

# City of Vacaville Hazard Annex

## Extreme Weather Annex



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## Record of Changes

Record of Changes		
Date	Change	Signature

## Introduction

### Purpose

The purpose of the City of Vacaville Extreme Cold/Freeze and Excessive Heat Emergencies Annex is to establish a coordinated effort between all City departments, the City Manager's Office, and the Emergency Operations Center (EOC) in response to reports of severe weather. This plan relies on the early notification and coordination between the City departments as well as providing valuable information to the public to allow for a safe and proactive response to weather related emergencies.

### Scope

This Plan is intended to provide guidance to city departments on preparation for and response to these events.

#### Objectives:

1. Provide protection of life, public health, safety, and welfare to the community and responders.
2. Maintain situational awareness on any potential extreme weather impacts to the area; provide regular updates to Operational Area partners and the California Governor's Office of Emergency Services (Cal OES).
3. Establish thresholds for notifications, coordination efforts, activations, and increased staffing needs.
4. Communicate with and advise early notice to potentially impacted areas and populations.

5. Establish and maintain communications among the Operational Area Emergency Operations Center (EOC), field resources, and Operational Area stakeholders.
6. Facilitate efforts between Office of Emergency Services and Solano County Health and Social Services Agency to establish warming or cooling centers, if needed.
7. Communicate with PG&E regarding potential power interruption if needed.

## Hazard Analysis

Heat and cold emergencies are often slower to develop, taking several days of continuous, oppressive weather before a significant or quantifiable impact is seen. Heat or cold waves do not strike victims immediately, but rather their cumulative effects slowly take the lives of vulnerable populations. Heat or cold waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more “typical” disaster scenarios. While heat or cold waves are obviously less dramatic, they are potentially deadlier. According to the 2018 California State Hazard Mitigation Plan, the worst single heat wave event in California occurred in Southern California in 1955, when an eight-day heat wave resulted in 946 deaths.

Extreme temperatures can severely affect humans. Prolonged exposure to heat or cold can disproportionately affect certain populations. It is essential to include specific planning for groups including:

- Individuals with Access and Functional Needs (AFN) ;
- Chronic conditions or injuries;
- Limited English proficiency, or non-English speaking;
- Older adults;

- Young children;
- Pregnant;
- Living in institutional settings;
- Low income, homeless, or transportation disadvantages;
- From diverse cultures;
- Medically fragile;
- People that work outdoors, especially new workers, temporary workers, or those returning to work after a week or more off;
- People exercising or doing strenuous activities outdoors during the hottest or coldest point of the day; or those not acclimated to the level of heat or cold expected, especially those that are new to a much warmer or cooler climate.

## Planning Assumptions

Weather emergencies are mild in the Solano County region compared to other parts of the country. However, the County has experienced periods of extreme temperatures that were hazardous to health, crops, and animals. The following assumptions were used in the development of this annex.

- Solano County is not generally considered the most threatened area for extreme heat/cold emergency conditions.
- The City has the primary responsibility to meet the needs of citizens living within its municipal boundaries.
- New information on climate science may be applied to understand the effects of heat or cold over time, and the body's ability to adapt.
- Emergencies involving heat or cold are often slower to develop, taking several days of continuous exposure before a significant impact can be seen.

- Extreme temperatures have increased effects on vulnerable populations or those with lower thresholds, including:
  - o The elderly and the very young
  - o Medically fragile
  - o Those who are unhoused
  - o Those without access to reliable cooling/warming center or shelter.
- Based on worse case planning the following could occur depending upon the size and scope of the event:
  - o The Vacaville Emergency Operations Center (EOC) could be activated if the event were significant enough to trigger response actions.
  - o The EOC will communicate and coordinate actions with local, regional, and State Governments, as needed.
  - o Power outages may occur, and communication systems may be damaged.
  - o Large-scale movement of at-risk populations may be necessary, causing otherwise non-impacted jurisdictions to become “host” to displaced populations.
- The State may initiate specified actions independently but will communicate and coordinate those actions with local government.
- Reimbursement of expenditures from the State during a proclaimed emergency is not guaranteed; all agencies involved must carefully track costs associated with any emergency response.

- Local cities, special districts, and Solano County agencies may have programs to address extreme temperatures. This plan does not restrict their operations, providing they are consistent with SEMS and NIMS.

## Weather Forecasting

NWS issues watches, warnings, and advisories to warn of extreme weather-related issues that are forecast to influence an area within the following 36 hours. If NWS forecasters predict an extreme cold or heat event beyond 36 hours, then the NWS will issue messaging in the form of Special Weather Statement, partner emails, and social media that is based on how far in advance of the event they are making a prediction.

The City’s official National Weather Service reference is:

Vacaville Nut Tree Airport (KVBC)	Point Forecast: 4 Miles NW Nut Tree Airport CA
Lat: 38.37755°N	Lat: 38.43N
Lon: 121.95853°W	Lon: 122W
Elev: 105ft.	Elev: 308ft.
	(Heat Index)

### Thresholds

Excessive Cold/Freeze – at or below 32° for two (2) consecutive days factoring in wind chill; at or below 40° with forecast heavy rain for four (4) or more consecutive hours as defined by the American Meteorological Society

Excessive Heat – NWS Heat Index in Danger category for two (2) consecutive days or Extreme Danger for one (1) day





# Heat Index Chart

		Relative Humidity (%)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Temperature (°F)	80	77	78	78	79	79	79	80	80	80	81	81	82	82	83	84	84	85	86	86	87
	81	78	79	79	79	79	80	80	81	81	82	82	83	84	85	86	86	87	88	90	91
	82	79	79	80	80	80	80	81	81	82	83	84	84	85	86	88	89	90	91	93	95
	83	79	80	80	81	81	81	82	82	83	84	85	86	87	88	90	91	93	95	97	99
	84	80	81	81	81	82	82	83	83	84	85	86	88	89	90	92	94	96	98	100	103
	85	81	81	82	82	82	83	84	84	85	86	88	89	91	93	95	97	99	102	104	107
	86	81	82	83	83	83	84	85	85	87	88	89	91	93	95	97	100	102	105	108	112
	87	82	83	83	84	84	85	86	87	88	89	91	93	95	98	100	103	106	109	113	116
	88	83	84	84	85	85	86	87	88	89	91	93	95	98	100	103	106	110	113	117	121
	89	84	84	85	85	86	87	88	89	91	93	95	97	100	103	106	110	113	117	122	
	90	84	85	86	86	87	88	89	91	92	95	97	100	103	106	109	113	117	122	127	
	91	85	86	87	87	88	89	90	92	94	97	99	102	105	109	113	117	122	126	132	
	92	86	87	88	88	89	90	92	94	96	99	101	105	108	112	116	121	126	131		
	93	87	88	89	89	90	92	93	95	98	101	104	107	111	116	120	125	130	136		
	94	87	89	90	90	91	93	95	97	100	103	106	110	114	119	124	129	135	141		
	95	88	89	91	91	93	94	96	99	102	105	109	113	118	123	128	134	140			
	96	89	90	92	93	94	96	98	101	104	108	112	116	121	126	132	138	145			
	97	90	91	93	94	95	97	100	103	106	110	114	119	125	130	136	143	150			
	98	91	92	94	95	97	99	102	105	109	113	117	123	128	134	141	148				
	99	92	93	95	96	98	101	104	107	111	115	120	126	132	138	145	153				
	100	93	94	96	97	100	102	106	109	114	118	124	129	136	143	150	158				
	101	93	95	97	99	101	104	108	112	116	121	127	133	140	147	155					
	102	94	96	98	100	103	106	110	114	119	124	130	137	144	152	160					
	103	95	97	99	101	104	108	112	116	122	127	134	141	148	157	165					
104	96	98	100	103	106	110	114	119	124	131	137	145	153	161							
105	97	99	102	104	108	112	116	121	127	134	141	149	157	166							
106	98	100	103	106	109	114	119	124	130	137	145	153	162	172							
107	99	101	104	107	111	116	121	127	134	141	149	157	167								
108	100	102	105	109	113	118	123	130	137	144	153	162	172								
109	100	103	107	110	115	120	126	133	140	148	157	167	177								
110	101	104	108	112	117	122	129	136	143	152	161	171									
111	102	106	109	114	119	125	131	139	147	156	166	176									
112	104	107	111	115	121	127	134	142	150	160	170	181									
113	104	108	112	117	123	129	137	145	154	164	175										
114	105	109	113	119	125	132	140	148	158	168	179										
115	106	110	115	121	127	134	143	152	162	173	184										
116	107	111	116	122	129	137	146	155	166	177											
117	108	112	118	124	132	140	149	159	170	181											
118	108	113	119	126	134	142	152	162	174	186											
119	109	114	121	128	136	145	155	166	178												
120	110	116	122	130	138	148	158	170	182												
121	111	117	124	132	141	151	162	174	187												
122	111	118	125	134	143	154	165	178													
123	112	119	127	136	146	157	169	182													
124	113	120	129	138	148	160	172														
125	114	121	130	140	151	163	176														

# Heat Index



Extreme Danger	Heat stroke likely.
Danger	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.
Extreme Caution	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Caution	Fatigue possible with prolonged exposure and/or physical activity.

## Concept of Operations

### Preparation Stage

1. Weather forecasts and information are typically provided by the National Weather Service, via conference call with the County OES Office and various other forms of media / applications.
2. All City departments must take the necessary measures to prepare, in advance, for an extreme temperature event.
3. Once the City is aware of or is notified of a possible severe temperature event, the following should occur:
  - a. Representatives from the City Manager's Office (CM), Fire Department (FD), Police Department (PD) and Community Services (CS) shall consult each other as to their preparations and plans for the upcoming event to ensure proper monitoring actions are in place and a plan exists for notifications and shelter opening(s) should further action be necessary.
  - b. Considerations for cooling/warming centers shall all be addressed as appropriate. Locations of shelters will be disseminated to the public. This is to include county locations from OES if any are being opened.
  - c. The Fire Chief or designee will brief the CM's Office and PIO as to preparations and any significant plans of action over and above preset triggers already identified in this plan. Department Heads will also be notified of considerations or plans.
  - d. The CM, FD, PD and CS shall, through their chain of command, inform the appropriate members of their departments of the preparation plans developed.
  - e. Throughout the event, members of the various departments will continuously track the conditions according to the preparation plans.

- f. The PIO will disseminate information to the public via various social media in coordination with PD, FD and PW. PD and FD PIO's shall also be utilized to fully inform the public. Messaging shall be coordinated and consistent.

#### Response Stage

1. Once the extreme cold/freeze or excessive heat arrives and its intensity verified, per the CM and/or Fire Chief; Unified Command (Fire Operations Chief, a Police Captain and a Community Services Director – or their designees) will be established. Unified Command, the City Manager's office, and the Comm. Center shall monitor the temperatures.
2. Coordinate with other organizations (e.g. The Father's House, Mission, Solano Boys and Girls club(s), PAL, F.I.R.S.T., faith based communities, and Vacaville and Travis Unified School District and others) to help the City staff warming or cooling centers.
3. The PD CRU staff assisted by FD Code Enforcement will go out to known homeless encampments and handout information about warming/cooling center(s).
4. The Fire Chief, depending on the severity of extreme cold/freeze or excessive heat, will either confer with the CM or unilaterally fully activate the EOC via the Comm. Center who will send out the EOC activation notification via the City's mass notification software.
5. The PIO will disseminate information to the public via various social media in coordination with PD, FD and PW. PD and FD PIO's shall also be utilized to fully inform the public. Messaging shall be coordinated and consistent and should consider the following:
  - a. Weather updates and forecasts.
  - b. Warming and cooling center locations. Advisories to protect pets and personal property.
  - c. Potential for rolling brownouts and power outages.
  - d. Hydration concerns in extreme weather.

- e. Ensure information dissemination to at risk populations (senior, low income communities, homeless, etc.)
6. Work with the City's ADA Coordinator to get information out to individuals with disabilities about location(s) of warming or cooling centers.
7. Coordinate with City Coach to provide transportation to warming or cooling centers.
8. Coordinate with the American Red Cross and the Salvation Army to provide food and water for warming or cooling centers.
9. Coordinate with the SPCA to provide extra kennels and pet supplies to take care of animals that are brought to the warming or cooling centers.
10. Advisories to monitor all media available for current conditions and information related to the weather.
11. The technique of "Shelter in Place" will be highly considered for extreme cold/freeze or excessive heat if residents have heating or air conditioning.

#### Recovery Stage

1. During the initial stages of recovery (and perhaps beyond), the EOC may remain activated until it is determined that regular city processes can handle the situation. The EOC shall support the recovery stage in an effort to meet all needs that may arise; other needs may arise depending on the circumstances and nature of the incident such as:
  - a. Maintaining warming and cooling centers, if still needed. (American Red Cross should be utilized)
  - b. Elected officials, various Department Heads, and PIO may consider meeting with residents to assure them of their health, safety and welfare.
2. Other long term issues may arise; for information concerning such issues including disaster response, please see the Emergency Operations Plan.

## Development and Maintenance

This Annex will be maintained and updated with the base EOP.