

# DEPARTMENT OF PUBLIC WORKS

Fred Abadi, PhD, PE, Director  
fabadi@waukesha-wi.gov



## MEMORANDUM OF CONTRACT

DRAFT 7/16/18

To: Water Conditioning Companies  
Subject: Water Softener Salt Optimization Program

The City of Waukesha (referred to herein as the City) has been required by DNR to implement measures to reduce chloride output from the Clean Water Plant. The most significant source of chloride is salt from water softening. The objective of this Softener Salt Optimization Program is to reduce softener salt use to no more than necessary to provide soft water, thereby reducing chloride output. You will assist the City in this effort by performing salt optimizations on softeners which discharge to the City's sanitary sewer system. This includes commercial, industrial, public, multi-family, and residential sewer users.

Phase I of the Program begins in 2018 and continues through 2022 or other end date as designated by the City. As a contractor for the City, you will perform and provide all optimization services as specified in the Scope of Work in Schedule A. You will provide only technicians who have successfully completed certification training for this Program, including overview training by the Water Quality Association (WQA) on the Optimization Report form, and detailed training by one or more softener manufacturers.

You will receive an appropriation from the City of \$30.00 for each optimization completed in compliance with the Optimization Report form and the terms and conditions of this Contract. Reports that are incomplete, inaccurate or unclear, or adjustments which fall short of Program goals will not be considered as completed optimizations. Your technicians will be expected to perform all adjustments listed on the WQA optimization report form, or as many adjustments that can be made on a particular softener. Each separate softener controller that is optimized will be considered a separate optimization. The City may adjust the pace of the Program to stay within the limits of designated funds. A copayment of \$10.00 is required to be paid by the softener owner to your company at the time of each optimization.

You agree to indemnify and hold harmless the City of Waukesha, its officers, employees, successors, assigns and agents from and against all claims, suits, costs, losses, debts, actions, demands, liabilities, expenses, and /or damages to persons or property in any manner arising out of or connected with you and your employees' and agents' actions and participation in this Water Softener Salt Optimization Program. You must maintain a public liability insurance policy, naming the City as an additional insured and loss payee, with limits of not less than \$1,000,000 per occurrence and \$2,000,000, aggregate, and provide the City with a copy of the certificate of insurance.

This Memorandum of Contract and its Schedule A and Exhibits constitute the entire agreement between the parties, and any change, amendment or modification must be made in writing and signed by both parties. If any provisions are held to be invalid and unenforceable, the remaining provisions shall be

<input type="checkbox"/> <b>ENGINEERING DIVISION</b> Alex Damien, PE City Engineer 130 Delafield St Waukesha, WI 53188 262-524-3600 Fax: 262-524-3888	<input type="checkbox"/> <b>MUNICIPAL PARKING SERVICES</b> Fred Ripley Parking Supervisor 241 South St. Waukesha, WI 53188 262-524-3622 Fax: 262-650-2572	<input type="checkbox"/> <b>STREETS DIVISION</b> 300 Sentry Dr Waukesha, WI 53186 262-524-3615 Fax - 262-524-3612 WWW.WAUKESHA-WI.GOV	<input checked="" type="checkbox"/> <b>CLEAN WATER PLANT</b> Jeff Harena Plant Manager 600 Sentry Dr Waukesha, WI 53186 262-524-3625 Fax: 262-524-3622	<input type="checkbox"/> <b>WAUKESHA METRO TRANSIT</b> Brian Engelking Transit Manager 2311 Badger Dr Waukesha, WI 53188 262-524-3634 Fax: 262-524-3646
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valid and binding on the parties. One or more waivers by either party of any provisions of the agreement shall not be construed as a waiver of a subsequent breach by the other party. This agreement is governed and construed in accordance with the laws of the State of Wisconsin.

Successful and timely completion of this important Program will be in the best interest of both the City and the water conditioning companies. Achieving significant chloride reduction through salt optimization will help avoid the need for escalated control measures. Please feel free to contact Tim Young with any questions or concerns, (262) 524-3628.

**[Company Name]**

\_\_\_\_\_  
[Representative]

Date: \_\_\_\_\_

**City of Waukesha**

\_\_\_\_\_  
By Shawn N. Reilly, Mayor

Date: \_\_\_\_\_

\_\_\_\_\_  
Attested by Gina L. Kozlik, City Clerk

Date: \_\_\_\_\_

To certify that funds are provided for payment:

\_\_\_\_\_  
Richard L. Abbott, Director of Finance

Date: \_\_\_\_\_

Cc: Fred Abadi, Jeff Harenda, Miles Eastman, Julie Weigl, Brent Brown, Jim Fisher, Kathleen Fultz, Tanya Lubner

## Schedule A

### Scope of Work

1. You will begin performing softener salt optimizations in the third quarter of 2018, and continue making steady progress toward the Program goal of optimizing all softeners connected to the City's sewer system by 2022.
2. You will schedule and perform optimizations in conjunction with all routine service calls for customers whose softeners discharge to the City's sanitary sewer system
3. You will schedule and perform optimizations for all your customers with rental softeners that discharge to the City's sanitary sewer system, and shall evenly distribute the number of rental optimizations between the start of the Optimization Program and December 31, 2020 in order to stay within the City's appropriations budget.
4. The City will mail a letter (Exhibit A) to the highest water users first, then will continue mailing letters in descending order of water usage. The letter will direct each softener owner or user to contact one of the listed companies which is certified to service their particular brand of softener. You will then schedule and perform the optimizations. You will provide to the City monthly a list of addresses where the property owner indicated there is no softener.
5. Only softeners which discharge to the City's sanitary sewer system are to be included in this Program. Softeners which discharge to a septic or holding tank are not to be included.
6. You will provide all personnel and materials needed to perform the optimizations. The City is not responsible for mobilization charges or any additional services, parts, or repairs.
7. You will conduct a criminal background check on all your technicians. All technicians must pass the background check (i.e., not on sex offender registry, no felonies within past 5 years) prior to performing any optimizations.
8. By September 1, 2018 you will submit to the City a list of all your technicians who will be performing optimizations, including their Program certification date (WQA training date) and a copy of their background check report. You will submit an updated list as changes occur.
9. All technicians must display proper identification upon arrival for each optimization. Technicians must comply with the City's guidelines and direction when scheduling and performing optimizations and only enter a property after obtaining consent to enter or pursuant to a special inspection warrant. The technicians shall inspect the water softener(s) on the property and determine if the softener(s) complies with the requirements for water softeners in Chapter 29 of the Waukesha Municipal Code. The technicians shall only perform optimizations after obtaining separate consent to optimize the water softener(s).
10. As each optimization is being performed, your technician will complete a detailed report using the online tool designated by the City, which incorporates the WQA Optimization Report form (Exhibit B). You will provide the mobile data access and hardware needed by your technicians in the field to accomplish this task, including GPS tracking and taking one or more photos of each softener.
11. You will address complaints in a timely and professional manner.
12. You will submit by the first day of each month a running list of softener owners/users and addresses (in spreadsheet format, sorted by street name) for which an appointment has been scheduled in response to the owner or user receiving a letter from the City.
13. Once per month, you will submit an invoice for the amount of \$30.00 per optimization completed, along with a corresponding report generated by the City of softener owners/users and addresses optimized, to:

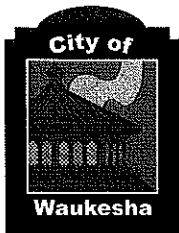
Accounts Payable  
City of Waukesha Clean Water Plant  
600 Sentry Dr.  
Waukesha, WI 53186  
jweigl@waukesha-wi.gov

The City is tax exempt, CES #047443, and will pay invoices monthly, net 30 days.

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**Exhibit A**  
**High Water User Letter**

DRAFT



# DEPARTMENT OF PUBLIC WORKS

Fred Abadi, PhD, PE, Director  
fabadi@waukesha-wi.gov



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To All Commercial, Industrial, and Other High-Volume Water Users

## NOTICE: Water Softener Salt Optimization Program

The City of Waukesha Clean Water Plant is continuing efforts to reduce chlorides from entering the sewer system. The largest source of chloride loadings (75%) is salt used in the regeneration of water softeners. The City is required by the State of Wisconsin to reduce chlorides, which can be harmful to fish and aquatic life. Salt usage can be reduced by as much as 50% through softener optimization without any change in softened water quality.

**As a high-volume water user, you are required to schedule a softener salt optimization to occur within 30 days of receipt of this letter\***. The City is working with the Water Quality Association ([www.wqa.org](http://www.wqa.org)) and local water conditioning companies in a cooperative effort to reduce salt use. The majority of the cost of the optimization is being shared between the City and local water conditioning companies. In addition, a nominal copayment of \$10 per softener optimized is required to be paid by the softener owner at the time of the optimization. Optimizing salt use will ensure your softener uses only the salt needed, which reduces your salt costs and handling while still providing softened water and reducing chlorides. **You must contact one of the approved water conditioning companies on the enclosed list who is certified to service your particular brand of softener.** A trained technician will evaluate your softener and make adjustments if needed to optimize salt efficiency. Although all softeners connected to the City sewer system must be optimized, high water users are being prioritized because they are likely to be high salt users as well.

### Questions & Answers

#### *Why is this Program necessary?*

The City of Waukesha Clean Water Plant has been mandated by DNR to reduce the chloride loading in its treated wastewater discharge. The chloride from softener salt discharges to the sanitary sewer and ends up at our wastewater treatment plant. Treatment plants are designed to remove solids and break down organic wastes, but chloride cannot be removed by cost-effective treatment processes.

#### *Is there a cost for the optimization?*

A nominal copayment of \$10 is required at the time of each optimization. The balance of the optimization cost is being absorbed by the water conditioning companies and the City. The technician may make recommendations for optional work that is not covered by the Optimization Program such as replacing components, performing other maintenance, adding salt, or replacing aging softeners.

*(continued on page 2)*

***\*If you do not have a softener, please sign and submit the enclosed Certification Form within 30 days.***

<input type="checkbox"/> <b>ENGINEERING DIVISION</b> Alex Damien, PE City Engineer 130 Delafield St Waukesha, WI 53188 262-524-3600 Fax: 262-524-3899	<input type="checkbox"/> <b>MUNICIPAL PARKING SERVICES</b> Fred Ripley Parking Supervisor 241 South St. Waukesha, WI 53186 262-524-3622 Fax: 262-524-3573	<input type="checkbox"/> <b>STREETS DIVISION</b> 300 Sentry Dr Waukesha, WI 53186 262-524-3615 Fax -- 262-524-3612 WWW.WAUKESHA-WI.GOV	<input checked="" type="checkbox"/> <b>CLEAN WATER PLANT</b> Jeff Harenda Plant Manager 600 Sentry Dr Waukesha, WI 53186 262-524-3625 Fax: 262-524-3622	<input type="checkbox"/> <b>WAUKESHA METRO TRANSIT</b> Brian Engelking Transit Manager 2311 Badger Dr Waukesha, WI 53188 262-524-3634 Fax: 262-524-3636
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*Who will perform the optimization?*

Certified technicians from local water conditioning companies that have received special training specifically for this Optimization Program.

*How long will the optimization take?*

About 30 minutes to an hour per water softener or controller. This will vary based on the size and complexity of your water conditioning system. A representative for your facility will need to be present during the optimization.

*What adjustments may be made to my softener?*

The technician may reduce the quantity of salt used per regeneration and input the resulting resin capacity, adjust the source water hardness setting to more accurately reflect actual source water hardness, reduce reserve capacity if manually controlled, and turn off timer overrides. The technician may also replace the injector as needed for proper operation at the lower regeneration salt dose. A resin cleaner may be added to restore lost capacity.

*Will this affect my water quality?*

Salt usage can be reduced by as much as 50% through softener optimization without any change in softened water quality. Although softened water quality should be unchanged, the frequency of regeneration is anticipated to increase if the salt dose is reduced.

*What are the benefits to my facility and the City?*

Reduced salt use benefits your facility by reducing costs of salt and handling, and benefits the City by reducing the concentrated chlorides discharged to sewers.

*What if we have a brine reclamation system?*

Optimization of the water softener can reduce total salt consumption even on systems with brine reclamation. However, the total salt reduction will not be as great due to the savings already provided by the brine reclamation system.

*Are there any alternatives?*

One alternative would be to ban softeners. However, the salt optimization approach (if successful) allows softener users to continue enjoying the benefits of soft water while helping the City achieve chloride compliance.

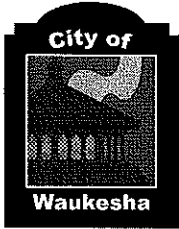
**Please schedule your appointment with one of the approved water conditioning companies on the enclosed list as soon as possible.** Feel free to contact me if you have any questions or would like further information. Thank you for your cooperation. Working together we can resolve this important issue.

Sincerely,

Tim Young  
Pretreatment Coordinator  
City of Waukesha Clean Water Plant  
262-524-3628

Enclosures

**Water Conditioning Companies Certified By the Water Quality Association  
to Perform Softener Salt Optimizations**



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'NO SOFTENER' CERTIFICATION FORM

As the owner, corporate officer, or site manager of the properties listed below, I hereby certify under penalty of law that no ion-exchange water softener which is designed to discharge a salt brine solution exists at any of these properties. I am aware that there may be penalties including citations and fines for knowingly submitting false information. I further certify that if any such softener is installed at a future date, it shall meet the requirements of Waukesha Municipal Code §29.08(i)(2) including minimum performance standards and optimization for salt usage in accordance with the enclosed letter.

FACILITY NAME \_\_\_\_\_

PROPERTY ADDRESS(ES)\* \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*List the address of each separate City water or sewer account.

Print Name & Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Rev. 07-18

Table with 5 columns: ENGINEERING DIVISION, MUNICIPAL PARKING SERVICES, STREETS DIVISION, CLEAN WATER PLANT, WAUKESHA METRO TRANSIT. Includes contact information for various departments.



**Exhibit B**  
**Optimization Report Form**

DRAFT

## Water Softener Optimization Report Phase 1 Format

Date: \_\_\_\_\_ Site Address: \_\_\_\_\_ Site Contact (first name): \_\_\_\_\_

Optimization conducted by (company): \_\_\_\_\_

Technician: \_\_\_\_\_ Training Certification Number: \_\_\_\_\_

1. Family Size? \_\_\_\_\_
2. Are there any special medical needs necessitating soft water? Yes \_\_\_ No \_\_\_ (contact manufacturer for guidance if needed)
3. Plumbing Configuration? Hot Soft only \_\_\_\_\_  
 Hot and Cold Soft, except for outside hose bibs & kitchen sink \_\_\_\_\_  
 Other? (explain) \_\_\_\_\_
4. Are there other treatment devices? \_\_\_\_\_  
 Point of Entry "POE"/ Whole-house Systems: Iron Filter \_\_\_\_\_ Other: \_\_\_\_\_  
 Point of Use "POU" Systems: RO \_\_\_\_\_ UV \_\_\_\_\_ Filter \_\_\_\_\_ Other: \_\_\_\_\_  
 Before or after water softener? \_\_\_\_\_
5. Water Softener Information: Serial number: \_\_\_\_\_ Approx. Age or Date of Mfg.: \_\_\_\_\_  
 Make: Culligan \_\_\_ Kinetic \_\_\_ Water-Right \_\_\_ Soft Water \_\_\_ Mermaid \_\_\_ Hanson \_\_\_ Guthrie & Frey \_\_\_ Hellenbrand \_\_\_  
 Ecowater \_\_\_ Kenmore \_\_\_ Electrolux \_\_\_ Morton \_\_\_ G.E. \_\_\_ North Star \_\_\_ Ecopure \_\_\_ Abendroth \_\_\_ Final Barrier Water \_\_\_  
 Other: \_\_\_\_\_  
 Specific Model: \_\_\_\_\_ Downflow Brining \_\_\_ Upflow Brining \_\_\_  
 Time Clock \_\_\_ (If time clock, regeneration frequency) every \_\_\_ Days  
 DIR Demand Initiated Regeneration (flow) \_\_\_ DIR Demand Initiated Regeneration (sensor) \_\_\_  
 Cu. ft. resin \_\_\_\_\_
6. Optimization

	Initial	Optimized	Target
Hardness Setting (Grains/Gallon)			Based on map from CH2M
Salt Efficiency (Grains/Lb. Salt)	With age factor:	Without age factor:	4000 grains of hardness removed per lb. of salt, or higher <u>without</u> age factor. With age adjustment factor of 2% per year, calculate: (Capacity in grains / salt dosage) – ((Capacity in grains / salt dosage) x age x 2%)
		With age factor:	
Salt Dosage (Lbs.)			Max. target of 5 lbs. per cu. ft. resin. Based on manufacturer recommendation per valve, salt curve, injector size, etc.
Injector Size			Based on manufacturer recommendation
Capacity (Grains)	N/A		Calculated by the manufacturer based on valve, optimized salt setting and injector
Capacity (Gallons)	N/A		Calculate: (optimized capacity in grains) / (new hardness setting in grains per gallon)
Reserve Capacity Gal. – Mechanical			Hot soft only - set to 25 gallons per person Hot & cold soft – set to 50 gallons per person
Reserve Capacity Gal. – Electronic			Program in the new salt dosage, capacity/grains. Refer to mechanical reserve capacity if system allows the programming of total gallons and reserve.
Add Resin Cleaner	N/A		Apply based on cleaner instructions
Time Clock Override	On or Off		If there is a time clock override for a DIR system, record initial settings then <u>turn off</u> override and set basis for regeneration to be demand

**Notes**

For time clock systems, fill in the table above the same as demand based system. Calculate regeneration timer settings based on actual water usage rate if recent water bills are readily available and provided by customer. If not, base on: Hot soft only - set to 25 gallons per person or Hot & cold soft – set to 50 gallons per person.

## Water Softener Optimization Report Phase 1 Format

7. What time is the softener set to regenerate at? \_\_\_\_\_
8. Is the time shown on the softener the same as the actual time? \_\_\_\_\_ Fix if not. If not adjustable, note the time shown on the softener \_\_\_\_\_ and actual time \_\_\_\_\_
9. Does the current softener appear to be working? \_\_\_\_\_
10. If repairs are needed to the system: (list and describe recommendations)

Estimated cost of repairs: \_\_\_\_\_

11. Are there any other recommendations or comments?

Valve	
Resin (e.g., replace)	
Tank	
Other	
<b>It is recommended that a softener 15 years old and not meeting 3,000 grains/lb with age adjustment should be replaced with an optimized DIR softener or the resin replaced.</b>	
<b>It is recommended that time clock systems should be replaced with optimized DIR systems</b>	

