

Annual Report for Year 1 (2022-2023) of the Time Limited Water
Quality Standard for Chloride

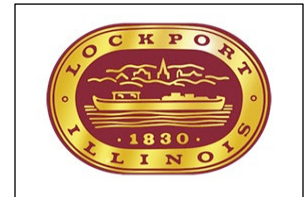
City of Lockport

June 30, 2023

Prepared by City of Lockport



**City of Lockport is a member of the
Lower Des Plaines Watershed Group**



1.0 Introduction to Chloride Issue in CAWS/LDPR

This Pollutant Minimization Plan (PMP) has been prepared by City of Lockport to reduce the environmental impacts from the organization's chloride related operations. City of Lockport is a discharger covered under the Time Limited Water Quality Standard for Chloride for the Chicago Area Waterways System and Lower Des Plaines River watersheds. This PMP has been prepared to meet the requirements laid out in the Time Limited Water Quality Standard (TLWQS) for Chloride. The term of this PMP covers the first 5-years of the TLWQS period and will be updated following the re-evaluations at Years 4 ½, 9 ½, and 14 ½.

Chloride is a permanent pollutant. It does not degrade over time and continues to accumulate in the environment. Proactive measures to reduce the amount of chloride discharged can help reduce the impacts from chloride on receiving waterways and the environment. Chloride impacts aquatic life, vegetation, and infrastructure. As the chloride concentrations increase and our waters become saltier, aquatic and plant biodiversity decreases and native species are overtaken by salt tolerant invasive species.

Chlorides are commonly found in road salt, fertilizers, water softeners, dust suppressants, and certain industrial processes. Chloride-based deicers, like rock salt, are used on parking lots, sidewalks, and roads to provide safe surfaces to the public during the winter months. These deicers are one of most common sources of chloride in the Chicago region.

The water quality standard for chloride for the Chicago Area Waterway System (CAWS) was updated as part of the rulemaking process related to changing the designated use of the CAWS. The chloride standard was updated from 1,500 mg/L during the winter and 500 mg/L during the summer to 500 mg/L all year round. The change in the chloride water quality standard took effect in 2018. Because portions of the CAWS were not going to meet this new standard due to the need to maintain public safety on roads, highways, sidewalks and parking lots during the winter months, a joint submittal and supporting individual petitions were submitted between 2015 and 2018 to the Illinois Pollution Control Board for a variance from the chloride standard. The joint petition laid out best management practices that can be achieved by the petitioners to reduce their chloride use while maintaining public safety during winter storms. In addition to the CAWS, portions of the Lower Des Plaines River watershed were included as it receives water from the CAWS.

On November 4, 2021, the IPCB issued an Opinion and Order for a Time Limited Water Quality Standard (TLWQS) for Chloride for portions of the CAWS and Lower Des Plaines River watersheds. The TLWQS for Chloride watersheds are defined in the Opinion and Order as the Des Plaines River watershed from the Kankakee River to the Will County Line (except for the DuPage River watershed) and the CAWS watershed (except the North Branch Chicago River watershed upstream of the North Shore Channel and those portions of the watershed located in Indiana). This is a watershed-based approach to reduce the chloride concentrations in the CAWS and Lower Des Plaines River. The TLWQS for Chloride requires all dischargers covered under the TLWQS for Chloride to create PMPs and implement specific best management practices based on their operations to reduce their chloride discharges.

2.0 Organization, Facility Information

Agency Name: City of Lockport		
Facility Name: City Wide		Permit Number: ILR400377
Facility Address: 222 E. 9 th Street		
City: Lockport	State: IL	Zip Code: 60441

The City of Lockport is a MS4 Community located approximately 30 miles southwest of Chicago in Will County with a residential population of 26,094. The City owns and maintains 184 lane miles of roadways and 10 commuter & public parking lots.

The City of Lockport currently has two covered salt storage dome facilities with a combined storage capacity of 2,000 tons of salt. No salt is stored outside of the designated structure and salt is ordered on and as needed basis to prevent overfilling the storage.

2.1 Level of Service for Winter Maintenance Activities

The City of Lockport’s Snow and Ice Control Policy details the steps taken during any winter event and how the City responds. We have plans in place for any type of winter storm event and a response that is appropriate for that event. Each winter storm event is different, and we determine the appropriate plan of action based on up to date forecasts and predictions from reputable weather sources.

3.0 Best Management Practices

Details regarding City of Lockport’s implementation of the best management practices (BMPs) identified as part of the TLWQS for Chloride are included below.

Workgroup BMP

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
The permittee must participate in a Chlorides workgroup for the CAWS or LDPR, depending on the watershed within which the facility’s discharge is located.	City of Lockport has been a member of the Lower Des Plaines Watershed Group since 2017. Staff attends meetings on a regular basis.

Salt Storage and Handling BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
<p>Store all salt on an impermeable pad that must be constructed to ensure that minimal stormwater is coming into contact with salt unless the salt is stored in a container that ensures stormwater does not come into contact with the salt.</p>	<p>All salt stored by City of Lockport is stored in a permanent dome structures on an asphalt pad to prevent contact with storm water.</p>
<p>Cover salt piles at all times except when in active use, unless stored indoors.</p>	<p>All salt stored by City of Lockport is stored in a permanent dome structures on an asphalt pad to prevent contact with storm water.</p>
<p>For working areas, provide berms and or sufficient slope to allow snow melt and stormwater to drain away from the area. If snow melt and stormwater cannot be drained away from the working area, channeling water to a collection point such as a sump, holding tank or lined basin for collection, discharge at a later time, use for prewetting, and use for make-up water for brine must be considered.</p>	<p>The City of Lockport salt is stored in in permanent dome structures and the salt is loaded immediately outside of the dome’s entrance. Both domes sit higher than the surrounding area and all snowmelt and stormwater drains away from the work area.</p>
<p>MS4/CSO Only - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.</p>	<p>All salt stored by City of Lockport is stored in a permanent dome structures on an asphalt pad to prevent contact with storm water.</p>
<p>Good housekeeping practices must be implemented at the site, including:</p> <ul style="list-style-type: none"> • cleanup of salt at the end of each day or conclusion of a storm event; • tarping of trucks for transportation of bulk chloride; • maintaining the pad and equipment; • good practices during loading and unloading; 	<p>The City of Lockport uses good housekeeping practices for winter road salt related work including loading, salt deliveries, facility upkeep and inspections. Details are provided in the City’s Snow and Ice Control Policy.</p>

<ul style="list-style-type: none"> • cleanup of loading and spreading equipment after each snow/ice event; • a written inspection program for storage facility, structures and work area; • removing surplus materials from the site when winter activity finished where applicable; • annual inspection and repairs completed when practical; • evaluate the opportunity to reduce or reuse the wash water. 	
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Winter Maintenance Operations BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
Calibrate all salt spreading equipment at least annually before November 30th. Records of the calibration results must be maintained for each piece of spreading equipment.	The City staff and/or vendor (Force America) performs the calibration on our eleven (11) trucks that are equipped with pre-wetting and computer controls each year.
Pre-wet road salt before use, either by applying liquids to the salt stockpile, or by applying liquids by way of the spreading equipment as the salt is deposited on the road.	The City uses pre-wet road salt on all eleven (11) trucks.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt spreading vehicles.	All eleven (11) trucks in the City fleet are equipped with pavement thermometer and sets the application rate prior to crews starting work.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing weather conditions, and forecasted weather conditions.	Targeted year is 2024.
Track and record salt quantity used and storm conditions from each call-out.	The City maintains records for each winter storm event. This is verified with AVL/GIS reporting on the computer controlled equipment.

<p>Develop a written plan for implementation of anti-icing, with milestones. The plan should consider increased use of liquids (e.g., carbohydrate products) beginning with critical locations such as bridges over streams.</p>	<p>Targeted year is 2026.</p>
<p>Provide employees involved in winter maintenance operations with annual training before November 30th on best management practices in the use of road salt in operations, including the practice of plowing first and applying salt only after snow has been cleared.</p>	<p>The City completes annual training for all staff prior to the winter season beginning. The Snow and Ice Control Policy is reviewed along with routes.</p>
<p>Be responsible for complying with all applicable BMPs even when deicing practices are contracted out and ensure that contractors are properly trained and comply with all applicable BMPs.</p>	<p>Not applicable as the City does not use contractors for snow and ice control.</p>
<p>Complete an annual report, as required by paragraph 3(B) of this order, which is standardized in an electronic format and submitted to the IEPA's website and to the watershed group.</p>	<p>The City completes annual reports.</p>
<p>Obtain and put into place equipment necessary to implement all salt spreading/deicing measure specified in this BMP, such as any new or retrofitted salt spreading equipment necessary to allow for pre- wetting and proper rates of application.</p>	<p>The City uses pre-wet road salt on all eleven (11) trucks.</p>
<p>MS4/CSO/IDOT/TOLLWAY Only - Install equipment to measure the pavement temperature on the winter maintenance fleet for a sufficient number of vehicles to provide sufficient information to adjust application rates for the most efficient levels.</p>	<p>All eleven (11) trucks in the City fleet are equipped with pavement thermometer and sets the application rate prior to crews starting work.</p>

Develop and complete a plan to equip the winter maintenance fleet before the first re-evaluation.	
MS4/CSO/IDOT/TOLLWAY Only - Before the first re-evaluation, develop a method for conducting a post-winter review to identify areas of success and areas in need of improvement. Items to be completed as part of the review must include, but are not limited to, an evaluation of each salt spreader’s application rate, variations in application rates, and discussion of the variation compared to the recommended rates. Once developed, the review should occur annually in the spring/early summer following each winter season.	Targeted year is 2023.

Additional BMPs Identified for Agency/Facility

BMP	Agency Description of Current Implementation
Weather Forecasting Service for the City of Lockport	The City uses a weather forecasting service with certified meteorologists to provide a City specific daily, 6-day look ahead forecast and snow/ice warnings prior and during winter storm events.

3.1 Analysis of BMPs Implemented

The City has not have any setbacks or unexpected results during this snow season.

3.2 Analysis of Alternative Treatments or New Technology

The City has alternative treatments planned at this time.

4.0 Deicing/Anti-Icing Agents Used

Materials used by City of Lockport for the 2022-2023 winter season are included as Appendix 1.

4.1 Application Rates

The City of Lockport did not use an application rate chart or guideline for the 2022-2023 winter season. There is no Appendix 2.

4.1.1 Application Rate Analysis

The City will be working on application guidelines in 2023.

4.2 Application Practices

City of Lockport uses the on board pre-wetting for deicing and anti-icing materials.

4.3 Call Outs

A total of 12.28 inches of snow was reported in the City of Lockport for the 2022-2023 winter. There were 0 freezing rain event(s) and 24 snow event(s) for the 2022-2023 winter. City of Lockport had 24 of call outs completed during the 2022-2023 winter. The City did not keep a call out log in 2022 -2023 but will begin doing so in 2023-2024. Appendix 3 not used.

4.4 Use of Liquids

The use of pretreatment did not increase this year.

5.0 Training

City of Lockport completed annual training for 30 of employees out of 30 of employees who are part of the winter maintenance operations on September 27, 2022 and November 1, 2022. A list of annual training topics by type of employee is included as Appendix 4.

6.0 Deicing and Snow Removal Equipment and Maintenance

City of Lockport uses equipment listed in Appendix 5 during winter maintenance activities.

6.1 Description of Equipment Washing and Wash Water Collection

Salt loading areas around bulk storage bins shall be cleaned up as soon as practical after every storm. All salt and plow trucks shall receive a preliminary wash/rinse down after every use and a thorough cleaning as soon as practical after each storm event. They shall be parked fully fueled and ready to go on a moments noticed. Special care should be given when operating next to bulk storage facility and the fuel island. Any salt or abrasive spills in the field due to mechanical malfunction or overloading of hoppers shall be noted and thoroughly cleaned up at the conclusion of snow operations.

7.0 Material Storage

Lockport maintains 2 storage areas. Information regarding the storage area(s) is included in Appendix 6.

8.0 Capital Purchases

Identified capital purchases from City of Lockport's PMP to implement the BMPs and reduce chlorides in our operations over the first 5-year term of the Chloride TLWQS are included as Appendix 7.

9.0 Environmental Monitoring Data

Chloride monitoring data is collected for the CAWS and Lower Des Plaines River watersheds per the IPCB order. The data is maintained by the workgroups. Chloride data for the CAWS is collected by MWRD for the CAWS watershed and provided to the workgroups as part of the annual reporting as required by the IPCB order. The Lower Des Plaines Watershed Group also maintains a USGS monitoring station in the Des Plaines River at Channahon, IL that collects continuous conductivity data to estimate chloride concentrations.

Chloride monitoring data reports are posted to <https://www.cawswatershed.org/reports/> and <https://ldpwatersheds.org/about-us/lower-des-plaines-watershed-group/our-work/chloride-tlwqs/>.

9.1 Organization Specific Chloride Monitoring Data

City of Lockport collects chloride monitoring data as part of its NPDES effluent data and the data is included as Appendix 8.

9.2 Changes to the Facility's NPDES Treatment Technologies for Chloride

No changes were made.

10.0 Program Evaluation

The City of Lockport will begin this year to evaluate our storm event operations. To see how we can implement an adaptive management approach to our salt application practices.

10.1 Proposed Steps for the Coming Year

At this time we do not have any proposed actions or changes to our operations.

11.0 Workgroup Participation

The City of Lockport participated in the LDWG's workgroup following ways this year and/or will in the coming year.

- Attend bi-monthly membership meetings via Zoom
- Participate in Chloride TLWQS Mentoring Sessions

- Attend Winter Deicing Workshops
- Utilize Seasonal Outreach Materials available online

Role in Winter Operations	Training Topics Covered
Maintenance Worker	How to Use Equipement, Route Review, Environmental Impacts from Salt, Application Rates, Good Housekeeping, Review of Snow and Ice Policies and Deicing
Crew Leader	How to Use Equipement, Route Review, Environmental Impacts from Salt, Application Rates, Good Housekeeping, Review of Snow and Ice Policies and Deicing
Superindent	How to Use Equipement, Route Review, Environmental Impacts from Salt, Application Rates, Good Housekeeping, Review of Snow and Ice Policies and Deicing
Director and Asst. Director of Public Works & Engineering	Route Review, Environmental Impacts from Salt, Application Rates, Good Housekeeping, Review of Snow and Ice Policies and Deicing

Organization Name:

Chloride TLWQS Annual Report
Appendix 5 - Equipment

Type of Equipment	Equipment/Vehicle Number	Type of Spreader (mechanically controlled, computer controlled, etc.)	Type of Material Used with Equipment (Dry, Pre-Wet, Pretreated, Liquids)	Other Important Equipment Information
Snow Plow	114	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4X2 Dump
Snow Plow	115	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4X2 Dump
Snow Plow	116	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4X2 Dump
Snow Plow	117	COMPUTER CONTROLLED	Pre-Wet	International 7400 4X2 Dump
Snow Plow	118	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4x2 Dump
Snow Plow	120	COMPUTER CONTROLLED	Pre-Wet	International 7400 4X2 Dump
Snow Plow	121	COMPUTER CONTROLLED	Pre-Wet	International 7400 4X2 Dump
Snow Plow	124	COMPUTER CONTROLLED	Pre-Wet	International 7400 6x4 Dump
Snow Plow	125	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4X2 Dump
Snow Plow	126	COMPUTER CONTROLLED	Pre-Wet	Peterbilt 348 4X2 Dump
<i>*Snow Plow</i>	127	<i>MECHANICALLY CONTROLLED</i>	<i>Pre-Wet</i>	<i>International 7400 4x2 Dump (Back Up)</i>
Snow Plow	129	COMPUTER CONTROLLED	Pre-Wet	International 7400 4x2 Dump
<i>*Snow Plow</i>	132	<i>COMPUTER CONTROLLED</i>	<i>Pre-Wet</i>	<i>International 7400 4x2 Dump (Back Up)</i>
<i>*Snow Plow</i>	133	<i>COMPUTER CONTROLLED</i>	<i>Pre-Wet</i>	<i>International 7400 4x2 Dump (Back Up)</i>

Location of Storage Area	Material Stored (Rock Salt, Salt Brine, etc.)	Amount of Material Stored 2022-2023	Material stored under permanent cover? (yes/describe other)	Material stored in a fully enclosed structure? (yes/describe other)	Material stored on an impervious pad? (yes/describe other)	Good housekeeping practices followed at storage area? (yes/describe other)
Public Works Facility	Rock Salt	1400 Ton	yes	yes	yes	yes
Public Works Facility	Calcuim Chlordie	4000 Gallons	stored in container	stored in container	yes	yes
WWTP Facility	Rock Salt	1400 Ton	yes	yes	yes	yes

Organization Name: City of Lockport Chloride TLWQS Annual Report
Appendix 7 - Capital Purchases

Capital Purchase Description	Plan/Schedule for Purchase
Snow Plow - Peterbilt 348 4X2 Dump	Budgeted for 2024
Snow Plow - Peterbilt 348 4X2 Dump	Budgeted for 2024

Chloride TLWQS Annual Report

Appendix 8 - Monthly Chloride Report for May 2022 to May 2023

Month	Lockport STP Influent	Lockport STP Effluent	Bonnie Brae STP Influent	Bonnie Brae STP Effluent
May-22	500	301	341	263
Jun-22	474	324	375	315
Jul-22	692	355	358	417
Aug-22	694	325	431	332
Sep-22	733	297	445	275
Oct-22	626	369	789	362
Nov-22	635	373	376	352
Dec-22	445	366	296	374
Jan-23	627	381	246	337
Feb-23	485	448	464	435
Mar-23	543	321	337	279
Apr-23	689	375	335	311
May-23	712	384	464	351