Chloride Pollutant Minimization Plan for Village of Wilmette

November 1, 2022

Prepared by Village of Wilmette

Chicago Area Waterways
CHLORIDE WORKGROUP

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

THE VILLAGE OF
Wilmette
EST. 1872

1.0 Introduction to Chloride Issue in CAWS/LDPR

This Pollutant Minimization Plan (PMP) has been prepared by the Village of Wilmette to reduce the environmental impacts from the organization's chloride related operations. The Village of Wilmette 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 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 Info, Facilities' Specific Info

2.1 Facility overviews/descriptions

Agency Name: Village of Wilmette		
Facility Name: Wilmette Public Works		Permit Number: NPDES ILG103006
Facility Address: 711 Laramie Avenue		
City: Wilmette	State: IL	Zip Code: 60005

The Village of Wilmette is a Cook County community serving a population of 27,114. The Village extends approximately five miles west from Lake Michigan and is approximately one mile wide. Wilmette is a home rule community with a Village President and Board of Trustees elected at large and a Village Manager who runs the day to day operations of the Village. Wilmette was incorporated as a municipal corporation in 1872. The Village has a full-service Engineering and Public Works Department (EPW) with 47 full-time employees that perform infrastructure maintenance, including snow and ice control for the 82 lane miles tributary to the CAWS.

2.2 Chloride Sources

The Village of Wilmette performs winter maintenance on the following infrastructure assets:

55 miles of arterial streets (any winter salting event, 0+ inches snow accumulation)

12 miles sidewalks, business commuter (any winter salt event, 0+ inches snow)

11 miles of side streets (2-inches snow accumulation)

121 cul-de-sac side streets (2-inches snow accumulation)

24 miles sidewalks, school walking (2-inches snow accumulation)

20 parking lots (2-inches snow accumulation)

18 miles of alleys (4-inches snow accumulation)

130 miles sidewalks, residential (4-inches snow accumulation)

The average snowfall and plow events are provided in Table 1. To provide safe driving conditions during the winter months, road salts are used to help melt snow and ice. Sodium Chloride (road salt) is the most cost effective material for removing snow and ice from the road surface when the temperature is above 20 degrees Fahrenheit. Below 20° Fahrenheit, salt is treated with Beet-Heet/Mag Chemical in order to remain effective for temperatures below 20°.

Winter Season	No. of Plow Activities	Snow (inches)
2018-2019	18	41
2019-2020	6	14
*2020-2021 (as of 3/17)	29	54
Average	**18**	**36**

The policy of EPW is to salt main arterial streets, streets adjacent to schools, streets with curves or steep grades. These streets are referred to as the Tier 1 Priority Routes. Salting is a proactive approach used to minimize the bonding of ice to pavement, and to halt the further buildup of ice and snow on roadways and sidewalks. Salting of the arterial streets and intersections will occur if conditions are favorable for snow build-up or icing which could lead to hazardous vehicular travel. The amount of salt dispersed depends on the conditions but will typically vary from 200-600 lbs./lane mile. Salting operations continue until the icing conditions are brought under control (wet pavement is maintained) or until salting is no longer effective and plowing commences.

Pre-wetting salt (applying a liquid deicer) greatly enhances the ice melting performance of rock salt at lower temperatures, helps the salt to stick better where applied and helps reduce the corrosiveness of rock salt. Salt brine is used in temperatures at 15° or above. Pre-wetting salt is used every time salting occurs. Salt is treated at a rate of 25 gallons per ton of salt dispersed.

Under normal conditions, only side street intersections will be salted. Salt will be applied to the 100-ft length of roadway approaching and exiting each intersection. If low sub-freezing temperatures are expected after a storm event, salt may be applied to the entire street to prevent wide spreading ice formation.

Business/Commuter Sidewalk Routes are the first sidewalks salted and plowed. These routes are serviced at the same time as the arterial streets. Cul de sacs, alleys and parking lots are plowed using a contractor. Salting is performed by in-house staff only when conditions warrant.

In 2019, the Village purchased a salt brine machine capable of producing 12,000 gallons of salt brine per shift and storing 18,000 gallons at a time. The machine can also blend salt brine with other chemicals to lower the effective melting temperature of the brine.

The Village has two covered storage facilities dedicated to salt storage, including a salt dome with 600 ton capacity and a fabric-covered structure with 400 ton capacity.

2.3 Level of Service for Winter Maintenance Activities

The Village of Wilmette has typically provided a high level of service when delivering winter maintenance services. Roadways are generally cleared from curb to curb and arterials are treated until pavement is free from snow and ice. In conjunction with this chloride minimization plan, however, an effort will be made to educate the public on the importance of salt conservation and to reframe the public's expectations of bare pavement during snow events.

3.0 Chloride Monitoring Data

Chloride monitoring data will be collected for the CAWS and Lower Des Plaines River watersheds per the IPCB order. The data will be maintained by the workgroups. Chloride data for the CAWS will be 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.

4.0 Chloride Reduction BMPs for POTWs, MS4s, CSOs, Industrial Sources, IDOT/Tollway

As part of the Chloride TLWQS, specific BMPs were identified for POTWs, MS4s, CSOs, Industrial Sources, and IDOT/Tollway to reduce the chloride impact on the watershed. These BMPs will be implemented over the 15-year term and additional BMPs evaluated at 5-year intervals during the 15-year term. Further details about winter maintenance practices currently being implemented by Wilmette are included in the snow and ice plan, which is included as Appendix 1. The BMPs identified are outlined below:

Workgroup BMP

Variance BMP	Currently Implementing	Will Implement (Target Year)	Agency Description of Current Implementation
The permittee must participate in a Chlorides workgroup for the CAWS or LDPR, depending on the	**X**		Wilmette has been a member of the Chicago Area Waterways Chloride Workgroup since its inception in 2021.

watershed within which the facility's discharge is located.			Staff participates in all meetings, training sessions and special events.

Salt Storage and Handling BMPs

Variance BMP	Currently Implementing	Will Implement (Target Year)	Agency Description of Current Implementation
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.	**X**		Salt used by Wilmette is stored in two facilities: a permanent salt dome (600 ton capacity) and covered fabric structure (400 ton capacity). Both sit on concrete pads to prevent contact with stormwater. Both structures are located at the Public Works Yard, 711 Laramie Avenue
Cover salt piles at all times except when in active use, unless stored indoors.	**X**		Salt piles are covered at all times.
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.	**X**		The Village currently practices good housekeeping to reduce chloride runoff to the storm sewer system. Areas in the Village Yard used to load and clean trucks are swept with a rotary broom on a bobcat after every use to ensure salt is not allowed to accumulate on the pavement surface. When cleaning trucks, all solids are removed prior to washing to ensure any runoff from washing the trucks is highly diluted. A smaller bucket was purchased for the loaders so that there is less spillage when loading trucks.
MS4/CSO Only - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.	**X**		Deicing materials are stored in various holding tanks.
Good housekeeping practices must be implemented at the site, including: • 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;	**X**		The Village is in compliance with some of the listed good housekeeping practices and others are programmed as future improvements. The Village currently practices good housekeeping to reduce chloride runoff to the storm sewer system. Areas in the Village Yard used to load trucks are swept with a rotary broom on a bobcat after every use to ensure salt is not allowed to accumulate on the surface. At the end of an event, trucks are washed in the manual

• 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.			side of the Village's car wash station. The water runoff during this process is collected in a basin, pumped out and repurposed. The 2024 Capital Improvement Program includes a request for salt dome repairs and coverings over the open sides of the fabric structure and salt dome structure. Annual inspections of the Village's salt facilities, including pads and structures are conducted annually in conjunction with development of the ten-year capital improvement program.

Winter Maintenance Operations BMPs

Variance BMP	**Currently Implementing**	**Will Implement (Target Year)**	**Agency Description of Current Implementation**
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.	**X**		Wilmette's fleet services staff calibrates all salt spreaders and liquid applications prior to November 30 each year. The data is collected and stored in a spreadsheet. Method of calibration includes dispensing and weighing the salt to verify the proper weight is dropped and dispensing and measuring the liquid to verify the correct amount is applied. Making sure all the equipment is properly maintained to guarantee consistency throughout the season. Periodically recalibrating equipment during the season if we find an anomaly in the data collected after each salting event.
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.	**X**		Wilmette's snow equipment is equipped with liquid salt pre-wetting systems to wet the salt prior to leaving the truck. This technique facilitates faster chemical snow melt and reduces the "bounce and scatter" effect to make more productive use of the salt.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt spreading vehicles.	**X**		All large snow plows and supervisor vehicles have working pavement temperature sensors.

Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing weather conditions, and forecasted weather conditions.	**X**		The Village snow team uses a snow and ice condition matrix to determine the proper strategy when responding to an event. This matrix is included in the Village's snow plan.
Track and record salt quantity used and storm conditions from each call-out.	**X**		This information is currently tracked on each vehicle. Every event tracks the liquid and salt amounts used. This information is downloaded and inputted into a master spreadsheet. Master tracking sheet is included in the Village's snow plan (Appendix 1).
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.	**X**		The Village's anti-icing plan is included in the Snow Plan.
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.	**X**		All Engineering and Public Works staff participated in the 4-hour training hosted by the CAWS and Lower Des Plaines River watershed workgroups.
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.	**X**		Contractors do not use salt
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.	**X**		To be completed
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.	**X**		Critical snow fighting equipment is already equipped with anti-icing and salt spreading/deicing measures. All new and retrofitted salt spreading equipment is equipped with pre- wetting technology that has been calibrated to ensure proper rates of application.

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.	**X**		All large snow plows and supervisor vehicles have working pavement temperature sensors.
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.	**X**		Quality control is completed during each storm and adjusted as necessary. In addition to the formal training by outsourced experts, each year our snow and ice supervisors conduct department-wide training before and after the snow season. The purpose of this training is to ensure the team has an opportunity to ask questions and provide feedback and suggestions for improving the operation. This includes discussion of the performance of the applicable equipment.

Additional BMPs Identified for Agency/Facility

If your agency currently does any other BMPs for chlorides specific to your operations (for industrial members – this may include any BMPs related to chlorides in your processes), list them out in the table below and provide details about how you are currently implementing those BMPs. If you don't use any additional BMPs, feel free to delete this section.

BMP	**Currently Implementing**	**Agency Description of Current Implementation**
Public education	X	The Village uses social media and E-news (electronic newsletter) to inform the public of proper use of salt and salt mitigation strategies. We also use this as an opportunity to inform the public about level of service changes related to using less salt when performing snow and ice control.

5.0 Other Chloride TLWQS Required Milestones

The Village of Wilmette will implement these specific milestones (not included in the above BMPs) as outlined by the Chloride TLWQS.

Milestone	Agency Completion Date	Agency Completion Details
6 MONTHS AFTER EFFECTIVE DATE: Petitioner establishes a mechanism for tracking of de-icing salt usage for each facility.	Salt usage is currently tracked	The tracking sheets used for every storm are provided in the attached Snow Plan (Appendix 1).
July 1st OF EVERY YEAR (BEGINNING WITH YEAR 2): Discharger must submit an Annual Report for the previous year beginning on May 1 and ending on April 30 of the following year to the Agency and the chlorides workgroup on. The report shall be on salt usage for deicing and steps taken to minimize salt use and makes the report publicly available.	By July 1 of each year, beginning in Year 2 (2023)	Wilmette will submit an annual report to the workgroup and IEPA.
July 1st of YEAR 3, YEAR 8 and YEAR 13: The chlorides workgroup submits a Status Report to the IEPA which includes an analysis on the following: chlorides monitoring data; report on the chloride workgroup's outreach strategy, which includes outreach efforts to expand coverage of the TLWQS, and outreach and training for nonpoint sources; identification of any new BMPs, treatment technology or salt alternatives; identification of the impediments and potential solutions of those impediments faced by dischargers and those granted coverage under the TLWQS that prevent them from completing the training and making all capital purchases necessary to implement the required BMPs; and identification and description of any assistance (financial, technical, or otherwise) that the chloride workgroup may be able to provide.	By July 1 of year 3 (2024), the workgroups will submit a Status Report to the IEPA.	To be completed by CAWS workgroup.
July 1st OF YEAR 4 ½: Chlorides workgroup submits to the Board its first proposed re-evaluation pleading consistent with the Board's order granting the TLWQS.	By July 1 of year 4 ½ (2025), the workgroups will submit a re-evaluation to the IEPA and IPCB.	To be completed by CAWS workgroup.

Appendix 1 – Snow and Ice Plan/Policy For the Village of Wilmette

THE VILLAGE OF Wilmette EST. 1872

ENGINEERING & PUBLIC WORKS DEPARTMENT

SNOW & ICE CONTROL PLAN

REVISED: NOVEMBER 2022

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I. PURPOSE

To combat winter storms, the Village has developed this Snow & Ice Control Program, which is dictated by the intensity of each individual storm. Controlling a winter storm is a team effort involving snow and ice control crews, private contractors, the news media, and citizens.

II. PUBLIC POLICIES

A. Parking Restrictions

1. **Winter Precipitation Event:** Section 14-328 of the Village Code prohibits parking on one side of any street that is 27 feet or less in width during a Winter Precipitation Event. A winter precipitation event is defined as any event of snowfall, sleet, freezing rain or ice, regardless of accumulation. This parking restriction shall be in effect during the event and an additional 24 hours after the event or until the clearing operations are completed, whichever is sooner.

2. **Street Parking Prohibited after 2" of Snow Accumulation:** Section 14-327 of the Village Code prohibits parking on any street at any time during a snowfall after a 2" accumulation and an additional period of 24 hours after the snowfall stops or until the snow & ice control operations have been completed, whichever is sooner.

B. Ticketing/Towing Parked/Stalled Vehicles (Streets, Alleys & Sidewalks): Snow equipment operators shall notify Public Works dispatch or the Supervisor on duty to call the Police Department to report vehicles that are blocking plowing operations.

C. Off-Street Parking: Certain areas have been designated for off-street parking during winter precipitation events:

1. The CTA parking lot @ Linden Ave & 4th Street (payment required)

2. The Historical Museum parking lot @ 609 Ridge Rd (until 8 am so the lot can be cleaned from 8-9 am).

D. Snow Disposal onto Public Right-of-Way: Section 20-92 of the Village Code prohibits the pushing, dumping or depositing of snow from private property onto any street or public way. This code section applies to the property owner and/or contractor.

III. ELIGIBLE DRIVERS

The criteria outlined in the Fleet Safety Program in the Village-wide Loss Prevention Program Manual will be used to determine that drivers of Village vehicles meet the minimum requirements prescribed by applicable regulatory agencies and Village policies and procedures.

IV. TRAINING

Employees must receive adequate training before being assigned snow and ice control tasks. Whenever possible, new employees shall attend Snowplow Driver Training hosted by the Northeastern Illinois Public Safety Training Academy (NIPSTA) prior to their first winter season. NIPSTA's hands-on training is preferred, but simulator training is also offered throughout the year. Supervisory staff is also responsible for conducting in-house training to ensure that employees are

familiar with Wilmette policies and equipment. The Engineering & Public Works supervisory staff is responsible for ensuring their employees have received adequate training on the following.

A. Classroom Training should include a complete review of the following:

1. Engineering & Public Works: Snow & Ice Control Program
2. Basic snow clearing techniques
3. Safety procedures (pre- and post-trip inspections, accident and breakdown reporting, etc.)
4. Communication
5. Defensive driving techniques for snowplow operators
6. Routes and assignments
7. Equipment preparation and use
8. Material application and usage
9. End of shift responsibilities

B. Hands-on Training should include operators driving their route(s) to familiarize themselves pre-season. Additionally, hands-on training should include employees demonstrating competency of:

1. Pre-and post-trip inspections
2. Function checks of lights, controls, and implements (salt controls, etc.)
3. Driver course completion with common snowplow obstacles (NIPSTA and/or in-house training)
4. Use of salt brine machine
5. Use of front-end loader to load vehicles with salt

C. Chloride Minimization Training is required annually and applies to all employees involved in winter maintenance operations. Employees receive a tutorial on best management practices in the use of road salt in snow and ice control operations, including the practice of plowing first and applying salt only after snow has been cleared. Equipment operators are expected to exhibit a salt conscious mindset in carrying out snow and ice control operations. Annual training is coordinated and sponsored through the Chicago Area Waterways Chloride Workgroup (CAWS) and the Lower Des Plaines River Watershed Workgroup.

D. Periodic Driver Observations: Continued operator safety training should occur through a ride-along program as the snow season progresses. Supervisory personnel should use the Snow & Ice Control Driver Observation Checklist (Appendix A) to monitor specific, known high hazard tasks operators face with the intention of mentorship and injury prevention. Observations do not have to be performed during a snow emergency but scheduled throughout the season when weather permits.

E. Annual Snow Meeting: In advance of each winter season, the Street Superintendent shall schedule a meeting with all snow & ice personnel to discuss the procedures outlined in this Plan. Special consideration shall be given to any new safety concerns and any updates from the previous year's Snow & Ice Control Plan.

V. CALL OUT NOTIFICATION PROCESS

A. Forecasting: The Village utilizes Murray & Trettel, a private meteorological service for weather information and notification of potential snow and ice conditions. This service provides advanced and ongoing warning of snow and ice conditions. Weather forecast information is presented to the Village utilizing the Snow-Ice Storm Warning form. Murray & Trettel contacts the Village Yard via email and will contact the Police Department during off-hours. Storm notifications are assigned a color code, which indicates the severity of the weather event. The color codes, green, yellow, red, and black will be described in detail below.

B. Notifications: During regular working hours, the Wilmette Police will call the Public Works front counter staff, supervisor on duty, or the Director of Public Works. After-hours, the Wilmette Police will contact the Snow & Ice On-Call Specialist. The Street Superintendent or supervisor on duty will determine when salting and plowing operations will commence. The supervisor on duty or Street Superintendent will call in personnel as necessary to begin salting and plowing operations.

C. Personnel and Scheduling: A list and schedule of personnel on-call for snow and ice response will be posted at all times in the lunchroom. Contact information and vehicle and route assignments for each employee will also be posted in the Training Room. In addition, a list of the Street Division salt response team on duty will be posted by the time clock and in the lunchroom. Police officers on the street will be gathering information on icing conditions and notifying the Public Works Department as needed.

D. Response Time: Employees on-call for snow and ice response are expected to respond to call-outs within one hour of notification. Failure to respond to a call-out in a timely manner may result in disciplinary action.

E. Weather Command / Murray & Trettel Preparation Guidelines: The most recent Murray & Trettel Operational Weather Color Code will also be posted in several places throughout the facility (near time clocks, outside the lunchroom, etc.). Department call outs will provide the appropriate response to the severity of the storm and may align with the Murray & Trettel Operational Weather Color Code. Please note that additional personnel beyond what is described in the list may be called in at any time if deemed necessary by the Street Superintendent or supervisor on duty. These shift assignments and descriptions are to be used as a general guideline only, and are as follows:

1. **Condition Green:** The weather pattern is unfavorable for the development of trouble conditions. This color is used in combination with a Yellow or Red condition to indicate the certainty of the forecast. Usually, no trouble is expected, and no action is needed.

2. **Condition Yellow:** The weather pattern is favorable for the development of a storm with “Little or Limited” impact. The response for this type of event would most likely be limited to the salt response group on duty but could require additional personnel.

3. **Condition Red:** The weather pattern is favorable for the development of a storm with “Significant” impact. The response for this type of event would most likely be

all Street Division employees, and ½ of all employees in the Water Sewer and Street Lighting Divisions, Snow Support Staff, and Remaining Management Staff. Additional personnel may be required.

4. **Condition Black:** The weather pattern is favorable for the development of a storm with "MAJOR" impact. The response for this type of event would most likely be all Street Division employees and all employees and Snow Support Staff in the Public Works Department.

VI. SHIFT ASSIGNMENTS, MAXIMUM SHIFT HOURS & SCHEDULING

Ahead of each winter season, employees are assigned one of two teams (A&B) to provide snow and ice control operations. Employees will not be scheduled for shifts longer than 12 hours, and each shift will include no more than 10 hours of driving. Scheduled shifts should allow for ample breaks. Employees will typically take breaks in between routes. Employees will not be allowed to exceed working 16 hours in one shift. Employees will be required to have at least 8 hours off in between shifts.

In the event of an emergency occurring simultaneously with snow and ice control, such as a water main break, outside contractors may be called in to assist as needed. This will be done by the Superintendents at the direction of the Director of Engineering & Public Works or Deputy Director of Public Works.

During the winter season, employees requesting time off will be asked to indicate if they are available in the event of an emergency. If a large-scale snow event occurs while an employee is scheduled to be off, that employee may be asked to come in to work to ensure crews are not being overextended. Time off for employees who are not able to make themselves available in the event of an emergency will be approved in the order that they are received, and only if the respective Superintendent can ensure minimum staffing levels can be maintained.

VII. RESOURCE ALLOCATION AND DEPLOYMENT

Salting Events

Salting events are defined as any winter precipitation event (sleet, freezing rain, ice, etc.) with total snow accumulation under two inches. The Village Code defines winter precipitation events under section 14-328.

These events are handled with chemical applications per Village's prescribed treatment schedule and/or mechanical equipment such as underbody plows (large dump trucks) or powered rotary brooms (sidewalk machines).

Street Division employees are divided in half and assigned to Salt Teams (and salt route assignments) ahead of each winter season. Each team (A & B) is comprised of seven employees, including, one supervisor and six (6) equipment operators (covering salt routes 1-5 and the business commuter sidewalk route). The two teams (A & B) rotate weeks serving on-call for snow and ice response (November-April). Teams rotate with each other at 12-hour intervals (maximum duration), until snow and ice operations conclude.

Employees are assigned to individual salt routes for the entirety of each winter season to allow for repetition and promote route retention, efficiency, and productivity.

The priority routes for salting operations include the following:

- Salt Route 1
- Salt Route 2
- Salt Route 3
- Salt Route 4
- Salt Route 5
- Central Business Districts (Denoted within Salt Routes 1-5)
- Business Commuter Route (Sidewalks)
- School Crossing Guard Locations (As-Needed Basis)
- Side Street Intersections (As-Needed Basis)

The team rosters, route assignments and on-call schedule for salting are attached in Appendix B.

The maps for the salt routes (1-5) and business commuter route (sidewalks) are attached in Appendix B.

The benchmarks (target goals) for single pass completion are attached in Appendix B.

Plowing Events

Plowing events are defined as those having total snow accumulation at two inches and above. The Village Code defines snow plowing events and no-parking restrictions under section 14-327.

For plowing events, the Village makes full use of eligible full time equivalent (FTE) employees and deploys its fleet of mechanical plowing equipment (front and underbody plows) and chemical applications per Village's prescribed treatment schedule.

There are a total of 35 (FTE) employees available in the Engineering and Public Works Department to support snow and ice operations (severe winter plowing events), includes the following breakdown:

Division	No. of Employees (FTE)
Street	15
Water/Sewer	12
Fleet Maintenance	6
Facilities Maintenance	2
Subtotal	35

Ahead of each winter season, at minimum, the salt team rosters (A&B) are expanded to include a total of 13 (FTE) employees. Additional employees are assigned to teams on an emergent and as-needed basis.

Each expanded team includes one supervisor and 12 equipment operators (five paired teams to address Salt Routes 1-5 and Zones 1-5 and one paired team to address business commuter and school walking routes). Alike to the salting schedule, the expanded teams (A & B) rotate weeks

serving on-call for snow plowing operations (November-April). Teams rotate with each other at 12-hour intervals (maximum duration), until plowing operations conclude.

Employees are assigned to individual Salt Routes/ Zones for the entirety of each winter season to allow for repetition and to promote route familiarity, retention, efficiency, and productivity. Denoted in the table below is a listing of priority routes (in-house snow plowing) based on snow accumulation.

Plowing Activity (In-House Crews)	**Snow Accumulation 2.00-3.99 inches**	**Snow Accumulation 4.00+ inches**
Arterial Streets (Routes 1-5)	Yes	Yes
Side streets (Zones 1-5)	Yes	Yes
Business District Offsets	Yes	Yes
Business Commuter Route (sidewalks)	Yes	Yes
School Walking Route (sidewalks)	Yes	Yes
Residential (sidewalks)	No	Yes
Bus Shelters	No	Yes

Team rosters, route assignments, and on-call schedule for plowing are attached in Appendix B.

The maps for the salt routes (1-5), side streets (zones 1-5), business district offsets, business commuter route (sidewalks), school walking route (sidewalks), residential (sidewalks), and bus shelters are attached in Appendix B.

The benchmarks (target goals) for single pass completion are attached in Appendix B.

VIII. CONTRACTUAL ASSISTANCE

The Village hires a private contractor to assist with snow and ice control (plowing operations only, no chemical applications). In-house crews are responsible for follow-up chemical applications to areas plowed by the contractor. Financial compensation is based on a single pass basis with tiered unit pricing based on snow accumulation (2.00-3.99 inches, 4.00-7.99 inches, and 8.00 inches+).

The contractor is responsible for providing the following services (see table below):

Plowing Activity (Contractual)	**Snow Accumulation 2.00 to 3.99 inches**	**Snow Accumulation 4.00 to 7.99 inches**	**Snow Accumulation 8.00 inches +**
Cul-de-sacs (120 ea.)	Yes	Yes	Yes
Alleys (18 miles)	Yes	Yes	Yes
Parking Lots (19 ea.)	Yes	Yes	Yes
Carriage Sidewalks	Yes	Yes	Yes

The maps for the cul-de-sacs (carriage walks), alleys, and parking lots are attached in Appendix B.

The benchmarks (target goals) for single pass completion are attached in Appendix B.

IX. VEHICLE MAINTENANCE AND INSPECTIONS

A. Pre-Season Maintenance: Vehicle Maintenance personnel perform detailed preventative maintenance on each piece of snow equipment in advance of each winter season. During

all plowing events at least two Vehicle Maintenance Mechanics will be on-hand to address equipment maintenance and operational concerns, even during off-hour plowing events. Safety Lane Inspections are conducted every six months, as required by the Department of Transportation.

B. Pre- and Post-Trip Inspections: Equipment operators are responsible for performing pre- and post-trip inspections, in accordance with the Fleet Safety Program in the Village-wide Loss Prevention Program Manual. During a salting or plowing event, operators should make special note of the following. If any issues are observed, operators must immediately report to Vehicle Maintenance.

1. Ensure two-way radio is operational
2. Check that window defroster is operational
3. Ensure fuel tank is full
4. Check DEF fluid level, if applicable
5. Check vehicle ballast for proper weight distribution
6. Check snowplow blade assembly (ensure bolts are tight and mounting brackets secure, check for cracked welds, blade markers present, etc.)
7. Check hydraulics for leaks and controls for proper operation
8. Check salt spreader for any loose parts and ensure throttle controls are operating properly
9. Make sure all feed gates are adjusted to the correct position before leaving the yard (there are bolts installed on the slides of the gates to make sure that the adjustment is correct).
10. Check for missing parts.

C. Periodic Mid-Route Inspections: Operators should ensure they have adequate winter gear to allow for periodic equipment checks in the field, during which they should make special note of the following. If any issues are observed, operators must immediately report to Vehicle Maintenance.

1. Ensure headlights, brake lights and strobe lights are free of ice and snow
2. Ensure mirrors are free of ice and snow
3. Ensure backup camera (if equipped) is free of ice and snow
4. Periodically check plow blade to ensure that chains remain attached
5. Check salt spreader to ensure it is not obstructed
6. Check level of liquid deicer
7. Check for missing parts

D. Route and/or Shift Completion Procedures: Upon returning to the Village Yard after finishing a shift and/or route, operators shall follow the procedures in the *Salt Spreading Operation & Post-Operating Procedures* JSA, ensure vehicle is fueled up for the next user, ensure Vehicle Maintenance Division is aware of any issues found during post-trip inspection. Open feed gates when emptying trucks but be sure to re-adjust to the correct level before parking in the garage (there are bolts installed on the slides of the gates to make sure that the adjustment is correct).

X. VILLAGE FLEET AND EQUIPMENT

Vehicle and Equipment List is attached in Appendix B.

XI. CALIBRATION OF EQUIPMENT

Fleet maintenance staff are responsible for equipment calibration of snow and ice equipment. This occurs prior to November 30th of each year and ahead of each winter season. Calibration is necessary to verify accuracy of chemical application desired outputs. The Village's existing equipment utilizes plow and salting/liquid controls manufactured by Force America and DICKEY-john. The plow controls are cable over hydraulic whereas the salting/liquid controls are electric over hydraulic. Calibration applies to any vehicle equipped with salt spreaders and liquid spray equipment (e.g., small dump trucks, large dump trucks, and sidewalk machines). Method of calibration includes dispensing and weighing the salt and liquid to verify the proper weight and volume is applied to roadway surfaces.

Staff calibrates equipment to ensure accuracy for the following prescribed application outputs:

- Salt Spreaders: 300 lbs. per lane mile (range of 200-600 lbs. per lane mile),
- Pre-wetting: 20 gallons per ton,
- Anti-icing: 40 gallons per lane mile.

Calibration worksheet is attached in Appendix B

XII. AUTOMATIC VEHICLE LOCATION (AVL) - GPS FLEET TRACKING

The Village's entire fleet is equipped with Automatic Vehicle Location (AVL) devices and GPS fleet tracking software. The software platform offers cloud-based geospatial locating services and includes reporting features. Supervisory staff utilize the software platform and real time data to monitor snow and ice activity throughout each snow event (truck location, truck speeds, cycle response times, route coverage, work status updates) with focus on process improvement and efficiency improvements. The real-time data also provides useful feedback for training new employees on route optimization.

XIII. SALTING POLICIES & ROUTE MAPS

The policy of the Public Works Department is to salt main arterial streets, streets adjacent to schools and those streets with curves or steep grades. These streets are referred to as the Salt Routes 1, 2, 3, 4, and 5. Business/Commuter Sidewalk Routes are salted concurrently with arterial streets.

A. Anti-Icing: This is a proactive approach where a strategic amount of liquid salt brine or liquid deicer blend product (40 gallons per lane mile) gets applied to roadway surfaces ahead of storm to prevent snow and ice from bonding to the pavement. This is the Village's first in a series of strategies for snow and ice control for each winter season. Salt Routes 1-5 (arterial streets) crossover and serve as the priority routes for anti-icing operations and include sensitive areas, such as, steep inclines and curved roadways, 24-hour facilities (Police Headquarters and Fire Stations) and bridge decks.

B. Method: Salting is a proactive approach used to minimize the bonding of ice to pavement, and to halt the further buildup of ice and snow on roadways and sidewalks. Salting of the arterial streets and intersections will occur if conditions are favorable for snow build-up or icing which could lead to hazardous vehicular travel. The amount of salt dispersed follows recommendations prescribed under the Chemical Treatment Schedule and varies between 200-600 lbs. per lane mile. Salting operations will continue until the icing

conditions are brought under control (wet pavement is maintained) or until salting is no longer effective and plowing commences.

C. **Pre-wetting:** Pre-wetting salt (applying a liquid deicer) greatly enhances the ice melting performance of rock salt at lower temperatures, helps the salt to stick better where applied and helps reduce the corrosiveness of rock salt. Common rock salt starts to lose melting efficiency around 20° while treated salt remains active in temperatures as low as 0°. When dry salt material is treated with liquid deicer blends, salt remains active in temperatures below 0°. Liquid salt brine (100%) is used in temperatures at 20° or above. The Supervisors will notify crews when changing from 100% liquid salt brine to liquid deicer blended product. Pre-wetting salt will be used every time salting is occurring unless otherwise decided by the supervisor. Salt is pre-treated at a rate of 20 gallons per ton of salt dispersed (liquid applied at truck's salt spinner).

D. **Side Streets:** Under normal conditions, only side street intersections will be salted. Salt will be applied to the 100-ft length of roadway approaching and exiting each intersection. If low sub-freezing temperatures are expected after a storm event, salt may be applied to the entire street to prevent wide spreading ice formation, if needed. The Supervisor on duty, the Street Superintendent, or the Director of Engineering & Public Works will make this decision if it is deemed necessary to provide safe travel.

E. **Business/Commuter Sidewalk Routes:** These routes shall be the first sidewalks salted and plowed. Whenever possible, the commuter sidewalk routes shall be completed by 6:00 AM and the business sidewalk routes completed by 8:00 AM. These routes shall be done at the same time as the arterial streets.

F. **Optional Three-Truck Salt Route:** Usually, four large salt trucks will be used to salt arterial streets (Salt Routes 1-4) and one small dump truck (Salt Route 5). If minimal precipitation occurs, the supervisor may choose to utilize three trucks instead. This option should only be used at night or on weekends when adequate time is available to complete the operation before peak traffic periods.

G. **Emergency Salt Routes:** Emergency salting routes have been established to include only the major arterial streets that would be salted to maintain basic traffic flow. The plan to switch to these routes will occur if the Village runs low on salt or is unable to procure additional salt. The decision to implement this switch will be made by the Director of Engineering & Public Works and the Street Superintendent.

Salt Route Maps: The following maps are included in Appendix B. Prior to each winter season, Street Division Supervisory staff will be responsible for ensuring each vehicle has the necessary maps. During a salting event, operators should check their vehicle to ensure they have the appropriate maps before leaving the Public Works Yard. Supervisors can re-print maps on an as-needed basis.

A. General Zone Map (1-5)

B. Master Arterial Salt Route Map

C. Salt Route 1

D. Salt Route 2

E. Salt Route 3

F. Salt Route 4

G. Salt Route 5

H. Business/Commuter Sidewalk Route

I. Three-Truck Salt Route Map

J. Emergency Salt Route Map

XIV. CHEMICAL TREATMENT SCHEDULE

The Village has developed a chemical treatment schedule to serve as the guiding reference document for prescribing chemical treatments along roadways for snow and ice control. The schedule provides recommendations for the initial (maintenance actions) and subsequent applications (3-hour intervals).

The recommendations consider various inputs such as precipitation type and intensity, initial pavement surface conditions, and pavement temperature range/trends. Supervisory staff also closely monitors the winter weather forecast and pavement temperatures (hourly, daily and extended) throughout each storm event and adjusts accordingly. Numerous vehicles are equipped with sensors to assist equipment operators with monitoring pavement temperatures. Staff also utilizes handheld devices for monitoring pavement temperatures.

All dry material applications (lbs. per lane mile) are subjected to pre-wetting applications at the spinner (20 gallons per ton). The application rate for dry material fluctuates between 200-600 lbs. per lane mile based on assessment of the inputs. For temperatures 20 degrees (Fahrenheit) and above, operators utilize 100% liquid salt brine (22-23% concentration) for pre-wetting applications. For temperatures below 20 degrees (Fahrenheit), operators utilize a custom blend of 70-80% liquid salt brine (22-23% concentration) and 20-30% liquid deicer product for pre-wetting applications.

The Chemical Treatment Schedule is attached in Appendix B.

XV. CHEMICALS

Over the course of a winter season, staff utilizes three different methods to apply (dry and/or liquid) chemicals onto roadways for snow and ice control:

- Deicing (apply chemical directly to snow/ice covered road surface, 200-600 lbs. per lane mile 100% dry material (pre-wetted at 20 gallons per ton) or 40-80 gallons per lane mile 100% liquid,
- Pre-wetting (apply liquid to dry material before hits road surface, at spinner, 20 gallons per ton).
- Anti-icing (apply chemical directly to dry road surface in advance of precipitation, 40 gallons per lane mile).

Anti-icing and pre-wetting chemical applications are best management practices, which effectively reduce overall chloride usage per Clean Water Act standards, enforced through the Illinois Pollution

Control Board, to protect the Chicago Area Waterway System (CAWS), specifically the Lake Michigan and Calumet/Chicago River Watersheds.

Bulk Rock Salt

The primary (dry) material used for snow and ice control is bulk rock salt which is sodium chloride (NaCl) and conforms with the American Association of State Highway Transportation Officials (AASHTO) Specification M143, sodium chloride, type 1, grade 1. This material is applied directly onto roadways with V-box salt spreaders at rates of 200-600 lbs. per lane mile for melting snow and ice (or deicing). This material is purchased through joint purchase agreements through the State of Illinois (CMS) and Lake County, Illinois -Division of Transportation.

Liquid Salt Brine

Salt brine is a 22-23% liquid solution comprised of sodium chloride (NaCl) and water (H2O), produced, and stored onsite at the Public Works Facility. Liquid salt brine is the preferred liquid product for anti-icing and pre-wetting applications at temperatures of 20 degrees Fahrenheit and warmer due to its effectiveness and low cost of production.

For anti-icing operations, crews apply liquid salt brine directly to roadways (40 gals per lane mile) ahead of a storm as a proactive measure to reduce the bonding of snow and ice to the pavement. This operation is referred to as anti-icing. Liquid salt brine is also utilized for pre-wetting applications where dry material is sprayed at the spinner (20 gals per ton) to reduce scatter of dry material onto roadways (stays on target and reduces waste) and to improve melting performance (and quicker activation) of dry material (rock salt).

Liquid Salt Brine Machine

The Village's automated liquid salt brine machine (stainless steel construction) and auto-truck fill system were installed and put into service starting with the 19-20 winter season. All pumps, electrical, plumbing, and mechanicals were assembled/installed by Fleet Maintenance staff. The unit is currently housed in a pre-manufactured small utility building to provide for ease of maintenance service/repair and promote long-term use. This equipment allows for automated production of 100% liquid salt brine (22-23% concentration).

Production capacity is 12,000 gallons per eight-hour day, and it takes 1-ton of bulk rock salt (2,000 lbs.) to produce 859 gallons of liquid salt brine solution at 22-23% concentration. The auto-truck fill system (ATFS) allows for programming (presets for fill outputs), reporting features, custom blending of up to three products, and remote access use. The ATFS refills trucks (saddle tanks) at a rate of 100 gallons per minute (GPM). Liquid salt brine production coincides on days of favorable weather conditions, not to interfere with snow and ice control operations.

Equipment operators receive annual refresher training for operating the ATFS and have access to an instruction manual (and cheat sheet) for reference.

Step-by-step instructions (or cheat sheet) for auto-truck fill is attached in Appendix B.

Liquid Deicer

Since bulk rock salt and liquid salt brine losses its effectiveness at lower temperatures (less than 20 degrees Fahrenheit), other chemicals are necessary to achieve desired melting performance for snow and ice control. Liquid deicers are typically comprised of other chlorides (calcium, magnesium) having lower freeze points and a mixture of organics for added environmental benefit and to inhibit corrosive properties of the solution. Liquid deicers assist with pre-wetting, deicing and anti-icing applications and can also be blended with liquid salt brine for custom solutions.

As part of the evaluation process in selecting liquid deicers, staff closely reviews the product's compatibility in mixing with 100% liquid salt brine for custom blending of deicer solutions. Identifying products which can safely blend without creating precipitates which clog and obstruct filters, screens and pump assemblies mounted on trucks, salt brine machine (and truck load system) and auxiliary storage tanks. Preference is also given to those products which uphold performance at lower temperatures, exhibit anti-corrosiveness properties, and provide further environmental benefits.

XVI. ONSITE CHEMICAL STORAGE

Dry Chemical Storage

The Village maintains two storage facilities for bulk rock salt at the Public Works facility. The permanent concrete/wooden structure (salt dome) was constructed in 1997, holds approximately 550 tons and includes a conveyor system for material loading during off-season. This facility is scheduled for rehabilitation in 2024 as part of the Village's 10-year Capital Improvement Program. The second facility is a temporary structure with fabric enclosure/concrete block construction (built in 2017) and holds an additional 400 tons, bringing total onsite storage capacity to 950 tons. On-hand capacity represents approximately 50% total consumption for an average winter season (1,800 tons).

Each facility resides on top of paved surfaces at the Public Works facility with roof structure/enclosures providing overhead protection from inclement weather which helps to mitigate stormwater runoff. Salt orders are placed throughout the winter season to replenish inventory. As a good housekeeping practice, salt orders are processed and loaded into storage facilities on same day as product delivery. On-hand inventory never exceeds onsite storage capacity.

Liquid Chemical Storage

The Village maintains five (5) storage tanks (poly construction) at the Public Works facility to support salt brine production, custom blending, anti-icing, pre-wetting, and deicing operations (see inventory below).

- 10,500 gallons capacity (liquid salt brine)
- 10,500 gallons capacity (liquid salt brine)
- 10,500 gallons capacity (custom blend product)
- 8,000 gallons capacity (liquid deicer -hot product)
- 2,500 gallons capacity (waste product from truck unload)

All storage tanks are plumbed together and function as part of the auto-truck fill system. Prior to the start of the snow season, all components (valves, couplings, and unions) are inspected for leaks

and repaired. Staff also inspects and services the filter screens for each storage tank. Operators receive refresher training on equipment operation for loading/off-loading liquids on trucks.

Step-by-step instructions (or cheat sheet) for auto-truck fill system is attached in Appendix B.

XVII. ANTI-ICING OPERATIONS

This operation entails application of liquid deicer product (or chemical freezing-point depressant) directly onto roadways ahead of winter precipitation events with the primary purpose of preventing bonding of snow and ice to pavement. Anti-icing is a proven cost-effective strategy as preventing snow and ice from bonding to pavement requires less chemical (chlorides) upfront and for subsequent treatments as compared to applying chemical to melt or break away snow and ice after it has already bonded to pavement.

For temperatures above 20 degrees Fahrenheit, in-house crews utilize liquid salt brine solution (22-23% concentration), whereas for temperatures below 20 degrees Fahrenheit, in-house crews utilize a custom blend solution containing 70-80% liquid salt brine and 20-30% liquid deicer product (such as a calcium chloride proprietary product exhibiting environmental benefits and anti-corrosiveness properties). The Village's equipment applies/sprays liquid deicer solution at 40 gallons per lane mile for anti-icing operations.

Liquid deicer solutions are sprayed directly onto roadway surfaces utilizing three pieces of equipment:

- Hook-lift anti-icing unit for use on a large dump truck (38,000 GVWR, T-18), 1,000 gallons capacity
- Anti-icing spray unit for use on a pick-up truck (three-quarter ton), 450 gallons capacity
- Anti-icing unit for use on a pick-up truck (three-quarter ton), 450 gallons capacity

Anti-icing Priority Routes

Higher traffic volume (arterial) streets, central business district areas, sharp inclines/declines, curves, and bridge deck surfaces are the Village's priority targets for anti-icing operations ahead of most snow and ice control events. However, at the discretion of the Director, the list of priority targets can expand to include side street intersections, alleys, and commuter parking lots for major icing events. The following are the Village's priority targets for anti-icing operations:

- Salt Route 1
- Salt Route 2
- Salt Route 3
- Salt Route 4
- Salt Route 5

Staff also utilizes a decision flow chart prior to deploying anti-icing operations. The flow chart draws on various weather forecast inputs, such as, pavement temperatures, precipitation type/intensity, wind, dew points, relative humidity, and pavement surface conditions (dry or wet). The flow chart

is premised upon a close review and assessment of the inputs which upholds and ensures efficacy of the chemical application.

The following attachments are denoted in Appendix B.

- Anti-icing Decision Flow Chart
- Anti-icing Truck Log Sheets

XVIII. PLOWING PRIORITIES, PROCEDURES & MAPS

Plowing operations will commence when 2" of snow has accumulated, or sooner if deemed necessary by supervisory staff. Salting operations will continue with the plowing until conditions deem it unnecessary or ineffective.

A. Arterials: Opening and maintaining the condition of arterial streets is the main priority in all plowing operations. Arterial streets are normally plowed and salted with either one truck or two trucks running in tandem. Occasionally, three trucks will be used.

B. Business/Commuter Sidewalk Routes: These routes shall be the first sidewalks salted and plowed. Whenever possible, the commuter sidewalk routes shall be completed by 6:00 AM and the business sidewalk routes completed by 8:00 AM. These routes shall be done at the same time as the arterial streets.

C. School Sidewalk Routes: When needed, school crossing guard locations and crosswalks shall be salted every weekday that school is in session by 7:30 AM whenever possible. All sidewalks on these routes shall be plowed after 2" accumulation.

D. Side Streets: Side streets are plowed after 2" of accumulation. Side streets are plowed and salted with either one truck or two trucks running in tandem. Normally, only side street intersections shall be salted, but the entire street can be salted if conditions dictate.

E. Cul-de-sacs: Cul-de-sacs are plowed after 2" of accumulation by the Village's contractor. They can also be plowed for a pass down the center or plowed at less accumulation; this decision is made by the Street Superintendent or supervisor on duty. The Village is divided into three areas: Area 1 west of Romona, Area 2 between Romona and Hunter, and Area 3 East of Hunter. This information along with other specific information will be included on a list for each cul-de-sac area. Village trucks will salt all cul-de-sacs if deemed necessary.

F. Alleys: Alleys are plowed after 2" accumulation of snow by the Village's contractor, coinciding with plowing of side-streets and cul-de-sacs. Maps are made available to the Village's contractor.

G. Parking Lots: The Village's parking lots, includes METRA and CTA, are plowed by the Village's contractor. The Street Superintendent or supervisor on duty notifies the contractor that the lots are to be plowed when there is an accumulation of 2" of snow. During less accumulation the Village will plow and salt the lots after the above routes have been completed or otherwise noted by the supervisor on duty. Village trucks salt all parking lots after they have been plowed.

H. Residential Sidewalks/Carriage Walks: Walks will be plowed after 4" accumulation and all walks within the Village will be plowed within 48-72 hours after the storm has ended. Whenever possible, this operation will take place during evening/nighttime hours when there is less use of the walks by pedestrians. Separate large-scale maps will be available in each sidewalk clearing vehicle detailing sidewalks in each zone. Through the 2022/2023 snow season, the Village's contractor will plow the carriage walks within the cul-de-sacs when requested by the Street Superintendent or supervisor on duty.

I. Bus Shelters: Bus shelters are the lowest priority and shall be cleared and salted as needed after a 4" accumulation.

J. Clearing Commercial Districts: Commercial districts shall be cleared of snow when the accumulation of snow creates a hazard for pedestrians using the district. The operation entails removing snow from the "transition zone" adjacent to the curb by pushing this snow into the parking area. The snow is then cleared from the parking areas with front end-loaders loading the snow into dump trucks that haul the snow to a predetermined location. When plowing this area please refer to the maps detailing where snow is allowed to be pushed.

Street and Sidewalk Plowing Maps: The following maps are included on the next several pages. Prior to each winter season, Street Division Supervisory Staff will be responsible for ensuring each vehicle has the necessary maps. During a plowing event, operators should check their vehicle to ensure they have the appropriate maps before leaving the Public Works Yard. Supervisors can re-print maps as needed.

A. Village Streets with 27-feet or Less Pavement Width (Restricted Parking on One Side of Street During Winter Precipitation Events)

B. Side Street Zones (1-5)

C. Alleys (18 miles)

D. Cul-de-sacs (120 ea.)

1. Area 1: west of Romona
2. Area 2: between Romona and Hunter
3. Area 3: East of Hunter

E. Sidewalks, Carriage Walks, Service Walks, Hidden Walks

F. Business/Commuter Sidewalk Routes

G. Downtown Business District Snow Clearing Map

H. School Sidewalk Routes

I. Parking Lots (19 ea.)

J. Bus Shelters

K. Private Drives (do not plow or salt these)

XIX. DATA COLLECTION AND REPORTING

The Village maintains detailed records for each snow event. This includes:

- Observed temperatures (air and pavement)
- Precipitation type and intensity
- Snow accumulation
- Event start and end
- Employee assignments (vehicle/equipment and route)
- Accrued employee labor and equipment hours
- Services provided and routes completed (in-house crews and contractual assistance)
- Prescribed treatment schedule (prescribed/enacted)
- Chemical material usage (dry and liquid materials)

Staff utilizes a master spreadsheet to capture all historical data for snow and ice response. Equipment operators are responsible for filling out log sheets for each snow event which denotes vehicle/equipment assignments and employee labor hours (regular, overtime and double time) whereas supervisory staff downloads chemical usage data from vehicles/equipment (Force America, DICKEY-john) for each snow event.

Supervisory staff also verifies and denotes observed weather conditions, snow accumulation, event start/stop, prescribed treatment schedule (enacted) and service levels completed. At conclusion of winter season, supervisory staff produces a year-end summary report of snow and ice response activities (and expenses) for the Village Manager's office.

Snow Season Master Spreadsheet is attached in Appendix B.

Detail Snow Event Summary sheet is attached in Appendix B.

Employee Event Log sheet is attached in Appendix B.

XX. ROUTE NOTES

In this section, known trouble spots and areas that require special attention are identified, as well as specific techniques and equipment that should be used for these areas.

A. Streets

1. **Weight Limits:** No large dump trucks or front-end loaders are to be driven over the Sanitary Canal bridges on Maple and Linden Avenues.

2. **Manholes/Inlets on Brick Streets:** Some structures are raised on brick streets due to settling. Proceed slowly on brick streets to minimize damage to plow blades.

3. **Handicap Parking Spaces:** when clearing on-street parking spaces, always plow snow AWAY from handicap parking stalls.

4. **Speed Humps**



   a. Five speed humps on Manor Drive, drive over them slowly

   b. Three speed humps on Thornwood between Hunter and Illinois Road

   c. Raised Crosswalk on Hunter between Thornwood and Greenwood

   d. Three speed humps on Kenilworth between Hunter and Locust

   e. Three speed humps on Locust Road (two in the 1100 block and one in the 900 block), marked with signs

   f. Two speed humps on Forest Avenue, between Green Bay and 15th Street

   g. Speed hump on Elmwood Avenue, between Green Bay and 15th Street

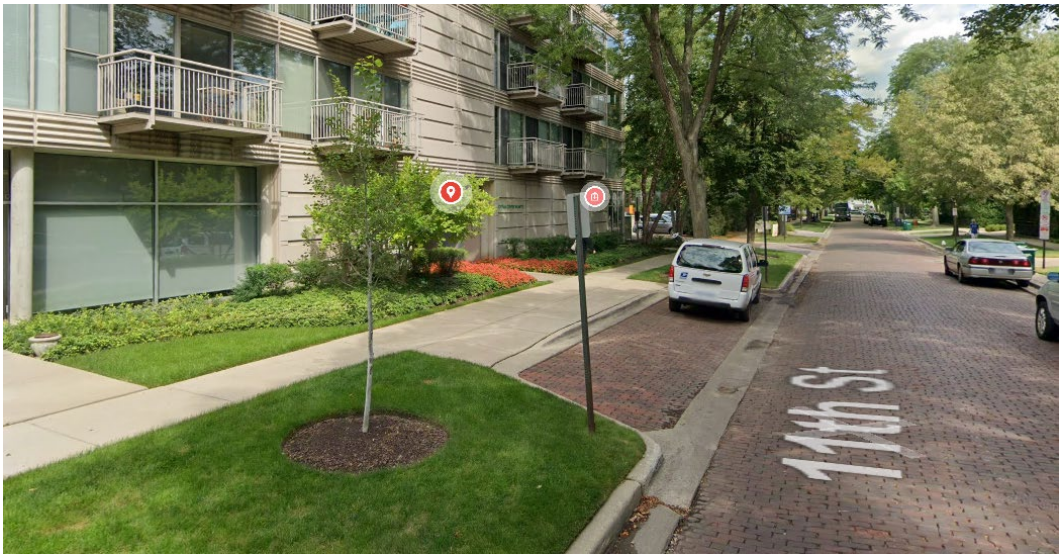
5. **Lake Avenue:** Cook County is responsible for all maintenance of Lake Ave west of Ridge Rd (established in 2006).
6. **Pedestrian Crossing Light:** The crossing guard location at 15th & Lake has been moved to the east, located between 15th and Park Avenue.



7. **Offset in front of Terry Animal Hospital (1419 Lake Ave):**



8. **Offset along Optima Building (11th Street):** Plow offset along west side of 11th, north of Central Avenue; borders Optima building side. This is on Salt Route 3.



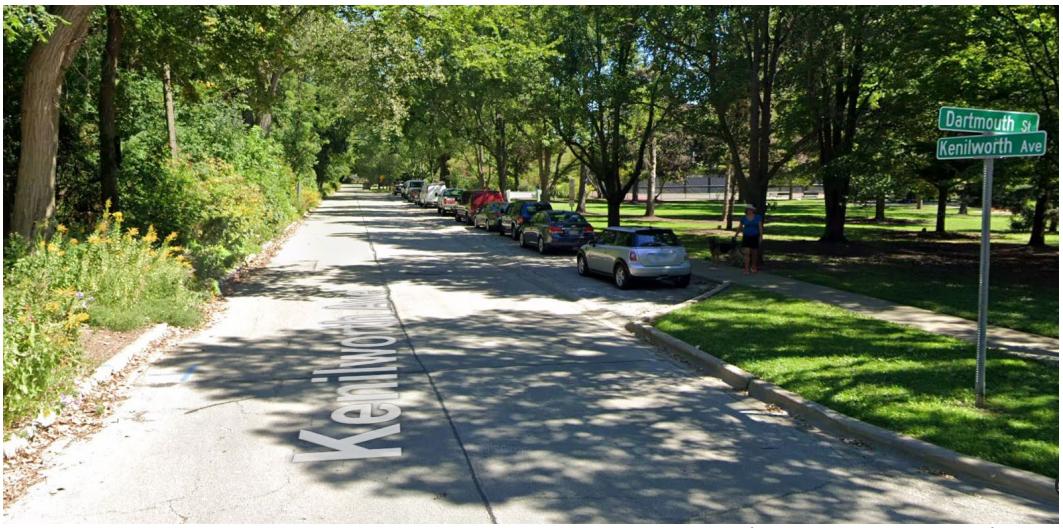
9. **School Zones:** pay close attention to all One-Way streets near school zones.





10. **Offsets near Harper School:** Adjacent to Thornwood Park on Dartmouth and on Kenilworth. This is on Salt Route 2.





11. **Offset near Central School:** Adjacent to the school on 9th Street and on 10th Street. This is on Salt Route 4.







12. Offset on Locust south of Lake



13. Bump-outs on Locust between Lake & Wilmette



14. Bump-outs at Lavergne & Washington





B. Sidewalks

1. **School Routes:** ONLY salt the areas where the crossing guards stand and all crosswalks (see map).

2. **Green Bay Trail Bike Path (Business/Commuter Sidewalk Route):** The bike path east of the railroad tracks between Forest Ave and Wilmette Ave should only be plowed with sidewalk plowing equipment. The Park District maintains the path north of Forest Ave.



3. **15th Street & Highland sidewalk behind McKenzie School:**



4. **600 Block of Ridge Rd (East Side): Do not** salt the sidewalk south of Police Station towards Wilmette, only salt north of the Police Station up to Lake Avenue.

5. **1200 Block of Ridge Rd:** after 4"+ snowfall, plow sidewalk up to the corner, just past 1136 Ridge Rd (north Village limits).



6. **Avondale / Hollywood Ct: Do not plow carriage walks** along Avondale and Hollywood Ct as a petition was signed by the residents (2008) requesting discontinued service.

7. **711 Leamington:** when plowing carriage walks in front of 711 Leamington, avoid removing snow from driveway apron.



8. **904 Oakwood:** when plowing sidewalks at 904 Oakwood, avoid plowing over turf areas when making the turn.



9. **Multipurpose Path under Sheridan Road bridge:** This will be considered a residential sidewalk; crosses over Gilson Park (east), Wilmette Harbor and Water Reclamation District Property (west).



C. Village Center

1. **Village Center: Do not** plow snow from the street onto the curb (see Village Center map for snow piling locations).

2. **Crosswalk near The Trendy Taco (1183 Wilmette Ave):** DO NOT pile snow onto the crosswalk near The Trendy Taco restaurant.







3. **Crosswalk near the Baker Building (1150 Wilmette Ave):** DO NOT pile snow onto the sidewalk next to the Baker Building.



D. Parking Lots

1. **Handicap Parking Spaces:** Always plow snow AWAY from handicap parking stalls.

2. **Burmeister and Village Yard Weight Limits:** No large dump trucks or front-end loaders are to be driven into the Village Yard employee parking lot or the Burmeister Parking Lot. USE A SMALL TRUCK TO PLOW & SALT. In the Village Yard employee parking lot, plow all snow to the north side.

3. **Police Station Lot:** At the North end of the Police station parking lot (the lot behind the station), there are garbage cans & dumpsters that must be kept clear of snow DO NOT PUSH SNOW in this area. **DO NOT** pile snow onto the sidewalk behind the Police Station, sidewalk located north of ramp (west side of lot).

4. **Police Station Ramp:** Be aware of pipes attached to the south wall; watch for these when backing onto ramp for salting or plowing.

E. Alleys

1. **Dead End Alleys should be backed down and snow pushed out to the street.** Do not plow snow along dead-end alleys into fences, especially between Ashland and Chestnut.

2. **Alley E-10, Zone 1:** DO NOT pile snow onto the sidewalk next to the Baker Building (1150 Wilmette Ave).



XXI. POLICY REVIEW

This Snow & Ice Control Program will be reviewed before each winter season, prior to the annual snow preparation meeting. The Program shall be updated as needed, and updates shall be provided to each employee.

Snow & Ice Control Practical Skill Evaluation **APPENDIX A**

Trainee Name:	Date:
Reference:	***JSA for Certified Power Inc. Snow Systems and operator's manual***
Pass Criteria:	Demonstrate all sections of the task without assistance.
Re-Testing:	Candidate's that do not pass will have the opportunity to re-test later. Re-tests cannot be performed on the same training day.
Task Safety:	***Ensure all PPE is provided and worn. Set up evaluation area in a controlled environment where the equipment can be safely operated without risk of injury or property damage.***

Evaluation Vehicle:

PPE Required:

	TASK STEPS	TEST		RETEST	
		Pass	Fail	Pass	Fail
1.	Put on PPE prior to task start *(Failure to do so is automatic failure of evaluation)*				
2.	Demonstrate PTO operation and PTO basic troubleshooting				
3.	Demonstrate and explain hydraulic functions and hydraulic troubleshooting methods (Hoist/ Plow/ Plow Balance)				
4.	Clear area before hydraulic component actuated *(Failure to do so is automatic failure of evaluation)*				
5.	Demonstrate and explain hydraulic test lines for spinner/auger troubleshooting				
6.	Demonstrate troubleshooting skills for electronic control solenoids for hydraulic system				
7.	Demonstrate 15mph test mode for hydraulic spinner/auger functions				
8.	Explain how to safely change snowplow cutting edge with shop crane				
9.	Demonstrate how to safely identify arrowhead lock functions and possible problems				
10.	Explain spray system functions and common failures				

Evaluator Comments:

Candidate Comments:

Evaluator (Print and Sign) Date

Trainee (Print and Sign) Date

Re-Test Evaluator (Print and Sign) Date

Re-test Trainee (Print and Sign) Date

APPENDIX B

- Team Roster, Route Assignments, On-Call Schedule
- Salt Route 1
- Salt Route 2
- Salt Route 3
- Salt Route 4
- Salt Route 5
- Plow Zones 1-5
- Business Commuter Route (Sidewalks)
- School Walking Route (Sidewalks)
- Residential Route (Sidewalks)
- Salt Conservation Route
- Salt Routes (3 trucks only)
- Emergency Salt Route
- Bus Shelters
- Cul-de-sac side streets
- Alleys
- Parking Lots
- Benchmarks for Service Tiers
- Equipment List
- Chemical Treatment Schedule
- Calibration Worksheet
- Anti-Icing Decision Flow Chart
- Anti-Icing Event Log Sheet
- Master Snow Season Record Log
- Snow Event Detail Log
- Employee Snow Event Log
- Auto-Truck Fill System Cheat Sheet
- Wheel Loader Operation Cheat Sheet

2021-2022

2022-2023 Streets Salt Teams (A & B)

TEAM "A"

Team	Vehicle No.	Employee	Salt -Route Primary	Salt -Route Secondary	Plow-Zone Primary	Plow- Zone Secondary	Alleys	Residential Sidewalks
		Muzik, Tony	SUPT.					
A	P-08	Falcone	Supervisor	ALL				
A	T-03	Ng	SR 1	SW -B/C	5	4		
A	T-09	Peterson	SR 2	SR 1	4	5		
A	T-10	NEW	SR 3	SR 2	3	1,2		
A	T-04	Ricci	SR 4	SR 3	1,2	3		
A								
A	C-25	Loebbaka	Bus/Comm Route	School Route	Bus/Comm & School	SR 5		
A	T-23	Sorby	SR 5	SR 4	1,2	4		

Key
Supervisor
SR 1
SR 2
SR 3
SR 4
Buss/Comm
School
SR 5

TEAM "B"

Team	Vehicle No.	Employee	Salt -Route Primary	Salt -Route Secondary	Plow-Zone Primary	Plow- Zone Secondary	Alleys	Residential Sidewalks
		Muzik, Tony	SUPT					
B	T-47	Rindfleisch	Supervisor	ALL				
B	T-03 / C-25	Gomez	SR 1	SW -B/C	5	4		
B	T-09 / C-25	Fioretto	SR 2	SR 1	4	5		
B	T-10	Toppel	SR 3	SR 2	3	1,2		
B	T-04 / C-25	Travis	SR 4	SR 3	1,2	3		
B								
B	C-25	Beckley	Bus/Comm Route	School Route	Bus/Comm & School	SR 5		
B	T-23	Wasley	SR 5	SR 4	1	2		

Key
Supervisor
SR 1
SR 2
SR 3
SR 4
Buss/Comm
School
SR 5

2022-2023 Tandem Plowing Teams

TEAM "A"

Team	Vehicle No.	Employee	Plow -Route Primary	Plow -Route Secondary	Plow-Zone Primary	Plow- Zone Secondary	Alleys	Residential Sidewalks
A	T-11	Falcone	Shift Supervisor					
A	T-03	* Ng, Alex	SR 1	SR 2	5	4		
A	T-40	Santini, Fred	SR 1	SR 2	5	4		
A	T-09	* Peterson, Adam	SR 2	SR 1	4	5		
A	T-33	Joe Perri	SR 2	SR 1	4	5		
A	T-10	* NEW	SR 3	SR 2	3	4		
A	T-17	O'Malley, Danny	SR 3	SR 2	3	4		
A	T-04	* Ricci, Anthony	SR 4	SR 3	1 & 2	3		
A	T-16	Larson, Ethan	SR 4	SR 3	1 & 2	3		
A	C-25	Loebbaka, Brad	SW -B/C	SW -School	SW -B/C & School			
A	T-23, T-08	Kevin Sorby	SR 5	SR 4	1,2	4		
					Auxilary PW Personnel			
A		NEW		SR 4	1	2		
A		Overeem, Matt						
A		Rodriguez		SR 1	5	4		
A/B	VM - ROTATION	Pater, Brian		PW Lot &Bridge Decks		5		
A/B	VM - ROTATION	Andrew Photopulis		PW Lot &Bridge Decks		5		

GUY

Additional Village Personnel 3

2	Village Hall	*Mike Hartigan-CDL	Knutsen,K.	Key	* Lead Truck	Streets

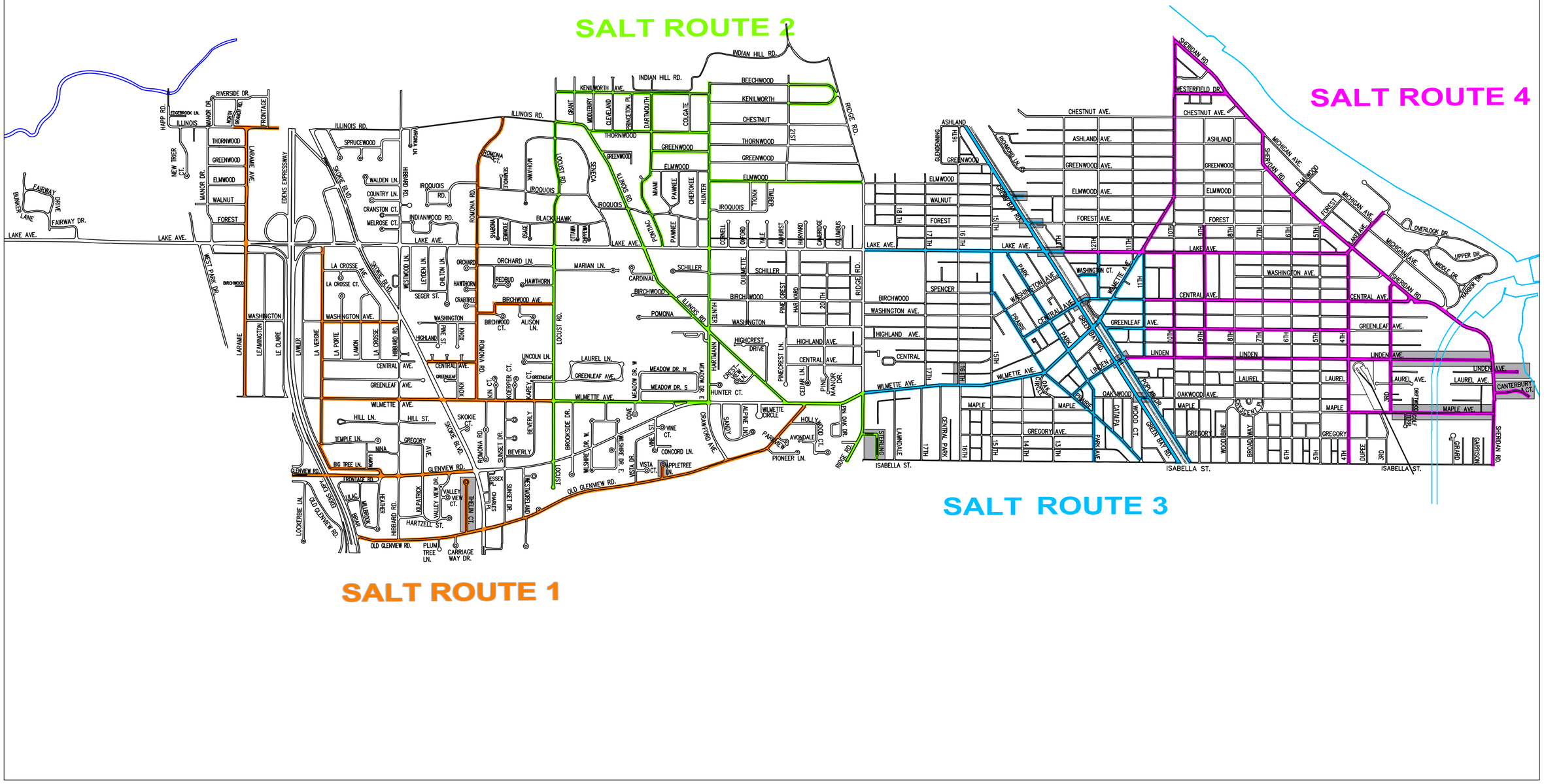
TEAM "B"

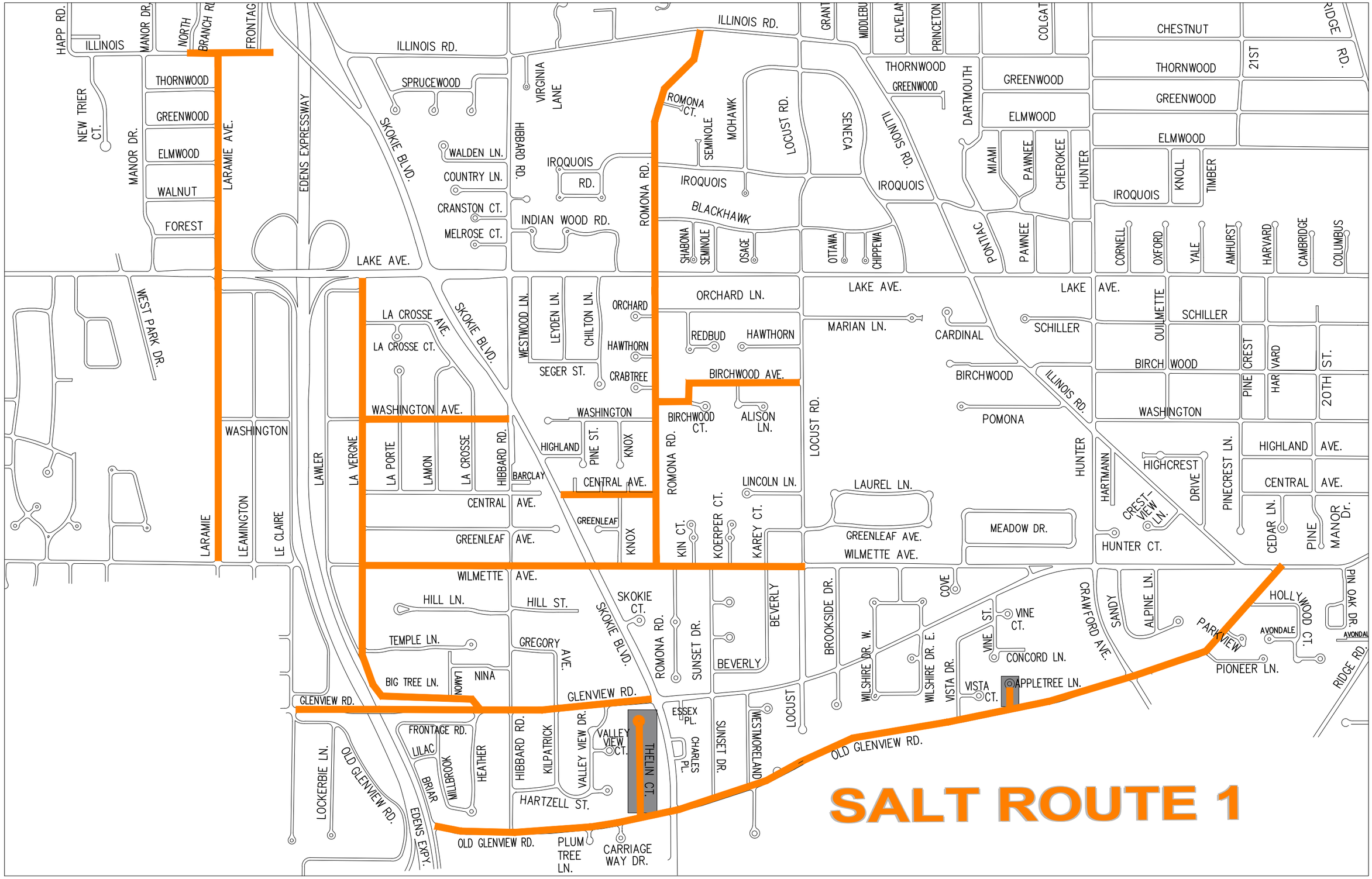
Team	Vehicle No.	Employee	Salt -Route Primary	Salt -Route Secondary	Plow-Zone Primary	Plow- Zone Secondary	Alleys	Residential Sidewalks
B	T-11	Rindfleisch	Shift Supervisor					
B	T-03, C-25	*Steven Gomez	SR 1	SR 2	5	4		
B	T-40	Hoffman, Dave	SR 1	SR 2	5	4		
B	T-09, C-25	*Fioretto, Paul	SR 2	SR 1	4	5		
B	T-33	NEW	SR 2	SR 1	4	5		
B	T-10	*Toppel, Chad	SR 3	SR 2	3	4		
B	T-17	Chad Davis	SR 3	SR 2	3	4		
B	T-04, C-25	*Travis, Tyler	SR 4	SR 3	1 & 2	3		
B	T-16	Smyth, Douglass (- CDL)	SR 4	SR 3	1 & 2	3		
B	C-25, T-23	Beckley,Robert	SW -B/C	SW -School	SW -B/C & School			
B	T-23, T-18	Rob Wasley	SR 5	SR 4	1	2		
B		Deboer, Nick		SR 4	1	2		
B		Novy, Dan						
B		Stockinger		SR 1	5	4		
A/B	VM - ROTATION	Abplanalp, Eric		PW Lot &Bridge Decks		5		
A/B	VM - ROTATION	Norlie, Kameron		PW Lot &Bridge Decks		5		

BRIGITTE

TONY

2	Village Hall	*Mike Hartigan-CDL	Knutsen,K.	Key	* Lead Truck	Streets

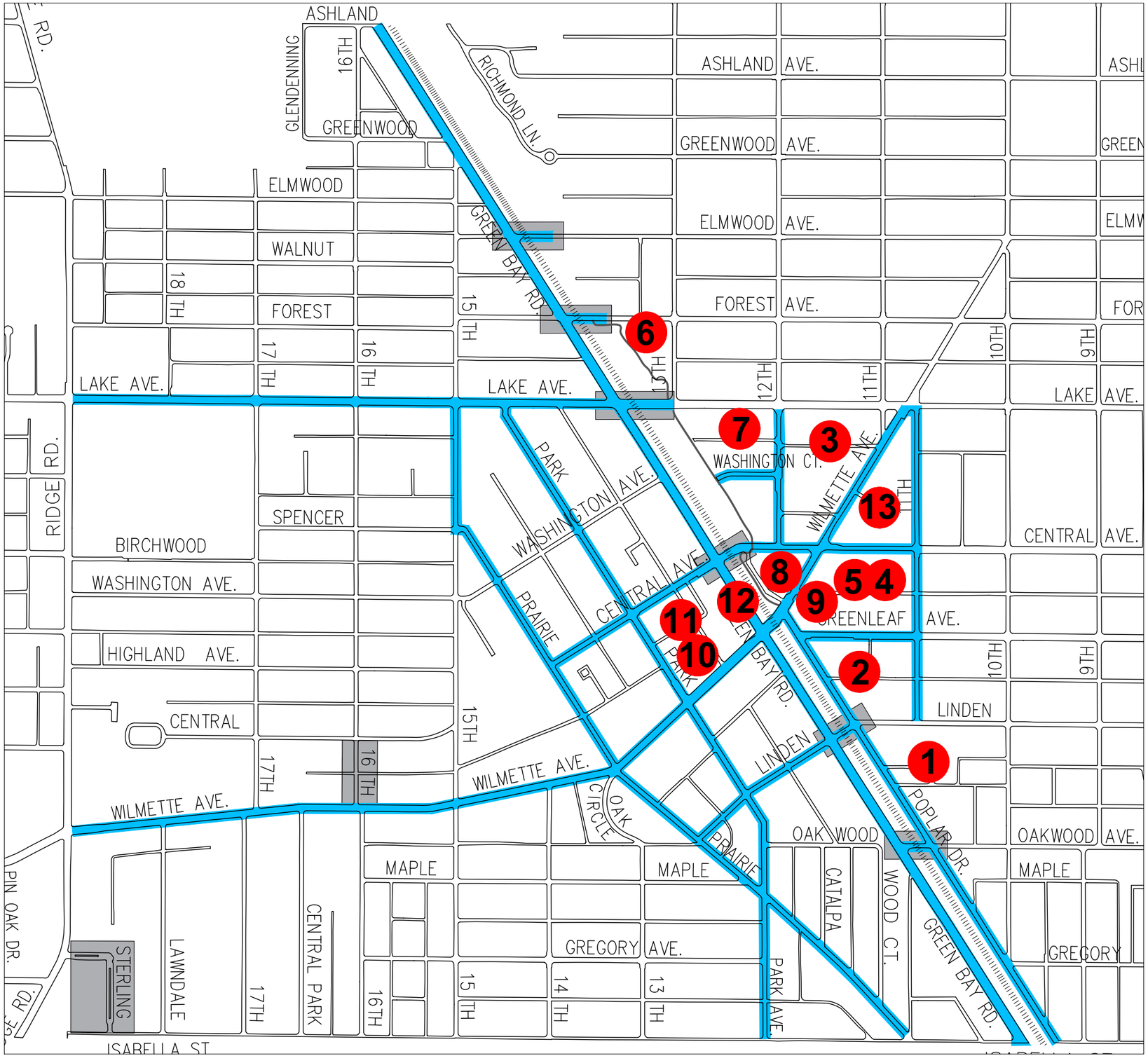

SALT ROUTE 2
SALT ROUTE 4
SALT ROUTE 3
SALT ROUTE 1
LAKE AVE.
ILLINOIS RD.
INDIAN HILL RD.
RIDGE RD.
SHERIDAN RD.
EDENS EXPRESSWAY
SKOKIE BLVD.
HAPP RD.
RIVERSIDE DR.
EDGEBROOK LN.
ILLINOIS
MANOR DR.
NORTH BRANCH RD.
FRONTAGE
LAFAYALLE AVE.
NEW TRIER CT.
THORNWOOD
GREENWOOD
ELMWOOD
WALNUT
FOREST
FAIRWAY DRIVE
BUNKER LANE
FAIRWAY DR.
WEST PARK DR.
BIRCHWOOD
WASHINGTON
LARAMIE
LEAMINGTON
LE CLAIRE
LOWER
LA VERGNE
LA PORTE
LAMON
LA GROSSE
HUBBARD RD.
LA GROSSE AVE.
LA GROSSE CT.
WASHINGTON AVE.
CENTRAL AVE.
GREENLEAF AVE.
WILMETTE AVE.
HILL LN.
HILL ST.
TEMPLE LN.
GREGORY AVE.
NINA
BIG TREE LN.
GLENVIEW RD.
FRONTAGE RD.
OLD GLENVIEW RD.
LOCKERBIE LN.
SKOKIE SLOW
LILAC
BRIAR
WILBROOK
HEATHER
HUBBARD RD.
KILPATRICK
VALLEY VIEW DR.
VALLEY VIEW CT.
HARTZELL ST.
THELEN CT.
ESSEX PL.
CHARTER
SUNSET DR.
WESTBOURNE
PLUM TREE LN.
CARRIAGE WAY DR.
SKOKIE
WESTWOOD LN.
LEYDEN LN.
CHILTON LN.
SEGER ST.
ORCHARD
HAWTHORN
CRABTREE
ORCHARD LN.
REDBUD
BIRCHWOOD AVE.
BIRCHWOOD CT.
ALISON LN.
HIGHLAND
PINE ST.
KNOX
ROMONA RD.
LINCOLN LN.
KIM CT.
KOEPPER CT.
KAREY CT.
GREENLEAF
ROMONA LN.
IROQUOIS
IROQUOIS RD.
CRANSTON CT.
MELROSE CT.
WALDEN LN.
COUNTRY LN.
INDIANWOOD RD.
SKOKIE
VERMONA
SEMINOLE
OSAGE
BLACKHAWK
UTAWA
OGEMA
MOHAWK
SENECA
LOCUST RD.
GRANT
MIDDLEBURY
CLEVELAND
PRINCETON PL.
DARTMOUTH
COLGATE
KENILWORTH AVE.
THORNWOOD
GREENWOOD
ELMWOOD
IROQUOIS
MIAMI
PAWNEE
CHEROKEE
HUNTER
FONTIAC
KNOLL
TUDOR
CORNELL
OXFORD
YALE
AMHERST
HARVARD
CAMBRIDGE
COLUMBUS
MARIAN LN.
CARDINAL
BIRCHWOOD
POMONA
SCHILLER
OUILMETTE
HIGHCREST
HUNTER CT.
HARTMANN
HIGHCREST DRIVE
PINECREST LN.
CEDAR LN.
PINE MANOR DR.
HIGHLAND AVE.
CENTRAL AVE.
LAUREL LN.
GREENLEAF AVE.
MEADOW DR. N
MEADOW DR. W.
MEADOW DR. E
MEADOW DR. S
WILMETTE AVE.
WILMETTE CIRCLE
SANDY
ALPINE LN.
CRAWFORD AVE.
PARK VIEW
PIONEER LN.
HOLLYWOOD CT.
AVONDALE
BROOKSIDE DR.
BROOKSIDE DR. W.
WILSHIRE DR. E
WILSHIRE DR. W.
VINE ST.
VINE CT.
CONCORD LN.
VISTA DR.
VISTA CT.
APPLETREE LN.
OLD GLENVIEW RD.
RIDGE RD.
SPENCER
BIRCHWOOD
WASHINGTON AVE.
HIGHLAND AVE.
CENTRAL
WILMETTE AVE.
OAKWOOD AVE.
MAPLE
GREGORY AVE.
ISABELLA ST.
LAWNDALE
CENTRAL PARK
OAK CIRCLE
PARK AVE.
PRAIRIE
GREEN BAY RD.
OAKWOOD CT.
CATALPA
WOODBINE
BROADWAY
CLENDENNING
RICHMOND LN.
CHESTNUT AVE.
ASHLAND
ASHLAND AVE.
GREENWOOD AVE.
ELMWOOD AVE.
FOREST AVE.
WESTERFIELD DR.
MICHIGAN AVE.
SHERIDAN RD.
ELMWOOD
FOREST
LAKE AVE.
OVERLOOK DR.
UPPER DR.
MIDDLE DR.
HARBOR DR.
WASHINGTON CT.
WASHINGTON AVE.
CENTRAL AVE.
GREENLEAF AVE.
LINDEN
LINDEN AVE.
LAUREL
LAUREL AVE.
MAPLE
MAPLE AVE.
CANTERBURY CT.
DRIFTWOOD
DUPEE
OSBORN
SHERIDAN RD.
1ST
2ND
3RD
4TH
5TH
6TH
7TH
8TH
9TH
10TH
11TH
12TH
13TH
14TH
15TH
16TH
17TH
18TH
19TH
20TH
US CITIZENSHIP


HAPP RD.
ILLINOIS
MANOR DR.
NORTH BRANCH RD.
FRONTAG
ILLINOIS RD.
GRANT
MIDDLEBU
CLEVELAN
PRINCETON
COLGAT
CHESTNUT
RIDGE RD.
THORNWOOD
GREENWOOD
ELMWOOD
WALNUT
FOREST
NEW TRIER CT.
MANOR DR.
LARAMIE AVE.
EDENS EXPRESSWAY
SKOKIE BLVD.
SPRUCEWOOD
WALDEN LN.
COUNTRY LN.
CRANSTON CT.
MELROSE CT.
HIBBARD RD.
VIRGINIA LANE
IROQUOIS RD.
INDIAN WOOD RD.
ROMONA CT.
ROMONA RD.
SEMINOLE
MOHAWK
LOCUST RD.
SENECA
BLACKHAWK
SHABONA
OSAGE
OTTAWA
CHIPPEWA
ILLINOIS RD.
DARTMOUTH
PONTIAC
MIAMI
PAWNEE
CHEROKEE
HUNTER
21ST
KNOLL
TIMBER
CORNELL
OXFORD
YALE
AMHURST
HARVARD
CAMBRIDGE
COLUMBUS
LAKE AVE.
WEST PARK DR.
LA CROSSE AVE.
LA CROSSE CT.
WESTWOOD LN.
LEYDEN LN.
CHILTON LN.
ORCHARD
ORCHARD LN.
HAWTHORN
SEGER ST.
CRABTREE
REDBUD
MARIAN LN.
CARDINAL
SCHILLER
OUILMETTE
BIRCH WOOD
CREST
VARD
PINE
HAR
20TH ST.
BIRCHWOOD AVE.
BIRCHWOOD CT.
ALISON LN.
POMONA
WASHINGTON AVE.
WASHINGTON
LAMON
LA PORTE
LA CROSSE
HIBBARD RD.
HIGHLAND
PINE ST.
KNOX
BARCLAY
CENTRAL AVE.
LINCOLN LN.
LAUREL LN.
HUNTER
HARTMANN
HIGHCREST DRIVE
CREST-VIEW LN.
PINECREST LN.
HIGHLAND AVE.
CENTRAL AVE.
CEDAR LN.
PINE
MANOR Dr.
HUNTER CT.
LAWLER
LA VERGNE
GREENLEAF
GREENLEAF AVE.
KIN CT.
KOERPER CT.
KAREY CT.
MEADOW DR.
WILMETTE AVE.
LARAMIE
LEAMINGTON
LE CLAIRE
HILL LN.
HILL ST.
SKOKIE CT.
TEMPLE LN.
GREGORY AVE.
BIG TREE LN.
NINA
GLENVIEW RD.
SUNSET DR.
BEVERLY
BROOKSIDE DR.
COVE
WILSHIRE DR. W.
WILSHIRE DR. E.
VISTA DR.
VINE ST.
VINE CT.
CONCORD LN.
CRAWFORD AVE.
SANDY
ALPINE LN.
VISTA CT.
APPLETREE LN.
PARKVIEW
HOLLYWOOD CT.
AVONDALE
PIONEER LN.
PIN OAK DR.
RIDGE RD.
FRONTAGE RD.
LILAC
BRIAR
MILLBROOK
HEATHER
LOCKERBIE LN.
OLD GLENVIEW RD.
EDENS EXPY.
HIBBARD RD.
KILPATRICK
VALLEY VIEW DR.
VALLEY VIEW CT.
THEIN CT.
HARTZELL ST.
ESSEX PL.
CHARLES PL.
WESTMORELAND
LOCUST
PLUM TREE LN.
CARRIAGE WAY DR.
SALT ROUTE 1

SALT ROUTE 2

Parking Lots to Salt/Check

1. Atrium
2. Police
3. Fire Station 2



SALT ROUTE 3

Parking Lots to Salt/Check

1. Poplar South
2. Poplar North
3. St. Augustine's Lot
4. 11th St. Lot
5. Veteran's Lot
6. Fire Station 1
7. Metra Lot
8. Village Hall Lot
9. 1199 Lot
10. Library Lot
11. Post Office Lot
12. Depot Lot
13. Burmeister Lot

SALT ROUTE 4

Parking Lots to Salt/Check

1. Water Plant
2. CTA East
3. CTA West

SHERIDAN RD.
WESTERFIELD DR.
CHESTNUT AVE.
ASHLAND AVE.
GREENWOOD AVE.
ELMWOOD AVE.
FOREST AVE.
LAKE AVE.
WASHINGTON CT.
WASHINGTON AVE.
CENTRAL AVE.
GREENLEAF AVE.
LINDEN
OAK WOOD
OAKWOOD AVE.
MAPLE
GREGORY AVE.
LAUREL
LAUREL AVE.
MAPLE AVE.
RICHMOND LN.
GREEN BAY RD.
PARK
PRAIRE
CIRCLE
OAK
WILMETTE AVE.
WOOD CT.
POPLAR DR.
CRESCENT PL
BINE
BROAD WAY
WOOD
MICHIGAN AVE.
ELMWOOD
FOREST
LAKE AVE.
OVERLOOK DR.
UPPER DR.
MIDDLE DR.
HARBOR DR.
DRIFTWOOD
GOLF TERR
CANTERBURY CT.
GIRARD
GARRISON
DUPEE
3RD
4TH
5TH
6TH
7TH
8TH
9TH
10TH
11TH
12TH
13TH
14TH
15TH
ISABELLA ST

Salt Route 5

Route Start

- Fire Station # 27 – Illinois & Lake
- P.D. LOT/Ramp
- Fire Station #1 – 13th & Lake
- RRxing FOREST / Elmwood (U-Turn @ 13th) then ELMWOOD / Forest
- **2nd Pass** of Fire Station #1 – 13th & Lake (**on 2nd pass- loop 13th St. entrance**)
- LAKE Ave RRxing
- Central / Wilmette / Linden / Oakwood - RRxing **(Slalom)** Loop @ Lake Ave.
- Metra Lot (include GB Road. OFFSET) **Do Not push snow on sidewalk**
- **Burmeister RAMP**
- Maple Bridge E/B
- Canterbury Ct.
- Linden Ct.
- Linden Bridge W/B (U-turn @ CTA **East** Lot - **SALT**)
- Linden Bridge E/B
- Maple Bridge W/B
- CTA **West** Lot - **SALT**
- Double Check **All RRxing and Metra GB Road Offset** before starting incline roads!
- ***NEW*** **Salt 16th between Wilmette and Central** -
- Complete Incline roads - Sterling Ave / Appletree Ln. / Thielen Ct.
- **Village Yard RE-LOAD -**
- Either Re-Run Route (**Per Supervisor**) or **Start CBD Lots / Offsets**
- **(PAY ATTENTION TO KEEP SNOW AWAY FROM HANDICAP SPOTS)**

Additional OFFSETS - Clean-up

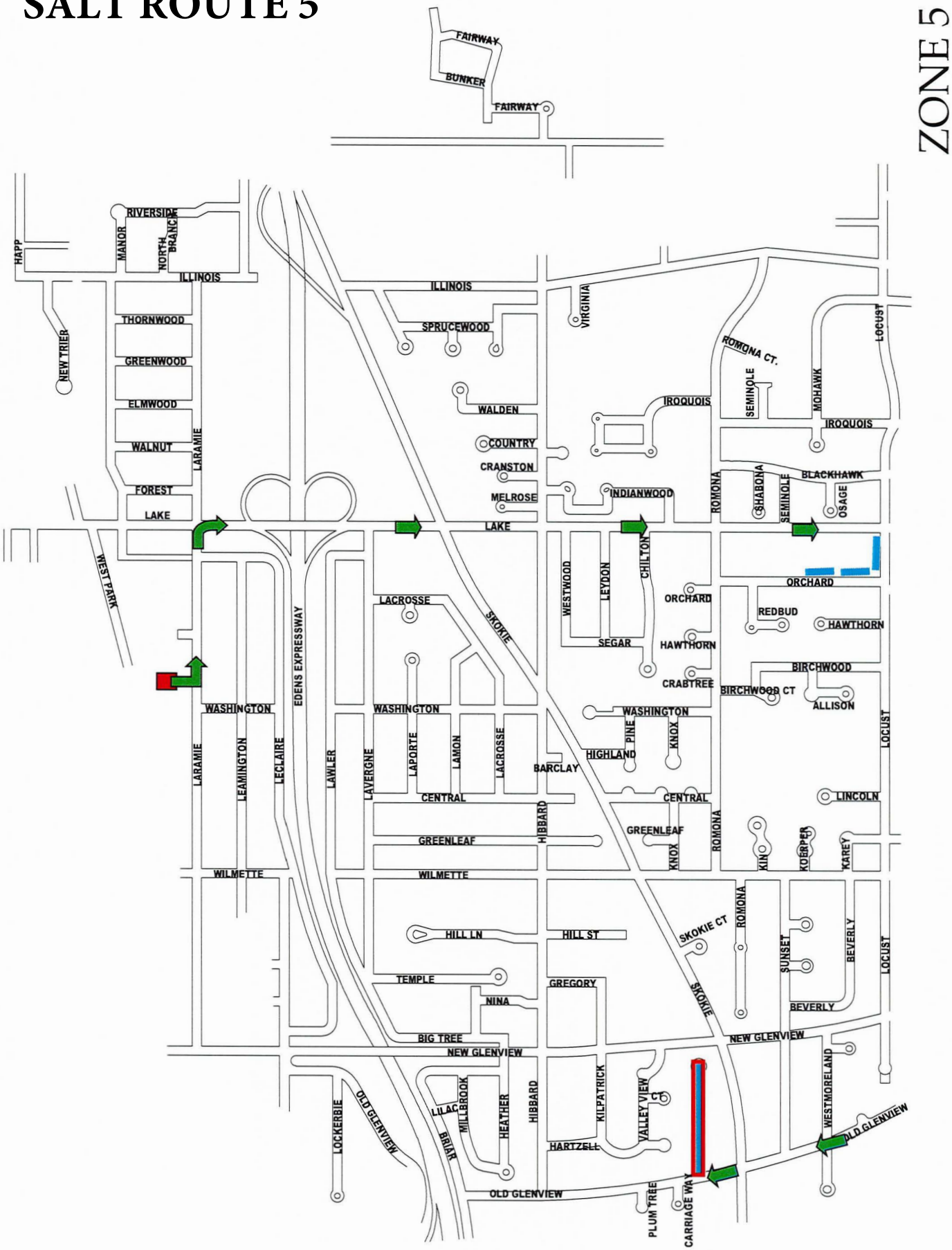
- Parking Offset on Washington Ave just west of Green Bay on S. Side of Street up to Alley (**STARBUCKS**)
- Parking Offset in front of **METRA** Station on E. side of Green Bay:

(DO NOT Push snow onto sidewalk)

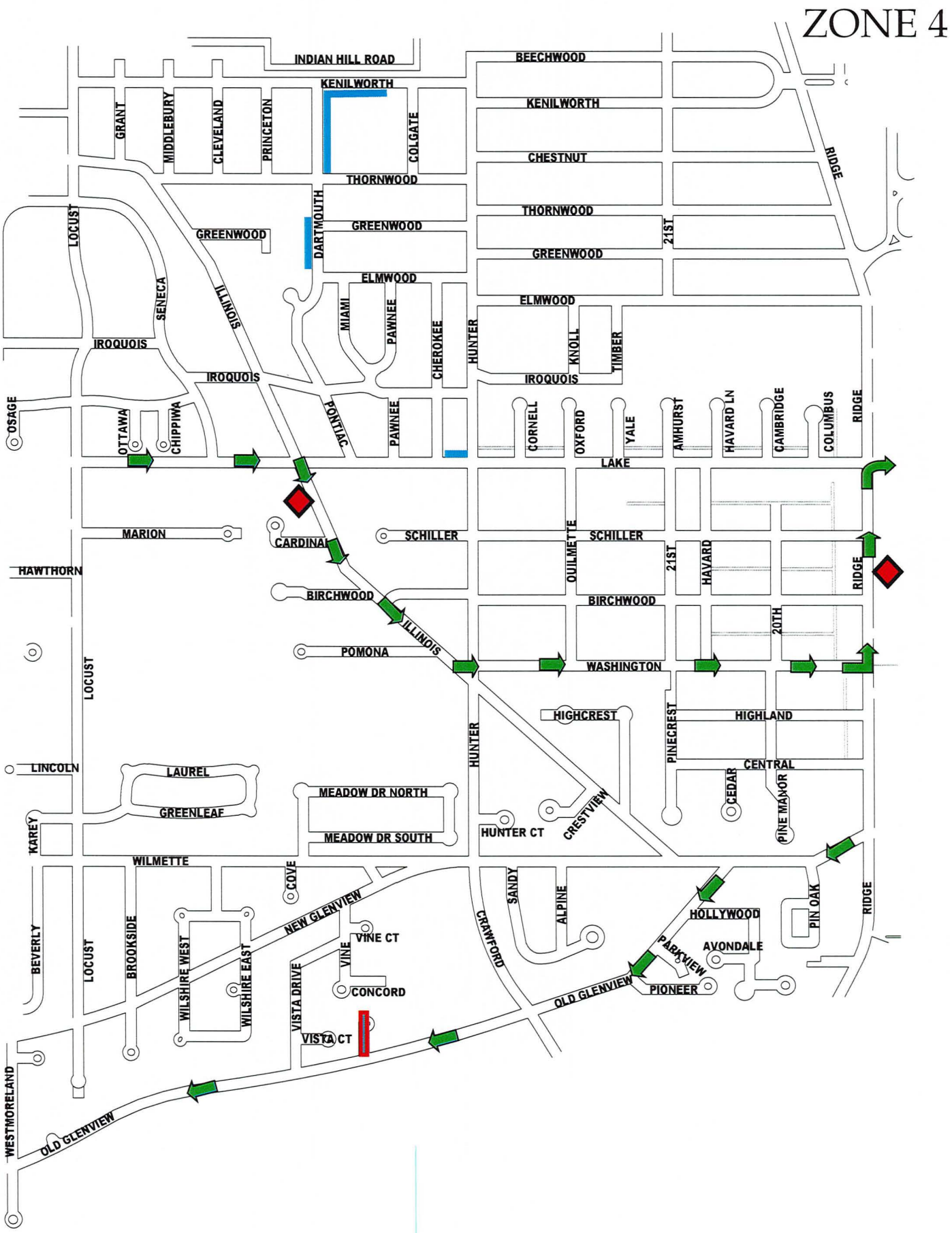
- Parking Offset on Lake Ave. W. of Green Bay on S. side of Street (**+Animal Hospital+**)
- 17th St. Offset @ Howard Park. S. of Spencer
- Bus Stop Offset N. Side of Lake just E. of Ridge
- Bus Stop Offset N. side of Lake just W. of Hunter:
  (**DO NOT BLOCK DRIVEWAY**)
- Parking Offsets @Thornwood Park (**2 Locations – one on Kenilworth and one on Dartmouth**)
- Parking Offset on Locust Ave. (**1 Location E. of Church on West side of road**)
- Parking Offsets on Orchard Rd. (**2 Locations s. of Church on North side of road**)

SALT ROUTE 5

ZONE 5

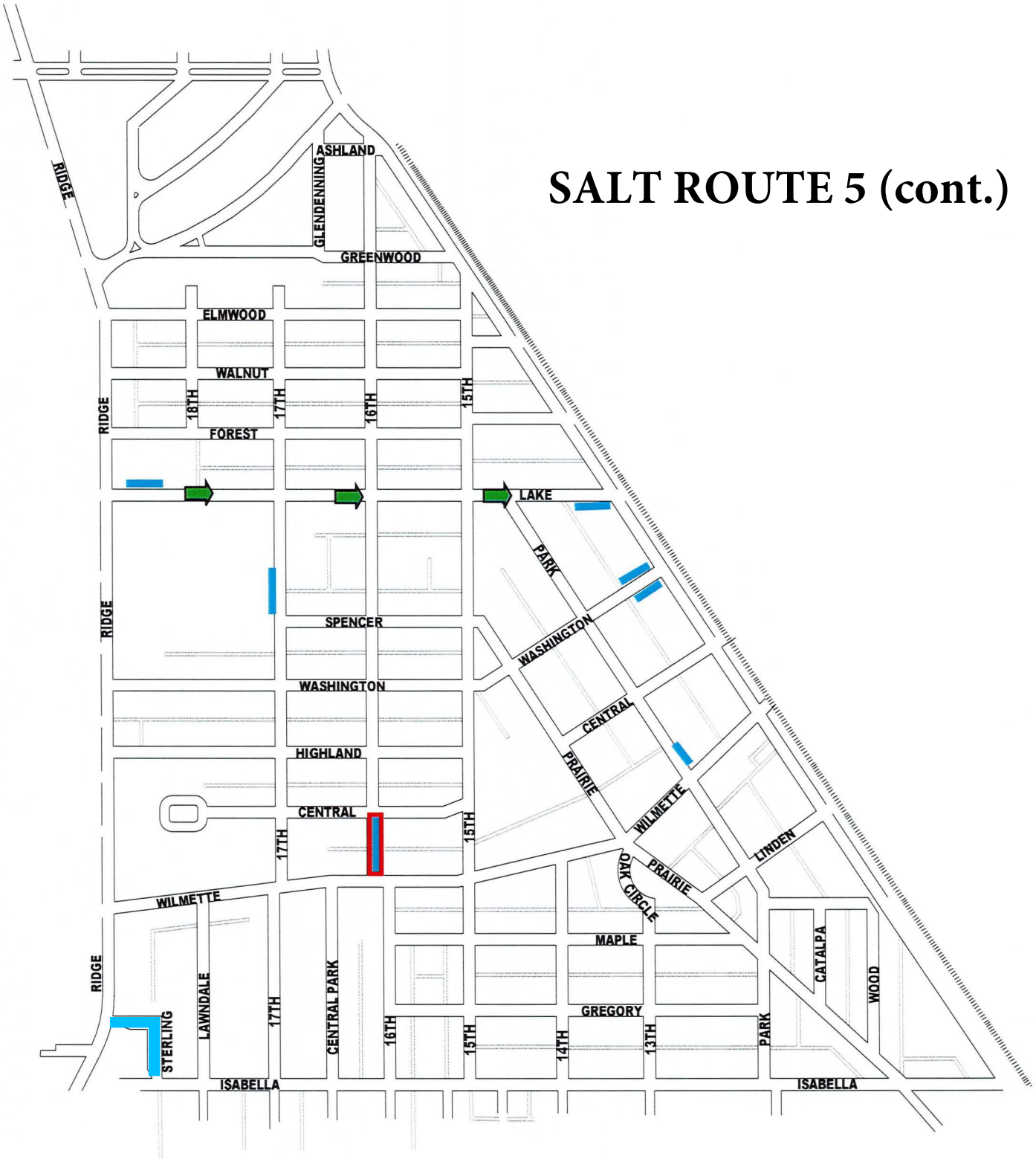


SALT ROUTE 5 (cont.)

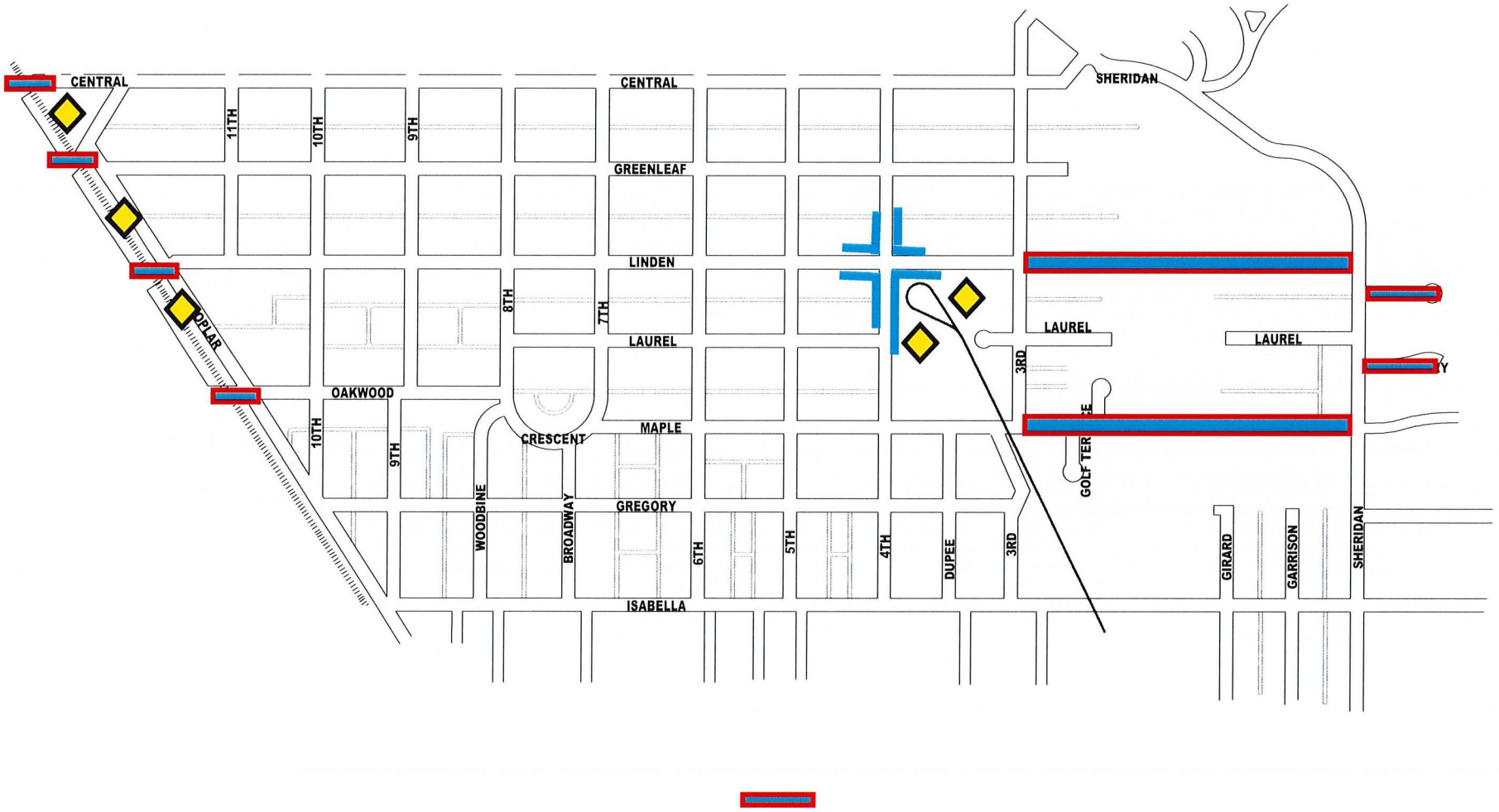


ZONE 3

SALT ROUTE 5 (cont.)

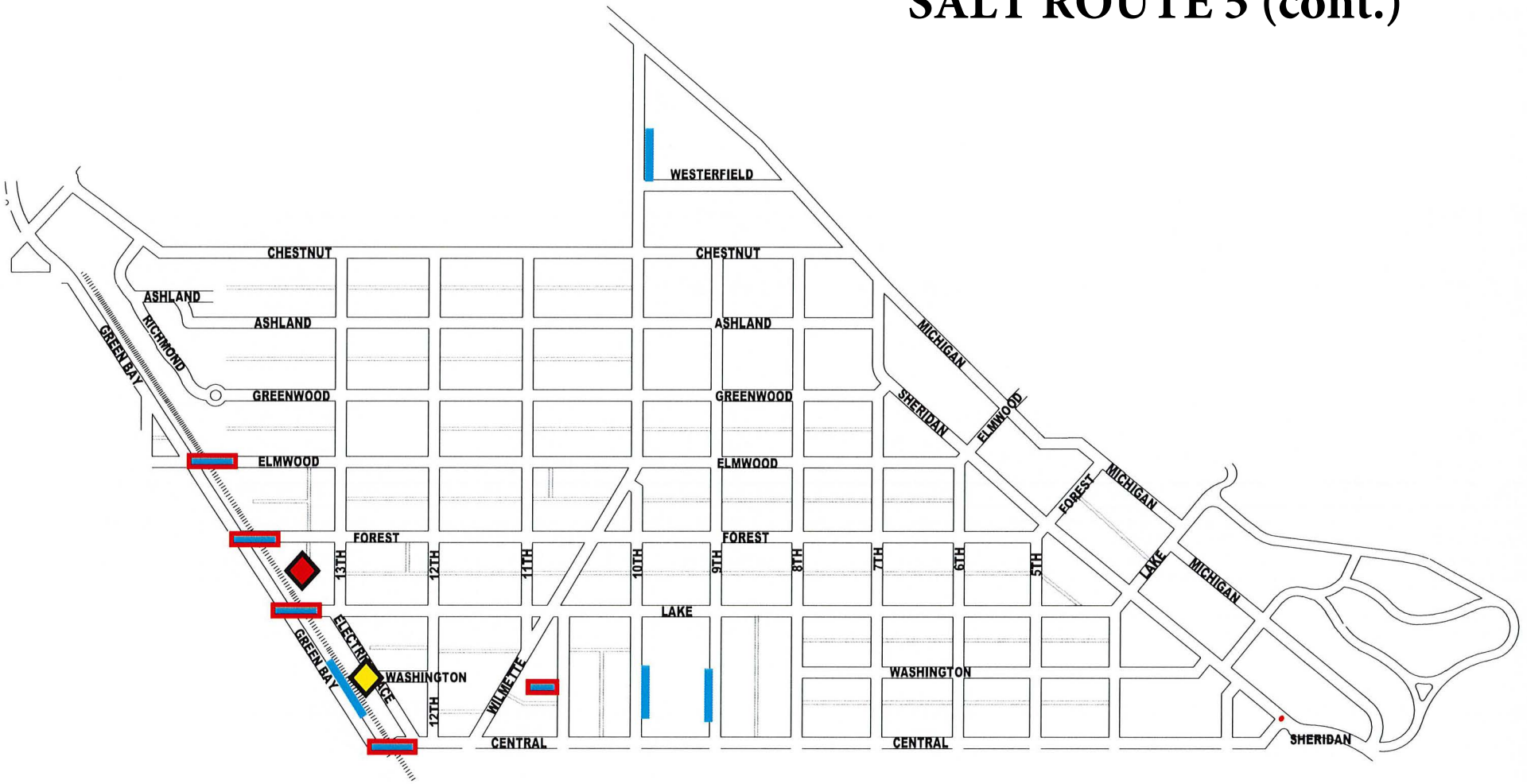


SALT ROUTE 5 (cont.)



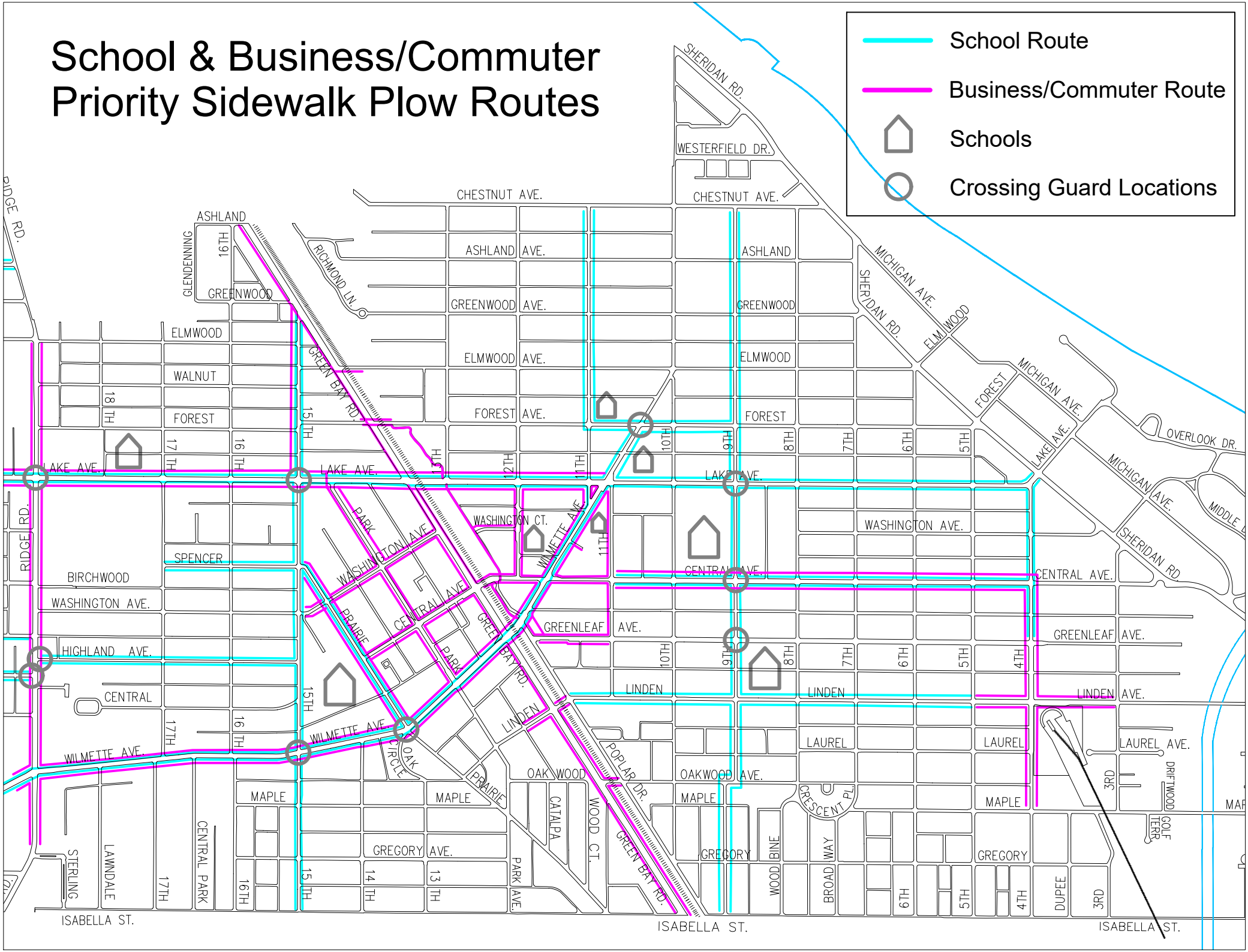
ZONE 2

SALT ROUTE 5 (cont.)

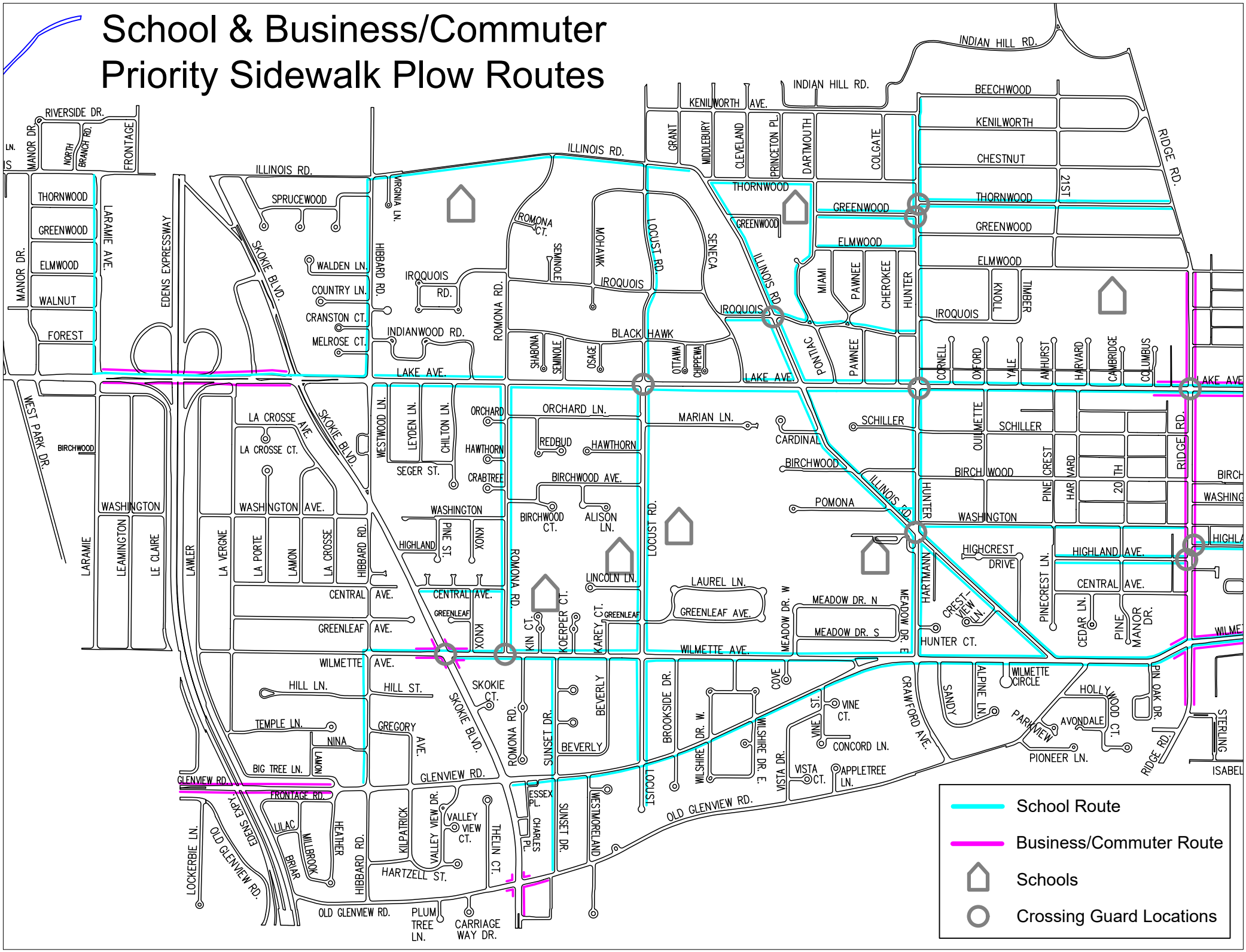


ZONE 1

School & Business/Commuter Priority Sidewalk Plow Routes



School & Business/Commuter Priority Sidewalk Plow Routes



Village of Wilmette
Salt Conservation Route

Critical Locations

SALT ROUTE 1

SALT ROUTE 2

FD

PD

NORTH BRANCH CHICAGO RIVER
HAPP RD.
RIVERSIDE DR
MANOR DR
NORTH BRANCH RD
FRONTAGE
ILLINOIS
NEW TRIER CT.
MANOR DR.
THORNWOOD
GREENWOOD
ELMWOOD
WALNUT
FOREST
LARAMIE AVE
EDENS EXPRESSWAY
SKOKIE BLVD.
ILLINOIS RD.
SPRUCEWOOD
WALDEN LN.
COUNTRY LN.
CRANSTON CT.
MELROSE CT.
VIRGINIA LANE
HIBBARD RD.
IROQUOIS RD.
INDIAN WOOD RD.
ROMONA RD.
ROMONA CT.
MOHAWK
SEMINOLE
IROQUOIS
BLACKHAWK
SHABONA
SEMINOLE
OSAGE
OTTAWA
CHIPPEWA
LOCUST RD.
SENECA
ILLINOIS RD.
GRANT
MIDDLEBURY
CLEVELAND
PRINCETON PL
KENILWORTH AVE.
INDIAN HILL RD.
COLGATE
DARTMOUTH
THORNWOOD
GREENWOOD
ELMWOOD
MIAMI
PAWNEE
CHEROKEE
HUNTER
PONTIAC
IROQUOIS
KNOLL
TIMBER
CORNELL
OXFORD
YALE
AMHURST
HARVARD
CAMBRIDGE
COLUMBUS
BEECHWOOD
KENILWORTH
CHESTNUT
THORNWOOD
GREENWOOD
ELMWOOD
21ST
BRIDGE RD.
PARK DR.
STERLING RD.
EARLSTON RD.
KENILWORTH AVE.
GLENDENNING
GREENWOOD
ELMWOOD
WALNUT
18TH
FOREST
17TH
LAKE AVE.
FAIRWAY DRIVE
FAIRWAY DR.
LAKE AVE.
WEST PARK DR.
LARAMIE
LEAMINGTON
LE CLAIRE
LAWLER
LA VERGNE
LA PORTE
LAMON
LA CROSSE
HIBBARD RD.
LA CROSSE AVE.
LA CROSSE CT.
SKOKIE BLVD.
WASHINGTON
WASHINGTON AVE.
CENTRAL AVE.
GREENLEAF AVE.
WILMETTE AVE.
HILL LN.
HILL ST.
TEMPLE LN.
NINA
LAMON
GREGORY AVE.
BIG TREE LN.
GLENVIEW RD.
FRONTAGE RD.
LILAC
BRIAR
MILLBROOK
HEATHER
LOCKERBIE LN.
OLD GLENVIEW RD.
EDENS EXPY.
WESTWOOD LN.
LEYDEN LN.
CHILTON LN.
SEGER ST.
ORCHARD
HAWTHORN
CRABTREE
HIGHLAND
PINE ST.
KNOX
GREEN-LEAF AVE.
KILPATRICK
VALLEY VIEW DR.
VALLEY VIEW CT.
HARTZELL ST.
THELIN CT.
PLUM TREE LN.
CARRIAGE WAY DR.
ESSEX
CHARLES PL.
SUNSET DR.
WESTMOOR LANE
ORCHARD LN.
REDBUD
HAWTHORN
BIRCHWOOD AVE.
BIRCHWOOD CT.
ALISON LN.
KIN CT.
KOERPER CT.
KAREY CT.
LINCOLN LN.
LAUREL LN.
GREENLEAF AVE.
MEADOW DR. W
MEADOW DR. N
MEADOW DR. S
MEADOW DR. E
HUNTER CT.
HARTMANN
CREST-VIEW LN.
HIGHCREST DRIVE
PINECREST LN.
CEDAR LN.
PINE MANOR Dr.
HIGHLAND AVE.
CENTRAL AVE.
WILMETTE AVE.
SKOKIE CT.
SUNSET DR.
BEVERLY
BEVERLY
ROMONA RD.
BROOKSIDE DR.
COVE
WILSHIRE DR. W.
WILSHIRE DR. E.
VINE ST.
VINE CT.
CONCORD LN.
VISTA CT.
APPLETREE LN.
CRAWFORD AVE.
SANDY
ALPINE LN.
PARK VIEW
AVONDALE
HOLLYWOOD CT.
PIONEER LN.
PIN OAK DR.
RIDGE RD.
ISABELLA ST.
LAWNDALE
CENTRAL PARK
17TH
SPENCER
LAKE AVE.
ORCHARD LN.
MARIAN LN.
CARDINAL
SCHILLER
OUILMETTE
SCHILLER
BIRCHWOOD
BIRCHWOOD
POMONA
ILLINOIS RD.
HUNTER
WASHINGTON
PINE
CREST
HARVARD
20TH ST.
RIDGE RD.
WASHINGTON AVE.
HIGHLAND AVE.
CENTRAL
CENTRAL AVE.
WILMETTE AVE.
17TH
LAWNDALE
CENTRAL PARK
ISABELLA ST.
OLD GLENVIEW RD.

Village of Wilmette
Salt Conservation Route

Critical Locations

SALT ROUTE 3

SALT ROUTE 1

SALT ROUTE 2

SALT ROUTE 4

FD

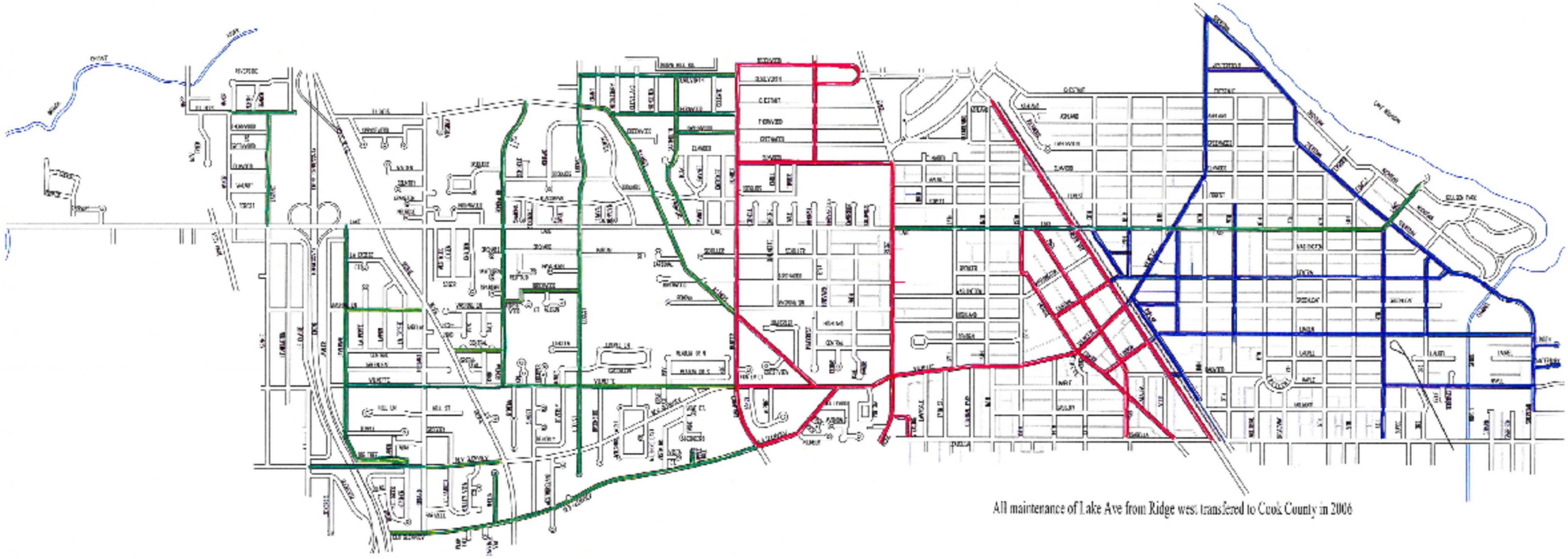
PD

INDIAN HILL RD.
BEECHWOOD
KENILWORTH
CHESTNUT
THORNWOOD
GREENWOOD
ELMWOOD
RIDGE RD.
PARK DR.
STERLING RD.
EARLSTON RD.
KENILWORTH AVE.
CUMNOR RD.
RICHMOND RD.
WOODSTOCK AVE.
RICHMOND LN.
GLENDENNING
GREEN BAY
CHESTNUT AVE.
ASHLAND AVE.
GREENWOOD AVE.
ELMWOOD AVE.
FOREST AVE.
LAKE AVE.
WASHINGTON CT.
ELECTRIC PL.
WILMETTE AVE.
PARK
GREEN BAY RD.
WASHINGTON
PRAIRIE
CENTRAL AVE.
LINDEN
POPLAR DR.
OAKWOOD AVE.
OAK CIRCLE
CATALPA
WOOD CT.
GREGORY AVE.
MAPLE
ISABELLA ST.
SHERIDAN RD.
WESTERFIELD DR.
MICHIGAN AVE.
ELMWOOD
FOREST
LAKE AVE
WASHINGTON
CENTRAL
GREENLEAF AVE.
LINDEN
LAUREL
MAPLE
CRESCENT PL.
WOOD BINE
BROAD WAY
OVERLOOK DR.
UPPER DR.
MIDDLE DR.
HARBOR DR.
LINDEN AVE.
LAUREL AVE.
CANTERBURY CT.
MAPLE AVE.
ROSLYN TERR.
GOLF TERR.
GIRARD
GARRISON
DUPEE
SHERIDAN RD.
OUILMETTE
SCHILLER
BIRCH WOOD
WASHINGTON
HIGHCREST
HIGHLAND AVE.
CENTRAL AVE.
PINECREST LN.
CEDAR LN.
PINE MANOR Dr.
CREST VIEW LN.
ALPINE LN.
HOLLYWOOD CT.
AVONDALE
PARK VIEW
PIONEER LN.
PIN OAK DR.
LAWNDALE
CENTRAL PARK
SPENCER
OQUOIS
KNOLL
TIMBER
OXFORD
YALE
AMHURST
HARVARD
CAMBRIDGE
COLUMBUS
PINE CREST
HARVARD
20TH ST.
RIDGE RD.
WALNUT
FOREST
17TH
16TH
15TH
14TH
13TH
12TH
11TH
10TH
9TH
8TH
7TH
6TH
5TH
4TH
3RD
21ST
18TH
16TH

3 Truck Salt Route

- East Salt Route
- Central Salt Route
- West Salt Route

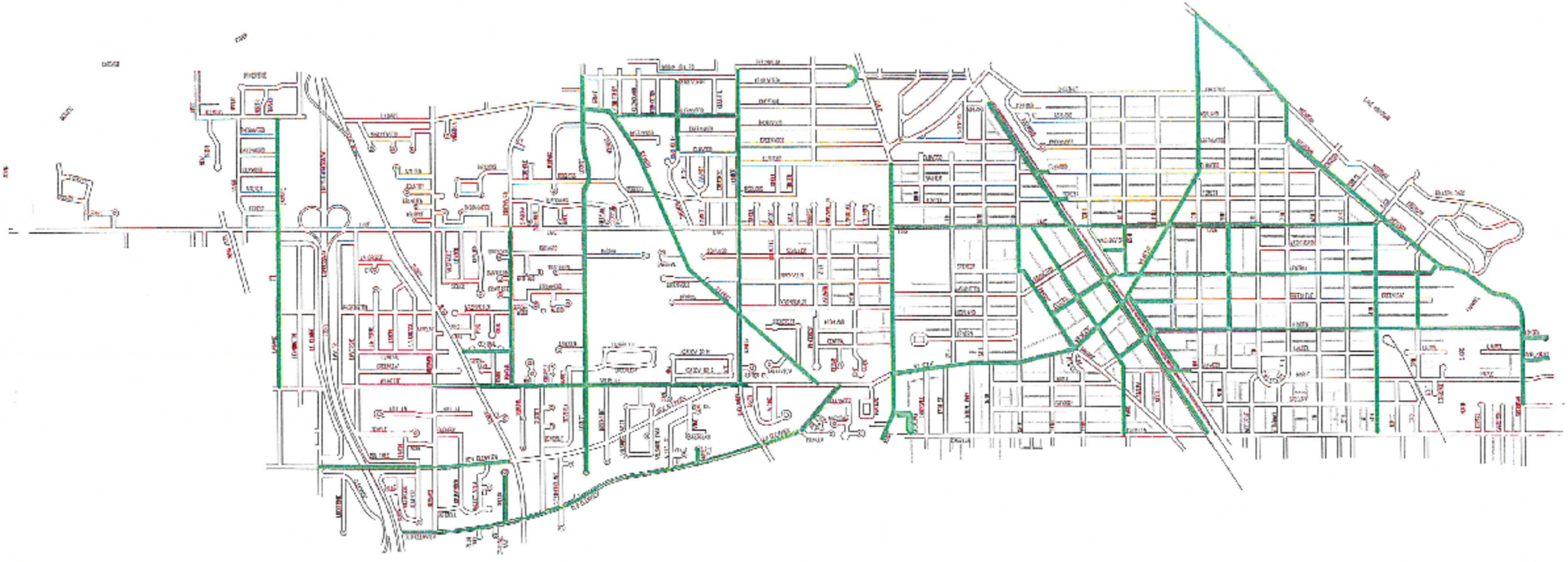
Village of Wilmette



All mainteranance of Lake Ave from Ridge west transfered to Cook County in 2006

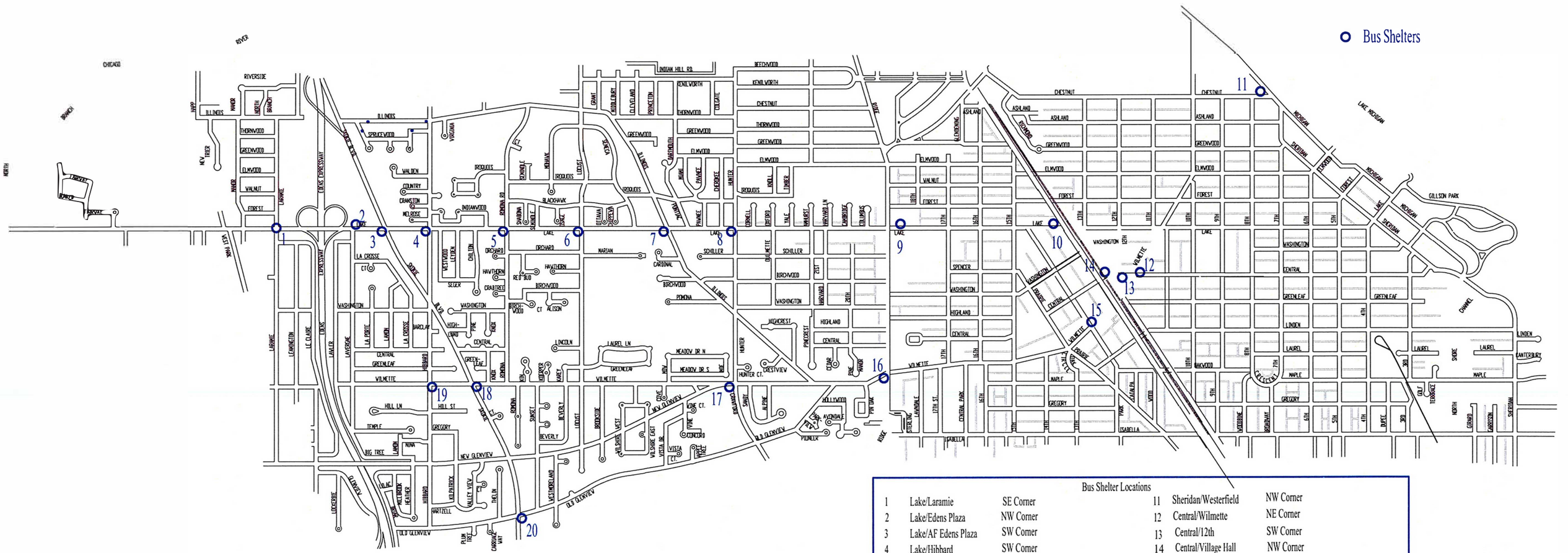
Village of Wilmette

Emergency Salt Route



Village of Wilmette

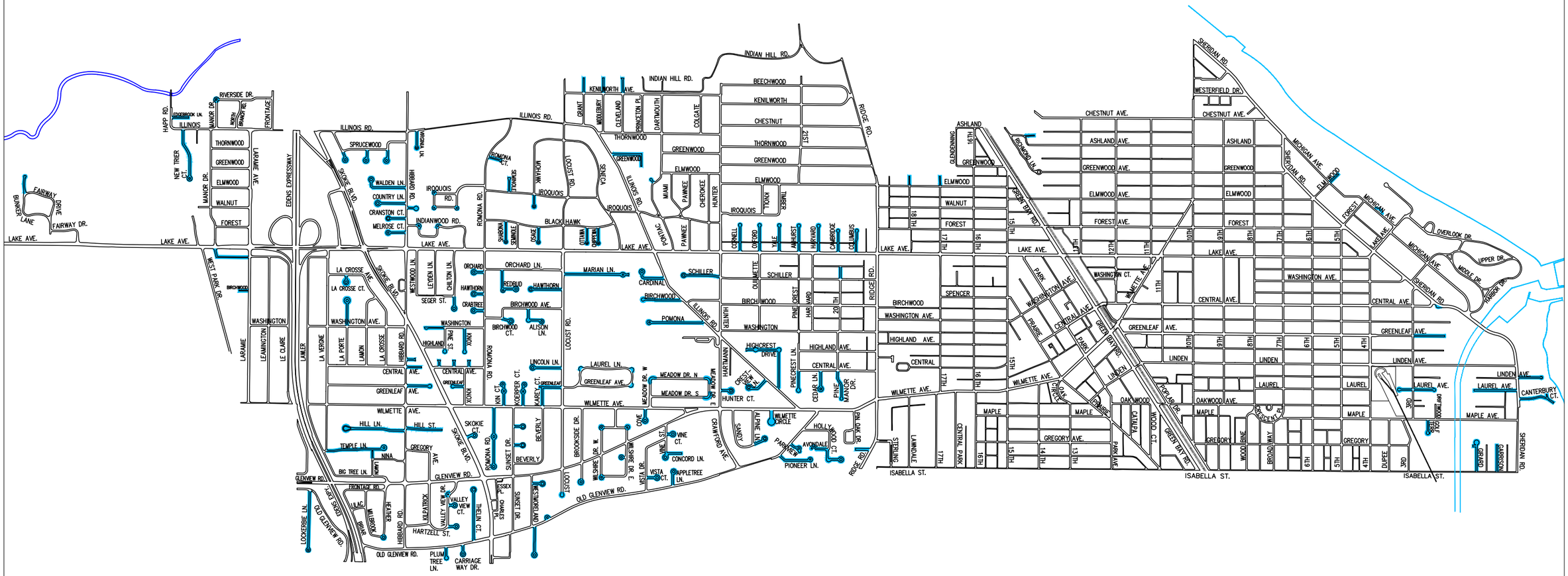
Bus Shelter Locations



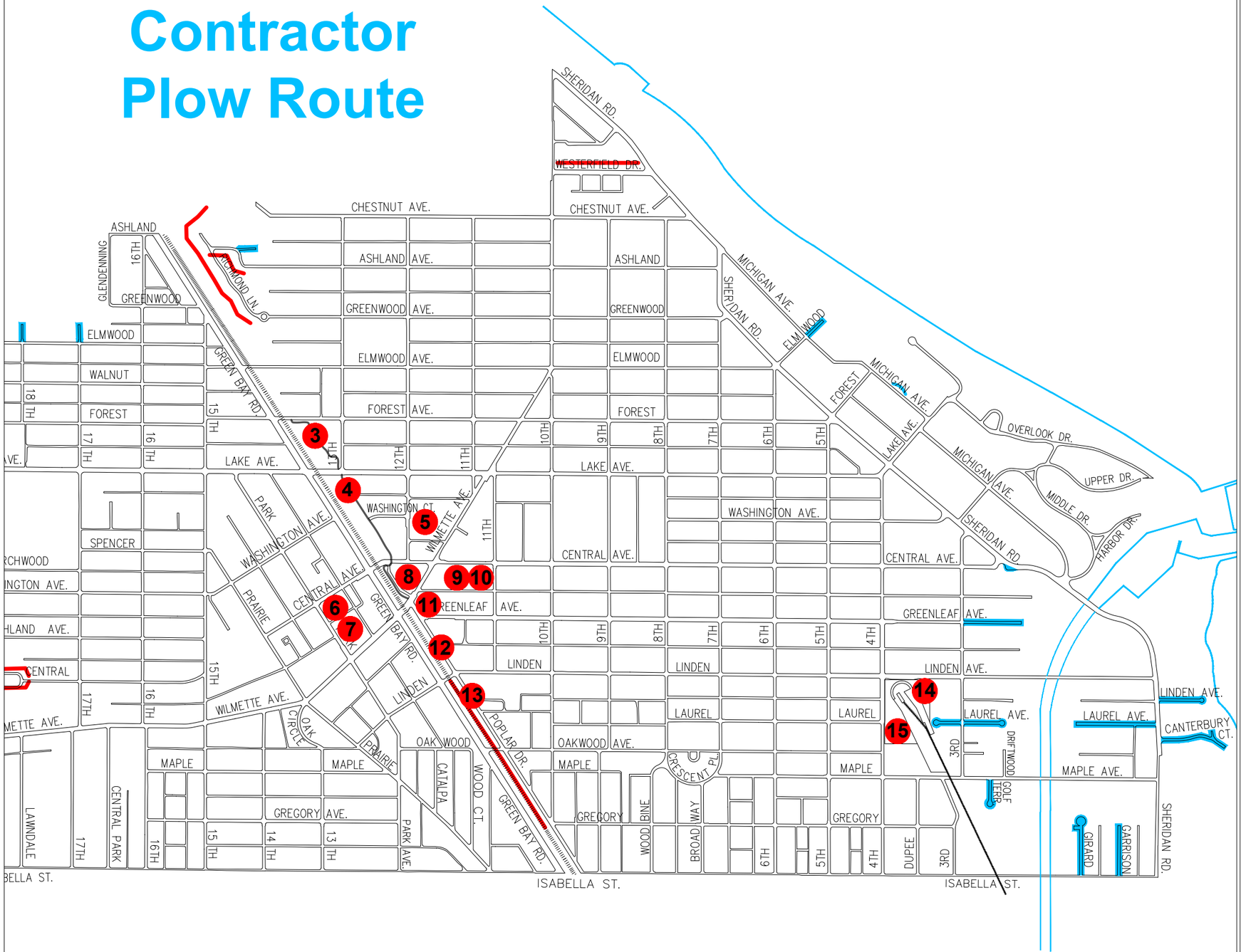
Bus Shelter Locations					
1	Lake/Laramie	SE Corner	11	Sheridan/Westerfield	NW Corner
2	Lake/Edens Plaza	NW Corner	12	Central/Wilmette	NE Corner
3	Lake/AF Edens Plaza	SW Corner	13	Central/12th	SW Corner
4	Lake/Hibbard	SW Corner	14	Central/Village Hall	NW Corner
5	Lake/Romona	SW Corner	15	Wilmette/Park	NE Corner
6	Lake/Locust	SW Corner	16	Wilmette/Ridge	SW Corner
7	Lake/Illinois	SW Corner	17	Wilmette/Crawford	SW Corner
8	Lake/Hunter	SW Corner	18	Wilmette/Skokie	SE Corner
9	Lake/Ridge	NE Corner	19	Wilmette/Hibbard	SE Corner
10	Lake/Green Bay	NW Corner	20	Skokie/Old Glenview	SE Corner

Village of Wilmette Public Works

Contractor Plow Route



Contractor Plow Route



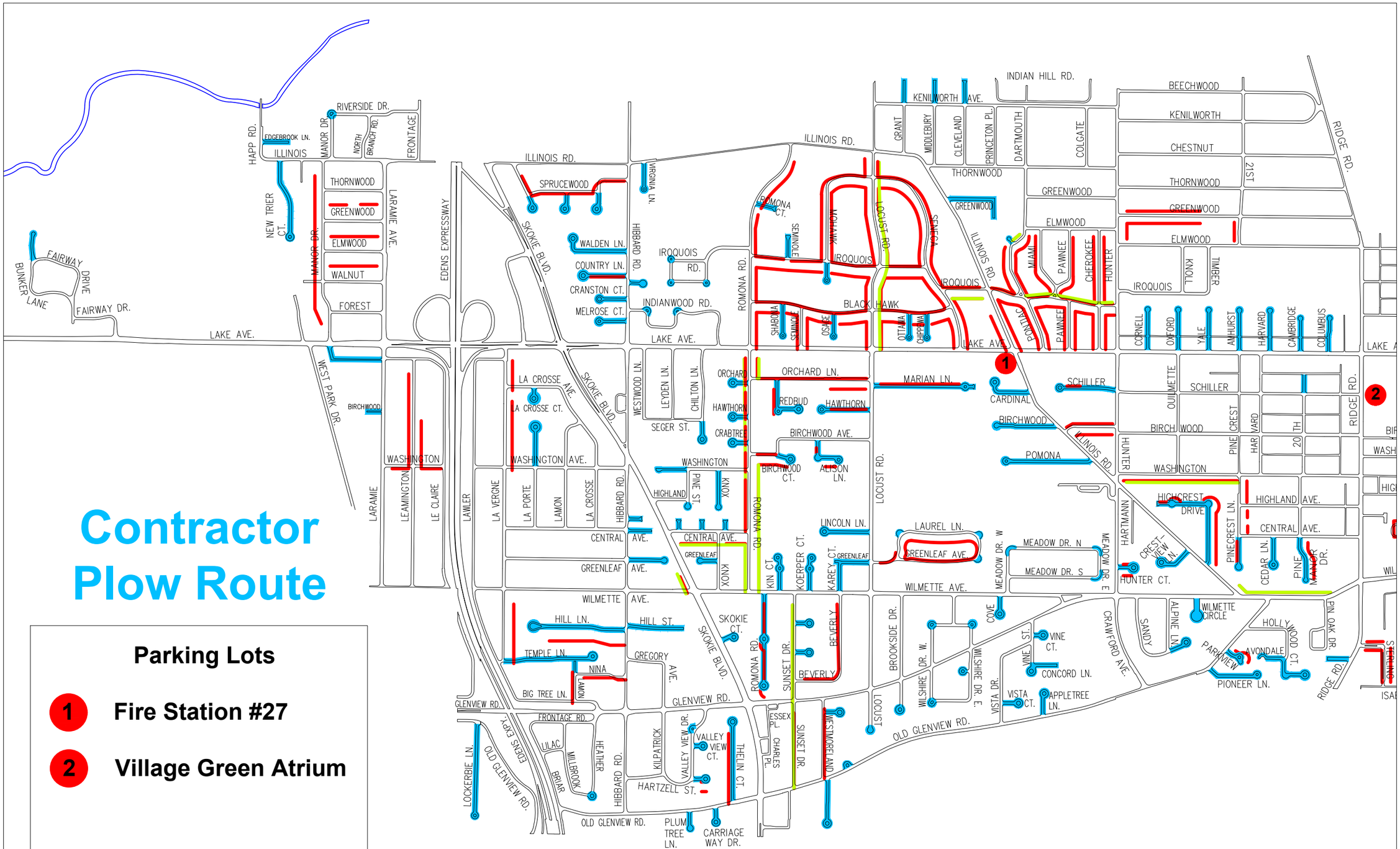
Parking Lots

- 3 Fire Station #6
- 4 Metra Commuter Lot
- 5 St. Augustine's Church
- 6 Post Office
- 7 Wilmette Public Library
- 8 Wilmette Village Hall
- 9 Veteran's Park
- 10 11th Street Lot
- 11 1199 Wilmette Lot
- 12 Poplar Lot North
- 13 Poplar Lot South
- 14 CTA Lot East
- 15 CTA Lot West

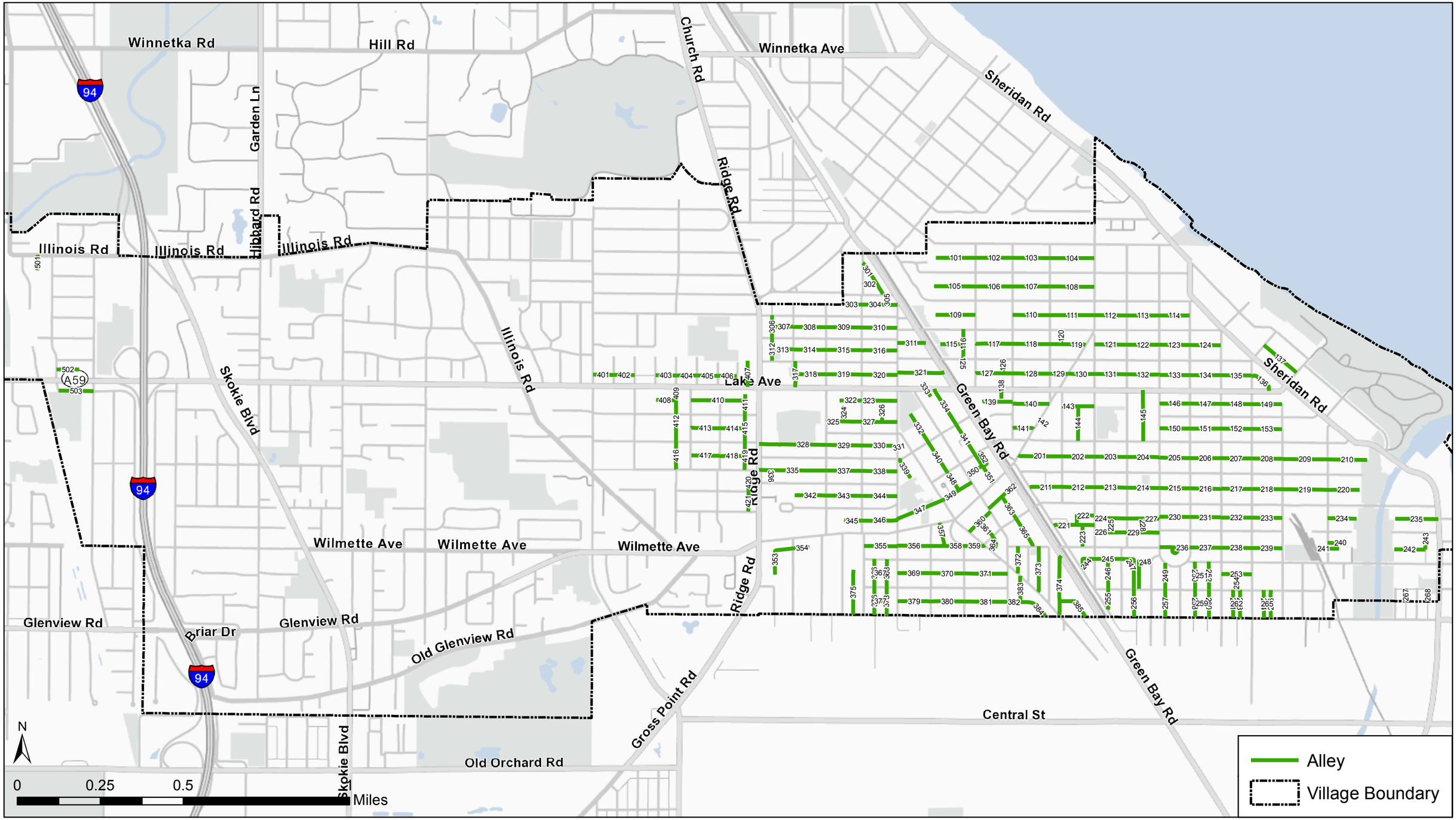
Contractor Plow Route

Parking Lots

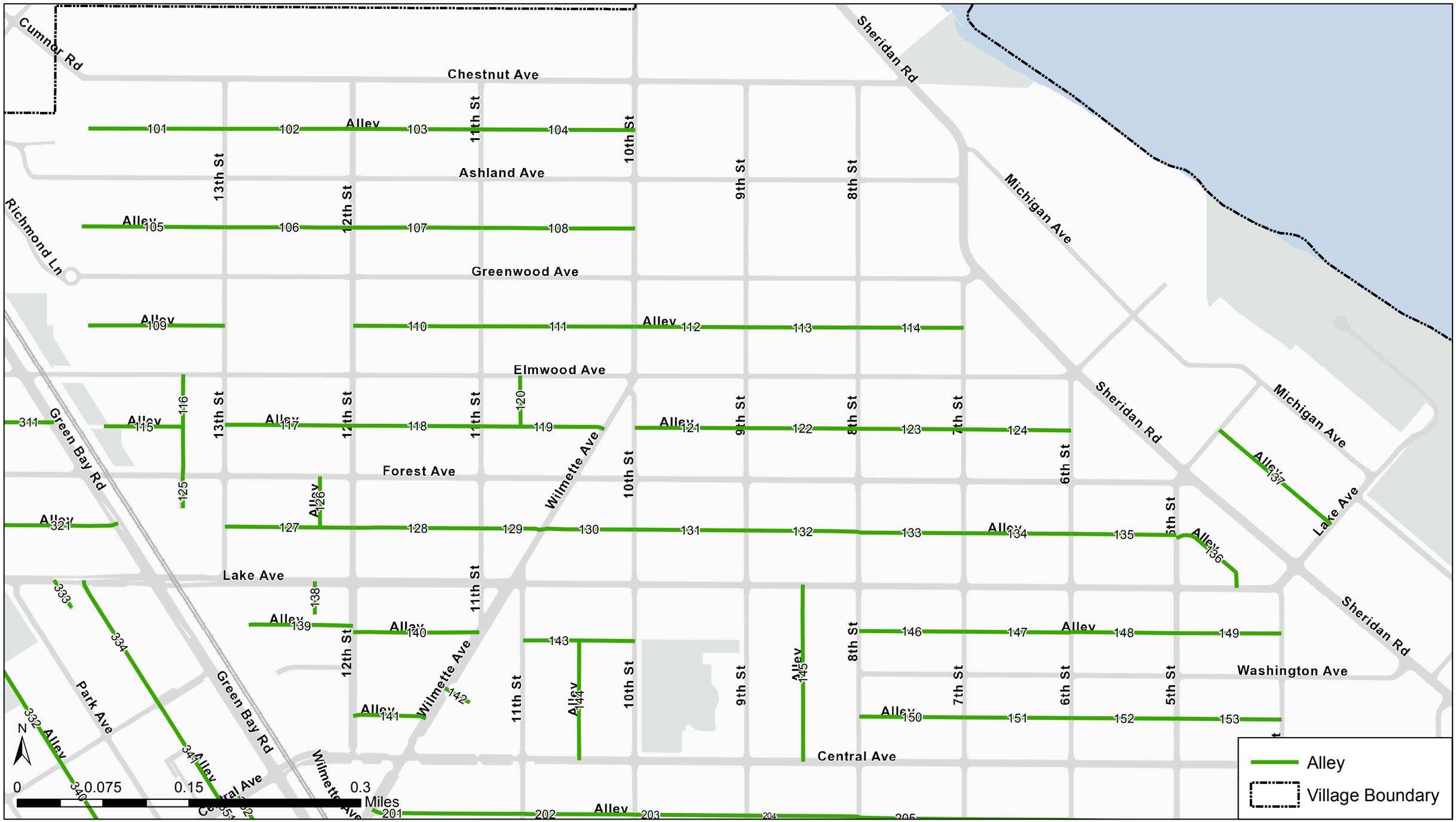
1. Fire Station #27
2. Village Green Atrium



Village Alleys



Village Alleys: Area 1



Village Alleys: Area 2



Village Alleys: Area 3

THE VILLAGE OF Wilmette EST. 1872

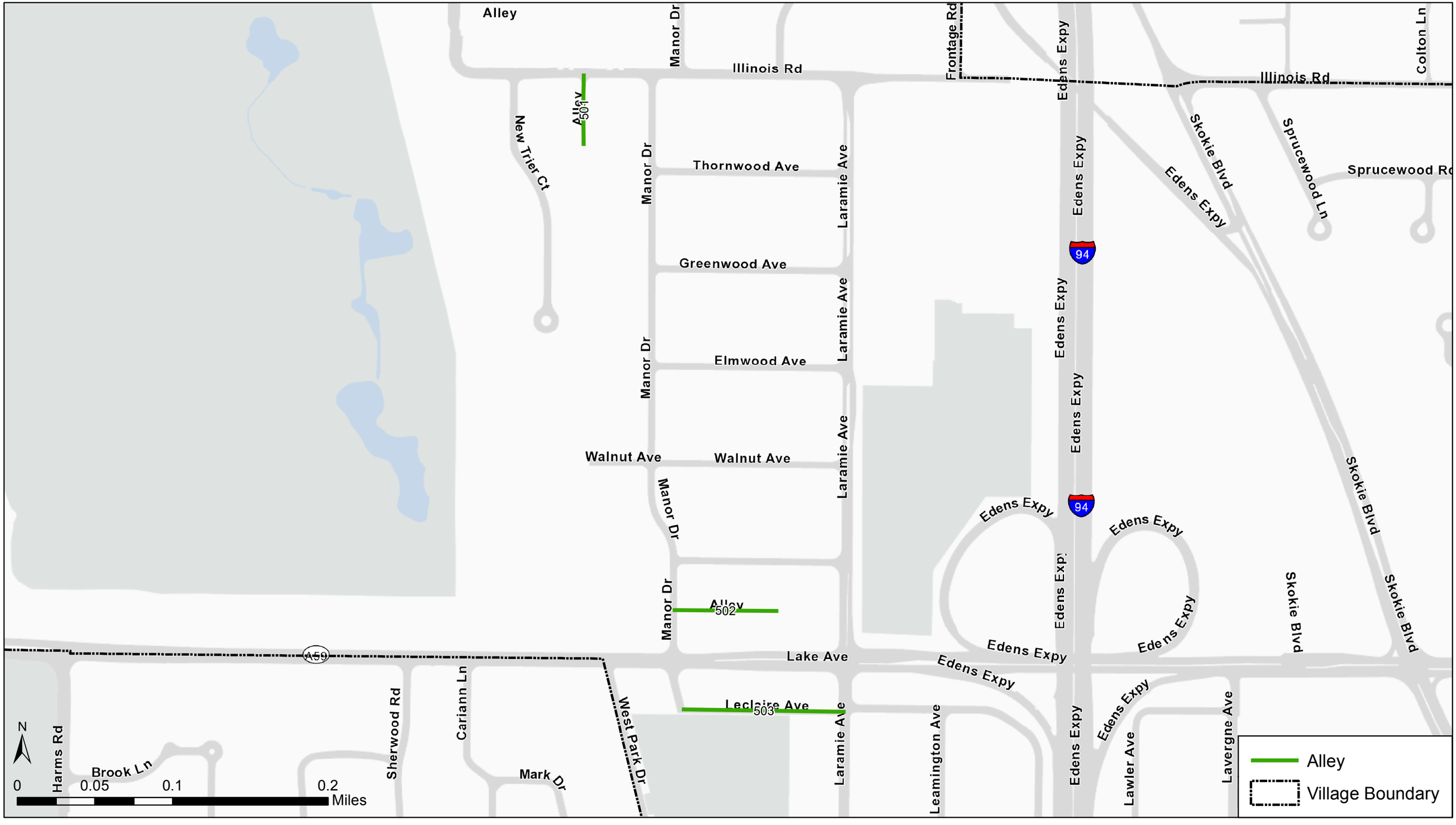
GIS Consortium



Village Alleys: Area 4



Village Alleys: Area 5



	Target Goals		
Service Item	Duration Single Pass (1.00 inch) Chemical	Duration Single Pass (2.00 inch) Plow/Chemical	Duration Single Pass (4.00 inch +) Plow/Chemical
Salt Route 1	3 (hrs.)	5 (hrs.)	8 (hrs.)
Salt Route 2	3	5	8
Salt Route 3	3	5	8
Salt Route 4	3	5	8
Salt Route 5	3	5	8
Business Commuter	4 to 8	5 to 10	n/a
School Walking	n/a	5 to 8	6 to 9
Residential Sidewalks	n/a	n/a	30 to 45
Side Streets	n/a	10	10
Cul-de-sacs	n/a	10	10
Alleys	n/a	10	10
Parking Lots	2	4	6
Bus Shelters	n/a	n/a	3

Vehicle ID	Type	Class	Front Plow	Underbody Plow	V-Box Spreader	Pre-Wet Enabled	Anti-Ice Enabled	Pavement Temp. Sensor
T-03	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-04	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-05	Lg. Dump	42k GVWR	10' Angling J-Plow Trip Edge	9.5' width	7 cubic yards	300 gallons capacity	n/a	n/a
T-06	Lg. Dump	42k GVWR	10' Angling J-Plow Trip Edge	9.5' width	7 cubic yards	300 gallons capacity	n/a	Equipped
T-08	Lg. Dump	38k GVWR	10' Angling Sectional	9.5' width	5 cubic yards	250 gallons capacity	n/a	n/a
T-09	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-10	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-16	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-17	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	9.5' width	5 cubic yards	250 gallons capacity	n/a	Equipped
T-18	Lg. Dump	38k GVWR	10' Angling Sectional	9.5' width	5 cubic yards	250 gallons capacity	1,000 gallons	Equipped
T-33	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	n/a	5 cubic yards	250 gallons capacity	n/a	Equipped
T-40	Lg. Dump	38k GVWR	10' Angling J-Plow Trip Edge	n/a	5 cubic yards	250 gallons capacity	n/a	Equipped
T-11	Sm. Dump	22k GVWR	9' Angling J-Plow Trip Edge	n/a	3 cubic yards	150 gallons capacity	n/a	Equipped
T-23	Sm. Dump	22k GVWR	9' Angling J-Plow Trip Edge	n/a	3 cubic yards	150 gallons capacity	n/a	Equipped
P-19	Jeep	4.5k GVWR	6.5' Single Trip Edge	n/a	n/a	n/a	n/a	Equipped
P-22	Jeep	4.5k GVWR	6.5' Single Trip Edge	n/a	n/a	n/a	n/a	Equipped
T-02	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-07	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-15	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	450 gallons	n/a
T-20	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	450 gallons	n/a
T-21	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	Equipped
T-26	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-29	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-36	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-39	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-41	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-44	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
T-47	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	Equipped
T-48	Pick-Up	3/4 ton	8' Single Trip Edge	n/a	n/a	n/a	n/a	n/a
C-02	Sidewalk	Wheel -MT	v-plow, articulating, rotary broom	n/a	0.22 cubic yards	n/a	100 gallons	n/a
C-19	Sidewalk	Wheel -MT	v-plow, angled plow	n/a	0.22 cubic yards	n/a	n/a	n/a
C-25	Sidewalk	Wheel -MT	v-plow, articulating	n/a	0.22 cubic yards	n/a	n/a	n/a
C-18	Sidewalk	Track -Prinoth	v-plow, fixed	n/a	0.22 cubic yards	n/a	n/a	n/a
C-20	Sidewalk	Track -Prinoth	v-plow, fixed	n/a	0.22 cubic yards	n/a	n/a	n/a
C-24	Sidewalk	Track -Prinoth	v-plow, fixed	n/a	0.22 cubic yards	n/a	n/a	n/a

Chemical Treatment Schedule

Snow, Ice or Frost Forecast	Pavement Temperature Range/Trend	Initial Pavement Surface Conditions	Initial Operation		Subsequent Operation (3-hour intervals)	
			Maintenance Action	Dry Chemical Spread (lbs/lane mile)	Maintenance Action	Dry Chemical Spread (lbs/lane mile)
Light Snow less than 1/2 inch per hour	Above 32 F, steady or rising	Dry	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, steady or rising	Wet Slush	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, steady or rising	Light Snow Covering	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, 32 F or below is immient	Dry	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	Above 32 F, 32 F or below is immient	Wet Slush	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	Above 32 F, 32 F or below is immient	Light Snow Covering	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	20 F to 32 F, remaining in range	Dry	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	20 F to 32 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	20 F to 32 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical	100
	15 F to 20 F, remaining in range	Dry	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	15 F to 20 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	15 F to 20 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	Below 15 F, steady or falling	Dry	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Wet Slush	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Light Snow Covering	Plow as needed	NA	Plow as needed	NA
Light Snow with periods of heavier snow	Above 32 F, steady or rising	Dry	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, steady or rising	Wet Slush	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, steady or rising	Light Snow Covering	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, 32 F or below is immient	Dry	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	Above 32 F, 32 F or below is immient	Wet Slush	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	Above 32 F, 32 F or below is immient	Light Snow Covering	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	200
	20 F to 32 F, remaining in range	Dry	Apply pre-wetted solid chemical	100	Plow as needed, Apply pre-wetted solid chemical as needed	200
	20 F to 32 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	100	Plow as needed, Apply pre-wetted solid chemical as needed	200
	20 F to 32 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	100	Plow as needed, Apply pre-wetted solid chemical as needed	200
	15 F to 20 F, remaining in range	Dry	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	250
	15 F to 20 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	250
	15 F to 20 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	200	Plow as needed, Apply pre-wetted solid chemical as needed	250
	Below 15 F, steady or falling	Dry	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Wet Slush	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Light Snow Covering	Plow as needed	NA	Plow as needed	NA
Moderate/Heavy Snow Storm -greater than 1/2 inch per hour	Above 32 F, steady or rising	Dry	Monitor Temps, Spot Treat	NA	NA	NA
	Above 32 F, steady or rising	Wet Slush	Apply pre-wetted solid chemical	100	Plow as needed, Apply pre-wetted solid chemical as needed	100
	Above 32 F, steady or rising	Light Snow Covering	Apply pre-wetted solid chemical	100	Plow as needed, Apply pre-wetted solid chemical as needed	100
	Above 32 F, 32 F or below is immient	Dry	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	Above 32 F, 32 F or below is immient	Wet Slush	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	Above 32 F, 32 F or below is immient	Light Snow Covering	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	30 F to 32 F, remaining in range	Dry	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	30 F to 32 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	30 F to 32 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	100 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	100 (min) to 400 (max)
	25 F to 30 F, remaining in range	Dry	Apply pre-wetted solid chemical	200 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	200 (min) to 400 (max)
	25 F to 30 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	200 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	200 (min) to 400 (max)
	25 F to 30 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	200 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	200 (min) to 400 (max)
	15 F to 25 F, remaining in range	Dry	Apply pre-wetted solid chemical	200 (min) to 500 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	250 (min) to 500 (max)
	15 F to 25 F, remaining in range	Wet Slush	Apply pre-wetted solid chemical	200 (min) to 500 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	250 (min) to 500 (max)
	15 F to 25 F, remaining in range	Light Snow Covering	Apply pre-wetted solid chemical	200 (min) to 500 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	250 (min) to 500 (max)
	Below 15 F, steady or falling	Dry	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Wet Slush	Plow as needed	NA	Plow as needed	NA
	Below 15 F, steady or falling	Light Snow Covering	Plow as needed	NA	Plow as needed	NA
Frost	Above 32 F, steady or rising	Any	Monitor Temps, Pre-Treat	40-75 gallons per lane mile anti-icing (liquid only)	NA	NA
	28 F to 35 F, remaining in range or falling to 32 F or below, and equal to or below dew point	Any	Monitor Temps, apply pre-wetted solid chemical	less than 100	Apply pre-wetted solid chemical as needed	less than 100
	20 F to 28 F, remaining in range, and equal to or below dew point	Any	Apply pre-wetted solid chemical	150 (max)	Apply pre-wetted solid chemical as needed	150 (max)
	15 F to 20 F, remaining in range, and equal to or below dew point	Any	Apply pre-wetted solid chemical	100 (min) to 200 (max)	Apply pre-wetted solid chemical as needed	100 (min) to 200 (max)
	Below 15 F, steady or falling	Any	Apply abrasives	NA	Apply abrasives as needed	NA
Freezing Rain Storm	Above 32 F, steady or rising	Any	Monitor Temps, Spot Treat	100	Monitor Temps, Spot Treat	100
	Above 32 F, 32 F or below is immient	Any	Monitor Temps, apply pre-wetted solid chemical	100	Apply pre-wetted solid chemical as needed	100
	20 F to 32 F, remaining in range	Any	Monitor Temps, apply pre-wetted solid chemical	100 (min) to 250 (max)	Apply pre-wetted solid chemical as needed	100 (min) to 250 (max)
	15 F to 20 F, remaining in range	Any	Monitor Temps, apply pre-wetted solid chemical	250 (min) to 400 (max)	Apply pre-wetted solid chemical as needed	250 (min) to 400 (max)
	Below 15 F, steady or falling	Any	Apply abrasives	NA	Apply abrasives as needed	NA
Sleet Storm	Above 32 F, steady or rising	Any	Monitor Temps, Spot Treat	125	Monitor Temps, Spot Treat	125
	Above 32 F, 32 F or below is immient	Any	Monitor Temps, apply pre-wetted solid chemical	125	Plow as needed, Apply pre-wetted solid chemical as needed	125
	28 F to 32 F, remaining in range	Any	Monitor Temps, apply pre-wetted solid chemical	125 (min) to 325 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	125 (min) to 325 (max)
	15 F to 28 F, remaining in range	Any	Monitor Temps, apply pre-wetted solid chemical	250 (min) to 400 (max)	Plow as needed, Apply pre-wetted solid chemical as needed	250 (min) to 400 (max)
	Below 15 F, steady or falling	Any	Plow as needed	NA	Plow as needed	NA

CALIBRATION WORKSHEET

OPERATOR'S MANUAL

DICKEY-john™

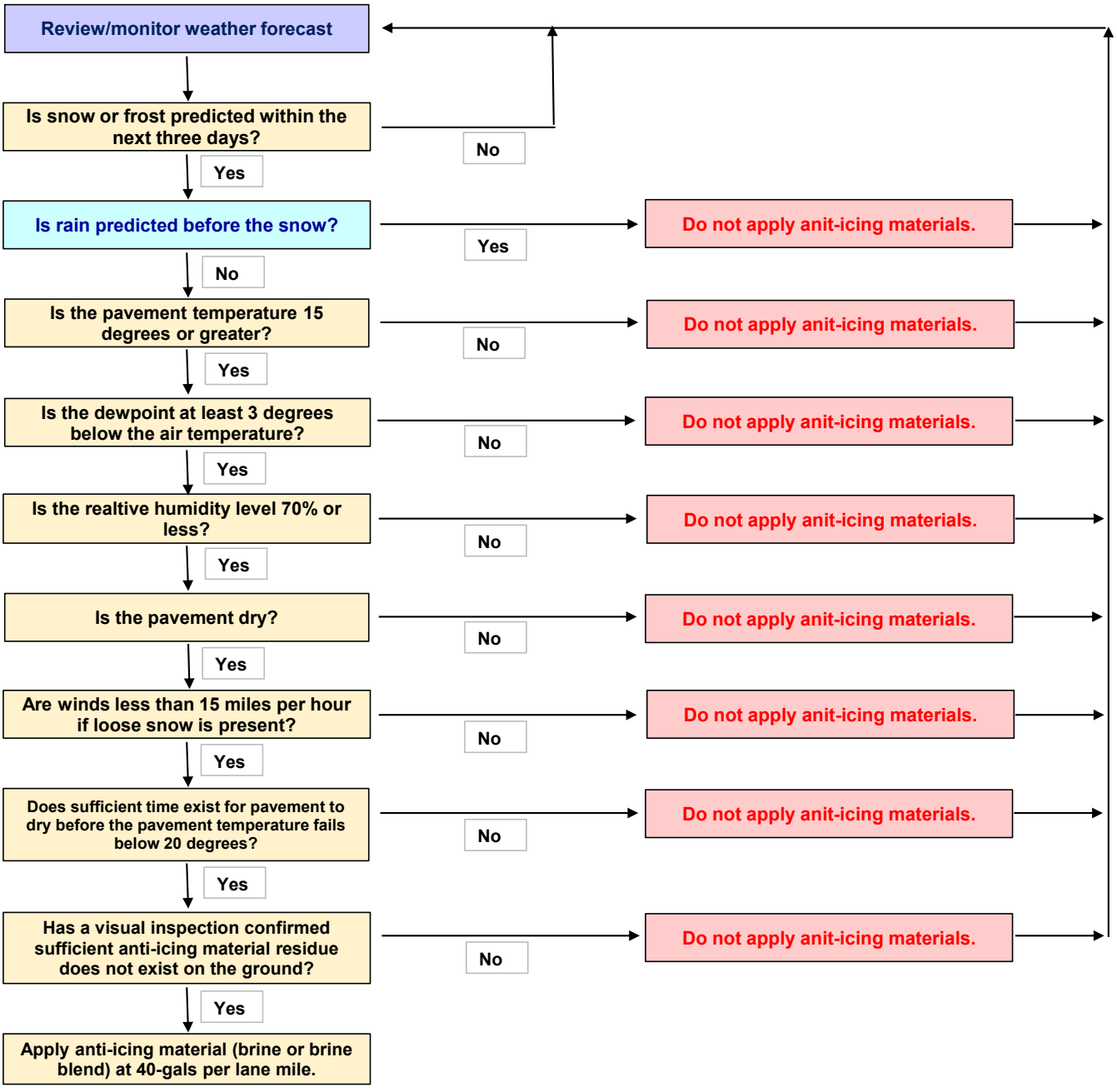
GROUND SPEED CONFIGURATION (F7)	
MAX SPEED	
MANUAL DRIVER	
MANUAL SPEED	
START UP	
CONSTANT 1	
CONSTANT 2	

SPINNER CONFIGURATION (F8)	
UNLOAD	
NO GND SPD	
DRV FREQ	
PULSE FDBK	
SPIN CON	
BLST RATE	
SYS RSPNS	
VALV BOOST	
AFILT	
PWM OFFSET	
PWM SAT.	
SPRD LIMIT	

LIQUID CONFIGURATION (F5)				
Parameter	**Liquid 1**	**Liquid 2**	**Liquid 3**	**Liquid 4**
Liquid Material				
K-FACTOR/DENSITY				
PRES OFFST				
MAX PRES				
MAX VOLT				
NZLE CNST				
DRV FREQ				
PWM OFFSET				
PWM SAT.				
SYS RSPNS				
VALV BOOST				
AFILT				

LIQUID APPLICATION RATE (F4)				
Parameter	**Liquid 1**	**Liquid 2**	**Liquid 3**	**Liquid 4**
Granular Material				
STEP METHD				
APP START/RATE 1				
IC/DC STP/RATE 2				
MIN APP/RATE 3				
MAX APP/RATE 4				
RATE 5				
RATE 6				
RATE 7				
RATE 8				
RATE 9				
RATE 10				
BLST RATE				
CHN LBL				

Anti-Icing Application Decision Flowchart



Anti-Ice Log Sheet

Anti-Icing Totals 2022-23 Winter Season

	TIME		TEMP		EMPLOYEE / Route			Miles				Gallons Total			Seasonal Total			30-40 Rate
DATE	START	STOP	AIR	ROAD	Truck #15	Truck #18	Truck #20	T-15	T-18	T-20	TOTAL MILES	T-15	T-18	T-20	T-15	T-18	T-20	Rate

2022 - 2023 SNOW & ICE RECORD

EVENT	DATE	PD CALL	CREW START	CREW END	Snow Accumulation (inches)	Rock Salt Used (tons)	Salt Brine Used (gal)	BEET-HEET Used (gal) 30%	PRECIP TYPE (SNOW, ICE, SLEET, DUST)	PRECIP INTENSITY (LIGHT, MODERATE, HEAVY)	AIR TEMPERATURE	PAVEMENT TEMPERATURE	Anti-Ice Mains	Anti-Ice Bridge Decks, Curves and Inclines	Anti-Ice Side Streets	Anti-Ice Intersections	Anti-Ice Alleys	Anti-Ice Business Commuter Sidewalks	Salt Mains	Salt Side Streets	Salt Parking Lots	Salt Cul-de-Sac Streets	Salt Intersections	Salt Business Commuter Route	Salt Alleys	Plow Mains	Plow Sides	Plow Business Commuter Route	Plow School Routes	Plow Crossing Guard Locations	Plow Parking Lots (2 - 4 ")	Plow Parking Lots (4 - 8 ")	Plow Parking Lots (8 + ")	Plow Cul-de-Sac Streets (2 -4")	Plow Cul-de-Sac Streets (4 - 8 ")	Plow Cul-de- Sac Streets (8 + ")	Plow Alleys (2 - 4 ")	Plow Alleys (4 - 8 ")	Plow Alleys (8 + ")	Plow Residential Sidewalks (4 + ")	Bus Shelters	Clearing / Hauling	Parking Ban / Parked Cars	Total Miles	NOTES
1					0.00	0.00	0.00	0.00																																					
2					0.00	0.00	0.00	0.00																																						
3					0.00	0.00	0.00	0.00																																					
4					0.00	0.00	0.00	0.00																																					
5					0.00	0.00	0.00	0.00																																					
6					0.00	0.00	0.00	0.00																																					
7					0.00	0.00	0.00	0.00																																					
8					0.00	0.00	0.00	0.00																																					
9					0.00	0.00	0.00	0.00																																					
9					0.00	0.00	0.00	0.00																																					
11					0.00	0.00	0.00	0.00																																					
12					0.00	0.00	0.00	0.00																																					
13					0.00	0.00	0.00	0.00																																					
14					0.00	0.00	0.00	0.00																																					
15					0.00	0.00	0.00	0.00																																					
16					0.00	0.00	0.00	0.00																																					
17					0.00	0.00	0.00	0.00																																					
18					0.00	0.00	0.00	0.00																																					
19					0.00	0.00	0.00	0.00																																					
20					0.00	0.00	0.00	0.00																																					
21					0.00	0.00	0.00	0.00																																					
22					0.00	0.00	0.00	0.00																																					
23					0.00	0.00	0.00	0.00																																					
24					0.00	0.00	0.00	0.00																																					
25					0.00	0.00	0.00	0.00																																					
26					0.00	0.00	0.00	0.00																																					
27					0.00	0.00	0.00	0.00																																					
28					0.00	0.00	0.00	0.00																																					
29					0.00	0.00	0.00	0.00																																					
30					0.00	0.00	0.00	0.00																																					
31					0.00	0.00	0.00	0.00																																					
32					0.00	0.00	0.00	0.00																																					
33					0.00	0.00	0.00	0.00																																					
34					0.00	0.00	0.00	0.00																																					
35					0.00	0.00	0.00	0.00																																					
36					0.00	0.00	0.00	0.00																																					
37					0.00	0.00	0.00	0.00																																					
38					0.00	0.00	0.00	0.00																																					
39					0.00	0.00	0.00	0.00																																					
40					0.00	0.00	0.00	0.00																																					
41					0.00	0.00	0.00	0.00																																					
42					0.00	0.00	0.00	0.00																																					
					0.00	0.00	0.00	0.00																																					
				TOTALS	0.00	0.00	0.00	0.00					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	Totals

AVG Accumulation			0.00																																											
AVG Pavement Temp			#DIV/0!		Mains Salted																0			Mains Plowed								0											Bus Shelters Cleared				0
AVG Air Temp			#DIV/0!		Parking Lots Salted																0			Sides Plowed								0											Residential Sidewalks				0
Total Accumulation			0.00		Sides Salted																0			School Routes Plowed								0											Clearing Operations				0
					Intersections Salted																0			Salt Crossing Guard Locations								1											Parked Cars				0
					Business Commuter Route																0			Plow Lots 2" - 8"								0											Cul de Sacs 2-4"				0
					Alleys Salted																0			Plow Lots 8" +								0											Cul de Sacs 4"+				0
																								Plow Alleys								0															
																								Plow Alleys								0															

Winter Season Snow Record - Master Log Sheet

Snow Event Log Sheet

Labor Costs							Total Labor	Total Equip	LARGE DUMPS														SM. DUMPS		SIDEWALK							LOADERS				PICK-UPS										SKIDSTEERS		JP	Mechanic hours
Name	Reg Hrs	Cost	OT Hrs	Cost	DT Hrs	Cost			T3	T4	T5	T6	T8	T9	T10	T16	T17	T18	T33	T40	T11	T23	C2	C18	C18R	C19	C20	C24	C25	C1	C13	C14	C21	T15	T20	T21	T26	T29	T36	T37	T41	T44	T47	T48	C34	C35	P19	
ABPLANALP, E		-		-		-	-	-																																						
BECKLEY, R		-		-		-	-	-																																						
CONRAD, J		-		-		-	-	-																																						
DAVIS, C		-		-		-	-	-																																						
DeBOER, N		-		-		-	-	-																																						
FALCONE, P		-		-		-	-	-																																						
FIORETTO, P		-		-		-	-	-																																						
GARCIA, L		-		-		-	-	-																																						
GOMEZ, S		-		-		-	-	-																																						
HARTIGAN, M		-		-		-	-	-																																						
HOFFMAN, D		-		-		-	-	-																																						
KNUDSON, K		-		-		-	-	-																																						
LARSON, E.		-		-		-	-	-																																						
LOEBBAKA, B		-		-		-	-	-																																						
MUZIK, T		-		-		-	-	-																																						
NG, A		-		-		-	-	-																																						
NONNEMACHER		-		-		-	-	-																																						
NORLIE, K		-		-		-	-	-																																						
NOVY, D		-		-		-	-	-																																						
O'MALLEY, D		-		-		-	-	-																																						
OVEREEM, M		-		-		-	-	-																																						
PATER, B		-		-		-	-	-																																						
PERRI, J		-		-		-	-	-																																						
PETERSON, A		-		-		-	-	-																																						
PHOTOPULOS, A		-		-		-	-	-																																						
RICCI, A		-		-		-	-	-																																						
RINDFLEISCH, S		-		-		-	-	-																																						
RODRIGUEZ, M		-		-		-	-	-																																						
SANTINI, F		-		-		-	-	-																																						
SMYTH, D.		-		-		-	-	-																																						
SORBY, K		-		-		-	-	-																																						
STOCKINGER, A		-		-		-	-	-																																						
TOPPEL, C		-		-		-	-	-																																						
TRAVIS, T		-		-		-	-	-																																						
WASLEY, R		-		-		-	-	-																																						
	0.00	$ -	0.00	$ -	0.00	$ -																																								

Labor Type	Event Hrs	Season Hrs	Event Cost	Season Cost
Regular Hours	0.00	0.00	$0.00	$0.00
Overtime Hours	0.00	0.00	$0.00	$0.00
Double-time Hours	0.00	0.00	$0.00	$0.00
Totals	0.00	0.00	$0.00	$0.00

Equipment Type	Event Hrs	Season Hrs	Event Cost	Season Cost
Lg. truck	0.00	0.00	$0.00	$0.00
Sm. Trucks	0.00	0.00	$0.00	$0.00
Sidewalks	0.00	0.00	$0.00	$0.00
Gehl/Bobcat	0.00	0.00	$0.00	$0.00
Loaders	0.00	0.00	$0.00	$0.00
Totals	0.00	0.00	$0.00	$0.00

Material Cost	Event Quantity	Season Quantity	Event Cost	Season Cost
Salt-Tons	0.00	0.00	$0.00	$0.00
BeetHeet-Gals	0.00	0.00	$0.00	$0.00
Food	$0.00			$0.00
Salt Brine	0.00	0.00	$0.00	$0.00
Totals			$0.00	$0.00

Contractual Services	Event Cost	Season Cost
	$0.00	$0.00

Grand Totals	Event Total	Season Total
	$0.00	$0.00

2022-23 WORK LOG	EVENT # _____	Date:						Total Reg Hrs	Total OT Hrs	DBL X Hrs
Employee	Date	Equip #	Time In	Time Out	Zone #	SR #	Work Duties			
ABPLANALP, E.										
ABPLANALP, E.										
ABPLANALP, E.										
ABPLANALP, E.										
Davis, C										
Davis, C										
Davis, C										
Davis, C										
DeBOER, N.										
DeBOER, N.										
DeBOER, N.										
DeBOER, N.										
FALCONE, P										
FALCONE, P										
FALCONE, P										
FALCONE, P										
FIORETTO, P										
FIORETTO, P										
FIORETTO, P										
FIORETTO, P										
GOMEZ,S										
GOMEZ,S										
GOMEZ,S										
GOMEZ,S										
HARTIGAN, M										
HARTIGAN, M										
HARTIGAN, M										
HARTIGAN, M										
HOFFMAN, D.										
HOFFMAN, D.										
HOFFMAN, D.										
HOFFMAN, D.										
McMillan, J										
McMillan, J										
McMillan, J										
McMillan, J										
MUZIK, T.										
MUZIK, T.										
MUZIK, T.										
MUZIK, T.										
NG, A										
NG, A										
NG, A										
NG, A										
NOVY,D										
NOVY,D										
NOVY,D										
NOVY,D										
O'malley, D										
O'malley, D										

2022-23 WORK LOG **EVENT # _____** **Date:**

Employee	Date	Equip #	Time In	Time Out	Zone #	SR #	Work Duties	Total Reg Hrs	Total OT Hrs	DBL X Hrs
O'malley, D										
O'malley, D										
OVEREEM, M										
OVEREEM, M										
OVEREEM, M										
OVEREEM, M										
PATER, B										
PATER, B										
PATER, B										
PATER, B										
PERRI, J										
PERRI, J										
PERRI, J										
PERRI, J										
PETERSON, A										
PETERSON, A										
PETERSON, A										
PETERSON, A										
Photopulos, A										
Photopulos, A										
Photopulos, A										
Photopulos, A										
RICCI, A										
RICCI, A										
RICCI, A										
RICCI, A										
RINDFLEISCH, S.										
RINDFLEISCH, S.										
RINDFLEISCH, S.										
RINDFLEISCH, S.										
RODRIGUEZ, M										
RODRIGUEZ, M										
RODRIGUEZ, M										
RODRIGUEZ, M										
SANTINI, F										
SANTINI, F										
SANTINI, F										
SANTINI, F										
SORBY, K										
SORBY, K										
SORBY, K										
SORBY, K										
STOCKINGER, A										
STOCKINGER, A										
STOCKINGER, A										
STOCKINGER, A										
TOPPEL,C										
TOPPEL,C										
TOPPEL,C										
TOPPEL,C										

2022-23 WORK LOG		EVENT # _____		Date:				Total Reg Hrs	Total OT Hrs	DBL X Hrs
Employee	Date	Equip #	Time In	Time Out	Zone #	SR #	Work Duties			
TRAVIS, T										
TRAVIS, T										
TRAVIS, T										
TRAVIS, T										
WASLEY, R										
WASLEY, R										
WASLEY, R										
WASLEY, R										

How to dispense liquid products from the BrineX Truck Fill Station



TRUCK CODE NUMBERS

Each truck has a unique code number for the truck and the product you wish to fill.

Please note this for use later.



Open the valve on the back of the product storage tank you want to dispense from. Your supervisor should tell you which tank to use.



OPEN VALVE



Truck Fill Station





The blue hose loads the truck with liquid.

The green hose unloads the liquid from the truck

Connect the blue hose to your truck





Remove plug



Connect hose



Open Valves



To the right of the shed door is the control panel



The power switch should be in the on position as pictured on the right. If not turn it clockwise to turn it on.





The screen on the control panel will prompt you to enter a password. This password is unique to the truck and the product you are dispensing.

The numbers for your truck are on a tag in the truck. Your supervisor will tell you which product code to use. Use the keypad to enter the code.



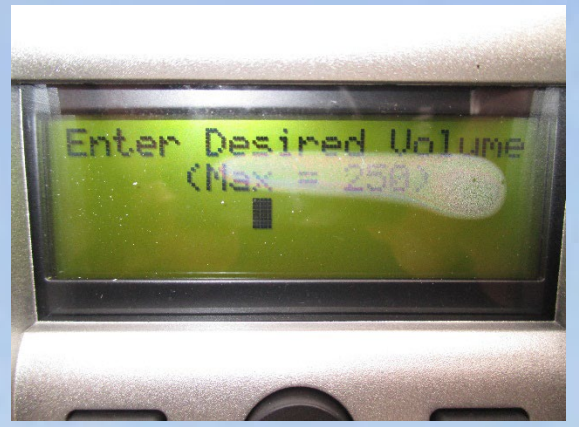


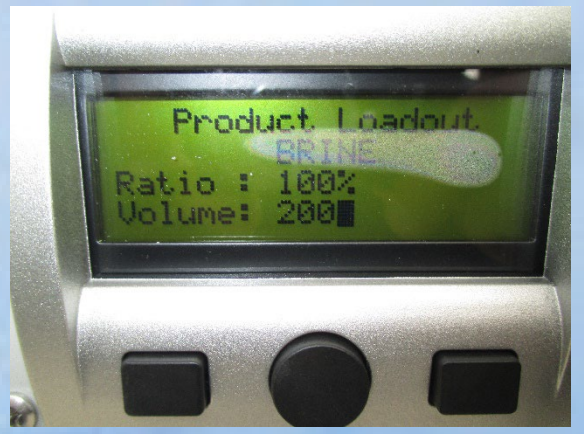


Enter how much product, in gallons, you wish to dispense and press start. Each truck has a maximum volume the computer will let you dispense at one time. Push the start button to begin.

Delivery can be stopped any time by pushing the stop button. If you stop and restart within 30 seconds, it will resume. If you wait longer, you will have to start over at the beginning.

The computer will stop dispensing automatically when the correct volume is delivered.







Turn off the valves on the delivery hose and the truck tank.

Disconnect the hose and replace the plug in the quick disconnect.





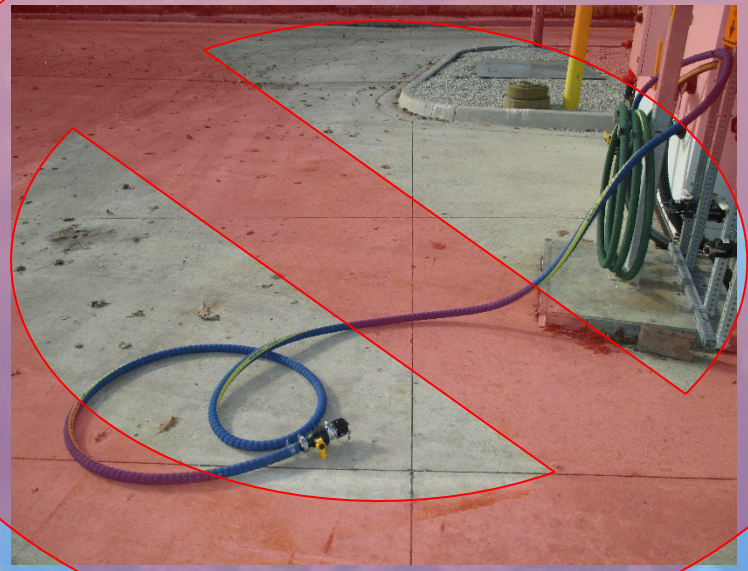
Replace the cap on the dispensing hose.





Hang the hose back up on the hanger. Please do not leave it on the ground.





Turn off the valve on the product tank.







Thank You!

A BRIEF INTRODUCTION TO THE NEW C-14 JOHN DEERE WHEEL LOADER



The keypad

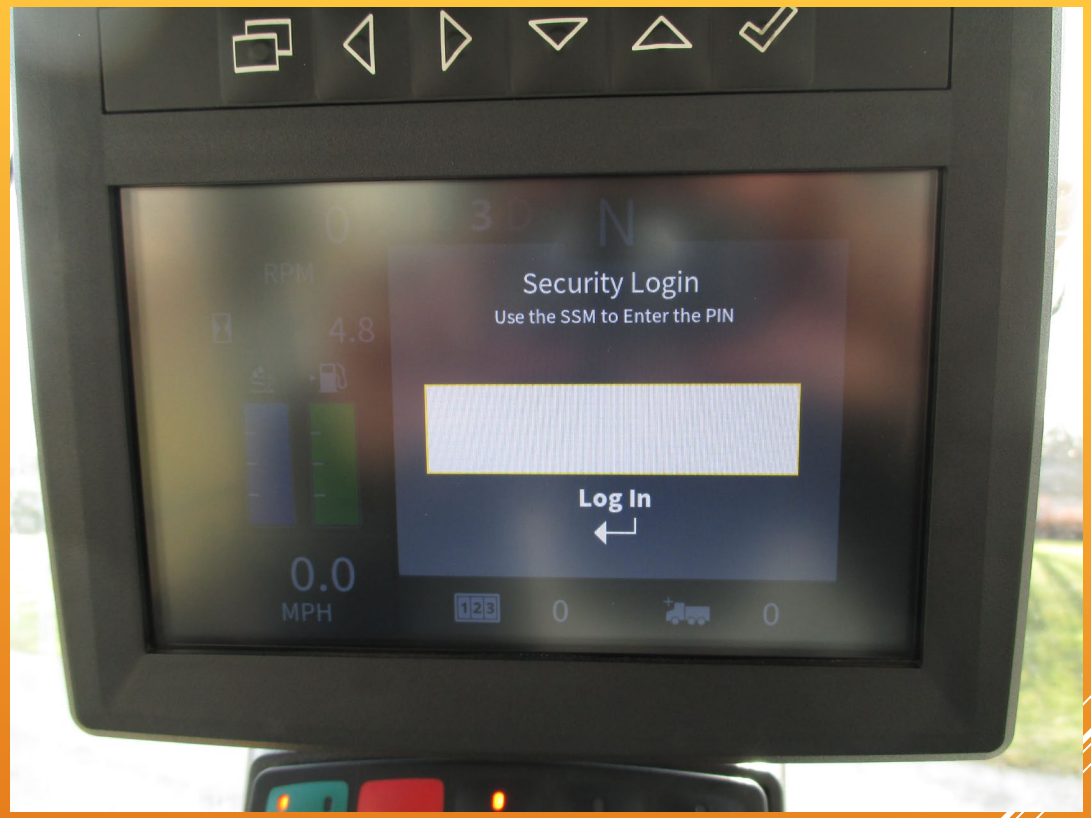


Push the green button once to turn on the vehicle.

Wait for the computer to boot up.



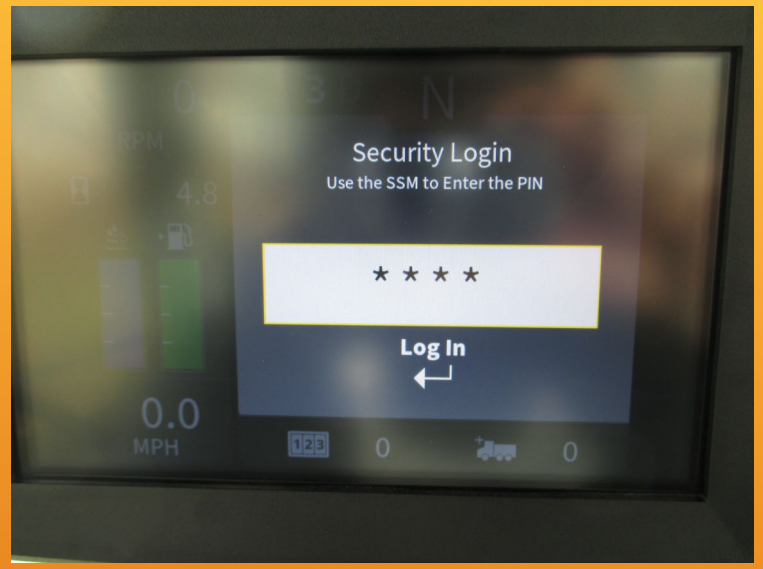
When the computer is done booting, it will prompt for a PIN number.



The PIN Number is :









Use the keypad to enter the PIN and then push the enter button.

You are now ready to start the machine



Push and hold the start button until the machine starts



The parking brake button releases and engages the parking brake



The stop button stops the engine and turns off the machine. Please turn off the lights before turning off the machine or you will have to re-enter the PIN to turn off the lights





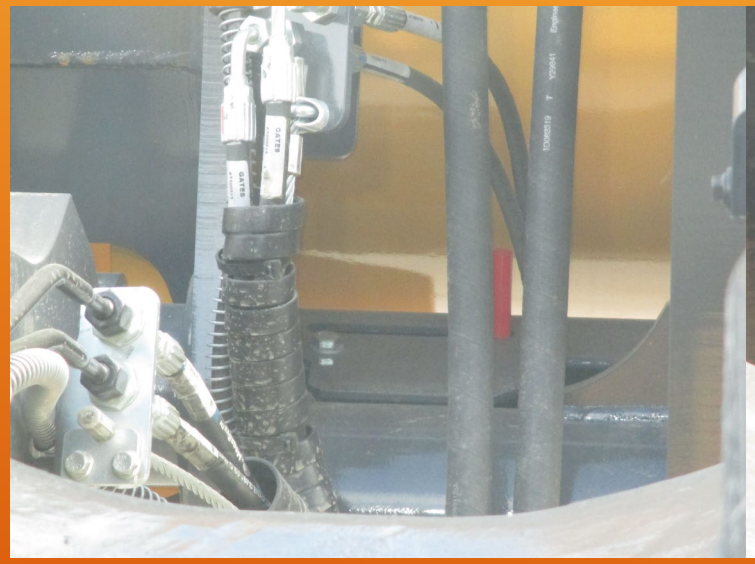
Locking and unlocking the bucket

Push and hold the bucket lock button until the unlocked icon appears





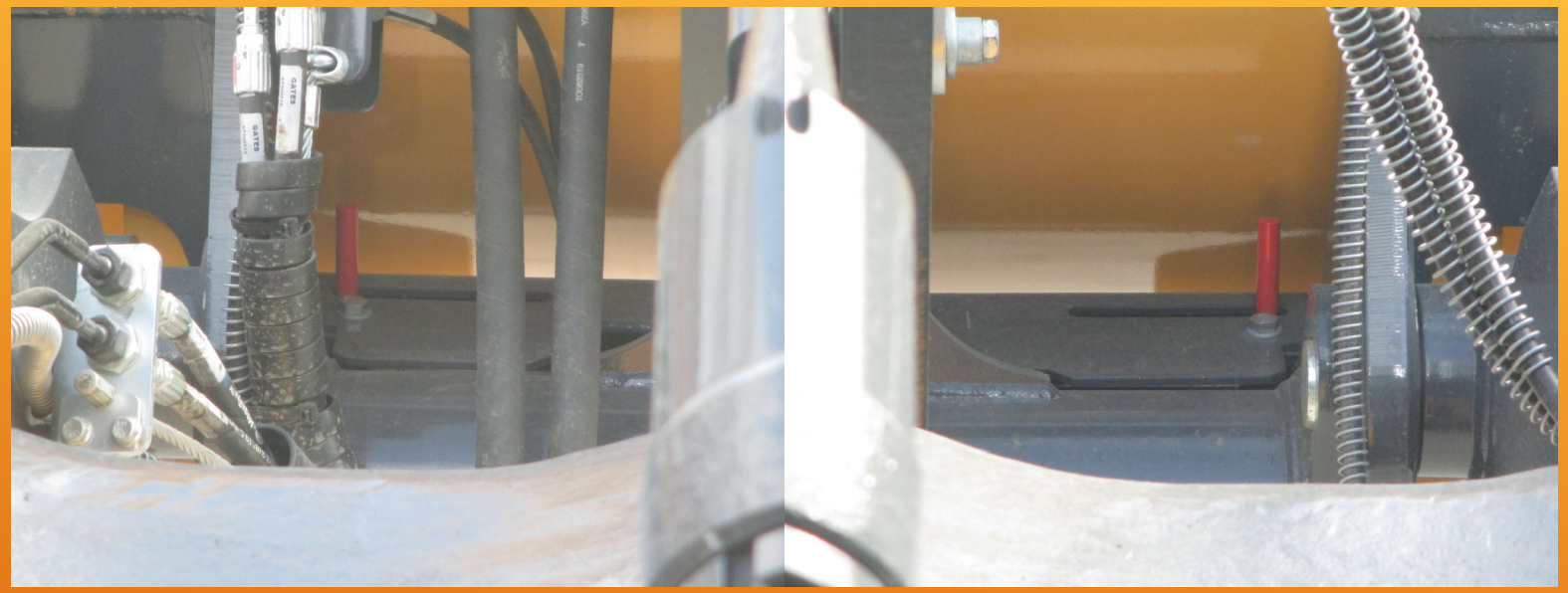
If you raise the bucket up, you can see the red lock pin indicators. When they are both inboard the bucket is unlocked.







Push the button once to begin the locking process



The bucket is locked when the red lock pin indicators are both in the outboard position



Thank you!

Your supervisor can help you with ‘hands on’ training before you operate the machine for the first time