

WINTER STORM - INCIDENT OPERATIONS PLAN

CEMP - ANNEX IV DOCUMENTATION



Note: This Incident Operations Plan is part of Annex IV Function of the Comprehensive Emergency Management Plan and this version includes the 2021 updates. City of Seattle Office of Emergency Management acts as the Incident Operations Plan Coordinator and collaborated with many partners for respective updates.

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1. STAKEHOLDERS

Table 1

PRIMARY DEPARTMENT	IO COORDINATOR
Seattle City Light	Seattle Office of Emergency Management
Seattle Department of Transportation	
Seattle Public Utilities	

Table 2

SUPPORT DEPARTMENT AND AGENCIES	
Seattle Department of Parks and Recreation	

2. INTRODUCTION

2.1 Purpose

To enable a coordinated multi-department and multi-jurisdictional response to a winter storm.

2.2 Scope

This is an annex of the Seattle Comprehensive Emergency Management Plan and applies to all City departments. It addresses the potential challenges posed by the following hazards: Snow and Ice; Windstorm; Flooding; and Landslides.

2.3 Authority

See Comprehensive Emergency Management Plan Introduction.

2.4 Limitations

The City will endeavor to make every reasonable effort to respond to a winter storm. However, City resources and systems may become overwhelmed by the magnitude of a storm and its impacts. There is no guarantee implied by this document that a perfect response to a winter storm will be practical or possible.

3. SITUATION

3.1 Emergency Conditions and Hazards

The Seattle Hazard Identification and Vulnerability Analysis (SHIVA) identifies Seattle’s hazards and examines their consequences so we can make smart decisions about how best to prepare for them. It provides information regarding potential impacts of hazards to the people, economy, and built and natural environments of the City of Seattle. The SHIVA provides a foundation for all of the City of Seattle’s disaster planning and preparedness activities. The list of all natural and human-hazards includes: Emerging Threat, Geophysical Hazards, Biological Hazards, Intentional Hazards, Transportation and Infrastructure Hazards, and Weather and Climate Hazards.

Four of these hazard types are associated with winter weather: Snow and Ice; Windstorms; Flooding; and Landslides. Each of the four hazards may have one or more of the following impacts:

- Traffic congestion;
- Increased response time for emergency services;
- Interruption or cancellation of government services such as solid waste pickup, municipal court cases;
- Reduction in public and/or private transportation services;
- Cancellation of healthcare services;
- Damaged or collapsed structures;
- Car accidents; and
- Impacts to vulnerable populations.

3.1.1 Snow and Ice

Snowfall is not uncommon and can be heavy. The unofficial record for the most snow is 64 inches in 1880. The single-day record is 21.5 inches in 1916. Snow, ice, cold temperatures can linger for weeks.

Possible impacts from snow, ice, and cold temperatures may include:

- Snow and ice-covered sidewalks, roadways and bridges making travel hazardous;
- Illness, injuries, and fatalities due to falls, sledding, car accidents, carbon monoxide poisoning, food poisoning (lack of refrigeration), hypothermia, heart attacks, and falling ice;
- Collapsed roofs;
- Power outages;
- Stranded commuters;
- Flooding caused by snow melt; and
- Frozen or ruptured water mains causing local flooding and/or loss of water services.

3.1.2 Windstorms

The Puget Sound region can experience strong windstorms, including ones with hurricane force winds known as mid-latitude cyclones. These storms are wider than tropical storms. The largest of these was the 1962 Columbus Day Storm.

The highest recorded wind speed in Seattle was 82 mph during the Columbus Day windstorm, although winds vary throughout the area due to terrain.

The 2006 windstorm caused great damage to city property and infrastructure, with damage estimates greater exceeding \$16 million. In the 2006 windstorm, sections of dozens of major arterials and hundreds of neighborhood streets were blocked, mostly by fallen trees and tree limbs. An estimated 700 trees fell on public property. Besides being an inconvenience to property owners and municipal governments who must clean up debris, falling trees and tree limbs are a hazard.

Possible impacts from high winds include:

- Severed power lines and communication lines; and
- Illness, injuries and fatalities due to falling tree limbs and other objects, electrocution (downed power lines), carbon monoxide poisoning, food poisoning (lack of refrigeration).

3 1.3 Flooding

Seattle is vulnerable to three types of floods.

- Riverine flooding – Heavy precipitation causes a river or stream to overflow its banks into the adjoining floodplain. This is the classic flood. Seattle’s creeks, especially Thornton and Longfellow, have flooded more often than the managed Duwamish River. Release of large volumes of water from the Howard Hansen Dam could affect the Duwamish River.
- Coastal flooding – Associated with storms. High tides and wind can push water into coastal areas. Coastal flooding can erode the toes of bluffs and are one factor in landslides. Some areas, like South Park, can experience drainage problems under the same conditions.
- Urban flooding – Happens suddenly when intense rain overwhelms the capacity of the drainage system. Low lying, bowl-shaped areas like Madison Valley and Midvale are the most likely to flood. This also can occur in many areas of the City where storm drains are overwhelmed by leaves and debris. This causes ponding on roadways, disrupting traffic and crosswalks.

Possible impacts from flooding include:

- Flooded structures;
- People trapped inside flooded structures or vehicles;
- Injuries and fatalities due to drowning;
- Severed pipelines, drainage lines, power lines, and communication lines; and
- Ponding water blocking roadways and pedestrian crosswalks.

3 1.4 Landslides

8.4% of Seattle is prone to landslides. Four kinds of slides may occur in Seattle.

- High Bluff Peel-off – blocks of soil fall from the high bluffs primarily along the cliffs of Puget Sound. Between 3-4% of all slides.
- Groundwater Blowout – groundwater pressure built up at the contact between pervious (sand) and impervious (clay) soil units causes a catastrophic groundwater and soil burst. Between 5-6% of all slides.
- Deep-seated Landslides – deep, rotational or translational slides and slumps caused by groundwater pressures within a hillside. Between 18-19% of all slides. These are the most dangerous type of slide.
- Shallow Colluvial (Skin Slide) – shallow and rapid slides on a slope, which may result in a debris flow. Over two-thirds (69%) of all slides are shallow colluvial.

Possible impacts from landslides may include:

- People trapped inside damaged or collapsed structures;
- People buried under dirt and debris;
- Injuries and fatalities related to blunt or penetrating trauma, suffocation; and
- Severed pipelines, drainage lines, power lines, and communication lines.

3.2 Planning Assumptions

- Winter storm forecasts provide sufficient time to conduct planning and to prepare in general.
- While winter storm weather forecasts are extremely helpful in planning and response, they are not 100% accurate.
- Despite extensive public messaging, many members of the community are unable to heed warnings to prepare for a storm.
- The hilly terrain in Seattle can make driving even more difficult on snow and ice covered roadways and may temporarily isolate neighborhoods.
- The drainage and wastewater system has a finite capacity and may be overwhelmed by storm runoff from short-duration events with high rainfall intensity or long-duration events with moderate rainfall intensity.
- The same type of rainfall event (e.g., 2 inches over 24 hours) may result in drastically different storm impacts due to the level of soil saturation during the storm.
- Because of the inherent uncertainties associated with any weather forecast, responders generally must assume the worst when it comes to preparing for a storm.
- Many businesses and residents do not clear the sidewalks in front of their property which limits access to goods and services, especially by the disabled or elderly.
- Street closed signs for ice covered streets, or flooded areas, are often ignored by drivers
- Storm related traffic congestion, parked vehicles, and abandoned vehicles can impede efforts to clear roadways, restore power, or address local flooding.

3.3 Weather Forecasts

Seattle Department of Transportation (SDOT), SPU, City Light, and the Seattle Office of Emergency Management (OEM) closely monitor National Weather Service forecasts. In addition:

- SDOT contracts with a private forecasting service called WeatherNet and with the University of Washington for snow/ice forecasting; called SnowWatch;
- SPU has a meteorologist on staff and contracts with the University of Washington for rain forecasting; called RainWatch; and
- Seattle City Light contracts with University of Washington for wind forecasting; called WindWatch.

All departments routinely and regularly share weather forecasts. In addition, SnowWatch, RainWatch, and WindWatch are available on the City's public website. The National Weather Service (NWS) may issue a weather outlook, advisory, watch, or warning as a storm approaches.

- A weather outlook gives notification of a potential for a significant storm, two to five days in advance.
- A weather advisory is for weather events with up to 24-hour notice that are more of an inconvenience and not necessarily life threatening.

- A weather watch is issued one or two days prior to an anticipated significant weather event; the odds of the event occurring have increased yet some uncertainty remains for the specific forecast area.
- A weather warning means confidence is high the significant weather event will occur in the next 24 hours or less, or is already underway.

The NWS may host one or more interactive webinars with local jurisdictions, before and during the storm, to discuss the forecast in detail and provide an opportunity for responders to ask questions. The Seattle OEM, SDOT, SPU, and Seattle City Light each participate in these webinars. Since the webinar can only support a limited number of participants, representatives from other City Departments and partner organizations are invited to participate in the webinar at the City Emergency Operations Center (EOC).

4. CONCEPT OF OPERATIONS

4.1 Incident Planning

When there is sufficient notice of an incident with the potential to cause significant impacts, the current OEM Staff Duty Officer (SDO), OEM Operations Coordinator, OEM Deputy Director, and members of the Disaster Management Committee and Strategic Work Group review available and determine a course of action.

- **Take no action:** Departments manage the incident without activation of the EOC. The OEM SDO is available 24/7 to provide assistance to departments.
- **Monitor the Incident:** The OEM SDO monitors the incident in coordination with affected departments. The OEM SDO keeps the OEM Director and Deputy Director fully briefed on the situation. If needed, the OEM SDO can share situation reports and forecasts with stakeholders using existing EOC email distribution groups.
- **Conduct a Planning Meeting:** The OEM Director may convene a planning meeting to develop a City Consolidated Action Plan (CAP) and determine when the EOC will be activated and what Emergency Support Functions (ESF) will be involved.

The decision on what action to take is based on the totality of the circumstances, such as the forecast, anticipated impacts, past experience with similar weather events, scheduled events taking place during the storm, and recommendations from those City departments likely to have a role in the response.

Triggers that could cause a planning meeting to be called, include but are not limited to the following :

- When requested by a City department;
- “Weather Advisory” issued by National Weather Service;
- Freezing rain and/or snow anticipated in the lowlands;
- 32° freezing temps. sustained for 2-days straight (daytime temperatures don’t rise above freezing);
- Rainfall greater than 2-3 inches in 24-hour period;
- Forecast of sustained winds 25 to 39 mph and/or gusts to 57 mph; and
- Increase in USGS landslide threshold and or rainfall intensity.

4.2 Citywide Incident Planning

A citywide planning meeting is conducted as soon as possible in order to provide sufficient time to prepare. The goal of the meeting is to:

- Determine the current state of preparedness of the City;
- Assess possible impacts to special events, City services and the community; and
- Consider whether or not to activate the EOC –or- identify event specific triggers for an activation.

If the decision is to activate the EOC, a City Consolidated Action Plan is developed that identifies the objectives and strategies that will govern the response to the storm. The Seattle OEM convenes and facilitates the meeting. For winter storms, the following departments participate in the planning meeting:

- Seattle City Light;
- Seattle Department of Finance and Administrative Services;

- Seattle Information Technology;
- Seattle Department of Transportation (SDOT);
- Seattle Fire Department;
- Public Health Seattle and King County;
- Seattle Human Services Department;
- Mayor’s Office (Director of Communications and/or Mayor Representative);
- Seattle Parks and Recreation;
- Seattle Police Department;
- Seattle Public Schools;
- Seattle Public Utilities (SPU);
- King County Metro Transit;
- King County Adult Corrections Facility; and
- University of Washington Emergency Management.

This list may be modified based on the type of hazard and other factors.

4.3 Response

4.3.1 EOC Activation

The City EOC is activated to provide citywide coordination and support to response operations during a significant winter storm. Typically, the EOC will activate shortly before the storm arrives and remain open through the height of the storm. City EOC hours of operation are tailored to meet operational need.

- A Consolidated Action Plan is used to coordinate operations throughout the City.
- Information is regularly shared with all EOC stakeholders through hourly Snapshot and Situation Reports that are issued once every operational period.
- An Essential Elements of Information list guides departments in what information to report to the EOC during the storm and when those reports should be provided.
- WebEOC is used for sharing information and updates with all City departments.

Public messaging is coordinated through the EOC Joint Information Center. Public messaging topics common to winter storms include:

- Check on your neighbor;
- Shelter and warming center locations and hours of service;
- Extent of damage;
- Safety information; hypothermia, driving, carbon monoxide poisoning, obey road closed and other warning signs;
- What the City is doing to respond to the incident;
- Status of City services, changes in hours of operation for City programs;
- Where to get information and assistance;
- Protect pipes and water services from freezing; and
- Clear storm drains in the event of snow melt or flooding.
- Clear sidewalks and curb-cuts of snow and ice.

4.3.2 Lead Agency Transition

As storm hazards change with weather conditions or when life safety priorities necessitate, lead agency assignment will be transitioned to the appropriate responding agency as indicated in the CEMP and

approved by the responding department's representatives in the EOC or conference call during periods of non-EOC activation.

4.3.3 Vulnerable Populations

Each storm and subsequent impacts may affect populations differently. For winter storms, populations that are potentially more vulnerable are people who are homeless; are elderly; are receiving medical treatments, such as dialysis; have a disability; rely on in-home case management services; need power for medical or assistive devices; become homebound and unable to go out during prolonged storm conditions; have limited English proficiency and others. As the ESF 6 lead, each event is assessed by HSD using the ESF 6 Winter Storm Checklist, which includes identifying potential impacts to vulnerable populations. Additionally, information, ongoing assessment and response activities are coordinated with ESF 8, ESF 5 and ESF 6 departments and partner agencies, including HSD, Libraries, Parks, Neighborhood Service Centers, Office of Housing, Seattle Animal Shelter, and 2-1-1.

Winter Response Plan for People Experiencing Homelessness

Many programs, government and non-profit, provide services to the homeless on a daily basis. During inclement weather, it is essential that the delivery of critical services for the people experiencing homeless is maintained, and if needed, augmented. The Human Services Department Winter Response Plan for People Experiencing Homelessness describes what steps are taken during the winter to provide shelter and food for the people experiencing homeless. For storms or extended periods of low temperatures that present a substantial threat to life or health, shelter capacity is augmented using facilities not normally used as shelters. During a disaster (weather-related or not) activities to support the people experiencing homeless will be linked with the overall City response as described in the City of Seattle Comprehensive Emergency Management Plan.

Utility Outages

To minimize impacts to vulnerable populations and critical services during the storm, electrical, water, gas outages will be promptly reported to the City EOC and Public Health Seattle & King County. The EOC will coordinate response activities, such as opening warming or overnight shelters (see Sheltering Plan), and messaging. During severe winter storm conditions, scheduled power and water shutoffs due to non-payment may be placed on hold.

Mobility Impacts

Conditions that prevent people from obtaining critical services or supplies can create life-threatening situations, particularly over an extended period of time. The Seattle EOC will monitor for these conditions, which can include, but are not limited to: hazardous driving conditions for non-emergency vehicles; cancellation of public transportation including Access buses; case workers or other support assistance unable to reach homebound persons; people who use mobility devices, have visual impairments, are frail or are not able to safely navigate conditions becoming homebound due to dangerous or impassable walkways and sidewalks; and/or supplies of food or medicine inaccessible or unavailable because of travel conditions.

Notification and Warning

Public information, including notifications are coordinated through ESF 15 and the Alert & Warning Support Operations Plan. Any messaging will include multiple communication strategies to reach targeted (vulnerable) populations.

4.3.4 Snowstorm Response Strategies

SDOT responds to snow, ice, frost, freezing fog, mist, rain, and black ice. The SDOT Winter Weather Readiness and Response Plan details the SDOT response.

Response Strategies

The response to snowstorms hinges on the ability of the SDOT and other transportation agencies in the region to keep the roadways passable. All City departments are expected to support SDOT in accomplishing its mission.

SDOT focuses on clearing snow from a limited number (approximately 1000 lane miles) of designated roadways to a defined service level. These roadways include the busiest streets that connect Seattle's neighborhoods with downtown and the greater Puget Sound region, streets used by transit agencies during harsh weather, streets used most frequently by public safety agencies, streets deemed important to public institutions (e.g., schools and hospitals), and streets leading to Seattle's major employers. Residential and secondary roadways are not cleared. Under the SDOT plan, there are two service levels.

- **Gold Level:** Bare pavement within twelve hours over all lanes on the most critical arterials as soon as there is a significant lull in the storm.
- **Emerald Level:** Bare pavement within twelve hours for one lane in each direction on selected major arterials and remaining Metro winter storm bus routes, as soon as there is a significant lull in the storm.

Before the storm arrives, SDOT applies anti-ice solution to the designated roadways to prevent frost from forming and snow and ice from bonding to the pavement. Under optimal conditions, it takes approximately 8 hours to apply the anti-icing solution to all designated roadways. Rain may dilute or wash away the anti-ice solution, limiting its benefit. During storms, crews also apply deicing material, granular salt, to help melt snow and ice on the roadway.

Plowing generally begins when there is more than 1 inch of snow accumulation. Plows push snow to the right. If there is more than 12 inches, the snow is pushed to the center of the street. The plows try to avoid creating windrows, which is a buildup of plowed snow that can block cross traffic at intersections. If necessary, front end loaders may be used in the downtown area to remove windrows and excessive snow accumulation.

King County Metro plows a limited number of routes in the downtown area that are needed for bus operations.

As called for in the Winter Weather Readiness and Response Plan SDOT deploys pedestrian safety crews to perform deicing and snow removal on critical sidewalk landings and public stairways located in the right-of-way, as identified using criteria in the city's Pedestrian Master Plan.

Using signs placed near known trouble spots, SDOT crews or SPD officers close streets as needed. Closed streets are displayed on a map which is available on the City website.

SDOT has a special emphasis team that can respond to emergency requests for plowing from SPD and SFD. In addition, Public Health Seattle King County and the Seattle Commission for People with Disabilities can request assistance in maintaining access to critical facilities and services, such as the Puget Sound Blood Center.

HSD and SPR department can open warming shelters or overnight shelters if needed. HSD conducts outreach to people living unsheltered during periods of low temperatures and may activate additional shelters for the people experiencing homelessness. SPD can activate outreach teams ("Cold Weather Van"),

which check on people living unsheltered and provide transport to shelters. The King County 2-1-1 website provides a comprehensive list of winter shelters in operation throughout the region.

A regional transport plan for medically vulnerable individuals who require uninterrupted access to outpatient care, such as chemotherapy or dialysis, may be activated if regular transportation options not be available. This is a limited service intended to support the most urgent of medical needs not otherwise addressed by emergency medical service providers. In the City EOC, ESF 1 and ESF 6 monitor providers of transportation (public and private) to medically vulnerable populations to determine if services are being curtailed due to the storm ESF 8 and the Northwest Healthcare Response Network also request healthcare providers reschedule appointments and identify those individuals that must receive their routine healthcare without delay or interruption.

Public Messaging for Snow Events

Key public message topics specific to snowstorms include:

- Shovel sidewalks, curb cuts, and driveways;
- Where to find information about the condition of roadways and weather reports;
- Location of closed streets;
- Warnings about ice falling from buildings; and
- Protection of water services against freezing (for any sustained cold period, not specifically snow related).

4.3.5 Windstorm Response Strategies

Seattle City Light (SCL) responds to power outages.

Response Strategies

As soon as possible, areas without power are defined, damaged portions of the electrical power system located, and a strategy for repair and electrical power restoration implemented. Where practical to do so, designated critical facilities are given priority for restoration with the understanding that the entire local distribution system in a given area must be functional in order for electrical power to flow.

Areas without electrical power are displayed on a map which is available on the City website.

SDOT leads the clearing of debris from roadways. Initially, debris is pushed out of the roadway to be picked up later. The SPU Debris Management plan describes how SPU will manage the removal and disposal of debris.

Traffic congestion, due to the traffic control signals being out, can slow crews responding to roadways blocked by debris and to damaged electrical power infrastructure. To address this, Debris Removal Task Forces (DRTF) can be mobilized. The DRTFs include SPD and one or more of the following departments as needed; SDOT, SCL, SPU, and the Parks Department. The DRTFs, escorted by police officers assigned to the task force, can rapidly respond to incidents. This multi-department approach is especially helpful for incidents that involve power lines (SCL response) entangled in debris (SPU and SDOT response) which is blocking a roadway (SPD).

The EOC Planning Section maps the location of critical facilities located in areas without power such as hospitals, dialysis centers, long term care facilities, and others.

Public Health works closely with the Northwest Healthcare Response Network (NWHRN) to identify and address impacts related to the storm. NWHRN maintains the Regional Patient Movement Response Plan

should need arise to evacuate a healthcare facility. If at all possible, evacuation of these facilities will be avoided.

During an EOC activation the Logistics Section may coordinate the refueling and maintenance of fixed generators through the FAS Facility Operations Maintenance Control Center (MCC). Generator repair and refueling are done through City vendors. If necessary, emergency contracts for rolling stock generators can be made available, however connections for rolling stock generators to buildings' electrical systems may not be in place. As needed, additional suppliers for mobile fueling can be made available. In a declared emergency by the Governor and Mayor, these resources, to extent practicable, can be commandeered for public use following Procedures for Commandeering of Private Equipment, Supplies, Facilities, Services and Impressment of Citizens.

The City's water system experiences impact during a sustained (multiple day) cold weather event. Seattle Public Utilities (SPU) gathers necessary resources to respond to no-water calls due to frozen services, and leak shut-offs. Staff are put onto extended shifts and may be held over.

Response to water systems leaks may be prioritized differently than normal, depending on the impact to transportation.

Public Messaging for Windstorms

Key public message topics specific to windstorms include:

- Warnings about the hazards posed by falling trees, tree limbs, objects, downed power lines, and carbon monoxide poisoning;
- Safe operation of generators;
- Requests that residents remove debris from sidewalks, curb cuts, and driveways;
- Description of the location of areas without power; and
- Explanation of the cause of the power outage and when electrical power might be restored and where.

4.3.6 Flooding Response Strategies

SPU leads the response to local flooding. SPU clears drains, maintains the storm drain system, and addresses ponding and flooding.

Response Strategies

SPU monitors weather forecasts and analyzes the potential impacts. The impacts are influenced by precipitation amounts, intensity, duration, and other issues such as leaves along streets and in storm drains. SPU prepares for impending storms by performing pre-storm maintenance to critical facilities.

During a storm crews are dispatched to known flooding sites, and in response to public calls. Priority is given to sanitary back-ups, and to flooding which impedes transportation. System operations are undertaken to maximize storage and pumping, to accommodate increased flow.

SDOT assists with clearing roadways.

SPD assists with identifying flooded areas, closes roadways, and provides traffic and crowd control as needed.

SFD conducts rescues for individuals trapped by water and can pump out flooded critical facilities such as hospitals (limited capacity to do this).

SFD and SPD work together to conduct evacuations of flooded areas.

HSD and Parks Department establish shelters as needed.

Seattle Department of Construction and Inspections (SDCI) structural engineers assess buildings for structural damage while SDOT structural engineers conduct assessments of roadways and bridges.

Public Messaging for Flooding

Key public message topics specific to flooding include:

- Do not drive/walk through pools of water; and
- Where to obtain sandbags.

4.3.7 Landslide Response Strategies

SPU leads the response to landslides. An annual pre-season, landslide planning meeting, hosted by SPU, is attended by Parks Department, SPU, and OEM. These departments use a joint protocol for coordinating the response to a landslide.

Response Strategies

Landslides can cover a wide area and impact public and/or private property, block roadways, and sever pipelines, communication lines and electrical lines. Depending on the area impacted, one or more departments may have a lead role in the response; SDOT clears roadways, SPR clears areas involving parks property, while Puget Sound Energy (gas), SPU and SCL address impacts to their infrastructure.

SPU crews respond to evaluate whether water runoff can be directed away from the landslide area.

Geotechnical engineers from several departments, including SPU, SPR and SDCI evaluate hillsides for stability and landslide potential.

SDCI structural engineers evaluate buildings for structural damage. SDCI uses a color-coded tag system to identify the status of structures:

- Red = structure is not safe to occupy;
- Yellow = limited use of the structure permitted;
- Green = structure is safe to use without limitations; and

SPD assists with traffic and crowd control at landslide scenes.

SFD provides emergency medical response and conducts rescues as needed.

The origin of the landslide determines which department is responsible for follow up and resolution of the incident. Resolution may take weeks or months to determine.

Public Messaging for Landslides

Key public message topics specific to landslides include:

- Stay away from unstable hillsides and recent landslide areas;
- Obey SDCI placards; and
- Redirection of runoff or drainage water away from slopes.

4.4 Direction and Control

4.4.1 All Departments

Initial Planning and Preparation

- Ready department resources for the response to the snowstorm, including four-wheel drive vehicles, tire chains and windshield fluid.
- Take steps to mitigate impact of the storm to service delivery, critical infrastructure and key resources.
- When requested, participate with Seattle OEM and other City Departments in planning the storm response.
- Notify Seattle OEM if Department Operations Center will be activated, when and at what level of activation and what support is needed from the EOC.
- Following guidance provided by the City EOC and in coordination with the Mayor's office, provide employees with updates on storm preparations, as needed.
- Coordinate pre-incident City public messaging as defined in initial planning meeting.

Response (EOC Activated)

- Coordinate public messaging through the Joint Information Center.
- OEM coordinates with the Mayor's office on any messaging that needs to go to City employees. For example, employee messaging, leave policy and modification of hours of department operation. It is then shared with City Department Directors for implementation and dissemination within their departments. City Department Directors have the discretion to adjust or modify messaging, hours of operations to personnel, or services based on their mission.
- Coordinate policy issues through the Seattle EOC Director.
- Coordinate all storm related mapping through the City EOC Planning Section.
- Use WebEOC to share information.
- Route requests for emergency plowing in support of critical operations to the SDOT.
- Notify the City EOC and SDOT if road conditions deteriorate and significantly hinder response operations or delivery of services.
- Notify Seattle EOC when Department Operations Center activates.
- Notify City EOC of any emergency lodging arrangements for department personnel.
- Notify City EOC of any fatality or significant injury related to the storm.
- Closely monitor supply levels and usage rate of wiper blades, windshield washer fluid and tire chains and notify EOC Logistics Section well before critical supplies run low or are expended.

4.4.2 ESF 1 Transportation (Department of Transportation)

Initial Planning and Preparation

- Provide to Seattle OEM the best estimate of potential impacts to Transportation Department service delivery and impacts to public transit in Seattle and region.
- Closely coordinate preparations with King County Metro Transit, Sound Transit and other transportation agencies in the region based on weather forecasts.
- Determine Washington State Department of Transportation strategy for Express Lane operation.
- Provide best estimate possible, based on forecast and available resources, of potential impacts to driving conditions and anticipated Service Level on snow routes and update according to the Essential Elements of Information strategy.
- Coordinate with Seattle Police Department to ensure sufficient street closure signs are available and distributed to designated locations throughout the City.
- Notify Seattle Police Department and King County Metro Transit of anticipated need for assignment of Liaisons – update the EOC when liaisons are activated.
- In coordination with City pre-incident public messaging strategy, develop and disseminate public messaging regarding transit services.
- Determine need to assign a King County Metro Transit Liaison to the SDOT’s Traffic Operations Center.

Response (EOC Activated)

- Closely coordinate operations with King County Roads Division, Washington State Department of Transportation, other transportation agencies in the region, King County Metro Transit, Sound Transit and other transit agencies to support transit operations.
- Monitor and provide updates on the status of rail, intercity bus service, taxi, marine and air transportation providers.
- Notify the Seattle EOC of any changes in King County Metro service levels.
- Coordinate requests to King County Metro Transit for heavy duty tow service, on an emergency and as available basis, for fire trucks.
- Closely coordinate operations with Seattle City Light to determine priority of handling downed power lines so key transportation routes can be reopened in a timely manner.
- Provide regular and frequent updates to the City EOC on road conditions, the status of storm operations and problems encountered.
- Maintain and update online mapping system.
- Maintain and update the Master Street Closure List.
- bus schedules, students sheltered at schools or students stranded on buses.
- Rapidly address requests for emergency street clearing from the Police Department, Fire Department, Public Health Seattle and King County or others.
- Provide special emphasis crews to, support life safety requests for assistance such as mass casualty incidents, hostage situations and fires.

4.4.3 ESF 2 – Communications (Seattle Information Technology)

Initial Planning and Preparation

- Review and update list of vendors and communication contacts for use during winter weather EOC activations.

Response

- Monitor all communication modes (radio, telephone, networks/servers, etc) for impacts, especially power outages.

4.4.4 ESF 3 Public Works and Engineering (Seattle Public Utilities)

Initial Planning and Preparation

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to water, waste water and solid waste service delivery.
- In coordination with City pre-incident public messaging strategy, develop and disseminate public messaging regarding frozen or burst water pipes and solid waste pickup.

Response (EOC Activated)

- As needed, activate Department Operations Center to coordinate internal operations and with other departments.
- Notify the City EOC and Public Health Seattle and King County of significant water or sewer service outage, outages known to impact a health care facility or if solid waste pick up will be delayed.
- Be prepared to provide equipment and crews to assist with snow and ice removal in support of SDOT operations.

4.4.5 ESF 4, 9, 10 Firefighting, Search and Rescue, Oil and Hazardous (Seattle Fire Department)

Initial Planning and Preparation

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to Fire Department service delivery.
- Coordinate with Public Health Seattle and King County on public messaging regarding carbon monoxide poisoning.

Response (EOC Activated)

- As needed, activate Department Operations Center to coordinate internal operations and with other departments.
- Immediately notify the EOC of developing critical incidents with a potential for cascading impacts.
- Maintain capability to respond to calls for service.
 - Notify City EOC if trends develop which indicate emergency calls for service may be significantly delayed Contact SDOT to request emergency plowing assistance.
 - For fire trucks that become stuck in the snow consider requesting heavy duty tow trucks from King County Metro.

4.4.6 ESF 5 (Emergency Management)

Initial Planning and Preparation

- Monitor and notify, as needed, City department and regional partners about the potential for a winter storm.
- Host the National Weather Service Webinar at the City EOC and notify City departments of the Webinar forecast.
- Facilitate the City initial planning meeting.
- In coordination with the Mayor’s Office, define City public and employee messaging strategy.
- Provide regular updates, as needed, to City departments on the storm forecast, potential impacts, storm preparation activities and anticipated response operations.
- Coordinate development and distribution of the City Consolidated Action Plan and Essential Elements of Information guide.
- Configure WebEOC (Base and Sub-Incidents).

Response (EOC Activated)

- Assign OEM Staff Duty Officers to general staff positions in the EOC.
- Update Essential Elements of Information guide as needed.
- Develop and distribute Snapshot and Situation Reports.
- Coordinate response mapping.
- Develop and distribute Consolidated Action Plans.
- Coordinate with King County Office of Emergency Management.
- Coordinate public and employee messaging through the Joint Information Center.
- Coordinate Auxiliary Communication Service operations.
- Ensure Seattle Public Schools notifies the EOC of any school closures or modification to hours of operation.

4.4.7 ESF 6 Mass Care, Housing and Human Services (Seattle Human Services Department)

Initial Planning and Preparation

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to vulnerable populations, human service agencies and ESF 6 departments’ services (Parks, HSD, Libraries, Seattle Center, DON, Seattle Animal Shelter, Office of Housing).
- In coordination with City pre-incident public messaging strategy, develop and disseminate public messaging regarding warming shelters and other related topics.
- Develop and maintain list of locations and capacity of current and potential warming shelters.
- With support from Finance and Administrative Services, arrange for front or four-wheel drive vehicles, chains, etc. for HSD Aging and Disability Services case management staff.

Response (EOC Activated)

- Monitor ESF 6 and human services agencies ability to deliver services.
- Continue assessing and reporting to the EOC impacts to vulnerable populations.
- Coordinate establishment of shelters or other mass care support as needed.
- Monitor mobility issues and transportation systems that support vulnerable populations and notify City EOC of developing issues.

4.4.8 ESF 7 Resource Support (Finance and Administrative Services)

Initial Planning and Preparation

- Review and update list of department fleet coordinators and review vehicle rental procedures and contracts.
- Review emergency contracting and purchasing guidelines and policies, and update the website.
- Assist departments with preparing vehicles and facilities.
- Review and update inventory of winter storm supplies such as chains, wiper blades, fluid, snow shovels, and salt.
- Ensure emergency generators are ready and City vendor contracts in place for repair and refueling.
- Ensure Finance and Administrative Services supported facilities have sufficient winter storm supplies per plan.
- Ensure City Contracts for generators, fuel delivery, snow removal supplies, equipment/vehicles rentals, towing, snow removal, snow plowing services and lodging are in place.

Response (EOC Activated)

- Closely monitor reports from departments on burn rate of key supplies and arrange for resupply as needed.
- Notify departments of extended hours of operation for vehicle maintenance shops.

4.4.9 ESF 8 Public Health and Medical Services (Public Health Seattle and King County)

Initial Planning and Preparations

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to healthcare community.
- In coordination with City pre-incident public messaging strategy, lead the development and dissemination of carbon monoxide warning messages.
- Develop and distribute other relevant health alerts according to public information strategy.

Response (EOC Activated)

- As needed, activate Health and Medical Area Command to coordinate internal operations and with other jurisdictions and departments.
- In coordination with Northwest Healthcare Response Network, monitor emergency room services, blood bank, dialysis centers and other critical healthcare services for potential disruption and notify City EOC.
- Rapidly evaluate impact of utility service interruptions on affected health care providers:
 - Monitor Seattle City Light System Status website; and
 - Immediately notify the EOC of developing critical incidents with a potential for cascading impacts.
- Closely monitor and report number of carbon monoxide cases:
 - Notify Seattle Joint Information Center; and
 - Address, and if needed, route to the City EOC for assistance, requests for non-medical logistical support from health care providers.
- Coordinate messaging through the Seattle Joint Information Center with Health Department as lead for messaging related to Carbon Monoxide poisoning.

- Monitor providers of transportation (public and private) to medically vulnerable populations and health care providers to determine if essential medical services are being impacted.

4.4.10 ESF 12 (Seattle City Light)

Initial Planning and Preparation.

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to electrical service delivery.
- In coordination with City pre-incident public messaging strategy, develop and disseminate public messaging regarding power outages.

Response (EOC Activated).

- As needed, activate Department Operations Center to coordinate internal operations and with other departments.
- Notify the City EOC and Public Health Seattle and King County of significant interruptions to electrical service delivery.
- Closely coordinate with SDOT to determine priority for clearing downed power lines so key transportation routes can be reopened in a timely manner.
- Be prepared to provide equipment and crews to assist with snow and ice removal in support of SDOT operations.

4.4.11 ESF 13 (Seattle Police Department)

Initial Planning and Preparation

- Provide to Seattle OEM an analysis, based on the weather forecast, of potential impacts to Police Department service delivery.
- Coordinate SDOT Department and determine if or when a Police Department Liaison will be needed in the transportation operations center.
- Coordinate with Department of Finance and Administrative Services regarding extended hours of operation at Charles Street and Haller Lake facilities. Arrange for emergency vehicle chain up at vehicle maintenance shops or utilize City towing vendor for support at precincts.
- Inventory cache of street closure signs stored at precincts and request replacements as needed from SDOT.

Response (EOC Activated)

- As needed, activate Department Operations Center to coordinate internal operations and with other departments.
- Assign priority to requests from SDOT or King County Metro for assistance with abandoned vehicles impacting snow and bus routes.
- Immediately notify the EOC of developing critical incidents with a potential for cascading impacts.
- Maintain capability to respond emergency calls for service:
 - Notify City EOC if trends develop which indicate emergency calls for service may be significantly delayed Contact SDOT to request assistance with vehicle access to police facilities and emergency plowing assistance.
- Be prepared to assist if resources allow, with implementing the plan to restrict Express Lane access to emergency and transit vehicles:

- Requires assignment of officers to traffic control posts at on ramps.
- If resources allow, and if deemed safe to do so, provide escort of SDOT vehicles.
- If resources allow assist with closure of critical transportation routes such as the Viaduct, West Seattle Bridge or others.
- Provide regular and frequent updates to the SDOT on locations of closed roads using SharePoint.
- When requested, provide report on weather, road conditions and snow depth, to the SDOT and the City EOC via the Seattle Police Department Dispatch Center or the Operations Center.
- When requested, assign a liaison from Traffic (or Patrol if not available) to the SDOT.
- When requested, assist with locating and reporting the location of abandoned buses.

4.4.12 ESF 15: Public Information

Initial Planning and Preparation

- Prior to activation, assign a lead PIO to coordinate pre-event messaging and serve as a point of contact for media inquiries. This individual should come from the Department which has lead of the hazard.
- Brief department PIOs on the situation.
- Develop a staffing plan consisting of PIOs from City departments to staff the Joint Information Center when the EOC activates.
- Participate in planning meetings, facilitated by OEM, to develop the response plan.
- Coordinate with partners at King County and the State as necessary.
- Briefing the EOC Director on the plan for JIC operations.
- Finalize and push any pre-event messaging to internal and external stakeholders including the media through the lead PIO.

Response

The JIC, staffed by PIOs from City departments, is the primary site and source of public information to the community using a variety of communications channels. Leveraging their combined expertise, the PIO team provides timely, accurate, and comprehensive information to the public. Public messaging activities include:

- Refine messaging with the Mayor's Office and EOC ESF Representatives as needed based upon impacts and actual conditions.
- Monitor media and social media.
- Coordinate with the Mayor's office and key Department representatives to ensure coverage for on camera or phone interviews with the media.
- Develop and disseminating the City's public messages.
- Integrate public messaging strategy with other response operations.
- Coordinate messaging with regional counterparts.
- Brief EOC staff on how the City's messages are being received by the community.
- Contribute to the development of EOC Snapshot and Situation Reports.

- Maintain direct contact with mainstream (TV, radio, newspapers), alternate (social, including blogs and on-line) and ethnic as maintained by the Mayor’s Office of Immigrant and Refugee Affairs (OIRA) media sources from local, regional and international organizations.
 - Ensure that key messages, especially those pertaining to life safety issues are translated into Tier 1 and Tier 2 languages.
 - Guided by the City’s Inclusive Outreach and Public Engagement (IOPE) policy, ensure emergency information gets out to as broad a base as possible using OIRA, the Community Communications Network (CCN), which is managed and maintained by Seattle-King County Public Health, and other available forums
 - Ensure that public messaging is accessible to all parts of the community, such as providing American Sign Language (ASL) interpreters, for any emergency news conference.

PIOs can use several outgoing communications channels to reach external audiences, including, but not limited, to, news releases; Seattle Channel; the City’s public Web site; Emergency Alert System (EAS), the alerts.seattle.gov blog; social media, such as Twitter and Facebook; regional communications channels, such as King County Metro listservs and Govlink; and resident information lines.

5. RESOURCE REQUIREMENTS

In order to effectively respond to a major incident or disaster, there must be a location that has the capacity to house the various disciplines required to coordinate the City's response. The EOC is the location where much of that collaboration occurs or is initiated. Problems that cannot be solved in the field become the responsibility of EOC responders:

5.1 Logistical Support

OEM maintains the City's EOC at 105 5th Avenue South. The EOC is a fully functioning site that can accommodate up to 150 responders at any given time. OEM has agreements in place with the University of Washington, Gates Foundation, and the Seattle College system for alternate locations for the City's EOC.

5.2 Communications and Data

Seattle OEM maintains the following communications systems:

- Telephones (City network, "hot and ring-down" lines, & cell phones);
- Satellite Phone;
- Ring-down telephone circuits;
- All City Intercom;
- Pagers;
- Printers;
- FAX Machine;
- 800 MHz Radios (KC OEM talk-groups);
- 800 MHz radio (OEM talk-group);
- Washington State EMD SATCOM Unit;
- Back-up Command and Control radio;
- Internet Packet Radio;
- LoBand, HF VHF and UHF radios;
- Electronic Data systems (servers/desktops);
- National Warning System (NAWAS) telephone;
- Video Conferencing Systems;
- WebEOC; and
- AlertSeattle.

6. ADMINISTRATION

This document is an external plan as defined by the City of Seattle Emergency Management Program Planning Policy and follows the maintenance process, which includes a method and schedule for evaluation and revision, as described therein.

The OEM Planning Coordinator is responsible for facilitating the review, update, and approval of the CEMP, as well as maintaining documentation of any changes.

Table 3

RECORD OF CHANGES			
DATE	TYPE	CONTACT	SUMMARY
April 2021	Update	J Jennings Carr	Administrative changes for EMAP compliance
November 2017	Update	L Meyers	Completed annual maintenance with an evaluation and update.
November 2015	Update	K Neafcy	Completed annual update.
November 2014	Update	K Neafcy	Completed annual update.

7. TERMS AND DEFINITIONS

None Identified.

8. REFERENCES

City of Seattle Comprehensive Emergency Management Plan
Seattle Hazard Identification and Vulnerability Analysis
2016-2017 SDOT Winter Weather Readiness and Response Plan
King County Comprehensive Emergency Management Plan
City of Seattle Winter Response Plan for Homeless Persons
Winter Storm Incident – City-Wide Coordination Checklist