

SNOW AND ICE CONTROL PLAN

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VILLAGE OF ALGONQUIN

Snow and Ice Control Plan

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I. SNOW FIGHTING PLAN

The Algonquin Public Works Department General Services Division is responsible for the safe flow of traffic throughout the Village's network of streets. Algonquin's current roadway system, within its maintenance jurisdiction, includes about 128 center-lane miles of pavement. Due to the topography of the Village, these streets include many steep grades and open areas where snow accumulations caused by drifting is extensive. These conditions present some unique obstacles and are managed primarily with three snow and ice control tools. Firstly, pavement treatments may be utilized prior to the event to prevent the initial snow fall from adhering to the road surface, secondly, road salt may be applied before, during, and after a storm, and lastly, roadway plowing is performed to remove accumulations from the roadway surfaces. These three tools may be utilized in various combinations dependent upon the variables of the storm, tool effectiveness in a given circumstance, and financial accountability.

The Illinois Department of Transportation (IDOT) generally plows and maintains the two main State routes (31 & 62) within our corporate limits. However, since we are situated at the edges of two IDOT divisions, we must, fairly regularly, provide service to those routes within our boundaries at times when the State's response is insufficient.

Counties and Townships that overlap our jurisdiction also manage snow and ice control routes within our corporate limits. Such areas include portions of Algonquin Rd., Randall Rd., and Cary Rd. These roads may also occasionally require our attention, as we lie at the outer limits of each respective jurisdiction.

Weather Prediction

Prediction of impending storms is important in the control of snow and ice. The Public Works Department subscribes to a live, internet based, weather radar service, and a 24-hour staffed weather prediction service. The snow and ice control supervisors also keep in contact with the local police department. All of these efforts, and others, as required, keep the Villages snow and ice control supervisors directly aware of the storms impacts and evolution. These types of data access are also used by IDOT and most other communities to provide accurate tracking of storms. Each year our storm data access potential is reviewed and adjusted, especially as technology evolves. An impending storm warning will initiate the assignment of snow and ice control tasks at the discretion of the supervisor in charge. Pending storm data is also related to the snow and ice teams in an effort to best prepare them for deployment.

Plow Routes

To coordinate snow and ice control effectively, the General Services Division has divided the Village into three (3) zones, (Zone A is east of Route 31, Zone B is between Route 31 & Randall Rd., and Zone C is from Randall Rd. to the west end of the Village limits), with snow plow routes assigned throughout the zones. Each truck is assigned a specific plowing route to maintain within a zone. Each plow route has a primary and secondary driver. Plow routes are balanced according to the number of miles serviced and the time required to complete each route. This insures that each route is completed in approximately the same amount of time. Those routes designated to, and serviced by, our largest service vehicles are between ten (10) and fifteen (15) miles long. Those plowed by our smaller service vehicles are between five (5) and eight (8) miles long. All Public Works Department equipment is available for utilization in the snow fighting effort. Most all able equipment is assigned and utilized, with several back up units available should units break down, or the nature of the event require additional deployment. The assistance of an outside

contractor is utilized for servicing many of the cul-de-sacs within the Village, and also our Down Town District. Private contracting of snow and ice services is also available for emergencies.

Whenever conditions call for a full plowing effort, two supervisors will be assigned as the snow and ice control supervisors. They will be charged with the responsibility of keeping pertinent records of the event, responding to calls and concerns from residents or Police Dispatch, and making all decisions related to managing the storm.

Alerting Snow and Ice Control Personnel

Assigned supervisors will manage snow and ice control operations. During daylight hours the Streets and Right of Way supervisor, or his designee, will deploy the snow and ice control teams. During the nighttime the police department will be the primary observers of the start of a storm and notify the person designated as the snow and ice control supervisor for that day. The snow and ice control supervisor will then determine whether snow and ice control teams are necessary and call out the proper personnel.

Plowing Policy

The goal of the Public Works Department is to clear the Village streets as effectively and efficiently as possible by utilizing an effective combination of snow and ice control methods. In the interest of protecting the environment and controlling costs, storm duration application of deicers will be performed sparingly, and typically only when mechanical plowing methods fail to provide desired results, or when hazardous conditions exist. During a snowstorm, the clearing of streets is performed on a priority basis. The roadway system in Algonquin is broken down in to four categories including primary arterial, secondary arterial, collector and local road. These categories provide the utilization hierarchy which allows our plan to identify and service the most crucial Village roadways first. Arterials are generally high volume roadways designed to move traffic through the Village, between various parts of the Village or to move traffic quickly to or from collector roads. Collectors are designed to channel somewhat smaller volumes of traffic from local roads to the primary and secondary arterials. Finally, local roads provide direct access to residential, commercial and institutional properties. Local roads form the lesser road system of subdivisions, downtowns and industrial parks, and can take the form of continuous streets, dead ends and cul-de-sacs.

Those streets most heavily traveled are the arterials and collectors, and are therefore considered higher on the list of priority streets and generally serviced first. Once the arterials and collectors are plowed and/or deiced they must be kept open and accessible to traffic. The next order of priority is the plowing and/or deicing of the local roads and cul-de-sacs within the subdivisions. These roads are to be cleared while keeping a watchful eye on the condition and drivability of the arterials and collectors. Municipally owned and maintained parking lots, sidewalks, and bike paths will be on separate routes and will not be considered in this particular priority hierarchy, but will be given appropriate attention based on use and need.

The cul-de–sacs and dead end streets will be kept open by the route drivers during the storm, but, due to the much smaller amount of traffic and the extended length of time necessary to clear the cul-de-sacs and dead end streets, final curb-to-curb clean-up will not take place until arterials, collectors, and local streets are fully cleared and the storm has subsided. A considerable number of cul-de-sacs are cleaned by contract in order to expedite the snow removal and provide more timely service to residents living in these areas. In all snow removal operations, cul-de-sacs are among our greatest operational challenges and public

relations issues. Therefore, we attempt to discourage, and thereby limit the number of cul-de-sacs proposed in new developments.

When plowing operations begin, the driver will "open" the arterials, followed by the collectors, etc. Opening a typical street consists of making one pass with the plow in each direction. This procedure may be done on several streets before the plow returns to push back the remaining snow accumulation to the approximate curb line. If a snowstorm is extremely heavy this procedure may be repeated many times before the streets can be cleared completely, or curb-to-curb as it is often referred. Collectors and local roads may be opened in this manner before arterials are completely cleaned. This decision will be left largely at the discretion of the driver, in consultation with the snow and ice control supervisor.

The amount of snow, weather conditions, and the travel time required between subdivisions within the route may dictate the need for some modification of the plowing routines in actual practice.

During regular working hours the Streets and Rights of Way Supervisor, or his designee, will coordinate the snow fighting effort. Utilizing our weather prediction resources, the supervisor will track the storm as well as possible and provide pertinent updates to field personnel. An assigned supervisor will drive the streets to appraise the plowing activities, monitor progress, and assist with emergency repairs and breakdowns, as they occur. An assigned supervisor will assist with parking lot plowing and help where needed with a pick-up and plow, as the aforementioned duties allow. These functions will aid in the more efficient and timely clearing of the Village streets and properties. For those hours other than regular working hours a designated snow and ice control supervisor will fulfill all these functions.

Salting Policy

The Village of Algonquin utilizes a two thousand two hundred (2,200) ton salt storage facility located at the Public Works Complex at 110 Meyer Dr. This facility allows the Public Works Department the necessary reserves of salt. In our commitment to protecting the environment and controlling costs, salt is applied as sparingly as able, typically two to three hundred (200-300) pounds per lane mile, as needed. With the addition of a mix of salt brine & beet juice (70% salt brine & 30% beat juice) added to our salt product, we have increased our ability to deal with colder temperatures, but often a combination of tire traffic and/or sunshine is needed to enhance the workability of these treatments. For this reason, cul-de-sacs are salted only in extreme cases. The increased ability to melt snow and ice is still not unlimited. Salt alone is effective to fifteen (15) degrees Fahrenheit. If street surface temperatures drop below this temperature, salt becomes ineffective. If the salt is treated with our brine and beet juice solution, it provides our salt product the ability to be effective down to a road surface temperature of five (5) degrees Fahrenheit. For this reason, most all of our salt capable units are able to apply this solution to the salt product as it is distributed upon the roadway.

The Village of Algonquin also employs a pre-storm surface treatment application strategy. This is where an anti-icing product is applied to the pavement prior to the storms arrival. There are a couple of ways this is done, and there are a couple conditions that must be present in order for the treatment to be effective. The pavement temperature cannot be below fifteen (15) degrees Fahrenheit, the humidity cannot be over seventy (70) percent, and there cannot be any chance of rain. The most common, longest lasting, and cost-effective process is to apply a salt brine/beet juice liquid mix to the roadway at a rate of forty (40) gallons per lane mile as disbursed via a vehicle mounted boom sprayer system. This application will dry and remain on the pavement ready to work for up five (5) days without the need for reapplication. The other option is to apply salt brine and beet juice treated salt to the roadways. This can only be done a few hours ahead of a storm. Both applications begin to melt the snow as soon as it contacts the roadway surface, which prevents the snow and ice from bonding to the pavement. This provides great opportunity in better managing a storm right from the start. To reiterate, a pre-storm surface treatment application can only be performed if the appropriate conditions exist, and may not be prescribed for many of the events that occur.

Municipal Lots, Sidewalks, Downtown, and Bike Paths

Routes are assigned under this current plan to handle snow removal from all municipally owned parking lots, and sidewalks abutting municipally owned properties. Additionally, clearance of parking spaces and sidewalks in our downtown area, as well as selected bike paths are also serviced.

The Ganek Municipal Complex route will be handled as a 24-hour responsibility. Assigned snow and ice control teams will first provide access clearance to the Police Department parking lot and ensure safe ingress and egress to the facility from Stonegate Drive. Depending on the time of day or night, teams may either shovel and deice the walkways, as required for 24-hour access to the lower level Police Department, or choose to go immediately to the upper level parking lot and open it up to prepare for the days business. Once all critical areas of the facility are opened up for reasonable access, the teams will rotate between assigned locations on the route while insuring that the Ganek Municipal Complex is maintained in a manner that provides consistently reasonable access for employees and the general public. Once the event is substantially complete, teams will push snow back to the curbs, perform a final detailing of all site walkways at the Ganek Municipal Complex, before proceeding to the final clean-up of other sites on the route.

The other routes are designated as post event routes and are the last sites to be serviced. There are routes that service the municipal properties throughout town, routes that service municipally owned sidewalks and bike paths, and a route that services the parking and walkways in the greater downtown area. These routes will be serviced within 24-hours of the substantial completion of a snow and ice control event.

Desired Results

All communities that publish a *Snow and Ice Control Plan* utilize this document to set a goal, or standard, for their specific operation. In actuality, that standard is generally a measurement of effectiveness on how quickly the roadways within the jurisdiction can be cleaned to bare pavement after all snowfall has ceased.

Although we strive to clear all roads down to bare pavement, curb-to-curb, we are unable to guarantee this due to extreme conditions and limits to manpower and equipment.

To that end, we need to cautiously set our standards high, but consider our current limitations. Algonquin's overall goal in this *Snow and Ice Control Plan* is to clear all of its roadways, from arterial to local road, of all snow accumulation within eight (8) hours after the snow has stopped. This policy dictates curb-to-curb snow removal on all roadways, with an additional standard of bare pavement on all arterial and collector roads, hills, curves and intersections, within the specified eight (8) hour period. Mid-block hard pack snow, bladed to a minimum thickness, is acceptable on most local roads

Ideally, this axiom would be met every time; however, because of many uncontrollable variables, a truly attainable result would be to meet the standard of a 12 hour completion for 80% of the storms in any

given season. Performance evaluation feedback is built into the reporting system; hence, the results of the snow fighting operation will be evidenced shortly after implementing the plan.

Property Damage

Throughout the course of operations of snow and ice removal, a certain amount of damage may occur due to the plow riding up over the curb. The Public Works Department will repair parkway damage with the use of pulverized dirt and seed in the spring, when weather permits. If the sod is rolled back in such a way that it could be restored, this will be done by the repair crews. The responsibility of watering repairs will fall to the adjacent homeowner. Damage to sod due to the inadvertent splashing of salt brine will not be treated by the Village.

If a mailbox is damaged by snow removal operations, a Public Works representative will be sent to inspect the damage. If there is evidence the box was struck by the plow, evidence of a dent in the box, there are three options for repair:

- 1) The box and/or post will be replaced with a standard type box and/or 4x4 post as needed.
- 2) Our crews can replace the mailbox with a box and/or post provided by the resident. The resident can receive a reimbursement of \$25 for the post and \$20 for the box.
- 3) The resident can replace the box and/or post themselves and receive the above reimbursement.

If there is no evidence of the box having been struck, the permanent repair will be the responsibility of the homeowner. In either case Public Works personnel will make repairs necessary to make the box functional as soon as possible after the storm.

Assistance to Private Property

Under no circumstances will a Village employee be allowed to use a Village vehicle to push, pull, or tow a private vehicle. The Village team member should notify the snow and ice control supervisor if there is any possibility of a hazard. Likewise, under no circumstances should a Village vehicle be used to clear snow from private or commercial property, and no employee is allowed to use privately-owned equipment during working hours.

Departure from Policy

In recognition of the possibility of unusual or unexpected conditions, the Village authorizes departure from these general policies. In extreme cases where conditions warrant, the Public Works Director in consultation with the Village Manager, or his/her representative, may order departure from these general rules.

No Duty or Right Created

The purpose of this policy is to establish goals for snow and ice control. It is not to be construed to create any duty to any individual or entity. The policy does not provide or promise any special protection or service to any particular individual or group of individuals. No additional rights shall be granted any individual or entity by adoption of strikes, equipment breakdown, weather conditions, inadequacy of equipment, state or federal regulations, shortage of personnel, and any unforeseen, uncontrolled or unanticipated acts.

II. SNOW REMOVAL RESPONSIBILITIES

Responsibility for snow and ice control is shared by everyone throughout the Village. The most efficient snow removal plan requires coordination of all Village personnel as well as the cooperation of local businesses and residents.

A. POLICE AND EMERGENCY DISPATCH

The Police Department and Southeast Emergency Communications (SEECOM) perform an important and integral role in the snow fighting operation. Their critical functions include:

- Notifying the Public Works Department when street conditions become slippery and dangerous, especially when this occurs after hours, and;
- Assisting in keeping streets clear of parked vehicles during snow removal.

The SEECOM Dispatch Center, in constant communication with patrolling officers, is the first line of communication to the Public Works Department for reporting unsafe roadway conditions in the wake of a snow and ice event.

Notification

The prompt notification of the Public Works Department is critical in the snow fighting and ice control operation. When conditions warrant, the Police Department personnel should implement the *Public Works Department On-Call Procedure* by contacting the proper on-call snow and ice control supervisor, in order to provide timely notification and details concerning the situation at hand. The Public Works on-call snow and ice control supervisor will determine the proper response.

All unsafe roadway conditions must be relayed to the Public Works Department, General Services Division. Unsafe conditions include glare ice, accumulated snow, blowing and drifting snow blocking travel lanes, freezing rain, and select other conditions that may create a need to provide risk reduction. Police officers should make frequent checks of cornering traction, braking traction, and general driving confidence; notification should be immediate when it is determined these activities become difficult or impaired. The Public Works Department should always be alerted before greater than one (1) inch of snow has been allowed to accumulate on roadway surfaces.

The Public Works Department urges the Police Department to lean to the conservative when making assessments of weather-related conditions. It's better to notify the General Services team if the situation is questionable, and let the supervisors decide to take, or not to take action. This assists in preventing an easily treated situation from getting much more challenging. Conferring between officers and/or sergeants and shift commanders may assist in making an appropriate judgment on street conditions and when to initiate notification to the General Services team. It is the intent of the Public Works Department to make our roadways safe for travel as soon as practically possible following the occurrence of a snow or ice event.

Once the plow drivers are servicing the roadways, the SEECOM Dispatch Center keeps them informed of further problem areas. In the event the plow drivers or the Police personnel feel the situation requires more attention, they should contact the snow and ice control supervisor, who will determine what further response is possible or required. The Police Department can also assist the plow drivers by supplying

important information about changing weather conditions, traffic back-ups, and accidents. Such helpful information assists our department in keeping the operation running smoothly.

Finite quantities of ice control materials and/or conditions that may render ice control ineffective, make for extremely difficult decisions about when, where, and how much material to apply. These decisions must ultimately rest with the snow and ice control supervisor, or his representative. The supervisor will attempt to respond to all problem areas, but sufficient stores of material must be preserved for the more dangerous hills and more heavily traveled roadways.

Parking

Parking is regulated by the Police Department in two separate sections of the *Algonquin Municipal Code* that can be related to winter roads. They are as follows:

• 41.03 ALL NIGHT PARKING

No person shall park any vehicle on that part of Illinois State Route 31 and Illinois State Route 62, lying within the Village limits between the hours of 2:00 a.m. and 5:00 a.m. on any day, except physicians on emergency calls. No person shall park any vehicle on any other street within the Village for a period of time longer than 15 minutes within the hours of 2:00 a.m. and 5:00 a.m. on any day from October 31st of each and every year until April 15 of each and every succeeding year, except physicians on emergency calls.

• 41.10 PARKING AFTER A SNOWFALL

- 1) It shall be unlawful for any person, firm or corporation to park or cause to be parked any vehicle on any public street within the corporate limits of the Village at any time after a snowfall of two inches or more has occurred, unless said public street has been cleared of snow and snow removal operations have been completed.
- 2) Members of the Police Department and those Village employees designated by the Manager are authorized to remove and tow away, or have removed and towed away, any car or other vehicle illegally parked that prevents or obstructs snow removal form public streets.
- 3) Cars or vehicles so towed away for illegal parking shall be stored in a pound designated by the Police Department and shall be restored to the owner or operator of such vehicle upon the payment of all towing and storage fees.

Working in concert with the Police Department to ensure motorist safety will make all of our jobs much easier and our snow removal efforts more timely and efficient. Our program cannot be a success without the complete commitment of the Police Department and SEECOM Telecommunications personnel. The Police Department's commitment to assisting to provide safer roads will make the Public Works Department's snow and ice removal operations that much stronger.

B. PUBLIC WORKS DEPARTMENT

All Public Works staff is considered an important part of the snow and ice control efforts of the Village. As required, all employees are expected to participate in this important aspect of this public work.

Snow Fighters

For the purpose of this *Snow and Ice Control Plan*, there are two categories of snow-fighter. There are primary drivers and secondary drivers (which back up the primary drivers, as required). The type of storm, anticipated weather conditions, and the general use of the Public Works Department On-Call Procedure will determine who and how many employees are called in to respond to a particular situation. In order to achieve this goal, it is the policy of the Public Works Department that during snow season (that period defined as between the Saturday following the last Friday in September and the Sunday prior to the first Monday in May) no more than one primary snow-fighter from the driver list and two secondary snow-fighters from the driver list may have the same scheduled benefit hours off. The driver must secure a replacement that is acceptable to the Streets and Right of Way Supervisor and the driver's supervisor. Salting situations will dictate an all-call notice going out to all primary route drivers. Most storms will result in a combination of the two call-out procedures, as salting generally precedes most plowing operations.

The primary snow-fighters will proceed to their plow routes, or zones, and proceed to clear the snow in the method described in Section I of this document, *Snow Fighting Plan*. Snow-fighters will remain on the routes until one of the following occurs:

- All routes or assigned areas are completely serviced
- An individual driver has plowed for approximately 12 hours
- An individual driver is too tired to plow

If called out, the secondary snow-fighters will continue to plow their designated routes, or any areas assigned by the snow and ice control supervisor, or his designee, until one of the following occurs:

- All routes or assigned areas are completely serviced
- An individual driver has plowed for approximately 12 hours
- An individual driver is too tired to plow

When a driver finishes his assigned area, he will check with the zone captain or snow and ice control supervisor for reassignment until all routes are cleared. A snow and ice operation is not considered complete until all streets are cleared of snow, curb to curb, intersections are pushed back for visibility, and all critical municipal properties are accessible. When plowing and/or salting is completed, the driver shall wash the salt off the outside of his truck, remove any trash and debris from the cab interior, and make sure that the truck is loaded with salt and fuel, if necessary, for any more predicted storms. If no further winter weather is anticipated, the trucks should be left clean and empty of salt, making sure that the auger, spinner and box are completely free of salt and residue, and that the pre-wetting equipment has been purged and washed, as required. Once the truck has been stowed properly, the driver should check-in with the snow and ice control supervisor prior to leaving for home.

During snow and ice removal operations, the assigned driver will be responsible for general maintenance of trucks and equipment and will help the Village's Internal Services Supervisor, or his designee, do minor repairs as needed. The snow and ice control supervisor may assign the driver to another truck if the repairs are not minor and require too much time to get the truck back on the road.

Supervisors

For the purpose of managing the snow and ice control responses, General Services Division supervisors are assigned responsibility for snow and ice control events on a rotating basis. There are also zone captains assigned from the ranks of the primary drivers. During snow plowing operations, a snow and ice control supervisor will be assigned to oversee all activities during a snowstorm event. When a storm can be handled simply by salting, the zone captains will be in charge of completing all areas within their zone. This will provide both the snow and ice control supervisor and the drivers with a definitive "go-to" person for questions or problems related to the storm, either during or after the event.

During a snow event, the snow and ice control supervisor will be charged with the responsibility of keeping pertinent records of the event, responding to the calls and concerns from residents, the Police Department, or SEECOM, and making all decisions related to managing the storm. The supervisor will also be expected to patrol the Village during the operation to look for problem areas, assist where and when needed, and stay in constant communication with the drivers to determine progress of the snow removal effort. The current phone system allows voice messages to go directly to the Streets and ROW supervisor's voice mail. He, or his designee, will check the contents of the voicemail during events at a maximum of three (3) hour intervals throughout the storm. Adequate response to each call will be provided by either ensuring that the problem is resolved or by contacting the caller personally to provide information relative to their concern.

Utilities Division

Utilities Division personnel are expected to participate in snow and ice control activities as required. While many of the team members will be assigned a roster position as part of the annual plan, those individuals who are not assigned specific roles at the beginning of the season are expected to support this effort at any time assistance is deemed necessary.

C. HOME AND BUSINESS OWNERS

Snow and Ice Control Plans are valuable tools adopted by Public Works agencies to define snow and ice removal standards for Village rights-of-way under their direct control. However, the operation is only partially successful if it is not supported with a cooperative effort from of each resident and business owner within the community. The Algonquin Municipal Code requires individuals to maintain snow and ice free public walks in the following section:

• 5.08 SNOW ON SIDEWALKS

The person occupying the ground floor of any building, the user of any lot without a structure thereon, and the owner of any vacant building or other premises shall remove the snow and ice accumulating on the abutting sidewalks within 24 hours after any snowfall has ceased. If snow or ice cannot be removed the surface shall be sanded or otherwise treated to lessen the hazard for pedestrians until the climate permits removal.

Home and business owners must also refrain from depositing snow or ice from private property or public aprons on to streets or alleys at any point in time. This practice creates an unnecessary hazard for motorists and pedestrians, and costs the Village taxpayers additional expense to send drivers back into areas to remove such deposits. Algonquin Municipal Code states the following:

• 5.06 DEBRIS ON STREETS, Item C – Snow and Ice

It shall be unlawful for any person to remove snow or ice from any private property, driveway approach, or parkway and deposit the same upon any public street, alley, or public part thereof.

D. MOTORISTS AND PEDESTRIANS

We demand that our plow drivers follow all of the rules of the road, at a minimum, and take extra caution as conditions and situations demand. The motorist, on the other hand, may be at the end of an already long commute and wants nothing more than to get home, not to be caught behind a "lumbering" plow truck. Poor decisions on the part of motorists to pass, tailgate and even cut-off a snow plow vehicle often create considerable danger for the motorist and the plow driver. Snow equipment operators must be aware of the road around them at all times and be ready to defend against mistakes and random acts of indiscretion by the motoring public.

It is in everyone's best interest for snow removal to be completed as quickly and safely as possible. The best decision a motorist can make in a winter storm situation is to not be a motorist at all. Stay at home whenever possible, until the road conditions allow for safe travel. When driving during a winter storm is a must, please remember to use extra caution and leave plenty of additional time to reach your destination; rushing in treacherous conditions is always a mistake. Motorists are asked to adhere to the following:

- Maintain a safe distance between snow removal equipment and your vehicle.
- Give snow removal equipment the right-of-way whenever possible.
- Never attempt to pass snow removal equipment on a Village roadway! The only safe time to pass a plow vehicle is on a multiple lane highway, when there is an open travel lane to the left side of the equipment. When passing snow removal equipment, check to make sure that the driver is aware of your presence and that you leave sufficient distance from the equipment to your vehicle before moving back in front of the plow.
- Do not use high beams when driving behind snow removal equipment as the bright light can shine in the driver's side mirror and interfere with the operator's vision.
- Do not park on Village Streets overnight or when snow accumulation exceeds 2-inches.
- Residents should keep all vehicles in private driveways.
- Snowmobiles and all-terrain vehicles are prohibited from being operated on Village roadways and properties. The dim lighting and erratic operation of such vehicles can easily confuse a plow driver and presents an unnecessary hazard for all concerned.

Pedestrians, particularly children, should observe the following precautions in winter storm conditions:

- Walk during the daylight hours whenever possible. If walking at night, wear bright or reflective clothing to stand out against the surroundings. Do not walk during blowing and severe conditions when visibility is decreased. Stay back from roadways, use designated sidewalks and bike paths, and where possible use walking routes with less roadway traffic.
- Shovel snow to the right side of your driveway (as you face the street). This will limit the amount
 of snow that the plow deposits in your driveway as the streets are cleared of snow. The pile of
 snow, being on the right side of your driveway, will not block site lines from oncoming traffic
 moving along your street. For everyone's safety, stockpile snow as far away from the curb-line as
 practicable.

• Discourage children from playing on, and around snow piles near the street. Backyards are the best location for children during, and after winter storms, particularly when snow removal operations are underway.

III. MANPOWER AND EQUIPMENT

This *Snow and Ice Control Plan* is only as valuable as the people who implement it, and is simply rhetoric without the proper equipment to perform the tasks at hand. The Village of Algonquin has made great strides forward in hiring top-notch personnel to perform the duties laid out in this document. The Village Board has been committed to replacing and modernizing the snow and ice removal fleet. Both practices, hiring talented individuals and purchasing quality equipment, must continue as a matter of practice and policy in order to provide a safe experience for the motoring public, while continuing to work to minimize our impacts to the environment. The Public Works Department continues to monitor and assess its snow and ice removal program in an effort to consistently improve practices, policies, and procedures. Only in consistent assessment will be continue to provide the most effective and responsible service to our citizens.

Personnel

As previously stated, snow and ice control is the responsibility of every employee of the Public Works Department, as required. All drivers, primary and secondary plow drivers, are equipped with cell phones and two-way radios. All Public Works supervisors also have cell phones and two-way radios for enhanced communication during snow plowing operations.

Vehicles and Equipment

Various equipment is assigned to manage the effort Village-wide.

To ensure that equipment will be available to meet the goals and standards set forth in this *Snow and Ice Control Plan*, the following parameters should be established and followed in the future:

- Vehicles should be replaced, ideally, on a twelve year cycle due to the highly corrosive environment and adverse conditions in which they operate.
- A one ton truck is required for every additional thirty cul-de-sacs, whether that one ton is owned by Algonquin or by a contracted service
- A truck capable of plowing residential streets is required for every addition ten to fifteen lane miles of roadway.

To prepare for the winter season, each year, during the month of October, the General Services team, in a cooperative effort, will inspect, repair and otherwise prepare all snow removal equipment for service potentially beginning in October. Snow plows, salt spreaders and spreader boxes should be attached to the trucks, calibrated and tested no later than November 1st of each year. Once all equipment has been inspected, mounted, tested and is certified as ready for operation, the assigned drivers should operate the vehicles over their routes. This will typically take place as part of the annual snow and ice control training meeting held in October. All equipment should be tried and tested on a dry run in good weather to ensure that it is ready for service when the weather turns foul. Any equipment failures or suspected problems should be written up and reported immediately to the Internal Services Supervisor via current work order submission processes. Repairs should be initiated as soon as possible and equipment retested.

Spreader Calibration

No later than November 1st of each year, each and every salt spreader must be calibrated and the calibration settings loaded into the current computer operating system in each truck. Calibration is essential for controlling application rates. Different materials will spread at different rates, so spreaders should be calibrated with the material intended to be used. Each spreader must be calibrated separately because even the same model spreaders can vary widely in their performance and spreading capacity. Spreaders operate in a very hostile climate (low temperatures, excessive moisture, and corrosive chemicals) so they must be cleaned and checked regularly to guarantee proper operation.

For a detailed discussion of calibration and instructions on how to properly calibrate a salt spreader, refer to the section of this document titled *Use of Deicing Chemicals*.

Route Marking

When drivers hit the field for their annual dry runs they should be familiarizing themselves with the designated route course and looking for any potential problems that will not be apparent when the route is blanketed with snow. Both primary and secondary drivers should drive the route together with route sheets and route maps in hand and discuss the most efficient and effective method for attacking the route. Any proposed changes to the route order-of-priority should be recorded on the route sheet and discussed with the Streets and ROW Supervisor following the dry run. Approved changes can then be made to the route sheets and maps, only with the concurrence of the supervisor.

Plowing hazards should be noted during the dry run, marked on the route map and recorded in a list for future reference by any substitute, or alternate drivers who may need to plow that particular route. Such hazard may include raised manholes, broken curb, offset intersections, vertically-shifted pavement, potholes, bridge approach expansion joints and any number of other roadway anomalies that could unexpectedly catch a plow blade during an actual snow removal operation. These areas of concern should be marked with flexible, reflective markers prior to the time the snow flies. These markers should be inspected and maintained by the route drivers throughout the winter season.

Contracted Services

The Village of Algonquin currently contracts on an annual basis with a private company for the clearing of snow from a large percentage our one hundred and seventy five (175) cul-de-sacs and our eighty one (81) eyebrows. This contractor is required to respond to the Village and begin work within one (1) hour of being contacted by the snow and ice control supervisor, and complete the entire clean-up within and eight (8) hour period.

The Village of Algonquin currently contracts on an annual basis with a privet contractor for the clearing of snow for the Down Town Business District. This contractor is required to respond to the Village and begin work within one (1) hour of being contacted by the snow and ice control supervisor, and complete the entire clean-up within and eight (8) hour period.

Two-way Radios

All snow removal equipment is outfitted with two-way radios for communicating between drivers, the snow and ice control supervisor, and the Public Works Department offices.

Driver Notification

Each Public Works field employee is required to have a cell phone which will accept messages from our current emergency notification system (currently the IAMRESPONDING internet based system). This will allow text message and email communication to the employees. The snow and ice control supervisor can use a cell phone, or any internet-enabled computer to send specific snow and ice removal instructions to all, or any individual, employee, no matter what their location.

Smart Phones

The snow and ice control supervisors have smart phones to expedite communication during a snow or ice event. These devices are invaluable for calling in truck repairs from the field, requesting towing services, or communicating directly with the public works offices or the Ganek Municipal Complex. Each device has many different venues of communication allowing for expedited services.

Customer Service Requests

The Public Works Department also has a digital phone system with voice mail capability. The main number for citizens to contact with snow-related concerns or questions is **(847) 658-2754**. This number will be staffed by Public Works Administration personnel Monday through Friday, 7:30 a.m. to 4:00 p.m. The current phone system allows voice messages to go directly to the Streets and ROW supervisor's voice mail. He, or his designee, will check the contents of the voicemail during events at a maximum of three (3) hour intervals throughout the storm. Additionally, customers may also submit requests via the "Algonquin Fix It" digital application. Adequate response to each call will be provided by either ensuring that the problem is resolved or by contacting the caller personally to provide information relative to their concern. During major events the Public Works Department request systems may be staffed during off hours at the discretion of the Public Works Director.

IV. USE OF DEICING CHEMICALS

The Village of Algonquin contracts to purchase rock salt (sodium chloride) through a joint purchasing agreement with McHenry County this year. Additionally, from time to time, the Village may contract with a private supplier or other consortium as current season pricing dictates. Salt has proven over time to be the fastest, cheapest and most effective deicer for winter pavement management. Most Public Works managers will agree that we are not in the snow plowing business, we are in the "bond breaking" business and rock salt is the product of choice to make us successful in that venture. Rock salt, in addition to being an effective deicer, is also an abrasive that provides improved traction for vehicle tires when applied to road surfaces.

Once bonded to pavement, ice cannot be removed by plowing without damaging the road surface or plowing equipment. Salt is used as a deicer because it lowers the freezing point of water. It is usually applied in conjunction with plowing because it will penetrate snow and ice left on the pavement. Brine prevents water from freezing into ice and bonding to the pavement. Salt must sometimes be used alone when there is insufficient snow accumulation to permit plowing. The action of vehicle tires passing over brine and hard snow or ice will break up surface ice and gradually move it toward the pavement's edge.

Most ice storms and snowstorms occur between twenty-six (26) and thirty-two (32) degrees Fahrenheit. Often after the storm ends, high pressure weather systems move into the Chicago area and temperatures drop dramatically, sometimes reaching well below zero (0). Therefore, it is important to apply salt early

in the storm when it will be most effective as a melting agent and will prevent ice and hard pack snow from bonding to the pavement. Rock salt is effective down to a temperature of fifteen to twenty (15-20) degrees Fahrenheit, and, if it is pre-wetted with a mix of seventy (70) percent salt brine, and thirty (30) percent beet juice it is effective in melting ice down to approximately three (3) degrees Fahrenheit. The Village of Algonquin has eleven (11), one hundred (100) gallon (minimum) pre-wetting units, and one (1), thirty (30) gallon pre-wetting unit. Additionally, the Village has one (1), ten thousand (10,000) gallon final storage tank, as well as, three (3), five thousand (5000) gallon tanks for salt brine & beet juice. These products can be mixed as needed.

The application of the liquid products (salt brine and beet juice) is done by a spray bar, directly sprayed on the rock salt as it leaves the salt spreader, just before it is distributed on the roadway surface. These systems utilize a chemical feed pump that is calibrated to apply the exact volume of liquid to the proportionate quantity of rock salt being applied to the roadway. The electronically controlled hydraulic salt spreaders that the Public Works Department utilizes have the capability to control both an on-board pre-wet system and the salt spreader simultaneously, based on the relative ground speed of the vehicle.

Pre-wetting the salt improves ice-melting capacities in a number of ways. First, it supplies moisture to the rock salt speeding the melting process. Second, it causes the rock salt to stick to the ice, snow and pavement instead of being thrown off of the road, thereby eliminating waste. Finally, the chemical properties of pre-wetting products cause it to melt snow and ice at lower temperatures than rock salt alone.

The purpose of a good snow and ice removal plan is to make the roadways safe and passable for the motoring public and public service vehicles; however, there is a general awareness that some ice melting products have a negative environmental impact on nearby soils, vegetation, and waterways. Additionally, some products may also have corrosive effects on vehicles and distribution equipment. It is therefore our policy to consistently review our application products and rates to insure the highest quality of program result, while being sensitive to the effects these products may have on our environment and equipment assets.

Spreading Chemicals

Chemicals are usually applied as soon as there is a definite indication of snow sticking to the pavement or the formation of ice. The initial application is very critical because the promptness of the application and the amount of chemical applied will determine if the snow will stick to the pavement. When the pavement is wet, it may be practical to make a chemical application slightly ahead of the storm to speed the melting process and to prevent the development of a slippery condition.

Caution should be exercised in the use of chemicals during periods of extreme temperature drops because slush and brine may refreeze (also known as Freeze back). When precipitation has stopped, all slush should be plowed promptly from the road surface.

Anti-icing efforts involve applying liquid chemicals to the pavement prior to the storms arrival. There are a couple of ways this is done, the most common, longest lasting, and cost effective is to apply the salt brine/beet juice liquid to the roadway at a rate of forty (40) gallons per lane mile, utilizing a truckmounted boom sprayer system. This liquid will dry and remain on the pavement ready to work for up three days without reapplication. The other way is to apply pre-wetted salt to the roadway. Pre-wetting helps to hold the salt to the pavement and it begins working as soon as the storm begins. This can only be done a few hours ahead of a storm. Both applications start to melt the snow as soon as it begins and prevent the snow and ice from bonding to the pavement.

Chemical Application Guidelines

Because air temperature, type of precipitation, and road surface condition affect snow fighting operations, the following guidelines have been instituted to assist with the decision making process concerning chemical application:

CONDITION 1	Temperature near thirty (30) degrees Fahrenheit; precipitation of snow, sleet or freezing rain; road surface is wet.
	 If snow or sleet, apply wetted salt at a rate of one-hundred (100) pounds per lane mile. If snow and sleet continues and accumulates, plow and salt simultaneously.
	• If freezing rain, apply wetted salt continuously at a rate of two-hundred (200) pounds per lane mile. If rain continues to freeze, reapply salt at a rate of two-hundred (200) pounds per lane mile, as required.
CONDITION 2	Temperature below thirty (30) degrees Fahrenheit or falling; precipitation of snow, sleet, or freezing rain; road surface is wet or sticky.
	 Plow snow and apply salt at a rate of two-hundred (200) pounds per lane mile depending upon accumulation rate. If freezing rain, continually apply wetted salt at a rate of two-hundred to three-hundred (200-300) pounds per lane mile.
CONDITION 3	Temperature below twenty (20) degrees Fahrenheit and falling; precipitation is dry snow; road surface is dry.
	• Plow as soon as possible. Do not apply salt. Continue to plow and check for wet, packed or icy spots and treat them with wetted salt applications at a rate of two-hundred to three-hundred (200-300) pounds per lane mile.
CONDITION 4	Temperature below twenty (20) degrees Fahrenheit; precipitation of snow, sleet or freezing rain; road surface is wet.
	• Apply wetted salt at a rate of two-hundred to three-hundred (200-300) pounds per lane mile, as required. If snow or sleet continues and accumulates, plow and salt simultaneously. If temperature starts to rise, apply salt at a rate of two-hundred to three-hundred (200-300) pounds per lane mile and wait for wetted salt to react before plowing. Continue until safe pavement is obtained.
CONDITION 5	Temperature below ten (10) degrees Fahrenheit; precipitation of snow or freezing rain; road surface has accumulation of packed snow or ice.
	• Apply wetted salt at a rate of two-hundred to three-hundred (200-300) pounds per lane mile, or utilize salt treated abrasives (anti-skids) at a rate

of one-hundred fifty to two-hundred (150-200) pounds per lane mile. When snow or ice becomes mealy or slushy, begin plowing. Repeat applications and plowing as necessary.

Use of Abrasives

The Public Works Department stockpiles torpedo sand for the purpose of providing traction control during severe situations and extreme cold, when rock salt, and other deicers become mostly ineffective. Use of abrasives will also be initiated should our stockpile of rock salt diminish during extended snow and ice control operations, or should suppliers of rock salt not be able to keep up with our demand.

The spreading of abrasives for traction control will be kept to a minimum due to numerous problems and hidden costs related to its use. Sand is an inert substance and will not breakdown and dissolve in the environment. While a layer of sand may improve traction in snow and ice conditions, the thin layer of sand left after snow and ice melts can alter the traction on the roadway surface, and must be cleaned up directly. A buildup of abrasives can smother roadside vegetation, silt up waterways, and block drainage. The cost of sweeping abrasives off roadways and from curb lines, and the time required to vacuum these materials from catch basins, tend to make their use less attractive. Therefore, for the purpose of this plan, abrasives remain a last-ditch effort in maintaining our streets in a safe and passable condition during winter weather situations.

V. STORM CLASSIFICATIONS

Snow and ice removal operations are nothing more than a battle against the weather. As unpredictable and unstable as Chicago-area weather patterns tend to be, the Public Works Department needs to take whatever advantage it can to win the upper hand in proper management of the events. Satellite weather tracking, the Internet, and Cable TV are all sources utilized to ensure that we stay apprised of developing storm conditions. Also, for the purpose of record keeping, the Village will utilize the National Salt Institute's system of snow storm classification. This will provide a consistent bench mark against which we can gauge the severity of each event and our performance in each case.

The Public Works Department will classify all storms into one of the three following categories:

CLASS A

A *Class A* storm is characterized by any storm event with two or less inches of accumulation and it involves salting operations with limited plowing.

In the event of a *Class A* storm, the snow and ice control supervisor will only provide the equipment and manpower necessary to keep the roads clear and safe in accord with the *Snow and Ice Control Plan*. During a freezing rain, additional trucks with spreaders may be dispatched to salt all roadways. (If the rain is too heavy and is washing the salt away, treated sand may be used.)

CLASS B

A *Class B* storm is characterized by a storm event or an expected storm event with snowfall accumulations of between two and eight inches. A *Class B* storm involves both plowing and salting operations.

In the event of a *Class B* storm, all primary manpower and equipment will be working on clearing each zone as specified by the snow and ice control supervisor. The snow and ice control manager will assess

any manpower shortages and equipment breakdowns as soon as possible. This is so that planning can take place for the use of alternate drivers, second shift personnel, and contractors. Because contractors require a one hour notification before starting, analyzing storm data and expected personnel demands is critical. The use of contractors (typically for cul-de-sac clearing) will be expected in a *Class B* storm event. Before the storm arrives, the snow and ice control supervisor will have as many trucks as possible loaded with rock salt and stored in the Public Works Garage. In this way, the salt will be warm and facilitate the melting of snow as it is applied.

CLASS C

A *Class C* storm will be triggered by a storm event, or an expected storm event, with eight (8) or more inches of accumulation in a twenty-four (24) hour period. A *Class C* storm event can create a severe situation. Life threatening situations can arise because the movement of emergency vehicles can be restricted by accumulating snow.

If an impending *Class C* storm appears imminent, the Public Works Director, General Services Superintendent, and the snow and ice control supervisor will remain constantly informed of its activity. Preparation for handling the storm will begin as soon as possible. Snow fighting crews will be called out as soon as it appears that they can be useful, and most, or all, contractors will be notified that their services will soon be needed. If possible, deicing operations will begin before the storm arrives in order to create a brine solution which will keep the snowfall from being packed down by traffic. This will help as the storm progresses, and in subsequent clean-up operations. As the storm progresses, the snow fighting effort will concentrate on keeping major roadway arterials and intersections clear until the storm activity slows. Those roadways with a lower priority will be serviced less by the snow fighters.

Public Works Administration, located at 110 Meyer Dr., will serve as the Snow Command Center during a *Class C* storm to answer residents' inquiries, and to communicate any emergency information to snow fighting teams. After the storm, snow clean-up procedures will begin as soon as possible. This may include hiring contractors for hauling large piles of snow out of the downtown area, or other critical locations, and continued plowing and salting operations until all roadways are clear.

Snow Alerting Procedures

Because effective snow and ice control begins with a good prognosis of road and weather conditions, the Public Works Department has contracted with an internet based weather service to provide accurate and detailed storm and road condition warnings. When a storm is expected, the snow and ice control supervisor can analyze weather conditions by viewing the up-to-the-minute information provided by the weather tracking service. Depending upon the severity of the storm, the snow and ice control supervisor will decide at what point the snow fighting operations will begin. At times, snow fighting may even begin with a salt spreading application before the storm arrives.

VI. ACCIDENTS AND SAFETY

Collision with Another Motor Vehicle

If a team member is involved in an accident while driving a Village owned vehicle, they must contact the snow and ice control supervisor immediately. The supervisor should be notified of any injured victims. The supervisor will contact the Police Department to request that the police, and, if necessary, the paramedics respond to the scene. The team member should make sure that any injured persons are

comfortable and protected from traffic; however, <u>do not move an injured person</u>. Reassure the person(s) that a rescue vehicle will be arriving shortly. Don't move vehicles unless directed by the police, or a public works supervisor. Write down any details of the accident that you can remember while waiting for the police to arrive. For insurance reasons, do not discuss the accident with the other party. The snow and ice control supervisor should notify the Public Works Director and the Human Resource Director of the incident as soon as possible. A complete accident report will have to be completed per the Village's current Accident/Injury Reporting Policy. If any parked vehicle is struck, the same procedures will apply. As CDL drivers we are subject to the Village policy on accidents by CDL drivers in relation to drug testing and procedure. This policy will be followed in any incident that occurs.

Collision with Other Objects

If garbage cans, mailboxes, or other such small objects are damaged by team member operating a Village vehicle, the team member shall document the occurrence and submit the information to the snow and ice control supervisor at the next convenient moment, but no later than the end of the shift. Data provided should include the address, the time the damage occurred, and an explanation of what happened. If the damage involves other than minor incidental snow and ice control incidents, the situation must be immediately communicated to the snow and ice control supervisor.

Requests for Reimbursement

If a resident inquires about damage to their property potentially caused by a snow fighting effort, this information shall be related immediately to the snow and ice control supervisor. The information shall include the complainant's name, address, phone number, and a summary of the claim. The snow and ice control supervisor will investigate the claim, make the appropriate notifications to the Public Works and Human Resources Directors, file appropriate paperwork, and insure timely follow up with the resident.

Safety

The following safety procedures shall be followed:

- 1) Prior to operation, team members will always thoroughly inspect vehicles and equipment.
- 2) Team members shall report all mechanical problems to their supervisor immediately.
- 3) Team members shall obey all traffic laws, and will not exceed the speed limit or use excessive speed, and will be certain to stop for all stop signs and traffic signals.
- 4) Team members shall be as helpful and courteous as possible to those who are stranded or those stuck in the snow. Team members shall not pass up a stranded motorist without offering some type of assistance or ensuring that they have help on the way. In an effort to insure the safety of the motorist, team members shall immediately notify the snow and ice control supervisor if the situation requires a police or fire department response. Drivers shall not risk injury by attempting to manually push a vehicle out of the road. Team members shall never use a Village vehicle to push or pull a privately owned vehicle that has become stuck or stranded.
- 5) Plowing speeds shall not exceed fifteen (15) to twenty (20) miles per hour (25 is allowed on outskirt streets away from residences). Plowing speed along the curb should be reduced to ten (10) miles per hour. Salt spreading speed should not exceed twenty (20) miles per hour. Driver performance must insure the safety of the public and the diligent minimization of potential damage to the equipment.
- 6) As a matter of policy, no public works snow and ice control driver shall drive for more than twelve (12) hours without at least eight (8) hours off of work.

Drug and Alcohol Testing Procedures

Drug and Alcohol testing is performed per the Village's current Drug and Alcohol Testing Policy.

For the purposes of snow and ice control operations, when an accident occurs, anytime someone is injured and/or there is property damage in excess of five-hundred (500) dollars, the driver must be taken by a supervisor for a drug and alcohol test. Supervisors will document the incident via the current Accident/Injury Reporting Policy.

References

Due to the fact that drivers, routes, maps, and policies are reviewed and adjusted with frequency, they are not included in this document, but are available upon request.