



# 2024 SNOW AND ICE CONTROL PLAN



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## EXECUTIVE SUMMARY

The purpose of the City of Fort Worth Snow and Ice Plan is to delineate the protocols and arrangements for managing snow and ice related incidents within the city. It outlines the effective use of resources, communication protocols, and explains the services the residents can expect.

The resources and services described in this document are not without limit. This means pavement will still be dangerous during ice events and residents are heavily encouraged to heed warnings and stay home during winter events when possible. These winter storms are inherently unpredictable and as weather patterns change, every effort will be made to maximize our resources to provide improved safety.

A well-planned and executed winter operations plan is imperative to successful emergency response. Preparation includes operational readiness of the Operations Command Center, equipment readiness, manpower, training, material inventory, and technology readiness for tracking.

The City of Fort Worth Street Operations group is responsible for coordinating winter response for approximately 8,100 lane miles of city roadways and over 241 bridges. These assets are categorized into three priority levels, shown below.



## **PRIORITIES**

1. Bridges/ Hospital entrances
2. Critical Hills
3. Intersections and arterials

The bridges and hills included as priorities are due to different aspects including but not limited to traffic volume, access to interstates, a history of icing, and a history of vehicular incidents. The City will first provide service to priority 1 locations on the designated routes before adding service to priority 2 or priority 3 locations.

The City of Fort Worth provides sanding for traction control for the wide-scale treatment of ice. The city has plentiful sanding resources and will continue to sand throughout the event while ice is present. A sand-salt mixture (10 percent salt) is applied on top of icy pavement. It cannot be applied before the precipitation falls.

The city stocks over 6000 tons of sand with ample amounts of pre-mixed sand/salt for an event. In an average winter, the city uses about 2500 tons of the sand/salt mixture.

Unlike northern cities, Fort Worth only averages approximately 9 days of winter precipitation each year with an average snow/sleet accumulation of less than 1". Additionally, in our region, low snow events tend to result in ice, so our treatment methods are focused on ice control rather than snow removal. As a result, the City doesn't maintain a fleet of snow plows. As staff continue to monitor future weather trends additional resources may be obtained and this plan will then be revised accordingly.

Each event is unique, but through effective communication and collaboration the city can stay flexible to meet evolving needs during winter emergency response. The Street Operations team is in constant coordination with the City Joint Emergency Operations Center (JEOC) and other partnering agencies to ensure effective operations. The remaining sections of this document provide more detail about how we prepare, plan and execute winter event emergency response.

## **PURPOSE**

The City of Fort Worth Snow & Ice Plan delineates the protocols and arrangements for managing snow and ice related incidents within the city. It outlines the effective use of resources, communication protocols, and the services the residents can expect. A well-planned and executed winter operations plan is imperative to successful emergency response. The following sections describe the cities procedures for activation, command and service center responsibilities, equipment, training, street treatment prioritization and resources, and post storm activities. Through these procedures it is our goal to provide efficient and effective improvement to public safety during winter storm events.

## **ACTIVATION AND STAFFING PROCEDURES**

In anticipation of an impending snow or ice event, a carefully orchestrated set of procedures is initiated to ensure the city's preparedness to respond. The initiation begins with a meeting of the Joint Emergency Operations Center (JEOC) staff to confirm the nature of the storm and makes the decision to fully activate the JEOC. The Transportation and Public Works (TPW) Operations Manager promptly notifies the Street Operations Superintendent to send Storm Warning Notification through the established chain of command to all staff.

The Street Operations Superintendent then contacts Field Operation Supervisors, triggering the activation of teams on alert status. Through the Storm Warning Notification, employees are notified of a being placed on a 24-hour Emergency Schedule Rotation.

## **MOBILIZATION**

The scale of the impending weather event plays a crucial role in determining the required number of teams, the anticipated duration of storm-related activities, and the additional resources necessary for an appropriate response. Each shift during this emergency is overseen by both the TPW Operations Manager and a Command Center Manager. Regular updates from the Command Center Manager are relayed hourly to the JEOC manager, maintaining a real-time understanding of the unfolding situation.

The operational cycle, structured as a 24-hour period, is divided into two 12-hour shifts. These shifts commence upon receipt of notifications of imminent weather events, persisting until the storm's intensity diminishes sufficiently to resume regular operations.

## **PERSONNEL SCHEDULING**

Early during JEOC activation and prior to the snow or ice event, a pre-storm meeting is convened to address staffing levels, equipment readiness, materials availability, administrative support, and any other essential resources. Street Operations Work Crews are proactively informed, to ensure that the required equipment is properly mounted and loaded, and that all personnel are adequately prepared for their designated shifts.

To ensure uninterrupted city coverage, the Street Operations Division maintains an Alert Roster, evenly distributing available crews into two 12-hour shifts. Collaborative efforts among TPW Operations Divisions facilitate the sharing of personnel and equipment, optimizing the utilization of city resources.

Oversight during these operations falls under the purview of the Street Superintendent or their designated representative. In instances where additional support is deemed necessary, the Equipment Services Division (ESD) is promptly contacted. Specifically, during nighttime operations, the ESD Shift Supervisor lends critical support, particularly for the "2nd" shift, ensuring a cohesive and efficient emergency response.

## COMMAND CENTER AND SERVICE CENTERS

In the orchestration of snow and ice emergency response efforts, a well-structured command and operation center system is crucial. This includes the Operations Command Center and the North & South Operations Centers, each playing distinct roles to ensure a cohesive and effective response.

### OPERATIONS COMMAND CENTER: COORDINATING EXCELLENCE

The Operations Command Center (OCC) is the nexus of field staff coordination, entrusted with the pivotal task of relaying updates to the Cities Joint Emergency Operations Center (JEOC) that is staffed with representatives from Police Department (PD), Fire Department, and MedStar, etc. The OCC serves as the nerve center for receiving sanding requests and priority calls from various sources and dispatching the requests. Technology systems allow for real-time tracking of available field units and material inventory, to minimize response times to requests.

### MINIMUM PERSONNEL REQUIRED: 4

- » One Supervisor: manages the event ensuring requests get prioritized and completed.
- » Two Crew leaders: Data entry on the call log and SharePoint. Communicates directly to drivers.
- » Trainee: Over sees VueWorks Software clearing completed service request.

### NORTH & SOUTH SERVICE CENTERS

In tandem with the Operations Command Center, the larger North & South Service Center facilities function as the front lines of the response effort. Supervisors at these service centers shoulder the responsibility of efficiently assigning teams, ensuring prompt reporting to the command center within an hour of the shift's commencement, both day and night.

These supervisors are also responsible for keeping accessible the material stockpiles and employee parking lots. They oversee the confirmation of materials used and vigilantly monitor stock levels. Moreover, they provide crucial updates to the command center regarding unit availability and the status of units undergoing repairs in the shop.

Minimum Personnel Required: Tailored to the Event

## **MAIN SUPERVISOR RESPONSIBILITIES:**

- » Readiness: Always prepared to respond swiftly to emerging situations.
- » Incidents & Injuries: Handling and reporting incidents and injuries promptly.
- » Time Sheets: Maintaining accurate and timely records of working hours.
- » Overseeing Heavy Equipment: Supervising the heavy equipment and sand trucks assigned to their shift.
- » Materials Management: Efficiently tracking and reporting materials used per shift.

Together, the command center and service centers, supported by skilled and structured personnel, form the backbone of a robust and responsive snow and ice emergency management system.

## **EQUIPMENT AND TRAINING PROCEDURES**

In the City of Fort Worth, a training program is in place to equip personnel with the skills necessary to operate various pieces of equipment crucial for efficient snow and ice response. The commitment to safety and proficiency is evident in the training procedures outlined below.

### **SANDING OPERATOR TRAINING: MASTERING PRECISION IN MATERIAL DISTRIBUTION**

Personnel undergo comprehensive training encompassing various equipment, such as insert sand spreaders, brine spraying units, and brine making machines. Hands-on sessions focus on proper material spreading techniques, specifically addressing challenging terrains like bridges, hills, and hospital entrances.

Training extends beyond individual tasks to cover the collaborative responsibilities of drivers and spotters during ice and snow events. Street Operations conducts mandatory training for all new employees each October, ensuring a thorough understanding of sanding procedures before allowing them to operate City sanders. To stay current, annual refresher courses are provided.

### **LOADING PROCEDURE TRAINING: PRIORITIZING SAFETY IN SPEEDY OPERATIONS**

Recognizing the need for swift loading without compromising safety, the City employs trained loader operators for the loading process. A dedicated class for loader operators emphasizes safety and efficient loading procedures, with an annual Rubber Tire Loader Training Procedure Document employed for operators with less than a year of experience. Refresher training during the Street Operations annual Sanding Training ensures that all loader operators maintain their competence and adherence to safety protocols.

## **EQUIPMENT LIST: DIVERSE RESOURCES FOR EFFECTIVE RESPONSE**

The City boasts a comprehensive array of equipment, including rubber tire loaders, motor graders, skid steers, backhoes, sand inserts (v-bottoms), tandem dump trucks, pickups, brine maker, and 550/Class 6 trucks equipped with brine spraying units and sand spreaders.

## **EQUIPMENT INSPECTION: A COMMITMENT TO EFFICIENCY AND SAFETY**

The City of Fort Worth adheres to an annual equipment inspection plan for sanders and spreaders, a critical component in enhancing efficiency during snow and ice events. This proactive approach aids operators in maintaining their equipment and precludes safety issues stemming from faulty equipment.

## **EQUIPMENT CALIBRATION: PRECISION IN MATERIAL DISTRIBUTION**

In September, supervisors lead their crews in a crucial task: ensuring all available spreaders are properly mounted and fully functional. This process includes calibration to guarantee the accurate distribution of materials in accordance with established guidelines. This proactive calibration effort enhances the City's readiness for any impending snow or ice event.

## **STREET TREATMENT AND RESOURCES**

In contrast to northern cities accustomed to prolonged winter conditions, Fort Worth experiences a distinctive weather pattern, with an average of approximately nine days of winter precipitation annually. Notably, the accumulation of snow and sleet rarely exceeds an inch. Moreover, in our region, low snow events often translate to icy conditions, prompting a strategic focus on ice control rather than snow removal.

Given this unique climatic context, the city does not maintain a fleet of snow plows, aligning our resources with the predominant challenges posed by ice formation. Our treatment methods are thus finely tuned to address and mitigate the specific risks associated with icy conditions. As our dedicated staff diligently monitors future weather trends, we remain agile in our approach. Additional future resources may be procured, and the existing plan will be revised to ensure the continued improvement of our winter preparedness strategies.

Within the framework of the services outlined in this document, it is crucial to acknowledge that resources are not unlimited. Despite our dedicated efforts, the pavement may remain perilous during ice events. As such, residents are strongly urged to prioritize their safety by heeding warnings and, when feasible, opting to stay home during winter events.

Winter storms, by their very nature, are unpredictable. Recognizing this inherent uncertainty, we are committed to adapting and optimizing resources as storm patterns evolve. Every conceivable effort will be made to enhance safety measures and mitigate the impact of these unpredictable events on the community.

## **STREET TREATMENT**

The Street Operations division of the City of Fort Worth plays a pivotal role in efficiently managing winter response initiatives across an extensive network of roadways, encompassing approximately 8,100 lane miles and over 241 bridges. This comprehensive responsibility involves the strategic categorization of assets into three distinct priority levels, each serving a specific purpose in the overall winter response plan.



## **PRIORITIES/LEVELS OF SERVICE:**

### » Priority 1: Critical Bridges & Hospital Entrances

These locations are given the highest priority due to factors such as traffic volume, proximity to interstates, historical incidents of icing, and vehicular accidents, and public health. Priority 1 locations are addressed first on designated routes before extending services to other priority levels.

### » Priority 2: Critical Hills

The next priority is maintaining safe passage through topographically challenging areas such as critical hills. Similar to Critical Bridges, the Critical Hill locations are identified based on historical incidents of icing and vehicular accidents.

### » Priority 3: Intersections and arterials

The City's emergency response must be maintained and therefore intersections and arterials will be addressed as priority 3. Residents are advised that neighborhood streets will not be sanded. Local roads will generally remain untreated unless providing access to priority locations.

## WINTER STREET TREATMENT METHODS:

The City of Fort Worth employs a sand-salt mixture (10 % salt) on top of icy pavement. Brining (or Anti-Icing) is used as an ice preventative measure.

Brine is a saltwater solution, that is sprayed as a liquid onto the pavement to interact with and lower the freezing point of winter precipitation. This proactive approach serves as a preventative measure under specific conditions, significantly enhancing road safety. Public cooperation is essential, and citizens are urged to exercise caution and maintain a safe distance from the spray trucks.

Brining is relatively new to the City of Fort Worth. The beginning of 2024 will be the first time crews will use the method to prevent ice formation. The decision to utilize brine will depend on the type of winter storm. Certain conditions make using brine sprayers impractical. For example, rain that falls just prior to freezing temperatures will wash away the brine.

Currently, the City has one 800 gallon/hour brine making machine. For reference, 800 gallons will treat about 17 lane miles. For application, the City currently has one truck with a 500-gallon tank spraying unit but has purchased and is anticipating delivery of five additional trucks with 750-gallon tank spraying units.

Sanding to provide increased traction over the ice is the primary street treatment method. The operations crews utilize a mixture of 90% Grade #6 manufactured sand mixed with 10% road salt for sanding operations. Each year in September, all supervisors conduct a sand quantity inventory.

The city stocks over 6000 tons of sand with ample amounts of pre-mixed sand/salt for an event. In an average winter, the city uses about 2500 tons of the sand/salt mixture.

This proactive planning ensures an adequate supply of materials for the impending winter season. Fort Worth adheres to established application guidelines, maintaining consistency in the deployment of salt/sand materials to mitigate the impact of winter weather on roadways. With ample sanding resources at its disposal, the City commits to continuous sanding throughout the event duration, to improve safety during icy conditions.

## **ROUTE ASSIGNMENTS:**

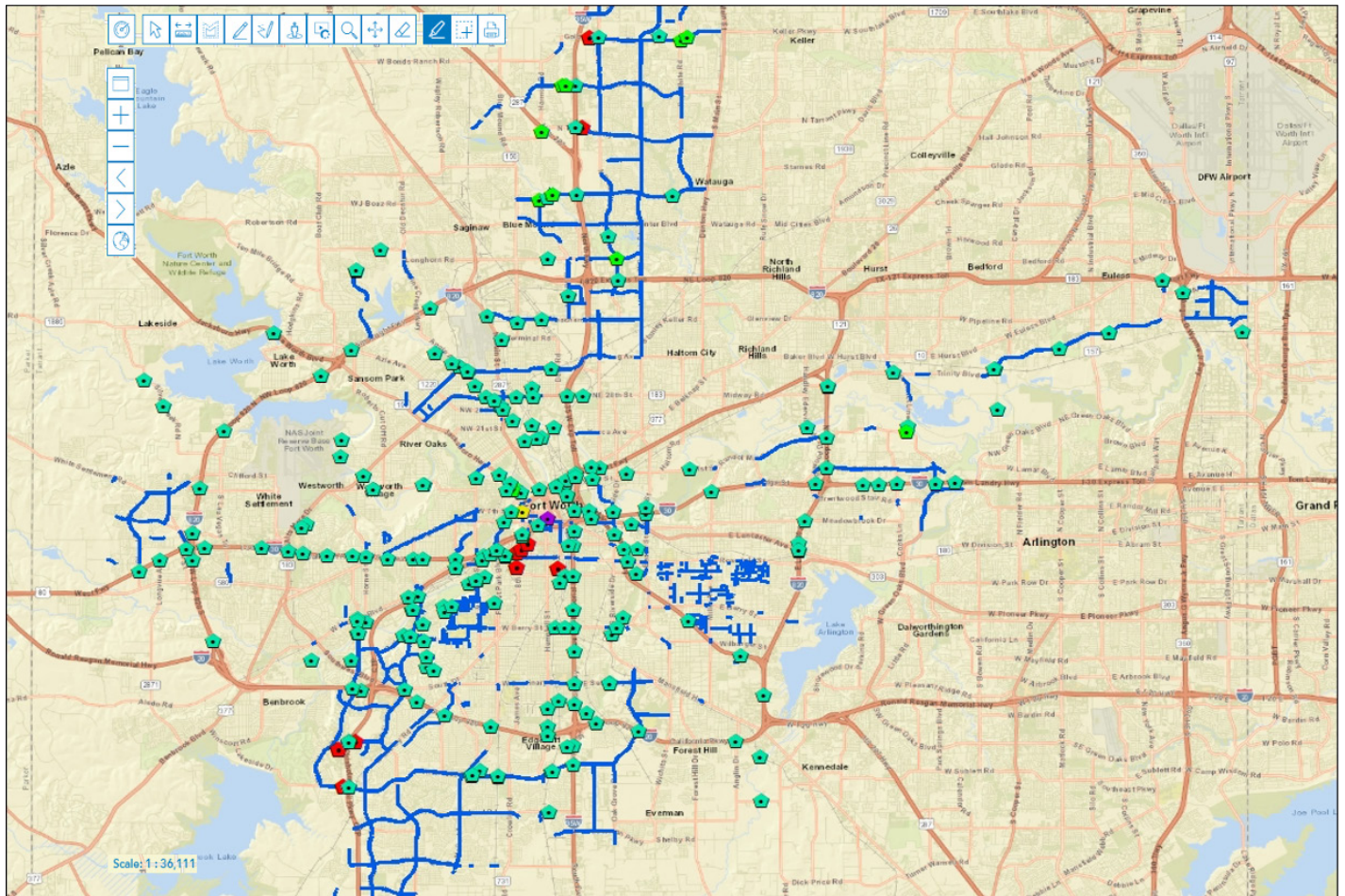
Efficient and timely winter street treatment is achieved through assigning truck routes to divide prioritized locations into sections for each truck active during a shift. Routing assignments can be rotated in coordination with shift assignments to allow for 24-hour coverage of the areas to be treated. Unanticipated locations requested for service through the JEOC will be assigned to the nearest truck with sufficient material to respond. The city keeps track of all the trucks in the city through Automatic Vehicle Locator (AVL) Geotab software in order to track location and further minimize response time.

The City of Fort Worth's winter street treatment is based on a prioritization framework and the application of ice specific treatment methods aimed to safeguard both critical infrastructure and community welfare during adverse weather events. The duration and severity of the storm determines the level of service ultimately implemented. Residents are encouraged to stay informed and cooperate with public safety measures for a safer and more resilient winter season.

## **POST EVENT ACTIVITIES**

Following winter weather events, the TPW Superintendent coordinates a comprehensive post-event after-action meeting, engaging key personnel to ensure a thorough and reflective assessment. This collaborative effort includes the Street Operations Supervisor, responsible for evaluating the event holistically, addressing both successes and areas for improvement. This discussion extends to the restocking of sand and salt, crucial for maintaining preparedness for future incidents. Simultaneously, Equipment Services plays a pivotal role in evaluating the fleet's performance during the event, contributing valuable insights to enhance operational efficiency. The Asset Management team is actively engaged to verify the status of current assets and identify any additional assets that may have been introduced during the event. This integrated and reflective approach underscores the City's commitment to continuous improvement, operational readiness, and the efficient management of resources in the aftermath of winter weather challenges.

## APPENDIX A - PRIORITY LOCATIONS



## APPENDIX B - SERVICED HOSPITAL AMBULANCE ENTRANCE LOCATIONS

- » Medical City Alliance - 3101 N Tarrant Pkwy
- » Texas Health Alliance - 10864 Texas Health Trl
- » Baylor All Saints - 1400 8th Ave
- » Medical City Fort Worth - 900 8th Ave
- » Cooks Children - 801 7th Ave
- » Texas Health Huguley - 11801 South Freeway
- » Texas Health Southwest - 6100 Harris Pkwy
- » Encompass Health - 6701 Oakmont Blvd
- » USMD Hospital - 5900 Altamesa Blvd
- » JPS Hospital - 1500 South Main
- » Texas Health Methodist - 1301 Pennsylvania Ave