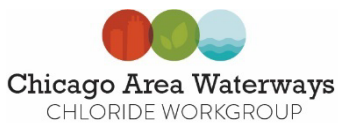


Annual Report for Year 2 (2023-2024) of the Time Limited Water
Quality Standard for Chloride

June 30, 2024

Prepared by the Village of South Holland Public Works Department



Village of South Holland is a member
of the Chicago Area Waterways
Chloride Workgroup/Lower Des
Plaines Watershed Group



1.0 Introduction

This Annual Report has been prepared by Village of South Holland to report on progress in meeting the requirements for the Time Limited Water Quality Standard for Chloride. Village of South Holland 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 the 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 South Holland		
Facility Name: Public Works Facility		Permit Number: ILR40-0451
Facility Address: 16226 Wausau Ave		
City: South Holland	State: IL	Zip Code: 60473

The Village of South Holland is a south suburb of Chicago in Cook County, Illinois, United States, within Thornton Township. The population was 21,465 at the 2020 census. South Holland is located at 41°36'N 87°36'W (41.60, -87.60). It is bordered by Harvey and Phoenix to the west, Dolton to the north, Thornton to the south, and Calumet City and Lansing to the east.

According to the 2010 census, South Holland has a total area of 7.286 square miles (18.87 km²), of which 7.27 square miles (18.83 km²) (or 99.78%) is land and 0.016 square miles (0.04 km²) (or 0.22%) is water. Of the 7.27 square miles the street network is based on a modified grid pattern with approximately 176 lane miles of local system streets.

In October 2023, the Village began operations out of a New Public Works Facility at 155 W 162nd St on approximately a 6-acre redevelopment site. The site will contain a 42,000 sqft Warehouse and Office Facility and a 72' Diameter Fabric Salt Dome. The Salt Dome base is constructed of 12" thick cast-in-place reinforced concrete walls with a prefabricated dome structure, complete roofing, weatherproofing, and a 16'x18' entryway. The 72' Diameter Fabric Dome on a 10' wall has a rated storage capacity of 2,836 tons and was completed on October 4, 2022.

2.1 Level of Service for Winter Maintenance Activities

Once the winter precipitation has ended and the cleanup phase has begun, the residents and visitors expect that things will return to normal as quickly as possible. Operations to recover from a winter precipitation event take time and below are the time frames that the Public Works Department will strive to achieve to meet the expectations of the public.

STATE AND COUNTY ROADS –

The State of Illinois and Cook County are responsible for the snow and ice control on the major traffic arteries through the Village. These roads include:

- 1.) Route 6 – from 162nd Street (Approximately 638 162nd St) east to Van Dam Rd (Approximately 1555 162nd St),
- 2.) State Street – from Route 6 (162nd St) south to 173rd St.,
- 3.) South Park Ave – 154th St south to I-294 Overpass,
- 4.) 170th St – from South Park Ave east to Luella Ave.

MAIN ROADS –

All of the major roads through the Village of South Holland are designated within a snow zone. These roads carry the largest volume of traffic and are treated with priority. The objective of the snow and ice program is to clear these roads curb to curb where possible within the first hour of the end of a winter precipitation event.

RESIDENTIAL STREETS –

The majority of the street mileage in the Village of South Holland belongs in this category. Although these streets have less average traffic, they are still important to the system and are treated as a second-level priority. The objective of the snow and ice program is to clear these streets curb to curb where possible within two to six (2 - 6) hours after the end of a winter precipitation event.

ALLEYS AND PARKING LOTS – all Alleys and Village owned lots and Village buildings

The objective of the snow and ice program is to have all Village-owned lots open, passible, and cleaned edge to edge where possible within eight (8) hours after the winter precipitation has ended. It is recognized that some parking lots that have long-term permitted parking may be difficult to clear because of the consistently parked cars. High Priority Parking Lots and Village Facilities, such as; Village Hall, Police Department, and the Community Center will be cleared and passible by the opening of the next business day.

SIDEWALKS – all sidewalks adjacent to Village owned properties

The objective of the snow and ice program is to clear all sidewalks adjacent to all Village owned properties within twenty-four (24) hours after the winter precipitation event has ended. Sidewalks in the Town Center will have a courtesy path cleared down the main portion of the walk and crosswalk sections across streets. Complete clearing of the walk is still the responsibility of the adjacent property owner per the Village Code.

SNOW CLEANUP IN TOWN CENTER - after all primary activities are accomplished.

When the accumulation of any one winter precipitation event or several events combined becomes an obstruction for pedestrians or patrons of businesses the Public Works Department will initiate a Town Center cleanup. This cleanup may last for numerous days and may require additional specific parking restrictions in the targeted cleanup area. The objective of this portion of the snow and ice program is to completely remove all snow and ice piles and windrows from the sidewalks and roads in the Town Center area. The snow may be hauled away to an offsite location.

For specific information please refer to the current Appendix 1 – Snow & Ice Control, Policy & Procedure Manual - Village of South Holland, IL, Department of Public Works.

3.0 Best Management Practices

Details regarding the Village of South Holland’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	Village of South Holland has been a member of the Chicago Area Waterways Chloride Workgroup since September 17, 2022. The

CAWS or LDPR, depending on the watershed within which the facility's discharge is located.	Public Works Director Michael Cramer and Public Works Supervisor Eric DiSanto will represent the village in all meetings.
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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.	All salt stored by the Village of South Holland has been stored in a permanent 72' diameter fabric salt dome structure on an asphalt pad to prevent contact with stormwater, since October 4, 2022.
Cover salt piles at all times except when in active use, unless stored indoors.	All salt stored by the Village of South Holland has been stored in a permanent 72' diameter fabric salt dome structure on an asphalt pad to prevent contact with stormwater, since October 4, 2022.
For working areas, provide berms and or sufficient slope to allow snow melt and stormwater to drain away from the area. If snow melts 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.	The new Public Works Facility and Salt Storage Dome are located at 155 W. 162 nd St. The site contains a Stormwater Plan and various levels of Best Management Practices. Construction was completed in October 2023. All stormwater BMPs were completed in February 2023.
MS4/CSO Only - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.	All salt stored by the Village of South Holland has been stored in a permanent 72' diameter fabric salt dome structure on an asphalt pad to prevent contact with stormwater, since October 4, 2022.
Good housekeeping practices must be implemented at the site, including: <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; 	At the end of every storm event, the following activities will take place: <ol style="list-style-type: none"> 1.) All paved surfaces around the salt dome are swept to collect leftover salt and deposited back in the salt dome. 2.) All remaining salt in vehicles is placed in the salt dome and trucks are washed to remove salt residue. <p>See the plan in Section 5 to implement other items.</p>

<ul style="list-style-type: none"> • maintaining the pad and equipment; • good practices during loading and unloading; • cleanup of loading and spreading equipment after each snow/ice event; • a written inspection program for storage facilities, structures, and work areas; • removing surplus materials from the site when winter activity is 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.	At the start of the 2023 Storm Season, we calibrated all salt-spreading equipment and recorded the results of each piece of 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.	Currently, the Village does pre-wet road salt as it leaves the spreader on all of our Large Dump Trucks.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt-spreading vehicles.	Two pavement temperature handheld units were purchased in 2022 and they were used to determine the salt use schedule during the 2023 Storm Season.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing	See the plan to implement in Section 5.

weather conditions, and forecasted weather conditions.	
Track and record salt quantity used and storm conditions from each call-out.	During the Storm Season of 2023/2024, we recorded salt quantity and storm conditions on the Facility Event Tracking Form provided by SaltSmart.org for each event.
Develop a written plan for the 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 currently has a written plan for implementing anti-icing that we used during the 2023/2024 Storm Season. Appendix 1 – Snow & Ice Control, Policy & Procedure Manual - Village of South Holland, IL, Department of Public Works.
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 the snow has been cleared.	On September 26, 2023, all Public Works employees participated in the Deicing Public Roads Workshop held by SaltSmart.org. Certificates for the training were obtained and retained in Personnel Training Files. This practice will continue annually.
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.	All public deicing practices are conducted by the Village of South Holland Public Works Department.
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.	This Annual Report represents the second year completing this requirement and has been submitted to the IEPA’s website and the watershed group.
Obtain and put into place equipment necessary to implement all salt spreading/deicing measures specified in this BMP, such as any new or retrofitted salt spreading equipment necessary to allow for pre-wetting and proper rates of application.	See the plan to implement in Section 5.
MS4/CSO/IDOT/TOLLWAY Only - Install equipment to measure the pavement temperature on	See the plan to implement in Section 5.

<p>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>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 a 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.</p>	<p>See the plan to implement in Section 5.</p>

3.1 Analysis of BMPs Implemented

As part of the Village’s BMP, we installed and began to utilize a centralized salt dome at 155 W 162nd St. The property is the new location of our PW Facility and was utilized all winter. Since all of our snow plowing, salt spreading, and deicing equipment are now a one location it made conducting the snow event more efficient and effective. Once the event was over, we were able to clean the surrounding surface and deactivate the equipment per the plan.

3.2 Analysis of Alternative Treatments or New Technology

We anticipated that we would be able to utilize our new salt brine equipment that we purchased from Orland Park to begin making salt brine, rather than purchase calcium chloride. However, due to time constraints with the completion of the new facility, we were unable to make this goal. We expect that this will be completed and ready to make salt brine by August 2024, and will greatly improve our use of pre-wetting technology next season.

4.0 Deicing/Anti-Icing Agents Used

Materials used by the Village of South Holland for the 2023-2024 winter season are included in Appendix 1.

4.1 Application Rates

The application rates used by the Village of South Holland for the 2023-2024 winter season are included in Appendix 2.

4.1.1 Application Rate Analysis

This past season was the first season that we attempted to regulate or change our application rates over the storm season. Utilizing the two manual temperature sensors helped in determining the range of products to use and helped instruct our staff. For the most part in 2023-2024, our application rates stayed consistent with past years, however, due to the continued light winter and the use of liquid pretreatment it is difficult to predict for future seasons. We will continue to try to reduce our application rates as we get more familiar with the topic and our equipment.

4.2 Application Practices

Winter storm operations generally consist of numerous stages. Each stage has its level of complexity and requires the staff to closely monitor conditions. Crew performance operations are generally divided into six stages. Village of South Holland uses the following practices to apply deicing and anti-icing materials:

- **PRETREATMENT:** This stage consists of anti-icing and pre-salting. In the case of anti-icing, this is an activity that can be done days in advance of a storm. Anti-icing is the application of salt brine (Calcium Chloride) in liquid form to the road during dry weather conditions. The mixture dries on the roads and is ready for the first snowfall. The mixture will reduce the bonding of snow and ice to the pavement and reduce the additional amount of salt required to keep the road safe. Pre-salting is an activity that is performed just before snowfall. Timing is critical when pre-salting. If salt is applied too early before snowfall, it could be blown off the road by wind or pushed off by traffic.

4.3 Call Outs

A total of 9.5 inches of snow was reported in the Village of South Holland for the 2023-2024 winter. There were 1 freezing rain events and 3 snow events for the 2023-2024 winter. The Village of South Holland had 4 callouts completed during the 2023-2024 winter. A log of all callouts completed by the Village of South Holland is included in Appendix 3.

4.4 Use of Liquids

Due to the addition of our liquid dispersment truck, we increased our use of liquids, before and during storms significantly. Due to the limited storm season, it is difficult to determine if the use of liquids was the main cause of the reduction of dry salt or if the limited number of events was the main cause. However, total dry salt use was down from previous years.

5.0 Training

The Village of South Holland completed annual training for 34 employees out of 34 employees who are part of the winter maintenance operations on September 26, 2023. A list of annual training topics by type of employee is included in Appendix 4.

6.0 Deicing and Snow Removal Equipment and Maintenance

Village of South Holland uses equipment listed in Appendix 5 during winter maintenance activities.

6.1 Description of Equipment Washing and Wash Water Collection

This year all of our equipment washdown takes place in our new indoor vehicle wash stations at the entrance and exit of the new public works facility at 155 W 162nd St. Water is captured in a stormwater sump in the interior of the building and all water and debris are pumped through our sanitary sewer system. Dry salt is swept from the concrete and restored in our salt dome.

7.0 Material Storage

The Village of South Holland maintains 1 storage area. Information regarding the storage area is included in Appendix 6.

8.0 Capital Purchases

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

8.1 Explanation of Capital Purchases Unable to Be Made According to the Reported Plan

Currently, we do not have any capital purchases anticipated for this term of the TLWQS. We are investigating automating the calibration of our salt spreaders through the Force American system to allow management to set each truck during each storm. Once this system is thoroughly investigated we will determine the necessary funding to implement the improvements.

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 at <https://www.cawswatershed.org/reports/> and <https://ldpwatersheds.org/about-us/lower-des-plaines-watershed-group/our-work/chloride-tlwqs/>.

10.0 Program Evaluation

During our review of the past winter storm season, we have determined that additional supervision is needed during the storm operation to more effectively track and adjust our staffing, equipment, and salt application information needs. We anticipate that these changes to our processes will be reviewed and further developed now that we are in our new Public Works Facility.

10.1 Proposed Steps for the Coming Year

All winter storm equipment has been transferred to our new Public Works Facility at 155 W 162nd Street and we were able to run operations out of the new facility. Small tweaks and adjustments were made to internal processes and the purchase of weather prediction software. We anticipate continuing to evaluate our procedures for preparing equipment, utilizing technology to help inform on application rates, staff training, equipment, and site maintenance.

11.0 Workgroup Participation

This year the Village of South Holland has attended and participated in the CAWCW's quarterly membership meetings on-site along with the following activities:

- Send key staff to Winter Deicing Workshops,
- Connect with other Public Works Organizations to share ideas on chloride reduction,
- Utilized Outreach Materials provided by CAWCW and other organizations to provide information to our residents,
- Submit Annual Report to CAWCW,
- Submit the completed Pollutant Minimization Plan to CAWCW and
- Participate in CAWCW-sponsored surveys related to workgroup activities.

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 2024-2025 (Year 3) in Tons or Gallons	Total Amount used for 2025-2026 (Year 4) in Tons or Gallons	Total Amount used for 2026-2027 (Year 5) in Tons or Gallons	Total Amount Used Over First 5-Year Term
Salt	Dry	528	0	528	0	262	0				262
Salt	Pre-Wet	528	0	528	0	0	218				218
Calcium Chloride	Liquids	528	0	528	0	15943	1166				17109
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0

Estimates of Relative Material Amounts Applied and Coverage Achieved

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	176	0	300%	300%	300%	0%	0%	0%			
2023-2024	176	0	300%	300%	300%	0%	0%	0%			

Deicing Application Rate Guidelines for Parking Lots and Sidewalks

These rates are adapted from road application guidelines (Mn Snow & Ice Control Field Handbook, Manual 2005-1). Develop your own application rates using the guidelines as a starting point and modify them incrementally over time to fit your needs. The area should first be cleared of snow prior to applying chemical.

Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Application Rate in lbs. per 1000 square foot area			
			Salt Prewetted/ Pretreated With Salt Brine	Salt Prewetted/ Pretreated With Other Blends	Dry Salt	Winter Sand (abrasives)
>30°↑	Snow	Plow, treat inter-sections only	0.75	0.5	0.75	not recommended
	Frz. Rain	Apply chemical	1.25	1.0	1.5	not recommended
30°↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75	not recommended
25 - 30° ↑	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.5	1.25	1.75	not recommended
25 - 30° ↓	Snow	Plow & apply chemical	1.25	1.0	1.5	not recommended
	Frz. Rain	Apply chemical	1.75	1.5	2.25	3.25
20 - 25° ↑	Snow or Frz. Rain	Plow & apply chemical	1.75	1.5	2.25	3.25 for frz. rain
20 - 25° ↓	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.25
15° to 20° ↑	Snow	Plow & apply chemical	2.0	2.0	2.75	not recommended
	Frz. Rain	Apply chemical	2.5	2.0	3.0	3.2
15° to 20° ↓	Snow or Frz. Rain	Plow & apply chemical	2.5	2.0	3.0	3.25 for frz. rain
0 to 15° ↑ ↓	Snow	Plow, treat with blends, sand hazardous areas	not recommended	3.0	not recommended	5.0 spot treat as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	not recommended	4.5	not recommended	5.0 spot treat as needed

To determine the amount of material needed, take the application rate x parking lot area / 1000 ft². **Example:** Given a 300,000 sq. ft. parking lot and an application rate of 1.5 lbs/1000ft² 1.5 x 300,000 = 450,000 450,000/1000 = 450 lbs (nine 50 lb. bags).

Anti-Icing Guidelines

These are a starting point only. Adjust based on your experience.

Condition	Gallons/1000 sq. ft.		Other Products
	MgCl ₂	Salt Brine	
1. Regularly scheduled applications	0.1 - 0.2	0.25 - 0.3	Follow manufacturers' recommendations
2. Prior to frost or black ice event	0.1 - 0.2	0.25 - 0.3	
3. Prior to light or moderate snow	0.1 - 0.2	0.2 - 0.4	

CAUTION: Too high an application rate may result in slippery conditions or tracking.



EVENT SNOW AND ICE REPORT

DATE: Storm #1 - 01/08/2024 - 1/09/2004

WEATHER CONDITIONS:

Snow Started at Noon on 1/08/2024, Air temp 31, Ground Temp 26
 Snow started to stick to pavement at 2:00 am on 1/08/2024, Air Temp 31, Ground Temp 19
 Snow Ended at Midnight on 1/09/2024, Air Temp 31, Ground Temp 19
 Snow plowing activities ended 1/09/2024

PRECIPITATION TYPE:

RAIN:

FREEZING RAIN:

SNOW:

ICE:

PRECIPITATION AMOUNT:

RAIN:

FREEZING RAIN:

SNOW: 1 inch

ICE:

ROAD CONDITION:

WET:

DRY:

POWDER:

WET SNOW:

TEMPERATURE:

AIR:

PAVEMENT:

STORM DURATION:

Storm activities between 1/8/2024 - 1/09/2024

DRIVERS USED SHIFT 1:

NAME:	HOURS:
Josh	12
Larz	12
Keith	5
Freddy	12
Bryan	3.5
Glen DeGraff	3.5
Os	3
Antoine	9
Cam	3
Mike	9
Tony	3

DRIVERS USED SHIFT 2:

NAME:	HOURS:

DRIVERS USED SHIFT 3:

NAME:	HOURS:

VEHICLES / MATERIALS:

VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	-	-
SD28	-	-
SD 29	-	-
LD 53	-	20
LD 55	25,000	-
LD 57	24,000	-
LD 58	6,000	-
LD 59	16,000	-
LD 61	11,000	-
LD 62	20,000	-

TOTAL USED FOR STORM EVENT:

SALT:	lbs	71,000.00
CC:	gal	20.00



EVENT SNOW AND ICE REPORT

DATE: Storm #2 - 01/12/2024 - 01/13/2024

WEATHER CONDITIONS:

Snow Started on 1/12/2024, Air temp 29, Ground Temp 22
 Snow Ended on 1/13/2024, Air Temp 1, Ground Temp -1
 Snow removal activities ended 1/13/2024

PRECIPITATION TYPE:

RAIN:

FREEZING RAIN:

SNOW:

ICE:

PRECIPITATION AMOUNT:

RAIN:

FREEZING RAIN:

SNOW: 6.5 inch

ICE:

ROAD CONDITION:

WET:

DRY:

POWDER:

WET SNOW:

TEMPERATURE:

AIR: 1

PAVEMENT: -1

STORM DURATION:

01/12/2024 - 01/13/2024

DRIVERS USED SHIFT 1:	
NAME:	HOURS:
Jim	8
Larz	12.5
Sammie	8
Eric	8
Freddy	5
Glen	4
Josh	12
Os	4
Cam	8
Keith	8

DRIVERS USED SHIFT 2:	
NAME:	HOURS:
Sean	4
Kris	4
Keith	4
Fredy	7.5
Cam	4.5
Cam	4.5

DRIVERS USED SHIFT 3:	
NAME:	HOURS:

VEHICLES / MATERIALS:		
VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	30,000	10
SD28	8,000	-
SD 29	6,000	-
LD 53	-	-
LD 55	54,000	30
LD 57	12,000	60
LD 58	30,000	30
LD 59	17,000	10
LD 61	8,000	-
LD 62	34,000	25

TOTAL USED FOR STORM EVENT:		
SALT:	lbs	157,000.00
CC:	gal	140.00



EVENT SNOW AND ICE REPORT

DATE: Storm #3 - 01/18/2024 - 01/19/2024

WEATHER CONDITIONS:

Snow Started on 1/18/2024, Air temp 15, Ground Temp 10
 Snow Ended on 1/19/2024, Air Temp 4, Ground Temp 1
 Snow removal activities ended 1/13/2024

PRECIPITATION TYPE:

RAIN:

FREEZING RAIN:

SNOW:

ICE:

PRECIPITATION AMOUNT:

RAIN:

FREEZING RAIN:

SNOW: 2 inch

ICE:

ROAD CONDITION:

WET:

DRY:

POWDER:

WET SNOW:

TEMPERATURE:

AIR:

PAVEMENT:

STORM DURATION:

01/18/2024 - 01/19/2024

DRIVERS USED SHIFT 1:	
NAME:	HOURS:
Josh	10
Jim	6
Larz	7
Freddy	12.5
Os	10

DRIVERS USED SHIFT 2:	
NAME:	HOURS:
Jim	3
Sean	9
Trey	4.25
Mike	7

DRIVERS USED SHIFT 3:	
NAME:	HOURS:

VEHICLES / MATERIALS:		
VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	18,000	-
SD28	6,000	-
SD 29	12,000	-
LD 53	-	-
LD 55	-	-
LD 57	16,000	-
LD 58	4,000	-
LD 59	28,000	-
LD 61	8,000	-
LD 62	9,000	-

TOTAL USED FOR STORM EVENT:

SALT:	lbs	84,000.00
CC:	gal	-



EVENT SNOW AND ICE REPORT

DATE: Storm #4 - 01/24/2024

WEATHER CONDITIONS:

Ice Started on 1/24/2024, Air temp 32, Ground Temp 29

PRECIPITATION TYPE:

RAIN:

FREEZING RAIN:

SNOW:

ICE:

PRECIPITATION AMOUNT:

RAIN:

FREEZING RAIN:

SNOW: 2 inch

ICE: .10 inch

ROAD CONDITION:

WET:

DRY:

POWDER:

WET SNOW:

TEMPERATURE:

AIR:

PAVEMENT:

STORM DURATION:

1/24/2024

DRIVERS USED SHIFT 1:

NAME:	HOURS:
Freddy	5
Glen	3.5

DRIVERS USED SHIFT 2:

NAME:	HOURS:

DRIVERS USED SHIFT 3:

NAME:	HOURS:

VEHICLES / MATERIALS:

VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	5,000	-
SD28	-	-
SD 29	-	-
LD 53	-	990
LD 55	-	-
LD 57	-	-
LD 58	-	-
LD 59	-	-
LD 61	-	-
LD 62	-	-

TOTAL USED FOR STORM EVENT:

SALT:	lbs	5,000.00
CC:	gal	990.00

Organization Name:
Village of South Holland

Chloride TLWQS Annual Report
Appendix 4 - Annual Training

Role in Winter Operations	Training Topics Covered
Mike Cramer - Director	CAWS Deicing Workshop: Roads Sept 26, 2023
Eric DiSanto - Supt.	CAWS Deicing Workshop: Roads Sept 26, 2023
Brent Ackerman	CAWS Deicing Workshop: Roads Sept 26, 2023
Allen Acosta	CAWS Deicing Workshop: Roads Sept 26, 2023
Joe Aghimien - Mech.	CAWS Deicing Workshop: Roads Sept 26, 2023
Robert Aguilar	CAWS Deicing Workshop: Roads Sept 26, 2023
Trey Cook	CAWS Deicing Workshop: Roads Sept 26, 2023
Michael Cox	CAWS Deicing Workshop: Roads Sept 26, 2023
Andy DeBoer	CAWS Deicing Workshop: Roads Sept 26, 2023
Glen DeGraff	CAWS Deicing Workshop: Roads Sept 26, 2023
Mike DeVries	CAWS Deicing Workshop: Roads Sept 26, 2023
Keith DeYoung	CAWS Deicing Workshop: Roads Sept 26, 2023
Luke Droz	CAWS Deicing Workshop: Roads Sept 26, 2023
Sean Faulkner	CAWS Deicing Workshop: Roads Sept 26, 2023
Sammie Flenoid	CAWS Deicing Workshop: Roads Sept 26, 2023
Eric Gordon	CAWS Deicing Workshop: Roads Sept 26, 2023
Grant Gutierrez	CAWS Deicing Workshop: Roads Sept 26, 2023
Josh Lewis	CAWS Deicing Workshop: Roads Sept 26, 2023
Jason Linder	CAWS Deicing Workshop: Roads Sept 26, 2023
Jim Maleczka	CAWS Deicing Workshop: Roads Sept 26, 2023
Antoine Marshall	CAWS Deicing Workshop: Roads Sept 26, 2023
Gary Medema	CAWS Deicing Workshop: Roads Sept 26, 2023
Bryan Meyer	CAWS Deicing Workshop: Roads Sept 26, 2023
Mario Pisterzi	CAWS Deicing Workshop: Roads Sept 26, 2023
Kris Prim	CAWS Deicing Workshop: Roads Sept 26, 2023
Siobhan Schuenemann	CAWS Deicing Workshop: Roads Sept 26, 2023
Larz Stanford	CAWS Deicing Workshop: Roads Sept 26, 2023
Ron Tiemens	CAWS Deicing Workshop: Roads Sept 26, 2023
Freddy Uruchima	CAWS Deicing Workshop: Roads Sept 26, 2023
Os Villanueva	CAWS Deicing Workshop: Roads Sept 26, 2023
Levi White	CAWS Deicing Workshop: Roads Sept 26, 2023
Tony Wise	CAWS Deicing Workshop: Roads Sept 26, 2023
Martin Zambrano	CAWS Deicing Workshop: Roads Sept 26, 2023

Organization Name:
Village of South Holland

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
2022FORD F250	T 1	NA	NA	Plow
2022FORD F250	T 2	NA	NA	Plow
2019FORDF250	T 3	NA	NA	Plow
2017FORDF250	T 5	NA	NA	Plow
2019FORDF250	T 17	NA	NA	Plow
2015FORD F550	SD 27	Mechanical	Pre-Wet	Plow
2021FORDF450 CREW LB	SD 28	Mechanical	Pre-Wet	Plow
2022FORDF450 2D SB	SD 29	Mechanical	Pre-Wet	Plow
2006INT7400 Deicing Tru	LD 53	Mechanical	Liquids	Plow
2009INT7400	LD 55	Mechanical	Pre-Wet	Plow
2015INT7400	LD 57	Mechanical	Pre-Wet	Plow
2016INT7400	LD 58	Mechanical	Pre-Wet	Plow
2019INT7400	LD 59	Mechanical	Pre-Wet	Plow
2022INT7400	LD 61	Mechanical	Pre-Wet	Plow
2022INT7400	LD 62	Mechanical	Pre-Wet	Plow

Organization Name:
Village of South Holland

Chloride TLWQS Annual Report
Appendix 6 - Material Storage

Location of Storage Area	Material Stored (Rock Salt, Salt Brine, etc.)	Amount of Material Stored 2022-2023	Amount of Material Stored 2023-2024	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)
155 W 162nd St	Rock Salt	1,500 tons	2,200 tons	Yes	Yes	Yes	Yes
16226 Wausau Ave	Calcium Chloride	4,500 gallons	4,500 gallons	Yes	Yes	Yes	Yes

Organization Name:
Village of South Holland

Chloride TLWQS Annual Report
Appendix 7 - Capital Purchases

Capital Purchase Description	Plan/Schedule for Purchase
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