



Photo: curbed.com

# 2019 Winter Weather Event

## After Action Report

**FINAL DRAFT**

Approved: 09 April 2019



**Seattle** Office of  
Emergency Management

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**TABLE OF CONTENTS**

**TABLE OF CONTENTS.....3**

**Event Overview .....5**

**Pre-Event Coordination .....5**

**Emergency Operations Center Schedule .....6**

**Emergency Operations Center Consolidated Action Plan Objectives .....6**

**Departments, Organizations, and Agencies Represented in the EOC:.....7**

**Operational Synopses .....7**

    Seattle Department of Transportation (SDOT).....8

    King County Metro.....8

    Sound Transit.....8

    Seattle Public Utilities (SPU) .....9

    Seattle City Light (SCL) .....9

    Seattle Human Services Department (HSD) .....10

    Seattle Parks and Recreation (SPR) .....10

    Seattle Center (CEN) .....11

    Seattle Public Library (SPL).....11

    Public Health – Seattle & King County (PHSKC) .....11

    Seattle Department of Finance and Administrative Services (FAS) .....12

    Seattle Department of Construction and Inspections (SDCI).....12

    Seattle Department of Human Resources (SDHR).....12

    Seattle Office of Economic Development (OED) .....12

    Seattle Office of Emergency Management (OEM) .....13

**Improvement Plan Items .....15**

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## Event Overview

The National Weather Service (NWS) forecast a widespread snow event for the Seattle area with potential totals reaching 12 inches. Extended period of cold conditions with additional snow falls were also in the NWS long-range forecast.

In the first 11 days of February, the Seattle area received over 20 inches of snow over multiple weather systems and experienced sustained temperatures nearly 10 degrees below normal. It was the highest snow total since 2008/2009, and the 16<sup>th</sup> snowiest month on record since records were started in 1894. Annual snowfall averages for the area is 5.9 inches of snow. Impacts to transportation infrastructure, the Seattle Public Schools system, businesses, airport operations, and many other service deliveries were substantial. Intermittent power outages peaked at approximately 39,000 with 43,000 customers affected in total. City response operations were



*Matt M McKnight/crosscut*

focused on maintaining mobility and otherwise minimizing the impacts to community members, particularly our vulnerable populations including but not limited to those experiencing homelessness.

## Pre-Event Coordination

Prior to the first National Weather Service (NWS) Weather Briefings for inclement weather, key City departments were well positioned for planning and coordination due to the high level of coordination taking place for the viaduct closure/SR-99 Tunnel opening. Coordination calls surrounding the Viaduct closure had been taking place daily since January 11<sup>th</sup> and acclimated participants into an efficient reporting format and provided a smooth transition to coordination for the subsequent period of historic winter weather in Seattle and the Puget Sound region. Several conference calls and cabinet meetings took place in the days prior to the City's Emergency Operations Center (EOC) activation for snow.



*CNN*

Continuity of operations plans (COOPs) were refreshed last October when the Seattle Municipal Tower faced possible closure during repair work from a burst sprinkler pipe. The number of employee alternative work arrangements was increased in preparation for the permanent closure of the Alaskan Way Viaduct. The updated COOPs and alternative work arrangements proved beneficial during the winter weather response of the City.

In keeping with activation protocols, the Office of Emergency Management (OEM) facilitated the multi-department and agency development of a Consolidated Action Plan to prepare for winter weather operations.

## Emergency Operations Center Schedule

**State Mission Number:**

**#19-0410**

**Snapshot Reports Issued:**

**25**

**Situation Reports Issued:**

**2**

**EOC Activation Schedule:**

**Friday, February 8<sup>th</sup>**  
1200 hrs – 2300 hrs

**Saturday, February 9<sup>th</sup>**  
0600 hrs – 1500 hrs

**Monday, February 11<sup>th</sup>**  
0500 hrs – 2200 hrs

**Press Conferences at the EOC:**

**Fri, Feb 8<sup>th</sup>**  
1100 hrs

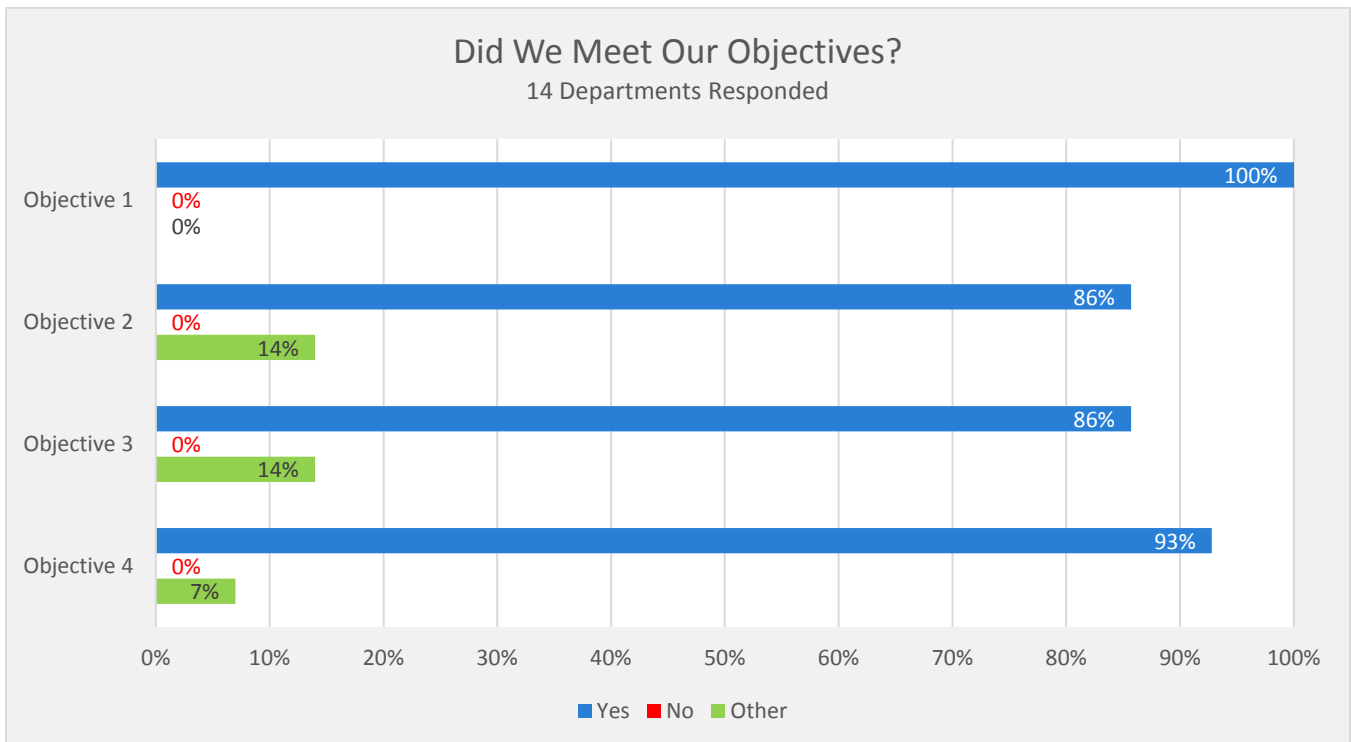
**Mon, Feb 11<sup>th</sup>**  
1100 hrs

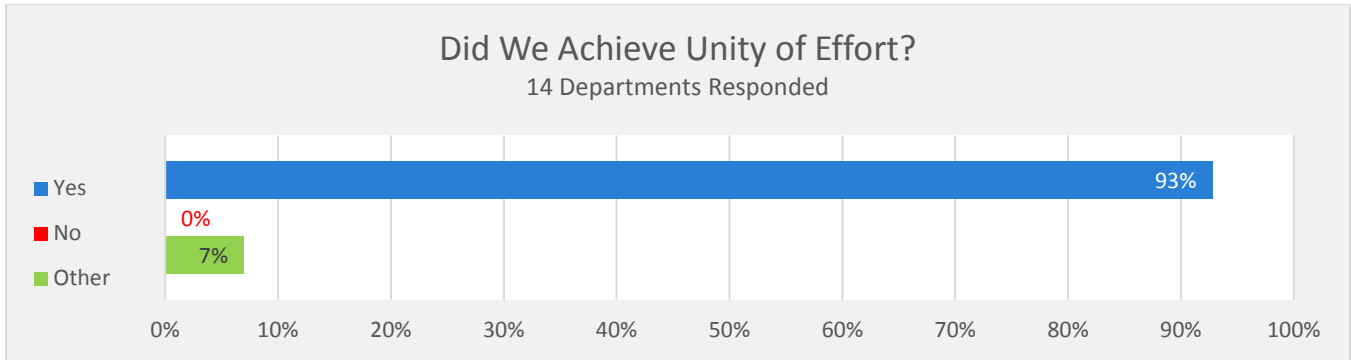
**Tue, Feb 12<sup>th</sup>**  
1100 hrs

**Wed, Feb 13<sup>th</sup>**  
1100 hrs

## Emergency Operations Center Consolidated Action Plan Objectives

- Objective 1: Maintain situational awareness on current and forecast impacts to City.
- Objective 2: Coordinate actions and resources to maintain City Services including public safety.
- Objective 3: Coordinate support for the community. (severe weather shelters, general population shelters, utilities, health, etc.).
- Objective 4: Ensure coordinated and consistent messaging with the community, stakeholders, and employees.





## Departments, Organizations, and Agencies Represented in the EOC:

- *City Attorney's Office* \*
  - Joint Information Center Public Information Officers
  - King County Metro
  - *Northwest Healthcare Response Network* \*
  - *Public Health – Seattle & King County* \*
  - Seattle Auxiliary Communications Service
  - *Seattle Center* \*
  - Seattle City Light
  - *Seattle Department of Human Resources* \*
  - Seattle Department of Transportation
  - Seattle Finance and Administrative Services
  - Seattle Fire Department
  - Seattle Human Services Department
  - Seattle Information Technology Department
  - Seattle Mayor's Office
  - *Seattle Office of Economic Development* \*
  - Seattle Office of Emergency Management
  - Seattle Parks and Recreation
  - Seattle Police Department
  - *Seattle Public Library* \*
  - *Seattle Public Schools* \*
  - Seattle Public Utilities
  - Sound Transit
  - Washington State Fusion Center
- \* On Call Status

## Operational Synopses

From Monday, February 4<sup>th</sup> to Thursday, February 14<sup>th</sup>, conference calls and/or cabinet meetings took place daily, facilitated by the Mayor's Office or the Office of Emergency Management. The calls included key partner agencies such as the National Weather Service, Seattle Public Schools, King County Metro, Sound Transit, King County Office of Emergency Management, and Washington State Emergency Management Division.

Many department operations centers were operational 24-hours a day throughout the event. Impacts to City services were provided to the public and to the media each morning.

On February 8<sup>th</sup>, Mayor Durkan signed a Civil Emergency Proclamation and activated the Emergency Operations Center for the next three winter weather events. An Emergency Contracting Order was also executed to ensure prompt ordering and delivery of essential supplies such as salt. The Proclamation and Order were delivered according to protocol to the City Clerk and City Council.

The Mayor and her cabinet conducted nearly daily media briefings to ensure the public and media were kept informed. The City of Seattle encouraged the public to contact 2-1-1 (or 9-1-1 in a crisis) if residents or businesses

saw anyone in crisis or in need of shelter. All first responders and dispatchers were notified of emergency shelters and the City arranged for transportation to shelters with any dispatch or crisis calls.

### Seattle Department of Transportation (SDOT)

SDOT's Winter Weather Response Plan, which is updated annually, was used in planning for and response to the series of storms. The plan was implemented at noon on February 3<sup>rd</sup> and stood down at the end of the day shift on February 14<sup>th</sup>. The plan was executed by two 12-hour shifts and supported by SDOT's Incident Management Team (IMT).

The snow and sustained cold temperatures required a largescale effort by SDOT and partners to restore and maintain maximum levels of mobility in the city. Thirty-five large plows and 20 small plows were used 24 hours a day for 9 days. Dozens of individual workers were deployed to hand shovel pedestrian routes and transit areas. Resources were used from Seattle Public Utilities (SPU), Seattle Parks and Recreation (SPR), Seattle City Light (SCL), Seattle Finance and Administrative Services (FAS), and contractors to complete the mission. This included 15 drivers with Commercial Driver's Licenses (CDL) from SPU, 150 laborers from SPR, three dump truck drivers from SCL, four dump trucks from SPR, nine plows from Mid-Mountain Contractors, Inc. Approximately 100 pieces of equipment were driven over 70,000 miles. This was the largest mobilization of combined city resources in SDOT's winter storm response history.

In addition to standard Winter Weather Response Plan actions, SDOT coordinated closely with Seattle Public Schools to identify and prioritize routes around schools for clearing.

An SDOT Ice and Snow Snapshot report was generated approximately every three hours to provide situational awareness.

### King County Metro

The Emergency Snow Network (ESN) was activated for the first time. The ESN is a reduced schedule and routes plan that brings services down to approximately 50% of normal service, this includes the complete discontinuation of many routes throughout the county. Additional information regarding the response from King County Metro may be found in their after-action report conducted internally.

### Sound Transit

Operations were focused on maintaining as many transit options as possible while maintaining passenger and employee safety. Winter storm plans for all modes were implemented early.

Staff participated in operational coordination meetings internally, with partnering transit agencies, and the City of Seattle Office of Emergency Management. As confidence in the forecast increased, staff hours were adjusted appropriately. Facilities, materials, and equipment were made ready and or acquired. The storm and operational response were monitored consistently, and situation reports were provided frequently throughout the incident.

Through a coordinated effort between Sound Transit and partnering agencies, snow and ice were removed from bus and rail platforms, ADA ramps, and parking areas, as well as Link and Sounder rail alignments and operating systems.

Both Sounder Commuter Rail and Link Light Rail maintained normal operating schedules throughout the storm.

Sound Transit Express tracked route status throughout the event through constant contact with partner agencies (KC Metro, Community Transit and Pierce Transit).



### Seattle Public Utilities (SPU)

SPU's 3 major lines of business (Drainage and Wastewater, Solid Waste, and Drinking Water) all experienced impacts from February's winter weather. Beginning with forecasts on February 2<sup>nd</sup>, SPU implemented procedures and staffing associated with the Solid Waste Inclement Weather Service Interruption Plan, the Wet Weather Readiness and Response Plan, and The Water Line of Business Freeze Response Plan.

Solid Waste service was interrupted for customers as four separate snow events over two weeks impacted collection areas. Coordination with hauling contractors and implementing alternate schedules and operations at transfer stations and the addition of neighborhood drop boxes allowed for 97 percent of customers' garbage to be collected without missing two consecutive weeks. Additionally, solid waste drop-off sites were made available at four separate locations. Public information efforts included traditional and social media as well as direct customer contact through AlertSeattle.

Drinking Water System Operations implemented the Freeze Response Plan by organizing response crews into geographic divisions throughout the city and responded to roughly 20 water main leaks/breaks in addition to customer calls for no water/frozen pipes and turn-ons/shut offs for leaks on property. Public Information efforts included mitigation measures for customers to protect pipes and how to respond to leaks on property.

The Drainage and Wastewater line of business monitored precipitation levels and snow melt throughout the response, implementing the Wet Weather Readiness and Response plan for a near-storm threshold event during the second week of SPU's major response activities. Public Information efforts included encouraging the public to clear storm drains to facilitate improved street drainage ahead of a potential major snowmelt.

A major logistics support effort ensured that essential SPU staff were fed, had needed transportation, were housed, and had access to equipment to keep them safe and as comfortable as possible, e.g. chains and personal protective equipment. In addition, Seattle Fire Department leadership opened the doors of occupied stations as warming centers for SPU field crews.

Interagency coordination included sharing SPU drivers with SDOT for training and response, staffing the Seattle EOC Infrastructure Branch and Planning Sections, and providing Public Information Officers for the Joint Information Center. SPR staff assisted in implementing drop boxes in neighborhoods that were hard to collect solid waste from. SPU's Contact Center Staff worked additional and overnight hours to support Seattle City Light's outage response. SPU staff also worked in overnight shelters to support SPR and Human Services mass care operations. SPU corporate policy and community affairs staff worked with SPU Executives and the Mayor's Office to facilitate public briefings and updates to elected officials. Following the winter storms, Mayor Durkan and SPU announced that a \$10 billing credit would be provided to residential customers who had two or more missed garbage collections due to inclement weather.

### Seattle City Light (SCL)

Response was limited to a relatively small number of outages during most of this event. Outage numbers were manageable and restored in reasonable and expected timeframes. The snow did not prove to be particularly impactful until it rained on the evening of February 11<sup>th</sup>. That evening as snow transitioned to rain, snow loaded tree branches were rapidly cleared of their snow load causing them to spring back into distribution lines. During this period was the largest spike in outages with a peak of approximately 39,000 customers out Monday night/Tuesday morning with a total of approximately 43,000 customers affected overall. By noon Tuesday, the outages were reduced to approximately 5,000 customers, and by noon Wednesday, fewer than 50 customers were experiencing an outage – this included a combination of storm related and non-storm related outages. All storm affected customers were back in-service Wednesday. The City prepared contingency plans in case these outages were more widespread.

Approximately 300 "wires down" calls were assessed by City Light between Monday night and Wednesday.

### Seattle Human Services Department (HSD)

HSD led the coordination of opening severe weather shelters, expanded capacity at overnight shelters, increased outreach and transportation for unsheltered people, contacted hundreds of Aging and Disability Services high-risk case-managed clients, provided a daily summary on open meals programs and food banks, and staffed the Health and Human Services Branch during the Emergency Operations Center activation.

Multiple severe weather shelters were opened with capacity expanded to serve approximately 550 additional people living unsheltered, primarily at the Seattle Center Exhibition Hall, Garfield Community Center, and Bitter Lake Community Center. Additional shelter space was opened in the Frye Building and Ernestine Anderson Village. This is in addition to the 2,100 shelter beds the City funds on any given night. Efforts also included working with providers to expand spaces for families and youth as well as with partners at King County to create additional capacity at the King County Administration Building.

The Navigation Team, made up of staff from HSD, SPD and SPR, worked extended hours to provide additional outreach and to provide transportation to shelters for people living unsheltered. Shelter and assistance were offered with over 715 contacts and some 162 individuals transported to emergency shelters by the Navigation Team and the Seattle Police Department. The Navigation Team also distributed essential food and clothing that were donated by Costco, Nordstrom, Amazon and Starbucks. This outreach effort was the largest push done by the Navigation Team and service providers in recent memory.

In partnership with multiple organizations, a three-day Resource Fair was hosted at the Seattle Center Exhibition Hall designed to connect people who were staying in the shelters with available services for basic needs, relationship development, service connection, and housing.

A daily summary of operational meal programs and food banks was provided to the EOC.

Aging and Disability Services (ADS) contacted high-risk case-managed clients as well as subcontractors who serve these types of clients, to ensure they were safe, had sufficient food, and had up-to-date emergency plans.

Winter storm preparations were coordinated with the Seattle Housing Authority (SHA) by ADS. In addition to contacting high-risk clients, instructions for reaching case managers were posted in many SHA buildings in the event case managers were unable to come to the building or if there were concerns about another resident.

### Seattle Parks and Recreation (SPR)

The emergency management plan was enacted which included operating community centers on an abbreviated schedule, working to clear snow from critical areas, and attending to downed trees. Scheduled programs were canceled and facilities operated on modified schedules.

SPR assisted and in some cases led the set-up and operation of emergency shelters for the homeless and the plowing and shoveling of snow on roads, sidewalks and parking lots.

Shelter sites were set up to include delivering cots, blankets, and food. Food service was offered three times daily. Showers were offered and towels and personal hygiene products were provided. Custodial services and maintenance support (refrigeration, plumbing, and electrical issues) remained operational 24 hours a day.

The shelter at Garfield Community Center opened Friday, February 8<sup>th</sup> and operated through Friday, February 22<sup>nd</sup> and the shelter at Bitter Lake Community Center opened on Monday, February 11<sup>th</sup> and operated through Tuesday, February 19<sup>th</sup>. The Garfield shelter served over 100 people each night and the Bitter Lake shelter served approximately 50 people each night. SPR staff assisted with checking in guests; preparing and serving breakfast, lunch, and dinner for shelter guests; coordinating volunteers and service agencies; gathering and sorting donations; providing security; cleaning; and other tasks to help keep guests safe and comfortable.

Demobilization of shelters included infestation detection, cot and debris removal, enhanced cleaning and sanitization, and coordination of transportation for shelter residents.

Additional recreation facilities (community centers, pools, tennis center) were opened for drop-in use and providing warming space. The Department Operations Center was activated on a 24-hour schedule and served additionally as a warming station for City field crews.

In support of SDOT, SPR staff worked around the clock hauling salt. Approximately 8.5 million pounds of salt was hauled by SPR crews alone. Along with plowing street routes, SPR crews also plowed parking lots at libraries, community centers, pools, schools, specialty gardens, and the Amy Yee Tennis Centers (approximately 60 lots). SPR supported pedestrian walkway and overpass clearing citywide and attended to over 40 tree emergencies citywide.

SPR provided support for City-wide efforts on snow clearance and provided locations as drop-off sites to support solid waste collection.

### Seattle Center (CEN)

Seattle Center provided the Exhibition Hall for use as an overnight shelter operated by the Salvation Army under the direction of HSD. Additionally, the Armory was provided as a warming center.

Resident organizations operated sporadically due to winter impacts on access and due to employee resource shortages.

Staff worked to remove snow, ice and downed trees on roadways and sidewalks to maintain access to the Armory, Exhibition hall, McCaw Hall, Monorail, theaters, parking garages and critical infrastructure such as the heating and cooling plant.

Exhibition Hall was also opened for three days of use as a human services resource fair and feeding facility.

### Seattle Public Library (SPL)

A modified schedule was implemented to continue some service to its patrons. Utilizing a preset plan, the Library operated on a "snow branch" schedule, which allowed employees to report and serve in the branch closest to their homes. The plan also limits all locations to a single shift.

### Public Health – Seattle & King County (PHSKC)

PHSKC coordinated with King County (KC) Office of Emergency Management to ensure procedures were in place for facilitating the transportation of patients to critical medical appointments. It was the first time the Winter Weather Medical Transport procedures were used in partnership with KC EMS, Northwest Healthcare Response Network, KC Metro and Hopelink.

PHSKC mobilized Public Health Reserve Corps volunteers and staffed a severe weather shelter established by City of Seattle at the Garfield Community Center.

Healthcare for the Homeless Network assessed service and resource needs at shelters and helped fulfill information and resource requests. Provided information to people living unsheltered as they transitioned out of severe weather shelters.

Activated Continuity of Operations (COOP) plan and assessed service provision and facility status throughout the snow events and adjusted normal Public Health operations as necessary to maintain services.

Disseminated translated messaging on staying safe in cold weather and preventing carbon monoxide poisoning through the Community Communications Network and Community Health Board Coalition. Posted information

via social media and created blog post encouraging people with medical needs to plan and act ahead of winter storms.

### Seattle Department of Finance and Administrative Services (FAS)

Pre-event operations included meeting with tenants, ordering supplies, and restocking tenant snow kits. Emergency contact information of blanket contract vendors was updated. All SDOT snow and ice equipment was inspected and prepared, and inventory for repair parts was checked for full stock levels.

FAS provided deicer and snow removal services on the parking lots and sidewalks at FAS facilities. Placed caution signs around snow/ice falling off building roofs where appropriate. Seattle Animal shelter performed essential duties that included animal care at the shelter, animal control response, and animal supply support to SPR community center shelters. Facility Operations staff coordinated plowing, deicing, and snow removal at 13 different City facilities, spreading almost 15,000 pounds of deicer.

FAS provided 24-hour operations and Fleet Management mechanics to support SDOT snow and ice response to ensure rapid and ongoing deployment of critical snow removal vehicles and equipment in the field. Fleet Management crews serviced 107 snow vehicles and responded to 347 unique work orders for repair incidents. They dispensed almost 8,000 gallons of fuel for snow response vehicles. FAS' support helped maintain at least 90 percent of SDOT's snow response fleet for use at all times during the response. Fleets staff used parts from downed snow response vehicles to keep others on the road and leveraged their metal shop to fabricate high-wear parts that were unavailable on the market.

During the inclement weather, FAS kept most of its Customer Service Centers open and the Customer Service Bureau continued to answer calls and provide information. FAS also coordinated donation pickups and deliveries, including donations used by the Navigation Team and at the emergency shelters.

FAS Department Operations Center (DOC) was activated. Lead staff were deployed to the EOC to help coordinate logistics and communications, and City buyers were placed on call to provide emergency purchasing and contracting requests from departments.

### Seattle Department of Construction and Inspections (SDCI)

SDCI provided landslide awareness to the public and the City in case of an event. Applicant Service Center was closed mid-afternoon on some days to give employees an opportunity to get home safely. Structural engineering staff was prepared should snow load have endangered roofs as the City has seen in past storms.

### Seattle Department of Human Resources (SDHR)

Department operations were maintained using available technology under alternative work agreements. Coordinated with HR leaders across the City to identify a shared understanding of "extraordinary overtime" in line with collective bargaining agreement language.

Provided support to SPR through optional employee alternative work roles as they staffed emergency shelters for people experiencing homelessness.

### Seattle Office of Economic Development (OED)

Alternative Work Arrangements were in place before the winter weather event. A majority of staff were able to work from home or other easily accessible locations, some meetings with stakeholders were rescheduled, work and operations continued mostly uninterrupted.

OED provided communications support by amplifying Mayor's Office and SDOT messaging to businesses and business districts on OED social media channels.

Outreach was provided to businesses that were impacted, primarily on snow and garbage removal issues.

#### Seattle Office of Emergency Management (OEM)

OEM facilitated the pre-storm development of the City's Consolidated Action Plan, staffed leadership roles in the Emergency Operations Center, served meals during EOC activations for the staff working there, facilitated press conferences, multi-agency coordination calls, and stayed in contact with County and State Offices of Emergency Management for situational awareness and resources logistics. OEM also worked with the City Budget Office to keep track of costs should the storm response have grown to the degree to qualify for state or federal assistance (which it did not). This After-Action Report and Corrective Action Plan continue to be coordinated by OEM.

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## Improvement Plan Items

	IP #	Observation/Issue statement.	Approach to address the identified issue.	Lead	Support	Completion Date
<b>Shelter</b>	19-001	Providing 24-hour sheltering for people experiencing homelessness requires more extensive support and training than typical general population sheltering. SPR staff worked through many issues such as light-out procedures, security of guests' personal belongings, and services of visiting nurses.	Convene a group including HSD, SPR, PHSKC, DCHS, Seattle Center, The Salvation Army and the American Red Cross to strategize services, agencies, resources and training needed to rapidly expand severe weather sheltering for people experiencing homelessness. Define shelter types and approach to operationalizing each type. Update the shelter operations procedures and severe weather shelter plan to incorporate recommendations from the group.	HSD, SPR	Seattle Center, ARC, Salvation Army, PHSKC, DCHS, Seattle Library, SDHR, SPD	Sept 1 2019
	19-002	Shelter procedures and available resources for the community centers were not clear.	Update the SPR shelter operations procedures to address gaps and best practices from the February shelter operations. Address debris removal, enhanced cleaning, supply restocking and transportation for guests. Involve key shelter partners to contribute to the update. Develop training for SPR and other supporting departments, depending on the type of shelter.	SPR	HSD, FAS, ARC	Sept 1 2019
	19-003	More shelter staff who were able to get to the community centers in the snow was needed to enable the rotation of staff.	Identify and train additional City staff who would be available to help support general population shelter operations and fill needed roles to address medical, mental health, security, chemical dependency, sheltering and service needs as shelter is closing, and other concerns.	SPR	SDHR, HSD, SPU	Sept 1 2019
	19-004	The kitchen facilities at SPR Community Centers are undersized and ill-equipped to provide longer term mass care operations.	Consider capital improvements, outside resources, and/or low or no preparation food options.	SPR		Jan 1 2020

Seattle Office of Emergency Management – After Action Report

	IP #	Observation/Issue statement.	Approach to address the identified issue.	Lead	Support	Completion Date
Transit	19-005	Staff trained in large vehicle operation were recruited, trained, and deployed to operate snow plows to help relieve exhausted snow plow operators.	Identify qualified staff, provide appropriate training and certification, then maintain rosters for the next winter season.	SDOT	SPR, SCL, SPU	Oct 1 2019
	19-006	Metro’s Emergency Snow Network, used for the first time, needs to be better coordinated with SDOT’s Winter Weather Response Plan to ensure maximum effectiveness.	SDOT and Metro executives will meet to coordinate operations including procedures to rescue stuck buses.	SDOT	KC Metro	June 1 2019
Solid Waste	19-007	SPR was requested by SPU to provide 4 staffed garbage collection drop sites for missed garbage pick-ups. These sites were plowed and/or graveled for safe public access.	Write this strategy into existing winter weather plans for future storm response when solid waste collection is delayed by weather conditions.	SPU		Sept 1 2019
Public Information	19-008	Snow removal was inadequate on private property or property where there was no clear ownership which made walking impractical.	Improve outreach community-wide and to specific customers about the responsibility to keep pedestrian traffic accessible.	OEM PIO	City-wide PIO group	August 1 2019
	19-009	Unsolicited donations of clothes, blankets, etc. were delivered to shelters at SPR Community Centers.	Develop messaging regarding unsolicited donations and provide alternatives.	OEM PIO	City-wide PIO group	August 1 2019
	19-010	Many customers did not understand the road conditions that impeded garbage collection and the fact that the top-heavy collection vehicles could not safely transit those conditions.	Develop messaging using graphics to demonstrate the conditions that warrant delayed service.	OEM PIO	City-wide PIO group	August 1 2019