

Keeping our waters fresh

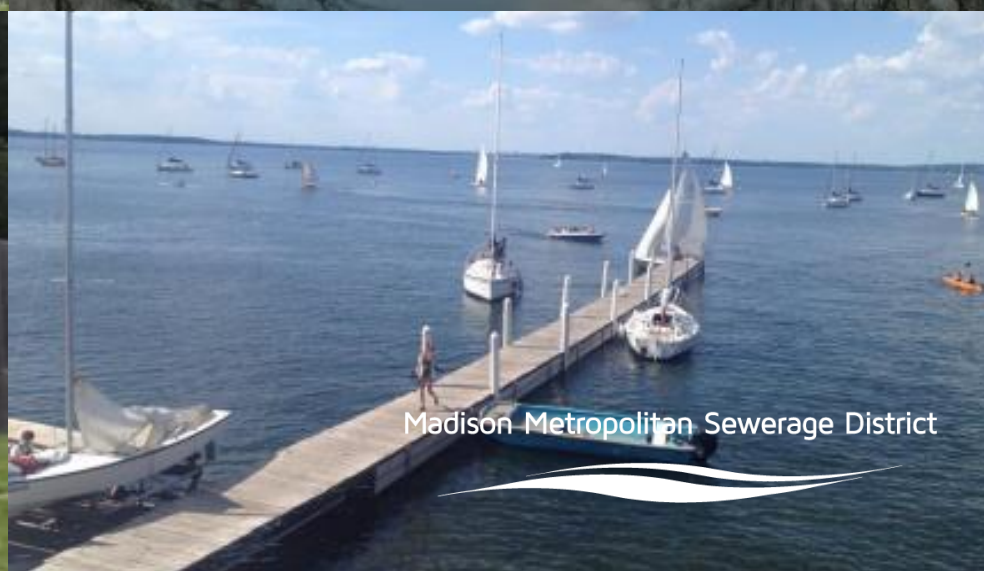


Madison Metropolitan Sewerage District

Where chloride comes from



Where chloride ends up

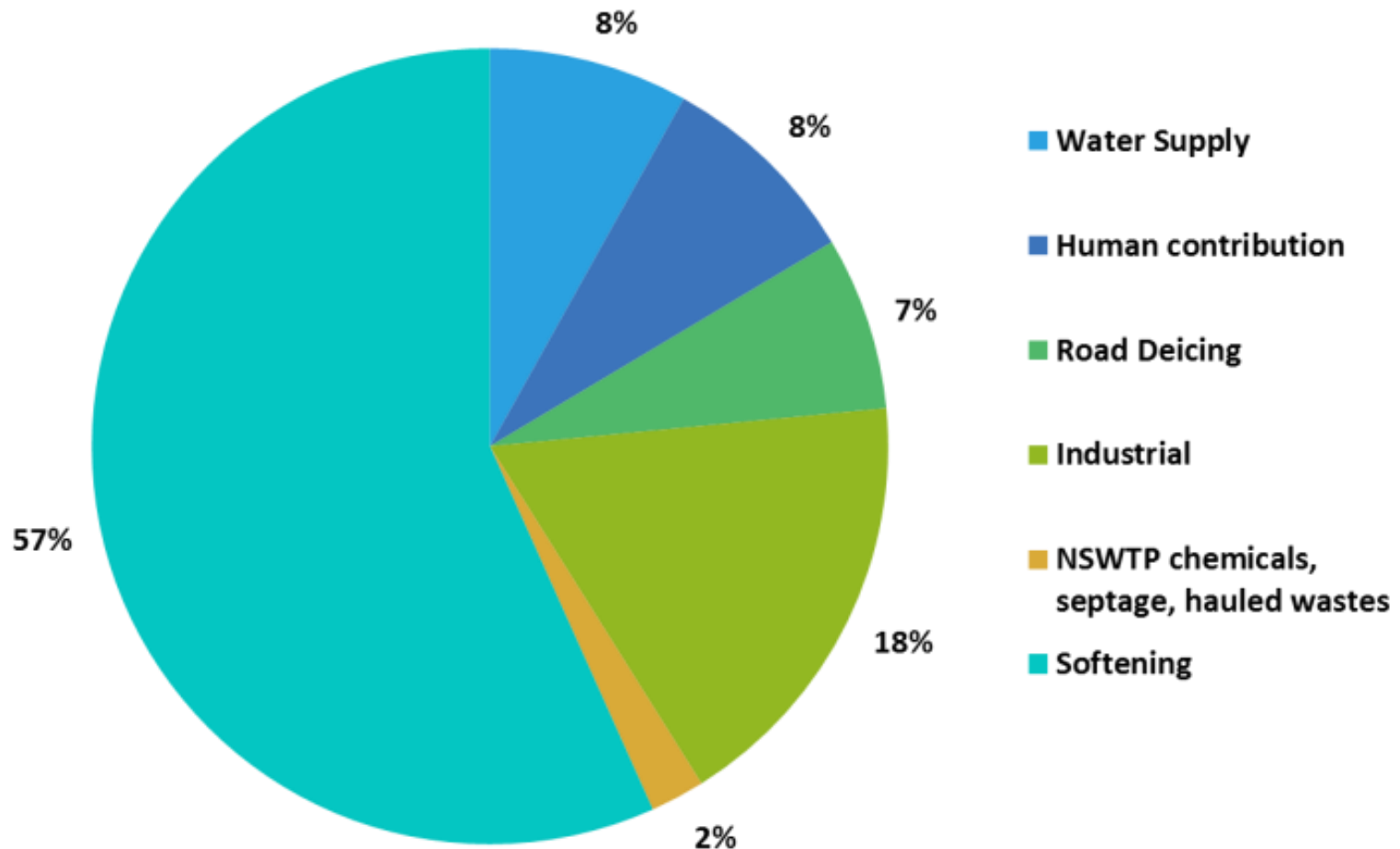



Madison Metropolitan Sewerage District

The district receives
more salt than this pile
each day.



Chloride sources to MMSD





Treated water returned to two streams

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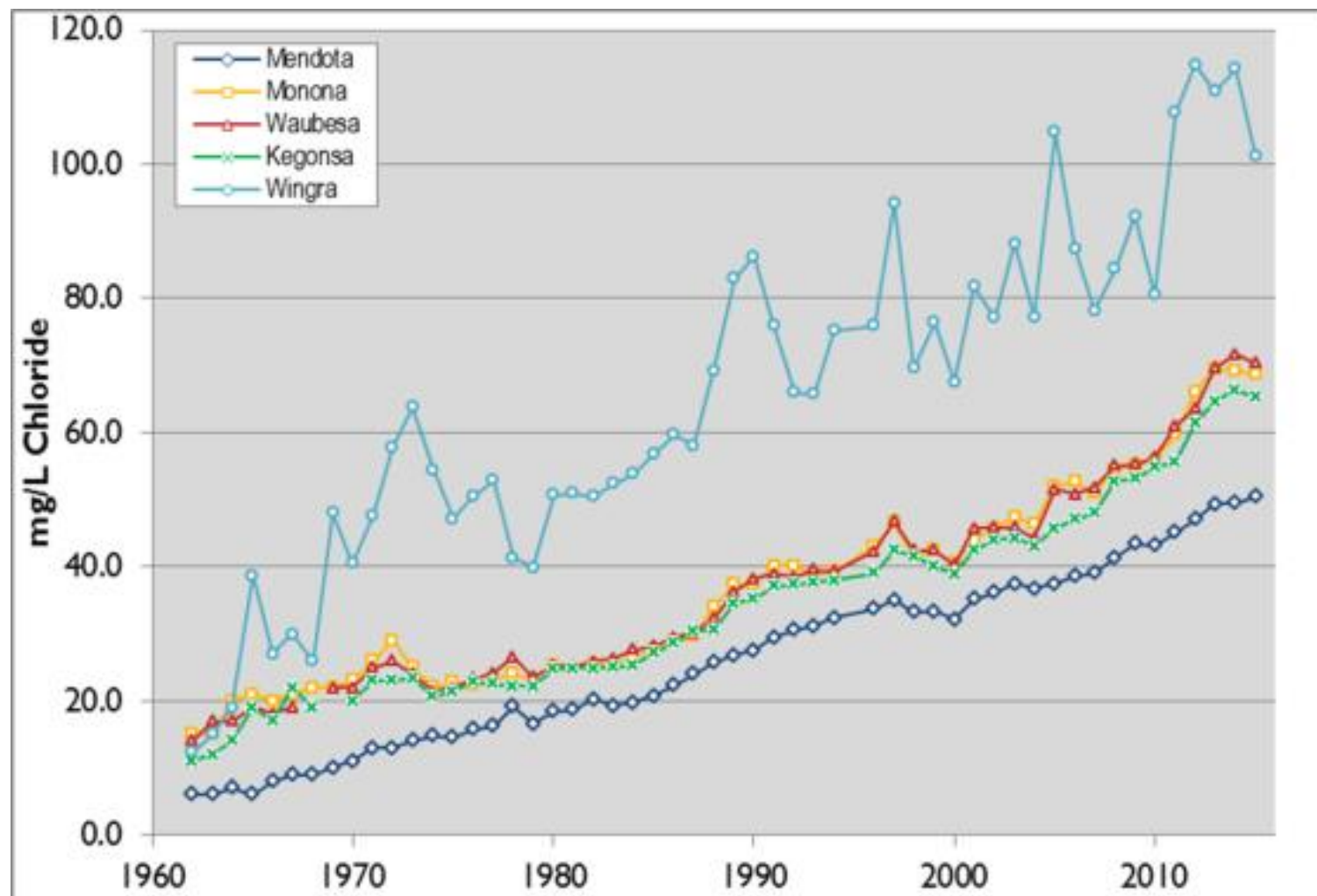


Road salt

- Most ends up directly in lakes, streams, and drinking water
- Some enters district sewer system, causing peaks



Chloride on the rise in area waters

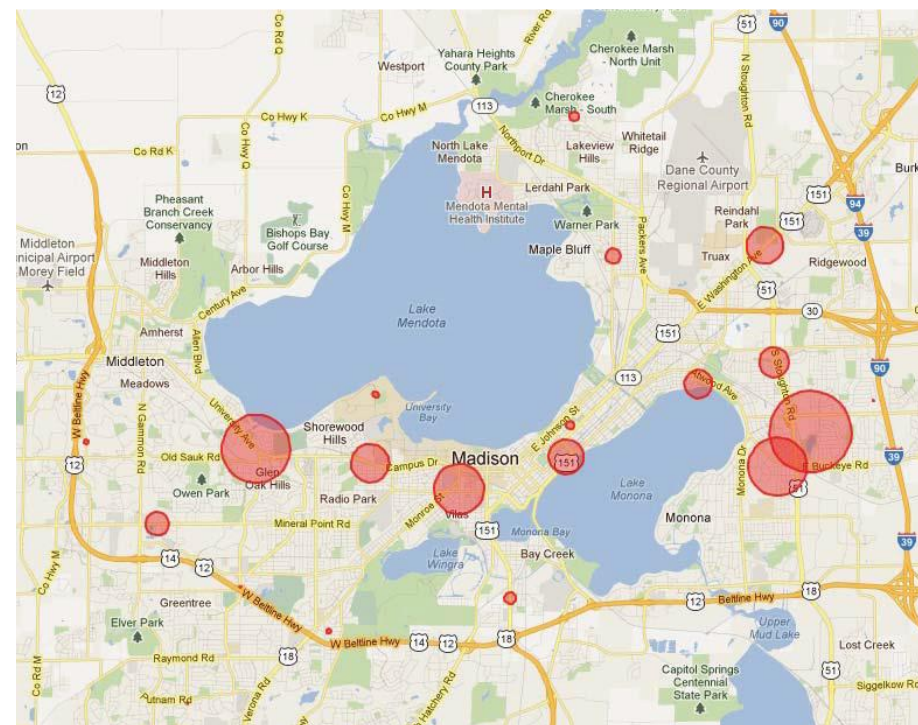


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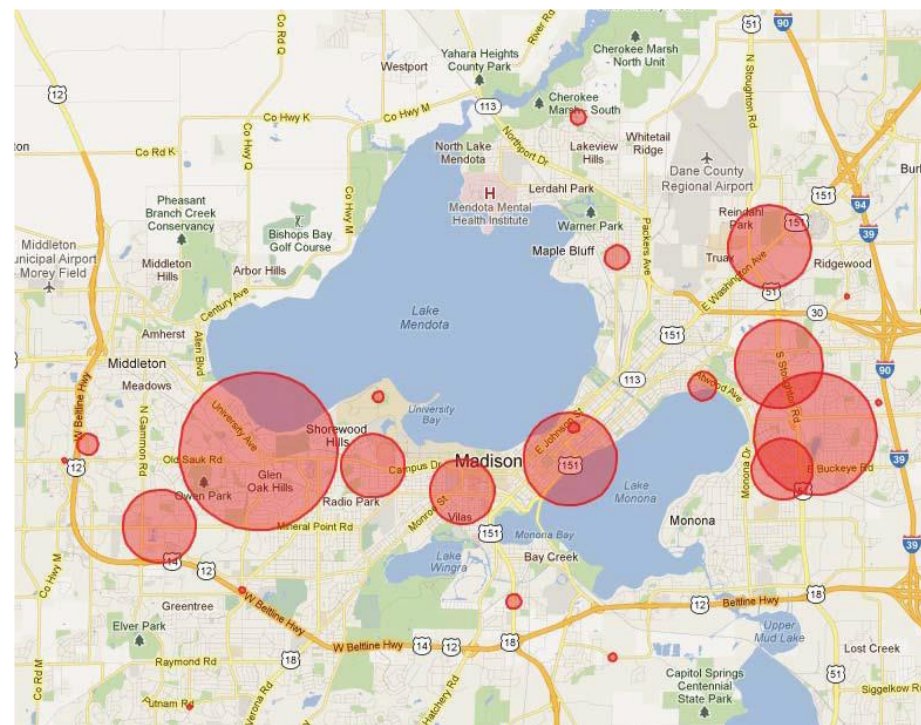
Madison/Dane County Public Health, Road Salt Reports



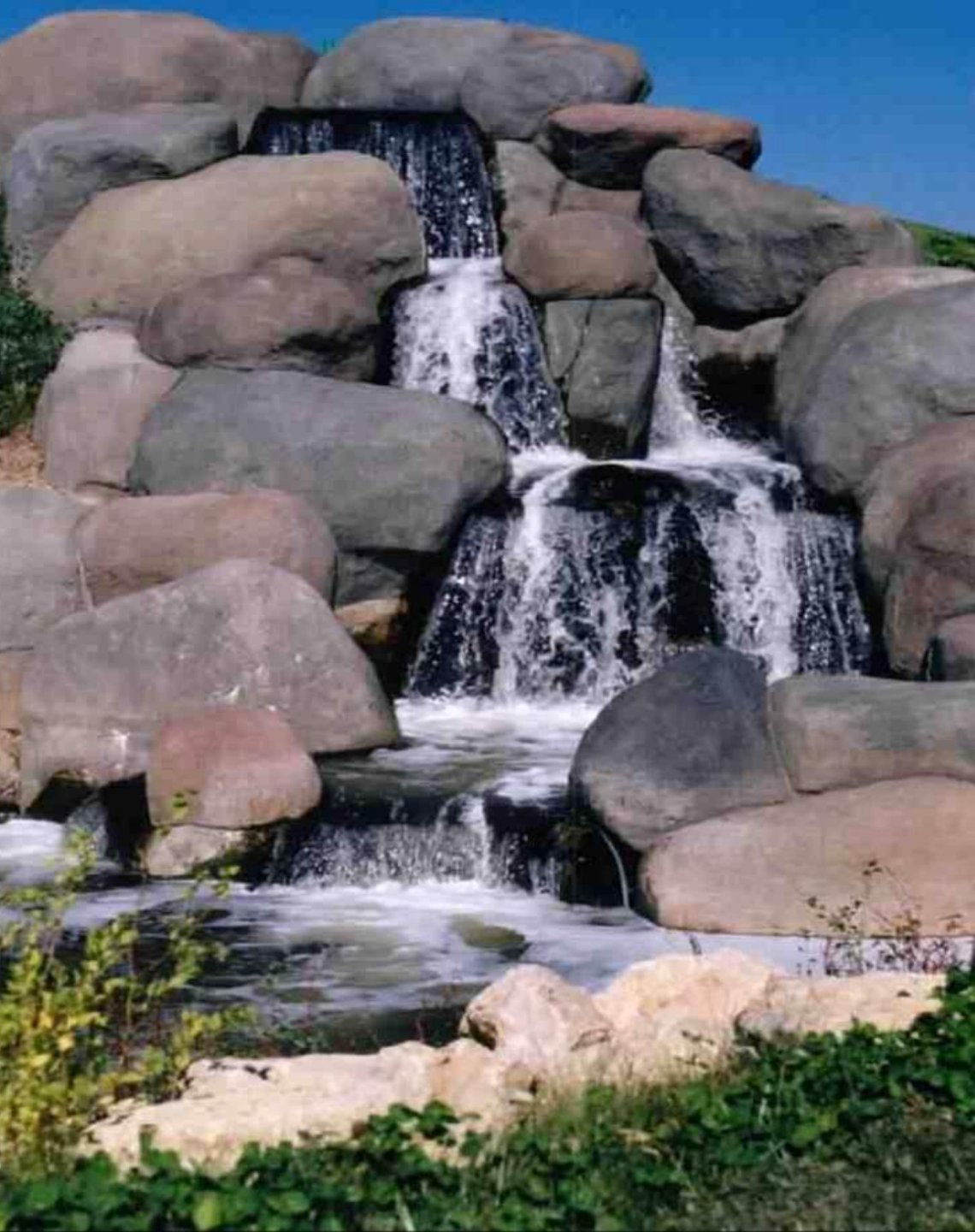
Drinking water chloride levels



1995



2010



Wisconsin Chloride Standard

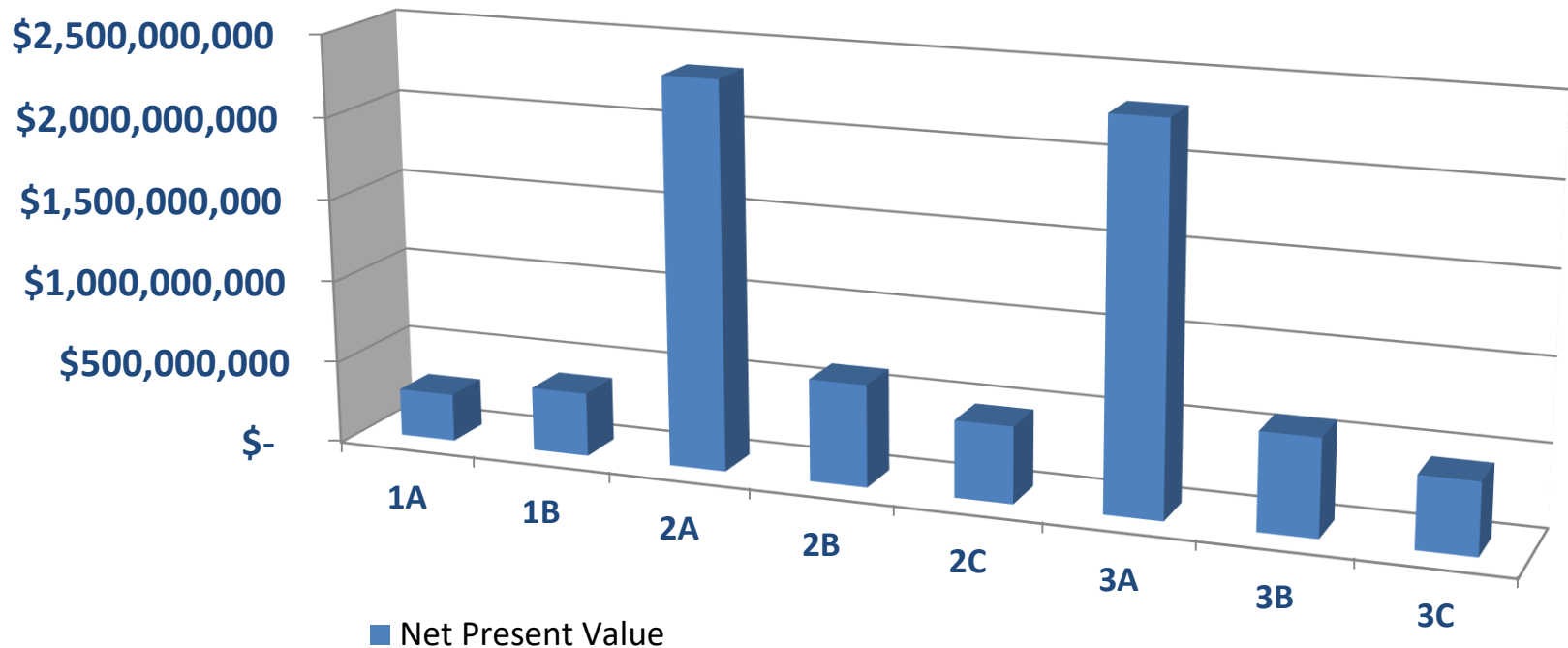
- 395 mg/L on weekly average in surface water
- Wastewater plants required to meet this limit



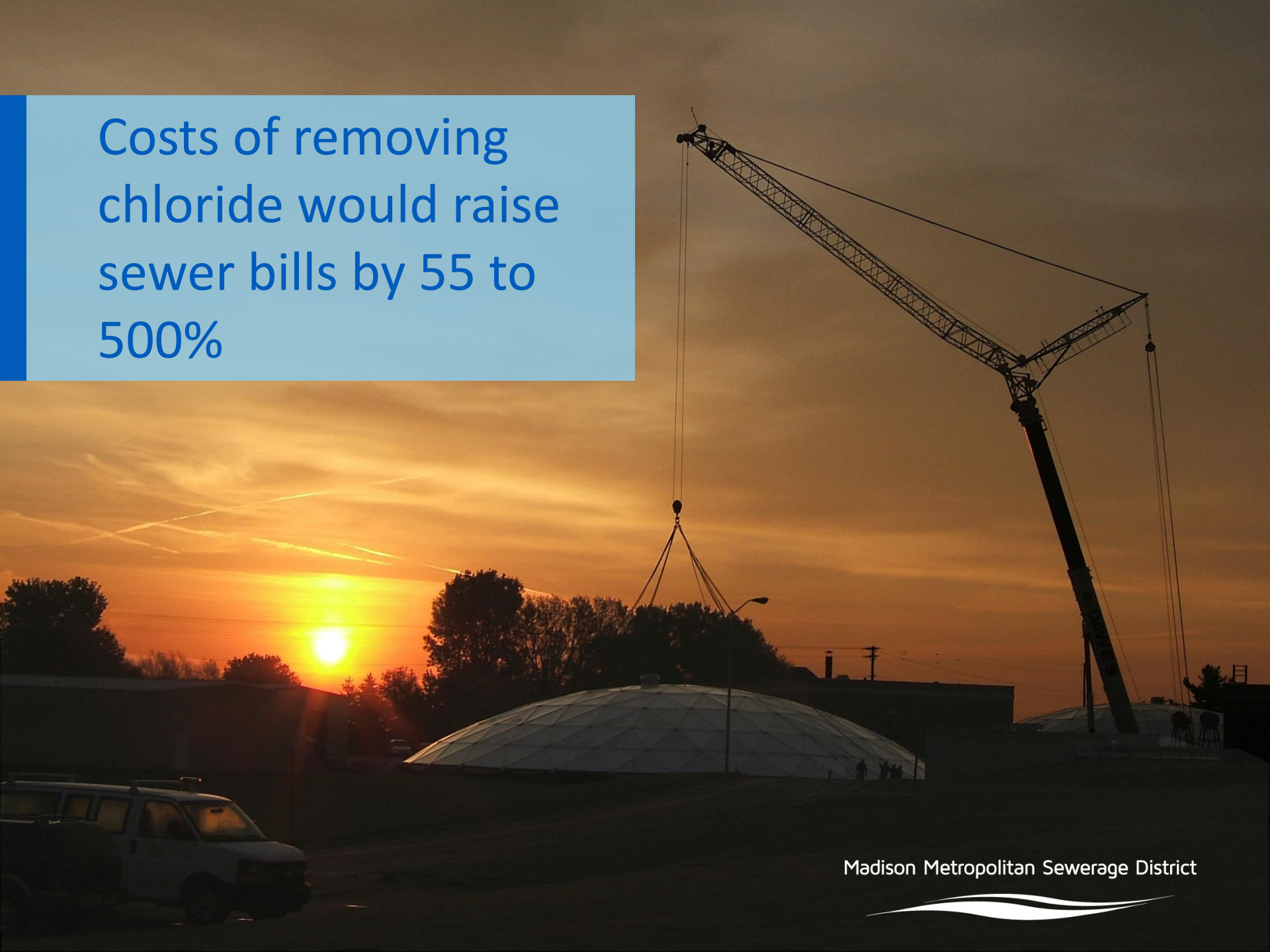


Treatment
options exist, but
are costly

Potential costs of treatment



Costs of removing
chloride would raise
sewer bills by 55 to
500%



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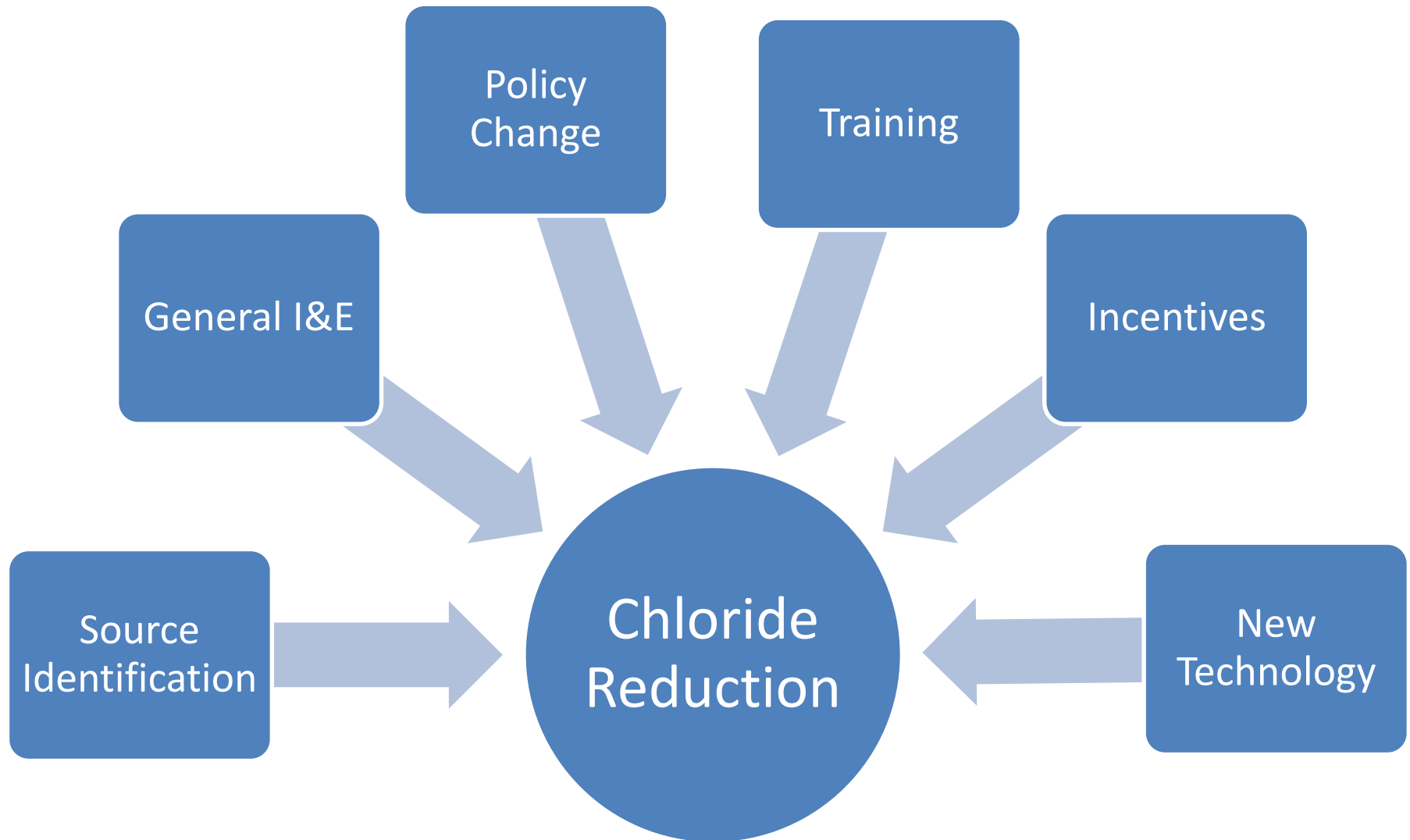


Chloride source reduction

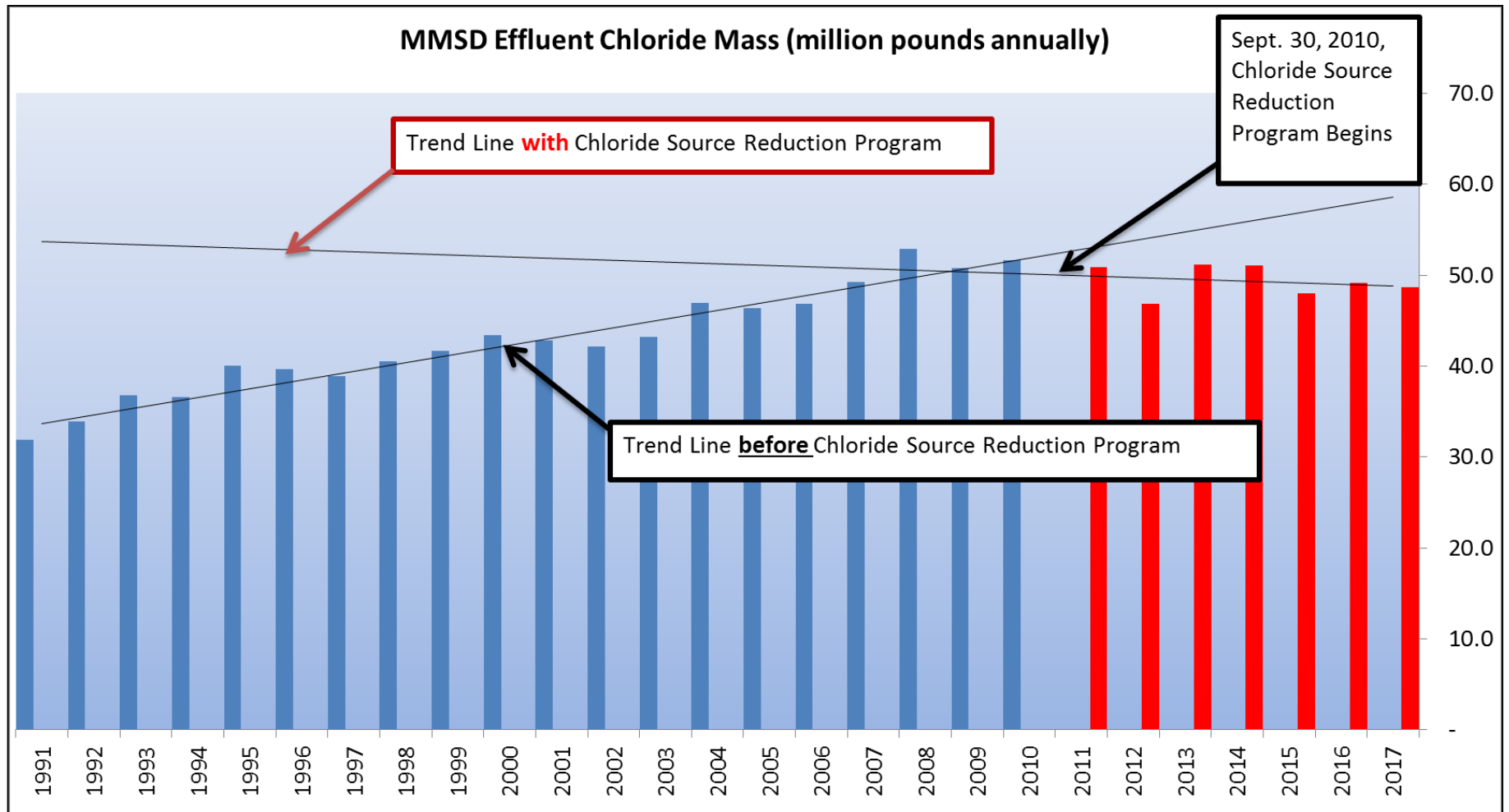
- Chloride pollution can be prevented
- Reducing chloride is much less expensive than removing it



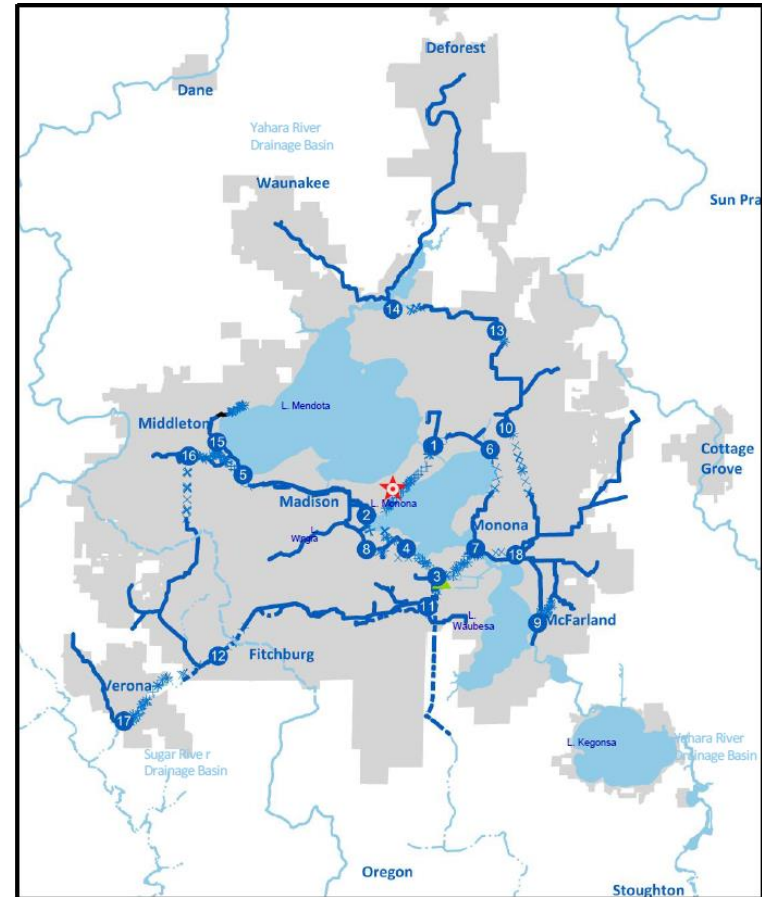
District chloride reduction strategy



Source reduction results



Municipal action is vital



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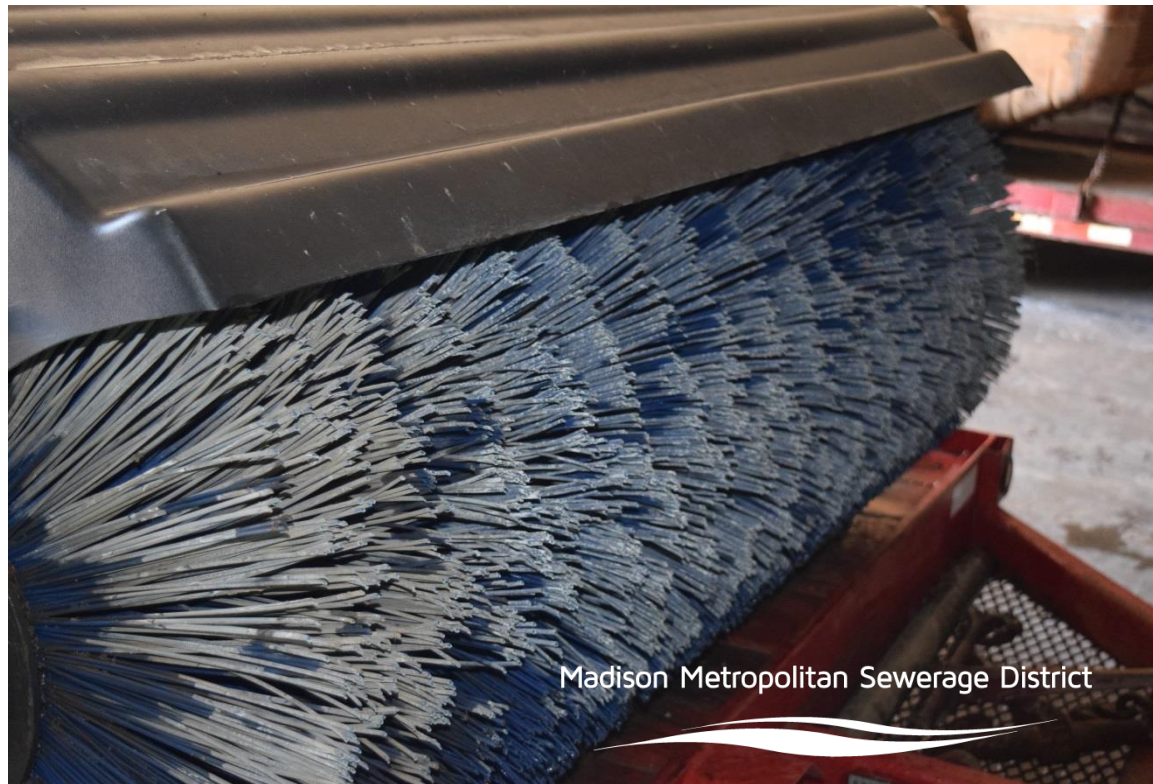


Use Salt Wise winter maintenance practices



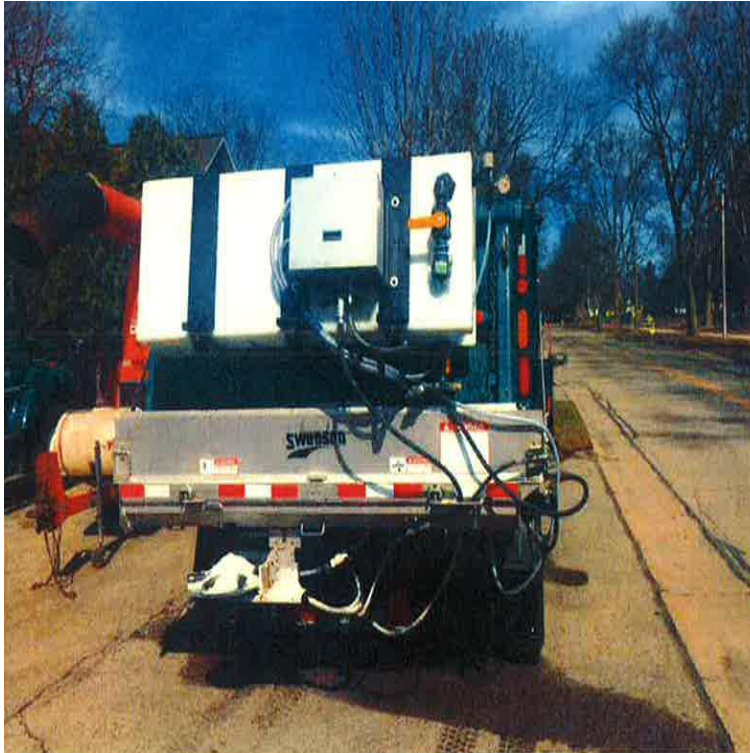
Road salt grants

- Up to 50% of capital investment
- Have ranged from \$500-\$12,000 (\$50,000 total)
- Learn/test, case study, quantify reductions



Madison Metropolitan Sewerage District

Example: Shorewood Hills



Pre-wetting system



Anti-icing



Be Salt **W**ise!

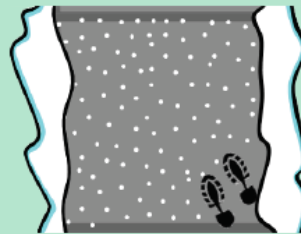
Once you put salt down, it doesn't go away. It washes off surfaces and accumulates in local lakes, streams and drinking water. You can keep sidewalks and driveways safe this winter while protecting our waters by following these simple steps:

1. Shovel



Clear walkways and other areas before the snow turns to ice. The more snow you remove manually, the less salt you will have to use and the more effective it will be.

2. Scatter



If you apply salt to pavement, aim for a pattern like this, leaving space between salt grains. A coffee mug full of salt is enough for about 60-70 feet of sidewalk. A hand spreader can help create this pattern.

3. Switch



When the pavement temperature is below 15 degrees, salt won't work. Switch to a different ice melter (like a blend) that works at a lower temperature, or use sand for traction.

Brought to you by the WI Salt Wise partnership:



Learn more at www.wisaltwise.com.





Promote water softener improvements

Madison Metropolitan Sewerage District



Improving softening efficiency

- Replacing time-clock & old softeners (47% reduction possible)
- Optimizing existing softeners (27% reduction possible)
- Softening less water

Madison Metropolitan Sewerage District



District salt reduction grant programs

- Salt reduction rebates
 - For: projects to reduce salt use in existing systems
- Chloride reduction innovation grants
 - For: projects that change business-as-usual approaches to salt
- Road salt reduction grants
 - For: projects that reduce road salt application through equipment, changed practices, education



Innovation grants

Madison Metropolitan Sewerage District

1610 Moorland Road • Madison, WI 53713-3398 • P: (608) 222-1201 • F: (608) 299-2129

Madison Metropolitan Sewerage District Chloride Reduction Innovation Grants 2018

Madison Metropolitan Sewerage District ("the district") is seeking applications for projects that facilitate permanent reductions of chloride (salt) to the district's sewer system. The goal of these grants is to spur changes to business practices, behaviors, and norms that will result in reduced chloride contributions to the sewer.

Background

Too much chloride (mostly from salt) goes down the drains that lead to the district's Nine Springs Wastewater Treatment Plant. The treatment plant is not designed to remove chloride from wastewater, so the salt ends up in local water bodies, threatening freshwater life. Faced with regulatory requirements to reduce chloride, the district has two options: build treatment technology at the plant, or reduce the amount of chloride that is discharged to the sewer. Building treatment technology would be significantly expensive and result in much higher sewer bills for customers, so the district is focusing on reducing chloride at the source.

To this end, the district is offering funding to support projects that reduce chloride to the sewer, from sources like water softeners and other systems that use salt. This funding is flexible and may be a single salt reduction project or multiple projects. Funding may also be considered for projects that result in data or education that will advance district chloride reduction goals.

Project Requirements

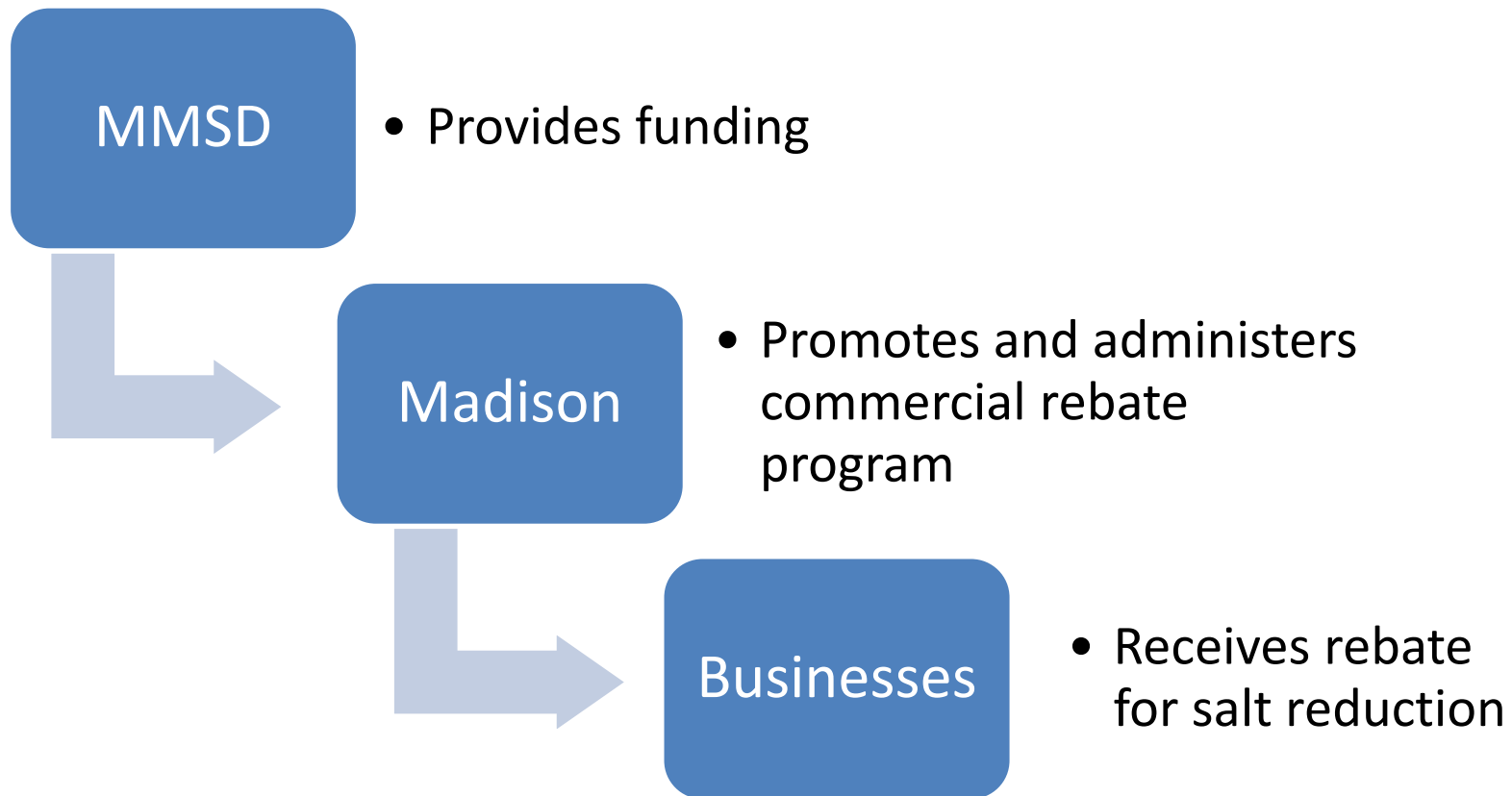
- Projects must focus on efforts to reduce chloride within the district's service area (<http://www.madsewer.org/Education/MMSD-Service-Area>).
- Projects must generate results that will advance or inform the district's efforts to reduce chloride contributions to the sewer system. Such results may include, but are not limited to:
 - Documented reductions in direct chloride contributions to the sewer system.
 - Data that increases understanding of the proportion and location of chloride contributions to the sewer system.
 - Technology and/or methodology that facilitates measurement and tracking of salt use and reductions.
 - Data that demonstrates the ability of various technologies, including new technologies, to use relatively little or no salt to effectively prevent scale buildup on appliances and fixtures.
 - Non-commercial outreach that spurs residents and businesses to reduce their salt contributions to the sewer system. That is, this funding may support a general outreach

Commission President: Thomas Hovel
Chief Engineer & Director: D. Michael Mucha, P.E.

- Change the way salt/chloride is used
- Possibilities include widespread softener improvements, research, outreach, and more
- FLEXIBLE

Madison Metropolitan Sewerage District

Example grant/pilot project structure



MMSD plans for 2019

- Continued funding programs for softener and road salt reduction
- Data capture through app
- Softener training + evaluation/optimization program

AT&T 9:40 AM 80%

Water Softener Optimization Form

Original hardness setting: *

22

2) Salt Setting (Dosage)

Original salt setting (lbs.): *

11.3

Is this the low salt setting for this softener? *

☐ Yes

☒ No

☐ Don't know

The lowest salt setting is recommended for highest salt efficiency. If possible, lower the salt setting of the softener to the low setting

2 of 3

AT&T 9:42 AM 80%

Water Softener Optimization Form

Original gallon capacity: *

1090

New grain capacity:

The value in this field is the factory-tested grain capacity of this model of softener at the new salt setting. Set this softener to this grain capacity.

17200

New gallon capacity:

800

Original softener efficiency:

2079.646017699115

New softener efficiency:

3822.222222222222

2 of 3



More resources

www.madsewer.org; search “municipal pollution prevention”

[Home](#) | [About Us](#) | [Projects](#) | [Programs/Initiatives](#) | [Education](#) | [Planning](#)

Pollution Prevention for Municipalities

Beyond the environmental benefits of pollution prevention, municipalities served by the District stand to benefit as customers by preventing pollution from reaching the treatment plant. A major goal of the District's pollution prevention work is to avoid the need to construct facility upgrades to remove pollutants of concern, since upgrades would be expensive and relatively inefficient in reducing pollution overall. The expense of facility upgrades would be passed along to our customers in sewer rates, so pollution prevention is an effort to protect water quality while keeping rates as low as possible.

As a municipality, you can assist the District in its pollution prevention efforts by minimizing pollution in municipal buildings, encouraging businesses in your municipality to enact pollution prevention measures, and educating residents about what they can do to reduce pollution. This page includes some specific steps you can take to minimize pollutants that the District is focusing on reducing at the treatment plant:

Chloride

- **Educate** residents about steps they can take to reduce water softener salt and road salt.
 - Distribute MMSD's [home salt reduction brochure](#) to your residents through mail or in municipal buildings
 - Direct residents to [WI Salt Wise](#).
- **Improve** water softeners in municipal building to minimize salt discharges to the sewer system.
 - To incentivize chloride reductions, MMSD is providing [grants & rebates](#) for projects that reduce chloride

Resources

You can use the resources below in outreach to your community about pollution prevention topics and recommended practices.

Chloride

- [Protect our fresh waters](#) - municipal chloride overview sheet
- [Reporting template](#) for chloride reports due annually to MMSD
- [Letter template](#) to large salt users about funding opportunities
- [Home salt reduction brochure](#)
- [WI Salt Wise](#)
- [Bill Stuffer](#)

Pharmaceutical Waste

[Safe Communities-MedDrop](#)

Non-Flushable Materials

[Flushable? poster](#)