

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

22-April-2024

Prepared by the Village of Channahon



The Village of Channahon is a
member of the Lower Des Plaines
Watershed Group



1.0 Introduction

This Annual Report has been prepared by the Village of Channahon to report on progress in meeting the requirements for the Time Limited Water Quality Standard for Chloride. The Village of Channahon 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: The Village of Channahon		
Facility Name: Channahon Public Works		Permit Number: ILG103059
Facility Address: 26156 S. Blackberry Ln.		
City: Channahon	State: IL	Zip Code: 60410

The Village consists of 82.7 centerline miles of roadways maintained by public works. They have one salt storage structure on-site that houses 2400 tons of salt.

2.1 Level of Service for Winter Maintenance Activities

Provide reasonable road conditions for traffic flow throughout the winter driving season. The first events of the season are the most critical. Drivers are not accustomed to driving on snow/ice. Road surface temperatures may be near freezing point. Minimize the ice to road bond that causes hazardous driving in accordance with the Villages Snow Policy.

3.0 Best Management Practices

Details regarding Channahon’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 Channahon has been a member of the Lower Des Plaines Watershed Group since March of 2017. The Village is an original founder and attends all bimonthly meetings.

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 Channahon is stored in a permanent dome structure on an impermeable pad to prevent contact with stormwater. Constructed in 1995 New for 2023-24, a tarp now covers the entrance to the dome to prevent rain water from contacting the salt pile.
Cover salt piles at all times except when in active use, unless stored indoors.	All salt is stored in a permanent dome structure unless it’s being used. Loaded trucks, when not in use, park inside the public works garage. Constructed in 1995.

<p>For working areas, provide berms and or sufficient slope to allow snow melt and stormwater to drain away from the area. If snow melt and stormwater cannot be drained away from the working area, channeling water to a collection point such as a sump, holding tank or lined basin for collection, discharge at a later time, use for prewetting, and use for make-up water for brine must be considered.</p>	<p>The Permanent dome structure is surrounded 360 degrees by asphalt pavement, sloped to ensure proper drainage away from the salt stockpile. Constructed in 1995. A lined basin is implemented to catch runoff from the salt loading zone (2023).</p> <p>New for 2023-24, a tarp now covers the entrance to the dome to prevent rain water from contacting the salt pile.</p>
<p>MS4/CSO Only - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.</p>	<p>Channahon currently uses 3 above ground holding tanks for deicing material. Two 5,000 gallon and one 8,000 gallons. Implemented in 2019.</p>
<p>Good housekeeping practices must be implemented at the site, including:</p> <ul style="list-style-type: none"> • cleanup of salt at the end of each day or conclusion of a storm event; • tarping of trucks for transportation of bulk chloride; • maintaining the pad and equipment; • good practices during loading and unloading; • 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; 	<p>Salt Clean-up procedure-SOP Storage facility, structures and work area check list Implemented in 2023</p>

<ul style="list-style-type: none"> • evaluate the opportunity to reduce or reuse the wash water. 	
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Winter Maintenance Operations BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
Calibrate all salt spreading equipment at least annually before November 30th. Records of the calibration results must be maintained for each piece of spreading equipment.	The Village calibrates all salt spreading equipment annually before November 30th. Implemented in 2018.
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 spreading equipment is upfitted to pre-wet road salt during application.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt spreading vehicles.	The Village utilizes both truck mounted and handheld noncontact thermometers. Implemented in 2018.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing weather conditions, and forecasted weather conditions.	Appendix 2.
Track and record salt quantity used and storm conditions from each call-out.	Implemented in 2020.
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.	Channahon is currently treating bridges, hills and curves deemed hazardous. And as of 2021 started anti-icing all roadways within snow plow routes designated as mains. New for 2023-24, All designated mains have been added to the anti-icing/ pre-treatment list.
Provide employees involved in winter maintenance operations with annual training before November 30th on best management practices in the	Training is held annually where we review the Villages snow policy and procedural power point presentation. Implemented in 2000.

<p>use of road salt in operations, including the practice of plowing first and applying salt only after snow has been cleared.</p>	
<p>Be responsible for complying with all applicable BMPs even when deicing practices are contracted out and ensure that contractors are property trained and comply with all applicable BMPs.</p>	<p>All snow operations are executed by village personnel.</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>Channahon will complete annual reporting. Implemented in 2022.</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>For FY24-25, Channahon is attempting the purchase of 4 new International trucks. These new vehicles will be upfitted with salt calibration and pre-wet systems. They are replacing older vehicles that where not upfitted with the new technology.</p>
<p>MS4/CSO/IDOT/TOLLWAY Only - Install equipment to measure the pavement temperature on the winter maintenance fleet for a sufficient number of vehicles to provide sufficient information to adjust application rates for the most efficient levels. Develop and complete a plan to equip the winter maintenance fleet before the first re-evaluation.</p>	<p>A sufficient number of vehicles are currently equipped with thermometers. Units are designated in the equipment inventory attached. Implemented in 2018.</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</p>	<p>Post Winter Evaluation Form to be completed by every driver at the conclusion of each snow season. Developed 2023.</p>

<p>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>	
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Additional BMPs Identified for Agency/Facility

BMP	Agency Description of Current Implementation
Wastewater Effluent chloride monthly testing	Monthly effluent chloride testing completed by Channahon’s wastewater department. NPDES monitor only.

3.1 Analysis of BMPs Implemented

The Villages winter snow season appears to have been successful. All treatment goals were met within the winter season, according to dosage calculations. Actions such as preventative vehicle maintenance and additional meetings with personnel about the adverse effects of chlorides seemed beneficial.

3.2 Analysis of Alternative Treatments or New Technology

With the addition of all route mains to anti-icing/pre-treatment list, the additional call-outs for roadway hazardous by the police department diminished.

4.0 Deicing/Anti-Icing Agents Used

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

4.1 Application Rates

The application rates used by the Village of Channahon for the 2023-2024 winter season are included as Appendix 2.

4.1.1 Application Rate Analysis

Channahon’s salt usage increased from the previous year, due to storm event characteristics. Channahon did set all automated salting equipment to the minimum discharge of 300lbs per lane mile. The level of service appears to be the same, with a

reductions of salt usage per event. Additional salting equipment purchases will aid in reducing future salt usage.

4.2 Application Practices

Channahon uses the following practices to apply deicing and anti-icing materials:

- Direct pavement application of brine.
- pre-wetting of salt with 70/30 mix of brine and SNI biomelt at the discharge point of plow trucks.

Dry salt application is only allowed in the event of equipment breakdown. Future equipment purchases upfitted with pre-wet systems, will further reduce dry salt applications.

4.3 Call Outs

A total of 21.6 inches of snow was reported in Channahon IL for the 2023-2024 winter. There were 2 freezing rain event(s) and 8 snow event(s) for the 2023-2024 winter. The Village of Channahon had 29 call outs completed during the 2023-2024 winter. A log of all call outs completed by Channahon are included as Appendix 3.

4.4 Use of Liquids

Channahon applies brine solution to its designated ant-icing/pretreatment and hot spot location prior to any forecasted event. All equipped vehicles pre-wet discharged rock salt with a 70% brine and 30% SNI biomelt solution to minimize chlorides.

5.0 Training

The Village of Channahon completed annual training for 16 employees out of 16 of employees who are part of the winter maintenance operations on Sept. 26th 2023. A list of annual training topics by type of employee is included as Appendix 4.

6.0 Deicing and Snow Removal Equipment and Maintenance

Channahon uses equipment listed in Appendix 5 during winter maintenance activities.

6.1 Description of Equipment Washing and Wash Water Collection

Barrier protection, such as jersey barriers with plastic sheeting, shall be placed along the eastern edge of the drive prior to the beginning of snow season. The barrier system is intended to block

water runoff created from hosing salt on pavement and allow it to be collected and used in the brine tank. This location is where all winter operational equipment is washed to remove chloride residuals. The length and configuration of the barrier system should be adjusted and/or widened until it achieves the intended result.

7.0 Material Storage

Channahon maintains 1 storage area(s). Information regarding the storage area(s) is included in Appendix 6.

8.0 Capital Purchases

Identified capital purchases from Channahon'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

Previous FY vehicle purchase where unable to be made due to production times for cab and chassis, along with difficulties from upfitting equipment contractor.

9.0 Environmental Monitoring Data

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

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

9.1 Organization Specific Chloride Monitoring Data

The Village of Channahon collects chloride monitoring data as part of its NPDES effluent data and the data is included as Appendix 8.

10.0 Program Evaluation

Attached data indicates a possible downward trend in max effluent chloride concentration. With the 2023-24 snow season having more precipitation than 2022-23 but, less than average precipitation and chloride application. Trending chloride showed that even with additional salt

application this year, the MG/L continues to drop. Channahon will continue to monitor effluent chloride concentrations for further improvements.

10.1 Proposed Steps for the Coming Year

Channahon will continue its participation in the watershed groups and follow the TLWQS. Future equipment purchases with appropriate salting technology will assist in Channahon's reduction of chlorides.

11.0 Workgroup Participation

The Village of Channahon has been a member of the Lower Des Plaines Watershed Group since March of 2017. The Village is an original founder and attends all bimonthly meetings. Channahon will continue to attend the Winter Deicing Workshop and submittal of annual report to the workgroup.

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
Rock Salt	Dry	5,461	174,000	7,540	174,000	289.69	718.13				1007.82
Brine	Liquids	764	174,000	1,059	764	5,837.50	11,500				17337.5
SNI BioMelt (70/30)	Pre-Wet	5461	464,000	7,540	174,000	1,987.50	3,463.50				5451
											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	5461	812,000	100%	100%	14%	21%	57%	21%			
2023-2024	8599	812,000	88%	88%	12%	21%	21%	0%			

These rates are adapted from road application guidelines. Develop your own application rates using the guide at the rate of 300-500 pounds per lane mile and no further out than

Hot Mix shall be a mixture of 70% Brine and 30% SNI Bio Melt and implemented using the

All snow removal equipment outfitted with pre-wet systems shall utilize

Pavement Temp. (°F) and Trend (H)		Weather Condition	Maintenance Actions
>30°	↑	Snow	Plow, treat inter- sections of
		Frz. Rain	Apply chemical
30°	↓	Snow	Plow & apply chemical
		Frz. Rain	Apply chemical
25 - 30°	↑	Snow	Plow & apply chemical
		Frz. Rain	Apply chemical
25 - 30°	↓	Snow	Plow & apply chemical
		Frz. Rain	Apply chemical
20 - 25°	↑	Snow or Frz. Rain	Plow & apply chemical
20 - 25°	↓	Snow	Plow & apply chemical
		Frz. Rain	Apply chemical
15° to 20°.	↑	Snow	Plow & apply chemical
		Frz. Rain	Apply chemical
15° to 20°.	↓	Snow or Frz. Rain	Plow & apply chemical
0 to 15°	↕	Snow	Plow, treat with blends
< 0°		Snow	Plow

The:

Condition

1. Regularly scheduled applications
2. Prior to frost or black ice event
3. Prior to light or moderate snow

Application Rate Guidelines

Guidelines as a starting point and modify them incrementally over time to fit your needs. The area should first be cleared an 3 feet outside the plowed lane unless circumstances such as an ice storm dictate otherwise or unless otherwise

Use village water truck for all hot spots and mains within the snow routes for pre-treatment/anti icing purposes at

Use Brine during every snow event at a rate of 1-1.25 gallon per lane mile. Application rate based on temperature

	Application Rate in lbs. per lane mile		
	Salt Prewetted/ Pretreated With	Salt Prewet- ted/ Pre-	Dry Salt
10-15	125	85	125
15-20	200	175	250
20-25	200	175	250
25-30	250	225	300
30-35	200	175	250
35-40	250	225	300
40-45	200	175	250
45-50	300	250	375
50-55	300	250	375
55-60	325	325	450
60-65	425	350	500
65-70	325	325	450
70-75	425	350	500
75-80	425	350	500
80-85	not recommended	525	not recommended
85-90	not recommended	not recommended	not recommended

Anti-Icing Guidelines

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

Gallons per minute		Other Products
Biomelt 30%/ Brine 70%	Salt Brine	
0.0	10.0	Follow manufacturers' re
0.0	10.0	
0.0	10.0	

1/6/2024	11.5		11.5	9	11.5		11.5	
	105		126	73	85		0	
	10.96		10.24	5.72	0		0	
	0		0	30	0		0	
1/7/2024								
1/8/2024								
1/9/2024	14.25		14.25		14.25			
	127		151		106			
	1.64		9.8		7.38			
	0		0		0			
1/10/2024	8							
	71							
	0							
	900							
1/12/2024	13.25		13.25		13.25			13.25
	136		156		113			113
	13.748		25.32		20			5.99
	0		0		0			0
1/13/2024	10.25		10.25	10.25	10.25			
	112		127	90	86			
	11.322		20.6	6.68	15.21			
	0		0	60	120			
1/14/2024	5.25							
	89							
	0							
	850							
1/15/2024	4		3.25		4			
	48		52		49			
	0		0		0			
	0		0		0			
1/19/2024	12.5	12.5	12.5		12.5		2	
	131	92	89		103		7	

	13.243	4.87	14.44		18.22		0.84	
	0	0	125		120		0	
	8	8	8		8			
1/22/2024	103	78	104		80			
	10.412	4	16.87		14.15			
	0	0	125		120			
	15.5	15.5	15.5		15.5			
1/23/2024	150	126	175		147			
	15.165	6.68	26.39		26			
	0	0	125		120			
			5					
1/24/2024			77					
			2					
			3.5					
2/1/2024								
			8					
2/9/2024			73					
			0					
			750					
2/14/2024								
	4.5	4.5	4.5		4.5			
2/16/2024	48	34	71		47			
	8.17	2	8.92		14.75			
	0	0	0		0			
		6.5						
2/23/2024		72						
		0						
		750						
					6.5			
2/27/2024					76			
					0			
					800			

3/21/2024								

Gordon	Brendon	Matt S	Jeff	Justin	Jake	Mike	Eric	Total Hrs
								2.5
								8
								4.25
4								4
59								
3.42								
10								
5.75								5.75
69								
0								
850								
								5.5
					3.25			3.25
					31			
					1.98			
					0			
					8			8
					77			
					0			
					800			
			8					8
			76					
			0					
			900					

		11.5	11.5		11.5		11.5	101
		76	101		104		94	
		4.4	9.67		4.9		4.3	
		100	100		60		10	
							3	3
							28	
							1.75	
							10	
			6.5					6.5
			70					
			0					
			750					
14.25	14.25		14.25		14.25	14.25	14.25	128.25
116	95		113		81	85	101	
6.4	6.4		14.58		7.24	2.1	9.34	
60	120		35		60	0	30	
								8
13.25			13.25	13.25	13.25		13.25	119.25
128			188	127	116		145	
14.64			12.9	9.43	9.593		15.98	
37.5			75	60	60		60	
10.25		10.25			10.25		10.25	82
118		100			78		76	
13.5		6.86			6.451		8.36	
37.5		0			60		60	
								5.25
7					4.25			22.5
70					54			
0					0			
0					0			
12.5	12.5				12.5	12.5	12.5	114.5
99	114				113	160	135	

					6.5			6.5
					79			
					0			
					900			

905.5

Total Miles	Total Salt (Tons)	Brine (Gallons)	OT Hrs	LBS per LM
			2.5	135.1724
29	1.96	0		
				0
88	0	850		
			4.25	257.7143
35	4.51	0		
				115.9322
59	3.42	10		
				0
69	0	850		
				0
74	0	900		
			3.25	127.7419
31	1.98	0		
				0
77	0	800		
				0
76	0	900		

			101	131.3874
764				
	50.19			
		300		
			3	125
28				
	1.75			
		10		
				0
70				
	0			
		750		
			56.25	133.0872
975				
	64.88			
		305		
				0
71				
	0			
		900		
			47.25	208.8396
1222				
	127.601			
		292.5		
			82	226.1321
787				
	88.983			
		337.5		
			5.25	0
89				
	0			
		850		
			0	0
273				
	0			
		0		
			40.5	204.349
1043				

	106.568			
		735		
				221.2577
679				
	75.117			
		535		
			60	223.4112
1138				
	127.121			
		695		
				51.94805
77				
	2			
		3.5		
				0
72				
	0			
		750		
				0
73				
	0			
		750		
				0
73				
	0			
		750		
				310.25
400				
	62.05			
		240		
				0
72				
	0			
		750		
				0
76				
	0			
		800		

79			
	0		
		900	
			405.25
8599			
	718.13		
		14963.5	
Average LBS per lane mile			167.0264

DATE	ACTION	GALLONS	TONS	RETURNS	PREDICTED EVENT	ACTUAL EVENT
31-Oct.-2023	Hot spots	0	6.56	4.6	.2 Snow	.5" snow
22-Nov.-2023	Pre-treat	850	0	0	26th flurries	NA
26-Nov.-2023	Hot spots	0	18.44	13.93	D-1"	2" snow
28-Nov.-2023	black ice	10	8.28	4.86	NA	ICE
29-Nov.-2023	Pre-treat	850	0	0	patchy fog	NA
4-Dec.-2023	Pre-treat	900	0	0	Rain/ snow mix	Rain/Sleet
30-Dec.-2023	Hot spots	0	3.3	1.32	Freezing fog or drizzle	NA
2-Jan.-2024	Pre-treat	800	0	0	freezing drizzle	light precip.
5-Jan.-2024	Pre-treat	900	7.83	0	D-1.5" start Jan. 6th	3.5" snow
6-Jan.-2024	Full Crew	300	109.73	0	Flurries	flurries all day
7-Jan.-2024	Hot spots	10	0	65.62	Flurries	AM hot spots
8-Jan.-2024	Pre-treat	750	70.38	0	flurries	1.1"
9-Jan.-2024	Full Crew	305	35.5	46.08	4-8" Wet Snow	3.0"
10-Jan.-2024	Pre-treat	900	0	0	< 1"-2" Wet Snow	Flurries w/no accumulation
12-Jan.-2024	Full Crew	315	123.06	0	8-12" Snow/ Rain	6" snow/ Rain
13-Jan.-2024	Full Crew	315	112.31	0	Flurries	2" Snow
14-Jan.-2024	Drifts	0	0	0	Drifting	Drifting
15-Jan.-2024	Clean up	0	0	0	Drifting	clean up
19-Jan.-2024	Full Crew	735	44.63	0	1-3" Snow	2" Snow

22-Jan.-2024	Full Crew	535	134.65	0	.25-.5 ice/sleet, snow	1" ICE
23-Jan.-2024	Full Crew	695	205.32	0	ICE/FOG	ICE
24-Jan.-2024	Hot spots	0	0	92.58	ICE/FOG	ICE
1-Feb.-2024	Pre-treat	750	0	0	Nothing	Frost
9-Feb.-2024	Pre-treat	750	0	0	Drizzle w/ dropping temps	Frosty Fog
14-Feb.-2024	Pre-treat	750	0	0	15th Rain/ snow mix, Low 35	.02" rain
16-Feb.-2024	Salting	240	88.92	26.87	0-1" snow	1" Snow
23-Feb-24	Pre-treat	750	0	0	0-1" snow	0.5" Snow
27-Feb.-2024	Pre-treat	800	0	0	0-1" snow	Flurries
21-Mar.-2024	Pre-treat	900	0	0	D-3" snow	Flurries/ sleet

NOTES

wescom called about icy bridges, Travis M called in.

snow on the 26th

matt k. called in for hot spots

Gordon, Ice due to drifting and ground temps 1-10 before 6:30AM

Ground temp range 15-25, patchy frost spots

ground temps boarderline through out town.

Jake 3.25hrs Sat. pm for hot spots

3-Jan. 7AM ground temps 30-34.

Storm started the 5th around 8:30pm,

Crew called in at 2:45am-2:15pm

Eric called in 5:30am-8:30am

0.20" per hour, starting 8th PM at 8:30PM, ground and air temp above freezing

3AM crew start, air temps 34 and rising

late night 10th into 11th AM

4:30AM-5:45PM, 40-50MPH gusts, Temps 20 and dropping

4:30AM-2:45PM, 40-50MPH gusts -30, temp -10 after 2PM.

Peter C. Called in from 5AM-10:15AM, gusts AM 30MPH, -10 temps

clean up drifting and dump salt

start 3AM end 4PM, air temp 10, ground 15, temps steady. Salt working

start 7:30AM, Ground temp 22 and rising. Ice accumulating
start 12:30AM, Rain freezing to pavement, temp 31-32.
Travis reg. hrs ice spots
Roadways 25, air 32, slick roads due to frost. 2-Feb same conditions.
Roadways 29-34 in the AM. Lite rain and falling temps
Ground temps high teens, low 20's
Air/ground temps 27-28, Snow building on grass, overnight temps in teens
PM snow, AM ground temps 30-34, overnight low 10.
snow and dropping temps into the morning hrs of 28th
22nd AM storm missed to the north, IDOT was out. Possible pm system.

Organization Name: Village of Channahon Chloride TLWQS Annual Report
Appendix 4 - Annual Training

Channahon completed annual training for 16 employees out of 16 of employees who are part of the winter maintenance operations which includes Street Forman, Utility Operators and Laborers.	
Role in Winter Operations	Training Topics Covered
Formen, Utility Operators and Laborers (In-house training)	1. Village Snow Policy – Definitions and Verbiage
	2. Callout Procedure – Description of emergency operations, Shift work and hours.
	3. Exemption Policy – Time off for snow drivers.
	4. Snow Removal Procedures – Callouts, checking in, Removal operations, Checking out, definitions, Application rates, Repairs and equipment inspections.
	5. Snow Removal Safety – Driving, attaching plow, loading salt, grate cleaning, blade changes/bolt replacement, unloading vehicles, wash down and general.
	6. Brine, Hot Mix(70/30) salt and pre-wet- Production and application rates
	7. Required Documentation – Driver sheets, Equipment check sheet, Salt load/unload tracking sheets, Brine production,
Formen, Utility Operators and Laborers (Salt Smart)	Salt Smart Webinar

Truck Number	Plow MFG	Plow Type	Plow Model	Push Frame MFG	Push Frame Type	Push Frame Model No	Salt Spreader
13	Flink	29HH Torsion Trip Edge 11'	29HHTTPY11PA45	Flink	29" Husting Hitch	PF91HH	Rhan / Highway (Bed Belt)
18	Flink	Husting hitch 12'	29HHTTPY12PA45	Flink	29" Husting Hitch	PF91HH	Flink 9"
32	Flink	Husting hitch 12'	29HHTTPY12PA45	Flink	29" Husting Hitch	PF91HH	Flink 9"
34	Flink	Reversable 11'	TTPY11PA450	Flink	29" Husting Hitch	PF91HHK	10' Henderson
36 (Chipper Truck)	Flink	Reversable 11'	PTTPY11PA45007	Flink	29" Husting Hitch	PF91HHK	Flink 6" x 8'
43 (pre-treat)	Flink	11'	PTTPY11PA4500XX	Flink	Quick Link	PF106FDAQL2LM HK	Varitech
50	Flink	11'	PTTPY11PA4500XX	Flink	Quick Link	PF106FDAQL2LM HK	Flink 6"
64	Flink	11'	PTTPY11PA4500XX	Flink	Quick Link	PF106FDAQL2LM HK	Flink 6"
40	Western	7.5'	ProPlus	Western	Ultra mount 2	ULTRAMT	NA
49	Western	8'	Pro Plow Series 272390	Western	Ultra mount 2	ULTRAMT2	NA
59	Western	8'	Pro Plow Series 272390	Western	Ultra mount 2	ULTRAMT2	NA
45 (village Hall)	Western	8'	Pro Plow Plus 72390	Western	Ultra mount 2	ULTRAMT2	NA

47	Western	8'	Pro Plow Plus 72390	Western	Ultra mount 2	ULTRAMT2	NA
60	NA	NA	NA	NA	NA	NA	NA
66	Western	9'	IUTPP	Western	Ultra Mount 2	ULTRAMT2	Swenson
67	Western	8'	8' Pro-Plow Series 2	Western	Ultral Mount 2	ULTRAMT2	NA
68	Western	8.5'	8.5' Pro-Plus	Western	Ultral Mount 2	ULTRAMT2	Salt Dog by Buyers
69	Western	8'	8' Pro-Plus	Western	Ultral Mount 2	ULTRAMT2	NA
70	Falls	11'	PTE-11-SC	Flink	Quick Link	PF106FDAQL2LM HK	Swenson
71	Falls	11'	PTE-11-SC	Flink	Quick Link	PF106FDAQL2LM HP	HI-WAY
72	Western	8'	PRO-PLOW	Western	ULTA MOUNT 2	ULTRAMT2	NA

Salt Spreader Model	Controller	Controller Type	Controller Model	Truck Thermo meter	Pre-Wet Systems (Y/N)
XT3-9/10	Component Tech	Storm Guard	GL-400	NA	NO
VCT90S4	Force	Center Electric	XV520P-32 Command-All	NA	NO
VCT90S4	Force	Electric over Hyd	XV520P-32 Command-All	NA	NO
Mini Body 2	Force	electric load Sense	XV520P-32 Command-All	NA	YES
VCT12DDS4	Force	GRM Kit	ssc1500	NA	YES
1035 Gal Anti Ice system with legs	Force	Center Electric	SSC3100	NA	Anti-Icing Truck
VCT12DDS4	Force	cable over Hyd	5100EX	Precise WCM-02 ARC System	YES
VCT12DDS4	Force	cable over Hyd	5100EX	NA	YES
NA	fleet flex	Electric over hyd	85200 or 96500	NA	NA
NA	fleet flex	Electric over hyd	85200 or 96500	NA	NA
NA	fleet flex	Electric over hyd	85200 or 96500	NA	NA
NA	fleet flex	Electric over hyd	85200 or 96500	NA	NA

Appendix 5 - Equipment

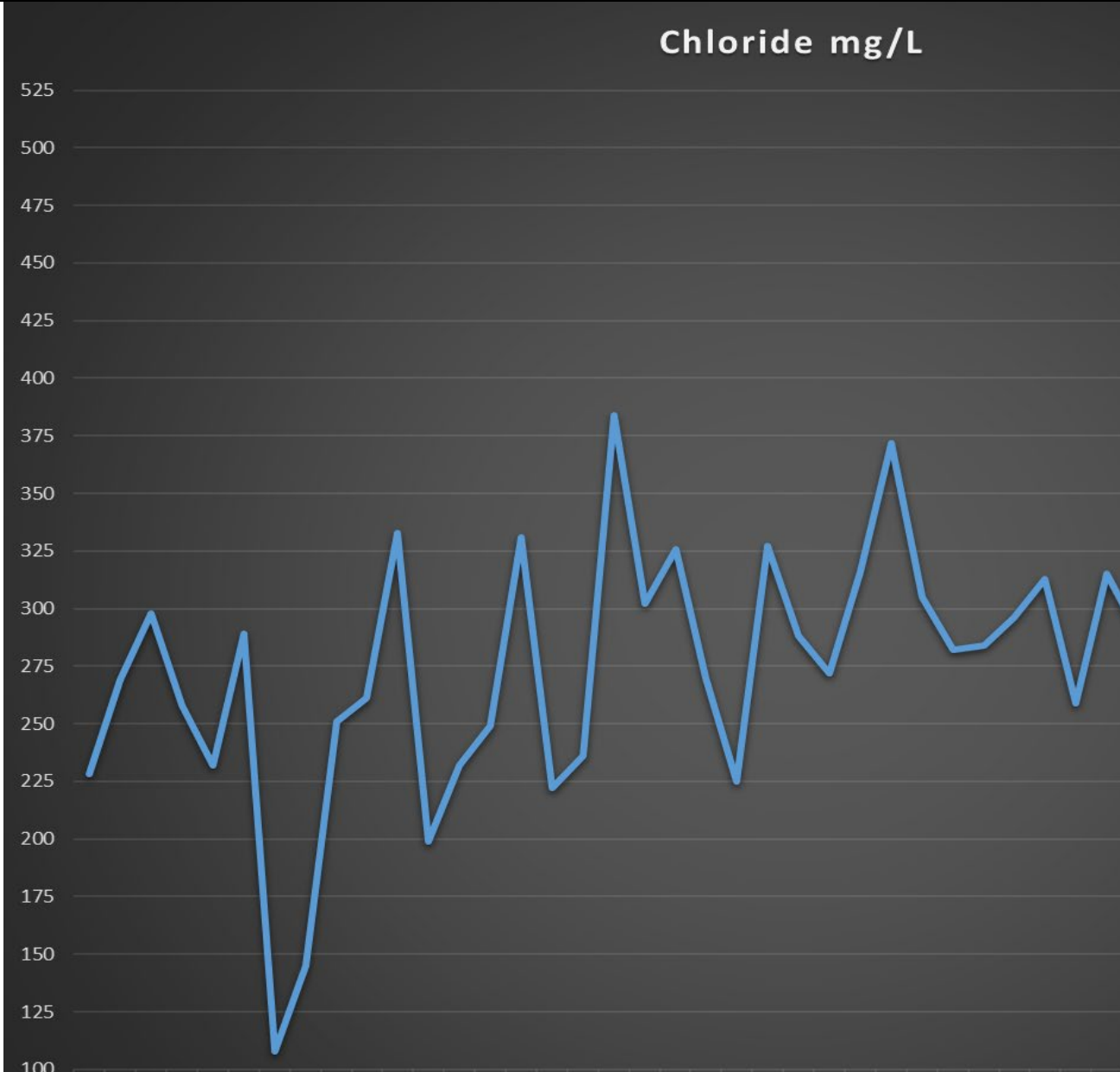
NA	fleet flex	Electric over hyd	85200 or 96500	Precise WCM-02 ARC System	NA
NA	NA	NA	NA	Raytek Raynger St thermometer	NA
SADS 6 SS	Force	Spool	Force 3100EX	NA	NA
NA	Fleet Flex	Electric over Hyd	35500 CabCommand	NA	NA
92420SSA	Buyers	Electric over Hyd	HVCO5	NA	NA
NA	Fleet Flex	Electric over Hyd	35500 CabCommand	NA	NA
SADS S2	Force	Electric over Hyd	AAF12LS-4(500B)-10LS-Z3-4-2(7)-2(14)-2(7)-BOMAIN 3000 AAF-VDM-GEN2-CFG	PRECISE WTS-01	YES
XT3	Force	Electric over Hyd	AAF12LS-3-10-Z3-4-4(CB2000/500)-4(750/750)-2(7)-2(14)-2(7)-BO AAF-VDM-GEN2-CFG	PRECISE WTS-01	YES
NA	fleet flex	Electric over Hyd	35500 CabCommand	NO	NO

Organization Name:

Chloride TLWQS Annual Report
Appendix 7 - Capital Purchases

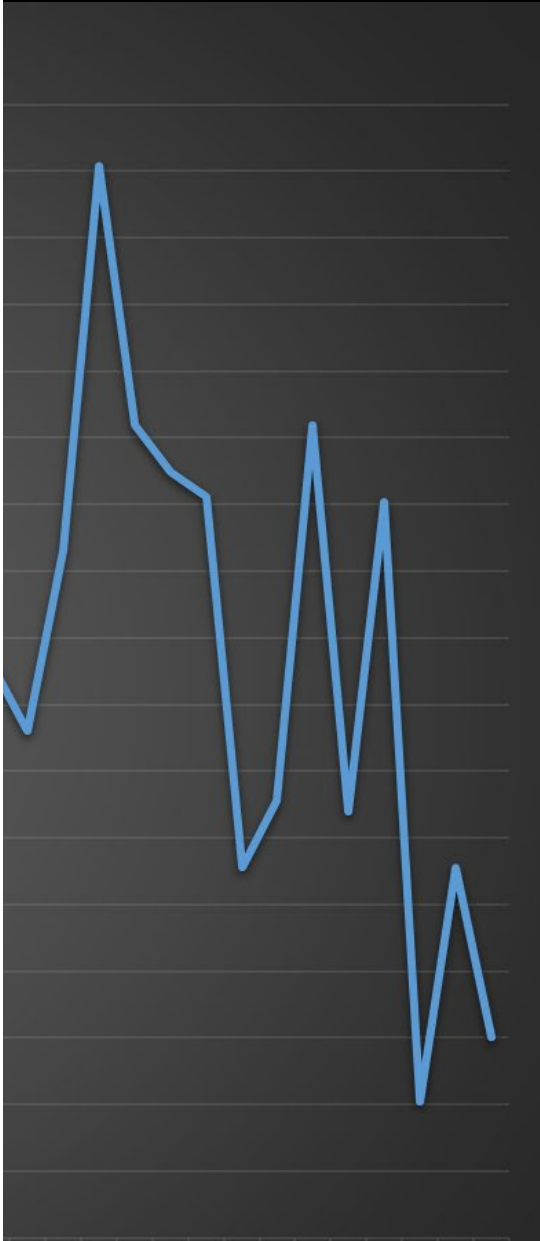
Capital Purchase Description	Plan/Schedule for Purchase
FY 22-23, two new International dumps w/plow and salting equipment	Changing to Internationals and ordering FY 24-25
FY 23-24, One F550 1-ton w/plow and salt equipment	Currenty being upfitted
FY 23-24, new to fleet 1-ton w/ plow and salt equipment	Currenty being upfitted
FY 24-25, two new International dumps w/plow and salting equipment	Waiting on start of FY 24-25

2024		2023		2022		
Date	Chloride mg/L	Date	Chloride mg/L	Date	Chloride mg/L	Date
		12/00/2023	232	12/16/22	236	12/08/21
		11/00/2023	289	11/17/22	384	11/05/21
		10/00/2023	108	10/27/22	302	10/07/21
		09/00/2023	145	09/08/22	326	09/09/21
		08/00/2023	251	08/11/22	270	08/11/21
		07/00/2023	261	07/21/22	225	07/08/21
		06/00/2023	333	06/30/22	327	06/17/21
		05/00/2023	199	05/24/22	288	05/07/21
04/00/2024	228	04/13/23	232	04/19/22	272	04/09/21
03/00/2024	269	03/16/23	249	03/08/22	316	03/11/21
02/00/2024	298	02/10/23	331	02/15/22	372	02/11/21
01/00/2024	258	01/06/23	222	01/06/22	305	01/07/21



04/00/2024
03/00/2024
02/00/2024
01/00/2024
12/00/2023
11/00/2023
10/00/2023
09/00/2023
08/00/2023
07/00/2023
06/00/2023
05/00/2023
04/13/23
03/16/23
02/10/23
01/06/23
12/16/22
11/17/22
10/27/22
09/08/22
08/11/22
07/21/22
06/30/22
05/24/22
04/19/22
03/08/22
02/15/22
01/06/22
12/08/21
11/05/21
10/07/21
09/09/21
08/11/21
07/08/21

2021	2020	
Chloride mg/L	Date	Chloride mg/L
282	12/07/20	239
284	11/18/20	264
296	10/02/20	405
313	09/03/20	260
259	08/21/20	376
315	07/17/20	151
290	06/04/20	239
358	05/14/20	175
502		
405		
387		
378		



06/17/21
05/07/21
04/09/21
03/11/21
02/11/21
01/07/21
12/07/20
11/18/20
10/02/20
09/03/20
08/21/20
07/17/20
06/04/20
05/14/20