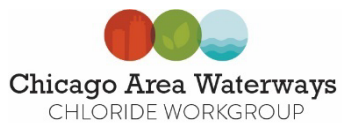


Annual Report for Year 2 (2023-2024) of the Time Limited Water  
Quality Standard for Chloride

July 1, 2024

Prepared by the Village of Lincolnwood



The Village of Lincolnwood is a  
member of the Chicago Area  
Waterways Chloride Workgroup  
Watershed Group



## 1.0 Introduction

This Annual Report has been prepared by the Village of Lincolnwood to report on progress in meeting the requirements for the Time Limited Water Quality Standard for Chloride. The Village of Lincolnwood 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 Annual Report has been prepared to meet the requirements laid out in the Time Limited Water Quality Standard (TLWQS) for Chloride.

Chloride 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 Plains 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: Village of Lincolnwood		
Facility Name:	Permit Number: ILG103021	
Facility Address: 6900 N Lincoln Avenue		
City: Lincolnwood	State: IL	Zip Code: 60712

The Village of Lincolnwood maintains 75 lane miles and has one salt storage facility at the Public Works yard. The salt dome is on an impervious pad and holds approximately 1,000 tons of salt. The Village of Lincolnwood has two 5,500-gallon salt brine tanks located at the Public Works maintenance yard.

### 2.1 Level of Service for Winter Maintenance Activities

The Village of Lincolnwood is responsible for plowing and salting 75 lane miles of roads during inclement weather. Public Works also clears public parking lots and designated sidewalks.

## 3.0 Best Management Practices

Details regarding the Village of Lincolnwood’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.	The Village of Lincolnwood joined the Chicago Area Waterways Chloride Workgroup in the 2023-2024 year.

### Salt Storage and Handling BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
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.	The Village has a salt dome at the Public Works facility that consists of an impervious storage pad and is fully enclosed.
Cover salt piles at all times except when in active use, unless stored indoors.	The Village’s salt dome is fully enclosed and is the only site for salt storage.
For working areas, provide berms and or sufficient slope to	There is sufficient slope around the salt dome to allow snow melt and stormwater to drain away from the salt dome.

<p>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><b>MS4/CSO Only</b> - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.</p>	<p>The Village utilizes a salt dome in the Public Works Yard for storing deicing material.</p>
<p>Good housekeeping practices must be implemented at the site, including:</p> <ul style="list-style-type: none"> <li>• cleanup of salt at the end of each day or conclusion of a storm event;</li> <li>• tarping of trucks for transportation of bulk chloride;</li> <li>• maintaining the pad and equipment;</li> <li>• good practices during loading and unloading;</li> <li>• cleanup of loading and spreading equipment after each snow/ice event;</li> <li>• a written inspection program for storage facility, structures and work area;</li> <li>• removing surplus materials from the site when winter activity finished where applicable;</li> <li>• annual inspection and repairs completed when practical;</li> <li>• evaluate the opportunity to reduce or reuse the wash water.</li> </ul>	<p>The Village utilizes the referenced housekeeping practices. Additional practices include:</p> <ul style="list-style-type: none"> <li>• Large vehicle salting trucks are stored in a closed vehicle garage when not in use.</li> <li>• Medium vehicle salting trucks utilize Salt Dogg dispensers and are covered with tarps and bungy cords when not in use.</li> <li>• The salt dome roof receives an annual inspection and any necessary roof repairs are completed as needed.</li> </ul>

## 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.	Preseason equipment checks are completed by the Village’s fleet maintenance division prior to use. The Village will be requesting a full-time fleet maintenance laborer position to begin in CY2025 to increase maintenance measures for the salt spreading equipment.
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 Village applies pre-wet road salt on the roads with the use of the spreading equipment on larger-designated trucks. It is added based on driver selection and weather conditions.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt spreading vehicles.	The Village maintains an annual contract with Weather (Wx) Sentry software. The program includes desktop and phone applications which also include calculations for road and bridge surface temperatures.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing weather conditions, and forecasted weather conditions.	The Village’s Snow Commander issues a recommended salt spread rate based on the pavement temperature, ambient air temperatures, and duration of the weather event.
Track and record salt quantity used and storm conditions from each call-out.	The Village’s Snow Commander maintains a snow tracking report to monitor the amount of salt used for each weather event, as well as snow conditions, and staff notes for each shift.
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.	The Village maintains a Snow Operations Manual that is reviewed and updated annually, as needed. The manual references snow and ice control priorities based on service area needs, a command operations overview, anti-icing procedures, operational map, and pre-trip/post trip inspection procedures.
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.	The Village’s Snow Commander coordinates preseason training which includes breakout sessions for operators and laborers.

<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>The Village does not contract deicing procedures. The Village consults with commercial businesses on recommended materials based on the Village’s BMPs.</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 Village will be submitting the Annual Report to the IEPA by July 1<sup>st</sup>, 2024.</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 Village utilizes a capital improvement program which includes the acquisition of new vehicle and salt spreader technologies.</p>
<p><b>MS4/CSO/IDOT/TOLLWAY Only</b>  - 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. Develop and complete a plan to equip the winter maintenance fleet before the first re-evaluation.</p>	<p>The Village currently uses a weather forecasting application for snowplow operations. The Village will include equipment to measure pavement temperature on snow trucks for the calendar year 2025 budget. If approved for the budget, the Village intends on purchasing the equipment early in the year to be able to equip the snow trucks with the equipment before the 2024-2025 winter season.</p>
<p><b>MS4/CSO/IDOT/TOLLWAY Only</b>  - 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</p>	<p>The Village will be conducting an end of season hotwash with the winter operations crews to discuss the successes of the winter season. Any improvements that can be made for the next winter season will also be discussed.</p>

developed, the review should occur annually in the spring/early summer following each winter season.	
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**Additional BMPs Identified for Agency/Facility**

<b>BMP</b>	<b>Agency Description of Current Implementation</b>
Sidewalk clearing and deicing	The Village utilizes a calcium chloride treatment material to deice designated sidewalks in the Village. In 2021, the Village purchased a Ventrac tractor to clear sidewalks of snow and ice.

**3.1 Analysis of BMPs Implemented**

The Village modified its sidewalk clearing program to include additional sidewalks based on Village needs and also reduced the coverage of certain areas due to safety concerns to the operator and equipment. The Village sees continued successes with pre-wet solution on main routes and bridge areas prior to snow/ice events.

**3.2 Analysis of Alternative Treatments or New Technology**

The Village is looking into future purchasing of tailgate mounted snow dispensers for increased public safety and enhanced vehicle utilization based on current fleet composition.

**4.0 Deicing/Anti-Icing Agents Used**

Materials used by the Village of Lincolnwood for the 2023-2024 winter season are included as Appendix 1.

**4.1 Application Rates**

The application rates used by the Village of Lincolnwood for the 2023-2024 winter season were based on field observations. Snow Commander direction is given at pre-event briefings and then rates are changed based on changing weather conditions and/or observed effectiveness based on field feedback.

**4.1.1 Application Rate Analysis**

The Village of Lincolnwood utilizes a Snow Commander-driven policy of pre-event briefing and recommended rate settings. A plow down/plow up policy is implemented for snow/ice response staff. Snowplow operators adjust pre-wet (special blend salt brine plus enhanced salt), with settings on various snow controller models in the fleet.

## 4.2 Application Practices

The Village of Lincolnwood uses the following practices to apply deicing and anti-icing materials:

- The Village utilizes anti-icing with a special blend salt brine solution (Gasaway) prior to snow events to prevent/delay ice from bonding with the pavement surface on designated main roads. The Village's snow trucks have the salt brine solution pre-loaded onto the trucks.
- When the pavement surface temperature is above 15 degrees Fahrenheit and sunny, the Village's large snow trucks use Cargill rock salt and is spread onto the roads.
- When the pavement surface temperature is above 15 degrees Fahrenheit and cloudy, rock salt and brine mix (Cargill/Gasaway) is pre-loaded onto the Village's snow trucks, application rate set and spread onto the roads.
- In conditions below 0 degrees Fahrenheit, the Village pre-loads rock salt (Cargill) with a super brine mix (Gasaway) that is spread onto the roads.
- For pedestrian sidewalks (concrete), in all weather conditions, the Village utilizes bagged type Excel 50 calcium chloride pellets. The Village utilizes a Ventrac snow tractor machine for anti-icing treatments on sidewalks by spreading calcium chloride pellets.

## 4.3 Call Outs

A total of 6 inches of snow was reported in the Village of Lincolnwood for the 2023-2024 winter. There were 2 freezing rain/ice event(s) and 11 snow event(s) for the 2023-2024 winter. The Village of Lincolnwood had a total of 13 call outs during the 2023-2024 winter. A log of all call outs completed by the Village of Lincolnwood are included as Appendix 3.

## 4.4 Use of Liquids

The 2023-2024 snow season saw a milder winter with fewer snow events and significantly less accumulation in previous years. Typically, the Village orders two full (5,500 gallon) tanks of brine mix and this season the Village only received one brine tank (4,440 gallons).

## 5.0 Training

The Village of Lincolnwood completed annual training for 16 employees out of 16 of employees who are part of the winter maintenance operations on August 23, 2024 (NIPSTA Medium Heavy Weight Session), November 29, 2024 (Operator Training Large Truck Plowing), and December 13, 2024 (Snowplow Training for Operators and Laborers). The Village has 8 operators that receive annual snowplow safety and equipment familiarization training and 8 laborers that receive snowplow training. A list of annual training topics by type of employee is included as Appendix 4.



## **6.0 Deicing and Snow Removal Equipment and Maintenance**

The Village of Lincolnwood uses equipment listed in Appendix 5 during winter maintenance activities.

### **6.1 Description of Equipment Washing and Wash Water Collection**

The Village utilizes a hose and spray applicator for vehicle washdown in the vehicle garage storage area. Drainage is via a 4" cast iron drain tile that is connected to a catch basin and triple basin separator. Brine reuse procedures include transfer of remaining brine in vehicle tanks back to the maintenance yard storage tanks at the end of the winter season. This action occurs in the vicinity of the salt dome, location of brine storage tanks.

## **7.0 Material Storage**

The Village of Lincolnwood maintains two storage area(s). Information regarding the storage area(s) is included in Appendix 6.

## **8.0 Capital Purchases**

Identified capital purchases from the Village of Lincolnwood'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/>.

## **10.0 Program Evaluation**

The Village of Lincolnwood will be reviewing the BMPs prior to the start of the 2024-2025 winter season. Any BMPs that can be improved or implemented will be utilized for the upcoming winter season.

### **11.0 Proposed Steps for the Coming Year**

The Village has not used a deicing application rate chart or guide before since application rates were based on weather conditions, Snow Commander direction and field- observation feedback changes. Prior to the start of the 2024-2025 winter season, the Village will be implementing an application rate chart that can be used for the winter operations. The Village will also be looking into new salt-spreader technologies to reduce chlorides.

### **12.0 Workgroup Participation**

The Village joined the Chicago Area Waterways Chloride Workgroup in the 2023-2024 year and will be doing the following:

- The Village will be submitting an Annual Report to the workgroup.
- The Village will be submitting a Pollutant Minimization Plan to the workgroup.
- The Village will participate in any CAWCW sponsored surveys related to workgroup activities or projects.
- The Village will be attending quarterly membership meetings.
- The Village will utilize the seasonal outreach materials that are available on the workgroup website for public education and outreach.

Chloride TLWQS Annual Report  
 Appendix 1 - Deicing/Anti-Icing Agents Used

Material or Product	Dry, Pre-Wet, Pretreated, or Liquid	Lane Miles Treated with the Product for 2022-2023	Parking Lot and Sidewalk Area (Sq. Ft.) Treated with the Product for 2022-2023	Lane Miles Treated with the Product for 2023-2024	Parking Lot and Sidewalk Area (Sq. Ft.) Treated with the Product for 2023-2024	Total Amount used for 2022-2023 (Year 1) in Tons or Gallons	Total Amount used for 2023-2024 (Year 2) in Tons or Gallons	Total Amount used for 2023-2024 (Year 3) in Tons or Gallons	Total Amount used for 2023-2024 (Year 4) in Tons or Gallons	Total Amount used for 2023-2024 (Year 5) in Tons or Gallons	Total Amount Used Over First 5-Year Term
Sodium chloride rock salt	Dry	75	N/A	75	N/A	975	265	0	0	0	1240
Special blend salt brine	Liquids	75	N/A	75	N/A	8,000	4,440	0	0	0	12440
Calcium chloride pellet premier snow and ice melter	Dry	5	256,150	5	256,150	6.25	2.5	0	0	0	8.75
											0
											0
											0
											0
											0
											0
											0
<b>Estimates of Relative Material Amounts Applied and Coverage Achieved</b>											

Chloride TLWQS Annual Report  
 Appendix 1 - Deicing/Anti-Icing Agents Used

Year	Total Lane Miles Maintained	Total Parking Lot and Sidewalk Area (Sq. Ft.) Maintained	Percent of Total Lane Miles Treated with Dry Materials	Percent of Total Lane Miles Treated with Pre-Wet or Pretreated Materials	Percent of Total Lane Miles Treated with Liquids	Percent of Total Parking Lot and Sidewalk Area Treated with Dry	Percent of Total Parking Lot and Sidewalk Area Treated with Pre-wet or Pretreated Materials	Percent of Total Parking Lot and Sidewalk Area Treated with Liquids			
2022-2023	75	256,150	107%	0%	100%	100%	0%	0%			
2023-2024	75	256,150	107%	0%	100%	100%	0%	0%			

**Organization Name: Village of Lincolnwood**

**Chloride TLWQS Annual Report  
Appendix 2 - Deicing Application Rates**

The Village of Lincolnwood currently uses field observations to determine the application rates of deicing materials. The application rates are generally set to 300-800 pounds per 2 lane miles and adjusted based on pavement temperature and effectiveness of the current application rate as noticed in the field.



# 2023 - 2024 Snow Event Log

Event Tally	Date	Day	Event Duration (hrs)	Timing	Crew Response	Event Description	Load # (Tons)	Sidewalk Program (Ventrac)	Remarks
1	11/26/2023	Sunday	4	6am - 10am	x1 Snow CDR	Unexpected	0		Touhy Ped Bridge/snow clear
2	12/31/2023	Sunday	4.5	9am - 1:30pm	3 Op/3 Lab	Xmas Eve	8		Difficult crew response/Light snow
3	1/6/2024	Saturday	7	3am - 10am	3 Sup, 3 Op/2 lab	Expected	6		1" accumulation
4	1/9/2024	Tuesday	1	11pm - Midnight	x1 Snow CDR/x1 Sup	Round 1	3		1/2" accumulation
5	1/9/2024	Tuesday	3	Midnight - 2:30am		Round 2 (Burst)	20		Additional 1/2"
6	1/11/2024	Thursday	8	Work Day	Regular Ops	Day Snow	6.5	3 hrs/1 lab/5 ga. fuel	Adjusted routes - no Touhy/Corner on Lincoln + no South on Pratt @ Lincoln due to sidewalk too narrow
7	1/12/2024	Friday	8	Work Day	Regular Ops	Day Snow	37	4.5 hrs/1 lab/5 ga. fuel	Alt. Parking Day #1; 2" acc.
8	1/13/2024	Saturday	10	2am - Noon	Call-in Crew	Weekend Snow	25		Clean-Up
9	1/15/2024	Monday	16	Work Day	Regular Ops	MLK Work Day	33		Alt. Parking Day #2
	1/16/2024	Tuesday				Materials Delivery	4,440 ga		Brine Super Mix - West Tank
10	1/18/2024	Thursday	4	Work Day	Regular Ops	Dusting	21		Clean-Up + Pile Removals
11	1/19/2024	Friday	9	Midnight - Next Day	2 Sups/3 OP/	Powder/Blowing Snow	42		Call-in + Clean-up - Snow 2"
12	1/23/2024	Tuesday	7.5	1:30am - 9:00am	2 Sups/3 OP/4 labor	ICE - WX Advisory	63	* unable to utilize asset for this event	* 1st shift w/4 laborers - preferred; Salt dome approx. 55% full
13	2/16/2024	Friday	1	Mid-day	x1 Op, x2 lab	Light Ice		5 bags	Very light ice- S. Illinois received more
X	5/31/2024	Friday	X	All Day	x1 Operator	Materials Delivery	140		Cargill Rock Salt - Salt Dome
<b>13</b>			<b>83</b>				<b>264.5</b>		
<b>Event # Total</b>			<b>Hours Total</b>				<b>Salt-loaded Total</b>		

Organization Name:

Chloride TLWQS Annual Report  
Appendix 4 - Annual Training

<b>Role in Winter Operations</b>	<b>Training Topics Covered</b>
<b>Operator Orientation</b>	1. Snow Operations Overview
	2. Snow Fleet Overview (equipment review of controller functions, valves, filter orientation)
	3. Spreader/Controller Configuration Review
	4. Best Practices Review and Q & A
<b>Laborer Orientation</b>	1. Snow Operations Overview
	2. Snow Fleet Overview (equipment review of controller functions, valves, filter orientation)
	3. Sidewalk Operations
	4. Best Practices Review and Q & A
<b>Rodeo Driver Training</b>	NIPSTA - safe maneuvering class

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
Salt/Dump Truck	International/7400 DT 466 (#3)	Computer controlled/Dickey-John Spreader	Pre-wet	Tail-gate auger
Salt/Dump Truck	International/7400, DT 466 (#15)	Computer controlled/Dickey-John Spreader	Pre-wet	Tail-gate auger
Salt/Dump Truck	International/Monroe Truck Equipment (#11)	Computer controlled/Force America SSC2500 Spreader	Pre-wet	Tail-gate auger
Salt/Dump Truck	International/Monroe Truck Equipment (#14)	Computer controlled/Force America 5700 EX Spreader	Pre-wet	Tail-gate auger
Salt/Dump Truck	International/Monroe Truck Equipment (#20)	Computer controlled/Force America SSC3100 Spreader	Pre-wet	Tail-gate auger
Salt/Dump Truck	International/Monroe Truck Equipment (#24)	Computer controlled/Force America SSC2500 Spreader	Pre-wet	Tail-gate auger
	Ford #7	Mechanical controlled	Liquid	
	Ford #23	Mechanical controlled	Dry	Salt Dogg Hopper
	Ford #48	Mechanical controlled	Dry	Salt Dogg Hopper





Organization Name: Village of Lincolnwood Chloride TLWQS Annual Report  
Appendix 7 - Capital Purchases

Capital Purchase Description	Plan/Schedule for Purchase
International dump/plow truck replacement (Truck #3)	Truck 3 was purchased in January of 2023 and is currently in production and awaiting delivery date.