Regional Operational Plan for Extreme Weather Centers and Disaster Sheltering

June 2024

King County

I. Contents

II. Motion 16183

Motion 16183 requests the Executive coordinate across King County agencies, cities, the King County Regional Homelessness Authority, the state and other partners to develop a regional operational plan for extreme weather centers and disaster sheltering, with a special focus on the most vulnerable King County residents.[1, 2] In addition, the Motion calls for community information gathering engagement, facility information, and best practices for heat, cold, and smoke.

III. Executive Summary

In recent years, King County has experienced an increase in the frequency and severity of severe weather events. Following the Heat Dome in 2021 that cost the lives of over 30 residents in King County and more than 400 across the state, Motion 16183 called for a focus on the most vulnerable individuals.[3, 4] King County conducted community outreach in partnership with non-profit organizations to gather a better understanding of available community resources, as well as gaps and community wants and needs.[5] Recommendations and suggestions for extreme weather events presented in this report are based on accepted best practices, literature review, existing plans, policies, and procedures, consolidated community input, assessment of available resources, and assignment of associated costs.

Extreme weather events are an ongoing threat. As widely reported, heat has the most impact on the homebound and elderly. Cold is an issue for all, especially those experiencing homelessness and those without proper access to heat. Wildfire smoke can be a risk for those individuals with respiratory or cardiovascular disease, people who are pregnant, older adults, and children.[6]

In 2021, the King County Office of Emergency Management (KCOEM) created incident specific playbooks focused on identifying expected actions, roles, and responsibilities for KCOEM, County agencies, and critical response partners. These playbooks focus on heat, cold, and smoke, and discuss response operations, levels of coordination, and potential impact on the community. Building off of these playbooks, KCOEM developed an operational plan for extreme weather centers and disaster sheltering. This sheltering plan provides a process and documents the necessary actions needed to open and

[1] Motion 16183 [Link][2] Motion 16183 specifies the most-vulnerable residents shall include, but are not limited to, unhoused people, low-income people who live in housing without adequate protection from extreme weather and senior citizens or those with disabilities without adequate protection from extreme weather.
[2] Motion 16183 specifies the most-vulnerable residents shall include, but are not limited to, unhoused people, low-income people who live in housing without adequate protection from extreme weather and senior citizens or those with disabilities without adequate protection from extreme weather.
[3] In the Hot Seat: Saving Lives from Extreme Heat in Washington State [Link]
[4] King County to develop its first-ever Extreme Heat Mitigation Strategy [Link]
[5] YMCA, Nickelsville Tiny House Village, and United Territories of Pacific Islanders Alliance
[6] Wildfire Smoke Report, Environmental Law Institute [Link]

operate a disaster shelter or extreme weather center during extreme weather and all hazard events. The plan uses existing best practices documented by the Federal Emergency Management Agency (FEMA) as well as the American Red Cross (ARC). The aim of the playbooks and the sheltering plan is to provide a strong set of actions and priorities to protect the people of King County during extreme weather events and other disasters.

KCOEM, additional King County departments, and community organizations conducted multiple community outreach events to inform the findings in this report and the sheltering plan.[7] These activities fall into two broad categories: whole community outreach in the form of surveys, and targeted outreach to vulnerable populations in the form of listening sessions. The surveys reached more than 1,300 King County residents. Additionally, five listening sessions were held with community groups. Through these surveys and listening sessions, KCOEM was able to ascertain some common needs in extreme weather centers and disaster shelters, including easy transportation to extreme weather respite locations, additional funding for air conditioning in community spaces, additional community hydration locations, shelter for pets, misting stations, increased public information, and additional information around the health impacts of extreme weather and smoke.

KCOEM also worked with the King County Facilities Management Division (FMD), Public Health - Seattle & King County (PHSKC), and community partners to identify King County, city, and community partner facilities that could potentially be used as extreme weather centers or shelters. Through this process, KCOEM created lists and maps of potential extreme weather centers and disaster shelter locations. These lists and maps will need to be updated as conditions change, as they provide a point in time view of available existing spaces that could serve as extreme weather centers or disaster shelters. While identifying facilities, KCOEM also obtained information around potential facility updates. Through direct discussion with subject matter experts at FMD, the cost to upgrade facilities heating, ventilation, and air conditioning (HVAC) was determined to vary widely given the size of the building and existing infrastructure. Upgrades and/or installations can range from hundreds of thousands to millions of dollars. As such, buildings that can potentially serve as an extreme weather center or disaster shelter would need to be evaluated individually.

In addition to finding potential facilities, KCOEM also identified a staffing model, which can be utilized in both extreme weather centers and disaster shelters and is scalable with both number of clients seeking shelter as well as the number of shelters opened. The estimated cost associated with staffing is between $1,392 and $1,689 for a 12-hour shift; this cost includes two shelter workers, one security worker, and one part time custodian.

Additionally, KCOEM reached out to the Washington State Department of Social and Health Services (DSHS) and Washington Health Care Association (WHCA) to obtain information about the percentage of long-term care facilities with air conditioning. However, neither agency was able to provide the requested information. KCOEM undertook independent research and found that generally, the Seattle

[7] King County departments and community partners are listed in the report methodology.

metro area has air conditioning in around 53 percent of homes, according to the U.S. Census.[8] Additionally, Section 388-78A-2990 of the Washington Administrative Code (WAC) contains temperature limits for assisted living facilities; the regulation requires buildings where the dry bulb temperature exceeds 85 degrees Fahrenheit 2 percent of the year to have air conditioning that is capable of maintaining a temperature of 75 degrees Fahrenheit.[9]

KCOEM also continues to run an Emergency Blog that provides up-to-date relevant information during extreme weather events and disasters.[10] The Emergency Blog has been utilized to provide information to the public, amplify partner information, and ensure that best practices on how to stay safe during extreme weather events are shared. Additionally, WA 2-1-1 utilizes the Emergency Blog to provide information on shelter and extreme weather centers inside of King County.

The KCOEM Sheltering Operations plan and the KCOEM playbooks provide strong guidance on how KCOEM and King County and other partners will act before, during, and after extreme weather events and disasters with regard to cooling/warming/cleaner air centers and disaster shelters. These documents, combined with other emergency management plans, create a strong foundation of planning that guide KCOEM and all emergency management enterprise partners to create better results for the residents of and visitors to King County. Additionally, with the findings in this report, multiple options for increasing community resilience are suggested, such as providing transportation and other wrap-around services to extreme weather and cleaner air centers and disaster shelters, extending hours of cooling centers and providing resource support for surge staffing, cooling options for pets, additional funding sources to update existing community spaces with air conditioning, shelter and extreme weather center training for city and county employees as well as community organizations, and misters in parks/transit hubs/plazas. These suggestions aim to assist community members by strengthening trusted spaces and providing additional needed services.

[8] Seattle Times [Link]
[9] WAC 388-78A-2990 [Link]
[10] King County Emergency Blog [Link]

IV. Background

Department Overview:

The Department of Executive Services (DES) provides public services directly to King County residents and internal services to King County government agencies. The divisions and offices that make up DES include the Business Resource Center, Finance and Business Operations Division, Office of Emergency Management, Facilities Management Division, Fleet Services Division, Inquest Program, King County International Airport-Boeing Field, Office of Risk Management Services, and the Records and Licensing Services Division.

The King County Office of Emergency Management (KCOEM), pursuant to King County Code (KCC) 2.56, is responsible for preparing and planning for disasters and emergencies, as well as providing effective direction, control, and coordination of County government emergency services functional units before, during, and after emergencies and disasters.[11] KCOEM liaises with other governments and the private sector. It serves as the coordinating entity for cities, County governmental departments, and other agencies before, during, and after emergencies and disasters. This work is done in compliance with a state-approved comprehensive emergency management plan.[12]

KCOEM implements strategies and conducts activities to enhance the capability and capacity of the King County region to prepare for, and then operate in, all types of emergency and disaster situations across five mission areas: prevention, protection, mitigation, response, and recovery. Preparedness establishes the risk environment; establishes frameworks for roles, responsibilities, tasks; provides for integration of various capabilities; and uses training and exercises to validate and revise those capabilities. These capabilities can then be executed, or operationalized, prior to, during, and after emergencies and disasters. Capabilities, in the context of emergency management and throughout this report, are distinct, yet interdependent elements that provide the means to accomplish missions, functions, or objectives through the execution of related tasks.

In July 2022, King County earned its second accreditation through the Emergency Management Accreditation Program (EMAP). EMAP accreditation demonstrates that King County has proven its capabilities in disaster preparedness and response systems. Overall, the EMAP process ensures that programs evaluate plans, policies, and procedures to gauge compliance with standards certified by the American National Standard Institute (ANSI). The KCOEM-led full accreditation means that the County's emergency management enterprise demonstrated compliance with 64 standards considered by the industry to be performance criteria for emergency management programs.

As of May 2024, there were only 91 accredited programs worldwide. King County is one of only 24 accredited counties in the United States, and one of five programs in Washington State. EMAP

[11] KCC 2.56.030 [Link]
[12] KCC 2.56.040 [Link], RCW 38.52.070 [Link]

accreditation is valid for five years and the program must maintain compliance with the Emergency Management Standard through submissions of annual reports. Programs are completely reassessed every five years to maintain accreditation status.[13]

Key Historical Context:

Climate change has a direct tie to the number and severity of extreme weather events.[14] King County has experienced numerous examples of extreme weather in recent years including eight days of unhealthy and very unhealthy smoke days in 2020, the 2021 heat dome which cost the lives of over 30 residents of King County, and the January cold snap of this year that caused the deaths of five persons in the Seattle area.[15, 16, 17] Additionally, the impacts created by climate change are felt most keenly by low-income households, the elderly, the young, Black, Indigenous, and People of Color (BIPOC) communities, and those experiencing homelessness. "The region is seeing projections for clear increases in frequency of extreme heat events, declining snowpack, ocean acidification, and more frequent flooding" as well as "respiratory issues from prolonged wildfire smoke."[18]

The U.S. Environmental Protection Agency (EPA) tracks heat related deaths, attributing heat as the cause of more than 11,000 American deaths between 1979 and 2018.[19] Heat waves are expected to increase in intensity and duration, with the frequency of hot days increasing with a high degree of certainty.[20] Washington has averaged three days of extreme heat per year between 1971 and 2021, and this is expected to increase to between 17 and 27 by the 2050s.[21]

Similar to heat, the EPA tracks deaths related to cold temperatures across the United States, with more than 19,000 Americans dying from cold since 1979.[22] Cold is an ongoing issue that has the most impact on those already vulnerable, causing harm to those experiencing homelessness, those with underlying medical conditions, and lower income residents. With these effects come cascading impacts, such as carbon monoxide poisoning from individuals attempting to stay warm through dangerous activities such as burning charcoal indoors.[23] Extreme cold does not show the same trend to worsening conditions as extreme heat, instead having more variability year over year. This is evidenced by events like the cold temperatures on December 27, 2023, the coldest day in 31 years for the Seattle area.[24]

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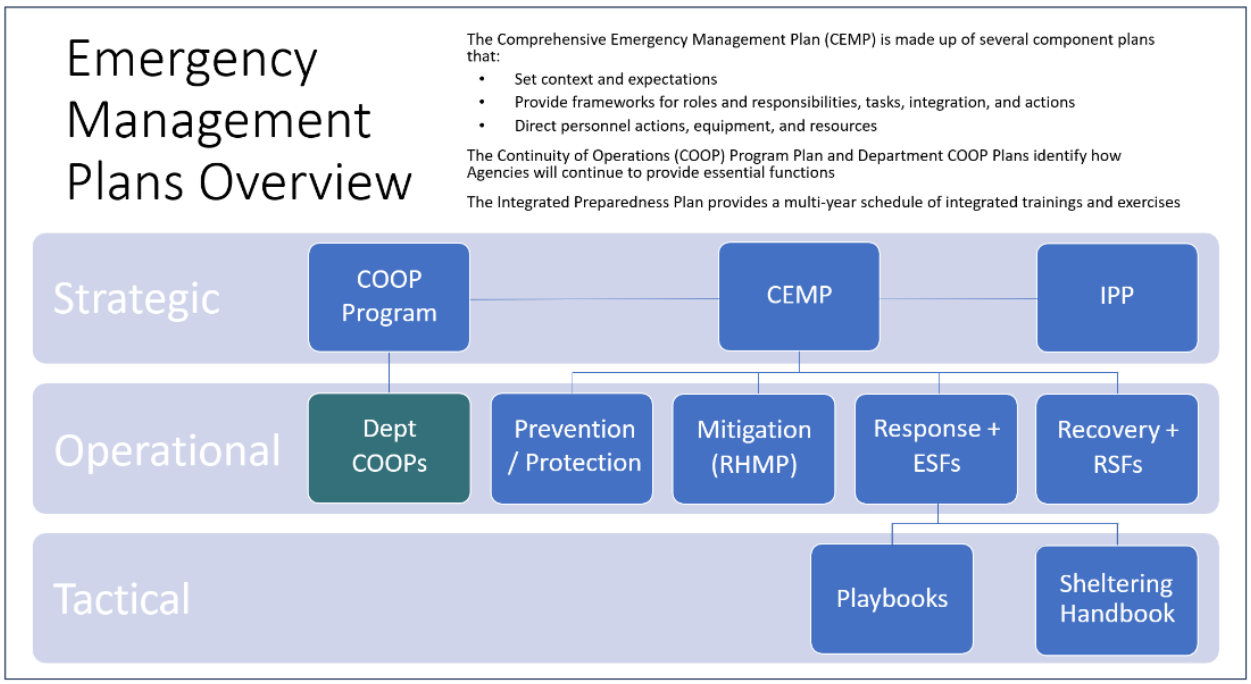
[13] EMAP Emergency Management Standards [Link]
[14] NASA Extreme Weather and Climate Change [Link]
[15] Clean Air Agency 202 Air Quality Data [Link]
[16] King County to develop its first-ever Extreme Heat Mitigation Strategy [Link]
[17] King 5: 5 people died due to hypothermia during extreme cold temps in Seattle area [Link]
[18] King County Strategic Climate Action Plan [Link]
[19] Climate Change Indicators: Heat-Related Deaths [Link]
[20] History of Pacific Northwest Heat Waves: Synoptic Pattern and Trends [Link]
[21] In the Hot Seat: Saving Lives from Extreme Heat in Washington State [Link]
[22] Climate Change Indicators: Cold-Related Deaths [Link]
[23] Extreme Weather Events: A Discussion Paper about Community Resilience [Link]
[24] King 5: Seattle Experiences Coldest Day in 31 Years [Link]

Wildfire smoke is also increasingly prevalent in western Washington, from fires in our area, fires states away, and fires in Canada. Wildfire smoke does not have the same premature death tracking as other hazards discussed; this is partially due to preexisting air quality issues in many locations. Air quality modeling, for the period 2012 to 2014, indicates that wildfire emissions could have contributed, annually, to 4,000 cases of premature mortality across the United States.[25] Additionally, fires have increased in frequency and intensity: 61 percent of major western US fires have occurred since the year 2000, and megafires, those burning over 100,000 acres, have steadily increased as well.[26]

Key Current Context:

KCOEM is responsible to ensure coordination among entities and jurisdictions around planning for and responding to emergencies and disasters. Emergency operations have many layers of complexity, and, over time, emergency managers have come to rely on multiple methods and resources to ensure all relevant parties are operating with the same facts and assumptions. KCOEM efforts are addressed through multiple nested emergency plans, beginning with the Comprehensive Emergency Management Plan (CEMP), as noted in Figure 1, below.[27]

Figure 1 - Emergency Management Plans Overview



[25] Qualifying the Premature Mortality and Economic Loss from Wildfire-Induced $PM_{2.5}$ in the Contiguous U.S. [Link]
[26] NASA: Six Trends to Know about Fire Season in the Western U.S. [Link]
[27] Comprehensive Emergency Management Plan [Link]

The CEMP is a strategic plan that guides elected and appointed County officials, King County government department directors, managers and staff, and County partners (39 King County cities, 120+ special purpose districts, nonprofit organizations, etc.) in preparing and planning for, and carrying out emergency functions pursuant to the Revised Code of Washington (RCW) 38.52.0708 and King County Code (KCC) 2.56.040. The CEMP also references and incorporates other plans and programs, including the Continuity of Operations (COOP) Program and technology to support emergency management coordination.

The CEMP includes four nested operational support plans:

- The Prevention/Protection Plan, which is designed to coordinate actions and activities that support preventing or stopping terrorism and protecting people and assets from the greatest threats and hazards;
- The Regional Hazard Mitigation Plan (RHMP), which is designed to coordinate actions and activities that reduce the impacts of threats and hazards and/or reduce vulnerabilities to threats and hazards;[28]
- The Response Plan, which is designed to coordinate actions and activities for saving and sustaining lives, stabilizing emergency incidents, and protecting property and the environment, and;
- The Recovery Plan, which is designed to coordinate actions and activities for timely restoration, strengthening, and revitalization of infrastructure, housing, the economy, and key health and social attributes of the community.

Under the CEMP fall the KCOEM Heat, Cold, and Smoke Playbooks, which sit alongside the new KCOEM Sheltering Operations plan. Additionally, KCOEM emergency management plans work to align with planning efforts from different King County partners to coordinate emergency management activities.

- KCOEM Heat, Cold, and Smoke Playbooks – The playbooks provide a roadmap to County departmental roles and responsibilities during extreme weather and smoke emergencies.[29, 30, 31]
- Department of Natural Resources and Parks (DNRP) Heat Map – By mapping heat across the area this map assists in where response, preparedness and mitigation activities are targeted.[32]
- PHSKC heat, cold, and smoke guidance – The guidance provides actions for the public to take, as well as establishes thresholds for needed action.[33, 34, 35]

[28] King County Regional Hazard Mitigation Plan [Link]
[29] KC Extreme Heat Incident Playbook [Appendix L]
[30] KC Extreme Cold, Snow, and Ice Incident Playbook [Appendix K]
[31] KC Smoke Incident Playbook [Appendix M]
[32] Department of Natural Resources and Parks Heat Map [Link]
[33] Public Health extreme heat response [Link]
[34] Public Health how to treat and prevent hypothermia [Link]
[35] Public Health wildfire smoke preparedness [Link]

- Blueprint for Addressing Climate Change and Health – Assists in defining King County's commitment to addressing climate change impacts, especially in those most vulnerable pockets of our community; the Blueprint offers a unique and necessary approach to incorporating health and equity into climate change.[36]
- Strategic Climate Action Plan (SCAP) – The SCAP also helps to link together climate change, and the impacts thereof, with all areas of County operations.[37]
- King County Regional Homelessness Authority (KCRHA) Severe Weather Policy – The policy provides additional guidance on partner response as well as best practices on assisting our unhoused neighbors.[38]
- KCOEM Sheltering Operations plan – This document provides guidance on the process of identifying, activating, operating, and deactivating a shelters and extreme weather centers.[39]

Report Methodology:

This report provides information around the adverse impacts of extreme weather events and smoke. It was assembled with the assistance of multiple King County departments and partner agencies:

- KCOEM provided coordination, research, and direct community outreach;
- FMD assisted with multiple cost estimates and the mapping of potential shelter locations;
- DNRP provided community outreach and data support;
- the Department of Local Services (DLS) assisted with surveys;
- the Department of Community and Human Services (DCHS) provided guidance and information specific to senior centers;
- KCRHA provided community outreach and subject matter expertise; multiple cities in King County assisted by providing shelter locations; and,
- Community partners provided some input as well as assistance with direct outreach.

The information gathered for this report came through direct community engagement in the form of discussion and surveys. A literature review was conducted to identify specifics on impact and changing conditions, including news articles to gather further understanding of community impacts. Various subject matter experts provided guidance on multiple parts of the project.

[36] Blueprint for Addressing Climate Change and Health [Link]
[37] Strategic Climate Action Plan (SCAP) [Link]
[38] KCRHA Severe Weather Policy [Link]
[39] KCOEM Sheltering Operations plan [Appendix B]

Community and city partners that provided information and assistance include.

- Seattle
- Des Moines
- Kirkland
- Maple Valley
- Black Diamond
- North Bend
- Newcastle
- Redmond
- Issaquah
- Baring Fire Department
- Highline College
- Bellevue College
- Nickelsville Tiny House Village
- City of Seattle Aging and Disability Services
- Chinese Information and Services Center
- United Territories of Pacific Islanders Alliance Washington

With King County's continued commitment to climate change, multiple plans are referenced in this report and are listed under the key current conditions section of this report.

Initial Report Findings:

The initial findings identify the desired features of extreme weather centers and disaster shelters as outlined in this report. Some reflect best practices identified by subject matter experts and drawn from scientific literature review, while others are from community outreach data and current capabilities, as cited. Fulfilling these findings could provide additional support to the residents of and visitors to King County during extreme weather and smoke events.

These findings, summarized below, are conceptual and need further deliberation, discussion, and planning prior to implementation. Additional actions may be developed to meet the needs of the most vulnerable in the community as necessary and appropriate. The six suggested findings are listed below.

1. Provide transportation and other wrap-around services to extreme weather centers and disaster shelters (entertainment, information, disability access, language interpretation, etc.).

   In an effort to provide additional support to the residents of and visitors to King County, additional wrap around services could be provided before, during, and after extreme weather events. This would increase transportation options for residents and aid in communicating what services are available to those who may need them. Sub actions include:

   - Promote and advertise transit options to and from extreme weather respite locations.
   - Offer additional incentives such as snacks, bottled water, Wi-Fi access, and the ability to charge devices at extreme weather centers.
   - Increase communication around options during events and preparedness activities prior to events.
   - Specifically communicate accessibility information of the shelter/center (e.g., ADA accessible, ease of access from public transportation, etc.).

- Provide communication in multiple languages prior to, during, and following any extreme weather event.

The above-mentioned actions would increase access to lifesaving and sustaining services during extreme weather events. Providing information to residents on availability/accessibility of extreme weather centers and disaster shelters, coupled with access to transportation, and information services, would benefit multiple vulnerable populations by increasing access to critical transportation services. This work would need support from multiple King County departments and partner agencies, including revenue.

2. Extend hours of cooling centers and resource support for surge staffing.

   During disasters and emergencies, individuals predominantly go to locations that are known to them where they feel safe, as evidenced in the KCOEM Survey Results.[40] Many facilities, such as senior and community centers, already act as cooling and warming centers during extreme weather. To expand this capability, facilities may consider extending hours to support vulnerable populations during extreme weather.

   To facilitate the extension of hours, additional funding for staff and associated costs would be needed. During emergencies, those effected are most likely to seek shelter in locations that are known and familiar. This suggested action would likely provide immediate benefit to community members.

   - In a survey conducted by DCHS, the City of Seattle Aging and Disability Services, and Age Friendly Seattle on senior center preparedness, 61 percent of senior centers answered "no" or "maybe" when asked about the possibility of extending hours. The main barrier to offering extended hours was staffing, followed by cost.

3. Provide cooling options for pets.

   During emergencies, many individuals refuse to leave pets unattended while seeking shelter.[41] Options could be provided for individuals to shelter with their pets or to have pets sheltered nearby. Providing space for pets would allow those seeking respite to be more comfortable and incentivize individuals to go to extreme weather centers and disaster shelters.

   - When the residents of King County were asked what features are expected in an extreme weather center, 60 percent identified "a place for pets" as important.[42] This is a higher percentage than individuals who expected comfortable seating.

[40] KCOEM Survey Results [Appendix E]
[41] Katrina's Lesson Learned [Link], KCOEM Survey Results [Appendix E]
[42] KCOEM Survey Results [Appendix E]

- It was also echoed in outreach conducted by the DNRP with respondents from the Nickelsville Tiny House Village stating that they will not leave pets to come to extreme weather centers.

4. Provide a funding source to update existing community spaces with Air Conditioning (AC) and Heating, Ventilation, and Air Conditioning (HVAC).

   During extreme weather and smoke events it is imperative that the community has the ability to seek shelter that is temperature controlled and free of harmful smoke and particulate matter, as evidenced by the over 30 lives lost in King County during the 2021 heat dome as well as the correlation between smoke and premature mortality.[43, 44] Extreme weather and smoke carry an increased risk of death; heat and smoke create a synergistic effect causing a 21 percent increase in risk of death.[45] Only around 53 percent of Seattle area homes have air conditioning.[46]

   - Senior centers have a higher rate of air conditioning compared to homes, but still only have 74 percent coverage.[47]
   - Trusted sites such as community and senior centers need a mechanism for securing the correct equipment to comfortably and safely provide space for residents of King County.
   - In the past, King County, through PHSKC, has provided individuals with box fan kits aimed at purifying indoor air. Programs such as this could be continued, and additional funding made available for community spaces currently lacking the infrastructure to keep indoor air quality reasonable.

5. Provide shelter and extreme weather center training for County and city employees, as well as community organizations.

   Having a robust cadre of trained workers able to assist during extreme weather events is imperative to staff extreme weather centers and disaster shelters. It may be beneficial to develop a training program that would allow County, city, and community organizations to attend to and shelter the most vulnerable in extreme weather events and disasters.

6. Install misters in parks/transit hubs/plazas.

   In addition to buildings that offer respite during extreme weather, alternative options could be considered as well. One such option suggested would be to place misters in public spaces during the summer months. Experiences by neighboring areas, such as Portland, indicate that misters should

[43] King County to develop its first-ever Extreme Heat Mitigation Strategy [Link]
[44] Qualifying the Premature Mortality and Economic Loss from Wildfire-Induced $PM_{2.5}$ in the Contiguous U.S. [Link]
[45] Risk of Death Surges when Extreme Heat and Air pollution Coincide [Link]
[46] Seattle Times [Link]
[47] Senior Center Emergency Readiness [Appendix D]

remain in a set location for the entirety of the hottest months. This action would allow residents to return to a known location to seek cooling.

V. Report Requirements

A. Coordinate across King County agencies, cities, the King County Regional Homelessness Authority, the state and other partners to develop a regional operational plan for extreme weather centers and disaster sheltering, with a special focus on the most vulnerable.

In 2021, KCOEM began work on the development of incident specific playbooks that identify expected actions, and roles and responsibilities for KCOEM, King County agencies, and other critical response partners.[48, 49, 50] The playbooks outline essential activities for key patterns during the preparedness and response operations phases; for instance, given notice of the potential for an extreme heat event, KCOEM convenes partners identified in the playbook for coordination calls to discuss response operations, levels of coordination, and the potential impact to the community. The Extreme Heat Playbook was developed in 2021 and updated in subsequent years to align with the National Weather Service Heat Risk Tool, along with guidance from agencies such as PHSKC, DHCS, and KCRHA.

KCOEM continued development of additional playbooks to outline the actions, critical tasks, roles and responsibilities, and coordination elements for smoke, extreme cold/snow/ice, and heat incidents. Additionally, KCOEM continues to socialize the playbooks with partners who are expected to provide updates on a regular basis.

Building on the foundation set by these playbooks, KCOEM has developed a disaster sheltering guide, the Sheltering Operations plan.[51] The plan provides a process and documents the necessary actions to open and operate an extreme weather center or disaster shelter during extreme weather and all hazards events. The plan uses national best practices from FEMA and the ARC. Additionally, the city of Tukwila Emergency Management played an integral role in the development of the sheltering plan, providing expertise and assistance. In combination, the playbooks and sheltering plan create a strong set of actions and priorities for preparedness and operations in response and recovery.

Additionally, KCOEM has defined disaster shelters as well as emergency weather centers. A disaster shelter is a place where people are evaluated to and receive disaster services. Water and meals are available at these locations, along with basic first aid, sleeping space, basic hygienic services, and other services, including the provision of or referral to items/services needed to accommodate persons with

[48] KC Extreme Cold, Snow, and Ice Incident Playbook [Appendix K]
[49] KC Extreme Heat Incident Playbook [Appendix L]
[50] KC Smoke Incident Playbook [Appendix M]
[51] Sheltering Operations plan [Appendix B]

functional/special/medical needs. Pet sheltering and care should be offered as resources and locations allow.

Extreme weather centers are places that people can stop in to get warm during extreme cold temperatures, get cool during extreme heat, get cleaner air during periods of poor air quality, such as resulting from wildfire smoke. These centers offer minimal other services beyond climate control, the ability to charge personal electronic devices, and basic sanitation.

A. 1. Conduct community outreach in low-income communities in unincorporated King County to gather information on the location and features that would result in the highest utilization of extreme weather centers and disaster shelters during extreme weather and other disasters.

KCOEM, with the assistance of County and community partners, developed and conducted multiple community outreach activities to inform this report and the Sheltering Operations plan, and to gather community opinion. These activities are categorized as: whole community outreach in the form of surveys, and targeted outreach to vulnerable populations in the form of listening sessions. KCOEM created and assisted with the distribution and analysis of three different outreach surveys and provided questions for listening sessions for four different community organizations.

The surveys and listening sessions provided insight into community needs before, during, and after extreme weather events. Common themes identified from community outreach include easy transit access, proper cooling and heating in community spaces, misters in public spaces, pet care, and more communication around availability of options. Figure 2 below summarizes key feedback from each engagement conducted.

The information provided below and in the following sections of this document summarizes the consolidated information gathered by the cities and the KCRHA.

Figure 2 - Outreach Results

Engagement Description	Number of Responses or Participants	Key Feedback Themes
DLS unincorporated area survey	12 Responses	• Cooling/heating centers must be walkable from transit • Funding should be provided for air conditioning in community spaces[52]

[52] DLS Unincorporated Area Survey [Appendix C]

Engagement Description	Number of Responses or Participants	Key Feedback Themes
DNRP YMCA Arcadia Youth listening session	5 Participants	• Staying hydrated outdoors is challenging • Access to transportation to cooling locations is important • Misters assist in combating the heat
DNRP Nickelsville Tiny House Village listening session	12 Participants	• Need for more places to go to stay cool, such as libraries or day centers • Need for more places that accept pets, have access to water and misting stations • More public information around the symptoms of heat exhaustion
DNRP United Territories of Pacific Islanders Alliance Washington listening session	20 Participants	• Need for more accessible cooling stations, access to open spaces, and trees • Need more partnerships between public, private, and community organizations • Changes should be made in building policy and infrastructure to provide air conditioning, especially for low-income and high risk people, and capital investment from government in community heat programs • Need additional resources and assistance to people experiencing homelessness
DNRP Chinese Information and Service Center listening session (focus on seniors)	16 Participants	• Need for additional information around health impacts, cooling sites, and parks with shade • Need for cooling locations to be known to the community and a close walk to homes and transit (under 15 minutes)
DNRP Chinese Information and Service Center listening session (focus on families with children)	15 Participants	• Need for additional information around health impacts, cooling sites, and parks with shade • Concerns about air conditioning and associated costs

Engagement Description	Number of Responses or Participants	Key Feedback Themes
		• Need for more providing information on keeping kids safe during heat events
DCHS senior centers survey	38 Participants	• Main barriers to providing additional services are staffing, followed by costs, and space[53]
KCOEM Alert King County semi-annual test and survey	1116 Responses	• 12 percent of respondents indicated that they would go to a community or senior center, mall, or other business, a cooling or warming center, or friends and family homes during an extreme weather event • 88 percent of respondents stated they would stay home[54]
KCOEM King County sheltering survey	398 Responses	• Barriers including pet care, safety concerns, lack of transportation, and that respondents are unaware of options • Most respondents get information on extreme weather through online news and local news alerts • Strong likelihood to go to friends, family, hotels, and shopping centers during extreme weather events[55]

A. 2. Encourage the cities to conduct outreach in low-income communities within their jurisdictions, to gather information on locations and features that would result in the highest utilization of extreme weather centers and disaster shelters during extreme weather and other disasters.

KCOEM encouraged cities to conduct community outreach through individual conversations, group meetings, surveys, and emails. This included speaking at the KCOEM Summer Hazards (May 16, 2024) and Winter Weather (November 16, 2023) Seminars, discussion at multiple Zone 1 and Zone 3 meetings, during OEM Regional Coordination weekly calls that routinely include multiple city partners, on Emergency Management Advisory Committee (EMAC) meetings, and regularly during monthly Mass

[53] DCHS Senior Centers [Appendix D]
[54] KCOEM Survey Results [Appendix E]
[55] KCOEM Survey Results [Appendix E]

Care Working Group meetings. Encouragement was also added in follow-up emails to many of the above-mentioned meetings.[56, 57, 58] Additionally, KCOEM and PHSKC provided two separate surveys to the cities, requesting them to work with community partners to gather information on extreme weather center and disaster sheltering locations. [59, 60] The information gathered provided extreme weather center and shelter site information and has been incorporated into the suggestions included in this report.

A. 3. Encourage the Regional Homelessness Authority to conduct outreach in unhoused communities throughout the county, to gather information on locations and features that would result in the highest utilization of extreme weather centers and disaster shelters during extreme weather and other disasters. Any locations identified to serve unhoused individuals shall strive to allow unhoused people to bring their personal belongings.

KCHRA worked in partnership with KCOEM and DNRP to provide direct outreach to individuals experiencing homelessness. This outreach utilized community partners working with persons experiencing homelessness to facilitate conversations around how extreme weather increases hardships, barriers to assistance, and what assistance is needed.[61]

The themes of these facilitated discussions highlighted the need for increased access to hydration, transportation access to cooling locations, accommodation for pets, misters in public spaces, and increased public information during weather events. The information has been incorporated into the suggestions included in this report and specifically addresses personal belongings.

A. 4. Consolidate the information gathered by the cities and the Regional Homelessness Authority with the information gathered through the county's outreach efforts in unincorporated King County. Based on that information, the executive shall also coordinate with the Regional Homelessness Authority and appropriate county, city, state, federal and tribal agencies as well as community partners and private sector businesses to identify facilities that could serve as extreme weather centers or disaster shelters.

KCOEM coordinated with KCRHA to gather information on what community members experiencing homelessness need at extreme weather facilities. This information was gathered in the form of listing sessions that took place at the YMCA Arcadia and Nickelsville Tiny House Village. KCOEM worked in partnership with FMD, city emergency managers, and community partners to identify facilities that could potentially serve as extreme weather centers and disaster shelters. A facility form to aid in the

[56] Zone 1 cities include: Beaux Arts, Bellevue, Bothell, Carnation, Clyde Hill, Duvall, Hunts Pint, Issaquah, Kenmore, Kirkland, Mercer Island, Newcastle, North Bend, Redmond, Snoqualmie, and Woodinville.
[57] Zone 3 includes: Algona, Auburn, Black Diamond, Burien, Covington, Des Moines, Enumclaw, Federal Way, Kent, Maple Valley, Milton, Normandy Park, Pacific, Renton, SeaTac, Tukwila, and Vashon.
[58] The Regional Coordination calls provide an opportunity to talk directly with local emergency management partners. This meeting often has over 40 participants.
[59] King County Government Facilities List [Appendix G]
[60] City and Community Partners Facilities List [Appendix I]
[61] Community partners - The YMCA and Nickelsville Tiny House Village

identification of sites was developed using best practices from the ARC. The form was shared with partners as a survey.[62]

In addition, FMD assisted in identifying King County facilities by analyzing existing building inventory, determining what facilities could be used or converted for use, and identifying spaces most likely to accommodate the needs of an extreme weather center or disaster shelter.

Notably, FMD has an everchanging building inventory. This means that spaces identified through the course of developing the Proviso response may not be available in weeks or months when the need arises. Thus, in order to have timely and accurate space availability information, a process could be created with FMD and KCOEM to identify potential facilities quickly and efficiently in preparation for extreme weather events.

Similarly, cities were contacted through two separate facilities surveys and asked to provide existing or planned extreme weather center and disaster shelter locations. With the assistance of PHSKC, some community partners were contacted directly and asked to provide information on available space.

A. 5 Based on the facilities identified in subsection 4 of this section A, provide a list and a map of King County facilities currently used for extreme weather centers or disaster sheltering or that could be rapidly repurposed to serve as extreme weather centers and disaster shelters with an emphasis on those facilities that can be available to residents of unincorporated King County or residents of cities that do not have access to similar facilities in their own cities. That information should also include staffing costs based upon the staffing model developed in subsection 8 of this section A.

The result of this work is captured as both a list of potential sites and a map of those sites most likely to serve as an extreme weather center or disaster shelter. This culminated in the identification of 48 potential city and community partner sites as well as 135 King County sites.[63, 64, 65, 66] The King County sites were then further refined to the 15 sites that most likely could be used currently or with a minimal amount of conversion.

The staffing costs included in this report follow the guidance of the ARC. The ARC is the national leader on sheltering and has been identified as having federal instrumentality, with the purpose of maintaining a system of domestic disaster relief. A staffing plan is included below in Figure 3 for extreme weather centers and disaster shelters.

[62] Shelter Facilities Survey [Appendix N]
[63] City and Community Partners Facilities Map [Appendix H]
[64] City and Community Partners Facilities List [Appendix I]
[65] King County Government Facilities Map [Appendix F]
[66] King County Government Facilities List [Appendix G]

Figure 3 - Shelter Staffing Plan

Shelter Staffing - Two Shifts

			Manager MC/SH/SV	Supervisor MC/SH/SV	Worker MC/SH/SA	Staff per Shift	Staff Total	Clients per Staff per Shift
50 Clients	Minimum Staff	Day	1	-	1	2	4	25
		Night	-	1	1	2		25
	Ideal Staff	Day	1	-	2	3	6	17
		Night	-	1	2	3		17
100 Clients	Minimum Staff	Day	1	-	1	2	4	50
		Night	-	1	1	2		50
	Ideal Staff	Day	1	-	3	4	7	25
		Night	-	1	2	3		33
200 Clients	Minimum Staff	Day	1	1	2	4	8	50
		Night	-	1	3	4		50
	Ideal Staff	Day	1	1	7	9	15	22
		Night	-	1	5	6		33
500 Clients	Minimum Staff	Day	1	2	7	10	20	50
		Night	-	2	8	10		50
	Ideal Staff	Day	1	3	18	22	39	23
		Night	-	3	14	17		29

Staffing costs were established based on the shelter staffing plan and have been reviewed by the Office of Performance, Strategy, and Budget. Using 2021 data, KCOEM calculated hourly amounts with three rates: average volunteer value of $31.80 per hour, King County median hourly wage of $40.48 per hour, and the Washington State Employment Security Department median hourly wage of $42.76 per hour.[67, 68, 69] Additionally, custodial costs were calculated using internal King County data from the Bob G Shelter at $32.29 per hour and the low and high end of the custodial hiring range $24.68 per hour and $35.25 per hour, respectively. Security work was also calculated using an existing King County contract at $44.23 per hour.

The estimated total staffing cost to run one extreme weather center serving 0-50 clients for a 12-hour shift falls between $1,392 and $1,689. These figures are intended to cover staffing costs alone for two shelter workers, security, and custodial services. Additional costs would likely be incurred as more services, such as food and supplies are added. Inflation would also impact actual costs.

[67] Independent Sector [Link]
[68] King County [Link]
[69] Employment Security Department [Link]

Figure 4 - Staffing Costs

Category	Hourly Wage
Shelter worker - volunteer	$31.80
Shelter worker - King County employee	$40.48
Shelter worker - Employment Security Department	$42.76
Custodial	$24.68-35.25
Security	$44.23
Total cost for a 50-client extreme weather center	*$1,392 - $1,689 per 12-hour shift*

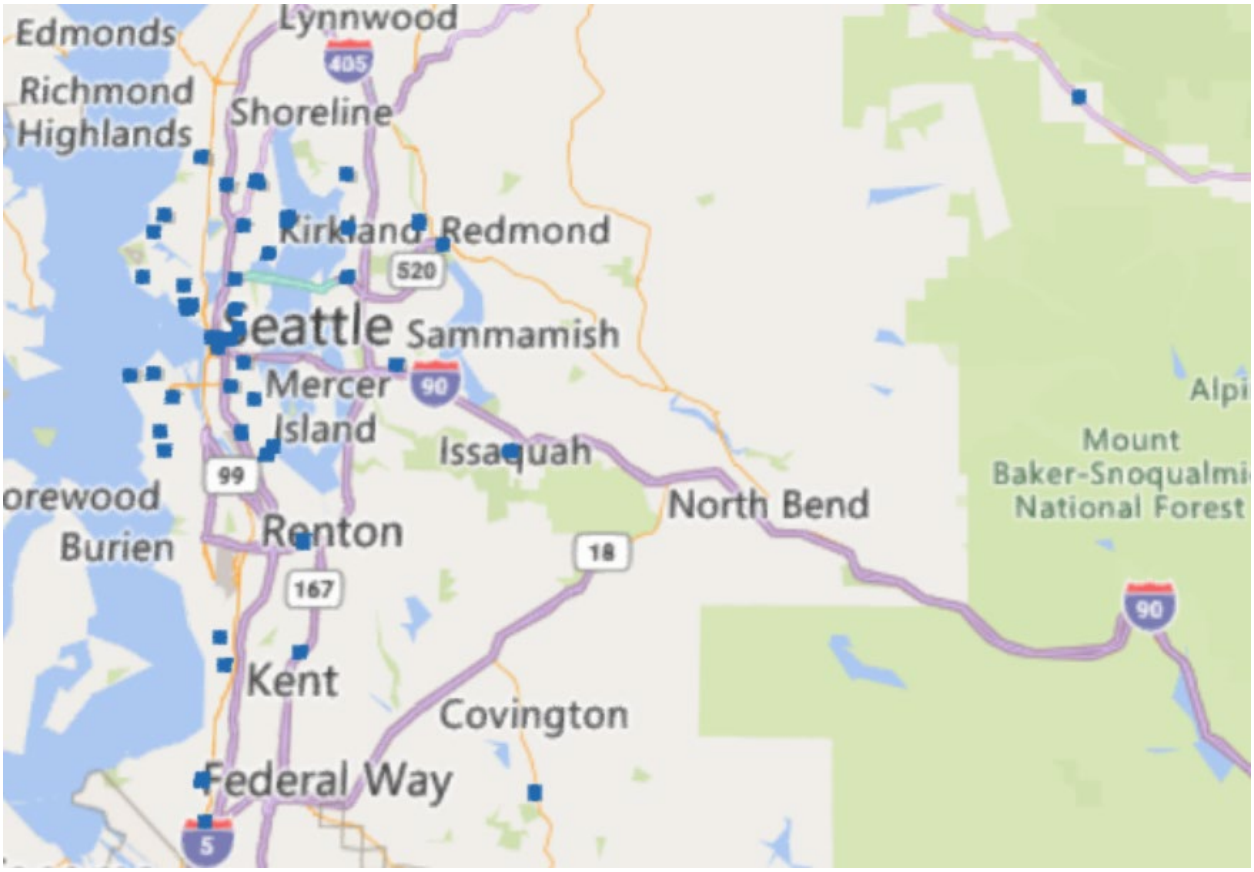
The above staffing model and associated costs are estimates and are scalable to reflect the size of event, the number of locations that may need to be opened, and the number of King County residents seeking respite from extreme weather or a disaster.[70]

A. 6. Based on the facilities identified in subsection 4 of this section A, provide a list and a map of King County facilities not currently used for extreme weather centers and disaster shelters, but that could be used for such purposes with upgrades. For a range of scenarios, the executive shall also identify the costs of such upgrades and staffing costs.

KCOEM partnered with FMD to identify facilities that had the potential to be used or repurposed into a shelter or extreme weather center. FMD was able to provide available spaces currently owned by King County. The properties were then further refined to those spaces that could most easily be repurposed based on the expertise of real estate professionals inside FMD. The entire list of potential spaces was included alongside a map of spaces that could be more easily converted.[71, 72] FMD noted that the inventory of buildings is in flux and changes regularly. Figure 5 shows a map of King County with the facilities also included in the two appendices.

[70] Staffing Cost Estimate [Appendix J]
[71] King County Government Facilities List [Appendix G]
[72] King County Government Facilities Map [Appendix F]

Figure 5 - King County Facility Map



Subject matter experts at FMD determined that the cost to upgrade facilities with heating, ventilation, and air conditioning varies widely given the size of the building and existing infrastructure. Upgrades and/or installation can range from hundreds of thousands to millions of dollars. Prospective spaces that would be used for such purposes would be evaluated for upgrades or installations.

Figure 6, below, demonstrates the range of projects completed by King County, illustrates the difference in cost between locations and specific needs of the facilities.

Figure 6 - HVAC Upgrade Costs[73]

Example	Description of site	Description of work	Cost
District Court Issaquah detention HVAC	Limited area of district court.	Partial HVAC replacement for a library sized facility.	$166,640

[73] HVAC Upgrade Costs [Appendix O]

Example	Description of site	Description of work	Cost
Clise Mansion HVAC	28 room, mansion/wedding venue size facility.	HVAC systems for a mansion sized location	$260,000
Federal Way Red Lion	Hotel with around 28,000 square feet of space.	Instillation of existing HVAC units with new power hookups and toilet exhaust fans.	$384,000
Shoreline District Court HVAC and fire alarm replacement	Similar size to a library branch.	Replaced district court HVAC and fire alarm system. (Note that the cost reflects both update)	$1,342,700
Auto parts warehouse conversion in Seattle Sodo neighborhood.	250+ bed Emergency COVID 19 Isolation and Quarantine site including support infrastructure warehouses and offices on the leased SODO site.	Complete replacement of HVAC, abatement, install of washing stations, bathrooms, showers. (Note that the cost reflects multiple updates)	$13 million

A. 7. Based on the facilities identified in subsection 4 of this section A, provide a list and a map of non-county owned facilities that could be used for extreme weather centers and disaster shelters. The executive shall also provide an engagement plan for those entities and the costs for any necessary upgrades.

Non-King County government (KCG) facilities were identified by working with city emergency managers and by talking to some community entities, such as Bellevue and Highline College. A list and map of city and partner facility information that have been or could be used as extreme weather centers and/or disaster shelters has been included.[74, 75, 76, 77]

Non-KCG facilities were engaged through the local city emergency managers as well as some direct outreach. City emergency managers were engaged during multiple meetings, and received multiple emails, surveys, and direct one-on-one communication. The outreach around engagement mirrored the ask for community outreach and included providing information at the KCOEM Summer Hazards and Winter Hazards Seminars, discussion at multiple Zone 1 and Zone 3 meetings, discussion during KCOEM Regional Coordination weekly calls that routinely include multiple city partners, EMAC meetings, and regularly during monthly Mass Care Working Group meetings.[78, 79]

[74] City and Community Partners Facility List [Appendix I]
[75] City and Community Partner Facility Map [Appendix H]
[76] King County Government Facilities Map [Appendix F]
[77] King County government Facilities List [Appendix G]
[78] Zone 1 cities include: Beaux Arts, Bellevue, Bothell, Carnation, Clyde Hill, Duvall, Hunts Pint, Issaquah, Kenmore, Kirkland, Mercer Island, Newcastle, North Bend, Redmond, Snoqualmie, and Woodinville.
[79] Zone 3 includes: Algona, Auburn, Black Diamond, Burien, Covington, Des Moines, Enumclaw, Federal Way, Kent, Maple Valley, Milton, Normandy Park, Pacific, Renton, SeaTac, Tukwila, and Vashon.

City emergency managers were provided surveys directly tied to facilities and were encouraged through multiple avenues to distribute those surveys to the community. KCOEM and PHSKC reached out directly to area colleges and were provided facility and contact information for Bellevue and Highline Colleges.

A. 8. Develop a staffing model based on best practices to operate extreme weather centers and disaster shelters. The staffing model should be inclusive of training requirements for county staff when operating emergency weather centers and disaster shelters. The staffing model should also include the cost to provide staffing for a range of scenarios.

The ARC is the national leader on sheltering and has been identified as having federal instrumentality, with the purpose of maintaining a system of domestic disaster relief. A staffing plan is included above.

It is an accepted practice that disaster shelters and extreme weather centers should be staffed by a minimum of two individuals at all times regardless of number of clients. This is to ensure the safety of staff and clients. Scaling extreme weather center and disaster shelter operations will require more staffing as well as additional support staff. Generally, disaster shelters or extreme weather centers with a client population of under 50 can be run utilizing a minimal staffing model of two staff members during the day and two during the night. Ideal staffing for a shelter of this size is six individuals, which allows for better client interaction. Utilizing additional staff may be necessary based on client needs. As the number of clients grows, staffing would have to increase as well. An estimate of cost associated with staffing an extreme weather facility is documented in Figure 4, above, with the stagging cost falling between $1,392 and $1,689 per 12-hour shift. This number was based off of a 0–50-person extreme weather facility operating for 12 hours.

A. 8. Include information, if available from the state department of social and 152 health services on long-term care assistance facilities or family care homes in King 153 County that do not have air conditioning.

Neither DSHS nor WHCA provided information on the percentage of long-term care facilities with air conditioning. According to the U.S. Census, the Seattle metro area now has air conditioning in around 53 percent of homes.[80] Additionally, Section 388-78A-2990 of the Washington Administrative Code creates temperature limits for assisted living facilities. The regulation requires buildings where the dry bulb temperature exceeds 85 degrees Fahrenheit two percent of the year to have air conditioning that is capable of maintaining a temperature of 75 degrees Fahrenheit.[81]

A. 9. Consider with King County Regional Homelessness Authority and city 155 partners the use of vouchers for accommodations or day use activities for the most 156 vulnerable residents.

[80] Seattle Times Seattle is no Long the Least Air-Conditioned Major Metro Area [Link]
[81] WAC 388-78A-2990 [Link]

Hotel vouchers are a proven method that can assist vulnerable populations in getting to safe accommodations.[82] This model has been used to assist with homelessness as well as those who have experienced natural disasters.[83] The main consideration for vouchers is the number of clients served. As client census increases congregate sheltering becomes vastly more cost efficient. Vouchers can provide needed alternatives during disease outbreaks or for clients that need different levels of assistance.

A. 10. Maintain a website with updated real-time information during extreme weather events and disasters, which includes a listing of all known available extreme weather centers, disaster shelters and emergency shelters, where to go to get help and public health tips for staying safe during extreme weather events and disasters, and how to volunteer or donate resources to organizations providing support during extreme weather events and disasters.

KCOEM operates an Emergency Blog that provides up-to-date relevant information during extreme weather events and disasters.[84] The Emergency Blog has been utilized in the past to provide information to the public, amplify partner information, and ensure that best practices on how to stay safe during extreme weather events are shared. Additionally, WA 2-1-1 utilizes the Emergency Blog to provide information on shelter and extreme weather centers inside of King County.

The website is: www.kcemergency.com

VI. Appendices

- Appendix A: King County Motion 16183
- Appendix B: Sheltering Operations plan
- Appendix C: DLS Unincorporated Area Survey
- Appendix D: DCHS Senior Centers
- Appendix E: KCOEM Survey Results
- Appendix F: King County Government Facilities Map
- Appendix G: King County Government Facilities List
- Appendix H: City and Community Partners Facilities Map
- Appendix I: City and Community Partners Facilities List
- Appendix J: Staffing Cost Estimate
- Appendix K: KC Extreme Cold, Snow, and Ice Playbook
- Appendix L: KC Extreme Heat Incident Playbook
- Appendix M: KC Smoke Incident Playbook
- Appendix N: Shelter Facilities Survey
- Appendix O: HVAC Upgrade Costs

[82] Terner Center for Housing Innovation: Using Emergency Housing Vouchers to Address Homelessness [Link]
[83] American Journal of Nursing: Advocation for Janetta [Link]
[84] King County Emergency Blog [Link]