



2015-
2016

SNOW AND ICE CONTROL PLAN



Maraskeshia Smith, Director
Department of Public Services
2015-2016

Table of Contents

<i>Map of all snow routes can be provided upon request</i>	i
EXECUTIVE SUMMARY	i
ROLES AND RESPONSIBILITIES	ii
COMMUNICATIONS	1
COMMUNICATIONS WORKFLOW	3
GENERAL GUIDELINES.....	4
POST STORM.....	11
Equipment Maintenance Operating Procedure	12
Winter Ops Truck Assignments 2015/2016	13
DRIVERS FOR THE 2015/2016 SNOW SEASON	15
Sidewalks and Snow	19
What Residents Can Do To Help.....	20
Winter Safety Tips	21
Winter Biking Tips.....	22
Appendix A: Snow Regions	23
Appendix B: Parking Snow Emergency Routes.....	24
Appendix C: Definitions	25
Appendix D - DPS Snow Plan Milestones.....	27
Appendix E – Private Streets	28
Appendix F – Alphabetical Listing of Snow Routes.....	29
Appendix G – Priority Snow Routes per Region	30
Appendix H – Salt Conservation	31

Map of all snow routes can be provided upon request

City-wide Map Information on line at:

[City of Cincinnati - Snow Priority Routes](#)

EXECUTIVE SUMMARY

The Department of Public Services' (DPS) Snow and Ice Control Plan is designed to serve as a guide for the City of Cincinnati outlining the effective use of resources, identifying effective communication strategies and defining the levels of service residents can anticipate. This plan strives to maximize services while minimizing the impact to the environment as well as being cost efficient.

The goal of DPS is to remove snow and ice from our roadways as rapidly and practical as possible. This does not always mean pavement will be bare and dry, but it will be passable. While the severity of each winter storm is unpredictable, DPS will continue to work within its resources to maintain the highest level of customer service possible while balancing efficiency in snow and ice control.

Snow and ice control account for more than 33% of the division's budget. Therefore, a well planned and executed winter operations plan is imperative. Preparation includes an analysis of previous year's issues and challenges, equipment readiness, manpower, emergency equipment rental, training, material inventory and current technology.

The Traffic and Roads Operations Division (TROD) of DPS is responsible for coordinating winter roadway safety for approximately 3112 lane miles. These lane miles consist of thoroughfares, bridges, overpasses, side streets, cul-de-sacs and alleyways. Priority routes are determined by traffic volumes, access to emergency routes, access to public transportation and access to schools. The priority plan for snow removal divides streets into 67 primary routes, 100 residential routes and 56 pickup truck routes.

Individual snow events in Cincinnati vary in severity. During a typical winter, the city averages 20-25" of accumulation with temperatures of 20°F and above. A variety of factors can occur during a snow-and-ice event making advance preparation difficult

Factors include:

- rate and accumulation of snowfall;
- moisture content;
- presence of sleet and freezing rain;
- temperature during and after storm;
- wind velocity;
- time of day;
- storm duration, and;
- intervals between storms.

These various factors are considered when establishing protocols. Depending on the response necessary for the event, snow removal operations will include primarily The DPS Divisions of TROD, Facilities Management, Fleet and Neighborhood Operations; however, this may include other city agencies and staff depending on the magnitude of the weather event.

Making the City of Cincinnati's Snow and Ice Control Plan effective requires the cooperation of many partners, including, but not limited to, DPS, emergency responders, and most importantly the citizens of Cincinnati. This document is divided into categories. Each category contains practices DPS has developed, adopted and/or tested for the purposes of enhancing snow and ice control. This plan will be updated annually.

ROLES AND RESPONSIBILITIES

DEPARTMENT	DIVISION	TASK	CONTACT	WORK PHONE	CELL PHONE
Administration	City Manager	Declare Snow Emergencies	Harry Black		
	Asst. City Manager	Department Oversight	Sheila Hill-Christian		
Public Services	Director's Office	Department Director	Maraskeshia Smith	352-5454	635-7990
	Director's Office	Communications	Daniel Rajaiah	352-5498	609-6101
	Director's Office	Contracts	Ann Newsom	352-5465	
	Traffic & Roads	Operations Oversight	Jarrold Bolden	591-6053	383-3737
	Traffic & Roads	7a.m. – 7p.m. Shift Supervisor	Lana Callahan	591-6052	615-9634
	Traffic & Roads	7p.m. – 7a.m. Shift Supervisor	Greg Courtland	591-6097	609-7020
	NOD	Central Business District Oversight	Michael Kelley	357-2648	616-1150
	Call Center	Customer Service/Dispatch Center	Brad Burkhalter	591-6025	615-7760
	Fleet Services	Equipment Repair Oversight	Dave Cavanaugh	352-5457	368-1701
Cincinnati Police	Chief's Office	Safety	Chief Eliot Isaac (Interim)	352-3028	
		Operations Oversight	Lt. Col. Dave Bailey	352-3026	
		Towing Coordination	Sgt. Carter	368-1058	
		Towing Coordination	Sgt. Hudepohl	383-7203	
Cincinnati Fire		Fire House Resources	Capt. Miles Davis	484-9442	

COMMUNICATIONS

The Winter Operations communications program is designed to keep our citizens informed and the department's efforts to ensure safe driving conditions whenever there is potential for significant weather.

Customer Service

DPS executes snow and ice control from the City's Call Center. During a snow event, the Call Center maintains various staffing levels up to 24 hours a day to assist with operations, police, fire and service requests.

Customer Service Phone based Service Requests

- Customer Service staff monitors the 591-6000 phone line and enters service requests into the Customer Service Request (CSR) system.

Customer Service Web based Service Requests

- The team dispatches crews to address complaints which were entered via 5916000.com, the web portal to the CSR system.

Customer Service Phone App Service Requests

- Thanks to evolving technology, the City now offers the "Fix It Cincy!" app for iPhones and Androids. The Customer Service Team is responsible for complaints which are entered via this method.

Dispatching

- Customer Service works in conjunction with the operations staff to ensure crews are systematically treating routes.
- Customer Service notifies crews of specific complaints and emergency conditions which need to be addresses by the operations crews.

Media Request Intake

- Media outlets contact the Customer Service Center to request information or to schedule a phone/camera interview.
- The Customer Service Representative receiving the request enters a service request which notifies the Public Information team, the Operations Superintendent, and Department Director.

Public Information

Message Development

- On an ongoing basis, operations managers are responsible for providing operational and logistical information as well as road conditions to the Public Information staff. During larger events, formal planning meetings help facilitate information sharing.
- The Public Information staff is responsible for preparing and distributing communications.

Message Distribution

- Media releases are published to coincide with broadcast media cycles. Typically, press releases are published at 3:30 a.m., 10:30 a.m., 3:30 p.m., and 9:00 p.m.
- When a media release is published, media contacts, City Administration, City Council, Community Leaders, and Customer Service Center are emailed with the published information.

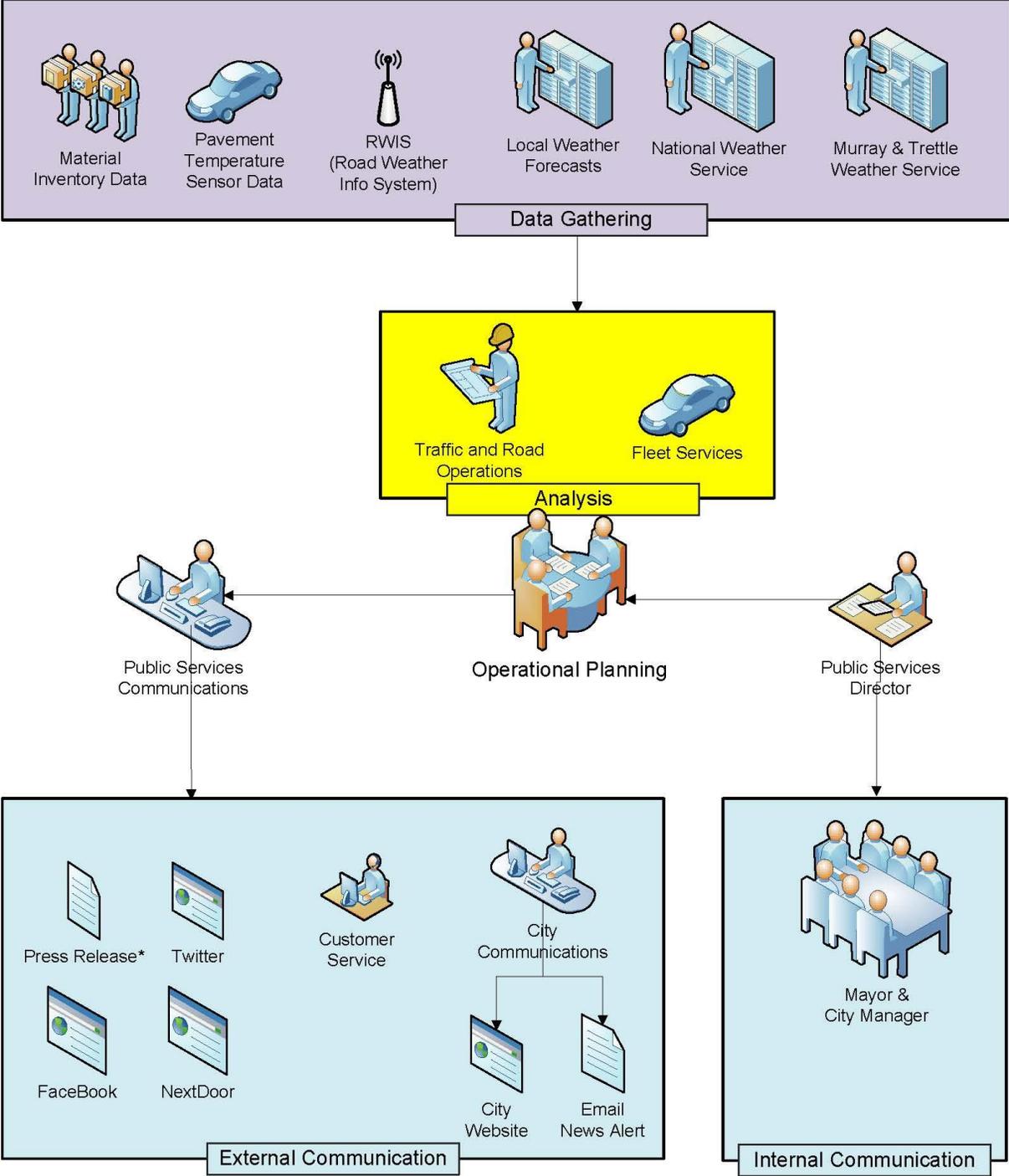
- All media releases are published on WebEOC, which supports the efforts of the Tri-State Crisis Communication Collaborative to centralize emergency communication regionally.
- Intermittently, as new information is available, it is shared via the DPS Facebook, Twitter and Next-door accounts.
- Tweets are shared on the City of Cincinnati and DPS websites.

Social Media Responses

- Social media has given DPS the ability to directly communicate with citizens. With our increased social media presence, citizens are utilizing social media to communicate with the department and report service request.
- The Public Information team monitors social media accounts and responds to questions/concerns as efficiently as possible.
- While DPS will be monitoring social media accounts, citizens are encouraged to submit service request via the City's call center, website or mobile applications to ensure a rapid response.

COMMUNICATIONS WORKFLOW

Communications Workflow for Winter Operations Event



*Press Releases are distributed via email to local media, City Council, City Administration, Community Councils and Neighborhood Partners

GENERAL GUIDELINES

Monitoring Snow/Ice Events

Beginning in November and continuing through March, DPS monitors the weather forecasts for any approaching winter storm. The weather monitoring service is vital to operations as it predicts local weather and road conditions. Daily forecasts include snow and ice warnings, as well as extended weather forecasts and predicted pavement temperatures. Pavement temperatures are also monitored by mounted temperature controls attached to vehicles and handheld devices carried by supervisors. This information assists the department in determining the type, timing and duration of snow and ice operations. Forecasts are sent electronically to DPS seven days a week at a minimum of two times per day. The department reviews these reports, as well as local media outlets and forecasts from the National Weather Service.

Planning for Snow/Ice Events

Staff continuously monitor weather conditions and will begin planning once a storm is forecasted. Each storm is **individually evaluated** during a pre-event planning meeting. This meeting is used to develop an operations plan. A basic plan will examine the following:

- What type of event will occur?
- How much snow/ice is expected?
- What is/will be the pavement temperature?
- Current materials inventory
- Treatment Types
- Usage strategy
 - Pretreating ahead of the event (anti-icing)
 - Treating during an event (deicing)
- Condition and availability of equipment
- Scheduling of Crews
 - Depending on the expected size, duration and temperature of the event, crews may work 12 hour shifts (7 a.m.-7 p.m. /7 p.m.-7 a.m.) or smaller teams may be deployed.
- Scheduled public activities
 - Conventions, concerts and sporting events, etc. are all taken into consideration when developing a response plan.

Strategies

DPS deploys two strategies when pretreating and treating roadways: anti-icing and deicing. While both of these strategies make use of chemical freezing point depressants, they differ in its fundamental objective. Anti-icing techniques are used to prevent the formation or development of bonded snow and ice by timely applications of a chemical. This strategy is a proactive approach and used before or at the very beginning of a storm, typically on dry pavement. Deicing techniques are used as a bond-breaking method only after snow or ice has accumulated and bonded to the road.

Anti-icing begins with the use of dry, liquid or pre-wetted materials. Crews will proactively anti-ice bridges, hills and overpasses on a regular schedule during the winter season. Because of the increased danger to the public, these locations are given special attention. These locations remain on a regular schedule throughout the winter season as they're more susceptible to ice.

Other locations will receive pre-treatment based on predictions from the weather forecast. It's important to note streets not receiving anti-icing material before the snowfall **may not** receive material until the pavement temperature has dropped and pavement conditions are wet, slushy or light snow covered to avoid wasting material which could possibly be plowed away.

Deicing techniques begin with plowing, using dry or liquid materials, application of heat (friction) or a combination of these practices. Rock salt has generally been used as a deicing agent in the past as it was once the most economical option and available in large quantities. However, this is no longer practical as the cost of salt has increased and recent winters have depleted the salt mines.

*Cincinnati had the third snowiest season on record in 2013/2014 with an accumulation of **47.1"**

The method of applying salt to the pavement is only effective when temperatures are above 20° to 25° F, there is sufficient precipitation or moisture on pavement and traffic volumes are appropriate. Salt, a dry deicing chemical, becomes effective once wet and dissolves into a brine solution. When pavement becomes wet, it uses moisture from water, snow or slush on the road surface to make brine.

During unusual circumstances, it may become necessary to employ measures to provide temporary traction or deicing material conservation through the use of abrasives. Sand, which is considered an abrasive, can be used when snow bonds are formed and rapid, increased friction is required. If temperatures reach a level too cold for chemical deicers to work, the department will use sand to provide for better traction. Once bond is broken and sufficient snow and ice are removed, DPS can return to preventive anti-icing operations.

Plowing is the most effective practice at removing compacted snow or loose ice before applying chemicals. If pavement and snow are cold and dry, and the snow in tire tracks is not adhering to the pavement, application of chemicals will have an insignificant effect. Plowing at this point is the appropriate operation.

When large amounts of accumulation occur where plowing is not possible, snow is hauled away. Crews haul the snow using backhoes and front-end loaders to fill trucks and haul the snow to an authorized snow dumping area.

Materials

The city has the capability to stockpile a maximum of 27,000 tons of rock salt (sodium chloride), 34,000 gallons of calcium chloride, 48,000 gallons of salt brine and 21,500 gallons of beet juice. These materials are strategically stationed throughout the city to allow for efficient operations (Appendix A). In addition, the city will contract for additional resources to ensure stockpiles are able to be replenished throughout the winter season.

When temperatures fall below 20°F, liquid calcium chloride and/or beet juice will be applied to every ton of salt (sodium chloride) to treat the pavement. This process of pre-wetting provides the moisture to make brine allowing for faster melting action. Applying a pre-wetting material to salt minimizes scatter during application by as much as 40%, reducing the need for repeated applications.

Liquid Calcium Chloride is used in pre-wetting, anti-icing and solid blend applications. The benefits of liquid calcium chloride provide the moisture needed to form liquid brine and initiate melting action. Once melting begins, the bond between ice and pavement can be broken allowing for mechanical removal.

Beet Juice, a byproduct of the sugar beet, is an organic compound which reduces the environmental effects associated with salt. Beet juice, in conjunction with salt, has many advantages; it is environmentally safe, has longer residual effects and is effective at much colder temperatures (-20°F).

Level of Service/Priorities

Street prioritizations were developed using the Cincinnati Area Geographic Information System (CAGIS), a division of Enterprise Technology Solutions (ETS) mapping systems. All major arteries, feeders, alleys, etc. are included in the city's snow and ice control plan.

Streets are treated and plowed based on three categories of route priorities: primary, residential and pickup (Appendix B)

- Primary routes include major thorough fares and hospital routes
- Residential routes are pathways off major thorough fares and are still accessible with larger trucks
- Pick up routes are streets which can only be accessed with smaller trucks

All routes are treated by priority beginning with primary.

These routes are divided into four regions: North, South, East and West. From these locations, crews address the prioritized snow routes for its area. Supervisors are responsible for directing and coordinating crews to complete snow and ice removal in accordance with the established priority routes. Close radio communication is maintained with all operators to keep abreast of progress on each route.

The following summarizes the snow removal actions for specific weather events:

Pavement Temperature Range and Trend	LIGHT SNOW FALL Less than 2 inch per hour						Comments
	Pavement Surface at time of initial operation	Maintenance action	Recommended Snow Removal Equipment	Pre-Treat	Dry/Solid (#/mile)	Prewet solid (#/mile)	
				23% Solution of Salt Brine 23% (gal/mile)			
Above 32°F Steady or rising	Dry, wet, slush, or light snow cover	Monitor Road and Weather Conditions for drops in temperature		20-40			Treat as need. Treat icy spots @ 100#/mile or 20gal/mile
Above 32°F or below is imminent	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Prewetting Tanks & Plow	20-40		50 to 100	
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Prewetting Tanks & Plow		50 to 100	50 to 100	
25°F to 32°F In Range	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Prewetting Tanks & Plow	20-40		50 to 100	
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader Prewetting Tanks and Plow		100 to 200	50 to 100	
Below 20°F to 25°F In Range	Dry	Apply Liquid or prewetted solid		20-40		100 to 200	Appropriate de-icing liquid maybe use in temperatures below 25
	Wet, slush or light snow cover	Apply Liquid or prewetted solid			200 to 300	100 to 200	
Below 15°F to 20°F In Range	Dry	Monitor Conditions					
	Wet, slush or light snow cover	Apply Solid Materials	Salt Spreader and Prewetting Tanks and Plow		300 to 400	300 to 400	Appropriate de-icing liquid maybe use in temperatures below 25°. If sufficient moisture is present solid chemical can be applied
Below 15°F Steady or falling	Dry	Monitor Conditions					Do not apply chemicals and maintain dry pavement during windy conditions
	Wet, slush or light snow cover	Plow as needed Apply prewetted solid material	Salt Spreader and Prewetting Tanks and Plow			200 to 300	

Pavement Temperature Range and Trend	HEAVY SNOW FALL W/ PLOWING 2 inches or more per hour						Comments
	Pavement Surface at time of initial operation	Maintenance action	Recommended Snow Removal Equipment	Pre-Treat	Dry/Solid (#/mile)	Prewet solid (#/mile)	
				23% Solution of Salt Brine 23% (gal/mile)			
Above 32°F Steady or rising	Dry, wet, slush, or light snow cover	Monitor Road and Weather Conditions for drops in temperature	Plow	20-40			Treat as need. Treat icy spots @ 100#/mile or 20gal/mile
Above 32°F or below is imminent	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks	20-40		50 to 100	Do not apply liquid to heavy or packed snow
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader		200 to 300	100 to 200	Do not apply liquid to heavy or packed snow
25°F to 32°F In Range	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks	20-40		100 to 200	Do not apply liquid to heavy or packed snow
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader		300 to 400	300 to 400	Do not apply liquid to heavy or packed snow
Below 20°F to 25°F In Range	Dry	Apply Liquid or prewetted solid		20-40			
	Wet, slush or light snow cover	Apply Liquid or prewetted solid			Max 400	Max 400	Appropriate de-icing liquid maybe use in temperatures below 25°
Below 15°F to 20°F In Range	Dry	Monitor Conditions					Do not apply chemicals and maintain dry pavement during windy conditions. If sufficient moisture is present solid chemical can be applied
	Wet, slush or light snow cover	Apply Solid Materials	Salt Spreader		Max 400	Max 400	
Below 15°F Steady or falling	Dry	Monitor Conditions					Do not apply chemicals and maintain dry pavement during windy conditions
	Wet, slush or light snow cover	Plow as needed Apply prewetted solid chemical	Plow			Max 400	

Pavement Temperature Range and Trend	FREEZING RAIN						Comments
	Pavement Surface at time of initial operation	Maintenance action	Recommended Snow Removal Equipment	Pre-Treat	Dry/Solid (#/mile)	Prewet solid (#/mile)	
				23% Solution of Salt Brine 23% (gal/mile)			
Above 32°F Steady or rising	Dry, wet, slush, or light snow cover	Monitor Road and Weather Conditions, especially bridges and elevated roads	Plow	20-40			Treat as needed. Treat icy spots @ 100#/mile or 20 gal/mile
Above 32°F or below is imminent	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks	20-40			
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks		300 to 400	200 to 300	Heavy rain changing to freezing rain will wash chemicals from roads, load and pre-position trucks on routes to begin treatment as soon as practical
25°F to 32°F In Range	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks	20-40			
	Wet, slush or light snow cover	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks		300 to 400	300 to 400	
Below 20°F to 25°F In Range	Dry	Apply Liquid or prewetted solid	Anti-Icing System or Salt Spreader and Pre-wetting Tanks	20-40			
	Wet, slush or light snow cover	Apply Liquid or prewetted solid			Max 400	Max 400	Appropriate de-icing liquid maybe use in temperatures below 25°
Below 15°F to 20°F In Range	Dry	Monitor Conditions					Do not apply chemicals and maintain dry pavement during windy conditions
	Wet, slush or light snow cover	Apply Solid Materials	Salt Spreader		Max 400	Max 400	Appropriate de-icing chemicals maybe use in temperatures below 25.
Below 15°F Steady or falling	Dry	Monitor Conditions					Do not apply chemicals and maintain dry pavement during windy conditions
	Wet, slush or light snow cover	Plow as needed	Plow		Max 400	Max 400	As snow continues to fall plow accumulation

When conditions become too severe for traffic flow and parking must be restricted, the City Manager will declare a snow emergency. When a snow emergency is declared, parking is prohibited on Snow Emergency Routes (Appendix C). Vehicles parked are moved to an area designated by the City of Cincinnati Division of Police. Car owners can retrieve their vehicles by calling (513) 591-6000.

Garbage Collection

Neighborhood Operations Division will provide garbage collection in most weather conditions. In emergency situations, such as heavy snow and ice, garbage collection may be suspended for the safety of employees. When collections are temporarily suspended, local media outlets will be notified to provide information to the public. DPS will utilize social media and its website to inform the community, as well.

POST STORM

Following a snow event, the Department will debrief to discuss and evaluate the performance of its crews as well as resources.

These meetings will consist of:

- Department Director
- Department Public Information Officer
- Traffic and Roads Superintendent
- Traffic and Roads Operations Supervisors
- Neighborhood Operations Supervisor
- Fleet Manager
- Fleet Assistant Supervisor
- Fleet Crew Chief
- Union Leadership
- Call Center Manager

The Department Director will lead the meeting by (1) analyzing the previous storm and impact on region; (2) examining what strategies worked well and improvements that need to be made; (3) discussing necessary repairs to equipment/vehicles, and finally ensuring all service requests from the storm are closed. The Department Director, in conjunction with the Traffic and Roads Superintendent, will evaluate the level of materials remaining and purchase additional material if needed.



Equipment Maintenance Operating Procedure

As the lifeblood of operations, equipment availability, readiness, and overall condition are essential factors related to an effective and efficient snow and ice removal program. It has been established through past research that the benefits of a comprehensive equipment maintenance management program which includes regular and consistent cleaning practices can yield a benefit/cost of up to 4.4 for the average agency.

Due to the severe nature of the environment for snow and ice control, winter operations fleet requires the highest level of equipment maintenance. To keep equipment in top condition, a regular maintenance routine to be followed all winter by Traffic and Road Operations Division could be developed and implemented. Developing and implementing a standard operating procedure (SOP) for equipment cleaning can ensure a successful approach towards achieving such benefits. A suggested procedure might include:

Throughout the Year:

Winter Fleet utilization during off months is critical to control maintenance costs and increase availability. Yard managers should be required to set up a rotation for single axles, contractor dumps and tandems assigned to their yard. Any truck that has not been utilized in the operation during the week must be started and driven. The units that have not been utilized during the week can easily be identified through the departmental Zonar GPS system. Supervisors should verify monthly this rotation of the winter fleet is taking place.

TROD yard managers need to ensure all construction spoils are dumped from truck beds daily. Equipment needs to be thoroughly washed with a quality truck wash throughout the year, not just during winter season. Corrosion damage in the truck beds occurs during the non-winter month needs to be identified and scheduled for timely repairs, do not wait for until the last push for fall winter preparations.

During Winter Season

Cleaning all equipment with truck wash, neutralizer, and pressure washer after each winter event is critical to control maintenance costs and reduce downtime. This includes pressure washing the truck surfaces, under the truck, plows and the material spreaders. Equipment needs to be completely rinsed and fast dried. Trucks, pickups, plows and spreaders should be stored indoors where possible. When the operator finishes cleaning the equipment, they must inspect the equipment to identify and report repairs that need to be made before the next event.

- **Conduct Pre-trip Checklist** before leaving the yard. A pre-trip checklist is required for commercial driver's license (CDL) compliance. Following the checklist will help prevent equipment failure and resulting accidents, injuries, and deaths. In addition to the attached pre-trip inspection, the following list should be used for the pre-trip inspection as well as the inspection performed when the event is over and the unit has been cleaned:
- **Spreaders:** Inspect pumps, hoses, controls, and fittings. Check spinners, augers, and auxiliary engines.
- **Hydraulic spreader controls:** The two major components are the pump and the controls, whether manual or automatic. Operators need to be familiar with spreader controls. Understand how the auger, or conveyor, and the spinner react at various settings,
- **Snow plow blades:** Inspect blades thoroughly after each use. If blade wear is excessive it may damage the moldboard. Since snow plow blades do not wear evenly, they need to be replaced when they are worn at any point. Operators should check blade wear throughout the storm.

Winter Ops Truck Assignments 2015/2016



SOUTH (24)	NORTH (23)	EAST (24)	WEST (24)
Pick Up (4) 50461 PU 70737 PU (NOD) 90830 PU (NOD) 90832 PU (NOD)	Pick Up (3) PU 70738 PU (NOD) 70740 PU (NOD)	Pick Up (4) 70741 PU (NOD) 90849 PU 90850 PU 90852 PU	Pick Up (4) 70739 PU (NOD) 90845 PU 90846 PU 90854 PU
Cont. Dump (3) 00903 CD 10904 CD 70903 CD	Cont. Dump (2) 00904 CD 70904 CD	Cont. Dump (3) 10903 CD 30900 CD 30901 CD	Cont. Dump (3) 00905 CD 30902 CD 70905 CD
Single Axle (10) 00939 S 2000 S 2000 20954 S D/S 2012 30950 D/S 2013 40957 S 2004 60951 S 2006 60953 S 2006 70958 S 2007 80942 S 2008 50954 S D/S 2015	Single Axle (11) 00935 S 2010 00937 S 2000 20943 S 2012 20956 S D/S 2012 30951 D/S 2013 60950 S 2006 60952 S 2006 70960 S 2007 70968 S 2007 70970 S 2007 50951 D/S 2015	Single Axle (10) 00938 S 2000 20941 S 2012 20957 S D/S 2012 40956 S 2004 70932 S 2007 70947 S 2007 70956 S 2007 70957 S 2007 70959 S 2007 50952 S D/S 2015	Single Axle (11) 00933 S 2010 20940 S 2002 20942 S 2012 20944 S 2012 20955 S D/S 2012 50958 S 2005 70944 S 2007 70961 S 2007 70969 S 2007 80941 S 2008 50953 S D/S 2015
Tandem (4) 00992 T D/S 2010 40990 T 2004 50994 T (NOD) 2005 40992 T 2004	Tandem (3) 50992 T D/S 2015 40993 T 2004 70981 T D/S 2007	Tandem (3) 00993 T D/S 2010 40991 T 2004 50993 T 2005	Tandem (3) 00994 T D/S 2010 70982 T 2007 50990 T D/S 2015
Brine (3) 00990 BT 70938 BS 80954 BS 80950 BS	Brine (4) 00991 BT 70933 BS 80951 BS	Brine (4) (MSD) BT 70946 BS 00931 BS 80953 BS	Brine (3) 80990 BT 80955 BS 80938 BS BS
Loader 95810 L 95811L	Loader 45810 L	Loader 15813 L 85812 L	Loader 85811 L

MSD Single Axle:

50955
50956
50957
50959

OO On Order: = 4

Eq# 2015 S/A
Eq# 2015 S/A
Eq# 2015 S/A
Eq# 2015 S/A

Brine Tandem Spare

Eq #

DRIVERS FOR THE 2015/2016 SNOW SEASON

TASK	LAST	FIRST	JOB_TITLE	DIVISION
DRIVER	Adams	Bryan	Carpenter	CFM
DRIVER	Aull	Jeffery	Sign Painter	TROD
DRIVER	Barron	Johnny	Laborer	TROD
DRIVER	Bennett	Kenneth	Cement Finisher	TROD
DRIVER	Berling	Robin	Traffic Aids Worker	TROD
DRIVER	Beverly	Wilbur	Truck Driver	TROD
DRIVER	Blythe	Charles	Laborer	TROD
DRIVER	Booker	Timothy	Electrical Maintenance Helper	TROD
DRIVER	Bradley	Antwon	Laborer	NOD
DRIVER	Brewton	Angeline	Truck Driver	NOD
OPERATOR	Bronson Jr	Gazzie	Motor Equipment Operator 1	TROD
OPERATOR	Brown	Anthony	Motor Equipment Operator 1	TROD
MANAGER	Brown	Eugene	Service Area Coordinator-EXM	TROD
DRIVER	Brown	Jonathan	Automotive Street Cleaning Equ	NOD
DRIVER	Brown	William	Truck Driver	TROD
DRIVER	Byrden	Orlando	Traffic Aids Worker	TROD
DRIVER	Calis	Ali	Sign Painter	TROD
DRIVER	Carota	Eddie	Laborer	NOD
DRIVER	Carter	Deloris	Traffic Aids Worker	TROD
DRIVER	Cochran	Joe	Supvg Traffic Aids Worker	TROD
DRIVER	Coleman	Ai-Rick	Truck Driver	TROD
DRIVER	Coleman	Marshelle	Laborer	NOD
DRIVER	Collier	Juan	Laborer	TROD
DRIVER	Cook	Frankie	Laborer	TROD
DRIVER	Cook	Paul	Cement Finisher	TROD
OPERATOR	Courtney	Christian	Motor Equipment Operator 1	TROD
DRIVER	Crutchfield	Eric	Truck Driver	TROD
DRIVER	Davis	Gary	Laborer	TROD
DRIVER	Davis	Laura	Truck Driver	NOD
DRIVER	Davis	Jason	Cement Finisher	TROD
DRIVER	Davis	Ray	Laborer	TROD
DRIVER	Day Jr	William	Truck Driver	TROD
DRIVER	Dean	Patrick	Plumber	CFM
DRIVER	Dorn	Tracey	Laborer	TROD
DRIVER	Dorrmann	Bradley	Cement Finisher	TROD

DRIVER	Dorrmann	Kevin	Cement Finisher	TROD
DRIVER	Doyle	Robert	Structures Maintenance Worker	NOD
MANAGER	Dukes	Terrence	Service Area Coordinator-EXM	TROD
DRIVER	Durham	Arlando	Truck Driver	NOD
DRIVER	Embry	Grandon	Truck Driver	TROD
DRIVER	Ervin	Selena	Laborer	TROD
DRIVER	Ervin	Tonya	Sanitation Specialist	NOD
DRIVER	Farrier	Thomas	Truck Driver	TROD
DRIVER	Fellerman	Michael	Electrical Maint Worker 2	TROD
DRIVER	Fields	Karla	Traffic Aids Worker	TROD
DRIVER	Fields	Tyrone	Truck Driver	TROD
DRIVE	Frames	Jay	Electrical Maintenance Helper	
DRIVER	Franklin	Cynthia	Truck Driver	TROD
DRIVER	Freeman IV	James	Truck Driver	TROD
DRIVER	Gause	Keith	Automotive Street Cleaning Equ	NOD
DRIVER	Gibson	Keith	Sanitation Specialist	NOD
OPERATOR	Gill	Richard	Motor Equipment Operator 2	TROD
DRIVER	Givens	Bernard	Traffic Aids Worker	TROD
DRIVER	Greer	Jasper	Laborer	TROD
DRIVER	Hafner	Gregory	Sign Painter	TROD
DRIVER	Hallbauer Jr	Charles	Truck Driver	NOD
OPERATOR	Halsell	Willie	Motor Equipment Operator 1	TROD
DRIVER	Hampton	Alexia	Truck Driver	TROD
DRIVER	Harlan	David	Engineering Technician 3	TROD
DRIVER	Harris	Brenda	Structures Maintenance Worker	TROD
OPERATOR	Harris	Ronnie	Motor Equipment Operator 2	TROD
DRIVER	Heath	Gary	Cement Gun Utility Worker	TROD
MANAGER	Hicks	Troy	Service Area Coordinator-EXM	TROD
DRIVER	Hobing	Andrew	Electrical Maint Worker 2	TROD
DRIVER	Hockl	Martin	Engineering Technician 4	TROD
MANAGER	Hooper	Thomas	Service Area Coordinator-EXM	TROD
DRIVER	Howard Jr	Roosevelt	Electrical Maint Worker 2	TROD
DRIVER	Howell	Pamela	Structures Maintenance Worker	TROD
DRIVER	Hubbard	Althea	Traffic Aids Worker	TROD
DRIVER	Jackson	Tyree	Electrical Maint Worker 2	TROD
DRIVER	Jackson	Danny	Truck Driver	NOD

DRIVER	Jackson	Dion	Truck Driver	TROD
DRIVER	Johnson	Erick	Electrical Maintenance Helper	TROD
DRIVER CDL	Johnson	Curtis	Truck Driver	TROD
DRIVER CDL	Johnson Jr	Mack	Laborer	TROD
MANAGER	Kellard	Timothy	Service Area Coordinator-EXM	TROD
DRIVER	Klapper	Dennis	Electrical Maint Worker 2	TROD
DRIVER	Lamb	Anthony	Automotive Street Cleaning Equ	NOD
DRIVER	Lawson	Danny	Plumber	CFM
DRIVER	Lester	Bobby	Electrical Maint Worker 2	TROD
DRIVER	Long	Dean	Electrical Maint Worker 2	TROD
MANAGER	Mack	Tom	Service Area Coordinator-EXM	TROD
DRIVER	Mason	Charles	Cement Finisher	TROD
DRIVER	Mathews	Louis	Truck Driver	NOD
DRIVER	McCants	Pearlette	Laborer	TROD
DRIVER	McCoy Jr	Dwayne	Truck Driver	NOD
DRIVER	Mitchell	Matthew	Structures Maintenance Worker	TROD
DRIVER	Mitchell III	Lloyd	Traffic Aids Worker	TROD
OPERATOR	Molden	Jeffrey	Motor Equipment Operator 1	TROD
DRIVER	Monroe	Brandon	Truck Driver	TROD
DRIVER	Moore	Gerald	Laborer	TROD
DRIVER	Moore	Robert	Truck Driver	TROD
DRIVER	Nichols	Charles	Laborer	TROD
DRIVER	Nierlich	Christopher	Heat Ventilation & Air Condi	CFM
DRIVER	Palmer	LaVonne	Truck Driver	TROD
DRIVER	Palmer	Bruce	Electrical Maint Worker 2	TROD
DRIVER	Parker	Orlando	Laborer	NOD
OPERATOR	Penn	Michael	Motor Equipment Operator 1	TROD
DRIVER	Peoples	John	Automotive Street Cleaning Equ	NOD
DRIVER	Pitts	Troy	Truck Driver	TROD
DRIVER	Plaut	Seth	Engineering Technician 3	TROD
DRIVER	Reaves	Devin	Laborer	TROD
DRIVER	Redmon	Sidney	Laborer	TROD
OPERATOR	Reed	Maurice	Motor Equipment Operator 2	TROD
DRIVER	Reeves	Anetra	Laborer	TROD
DRIVER	Reynolds	Lamar	Truck Driver	TROD
DRIVER	Reynolds	Michael	Laborer	TROD

DRIVER	Reynolds	Robert	Electrical Maint Worker 1	TROD
DRIVER	Richardson	Latonya	Laborer	NOD
MANAGER	Robins	Richard	Service Area Coordinator-EXM	TROD
DRIVER	Rolfes	Craig	Carpenter	CFM
DRIVER	Scharff	Joseph	Traffic Aids Worker	TROD
DRIVER	Schirmer	Rick	Electrical Maint Worker 2	TROD
DRIVER	Sewell Sr	Timothy	Truck Driver	TROD
DRIVER	Shaw	Matthew	Truck Driver	TROD
DRIVER	Shaw	Felicia	Traffic Aids Worker	TROD
DRIVER	Shelton	Kimberly	Truck Driver	TROD
DRIVER	Slack	Jason	Electrical Maint Worker 2	TROD
DRIVER	Smith	Sherrill	Laborer	NOD
DRIVER	Smith	Daniel	Laborer	TROD
DRIVER	Smith	Michael	Laborer	TROD
MANAGER	Smith	Greg	Service Area Coordinator-EXM	TROD
DRIVER	Speed	Brian	Bricklayer	CFM
OPERATOR	Steele	Tisheena	Motor Equipment Operator 1	TROD
DRIVER	Steward	David	Cement Finisher	TROD
DRIVER	Stewart II	Robert	Laborer	NOD
DRIVER	Streicher	Thomas	Electrical Maint Worker 2	TROD
DRIVER	Stubblefield	Brian	Electrician	CFM
DRIVER	Tiller	James	Truck Driver	TROD
DRIVER	Triggs	Jeremy	Truck Driver	NOD
DRIVER	Turner	Duane	Laborer	TROD
DRIVER	Vance	Hilliard	Cement Finisher	TROD
OPERATOR	VanHook	Richard	Motor Equipment Operator 1	TROD
DRIVER	Vollman	Stephen	Electrical Maintenance Helper	TROD
DRIVER	Von Hoene	Michael	Cement Finisher	TROD
DRIVER	Wade	Elvin	Cement Finisher	TROD
DRIVER	Walter	Joseph	Plumber	CFM
OPERATOR	Wheeler	Rashad	Motor Equipment Operator 1	TROD
DRIVER	Williams	Blane	Heat Ventilation & Air Condi	CFM
DRIVER	Williams	Granada	Laborer	NOD
DRIVER	Williams	Jermaine	Laborer	TROD
DRIVER	Winning	Tad	Storekeeper	TROD
DRIVER	Wolterman	Charles	Cement Finisher	TROD

Sidewalks and Snow

Ohio Revised Code 723.011 authorizes the City of Cincinnati to require property owners to remove snow and ice from abutting or adjoining sidewalks in a timely manner.

What does this mean?

A property owner is responsible for keeping his or her property safe. If a postal worker, delivery worker or a visitor falls because you didn't shovel and salt your walkway, you could be responsible for covering that person's injuries.

Am I liable if I shovel my sidewalk and it freezes again, then someone falls?

The Ohio Supreme Court has affirmed residents can comply with Municipal Code's requirement to shovel their sidewalks without assuming liability to others who may slip and fall. The only time a resident may become liable is when they permit or create a dangerous accumulation of snow that results in personal injury to another.



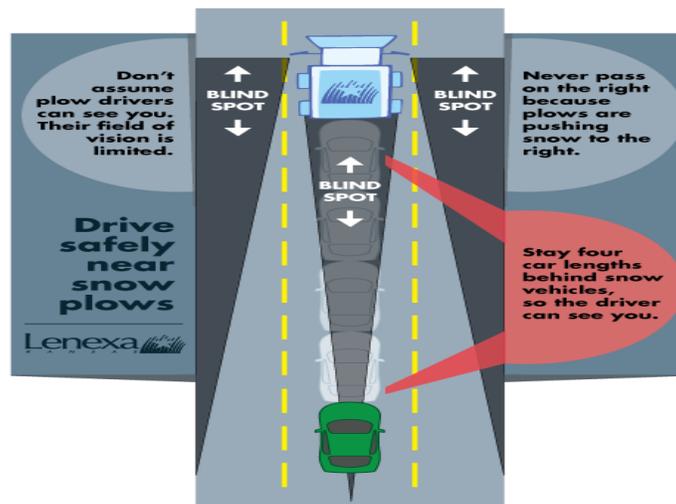
- Section 723-57 of the Cincinnati Municipal Code requires property owners to remove snow.
- Section 723-59 of the Cincinnati Municipal Code requires property owners to remove ice.
- ORC 723.011 (Ohio Revised Code) The penalty for violating these sections is a fine of \$25.

Please be a Good Neighbor: Do your part in helping our citizens – especially our elderly neighbors and our neighbors with disabilities – navigate through the difficulties of winter.

Many elderly citizens and citizens with disabilities are stranded and unable to access some of the basic services they need.

What Residents Can Do To Help

- Shovel snow onto grassy area of your property when clearing driveways/sidewalks.
- Avoid shoveling snow from your driveway onto City roadways. This will help keep the City's streets from re-icing when already treated.
- Apply salt, sand and/or cat litter to icy steps and paths.
- Assist with clearing snow surrounding fire hydrants.
- Shovel around storm drains as necessary to minimize the risk of black ice as snow starts to melt.
- Adopt a storm drain near your residents to assist the City in keeping its approximately 30,000 storm drains properly draining.
- Use off street parking during snow events to allow crews to work safely, efficiently and quickly.
- Be observant of snow parking restrictions and emergency declarations when in effect.
- Drive with extra care and leave additional distance between you and the vehicle ahead.
- Maintain a distance of no less than 100 feet behind a city vehicle.
- Avoid passing snow trucks.



And, ultimately, exercise patience!

Understand it takes time for the City to clear its 3112 miles of road following a snow event.

Winter Safety Tips

- Citizens can reduce risk and assist snow removal efforts by parking off-street where possible
- Motorists should allow extra driving time and use extra caution.
- Reduce speed and leave plenty of room to stop. Citizens are encouraged to allow at least three times more space than usual between their vehicle and the car in front.
- Brake gently to avoid skidding. If your wheels start to lock up, ease off the brake.
- Turn on headlights to increase visibility.
- Keep headlights and windshield clean.
- Use low gears to maintain traction, especially on hills.
- Extend caution while traveling on bridges, overpasses and infrequently traveled roads. Even at temperatures above freezing, if the conditions are wet, you might encounter ice on exposed roadways like bridges.
- Pour sand, cat litter, gravel or salt in the path of the wheels to help improve traction.

Winter Biking Tips

Winter conditions offer a unique set of challenges for the bicycle commuter. Follow these tips when commuting in the winter:

- Choose a route based on winter road priorities. Main thoroughfares have the least amount of snow and ice. Remember snow covered roads mean narrow thoroughfares.
- Beware of potholes, puddles and snow banks.
- In stall knobby or studded tires
- If losing control, move bike toward a snow bank
- Pedal in allow gear during the winter. If pedal is frozen in low, bikers can still pedal in most terrains
- Try not to make sudden emergency maneuvers. Wet, slush, roads mean reduced stopping power and extended braking distances.
- Wear well –layered clothing to regulate body temperature and stay dry.
- Wear blade-style glasses or goggles to keep eyes from watering and keep flying road grit out of your eyes.
- Wear warm, windproof gloves.
- The City does not plow bike lanes.

Bicycle Commuting In Winter

Choose the Right Equipment

Mountain bike
Sturdy tires
Fenders
Bright light in front
Red light in back
Reflectors

Emergency Kit

Pump
Spare tire
Patch kit
Extra light
Basic tools
Jacket
Cell phone



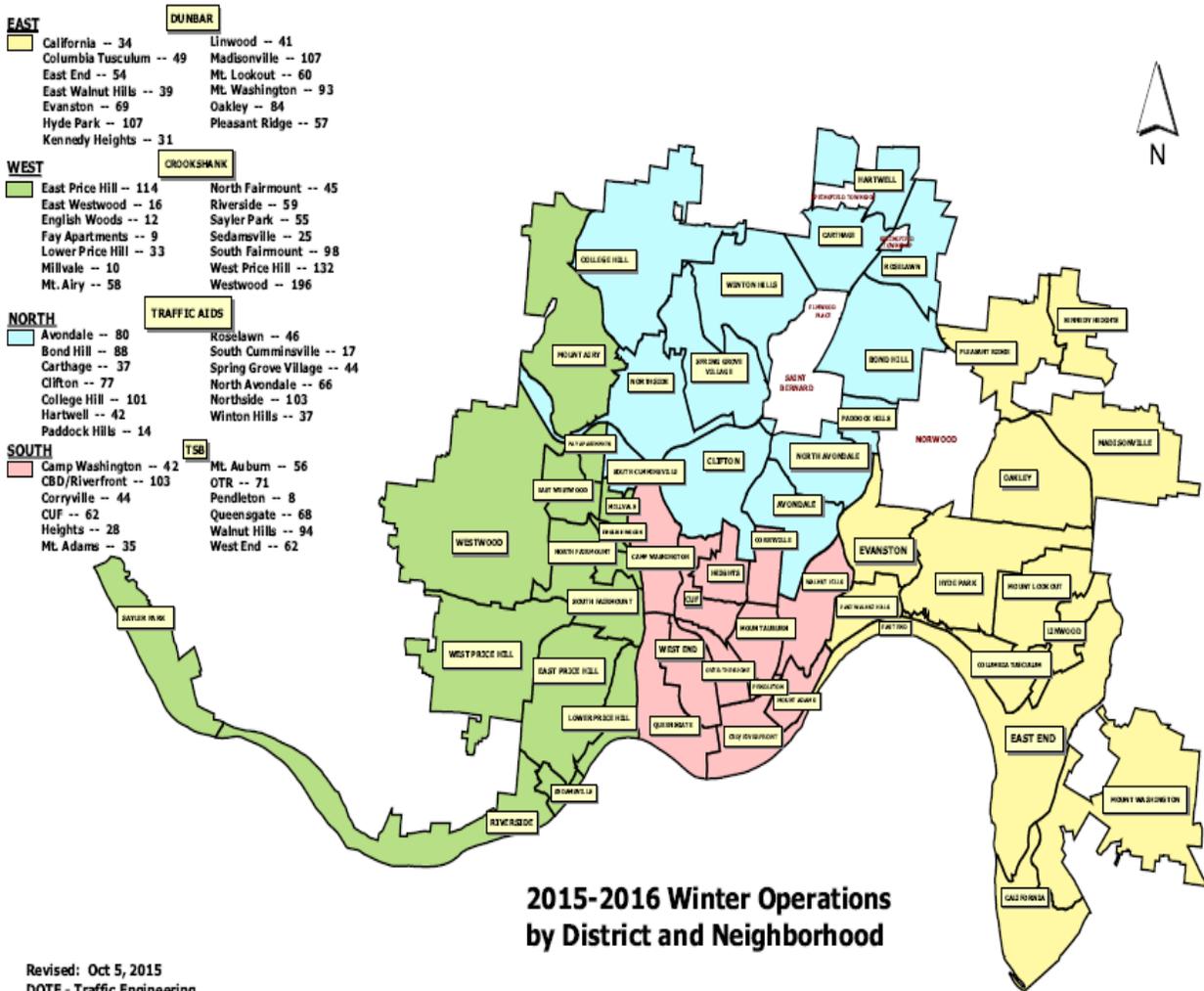
Choose the Right Clothing

Layered clothing
Wind jacket
Reflective vest
Wind pants/long underwear
Gloves/windproof mittens
Neck gaiter
Warm hat under helmet
Helmet cover with ear band

Source: Commute Options (www.commuteoptions.org)

Appendix A: Snow Regions

REGION	Primary Routes	Residential Routes	Pickup Routes	Lane Miles
EAST	23	24	15	768
NORTH	16	32	10	790
SOUTH	15	23	15	772
WEST	11	17	16	782
TOTAL	65	96	56	3112



Revised: Oct 5, 2015
 DOTE - Traffic Engineering

Appendix B: Parking Snow Emergency Routes

Routes are designated by signs stating "No Parking during Snow Emergency."

Police District 1

- Reading Road: Central Parkway to Paddock Road
- Vine Street: Mitchell Avenue to Third Street
- Gilbert Avenue: Broadway to McMillan

Police District 2

- Eastern Avenue: Delta Avenue to Second Street
- Eastern Avenue: Delta Avenue to Columbia Parkway
- Madison Road: Woodburn Avenue to Plainville
- Marburg Avenue: Ridge Road to Erie Avenue
- Whetsel Avenue: Bramble Avenue to North Corp. Line
- Observatory Avenue: Edwards Avenue to Delta Avenue

Police District 3

- Glenway Avenue: West Corp. Line to W. 8th Street
- Queen City Avenue: Werk Road to Beekman Street
- Harrision Avenue: West Corp. Line to State Avenue
- Warsaw Avenue: Glenway Avenue to State Avenue
- River Road: West Corp. Line to Evans Street
- Elberon Avenue: W. 8th Street to State Avenue
- Montana Avenue: West Fork Road to Glenmore Avenue
- Westwood Northern Boulevard: Hopple Street to Boudinot Avenue
- Boudinot Avenue: Glenway Avenue to Westwood Northern Boulevard

Police District 4

- Ridge Road: Amberly Village Corp. Line to Marburg Avenue
- Montgomery Road: Norwood Corp. Line to Silverton Corp. Line
- Woodburn Avenue: McMillan to Dana Avenue
- William H. Taft Road: Columbia Parkway to Vine Street
- McMillan Street: Central Parkway to Hackberry Street
- Paddock Road: Reading Road to Vine Street
- Gilbert Avenue: Woodburn Avenue to McMillan Street
- Reading Road: Paddock Road to Sunnybrook Drive
- Dana Avenue: Reading Road to Duck Creek Road
- Burnet Avenue: Forest Avenue to Reading Road

Police District 5

- Martin L. King Drive: Central Parkway to Woodburn Avenue
- Ludlow Avenue: Spring Grove Avenue to Jefferson
- Jefferson Ave from Nixon to Ludlow
- Hamilton Avenue: Spring Grove Avenue to Hollywood
- Colerain Avenue: Spring Grove Avenue to Kipling Road
- Burnet Avenue: Forest Avenue to Reading Road
- Jefferson Avenue: McMillan St. to Martin Luther King
- Calhoun Street: Vine Street to Clifton Avenue
- North Bend Road: Vogel Road to Daly

Appendix C: Definitions

1. **Snow Season** – November 1 – March 31
2. **Dry Snow** – Occurs when the troposphere temperature (the lowest portion of the earth's Atmosphere) and the surface temperature fall below freezing causing snow to be less dense than average and not sticky.
3. **Wet Snow** – Occurs when surface temperatures are just above freezing, goes through repeated melt-freeze cycles, forming crust on the surface allowing it to stick together.
4. **Compacted Snow** – Snow which has been compressed into a solid mass that resists further compression and will hold together or break into lumps if picked up.
5. **Slush** – Mixture of small ice crystals and liquid water. Generally forming when snow and/or ice melts.
6. **Chemicals** – Used in conjunction with a solid to help depress the freezing point of water, turning ice or snow into liquid or slush.
7. **Deicing** – A reactive operation: Removal of existing snow, ice or frost from roadway or other surface. Spreading material after snow begins.
8. **Anti-icing** –A proactive operation. Treatment with an ice melting chemical before or during the beginning of a storm to prevent or delay the formation of ice or the adhesion of ice and snow to the surface.
9. **Salt** – Mineral substance composed primarily of sodium chloride. A primary tool for snow and ice control.
10. **Brine** – (i.e. wetted salt) solution of salt in water. Can be used to de-ice or reduce freezing temperatures on roads.
11. **Beet Juice** – Anti-icing fluid is a natural, agricultural product from the juice remaining after sugar beet extraction. Used in conjunction with rock salt.
12. **Calcium Chloride** – Used as anti-icing, pre-wetting solution to help improve the performance of rock salt.
13. **Plowing** – During and after precipitation, plows are utilized to remove higher accumulations of snow before using de-icing products. Plowing normally leaves ridges of snow along road edges in front of sidewalks, driveways and parking lanes.
14. **Passable** – Moderately good quality, but less than excellent, capable of being passed, traversed or crossed. (Roget's, 1988).
15. **Pre-wetted Salt** – Salt that has been treated with liquid, prior to being spread.
16. **Level 1 Snow Alert** - Roadways are hazardous with blowing and drifting snow.

- 17. Level 2 Snow Advisory** – Roadways are hazardous with blowing and drifting snow. Only those who feel it's necessary to drive should be out on the roadways. Contact your employer to see if you should report to work.
- 18. Level 3 Snow Emergency** – All Municipal, Township, County and State roadways are closed to non-emergency personnel. No one should be out driving during these conditions unless it is absolutely necessary to travel. Those traveling on the roadways may subject themselves to arrest.
- 19. City of Cincinnati Parking Snow Emergency** – The City may issue a parking snow emergency during severe snowstorms. A snow emergency declaration initiates parking restrictions on designated routes. Cars not moved are subject to ticketing and towing. This will assist with the full treatment of streets in order to make roads passable as soon as practical.

Appendix D - DPS Snow Plan Milestones

	Lead	End of Snow	April	May	June	July	August	September	October	November	December
Previous Season Debrief	Smith										
Salt Contract	Newsom										
Salt Order	Phillips										
Truck Readiness	Cavanaugh										
Training	A. Callahan										
Equipment Readiness	Cavanaugh										
Plan Update	Bolden										
Dry Run	Bolden										
Media Plan	Rajaiah										
1st Snow	Bolden										
1 st Snow Debrief	Smith										

Appendix E – Private Streets

Appendix Provided Upon Request

Appendix F – Alphabetical Listing of Snow Routes

Appendix Provided Upon Request

Appendix G – Priority Snow Routes per Region

Appendix Provided Upon Request

Appendix H – Salt Conservation

Appendix Provided Upon Request