

# GUIDE TO DEVELOPING A LOCAL WATER SOFTENER REBATE PROGRAM



September 19, 2019

## 1. Overview of the Need for Water Softener Rebate Programs

Water is considered “hard” or “soft” depending on the levels of dissolved minerals such as calcium and magnesium are in the water. Hardness is measured by either grains per gallon (gpg) or milligram per liter (mg/L) of calcium carbonate equivalent. Approximately 1 gpg is equal to about 17 mg/L. Thresholds for determining soft or hard water may vary. The Water Quality Association (WQA), a non-profit international trade association representing the residential, commercial and industrial water treatment industry, uses the degree of hardness standards shown in Table 1. The U.S. Geological Survey (USGS) uses similar thresholds to define hard and soft water.

*Table 1. Degrees of Water Hardness*

Degree of Hardness	Calcium Carbonate Equivalent	
	Grains per Gallon (gpg)	Parts per million (or mg/L)
Soft	<1.0	<17.0
Slightly Hard	1.0-3.5	17.1-60
Moderately Hard	3.5-7.0	60-120
Hard	7.0-10.5	120-180
Very Hard	>10.5	>180

Source: The Water Quality Association

There is no regulatory requirement to soften water in Minnesota, however many residents and business owners make the decision to install water softeners based on a variety of reasons ranging from personal preferences to appliance and infrastructure performance manufacturer requirements and/or recommendations. The Minnesota Department of Health (MDH) recommends that if water exceeds 7 grains of hardness per gallon or 120 mg/L, a water softener may be needed to help appliances run smoothly and to improve water aesthetics. However, the recommended hardness threshold may be lower for some water-using appliances (check warranty details) and industrial processes.

There are benefits to softening water. Water softeners can protect plumbing and fixtures from scale build up and decrease the need for chemical cleaners designed to remove scale build up from sinks, tubs, shower stalls and fixtures. Water softeners can save on the amount of energy needed to operate water heaters and other appliances that heat water. Water softeners also make laundry cycles more efficient, allowing the use of less water and less detergent. Private well owners may also rely on water softeners as one option for removing other contaminants such as radium, barium and strontium.

While there are some benefits to softening water, the technology can contribute to salt use and disposal. Home water softeners, also called ion exchange units, are appliances that remove calcium and magnesium in water. Resin beads inside the softener trap the calcium and magnesium and exchange them for sodium or potassium. Once the resin beads become full of calcium and magnesium, a highly-concentrated salt or potassium solution removes the calcium and magnesium from the beads. The chloride from water softener salt use makes its way to the environment either through discharge to a septic system or by delivery to a municipal wastewater treatment plant. Chloride is not removed from wastewater using conventional treatment methods. Although reverse osmosis (RO) technology can remove chloride from wastewater, this approach is expensive, energy-intensive, and generates a concentrated brine that still requires proper disposal. Therefore this not a feasible option to remove chloride from wastewater.

Chloride in lakes, streams, and groundwater threatens the health of freshwater fish and other aquatic life, as well as drinking water supplies. Chloride is toxic to aquatic life at concentrations of 230 mg/L, which is equivalent to one teaspoon of salt in five gallons of water. Once in the water, there is no feasible way to remove the chloride.

- **Drinking water.** Salt has contaminated groundwater in some areas of the state; 75% of Minnesotans rely on groundwater for drinking water. Excess salt could affect the taste and healthfulness of drinking water. Twenty-seven percent of monitoring wells in the Twin Cities metro area's shallow aquifers had chloride concentrations that exceeded EPA drinking water guidelines. Thirty percent of Twin Cities wells had chloride concentrations that exceeded the water quality standard.

- **Increased corrosivity in drinking waters.** High chloride can increase tendency of water to cause corrosion in distribution systems and can increase the rate of release of [lead](#) into the water.

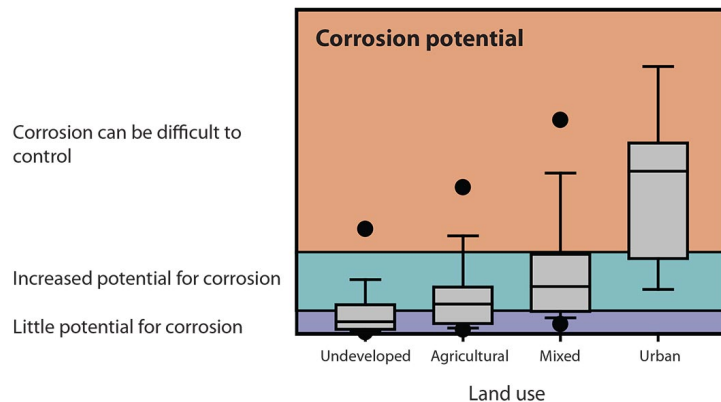
- **Fish and aquatic bugs.** High amounts of chloride are toxic to fish, aquatic bugs, and amphibians. Chloride can negatively affect the fish and insect community structure, diversity and productivity, even at lower levels.

- **Plants.** Plants that take up salty water through their roots can suffer. Chloride in streams, lakes, and wetlands harms aquatic vegetation and can change the plant community structure.

- **Soil.** Salt-laden soil can lose its ability to retain water and store nutrients and be more prone to erosion and sediment runoff (which also harms water quality).

Urban streams have an elevated potential to cause corrosion

*Image source: USGS*



For more information on water softeners from the Minnesota Department of Health, see <https://www.health.state.mn.us/communities/environment/water/factsheet/softening.html>

Centralized hardness reduction using lime or reverse osmosis is an approach that many local jurisdictions can consider taking as a first step to reduce chlorides. For example, the city of Morris, Minnesota, began operating a centralized water softening system in 2019 at their water treatment facility. Another approach is to offer residents and businesses a financial incentive to optimize or upgrade operating water softeners to high-efficiency units or, where centralized hardness reduction is occurring, minimize or discontinue the use of traditional salt-using self-regenerating water softeners. A water softener rebate program is often used in these cases.

Some water softener rebate programs may be reduction-based, incentivizing projects that allow the technology to remain in use if steps are taken to optimize performance and reduce salt-use. Other programs may be technology-based, incentivizing upgrade replacement with a high-efficiency unit. And some programs may be removal-based, encouraging the removal of all units. Water softener rebate programs vary depending on a variety of factors, including program drivers and goals, available data on chloride levels and water softener use, funding availability, and staffing resources.

## 2. Purpose of This Document

This document is intended to serve as a general guide for city or watershed managers and staff interested in developing a water softener rebate program in their jurisdiction. It provides an overview of the basic steps involved in developing a water softener rebate program, informed through research on existing water softener rebate programs. The guide presents an overview of key options for consideration and existing program examples, as well as appendices with programmatic documents from existing programs for reference. An evaluation of sources of chloride should be conducted prior to developing a water softener rebate program to ensure that water softeners are a significant source of the chloride load and that a rebate program will be a cost-effective strategy. The Minnesota Pollution Control Agency (MPCA) will be developing a Chloride Source Assessment Model that can help with this assessment (<https://www.pca.state.mn.us/water/chloride-salts>).

## 3. Steps for Developing a Water Softener Rebate Program

A water softener rebate program should ideally be tailored to the specific goals and characteristics of a municipality. The following steps are general recommendations for consideration and are not intended to serve as a definitive how-to guide. Ultimately, each municipality or watershed should craft a process that aligns with the goals, vision, and approach best suited for that specific jurisdiction. The process, and the resulting program, should be flexible and allow for continuous improvement over time.

The general steps presented in this section are as follows:

- Step 1. Identify Program Drivers
- Step 2. Gather Baseline Information on Water Softener Use
- Step 3. Identify Program Goals and Scope
- Step 4. Identify and Engage Potential Program Partners
- Step 5. Estimate and Obtain Funding
- Step 6. Determine Type of Rebate and Program Procedures
- Step 7. Conduct Outreach
- Step 8. Implement, Evaluate, and Adapt Program

Each step is described below in more detail, with key considerations. Where possible, each step includes examples from existing water softener rebate programs from around the country. Appendix A includes a list of the programs and contact information for jurisdictions to refer to if more information about a specific program is desired. Keep in mind that while the steps are presented sequentially, it is possible for jurisdictions to re-order the steps or undertake them concurrently or iteratively as new information relevant to program development becomes available. For example, Step 7 (Conduct Outreach) could begin immediately in the process and carry through all of the program development steps.

### Step 1. Identify Program Drivers

It is important to consider the driving force behind program development and implementation that will ultimately influence program goals and associated program elements. Perhaps the most straightforward driving force behind development of a water softener rebate program is a regulatory one. A regulatory driving force might be a Total Maximum Daily Load (TMDL) for chlorides, and/or an ordinance that requires optimization, upgrades, restrictions or the removal of water softening systems. There are numerous other driving forces behind the decision to implement a water softener rebate program. More than one driving force may influence the decision to develop a water softener rebate program.

Program drivers that are regulatory in nature, however, will likely have a stronger influence on the program goals and the type of rebate program.

- **TMDLs.** When MPCA develops and EPA approves TMDLs for chlorides, wastewater treatment plants may receive a wasteload allocation (WLA) that requires implementation through more stringent National Pollutant Discharge Elimination System (NPDES) permit limits. The WLA may establish a quantifiable chloride reduction for wastewater treatment plants that could drive the need for a water softener rebate program that generates a measurable chloride reduction to demonstrate progress toward meeting the chloride WLA.
- **NPDES permit.** More stringent chloride permit limits may stem from a TMDL or Reasonable Potential analysis. In some instances, chloride levels aren't necessarily more stringent, but can still be challenging for wastewater treatment plants to comply with given limited resources to upgrade treatment technology. As part of a wastewater treatment plant's pre-treatment program, a wastewater treatment plant may find it is more cost-effective to lower chloride levels coming into the plant by investing resources into a water softener rebate program. A [chloride variance permit process](#) is also in place to consider requests from permitted entities subject to chloride permit limits. To be eligible for a variance, a wastewater treatment plant must develop a Chloride Minimization Plan with a Chloride Variance Request Form. The Chloride Minimization Plan can result in useful information for developing a water softener rebate program (Step 2).
- **Local ordinance.** With a local ordinance as the regulatory driver, the goal of the water softener rebate program is to help regulated entities comply with their requirements. Typically, a local ordinance itself is driven by the need for a jurisdiction to comply with NPDES permit requirements to achieve water quality standards, possibly a TMDL WLA or NPDES permit chloride limit.
- **Environmental concerns.** Chlorides may be on a jurisdiction's radar before excessive levels cause aquatic life and/or drinking water quality impacts. These concerns may be a primary driver for a voluntary water softener rebate program to prevent exceedances of chloride water quality standards that may lead to a TMDL and subsequent stringent NPDES permit limits and local ordinances. This type of program may not need to demonstrate quantifiable chloride reductions but focus more on optimization and/or replacement of technology as a way to avoid future chloride-related water quality problems.

Understanding the driver for a water softener rebate program is a key consideration in determining the program goals, the type of program, metrics for success over time, and reporting and tracking needs.

### **Key Considerations for Step 1**

- Is the driver for the program regulatory or voluntary?
- Does the driver for the program focus on measured or estimated chloride reductions? Or is the focus on number of units optimized, upgraded, or removed?
- Does the driver for the program include a time frame?
- Does the driver for the program require tracking and reporting requirements?
- Does the driver for the program include a fine for non-compliance or a cost for treatment upgrades that affects the financial analysis of developing and implementing a program?

## Step 2. Gather Baseline Information on Water Softener Use

Under Step 1, jurisdictions determine the “why” of a water softener rebate program. Under Step 2, information on the “who” of the water softener rebate program is examined. Gathering baseline information on the use of water softeners in a jurisdiction will help characterize who is using salt-based water softeners and the type of technology in use. This is a helpful step in understanding the extent of the problem and how best to target the scope of the water softener rebate program. As stated in the introduction, it is imperative that municipalities seeking to develop and implement a water softener rebate program as a means to comply with regulatory chloride reductions thoroughly evaluate the potential effectiveness of a water softening rebate program to meet permit limits. Robust information on the chloride contributions of water softeners in a jurisdiction under this step will help determine if rebates can effectively meet program goals driven by NPDES permits.

Several key pieces of baseline information can be obtained during the review process to support development of program purpose and goals, including:

- Percentage of households and/or businesses using water softeners
- Approximate age of water softeners
- Percent of timer-based and demand-initiated water softening systems
- Size of existing water softening systems (e.g., small residential or large schools or businesses)
- Largest contributors of salt in jurisdiction

*The Statewide Chloride Management Plan* (MPCA 2019) source assessment states that “where the primary source of household water is hard (as it is throughout the state) and it is not softened by municipal water utility, residential water softeners may be the primary source of chloride to [wastewater treatment facilities].” For more information, visit the MPCA’s [statewide chloride resources webpage](#).

### Percentage of households and businesses using water softeners.

It can often be difficult to obtain exact information on water softeners in a jurisdiction, as there are typically no reporting requirements for these types of systems. Estimates of baseline information on water softeners, however, can be determined in several different ways. For example, the source assessment section of a chloride TMDL report, if applicable to your area, could be a good starting point. In addition, a Chloride Source Assessment Model is currently under development by the MPCA that when completed will serve as a tool to inform chloride source assessments.

Wastewater treatment facilities are another potential source of information on water softener use in their jurisdictions. For example, some facilities may have record of the top contributors to their facility and other high use water softener users. As mentioned under Step 1, wastewater treatment facilities seeking a chloride variance are required to develop and submit Chloride Minimization Plans which can also contain useful baseline information on water softeners. Not all facilities will have these exact data or records but anecdotal information and experiential knowledge from waste water treatment facility staff can also provide key insight to high impact users and/or high use areas.

Other industry experts, such as local water softener suppliers or plumbers can also help inform baseline information. Simply calling or visiting these local businesses or asking them to complete a quick questionnaire may provide the desired level of baseline information.

Conducting a residential survey is an option for obtaining water softener specific information as well. Surveys can provide a more accurate baseline understanding but will often require more time and resources than other options. Depending on the severity of the driving force behind the development of rebate program, a survey may be the best course of action. A survey also provides a mechanism to ask customers what factors might prevent them from removing/replacing existing water softener technology. This will help to discern if the amount of the rebate is the primary factor or if other issues such as perception of alternative technology effectiveness is a potential barrier. This type of information will help with program development, as well as understanding the levels of awareness/education needed to help launch the program and motivate participation.

**Approximate age of water softeners.** The approximate age of existing water softening systems is often correlated to the age of a residential home. Older homes may have older water softener systems that are less efficient and thus require more salt than newer systems. Age of homes within a jurisdiction can be found through the local assessor's office. Plumbing permits are required for water softener installation and replacement in some Minnesota communities. These permits would also provide insight into the approximate age and thus efficiency of water softeners in the program area.

**Types of water softener systems.** Most water softening systems remove magnesium and calcium ("hardness") by ion-exchange or using salt. There are two main categories of ion-exchange systems: timer-based and demand-initiated. Timer-based water softening systems regenerate after a certain time period has passed, adding more salt to the systems. Regeneration is not dependent on usage. Demand-initiated regeneration (DIR) or on-demand softeners regenerate salt based on usage, typically when a certain amount of water is used or when hardness readings indicate the need to soften water. Understanding the types of water softener systems can help jurisdictions understand the associated chloride contribution from these systems and the cost and savings associated with a water softener rebate program.

### **Key Considerations for Step 2**

- What type of customers predominantly use water softeners in the jurisdiction? Residential? Commercial? Other?
- What is the extent of salt-based water softeners versus non-salt-based water softener technology among each type of customer?
- Is optimization of existing salt-based water softeners an option in the jurisdiction?

### ***Madison Metropolitan Sewerage District (MMSD), WI on-site surveying for baseline information***

Regulatory driving force: MMSD faced stringent discharge limits for chloride into natural water and the inability to remove chloride with standard wastewater treatment technology.

MMSD conducted a three-month voluntary residential survey of homes in four targeted neighborhoods within their sewershed to gather baseline information on water softeners discharging to their treatment plant. MMSD sent out a mailer prior to conducting the in-person surveys to obtain permission from homeowners and schedule a visit. Surveys were conducted by volunteers through a university program that had been trained by MMSD staff. Surveys included in person interviews with homeowners, a review of current plumbing and softener system, water hardness testing, and water sample collection for analysis at the MMSD laboratory. Pictures, serial numbers, and other identifying features of the water softening systems were also recorded.

- Can an alternative non-salt-based water softener be recommended in the jurisdiction and accepted by customers?
- What are the potential barriers to replacing salt-based water softener technology with non-salt-based water softener technology?

### Step 3. Identify Program Goals and Scope

Once the program drivers (Step 1) and the extent of salt-based water softener use (Step 2) are understood, Step 3 focuses on using that information to identify the program goals and scope.

Program goals should align with the drivers identified under Step 1, whether regulatory or voluntary. For some jurisdictions, the goal may be to achieve a measured chloride reduction as required under a TMDL or NPDES permit. Therefore, the program goal may focus on achieving that reduction through a variety of means, such as a combination of technology upgrades, optimization, or removal. As a result, the program may need to ask participants to measure chloride reductions through their program participation over time. For other jurisdictions, the required goal may be to remove or upgrade a specified number of units based on the findings of the baseline information and to gauge the change in chloride reductions. Therefore, the program goal may focus on technology removal without requiring participants to provide information on associated chloride reductions. If the goal of the water softener rebate program is to meet an NPDES permit limit, engaging with the MPCA permit writer to discuss the program goals is key.

Determining the program scope takes into account which type of customers the program will target for a rebate to achieve the program goals, based on the findings of the information gathered under Step 2. For example, the baseline information may show that there are more residential customers using salt-based water softeners than commercial customers, but the commercial customers contribute a greater amount of chlorides due to the amount of water use. If the goal of the program is to reduce chloride levels by a specific amount, the scope of the program may focus on working with the biggest users first, followed by residential customers. If the goal of the program is to remove or upgrade a specified number of salt-based water softener systems, then the program scope may focus on all customers with an emphasis on the predominant residential customers to hit the unit removal target.

A preliminary program goal and scope may be determined by the results of Steps 1 and 2. However, information from key program partners (Step 4) and funding availability (Step 5) will also influence the overall program goals and scope. Therefore, this step may be revisited and reexamined a few times over the course of the program development process.

#### Key Considerations for Step 3

- Using information from Step 1, what is the overall goal of the program: is there a measured chloride reduction or other target?
- Using information from Step 2, what type of salt-based water softener customer should be the primary program target to achieve the program goal?
- After completing Step 4, what does input from key program partners suggest about adjusting the program goals and scope?
- After completing Step 5, how does information about available program funding influence the program scope to achieve the program goals?



## Step 4. Identify and Engage Potential Program Partners

While identifying and engaging potential program partners is listed as Step 4, there are reasons to consider identifying these partners at the outset of the program development process and involving them in all program development steps to inform the process and create program buy-in. Involving stakeholders with expertise on water softening technology in the development of the program has the potential to provide benefits in creating an effective program. Partners could be a source of expertise on optimizing salt-based water softeners, alternative technologies, the cost and process of upgrade, replacement, or removal, and perceptions of residential and commercial customers. In addition, program partners may be able to assist in program implementation through outreach and education, technical assistance, and additional funding.

Engaging potential program partners to obtain expertise and program development input could be done formally or informally, depending on staffing resources and time constraints. A formal approach could involve establishing a program advisory committee that meets regularly to discuss aspects of the program. An informal approach could involve contacting program partners on an as-needed basis to ask for input on key components of the program. Regardless of the approach, identifying and engaging potential program partners early on can increase the potential of program implementation success to achieve program goals.

While engaging potential program partners, it is important to think about the role they may play in the program, both during development and implementation. Table 2 presents a list of potential partners and possible roles each partner might play in program development and implementation. Jurisdictions are likely to face limited resources and staffing to develop and implement programs. Engaging partners can help extend the reach of water softener rebate programs over time.

Table 2. Potential Water Softener Rebate Program Partners and Associated Program Roles

Potential Partner	Possible Role
Drinking water and wastewater treatment facilities	Implementation, funding
Regional water utility groups	Implementation, funding
Metropolitan Council	Research, implementation, funding, technical expertise
Watershed districts, watershed management organizations	Implementation, education and outreach, funding
Soil and water conservation districts	Implementation, education and outreach
Non-profits	Implementation, education and outreach
Community groups and organizations (citizen group Stop Over Salting, Master Water Stewards, etc.)	Education and outreach
Minnesota Water Quality Association (WQA) and local water softener suppliers	Technical expertise for program development and implementation, including softener optimization to reduce salt use and modeling impacts on chloride concentration; Education and outreach for program implementation
Plumbers	Technical expertise for program development and implementation; Education and outreach for program implementation
University or higher education program (researchers, extension, MnTAP etc.)	Baseline information gathering for program development; Technical assistance during program development; Education and outreach; staffing support
Residential and commercial customers	Input on potential barriers to participation for program development; Input on program application and process; Input on program outreach messaging
State agencies (MPCA, Minnesota Department of Health)	Technical assistance, education and outreach, Minnesota GreenCorps staff, funding
Professional Associations (American Water Works Association, etc.)	Technical assistance, program advocacy and support

During program development, different types of partners can help in gathering baseline information (Step 2) on the extent of salt-based water softeners in a jurisdiction to inform decisions about program scope. Once program goals are determined, key partners such as MPCA permit writers, can provide input on the feasibility of using a rebate program to achieve NPDES permit limits. Input from experts during program development can be valuable when considering the economics of the program (Step 5). For example, the Cities of Madison, WI and Waukesha, WI asked water treatment professionals for input on the cost and savings of upgrading and/or optimizing water softener technologies. In Waukesha, this information helped to generate a flat fee the City would pay pre-qualified professionals participating in the city's optimization program. During program implementation, local technical experts can offer services, in addition to education and outreach to customers, that help to motivate program participation. For example, the City of Lake Geneva, WI worked with a local water softener retailer and

supplier to conduct free inspections of existing systems and provide further incentives for residents to upgrade units.

### Key Considerations for Step 4

- What type of approach (e.g., formal, informal) for involving potential program partners will benefit the program development process given available time and resources?
- What components of the program development process could most benefit from technical expert input (e.g., baseline information, water softener technology, optimization, replacement, or removal cost information)?
- Which partners are key to reaching the program’s target customers and motivating participation?
- Which partners have access to additional funding or technical services that could be leveraged through the water softener rebate program?

### Step 5. Estimate and Obtain Funding

Adequate funding is essential to a successful water softener rebate program. The entire premise of the program is based on offering customers with a financial incentive to either optimize existing salt-based technology, replace with a high-efficiency unit or alternative non-salt-based technology, or remove the existing salt-based technology. Estimating and securing the amount of funding needed to achieve the program goal is an important step in the program development process. Determining the available funding for the program will influence the type and amount of rebates (Step 6) that the program can make available to the program target customers.

In some programs, a detailed financial analysis is a component of a larger chloride and water softener technology study as part of gathering baseline information. Other programs work with technical experts from the water softener industry to calculate the cost of salt-based water softener technologies, the cost of technology removal and disposal, the cost of technology replacement, and for optimization-based programs, the cost per pound of chloride reduced, and the savings in chloride reduction. Understanding these costs and savings, coupled with information about the target chloride reduction, can assist a jurisdiction in estimating the funding needed to provide rebates over a period of time. It is also important to factor in costs associated with other aspects of the program once determined (Step 6), including application processing, inspections, and program tracking and reporting.

With estimates of the funding needed to implement the water softener rebate program, the next analysis involves identifying internal and external sources of funding. Existing water softener rebate programs use a variety of funding sources and structures.

- **Water or utility bill surcharge or usage fee.** Surcharges are common lines on most water or utility bills. There are numerous reasons to include a surcharge on a water bill, funding a water softener rebate program is a potential option. Usage based fees for water softeners are another potential source of funding that provide an additional incentive for participation in your program.

BILL DETAIL			
<b>Your Water Budget for This Period</b>		<b>19 CCF</b>	<b>14,212 gallons</b>
<b>Your Water Consumption:</b>		12 CCF	8,976 gallons
<b>Service Charge</b>			<b>\$7.00</b>
Tier 1:	Excellent	10 CCF @ \$0.84	\$ 8.40
Tier 2:	Efficient	2 CCF @ \$0.94	1.88
Tier 3:	Inefficient	0 CCF @ \$1.41	0.00
Tier 4:	Excessive	0 CCF @ \$1.88	0.00
Tier 5:	Wasteful	0 CCF @ \$3.76	0.00
<b>Total Consumption Charge</b>			<b>\$11.28</b>
<b>Multi-Unit/Special Charge</b>			<b>0.00</b>
<b>Sewer Charge</b>			<b>0.00</b>
<b>Energy Surcharge</b>			<b>0.00</b>
<b>Indio Service Fee</b>			<b>0.00</b>
<b>Indio Utility Fee 5%</b>			<b>0.00</b>
<b>Returned Check Fee</b>			<b>0.00</b>
<b>Late Fee</b>			<b>0.00</b>
<b>Total For This Period</b>			<b>\$18.28</b>
<b>Previous Balance</b>			<b>0.00</b>
<b>Total Amount Due</b>			<b>\$18.28</b>

*Example surcharge and usage fee for water bill. "Understanding Your Water Bill" (US EPA).*

- **City general funds** may still be required to supplement the previous sources of funding to ensure program longevity and success.
- **Grant dollars** may also be available through federal, state, and/or private programs. For example, MPCA recently received Clean Water Fund monies to start a new grant program for rebate program implementation. Watershed planning funds through the Board of Water and Soil Resources (BWSR) may also be available on a program by program basis pending approval by the agency. For example, as part of BWSR's Watershed-based Funding pilot in the Twin Cities Metro area, local partners elected to allocate funding to address the private applicator and commercial/multi-family property sources of chloride. BWSR is currently working on developing policy and guidance for the permanent Watershed-based Funding program. Through this program, funding to support implementation of a water softener rebate program may be available.
- **Low interest loan** like those used for septic system improvements. The MPCA offers a [zero-percent interest loan](#) that can be used to fund softer exchanges, rebates, or other financial incentive programs.
- **Brand discounts or rebates.** Water softener suppliers may offer or wish to offer discounts on water softeners that are covered in the rebate program. This partnership can reduce cost burden on the program initiators and the consumer and increase business for the supplier.

### **Key Considerations for Step 5**

- What is the estimated funding needed to reach the program goal?
- What are the possible internal and external funding sources that will cover the rebates and program administration?
- If the estimated program funding needs exceeds the internal and external funding sources, what adjustments to the program scope will be made that will allow the program goal to be achieved?

## **Step 6. Determine Type of Rebate and Procedures**

This step focuses on determining the type of rebates that the program will offer based on the program goals, scope, information from key partners, and available funding. Once the type of rebate and the associated amount is determined, the focus shifts to developing the program requirements, policies, procedures, and programmatic tools and materials, including application forms, inspection forms, and tracking tools.

### **Types of Rebates**

Rebate programs can be either technology-based or reduction-based in nature. A city or watershed staff considering developing a water softener rebate system for a jurisdiction will need to consider several factors to determine which type of rebate program will meet the program driver and associated program goals. Programs driven by regulatory requirements may have the type of program specified as a permit condition, leaving little flexibility. Some programs that have a goal to achieve a specific, measurable chloride reduction may choose to develop a reduction-based water softener optimization rebate program and/or a technology-based water softener replacement and upgrade program. Other programs may focus on removing a percentage of residential or commercial water softeners and therefore will focus on a technology-based rebate that focuses on technology removal.

General types of rebates found in existing programs include the following:

- **Technology removal with a rebate pay-out (see Lake Geneva, WI and City of Brentwood, CA).** This type of rebate focuses on removal of salt-based water softeners and a payment made to the customer. This approach may have tax implications, depending on the amount of the rebate paid out to the customer.
- **Financial incentive to purchase new water softener technology (see City of Solvang, CA).** This approach helps to offset the cost of purchasing new and typically more expensive water softening technology, such as a portable exchange tank water softening system where a water softener company exchanges the tank for a new one and legally disposes of the brine solution or a high-efficiency water softener, typically after removing older salt-based water softeners. The financial incentive could be a flat amount or a percentage of the cost of the new high efficiency technology. The program in the City of Solvang provides a specified amount of rebate funding to the customer in the form of a water bill credit. This approach avoids making payments to participating customers, uses existing financial mechanisms, and avoids taxable income implications for customers.
- **Financial incentive for first-time purchase of non-salt-based water softener (see City of Brentwood, CA).** This approach does not focus on replacement of old technology, but helps to offset the first time purchase of the more expensive non-salt based water softener technology. This type of approach can be useful where an ordinance is in place that prohibits the use of salt-based water softeners and new construction projects intend to install a water softener for the first time. This approach may be paired with a technology removal rebate to create a comprehensive program.
- **Salt reduction-based project rebates (see Madison Metropolitan Sewerage District, WI and Waukesha, WI).** This approach focuses on salt reductions rather than technology removal to earn a rebate. Salt reduction projects could include elution studies which evaluate the performance of water softeners and can help identify opportunities for improvement, optimizing water softeners to use salt more efficiently, reducing the amount of soft water used in a facility, or reducing the use of chloride-containing process chemicals. Rebates vary based on the amount of salt reduced, with rebates tiered by small-scale and large-scale salt reduction projects.

### Program Policies and Procedures

City and watershed staff will need to develop supporting policies and procedures to govern how the program is administered based on the selected rebate type. General policies and procedures that should be considered and developed prior to the program launch are described below. This list is by no means exhaustive and each program's policies and procedures will vary based on jurisdiction and program specific factors including staffing resources, in-house technical expertise, available funding, partnerships, program goals, and concerns about legal liability.

**Program Eligibility Criteria.** This policy states the criteria for program participation. The policy may address the following:

- Type of customer who is eligible for a rebate (e.g., residential, commercial, both)
- Type and/or age of water softener for which the rebate is available (e.g., currently installed and optimized, previously installed and recently replaced or removed, first time high-efficiency or non-salt-based system purchase)

- How the optimization, upgrade installation, or removal must be performed (e.g., via certified vendor, property owner)
- Timing of the action eligible for rebate (e.g., prior to program launch, after program launch)

The City of Waterloo, WI specifically states that they will only reimburse systems that are functioning at the time of removal. Madison Metropolitan Sewerage District, WI requires that salt-reduction projects are eligible only for water softeners in use and cannot be given retroactively for previously completed projects.

**Program Application Process.** This policy determines what type of information, documentation, and what form or checklist an eligible customer must provide to sign up for the rebate program and receive funding. The procedure then determines where the form is sent, the person responsible for reviewing and approving, and the mechanism for flagging the customer for the rebate in the tracking database or billing system. Depending on the type of rebate program, information/documentation that could be requested as part of the application process may include:

- A copy of recent water/sewer bill
- A photograph of the existing conventional (old) salt-using automatic water softener
- Make, model, and serial number of new and old softener system
- Address of installation
- Date of installation
- A copy of the invoice or receipt for the new non-salt based water softener
- A copy of a contract with a water treatment dealer
- Copy of salt delivery records for a specified timeframe
- Monthly water use
- Annual salt use
- Estimated annual salt reduction from project

Examples of application requirements and forms available at most existing program websites listed in Appendix A.

**Inspection/Verification Process.** This policy may require visual inspections to verify installation of new water softener technology. The City of Solvang, CA requires visual inspection to confirm compliance with the rebate program requirements. The customer also agrees through the program application to allow the City Wastewater Inspector to return after 12 months and retrieve performance history data from the water softener after the water softener has been in service for 12 months.

**Rebate Payment Process.** This policy will address how the rebate is provided to customers. Some programs opt to make a direct payment to eligible customers that thoroughly complete the application and meet all program requirements. Other programs opt to offer the rebate as a water bill credit, using the existing billing mechanism. Credits also help to avoid income tax issues for customers who receive a lump sum payment.

**Approved Service Provider Agreements.** For programs that require optimizing, upgrading, or removal of old salt-based water softeners by pre-qualified plumbers or water treatment professionals, a pre-qualified service provider policy and agreement may be needed. The City of Waukesha, WI developed a pre-qualified optimization provider program that included an education course specific to the city's program. The City of Brentwood, CA developed an agreement for plumbers that wanted to

participate in the program and receive a flat fee per unit removed. The agreement included a clause that prohibited the plumber from installing salt-based water softeners for future customers.

**Required Technology Efficiency.** Some programs specify the optimization parameters and/or required efficiency of a new unit replacing an older model. The Madison Metropolitan Sewage District (Madison, WI) had replacement systems meeting at least 4,000 grains/lb. salt efficiency. The City of Waukesha, WI developed a pre-qualified optimization provider program and established optimization parameters reported back to the city via a city app.

**Required Technology Alternatives.** Some programs specify the type of alternative technology that must be installed to be eligible for a rebate. There are many alternatives to the traditional ion-exchange water softener. The U of M developed factsheets on these alternatives and other recommendations for ion-exchange softeners.

[Residential water softening alternatives](#)

[Industrial water softening alternatives](#)

### **Key Considerations for Step 6**

- What type of rebate will the program offer and what is the associated rebate amount?
- What policies and procedures will the program establish to verify eligibility requirements and compliance with overall program requirements to earn the rebate?
- What documentation or proof of action will program participants be required to provide?
- What is the mechanism for giving the rebate to customers?
- What forms, checklists, and agreements are needed to implement program policies and procedures?

### **Step 7. Conduct Outreach**

Education and outreach to promote the water softener rebate program is an essential step for raising awareness and motivating participation. Education and outreach can include the use of printed and electronic collateral, such as program fact sheets, utility bill inserts, newspaper ads, social media, newsletters, websites, and door hangers. In addition, educating plumbers, water treatment providers, and water softener suppliers on the requirements of the rebate program is essential. These service providers often incorporate rebate program information into their marketing efforts and can help to educate customers about rebate availability at little to no cost to the jurisdiction administering the program. Existing programs with sustained outreach and education efforts report higher levels of participation, particularly when technical service providers are outreach partners.

Existing resources can be used to develop education and outreach materials:

[Statewide Chloride Resources](#)

[University of Minnesota Water Softening Resources](#)

In addition, there are many existing resources to tap into for staffing support to implement the education and outreach portion of a rebate program:

- **Minnesota GreenCorps members.** The [Minnesota GreenCorps Program](#) is a statewide initiative, coordinated by the Minnesota Pollution Control Agency, to preserve and protect Minnesota's environment while training a new generation of environmental professionals. The program places AmeriCorps members with host organizations around the state to assist

communities and local governments with a variety of needs including improving water quality. Existing GreenCorps program staff may be available to support implementation of this step. A jurisdiction may also consider creating a new GreenCorps position focused on water softener education and outreach efforts. To learn more information on the program and to apply to host a GreenCorps member contact: [mngreencorps.pca@state.mn.us](mailto:mngreencorps.pca@state.mn.us).

- **Master Water Stewards.** Master Water Stewards is a program that certifies and supports community leaders to prevent water pollution and educate community members to conserve and protect our waterways. The program is a partnership between Freshwater and participating cities, counties, watershed management organizations and non-profits. These highly trained volunteers may be available to support education and outreach efforts. For more information on the program visit: <https://masterwaterstewards.org/>.

### *Key Considerations for Step 7*

- What are existing outreach mechanisms used by the jurisdiction that can effectively deliver program information?
- Which partners can help support program outreach and education activities?

## **Step 8. Implement, Evaluate, and Adapt Program**

This step focuses on the launch and implementation of the water softener rebate program once all policies and procedures (Step 6) are completed and program outreach to raise awareness (Step 7) has started. Implementation can take place as a pilot, focusing on a limited program scope or a limited time frame, as a way to collect feedback from key partners and make adjustments. Some programs focus on full program implementation from the outset, but make adjustments to policies and procedures over time based on feedback from partners and participants. Whether pilot or full-scale implementation, it is important to have feedback mechanisms in place and a process for improving program implementation over time. Participation rate is one metric that will indicate a program may need adjustment.

### *Key Considerations for Step 8*

- What is the initial implementation plan at program launch (e.g., pilot or full implementation)?
- What are the feedback mechanisms to allow key partners and targeted program participants to provide input on program challenges?
- How often will staff evaluate and adjust program policies and procedures to improve success and progress toward program goals?



## Appendix A: Existing Water Softener Rebate Programs

### Scottsdale, AZ: Water Softener Rebate Program

The previous program focused on removal of water softeners with rebates up to \$250 for removal. The intent of the new 2019 program is to remove connected, functioning water softeners to reduce salinity in the wastewater.

Program Contact: Scottsdale Water, 480-312-5650 or WaterOperations-CustomerService@ScottsdaleAZ.gov

Website: <https://www.scottsdaleaz.gov/water/rebates>

### City of Solvang, CA: Water Softener Upgrade Rebate Program

This program offers residents an upgrade rebate for replacing old conventional self-regenerating (automatic) water softener with a salt-free canister type (portable exchange tank) water softener, or a new high-efficiency or ultra high-efficiency twin sensor water softener. The rebate is offered in the form of a \$400 credit on a resident's water bill.

Program Contact: Kristin Rubin, kristinr@cityofsolvang.com or 688-5575

Website: <https://www.cityofsolvang.com/175/Water-Conservation>

Application: <https://www.cityofsolvang.com/DocumentCenter/View/1482/Water-Softener-Upgrade-Rebate-App?bidId=>

Guidelines: <https://www.cityofsolvang.com/DocumentCenter/View/1483/Water-Softener-Upgrade-Rebate-Guidelines-V3?bidId=>

### City of Brentwood, CA: Water Softener Rebate Program

This program offered a financial incentive to residents willing to remove their salt-based, self-regenerating water softeners. Participating residents received a \$700 removal rebate. All removals eligible for the rebate had to be conducted by pre-qualified plumbers. The City paid pre-qualified plumbers a flat rate for each removal. Pre-qualified plumbers signed a service provider agreement with the City. In addition, the City offered a \$300 financial incentive for the first-time purchase of a non-salt-based device (where no previous unit has been in-place).

Program Contact: Diana Williford, Water Conservation Specialist, 925-516-6045

Program Brochure: <https://www.brentwoodca.gov/cob/pw/drought/water-softener-rebates.pdf>

Application and Service Provider Agreement: Available as a .pdf upon request from MPCA

### Inland Empire Utilities Agency (IEUA) Municipal Water District, CA

This program provides a financial incentive to residents living in the IEUA service area to remove automatic water softeners. IEUA offers 100% of the reasonable value (between \$300-\$2,000), plus free

removal and disposal. The water softener must be connected and in working condition to qualify for the rebate. Residents submit an application form with proof of purchase and the IEUA sends a letter stating the rebate offer based on the purchase price, make, model, and age of the unit.

Program Contact: IEUA, 909-993-1550 or [softenerrebate@ieua.org](mailto:softenerrebate@ieua.org)

Website: <https://www.ieua.org/use-water-wisely/rebates/water-softener-rebate-program/>

Application Form: <https://www.ieua.org/use-water-wisely/rebates/water-softener-rebate-program/water-softener-rebate-application/>

### **Santa Paula, CA: Water Softener Buy Back Program**

Initiated in 2015, this buyback program offered \$500 for the removal of a salt-based system, and an additional \$300 in rebates if the homeowner opted to replace their old system with a new, greener salt-free water softener. This buyback program is no longer in effect. An ordinance prohibits installing or replacing a Self-Regenerating Water Softening Appliance (SRWS) in a residence located within the City jurisdiction.

Program Information:

[http://m.santapaulatimes.com/news/archivestory.php/aid/30444/Cut the salt: Santa Paula launches water softener buy back program.html](http://m.santapaulatimes.com/news/archivestory.php/aid/30444/Cut_the_salt:_Santa_Paula_launches_water_softener_buy_back_program.html)

<https://www.pelicanwater.com/blog/santa-paula-water-softener-buy-back-program/>

Application: <http://www.ci.santa-paula.ca.us/WaterSoftenerBuybackForm.pdf>

### **Village of Pinckney, MI: Water Softener Rebate Program and Ordinance**

This water softener rebate program focuses on encouraging compliance with the Village's ordinance, which states that water softeners cannot be discharged into the sewer line. Eligible property owners can receive a 50% rebate, up to \$300, for installing a drywell or toward the purchase of a no-discharge water conditioner.

Program Contact: Village of Pinckney, Department of Public Works, 734-878-0666 or [dpw@villageofpinckney.org](mailto:dpw@villageofpinckney.org)

Website: <http://villageofpinckney.org/wp-content/uploads/2015/01/Water-Softener-Rebate-Program-v-2-2011.pdf>

### **Madison Metropolitan Sewerage District, WI: Salt Reduction Rebates for Commercial and Industrial Facilities**

This program offers rebates for projects undertaken by commercial and industrial facilities that result in permanent, measureable reductions in salt to the sewer system, including projects focused on optimization and soft water use reductions. Rebate recipients must be able to quantify the amount of salt reduced by the project. The rebate amount varies depending on the type of project and the associated amount of salt reduction (e.g., small-scale versus large-scale).

Program Contact: Emily Jones, 608-222-1201 ext. 203 or EmilyJ@madsewer.org

Website: <https://www.madsewer.org/Programs-Initiatives/Chloride-Reduction/Chloride-Grants>

Application Form:

[https://www.madsewer.org/Portals/0/ProgramInitiatives/ChlorideReduction/Grant%20Programs/2018\\_Salt\\_Reduction\\_Rebate\\_Overview\\_and\\_Application\\_1.pdf](https://www.madsewer.org/Portals/0/ProgramInitiatives/ChlorideReduction/Grant%20Programs/2018_Salt_Reduction_Rebate_Overview_and_Application_1.pdf)

### **City of Waterloo, WI: Water Softener Rebate Program**

This program offers a financial incentive to replace a working timer-based self-regenerating water softener with a demand initiated regeneration (DIR) water softener. The rebate is provided as a water utility bill credit applied towards future bills. The rebate offer is up to 50% of the cost of the DIR water softener, but not to exceed \$400. City of Waterloo ordinance 340-12 (G) requires that new water softeners have demand-initiated regeneration controls with a minimum salt efficiency of 3,350 grains' hardness per pound of salt.

Program Contact: Joy Bisco, Utility Accountant, (920) 478-2260 or lleistico@wppienergy.org

Website: <https://www.waterlooutilities.com/water-softener-rebate>

Application Form:

<https://www.waterlooutilities.com/sites/waterlooutilities.com/files/Water%20Softener%20Replacement%20Rebate%20Application%20Form.pdf>

### **Lake Geneva, WI: Water Softener Rebate Program**

The Lake Geneva Utility Commission offers a \$100.00 rebate check paid directly to residents for either upgrading current unit to an on demand system, or installing a new unit that is metered on demand. In addition to the rebate check, Culligan offers a \$100.00 discount off their complete line of metered on demand water softeners to utility customers exclusively.

Program Contact: Josh Gajewski, Utility Director, (262) 248-2311 Xt. 6115 or jgajewski@lgutilities.org

Website: <https://www.lgutilitycommission.com/wastewaterutility>

Application Form: <https://drive.google.com/file/d/0B-877Fe5oHxIX3dyZUtHS2FSY2c/view>

### **Waukesha, WI: Water Softener Optimization, Salt Reduction Program**

This program focuses on optimization of existing water softeners. The city is partnering with local water conditioning companies to retrofit the water softeners of Waukesha Water Utility customers to make them more efficient. The city pays for the bulk of the service calls, but customers contribute a \$10 copay.

Program Contact: (262) 521-5272 or contactus@waukesha-water.com

Website: <http://www.waukesha-water.com/index.html>

