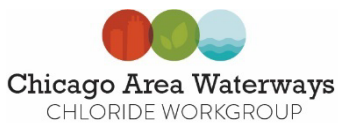


Annual Report for Year 1 (2022-2023) of the Time Limited Water
Quality Standard for Chloride

June 30, 2023

Prepared by 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 to Chloride Issue in CAWS/LDPR

This Pollutant Minimization Plan (PMP) has been prepared by Village of South Holland Public Works Department to reduce the environmental impacts from the organization's chloride related operations. Village of South Holland Public Works Department 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: 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.

The Village is currently constructing 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, weather proofing, and a 16'x18' entryway. The 72' Diameter Fabric Dome on a 10' wall has a rated storage capacity 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 expectations of the residents and visitors is 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 thru 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 with in eight (8) hours after the winter precipitation has ended. It is recognized that some parking lots that have long term permitted parking maybe 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 sidewalk adjacent to Village owned properties

The objective of the snow and ice program is to clear all sidewalks adjacent to all Village owned properties with in twenty-four (24) hours after the winter precipitation event has ended. Sidewalks in Town Center will have a courtesy path cleared down the main portion of the walk and cross walk sections across streets. Complete clearing of the walk is still the responsibility of the adjacent property owner per 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 become 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 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 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 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 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 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.	New Public Works Facility and Salt Storage Dome is located at 155 W. 162 nd St. The site contains a Stormwater Plan and various levels of Best Management Practices. Construction is underway and will be complete September 1, 2023. All stormwater BMP's 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 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 were swept to collect left over salt and deposited back in the salt dome. 2.) All remaining salt in vehicles were placed in the salt dome and trucks were washed to remove salt residue. <p>See 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 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.	Starting with the 2022 Storm Season we calibrate 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 and we used them to determine salt use schedule during the 2022 Storm Season.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing	See 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 2022/2023 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 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 of anti-icing that we used during the 2022/2023 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 snow has been cleared.	On September 27, 2022 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 first year completing this requirement and has been submitted to the IEPA's website and to the watershed group.
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.	See plan to implement in Section 5.
MS4/CSO/IDOT/TOLLWAY Only - Install equipment to measure the pavement temperature on	See 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 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 plan to implement in Section 5.</p>

3.1 Analysis of BMPs Implemented

As part of the Village’s BMP’s 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 under construction all winter. This caused us significant challenges in and around the salt dome. On several occasions we were unable to sweep and spray salt from the surrounding loading area due to construction. However, since we had so few storms this was limited.

3.2 Analysis of Alternative Treatments or New Technology

For next storm season we will be producing our own salt brine on site using brine making equipment we purchased from Orland Park. We expect that this will improve our use of pre-wetting technology next season.

4.0 Deicing/Anti-Icing Agents Used

Materials used by Village of South Holland for the 2022-2023 winter season are included as Appendix 1.

4.1 Application Rates

The application rates used by Village of South Holland for the 2022-2023 winter season are included as 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 product to use and helped instruct our staff. For the most part our application rates stayed consistent with past years, however, due to the light winter and the use of liquid pretreatment it is difficult to predict for next season. We will continue to try to reduce our application rates as we get more familiar with the topic.

4.2 Application Practices

Winter storm operations generally consist of numerous stages. Each stage has its own 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 prior to snowfall. Timing is critical when pre-salting. If salt is applied too early prior to snowfall, it could be blown off the road by wind or pushed off by traffic.

4.3 Call Outs

A total of 6 inches of snow was reported in Village of South Holland for the 2022-2023 winter. There was 1 freezing rain event(s) and 2 snow event(s) for the 2022-2023 winter. Village of South Holland had 3 call outs completed during the 2022-2023 winter. A log of all call outs completed by Village of South Holland are included as Appendix 3.

4.4 Use of Liquids

Due to the addition of our liquid dispersement 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 were the main cause of the reduction of dry salt or if the limited number of events were that main cause. However, total dry salt use was down from previous years.

5.0 Training

Village of South Holland completed annual training for 28 of employees out of 28 of employees who are part of the winter maintenance operations on September 27, 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

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

6.1 Description of Equipment Washing and Wash Water Collection

As with past years our equipment wash down takes place in our indoor and outdoor vehicle wash stations at the back of the current public works facility at 16226 Wausau Ave. Water is captured in a stormwater sump at the exterior of the building and all water and debris are transported to our Vincennes Lay Down Yard and placed in a dry out area. Dry salt is swept from the concrete and restored in our salt dome. During the next storm season our new public works facility will provide us with better capture infrastructure and new procedures for the potential reuse of wash down water.

7.0 Material Storage

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

8.0 Capital Purchases

Identified capital purchases from 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 as 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.

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

During our review of the past winter storm season we have determined that additional supervision is needed during the storm operation in order 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 once we have moved into our new Public Works Facility.

10.1 Proposed Steps for the Coming Year

It is anticipated that our Public Works Department staff and equipment will be transferred to our new Public Works Facility at 155 W 162nd Street by August 1, 2023. At this point we will begin to look at our winter storm operations using our new facility. We anticipate evaluating 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 via Microsoft Teams 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 completed Pollutant Minimization Plan to CAWCW and
- Participate in CAWCW sponsored surveys related to workgroup activities.

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 - 12/21/2022 - 12/28/2022

WEATHER CONDITIONS:

Snow Started at Noon on 12/22/2022, Air temp 33, Ground Temp 26
 Snow started to stick to pavement at 2:00 pm on 12/22/2022, Air Temp 23, Ground Temp 19
 Snow Ended at Midnight on 12/22/2022, Air Temp 10, Ground Temp 5
 Snow plowing activities ended 12/28/2022

PRECIPITATION TYPE: RAIN: <input type="text"/> FREEZING RAIN: <input type="text"/> SNOW: <input type="text"/> ICE: <input type="text"/>	PRECIPITATION AMOUNT: RAIN: <input type="text"/> FREEZING RAIN: <input type="text"/> SNOW: 3 inch ICE: <input type="text"/>	ROAD CONDITION: WET: <input type="text"/> DRY: <input checked="" type="checkbox"/> X POWDER: <input checked="" type="checkbox"/> X WET SNOW: <input type="text"/>	TEMPERATURE: AIR: <input type="text" value="23"/> PAVEMENT: <input type="text" value="19"/>
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STORM DURATION:

Storm duration 2:00 pm to midnight on 12/22/2022. Storm activities between 12/21/2022 - 12/28/2022

DRIVERS USED SHIFT 1:		DRIVERS USED SHIFT 2:		DRIVERS USED SHIFT 3:		VEHICLES / MATERIALS:		
NAME:	HOURS:	NAME:	HOURS:	NAME:	HOURS:	VEHICLE:	SALT (LBS CC (GAL))	
Keith	10	Martin	3			T1	-	-
Vernell	10	Antoine	3			T2	-	-
Martin	10	Sean	3			T3	-	-
Antoine	10	Os	3			T5	-	-
Sean	10	Fredy	3			T17	-	-
Os	10	Michael	3			SD 27	38,000	-
Fredy	10	Cam	3			SD28	12,000	-
Michael	10	Craig	3			SD 29	22,000	-
Cam	10	Brent	3			LD 53	-	2,468
Craig	10	Larz	3			LD 55	12,000	35
		Bryan	3			LD 57	33,000	75
		Josh	3			LD 58	10,000	-
						LD 59	12,000	20

TOTAL USED FOR STORM EVENT:

SALT:	lbs	139,000.00
CC:	gal	2,597.50



EVENT SNOW AND ICE REPORT

DATE: Storm #2 - 01/25/2023 - 01/30/2023

WEATHER CONDITIONS:

Snow Started at Noon on 1/25/2023, Air temp 23, Ground Temp 19
 Snow started to stick to pavement at 2:00 pm on 1/25/2023, Air Temp 23, Ground Temp 19
 Snow Ended at Midnight on 1/30/2023, Air Temp 9, Ground Temp 5
 Snow removal activities ended 1/30/2023

PRECIPITATION TYPE:	
RAIN:	<input type="text"/>
FREEZING RAIN:	<input type="text"/>
SNOW:	<input type="text"/>
ICE:	<input type="text"/>

PRECIPITATION AMOUNT:	
RAIN:	<input type="text"/>
FREEZING RAIN:	<input type="text"/>
SNOW:	3 inch
ICE:	<input type="text"/>

ROAD CONDITION:	
WET:	<input type="text"/>
DRY:	X
POWDER:	X
WET SNOW:	<input type="text"/>

TEMPERATURE:	
AIR:	23
PAVEMENT:	19

STORM DURATION:

On and off for 5 days

DRIVERS USED SHIFT 1:	
NAME:	HOURS:
Keith	
Vernell	
Martin	
Antoine	
Sean	
Os	
Fredy	
Michael	
Cam	
Craig	

DRIVERS USED SHIFT 2:	
NAME:	HOURS:
Martin	
Antoine	
Sean	
Os	
Fredy	
Michael	
Cam	
Craig	
Brent	
Larz	
Bryan	
Josh	

DRIVERS USED SHIFT 3:	
NAME:	HOURS:

VEHICLES / MATERIALS:		
VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	58,150	-
SD28	45,508	-
SD 29	37,924	-
LD 53	-	12,160
LD 55	10,113	30
LD 57	40,452	290
LD 58	70,790	255
LD 59	35,395	10

TOTAL USED FOR STORM EVENT:

SALT:	lbs	298,332.00
CC:	gal	12,745.00



EVENT SNOW AND ICE REPORT

DATE: Storm #3 - 02/15/2023 - 02/17/2023

WEATHER CONDITIONS:

02/15/2023 - Dry - No Precip - CC Only
 02/16/2023 - Soft rain started approximatly 7:00 am

PRECIPITATION TYPE:	
RAIN:	X
FREEZING RAIN:	
SNOW:	
ICE:	

PRECIPITATION AMOUNT:	
RAIN:	
FREEZING RAIN:	X
SNOW:	
ICE:	

ROAD CONDITION:	
WET:	X
DRY:	
POWDER:	
WET SNOW:	

TEMPERATURE:	
AIR:	36
PAVEMENT:	19

STORM DURATION:

DRIVERS USED SHIFT 1:	
NAME:	HOURS:
Keith	
Vernell	
Martin	
Antoine	
Sean	
Os	
Fredy	
Michael	
Cam	
Craig	

DRIVERS USED SHIFT 2:	
NAME:	HOURS:
Martin	
Antoine	
Sean	
Os	
Fredy	
Michael	
Cam	
Craig	
Brent	
Larz	
Bryan	
Josh	

DRIVERS USED SHIFT 3:	
NAME:	HOURS:

VEHICLES / MATERIALS:		
VEHICLE:	SALT (LBS)	CC (GAL)
T1	-	-
T2	-	-
T3	-	-
T5	-	-
T17	-	-
SD 27	14,327	-
SD28	5,056	-
SD 29	13,484	-
LD 53	-	600
LD 55	20,226	-
LD 57	10,113	-
LD 58	17,698	-
LD 59	5,899	-

TOTAL USED FOR STORM EVENT:		
SALT:	lbs	86,802.74
CC:	gal	600.00

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
Eric DiSanto - Supt.	CAWS Deicing Workshop: Roads
Robert Aguilar	CAWS Deicing Workshop: Roads
Grant Gutierrez	CAWS Deicing Workshop: Roads
Siobhan Schuenemann	CAWS Deicing Workshop: Roads
Tim Plys	CAWS Deicing Workshop: Roads
Andy DeBoer	CAWS Deicing Workshop: Roads
Luke Droz	CAWS Deicing Workshop: Roads
Mike DeVries	CAWS Deicing Workshop: Roads
Keith DeYoung	CAWS Deicing Workshop: Roads
Kris Prim	CAWS Deicing Workshop: Roads
Vernell Johnson	CAWS Deicing Workshop: Roads
Jim Maleczka	CAWS Deicing Workshop: Roads
Sammie Flenoid	CAWS Deicing Workshop: Roads
Martin Zambrano	CAWS Deicing Workshop: Roads
Antoine Marshall	CAWS Deicing Workshop: Roads
Sean Faulkner	CAWS Deicing Workshop: Roads
Jason Linder	CAWS Deicing Workshop: Roads
Osbaldo Villanueva	CAWS Deicing Workshop: Roads
Fredy Uruchima	CAWS Deicing Workshop: Roads
Michael Cox	CAWS Deicing Workshop: Roads
Cameron Anderson	CAWS Deicing Workshop: Roads
Craig Lottie	CAWS Deicing Workshop: Roads
Joe Aghimien - Mech.	CAWS Deicing Workshop: Roads
Brent Ackerman	CAWS Deicing Workshop: Roads
Larz Stanford	CAWS Deicing Workshop: Roads
Josh Lewis	CAWS Deicing Workshop: Roads
Bryan Meyer	CAWS Deicing Workshop: Roads

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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

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Appendix 6 - Material Storage

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)
155 W 162nd St	Rock Salt	1,500 tons	Yes	Yes	Yes	Yes
16226 Wausau Ave	Calcium Chloride	4,500 gallons	Yes	Yes	Yes	Yes

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Appendix 7 - Capital Purchases

Capital Purchase Description	Plan/Schedule for Purchase
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