



# SNOW & ICE CONTROL PLAN





## **SNOW & ICE CONTROL PLAN**

### **GOAL**

The primary goal of the Public Works Department is to provide the traveling public with the safest driving surface possible in an efficient and economical way with resources available to the Town of Windsor during snow storms.

### **INTRODUCTION**

This Snow & Ice Control Plan outlines the procedures used by the Public Works Department for snow removal operations. While trying to meet this goal of safe driving conditions for the traveling public during the snow season, the Town also strives to remove snow and ice from our roadways as rapidly and efficiently as possible while keeping roads open and essential traffic moving. This does not mean bare and dry pavement should be expected after each snowstorm. The aim of Snow & Ice Control Plan is to return road surfaces to safe winter driving conditions as soon as feasible within the limitations of this plan, our limited resources, and weather conditions. It must be recognized that, although this plan sets general guidelines to be followed, each snowstorm has its own characteristics with variable conditions such as air and pavement temperatures, wind speeds and directions, precipitation rates and types, extreme temperatures, timing, duration, and traffic activity. This plan must remain flexible and take into consideration these variables.

Windsor's average snowfall is approximately 43.5 inches. When snow is predicted, town crews from both the Public Works and Parks Departments are assigned to snow removal shifts. The crews are on 12 hour shifts 24/7 and contractors are called-in to assist as needed. The Town and the contractors will do their best in getting streets open as promptly as possible.

The Town's main focus for the Snow & Ice Control Plan is to clear all major arterial streets for emergency responders, schools, bus routes, and motorists providing a basic network of connected main streets. The information contained in this document explains in more detail the Town's snow & ice removal procedures for Windsor's 201.52 center lane miles of streets. However, that number can triple or quadruple when one factors in "lanes". For example, Main Street from 7th Street to 15th Street is approximately 1 mile; however, it is 4 lane miles due to the four lanes that exist on Main Street (this does not include turn lanes).

## **EMERGENCY DECLARATIONS**

The Town Manager or his/her designee maintains the right and responsibility for the declaration of a snow emergency outside of this plan. This plan is not intended to be the determiner of a snow emergency or its declaration but may act as an aid in such determinations and a part of the response effort to such an emergency declaration.

## **SNOW & ICE REMOVAL PRIORITIES**

**Priority I:** All main arterials and collector streets are plowed and treated with de-icing materials until the storm subsides. Hills, roundabouts, major intersections with traffic signal lights and stop signs are treated with de-icing materials. Critical facilities such as medical offices, Police & Fire Departments, Downtown Business District, and all schools are plowed & treated with de-icing materials.

**Priority II:** All main arterials and collector streets are plowed and treated with de-icing materials until the storm subsides. Hills, roundabouts, curves, major, minor intersections with traffic lights and stop signs are treated with de-icing materials. Critical facilities such as medical offices, Police & Fire Departments, Downtown Business District, and all schools are plowed & treated with de-icing materials. All residential through streets and paved alleys are plowed.

**Priority III:** All main arterials and collector streets are plowed and treated with de-icing materials until the storm subsides. Hills, roundabouts, curves, major, minor intersections with traffic lights and stop signs are treated with de-icing materials. Critical facilities such as medical offices, Police & Fire Departments, Downtown Business District, and all schools are plowed & treated with de-icing materials. All residential through streets, all alleys, cul-de-sacs, and dead-end streets are plowed ***as town resources allow***. Emergency Operations Center may be activated by the Public Works Director and/or Town Manager.

***\*These are guidelines only and other factors may necessitate actions.***

## **DRIVER ROTATION**

The Town of Windsor currently operates 12 snow plows trucks & pickups to address its plowing needs. Considering the number of lane miles with the Town, it takes approximately 12 hours for the snow plows operating full capacity to plow every street in the Town. The Public Works Department is implementing this policy maintain the required commercial driver licenses (CDL) to operate Town plows.

The Town's snow plow crew's operate under an exemption from the driver regulations of CDL licensure under Section 390.3(f)(2) of the Federal Motor Carrier Safety Administration regulations meaning that the Town snow plow drivers are not required to comply with hours of service and all other CDL driver regulations except the requirements to maintain CDL licensure. Even with the exception, hours of service regulation on CDL licenses can provide quality

guidance for driver rotation in the event of a prolonged winter storm event. **CDL hours of service regulations specify that after ten hours of time off, drivers are allowed to work up to 14 hours, up to 11 hours of which can be behind the wheel, before another 10 hours of time off.** The Town desires to utilize the most efficient snow plowing service possible without jeopardizing the safety of the Town's crews. Therefore, in the event of a Category II or III storm, and possibly some Category I storms, it may be necessary to rotate snow plow drivers and implement the use of supplemental drivers from other divisions of the Public Works Department to maintain plowed roads through the duration of a storm and minimize down times.

Section 383.3(d)(3)(i) of the Federal Motor Carrier Safety Administration regulations specify that when driving is done for the purpose of removing snow or ice from a roadway by plowing, and/or de-icing, commercial vehicles can be operated without the requirements for the drivers to have a commercial driver license. Even with this added exemption, the Town will utilize CDL drivers from other Public Works Divisions and/or other Departments whenever possible for more drivers.

This rotation cycle assumes that storms begin simultaneously with the start of the normal work schedule. This will not always be the case. Storms may set in before the start of the crew's normal work schedule potentially resulting in insufficient rest time for the drivers prior to starting plowing operations. Storms may also set in after the start of the crew's normal schedule potentially resulting in extended work schedules beyond that of the basic rotation timeline. In the event of either scenario, the Public Works Director or his/her designee reserves the right to modify the overall rotation timeline by cutting hours off of the front of the rotation timeline to the degree necessary to ensure plowing efficiency and the safety of the crew. Although a rotation of this type presents the possibility for inequalities in the hours worked between members of all Department crews, should a rotation cycle not sustain through the entire 24-hour primary rotation. The Director of Public Works will be responsible for ensuring that inequalities are balanced out to the greatest degree possible during the next extended winter storm event.

Once snowstorm operations are complete (7am to 7pm and 7pm to 7am), crews will return to normal working hours (7am to 3:30 pm), after all Town roadways have been inspected to meet the expectations of Town Staff.

### **STREET CLOSURES**

If storm conditions warrant the Public Works, Police Department, Fire Department, or Town Manager may determine it necessary to close streets or portions of streets that are determined to be impassable or overly dangerous. Streets may also be closed during storms at the direction of the Public Works Director and/or Town Manager, for safety reasons. We are aware this may cause an inconvenience to the traveling public. However, storms which are of such a magnitude to create such conditions, they could be beyond the capabilities of the Town's resources or may occur so rapidly to limit response abilities and therefore may necessitate closures.

## **CUL-DE-SACS, LOW PRIORITY STREETS AND ON STREET PARKING**

There are over **400 cul-de-sacs that add up to 25.86 miles**, numerous alley ways and dead-end streets in the Town of Windsor. The Town incurs proportionally more time and costs clearing snow from these streets than typical “uninterrupted” stretches of streets. It is the Town’s intent that cul-de-sacs, alley ways, and dead end streets will be cleared during **Priority III** will be addressed **as Town resources allow**.

In anticipation of impending snow storms, it is **strongly** recommended that citizens prepare in advance to have vehicles parked off of the street regardless of the time of day. It is dangerous and difficult to plow streets clogged with parked vehicles. Cul-de-sacs **may** not be plowed if plows cannot safely drive down them. The most helpful thing residents can do to facilitate snow removal is to get their cars off the street and encourage others to do the same. Residents can also help by removing trailers, portable basketball hoops and garbage cans (all of which should not be parked or stored in the street) from the street any time snow plows are out working. Snow removal in inclement weather is challenging enough on a “clear” road and these obstacles only increase the difficulty for crews to plow snow. If these streets and alleys become snow packed, they may not be cleared to the same extent as other streets such as arterials and collector streets.

In an effort to become more efficient, Town snow crews will (when feasible) use the following standards to plow snow in cul-de-sacs, alley ways, and dead end streets:

**Cul-De-Sacs:** Cul-de-sacs will be plowed in **Priority III** snowstorms. Snow removal crews will clear a central path through the Cul-de-sac by plowing “Once to the Right” and “Once to the Left” to the curb and gutter. When reaching the end of the Cul-de-sac “The Bowl”, snow then will be pushed to the best available location in the public right-of-way which least impacts residents. Pickup plows will be utilized for snow removal in Cul-de-sacs, in attempt to clear a central path through the Cul-de-sac.

**Alley Ways:** Alleys will be plowed with a Pickup V Plow with a single pass down the center of the alley pushing snow to both sides, at the discretion of the plow driver.

**Dead-End Streets:** Dead-end streets will be plowed to the end of the street with the snow stockpiled in the street beyond the last driveway to the greatest degree possible.

**Low Priority Streets:** During major storms, traffic on low-priority streets such as residential streets and cul-de-sacs will become packed or icy before it can be plowed. When snow has become compacted on low-priority streets and plowing is ineffective, operations may be discontinued until regular working hours. The goal in plowing for low priority streets is to simply provide a plowed lane in each direction of travel, as time allows the snow plow operators to do so.



As stated earlier, it is ***strongly*** recommended that citizens prepare in advance to remove vehicles and other items off of the street regardless of the time of day. The most helpful thing residents can do to facilitate snow removal is to ***get their cars off the street*** and encourage others to do the same.



### **DOWNTOWN SNOW REMOVAL**

The Downtown area consists of Main Street (Hwy 392) from 7<sup>th</sup> Street to 3<sup>rd</sup> Street and from Walnut Street to Ash Street off of Main Street. Snow removal crews will plow and ice slice curb to curb in the Downtown area at least once during a snow event. Businesses in this area are encouraged to shovel snow from their sidewalks onto the street prior to the Town’s snow removal crews arriving. Snow removal crews will remove snow in a timely manner and as resources allow.

### **DE-ICING MATERIALS**

The Town of Windsor each year uses a de-icing material called Ice Buster, to ensure that the roadways are properly maintained during snowstorms. The reasons why the Town selected the product (Ice Buster) comes from a criteria of three things; cost, performance and potential environmental impacts. Along with that the Town gets this product from the City of Ft. Collins which makes availability and delivery cost lower. The Towns Snow & Ice Control Plan strategies and products have changed over the years due to changes in industry practices,

availability of products, and changing markets. We try very hard to stay up on the trends in snow and ice control and have tried new products as they become available in order to use the best products for the safety of our community. The Town also places an extreme high value on environmental protection and cost considerations.

Ice Buster is a granular rock salt product pre-wetted with Apex Meltdown to reduce corrosion while increasing de-icing performance on all the Town's roadways. Ice Buster is a complex chloride containing primarily Sodium Chloride (NaCl), Magnesium Chloride (MgCl<sub>2</sub>), and Calcium Chloride (CaCl<sub>2</sub>). **Ice Buster works down to 15 degrees;** once its passes that temperature it becomes very hard to melt snow and ice. Ice Buster accelerates ice melt by absorbing 50% more of the sun's radiant energy than white de-icing products. This salt comes from a salt mine in Kansas and is grey in color. The color grey signals to motorists that roads have been treated. This product requires fewer applications resulting in reduced amounts of chloride introduced into the environment. Studies indicate that applying de-icing materials reduces accidents by 88% and pays for itself in a half hour in terms of avoiding vehicle crashes. The Town **DOES NOT** use sand. Ice Buster delivers enhanced traction and eliminating the need for sand. By doing this, reduces sediment along roadways, in storm drainages, and in rivers. Sand can have detrimental effects to air quality and sweeping cost for the cleanup.

Apex Meltdown is a corrosion inhibitor, derived from organic polymers and blended with a 30 percent Magnesium Chloride solution. **Apex Meltdown (Magnesium Chloride solution) works down to -10 F degrees;** The Town has started in (2020) with Prewetting Salt Operations, which is a process of coating, or treating, Ice Buster (granular rock salt) with a liquid Apex Meltdown (Magnesium Chloride solution) as it comes out of the V-box spreader. Generally done in the range of 8 to 12 gallons of liquid per ton of material. Pre-wetted Ice Buster (granular rock salt) will stick to the pavement and reduces bounce and scatter, while increasing the de-icing performance at which the salt begins the melting process. The Town is **NOT** using liquid anti-icing operations. Crews are trained on sensible salting techniques, and all snow plow trucks are calibrated to spread only the amount of de-icing salt required to de-ice the roadways.

Additional de-icing products are used in smaller quantities on sidewalks surrounding the Town facilities, in parks, and on high pedestrian traffic areas, where slip hazards occur regularly.

The Town budgets a certain amount of money each year for de-icing materials. Due to limited salt storage, delivery capacities, or when more snow is predicted, de-icing may be reduced or halted to conserve de-icing materials. Meaning during a snowstorm, de-icing materials are limited, until the storm stops. When temperature reaches below 15 degrees, de-icing materials are ineffective until temperatures rise.

### **RESPONSIBILITIES OF THE GENERAL PUBLIC**

Residents, business owners and private contractors it is unlawful and strictly prohibited per Section 11-3-10 of the Municipal Code from encroaching on public right-of-ways (ROW) by any

person to push snow or ice into or across the street from private lots, driveway and sidewalks. Property owners who violate this section will be required to remove the improperly placed snow, or pay the costs if the Town does the work. For example, snow from private property may **NOT** be placed in public streets, on or around fire hydrants and Town parking lots. Public (ROW) typically extends 5 feet behind the curb.

Such practices like block drainages can cause ice backups, obstruct the line of sight for motorist, and create a hazard on public sidewalks. Snow that is plowed onto a street (even temporarily) can create a serious hazard for motorists and creates a liability for the party responsible for pushing the snow onto the public (ROW).

Windsor property owners and/or occupants are responsible for keeping all sidewalks free of snow and ice. In the event such owners or occupants fail to remove snow and ice from such sidewalks within twenty-four (24) hours after the accumulation of snow and ice thereon, the Town may have the sidewalks cleaned and cleared of snow and ice, and the cost thereof, including inspection and other incidental costs and an additional cost for administration not to exceed ten percent (10%), shall be assessed against the property per Section 11-7-10 of the Municipal Code.

The residents living out of town limits should move their mail boxes away from the road ways or make them snow worthy to prevent damages to their mail boxes from snow removal equipment. ***The Town of Windsor assumes no responsibility for damages to mail boxes.***

Operators of private snow removal services not hired by the Town, but operating within the Town limits, shall completely clean all snow pushed onto the Town streets and be liable for all damages caused to Town or Private properties.

The Town is responsible for clearing sidewalks at Town owned facilities such as Town Hall, Public Works Service Facility (PW), Police Department (PD) and the Community Recreation Center (CRC). The Town also clears parking lots at Town facilities. These snow removal functions may be done by Town staff, contractors or a combination of the two. The Town will remove snow from trails as resources allow.

### **HOW YOU CAN HELP?**

In order for all town crews to be as efficient as possible, we need help from the citizens and private contractors.

- ❖ If you do not have to go out then **DON'T!** Avoid driving unless absolutely necessary. Your home is the safest place to be during a storm.
- ❖ If a “storm advisory” is posted for the area, make arrangements to get supplies and errands completed **PRIOR** to the storm hitting.



- ❖ If you do get stuck or slide off of the road, please do not leave your vehicle stranded, arrange for it to be towed to a safe location. Town plow drivers **WILL NOT** pull private stuck vehicles out of ditches or snow drifts.
- ❖ Park your vehicle in your driveway.
- ❖ Do not allow your vehicle to hang out of the driveway onto the street.
- ❖ Remind your children to stay behind the sidewalks when they see the plow trucks coming towards them.
- ❖ Remind your children that snow piles in the street **ARE NOT A PLAY AREA!**
- ❖ Remove portable basketball hoops, hockey goals, skateboard ramps and other structures from the street. This will enable plow trucks to reach the curb and eliminate damage to the truck or portable structure.
- ❖ Trees along public roads need to be maintained (trimmed) in order for snow removal equipment to clear the streets.
- ❖ Shovel sidewalks within 24 hours after a storm
- ❖ When cleaning driveways, sidewalks and parking lots, **DO NOT** put snow in the street or public right of way. Doing so can cause obstructions in the roadways and cause problems for other motorists or emergency services. Also please remove snow in flow pans and gutters to help eliminate ice backups in storm drains, it can cause drainage issues and is a violation of Town ordinance Sec.11-3-10.

- ❖ When trucks are plowing snow and spreading material, **STAY BACK** from the truck a minimum of 100 feet to avoid problems!



- ❖ Plow trucks *may* have to back up and there are blind spots in the mirrors; therefore, for your safety, **DO NOT** pull up directly behind them. They may not be able to see you.
- ❖ Snow plow blades are *generally* wider than the vehicle they are attached to, in order to maximize the effort to clear the road. Plow trucks *generally* push snow to the right side. So **NEVER** attempt to pass a plow truck on the right side when they are plowing snow, because that is the side the snow is being pushed to.

## **FREQUENTLY ASKED QUESTIONS**

### **When will the Town start snow and ice control operations?**

The Towns On-Call Snow & Ice Removal Crew, in conjunction with weather reports, and with help from Police Department observations, when to begin snow and ice control operations on a case-by-case basis. Other criteria that the Town uses are temperatures, snow accumulation, drifting of snow that causes traveling issues, icy conditions which affect travel and the time of the snowfall.

### **When will the Town plow my Street?**

The Town's Snow & Ice Control Plan has **3 priorities**, explaining where the Town starts snow plowing first. The Plan is to return road surfaces to safe winter driving conditions as soon as feasible within the limitations of this plan, our limited resources, and weather conditions. Staff will evaluate the weather conditions during each snowstorm and will dispatch snow removal crews to impacted areas as need. Priorities to include arterial and collector streets, critical facilities such as medical offices, Police & Fire Departments and all schools. Along with designated problem areas, such as hills, roundabouts, curves, major, minor intersections with traffic lights and stop signs. It must be recognized that, although this plan sets general guidelines to be followed, each snowstorm has its own characteristics with variable conditions such as air and pavement temperatures, wind speeds and directions, precipitation rates and types, extreme temperatures, timing, duration, and traffic activity. This plan must remain flexible and take into consideration these variables.

### **Why do the plows cover over the areas I just shoveled? Am I responsible for those areas?**

Snow plow drivers will make every effort to avoid plowing snow onto the sidewalks and driveway entrances. However, in the process of removing snow from the roadways there may be times that this cannot be avoided and sidewalks or driveway entrances may become covered. Sidewalks must be cleared within 24 hours of the end of the snow storm per Sec.11-7-10 of the Municipal Code.

### **Who is responsible for clearing and maintaining sidewalks during a snow event?**

Windsor property owners and/or occupants are responsible for keeping all sidewalks free of snow and ice. Owners and/or occupants have 24 hours from the time the storm stops to clear the areas they are responsible for.

### **My neighbors never clear their sidewalks. What can I do?**

Residents are required by the Town Code to have their sidewalks cleared within 24 hours of the end of the snow storm per Sec.11-7-10 of the Municipal Code. If you are concerned about unclear sidewalks, you can contact Code Enforcement at the Police Department at (970)674-6400.

### **What can you do about ice that has build-up along curbs, gutters, and flow plans or is re-freezing over the sidewalk, in which are caused by shaded areas such as houses, trees and fences?**

Some streets in the Town do not receive much direct sunlight, prohibiting a natural thawing of snow and ice. Consequently, ice build-up will block storm drains and create hazardous conditions if it forms over the sidewalk. It is very difficult to remove this ice build-up without causing damage to concrete and asphalt. This ice will not melt until the temperature is above freezing for an extended period of time. If the ice is on a sidewalk adjacent to private property, then it is the property owner's responsibility to remove it.

### **Who is responsible for clearing and maintaining trails during a snow event?**

The Parks and Forestry Division will remove snow from town-maintained trails as resources become available. The division can be reached by calling 970-674-2434.

### **Why are only portions of the street plowed on residential streets?**

When conditions warrant, residential streets may only be plowed enough to give residents access to the highest priority streets. Plowing from curb to curb is not always practical because it would require more time and moving of many vehicles that park on the streets. Clearing the snow from driveway entrances is the responsibility of the property owner.

### **I saw a Town snow plow driving around during the storm with its blade up. Why wasn't it plowing?**

It is the goal of the Town to plow streets systematically and efficiently. When snow plows are moving from one location to another, or returning to refuel or have more de-icing material loaded onto the truck, they travel with the plow blades up.

### **How many miles of streets are plowed in the Town of Windsor?**

So there are over 201.52 center lane miles of roads in Windsor. However, that number can triple or quadruple when one factors in "lanes." For example, Main Street from 7th Street to 15th Street is approximately one mile; however it is four lane miles due to the four lanes that exist on Main Street, not including turn lanes. If you times that number by 2 (a pass going both directions), that comes to a minimum of 403.04 miles of Street Plowing in the Town each snowstorm.

### **How many pieces of equipment are used in the snow plowing effort?**

The Towns has seven (7) snow plow dump trucks each equipped with sanders, two (2) ton pickups, eight (8)  $\frac{3}{4}$  pickups, two (2) four-wheel drive tractors, one with snow blower, one (1) motor grader, and one (1) front-end loader, and two (2) backhoes.

### **What does the Town put on the streets to melt ice and snow?**



The Town uses Ice Buster is a granular rock salt product pre-wetted with Apex Meltdown to reduce corrosion while increasing de-icing performance on all the Town's roadways. Ice Buster is a complex chloride containing primarily Sodium Chloride (NaCl), Magnesium Chloride (MgCl<sub>2</sub>), and Calcium Chloride (CaCl<sub>2</sub>). **Ice Buster works down to 15 degrees;** once it passes that temperature it becomes very hard to melt snow and ice. Ice Buster accelerates ice melt by absorbing 50% more of the sun's radiant energy than white de-icing products. This salt comes from a salt mine in Kansas and is grey in color. The color grey signals to motorists that roads have been treated. This product requires fewer applications resulting in reduced amounts of chloride introduced into the environment. Studies indicate that applying de-icing materials reduces accidents by 88% and pays for itself in a half hour in terms of avoiding vehicle crashes. The Town **DOES NOT** use sand. Ice Buster delivers enhanced traction and eliminating the need for sand. By doing this, reduces sediment along roadways, in storm drainages, and in rivers. Sand can have detrimental effects to air quality and sweeping cost for the cleanup.

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### **Why not plow to the center of the street?**

Plowing snow to the center of the street can be very hazardous to motorists; traffic flow is restricted by eliminating a portion of a lane, the freeze/thaw cycle deteriorates the pavement and icy driving conditions are created when the melting snow freezes on the pavement every night. This practice can also create sight obstructions for low vehicles and cause problems for residents entering and exiting roadways.

### **Who do I call to report problems with snow removal?**

Calls regarding snow and ice removal operations should be directed to the Public Works Department at (970)674-5400, Monday-Friday, 7:00 a.m. to 3:30 p.m. or for afterhours Public Works emergencies call (970)674-5411. If you encounter an emergency situation, call 911.