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## DEPARTMENT OF PUBLIC SERVICE ADMINISTRATIVE POLICY & PROCEDURE

**City of Hilliard**

**Department of Public Service**

**Issued by: Clyde R. Seidle, Director of Public Service**

**Administrative Policy and Procedure: Snow and Ice Control Plan**

**Current APP No: 2006-009**

**Effective Date: October 16, 2006      Last Revision Date: January 6, 2014**

**Previous: APP 2006-008 rescinded 6/20/06**

### **Purpose:**

To establish a policy and procedure for City's snow and ice control plan.

### **Applicability:**

This policy applies to all City employees involved in snow and ice control operations.

### **Overview:**

The City's Operations Division has developed this snow and ice control plan to outline services to city streets during winter conditions. Implementing this snow and ice control plan will allow the Operations Division to meet the stated objectives outlined below. This comprehensive plan includes details on policies, procedures, personnel, equipment, materials, quadrant routes, and agreements.

### **Objective:**

Snow and ice control on roadways and public property is an essential municipal service that is necessary for public safety, daily mobility, elimination of traffic delays for emergency vehicles, and the motoring of public and pedestrians at public facilities. City streets will be maintained in a passable condition during storms by clearing them of snow and ice as soon as conditions permit.

Weather conditions constantly change during a snow storm; therefore, it is impractical to establish a specific method for removing snow and ice from City streets. This document is a general guideline provided to inform the public and city personnel of standard operating procedures regarding snow and ice control.

The City's snow and ice control program will combine plowing with the efficient use of salt and other resources. The City strives to provide passable streets as soon as possible by prudent use of resources, personnel, equipment, and materials,

### **Quadrant Routes:**

The City has been divided into four color-coded quadrants (green, purple, blue, orange) for the purpose of snow and ice control. These service areas are specifically delineated in the attached "Snow and Ice Control Quadrant Map" section of this plan. Quadrant boundaries should be reviewed annually to keep areas and responsibilities equivalent. The "Snow and Ice Control Quadrant Map" further delineates service areas by specifically highlighting high priority routes within each quadrant. High priority areas should be kept clear before moving to areas of less priority.

The general procedure for snow and ice control is to assign one or two plows to each of the four quadrants. Ideally, there will one large truck and one pick-up truck assigned to each quadrant. Plow operators are responsible for keeping their quadrant in the best condition possible given adverse conditions. In extreme conditions, additional personnel may be assigned to a given quadrant.



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### **Tandem Route:**

The City's major arterials have been assigned to a high-priority tandem route. The Operations Division has two (2) tandem plow trucks equipped to service the tandem routes. The Tandem #1 (north) route is designated in BROWN and the Tandem #2 (south) route is designated in RED on the attached "Snow and Ice Control Quadrant Map".

### **Priority of Streets:**

City streets will be plowed in the following order:

**Priority 1:** Major arterials (included in salt routes)

**Priority 2:** Minor arterials and collectors, including the more significant residential collectors (included in salt routes).

**Priority 3:** Secondary streets, generally the through residential streets not included above (minor residential – generally not included in salt routes).

**Priority 4:** Cul-de-sacs, dead ends, eyebrows, and other non-through streets and alleys (not included in salt routes).

### **Personnel Resources:**

The Operations Division has the following personnel available for snow and ice control:

- Director of Public Service (1)
- Right-of-Way Services Manager (1)
- Crew Leader (3)
- Maintenance Technician II (18)
- Maintenance Technician I (2)
- Mechanic (2)

### **Additional Personnel Resources:**

Operations Division staffing may be inadequate to fill all winter operations needs. In the event that all shifts can not be filled by regular service personnel, resources from outside the department will likely be offered said shifts.

The following additional personnel may be required during winter operations:

- Director of Recreation and Parks (1)
- Deputy Director of Recreation and Parks (1)
- Chief Construction Inspector (1)
- Construction Inspector (1)
- Engineer Technician (2)
- Other personnel not specifically identified herein.

Private contractors may be utilized in extreme situations at the discretion of the Director of Public Service.

### **Equipment Resources:**

The Operations Division has the following equipment available for snow and ice removal:

- Large Tandem Axle Dump Truck (with plow and salt spreading equipment) (2)
- 2.5-ton Single Axle Dump Truck (with plow and salt spreading equipment) (4)
- 2.5-ton Single Axle Dump Truck (with plow and salt brine equipment) (1)
- 1.0-ton Single Axle Dump Truck (with plow and salt spreading equipment) (2)
- ¾-ton 4x4 Pick-Up Trucks (with plow, no salt spreading equipment) (16)
- Articulating Front End Loader (1)
- Backhoe (2)
- Skid Loader/Toolcat (2)



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### Winter Operations Command Center:

Snow and ice control operations will be directed from the City’s Service Center, located at 3770 Municipal Way. Upon arrival, personnel should check-in at the command center for work assignments.

### Materials:

The City’s service center shall maintain an adequate supply of salt and other materials necessary to provide snow and ice control services. If additional materials are necessary beyond those stockpiled at the service center, the Deputy Director of Public Service or Right-of-Way Services Manager will arrange quotes and pickup or delivery procedures for said materials.

### Rock Salt:

The City will utilize rock salt as the primary material for snow and ice control. Rock salt is effective for melting snow and ice because the chemical properties of the salt lower the freezing point of water. However, the colder it gets, the more salt is required to melt snow and ice. Rock salt begins to lose its effectiveness as temperatures drop below 25 degrees Fahrenheit. The City’s policy is to salt only streets on the current salt route, and to plow all city streets. At the discretion of the Director or Supervisor, some streets or intersections may be salted that aren’t on the salt route to preserve public safety. The City will not utilize salt if temperatures drop below 25 degrees Fahrenheit.

### Salt Brine Solution:

The use of salt brine solution may be implemented. Salt brine solution is a road salt and water mixture. The application of salt brine before snow begins to fall helps prevent the bonding of snow and ice to pavements. The proper salt brine solution will melt ice and snow and prevent it from adhering to the pavement, thus making clearing the streets more efficient. This solution will easily wash off vehicles with soap and water. The use of salt brine should decrease the amount of road salt used by 20 – 30% per lane mile, which is not only beneficial to the environment, but also more cost effective.

### Anti-skid Materials:

Anti-skid materials help provide traction and can be sand or fine stone, sometimes referred to as grits.

### Level of Service:

De-icing and snow removal will be completed in the priority established under this plan. All arterials and collectors (all streets included on the salt route) will normally be plowed/salted within 4 to 6 hours after the onset of a storm. Work to clear residential streets will begin after all arterials and collectors have been plowed/salted and restored to a safe and passable condition. It should be noted that no two winter storms are identical. The exact tactics and methods used to fight a storm may vary widely. A fast and heavy snowfall may require all personnel to continually work on clearing or salting the major arterial roadways, which will significantly extend the time it takes to service residential and other lower volume roadways.

The time for completion of snow and ice control is always dependent on several factors including: total snowfall accumulation, the nature of the snow (heavy, light, drifting, icy, etc.), temperature (salt for instance, is less effective below 25°F, and ineffective below 15°F), traffic and other obstacles, as well as available personnel and resources. The following table shows expected times to complete operations after all snow has stopped accumulating.

### Expected Time to Complete Snow and Ice Control Operations

<u>Amount of Snow Accumulation</u>	<u>Complete Major Storm</u>	<u>Complete All Streets</u>
1 to 4 inches	3 to 4 hours	14 to 16 hours
4 to 6 inches	4 to 7 hours	16 to 20 hours
6 to 10 inches	6 to 9 hours	20 to 25 hours
Over 10 inches	6 to 10 hours	25 to 35 hours



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A full crew typically consists of 8-10 units plowing and/or salting streets. During short-term storms more personnel are usually available, but a storm of longer duration may require the use of split shifts, which reduces available personnel.

Employees assigned to snow and ice control operations shall be responsible for the completion of their assigned area to the best of their ability based on weather and/or roadway conditions. Each driver assigned to a specified quadrant shall be responsible for monitoring its condition. The driver will maintain communications with the designated supervisor to report on their progress and the effectiveness of the de-icing and plowing efforts. Supervisors will be responsible for checking areas for thoroughness and effectiveness of efforts to direct and coordinate work crews to complete snow and ice control in accordance with level of service expectations outlined in the plan.

### **Priority 4 Streets (Alleys, Cul-De-Sacs, Dead Ends, Eyebrows, and Special Condition Streets):**

The geometry of some special streets and areas within the City can make snow and ice control service problematic and difficult. Residents are strongly encouraged to refrain from parking along Priority 4 streets during snow events. Parking in these areas can severely limit access for City crews. The nature of these streets already makes clearing snow very challenging, but any additional obstacles may make provision of service impossible. With this in mind, the following list of eyebrows shall be signed "NO PARKING DURING SNOW": Hilliard Heights subdivision eyebrows: corners at Hillcrest South and Hillcrest East, Hillcrest East and Hillcrest North, Midlane Drive Eyebrow, and Hillcrest South and Hillcrest West. City snow plow operators will be given clear direction to do nothing to these areas in the event that any vehicle is parked or stopped with the eyebrow area. Furthermore, snow plow operators will be instructed to clear snow in cul-de-sacs to the best of their ability while sticking to a schedule of no more than 10 minutes per individual cul-de-sac. The geometric design of many cul-de-sacs does not allow for any clearing of snow if one or more vehicles are parked within them.

Any effort to clear snow on Priority 4 Streets when snow is still falling will generally be limited to making two or three simple passes to provide access. After snowfall has ceased, and time permits, the City will clear Priority 4 Streets to the best extent possible with available resources.

### **Snow Emergencies:**

The Mayor may declare a snow emergency if three inches or more snow is forecasted in a short period, with the prospect for additional snow, or when snow and/or ice have accumulated to the extent that safe vehicular travel is impaired. If such a snow emergency is declared, NO STOPPING OR PARKING will be permitted on posted snow routes. At the option of the City, vehicles parked on posted snow routes may be towed. If a vehicle is not removed from the public street after two (2) hours of the Mayor's declaration of a Snow Emergency, it may be towed at the owner's expense.

### **Treatment Methods:**

The Operations Division uses the following treatment methods for snow and ice control:

- **Salt** is used to melt the snow or ice.
- **Salt brine** is applied to roadways before snow begins to fall to help prevent the bonding of snow and ice to pavements.
- **Anti-skid materials** help provide traction and can be sand or fine stone, sometimes referred to as grits.
- **Plowing** is utilized when snow becomes too deep for salt granules to effectively penetrate.

### **Suggested Treatment Methods by Weather Conditions:**

- A. Snow flurries: Salt only as conditions require (minimum salt application rate).
- B. Sleet and ice or freezing rain: Salt only the salt routes. Salt problematic areas as directed by supervisor.
- C. 0" to 2" snowfall accumulation: Salt only the salt routes. No action required on side streets unless otherwise directed by supervisor.



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- D. 2” or more accumulation: Plow and salt combination as necessary.
- E. Drifting snow: Plow and salt combination as necessary. Use salt according to roadway conditions.
- F. Accumulating snow on arterial routes - Tandem plowing:
  - 1. Multi-lane roads may require tandem plowing; this is a judgment call as conditions warrant. If this becomes necessary, contact your on-duty supervisor before leaving your area to provide assistance to a co-worker.
  - 2. Tandem plowing operations will continue as conditions warrant. The on-duty supervisor will coordinate this activity as necessary.
- G. Temperatures and determination of de-icing chemicals to be utilized:
  - 1. 25° F and warmer -- Salt as required.
  - 2. Below 25° F – Do not salt unless directed to do so by supervisor.

### **Coordination with other Governmental Agencies:**

Agreements with the Franklin County Engineer, Norwich Township Trustees, City of Columbus and/or other agencies will be reviewed, annually, in order to coordinate snow/ice removal from streets and freeways that fall under their respective jurisdictions. These agreements are extremely effective in eliminating redundancy of efforts and thereby increasing overall productivity of both Hilliard and the other agency’s work forces. It is the general policy of the City not to plow or salt streets in other jurisdictions if there is no agreement.

### **Spotters and Dispatchers:**

The Director and Right-of-Way Services Manager may perform duties of snow and ice spotting and/or dispatching under some conditions. Other staff may be trained by the Operations Division for support duties such as spotting and dispatching.

### **Training:**

In-house training shall be conducted each October for personnel engaged in winter snow and ice control operations. Included in this in-house training program will be hands-on experience, route dry runs, review of quadrant map service areas, and review of overall procedures, equipment, materials, and resources. Salt spreading programs, weather forecasting systems, and snow spotter programs may also be reviewed.

Snow and ice control training may consist of:

- ½ day classroom, ½ day hands-on training.
- Dry Runs of all routes by regular personnel at assigned locations.
- Review of special conditions for each route.
- Spotter Training.
- Dispatcher Training.
- Peer-to-Peer hands-on training for non-experienced personnel both within and outside the Department of Public Service – provides a ½ day session with an experienced equipment operator.
- Half-day indoor training and discussions session. Includes discussion of individual routes, techniques and procedures to accomplish plan goals and to inform personnel of all resources, particularly new resources.
- Participation in Franklin County Engineer’s Snow Fighter Rodeo.

### **Safety:**

Snow and ice control efforts have a primary objective of providing safe travel for all motorists. Snow removal personnel must constantly evaluate their actions and monitor their ability and effectiveness to provide safe travel for all motorists and pedestrians.



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Equipment operators are to:

- Promptly report all mechanical problems.
- Utilize good judgment and appropriate driving speeds during adverse weather conditions especially during snowstorms or at night.
- Be considerate of the rights of other motorists. Utilize appropriate discretion when assisting or reporting stranded motorists or vehicles to the Police Department.
- Observe traffic laws at all times.
- Utilize all appropriate safeguards to prevent frostbite and hypothermia including the use of proper clothing and maintaining communication with other snow removal personnel at all times.
- Report to the supervisor when you are too fatigued to continue driving.

### Emergency Notification:

When either the Police Department or other city personnel identify isolated problematic areas, they should immediately notify first call Operations Crew Leader or their designee. Should the first call Operations Crew Leader be unavailable, HPD should follow the current call-out list of supervisory personnel until someone is contacted. The supervisor will be responsible to make decisions about treatment of any isolated icy spots.

### Completion of Quadrant Routes:

When a snow removal route has been completed, the driver is to contact the supervisor for reassignment. At the end of each shift, all streets will be in a safe driving condition before employees leave their assigned routes. If for any reason employees are released or reassigned before their assigned area is completed, it is the responsibility of the employee to advise the supervisor of areas on their assigned route that are not yet complete.

### Clean Up:

All snow removal equipment shall be maintained with a half tank of fuel or more at all times during the winter months. At the end of each assigned shift snow removal personnel are to contact the shift supervisor to determine how trucks are to be stored and parked at the end of the shift. Snow removal personnel are required to complete work orders and material usage reports for shift supervisor review prior to leaving unless otherwise directed by their supervisor.

### Attachments:

The following attachments are to be included as part of this policy:

1. Snow and Ice Control Quadrant Maps.
2. Snow and Ice Control Primary Call-Out List.
3. Snow and Ice Control Secondary Call-Out List.

Issued by:

January 6, 2014

Clyde R. Seidle, P.E.  
Director of Public Service/City Engineer

Date