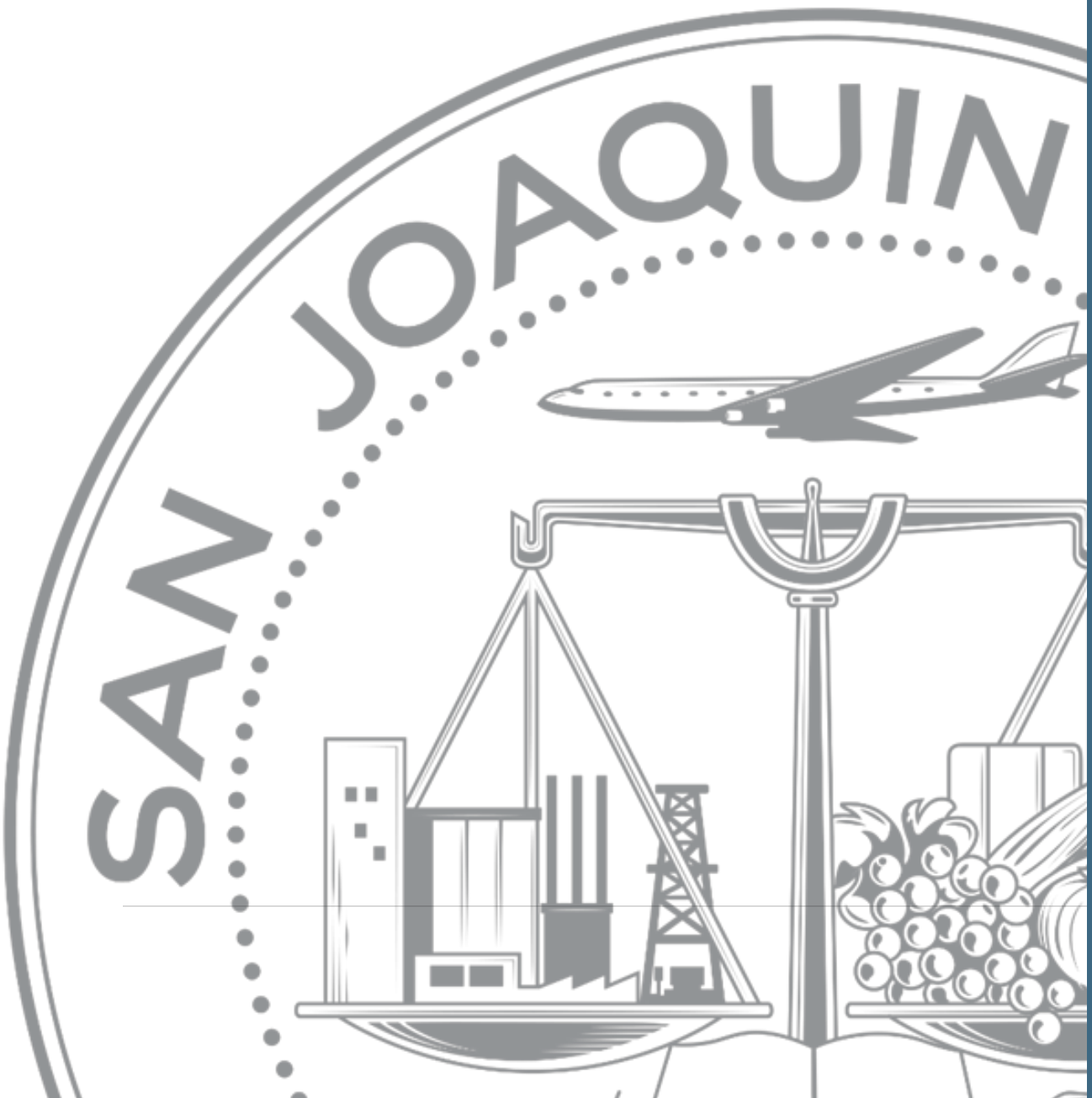
SAN JOAQUIN COUNTY

Greatness grows here.

Severe Weather Hazard Annex

Draft



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Letter of Promulgation

This Severe Weather Annex addresses San Joaquin County's planned response to extraordinary emergency situations associated with severe weather issues and is an extension of the San Joaquin County Emergency Operation Plan. This plan assigns tasks and responsibilities to county departments and various agencies and organizations specifying their roles in an event caused by severe weather.

To execute this plan effectively and mobilize available resources, all implementing personnel must have knowledge of the procedures set forth in this plan and be trained in its use. Departments and agencies having roles and responsibilities established by this plan are expected to develop Standard Operating Guidelines and Procedures based on the provisions of this plan.

This plan was developed using generally accepted emergency management principles and practices. Incorporated are planning elements derived from Federal Emergency Management Agency and California's emergency planning documents. Modifications to this plan may be made under the direction of the Director of Emergency Operations. Changes to this plan will be relayed digitally to all members of the distribution list. Adoption will occur following the established maintenance schedule; however, the plan may be modified in the interim without prior approval and formal adoption. This plan will be updated and reviewed at least every three years or following a major event.

This plan has been developed pursuant to the California Emergency Services Act and conforms to the Standardized Emergency Management System (SEMS). This plan replaces previous annexes of the same title.

This annex will be formally promulgated by the chairperson of the Disaster Council of San Joaquin County at the next regularly scheduled meeting. The Disaster Council is empowered by County Ordinance to review and approve emergency and mutual aid plans.

_____ _____

Robert Rickman Date
Director of Emergency Services

Plan Administration

San Joaquin County Office of Emergency Services Director of Emergency Operations will coordinate review, revision, and re-promulgation of this annex at least once every two years or when key changes occur, such as lessons learned from exercises or real events. Changes may be made by the San Joaquin County Director of Emergency Operations without formal Disaster Council approval. This document supersedes all previous severe weather, heat, and cold appendices and annexes for the Operational Area.

Record of Changes

All updates and revisions to this annex will be tracked and recorded in the following table. This process will ensure that the most recent version of the plan is disseminated and implemented by emergency response personnel.

Date	Change No.	Change made by (name/title)	Summary of Changes
11.30	1	jrd	Formatting
7.17	2	rdk	Update table of contents “Heat Advisory.”
7.17	3	rdk	Update 3.1 extreme temperatures
7.17	4	rdk	Update 3.4 to “partner emails.’
7.17	5	rdk	Update 3.4.1 and Tables 1 and 2
7.17	6	rdk	Update 3.5 Freeze warnings
7.17	7	rdk	Update 4.1.2 titling and wording “Heat Advisory”
7.17	8	rdk	Update wording 4.3.2 A Winter Storm Warning or Watch
8.2	9	rdk	New information on atmosphere rivers, along with charts and visual aids
8.3	10	rdk	New information on High Winds Events, along with charts and visual aids
8.4	11	rdk	Update Authorities and Reference
9.8	12	rdk	Merge Heat and Cold Phases and update wording in Concept of Operations
9.8	13	rdk	Merge and Update Roles and Responsibilities Table.

Plan Distribution

San Joaquin County Office of Emergency Services maintains the Master Emergency Operations Plan and annexes in the San Joaquin County Emergency Operations Center Library. This document, upon signature, will become an annex to the San Joaquin County Emergency Operation Plan. The primary method of Emergency Operation Plan and annex distribution is electronic, with a copy available in the document library of WebEOC and on the County’s web page.

TABLE OF CONTENTS

1 Executive Summary 6
2 Introduction 7
2.1 Purpose 7
2.2 Scope 7
2.3 Planning Assumptions 7
3 Hazard Analysis 8
3.1 Extreme temperatures 8
3.2 Extreme Temperatures and Humans 9
3.3 Extreme Temperatures and Animals 10
3.4 National Weather Service Alerts and Warnings 10
3.5 Cold emergencies 17
3.6 Atmospheric Rivers 18
3.7 Atmospheric River Categories 19
3.8 Prolonged Atmospheric Events 20
3.9 Damaging Winds 22
3.10 High Wind Events 23
3.11 Watches, Warnings and Advisories 23
4 Concept of Operations 25
4.1 Extreme Temperature Responses 25
4.2 Roles and Responsibilities Table – Heat 28
5 Authorities and References 32
6 Definitions 32
7 Acronyms 34

1 EXECUTIVE SUMMARY

The Severe Weather Hazard Annex is a support annex to the San Joaquin County Emergency Operations Plan (EOP). It represents a consolidation of extreme weather events, specifically extreme heat and cold temperatures and wind events.

The annex describes the Operational Area (OA) coordination during extreme weather events and guides County government, special districts, local government, community-based organizations, and faith-based organizations in preparation for and response to emergency incidents involving extreme weather.

This annex recognizes the need for the OA to communicate and coordinate with local agencies through the San Joaquin County Office of Emergency Services (OES) and to support local agencies' actions consistent with the Standardized Emergency Management System (SEMS).

The Severe Weather Annex outlines criteria and response triggers for each specific type of event. It further identifies event-specific department and agency roles and responsibilities in addition to those outlined in the Basic EOP.

Departments and agencies identified in this document shall review the plan to familiarize themselves with their roles and responsibilities. Local agencies are advised to develop their plans and prepare agreements for support in response to any emergency.

2 INTRODUCTION

2.1 PURPOSE

This annex is developed to identify actions that may need to be taken to address the needs of populations in an extreme or severe weather emergency. This document is for immediate use and is designed to provide agencies within San Joaquin County (County) with specific roles and responsibilities related to the implementation of severe weather response. OES, in coordination with county departments and affected cities, will direct the implementation of this guidance.

2.2 SCOPE

Emergency response to a severe weather event may require an increase in resources from the entire OA. To meet the response objectives outlined in this annex, both public and private agencies are assigned specific tasks. This plan identifies roles, responsibilities, and coordination lines between the County, cities, and non-government organizations with a role in response to a severe weather event. This plan further identifies a phased approach to extreme weather response and the triggers for increasing operation activities.

2.3 PLANNING ASSUMPTIONS

Weather emergencies are mild in the County 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.

- Emergencies involving cold or heat are often slower to develop, taking several days of continuous cold/heat before a significant impact can be seen.
- The County has the primary responsibility to meet the needs of citizens living in unincorporated areas during emergencies.
- Incorporated cities have the primary responsibility to meet the needs of citizens living within their boundaries during emergencies.
- Extreme temperatures have increased effects on vulnerable populations or those with lower thresholds, including:
    - older adults and the very young
    - Medically fragile
    - Homeless
    - Those without access to reliable cooling/heating/shelter
- Large-scale movement of at-risk populations may be necessary, causing non-impacted jurisdictions to become “host” to displaced populations.
- Power outages may occur.
- The OA will communicate and coordinate actions with local, regional, and State Governments as needed.
- 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 County agencies may have programs to address extreme temperatures. This plan does not restrict their operations, providing they are consistent with SEMS and NIMS.

3 HAZARD ANALYSIS

3.1 EXTREME TEMPERATURES

The County has a mild climate and an abundance of sunshine year-round. The summers are virtually cloudless, with warm, dry days and mild nights. The NWS has defined a water year as beginning in October and ending in September; thus, rainfall averages are listed with that in mind. The annual rainfall of the County is between 13 – 14 inches, with 90% of that falling between November and April. Excessive rain and damaging storms are infrequent, occurring only about three or four days a year, and precipitation may exceed a half-inch on about nine days of the year.

Over the last 25 years, the County has faced extreme highs and lows in rain amounts. Historically, 1997-98 saw more than 27-inches of rain in Stockton. Contrary to that, 2013 recorded a record low of 4.59, a full inch lower than the previous record, adding to a multi-year drought that spanned 2012-2017. Snowfall in the County is rare.

Dense fog occurs primarily in late autumn and early winter. Light and moderate fog is more frequent and may happen anytime during the wet, cold season. Fog is usually confined to the early morning hours and burns off during the day. However, in December and January, under stagnant conditions, winter fog may continue for as long as four to five weeks with only brief periods of clearing, particularly in the delta regions of the county.

Prevailing winds in the County are from the Northwest. Occasionally there will be a southerly wind brought on during storms. Sometimes, a strong wind blows down the Sierra Nevada and is warmed as it reaches the valley floor as a hot, dry north wind. These winds produce heatwaves in the summer and fortunately are usually followed within two or three days by the cooling southwest delta breezes, especially at night.

Temperatures exceeding 100 degrees Fahrenheit can be expected, on average, about seven days in July and 19 during the year (according to the latest 1991-2020 climate normal) at Stockton, CA.

Although there have been seasons where temperatures above 108 have been recorded for 3-5 days, in 2017, the average high temperature for the summer was 95, one of the hottest years on record since the 1940s. The Stockton area recorded 38 days of 100-degree plus days, including new record of 115 on 9/6/2022. During these hot afternoons, the air is extremely dry, with relative humidity less than 20%. Even on these hot days, however, temperatures will fall into the sixties at night. In the winter, nighttime temperatures on clear nights will fall to, or slightly below, freezing and will rise in the afternoon into the low fifties.

In addition to the recorded high temperatures in 2017, 2014 was the hottest year ever recorded, with 2015 as the fourth hottest. Some climatologists forecast that these extreme temperatures could become routine in the decades to come.

Within the San Joaquin Valley region, climate change modeling forecasts an increase in the frequency, intensity, and duration of extreme heat events and heatwave-waves, which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions.

Additionally, the higher temperatures throughout California will cause an earlier melting of the snowpack resulting in high water, stress on the Delta Levee system surrounding the County, and less drinking water available to citizens in non-rainfall months of the year.

Although the probability of drought is expected to increase throughout the 21st century due to the impacts of climate change, the possibility of increased intense rainfall with historical runoff is also projected. With the current high flood risk throughout the County, this could have widespread impacts throughout the county and the entire region, including floods and levee or dam failures.

Increased development contributes to the urban heat island (UHI) impacts. Areas that have an abundance of asphalt and building materials, such as steel and brick, absorb and hold in heat, whereas rural areas reflect some of the heat.

Historically, San Joaquin Valley has experienced record-setting low temperatures in the Stockton area, several times since 1990. In December 1990, temperatures did not rise above 25 degrees Fahrenheit in parts of the San Joaquin Valley for three to five days. Several records were set for the duration of freezing temperatures as well. In December 1998, an unusually cold winter led to crop freezes from December 20 through 27, 1998, and multiple days until May 1999 with freezing temperatures overnight. Again, in December 2006, freezing temperatures were attributed to several deaths throughout California. The numbers of vulnerable populations have increased, such as homeless and could potentially be a different outcome if it were to occur again.

3.2 Extreme Temperatures and Humans

Extreme temperatures can severely affect humans. When the body is hot for long periods, it loses its ability to perspire, which is how the body handles high temperatures. Heat exhaustion is a common reaction to severe heat and can include symptoms such as excessive perspiration, dizziness, headache, and fainting. It can usually be treated with rest, a cool environment, and hydration. When a person stops perspiring, they can move from heat exhaustion to heatstroke very quickly. Heatstroke is more severe and requires immediate medical attention. It is often accompanied by dry skin, body temperature above 103 degrees Fahrenheit, confusion, and sometimes unconsciousness. Untreated heatstroke may lead to death.

Prolonged exposure to freezing temperatures can cause frostbite to exposed skin, typically fingers, toes, ear lobes, or the tip of the nose. Increased winds, causing a wind chill effect, can further lower body temperatures at a faster rate. Hypothermia is another cold-related issue when the core body temperature drops below 95 degrees Fahrenheit. Medical attention is needed immediately for this condition.

Prolonged exposure to heat/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 coldest or hottest point of the day; or
- Those not acclimated to the level of cold/heat expected, especially those that are new to a much warmer or cooler climate.

3.3 EXTREME TEMPERATURES AND ANIMALS

Excessive heat or cold can be hazardous to animals as well. Dogs and cats naturally conserve heat and are less efficient at cooling than humans. They are in danger of heatstroke at 110 degrees Fahrenheit. Sweat glands on pets are located on the nose and footpads, which are inadequate for cooling on hot days. Panting and drinking water can help with cooling, but if the air temperature is overheated, brain and organ damage can occur in 15 minutes. Risk factors to heat stress include body size, age (young and old), breed (short-nosed breeds, such as bulldogs), obesity, and existing metabolic, cardiovascular, or respiratory disease.

Livestock and poultry are also vulnerable during extreme temperature events. During heat events, livestock and poultry should be provided adequate and accessible cooled drinking water, shade, and fans where (or when) feasible. In addition, planning for rolling power outages can mitigate problems. Dairy farmers have used a variety of temporary cow-cooling methods. Hoses can be hooked up to water trucks and used to soak the cattle. Strings of cows can be cooled in sprinkler pens if they are in constant use for milking. Industrial fans can be rented to augment these water-cooling methods.

In addition, monitoring local rendering facility operations can provide early indicators as well. During a heat incident in July 2006, the County lost over 4,500 tons of livestock, mainly poultry and cows. The State's rendering system (six facilities Statewide) was overwhelmed, and animals were not disposed of promptly, leading to some animals being buried on site. The California Integrated Waste Management Board required an emergency waiver to dispose of the carcasses at the Fink Road Landfill. A local proclamation of emergency was prepared in advance, with animal mortality being one of the triggers.

Cold weather can also be dangerous to small animals that are not acclimated to cold weather (typically indoor pets). Hypothermia and dehydration are the two most probable life-threatening conditions for animals in cold weather. In general, animals tend to drink less in cold weather risking dehydration, or their typical watering sources can be frozen. Wet conditions and wind chill can add significantly to the cold stress for animals as well. Particular attention should be paid to very young and old animals, as they may be less able to tolerate temperature extremes and have weaker immune systems.

3.4 NATIONAL WEATHER SERVICE ALERTS AND WARNINGS

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 excessive heat/cold event beyond 36 hours, then the NWS will issue messaging in the form of, partner emails, and social media that is based on how far in advance of the event they are making a prediction.

3.4.1 HeatRisk

The NWS has developed the *HeatRisk prototype* forecast to provide a quick view of the risk

potential for the following seven days using color and numeric values.[1] This risk is assessed by comparing the official NWS temperature forecast to local thresholds, which change through the year based on climatology. This location-specific approach considers:

- Significantly above average temperatures.
- Time of year (e.g., early season vs. typical summer heat).
- Duration of unusual heat expected.
- If temperatures pose an elevated risk for heat complications.
- If overnight lows and humidity allow temporary relief or enhancement of the heatwave, and;
- The approximate role of humid air using well-known physical relationships of temperature to humidity.

All of these factors are used to create daily dynamic heat thresholds and then are matched to their appropriate *HeatRisk*. Information from both the overnight lows and daily highs are combined to create the final output – the experimental 24-hour *HeatRisk*.

Heat Advisory

A Heat Advisory will be tied to an event where the *HeatRisk* output is on the Orange/Red threshold (Orange will not always trigger an advisory).

Excessive Heat Watch / Warnings

An Excessive Heat Watch / warning will be tied to the *HeatRisk* Red/Magenta output.

The NWS has assigned a specific color to each *HeatRisk* category to make it easier for people to quickly understand whether heat is reaching a high enough level to create heat concerns for their situation. Each *HeatRisk* category corresponds to a different level of potential heat concern, which includes five categories from 0-4, with zero as the least concern. The following table provides a more detailed look at the color and numerical values.

Table 1 HeatRisk Number and Color Scale

HeatRisk Values	Risk of Heat Effects	Level of Heat Concern
When the HeatRisk value is:	...the risk of heat effects are:	…as symbolized by this color
0	**Little to no risk**	**Green**
1	**Minor**	**Yellow**
2	**Moderate**	**Orange**
3	**Major**	**Red**
4	**Extreme**	**Magenta**

The higher the value, the greater the level of heat concern for that location. If both the overnight lows and daytime highs are exceptionally warm for at least 48 hours, at levels that pose an elevated risk for heat complications, the highest level of 4 for *HeatRisk* is achieved.

Essentially, when *HeatRisk* values are 1 or higher, heat is of concern – at first for those who are extremely sensitive to heat, then for everyone as *HeatRisk* values get to the highest levels. For example, a *HeatRisk* value of 0 represents no elevated risk for heat concerns. A *HeatRisk*

[1] NWS– Experimental Potential Heat Risks https://www.wrh.noaa.gov/wrh/heatrisk/?wfo=sto

value of 2 represents a moderate potential risk for members of heat-sensitive groups, while a *HeatRisk* value of 3 represents a high potential risk of heat effects for anyone without proper hydration and adequate cooling. In the detailed table that follows, the five levels of heat concern are listed with their definition, the risk to the population and/or animals, and the actions suggested at each level are highlighted.

Table 2 – HeatRisk Concerns and Risks to People and Animals

	Value	Meaning	Who/What is at Risk?	How Common is this Heat?	For those at risk, what actions can be taken?
GREEN	0	Level of heat poses **little to no risk**	No elevated risk	• Very Common	• No preventative actions necessary
YELLOW	1	Heat of this type is tolerated by most; however, there is a **minor risk for extremely heat-sensitive groups** to experience negative heat-related health effects	Primarily those who are extremely sensitive to heat, especially when outdoors without effective cooling and/or adequate hydration	• Very Common	• Increase hydration. • Reduce time spent outdoors or stay in the shade when the sun is strongest. • Open windows at night and use fans to bring cooler air inside buildings

	Value	Meaning	Who/What is at Risk?	How Common is this Heat?	For those at risk, what actions can be taken?
ORANGE	2	• Heat of this type is tolerated by many; however, there is a moderate risk for members of heat sensitive groups to experience health effects • Some risk for the general population who are exposed to the sun and are active • For those without air conditioning, living spaces can become uncomfortable during the day, but should cool below dangerous levels at night	• Primarily heat sensitive groups, especially those without effective cooling or hydration • Those not acclimated to this level of heat (i.e., visitors) • Otherwise, healthy individuals exposed to longer duration heat, without effective cooling or hydration, such as in the sun at an outdoor venue. • Some transportation and utilities sectors • Some health systems will see increased demand, with increases in ER visits	Fairly common most locations Very common in southern regions of country	• Reduce time in the sun between 10 a.m. and 4 p.m. • Stay hydrated. • Stay in a cool place during the heat of the day. • Move outdoor activities to cooler times of the day. • For those without a/c, use fans to keep air moving and open windows at night

	Value	Meaning	Who/What is at Risk?	How Common is this Heat?	For those at risk, what actions can be taken?
RED	3	• Heat of this type represents a **major Risk to all individuals who are 1**) exposed to the sun and active or 2) are in a heat sensitive group. • Dangerous to anyone without proper hydration or adequate cooling • For those without air conditioning, living spaces can become deadly during the afternoon and evening. Fans and open windows will not be as effective. • Poor air quality is possible. • Power interruptions may occur as electrical demands increase	• Much of the population, especially people who are heat sensitive and those without effective cooling or hydration. • Those exposed to the heat/sun at outdoor venues. • Health systems likely to see increased demand with significant increases in ER visits. • Most transportation and utilities sectors	Uncommon most locations Fairly common in southern regions of country	• Consider canceling outdoor activities during the heat of the day, otherwise move activities to the coolest parts of the day. • Stay hydrated. • Stay in a cool place especially during the heat of the day and evening. • If you have access to air conditioning, use it, or find a location that does. Even a few hours in a cool location can lower the risk. Fans may not be adequate

	Value	Meaning	Who/What is at Risk?	How Common is this Heat?	For those at risk, what actions can be taken?
MAGENTA	4	• This is a rare level of heat leading to an Extreme Risk for the entire population. • Very dangerous to anyone without proper hydration or adequate cooling. • This is a multi-day excessive heat event. A prolonged period of heat is dangerous for everyone not prepared. • Poor air quality is likely. • Power outages are increasingly likely as electrical demands may reach critical levels.	• Entire population exposed to the heat is at risk. • For people without effective cooling especially heat sensitive groups, this level of heat can be deadly. • Health systems highly likely to see increased demand with significant increases in ER visits. • Most transportation and utilities sectors	• Rare most locations • Occurs up to a few times a year in southern regions of country, especially the Desert Southwest	• Strongly consider canceling outdoor activities • Stay hydrated. • Stay in a cool place, including overnight. • If you have access to air conditioning, use it or find a location that does. Even a few hours in a cool location can lower risk. Fans will not be adequate. • Check on your neighbors

3.5 COLD EMERGENCIES

NWS issues frost and freeze products using the "watch/warning" concept. Partner emails may be issued several days in advance of an event to provide an alert that a damaging freeze situation is possible. **Watches** are usually used 12-48 hours in advance of a potential freeze event, indicated the situation is likely to occur, but details may be uncertain about timing, extent, and severity. **Warnings** indicate a high degree of confidence that the event will occur as described and they usually are issued within 24-hours of the event. **Warnings** may be issued even if a **watch** was not released in advance. Similarly, **watches** may have been issued, but conditions then change enough that a **warning** is not needed.

There are two types of cold weather products used in the County. In general, these products are only issued for lower elevation areas where frost and freeze events are relatively rare.

Frost Advisories – These are issued when widespread frost may occur. Frost advisories are not issued after the first freeze event of the winter until spring bloom begins. Although warm-season plants may die with the first frost, no frost warnings exist because frost damage is generally cosmetic to cold season crops.

Freeze Warnings – These are issued for areas with significant commercial agriculture whenever the first winter freeze is expected. The first freeze is defined as "when minimum shelter temperature is forecast to be 32 degrees or less during the locally defined growing season."

There are no freeze advisories. Additional freeze warnings are issued when a hard freeze is expected, which could cause widespread damage to water pipes, harm ornamental plants, which are usually hardy in winter, and cause significant damage to blooming crops such as almonds and cherries or too-early grape leaves.

Cold weather also affects crops. In late spring or early fall, the early arrival of cold air can damage or kill farmers' produce and plants and flowers at your home or business. A freeze occurs when the temperature drops below 32°F. Freezes and their effects are significant during the growing season. Frost develops on clear, calm nights and can occur when the air temperature is in the mid-30s. Each plant species has a different tolerance to cold temperatures. Though only in the rare instances would these be issued for the county, as they pertain to winter precipitation, not cold temperatures, NWS will issue a Winter Weather Advisory, Winter Storm Watch, or Winter Storm Warning when warranted due to weather forecasts.

- **Winter Weather Advisory** – Be Aware Wintry weather expected. Exercise caution. Light amounts of wintry precipitation or patchy blowing snow will cause slick conditions and could affect travel if precautions are not taken.
- **Winter Storm Watch** – Be Prepared Snow, sleet, or ice possible. Be prepared. Confidence is medium that a winter storm could produce heavy snow, sleet, or freezing rain and cause significant impacts.
- **Winter Storm Warning** – Take Action Snow, sleet, or ice expected. Take action. Confidence is high that a winter storm will produce heavy snow, sleet, or freezing rain and cause significant impacts.

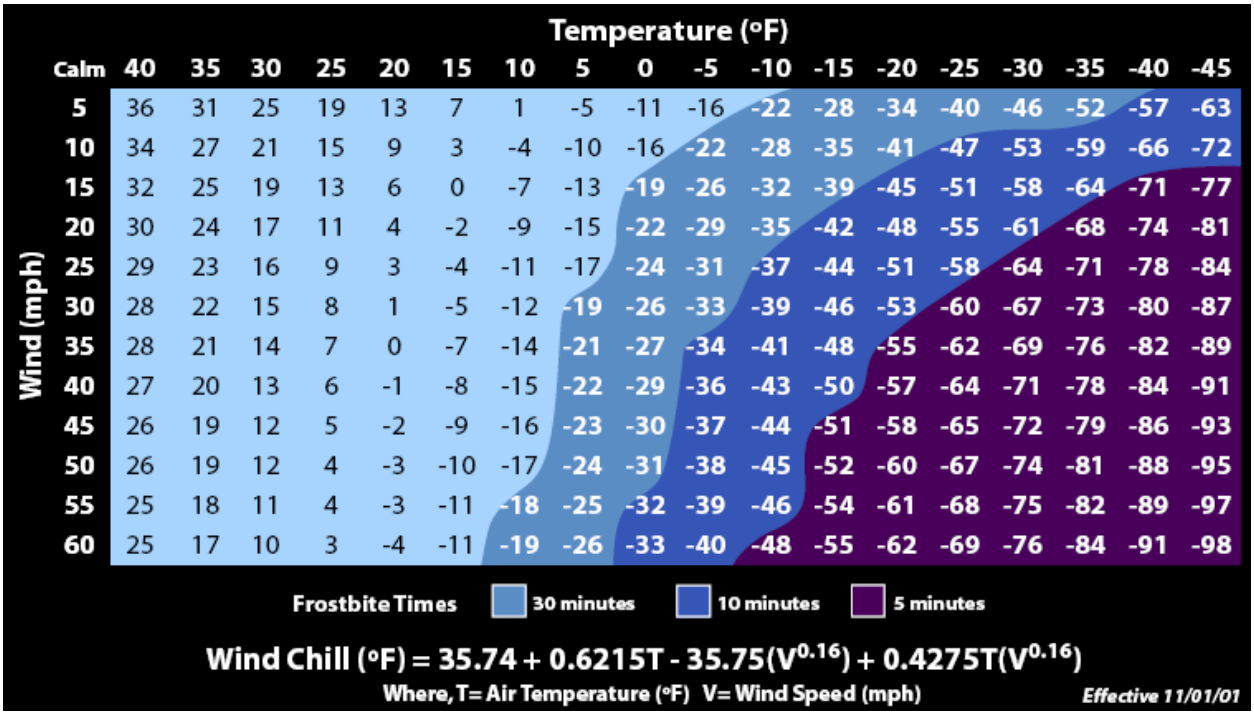
Although building codes, plant type and age, crop location, the amount of time (duration) below 28 degrees, and the dew point temperature can change the impacts, the general rule is to look closely at the need for hard freeze warnings when temperatures in the Central Valley agricultural areas are expected to fall to 25 degrees or less. Because the impacts are not strictly based on temperature or duration, close coordination is needed with agriculture and health

experts on determining the need for this type of warning. This type of freeze warning is nearly always preceded by watches.

NWS Wind Chill Temperature (WCT) index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. The index does the following:

- Calculates wind speed at an average height of 5 feet, the typical height of an adult human face, based on readings from the national standard height of 33 feet, typical height of an anemometer.
- Is based on a human face model.
- Incorporates heat transfer theory based on heat loss from the body to its surroundings, during cold and breezy/windy days.
- Lowers the calm wind threshold to 3 mph.
- Uses a consistent standard for skin tissue resistance.
- Assumes no impact from the sun, i.e., clear night sky.

Wind chill temperature is the temperature it “feels like” outside and is based on the rate of heat loss from exposed skin caused by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate causing the skin temperature to drop. Wind chill does not affect inanimate objects like car radiators and exposed water pipes because these objects cannot cool below the actual air temperature.



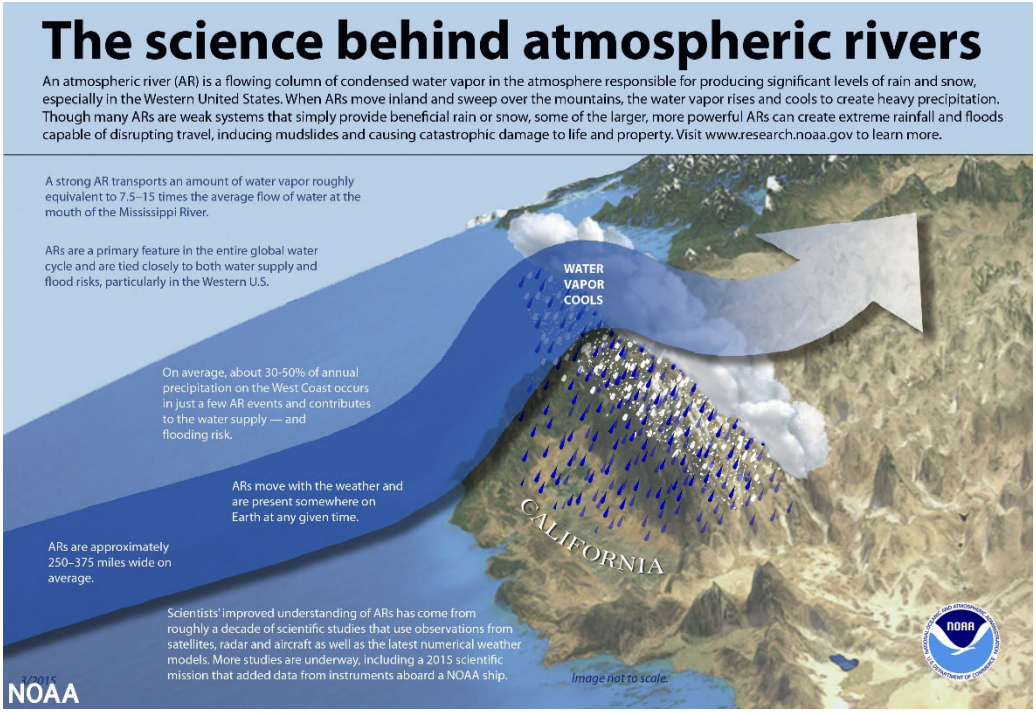
3.6 Atmospheric Rivers

Atmospheric rivers are long, narrow regions in the atmosphere that function like rivers in the sky, transporting most of the water vapor beyond the tropics. The size and strength of these rivers vary, with the average one carrying a similar amount of water vapor as the average flow

of water at the mouth of the Mississippi River. However, exceptionally powerful atmospheric rivers can carry up to 15 times that amount. When atmospheric rivers reach land, they release this water vapor in the form of rain or snow.

The atmospheric rivers with the most water vapor and strongest winds can produce extreme rainfall and floods, often lingering over vulnerable watersheds. Such incidents can cause significant loss of life and property, disrupt travel, and trigger mudslides. One well-known and potent atmospheric river is the "Pineapple Express," which can transport moisture from the tropics near Hawaii to the U.S. West Coast.

It is worth noting that not all atmospheric rivers cause damage. Most weak systems provide essential rain or snow crucial to the water supply. Atmospheric rivers play a vital role in the global water cycle and are closely linked to water supply and flood risks, particularly in the western United States.



3.7 Atmospheric River Categories

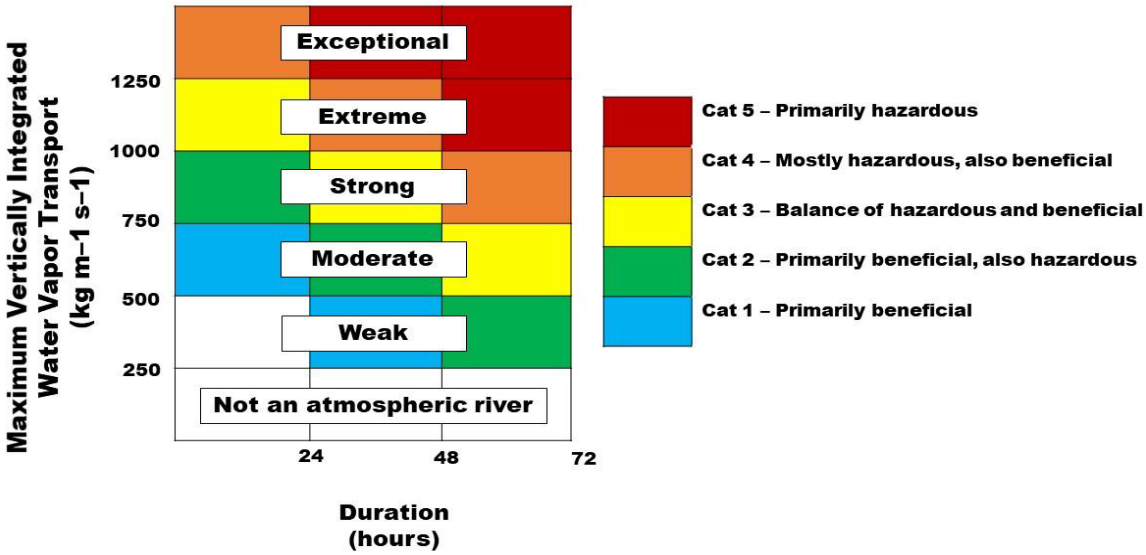
The United States Geological Survey has published findings indicating that high-intensity atmospheric rivers can result in just as much devastation as hurricanes. To assess the severity of these storms, a rating system has been implemented that considers their potential benefits and hazards. The scale ranges from Category 1 to Category 5, with higher values indicating a greater level of risk. Further clarification on this rating system can be found in the USGS documentation. USGS explains:

- **Category 1 (weak):** A Category 1 atmospheric river would be a milder and briefer weather event with primarily beneficial effects, like 24 hours of modest rainfall.
- **Category 2 (moderate):** A Category 2 atmospheric river is a moderate storm with mostly beneficial effects, but also somewhat hazardous.
- **Category 3 (strong):** A Category 3 atmospheric river is more powerful and longer lasting, with a balance of beneficial and hazardous impacts. For example, a storm in this

category could bring 5-10 inches of rain over 36 hours, enough to help replenish reservoirs but also pushing some rivers close to flood stage.

- **Category 4 (extreme):** A Category 4 atmospheric river is mostly hazardous, though also with some beneficial aspects. A storm of this rating could dump enough heavy rain over several days to bring many rivers to flood stage.
- **Category 5 (exceptional):** A Category 5 atmospheric river is primarily hazardous. The USGS gives the example of an atmospheric river that lasted over 100 hours over the Central California coast during the 1996-97 New Year's holiday period. The heavy rain and runoff caused over $100 billion in damage.

Atmospheric rivers, while capable of producing intense precipitation, can also result in landslides and pose a risk to public safety and infrastructure through powerful winds that may uproot trees and knock down power lines. Such events warrant close attention and preparation to ensure a timely and effective response.



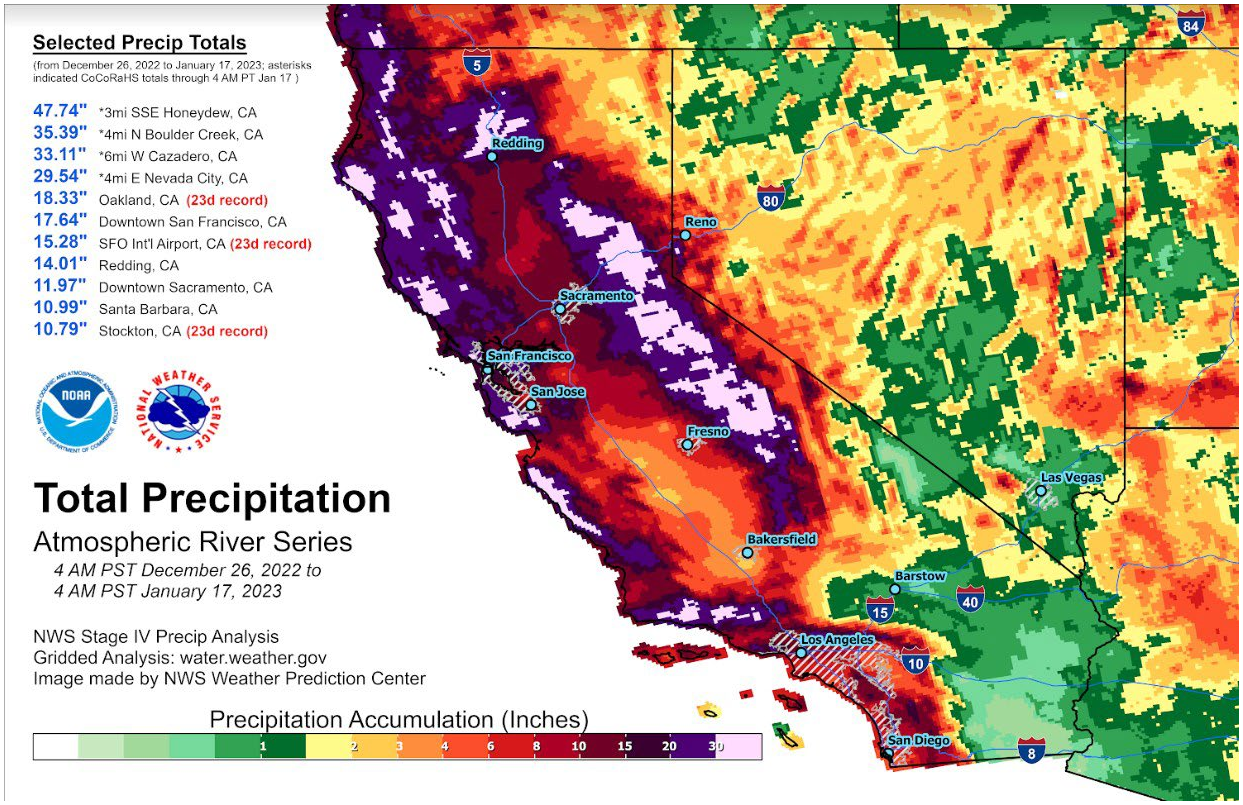
3.8 PROLONGED ATMOSPHERIC EVENTS

From late December 2022 to mid-January 2023, California experienced multiple rounds of moderate to heavy precipitation, caused by a continuous series of atmospheric river events. The lower elevations received 10 to over 30 inches of rainfall, while higher elevations saw snowfall ranging from 5 to over 15 feet over the course of several weeks.

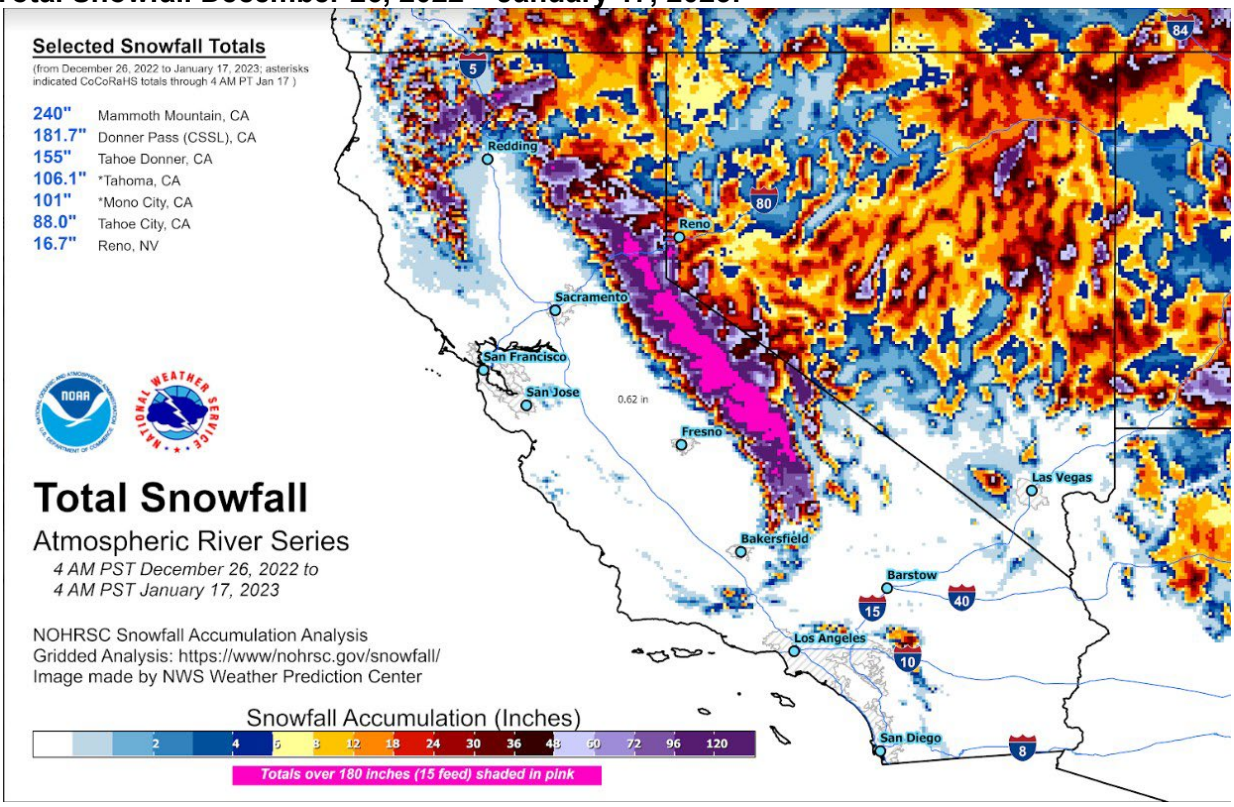
Since December 26, there was a brief pause in the weather systems for less than 24-48 hours in most cases. However, all the weather events during this time period were part of a single prolonged Atmospheric River event, starting around December 26, 2022, and ending on January 17, 2023.

The following summary graphics provide information on the total measured liquid precipitation and snowfall across California, along with a list of river locations that reached flood stage during the event.

Total Liquid Precipitation December 26, 2022 – January 17, 2023:



Total Snowfall December 26, 2022 – January 17, 2023:



River Gauges that Reached Flood State

Note that these locations represent routine river forecast points across the state. Additional smaller rivers and streams likely reached flood stage but did not have either established flood stages or reliable real-time data.

River Name	Gage Location	Flood Start Dates	Flood End Dates	Crest (ft)	Crest Date/ Time (PST)	Flood Stage (ft)
Bear Creek	McKee Road	1/9/2023	1/10/2023	26.20	1/10, 0145	23.0
Carmel River	Robles Del Rio	1/9/2023 1/14/2023	1/10/2023 1/15/2023	12.69 10.14	1/9, 1131 1/14, 1345	8.5
Cosumnes River	Michigan Bar	1/1/2023	1/1/2023	16.43	12/31, 0945	12.0
Eel River	Fernbridge	12/31/2022	12/31/2022	21.71	12/31, 1115	20.0
Mad River	Arcata	12/30/2022	12/31/2022	22.22	12/30, 2215	22.0
Mokelumne River	Benson's Ferry	1/1/2023	1/2/2023	20.23	1/1, 1945	17.0
Navarro River	Navarro	1/7/2023 1/9/2023	1/8/2023 1/9/2023	25.54 24.75	1/8, 0700 1/9, 1300	23.0
Russian River	Hopland	12/27/2022 12/30/2022 1/4/2023 1/7/2023 1/9/2023 1/11/2023 1/14/2023	12/27/2022 12/31/2022 1/5/2023 1/8/2023 1/9/2023 1/12/2023 1/14/2023	15.01 18.61 17.28 15.87 17.22 15.22 16.02	12/27, 1400 12/30, 0415 1/4, 0030 1/8, 0945 1/9, 1400 1/11, 0145 1/14, 0445	15.0
Sacramento River	Ord Ferry	1/15/2023	1/15/2023	114.29	1/15, 1200	114.0
Sacramento River	Tehama Bridge	1/9/2023 1/14/2023	1/10/2023 1/15/2023	210.10 210.91	1/9, 2215 1/14, 1500	209.5
Salinas River	Bradley	1/9/2023	1/11/2023	19.64	1/14, 1345	14.0
Salinas River	Paso Robles	1/9/2023	1/10/2023	32.02	1/9, 1630	29.0
Salinas River	Spreckels	1/12/2023	1/14/2023	24.63	1/13, 0926	23.0
San Diego River	Fashion Valley	1/16/2023	1/16/2023	12.77	1/16, 0815	11.3
Santa Margarita River	Ysidora	1/16/2023	1/16/2023	11.65	1/16, 1000	11.2
Santa Ynez River	Narrows	1/9/2023	1/10/2023	17.22	1/10, 0430	15.0
Sespe Creek	Fillmore	1/9/2023	1/10/2023	20.5	1/10, 0016	19.2
Sisquoc River	Garey	1/9/2023	1/10/2023	17.78	1/9, 2230	16.0
Ventura River	Foster Park	1/5/2023 1/9/2023	1/5/2023 1/10/2023	18.23 25.42	1/5, 1015 1/9, 1855	17.6

3.9 DAMAGING WINDS

It's crucial to understand that winds that cause damage without rotating are generally referred to as "straight-line" winds, as opposed to tornadic winds. These types of winds are generated by a

thunderstorm downdraft and are responsible for ground-level damage. Winds exceeding 50-60 mph are classified as damaging winds.

Interestingly, severe thunderstorm winds are more frequent than tornado damage and account for half of all severe reports in the lower 48 states. These winds can reach up to 100 mph, and the damage path can extend for miles.

Given that most thunderstorms produce some straight-line winds as a result of a downdraft outflow, individuals living in areas susceptible to thunderstorms are at risk. Residents of mobile homes are especially vulnerable to injury and death, even if their homes are anchored. It's of paramount importance to take the necessary precautions during windy events and prioritize safety.

3.10 High Wind Events

During the specified time period, several regions within the state were impacted by severe wind gusts in conjunction with precipitation. The most forceful and widespread winds were recorded on several dates, namely December 28th, 2022, January 1st-3rd, 2023, January 5th-6th, 2023, January 8th-10th 2023, and January 14th-16th, 2023, with gusts ranging from 40 to 70 mph in certain areas. These winds resulted in numerous instances of downed trees and power outages. However, the most potent and extensive winds were observed on January 7th and 8th, 2023, when thunderstorms swept across a significant portion of the state.

3.11 Watches, Warnings and Advisories

To ensure the safety of individuals, the National Weather Service employs various tools like watches, warnings, and advisories. These products alert people about weather hazards that may endanger their lives or property. These products have three primary categories: severe weather, winter weather, and non-precipitation weather (e.g., fog or dust storms).

A watch is issued when hazardous weather or hydrological events are forecasted to occur, but the event's timing, location, and occurrence remain uncertain. A watch's purpose is to give individuals enough time to prepare and take necessary actions. An alert may turn into a warning or advisory or be canceled entirely.

Warnings are issued when a hazardous weather or hydrologic event is either happening, is about to happen, or has a high probability of occurring. These alerts are the official voice for conditions that threaten life or property and should be taken seriously.

Advisories are issued for less severe conditions that still cause significant inconvenience. It is crucial to take advisories seriously and exercise caution, when necessary, as these conditions could lead to situations that may threaten life and property.

San Joaquin Valley
Weather Forecast Office
Watch, Warning, and Advisory Criteria

Thunderstorms and Tornadoes	
Severe Thunderstorm Warning	Thunderstorm producing hail equal to or greater than 1" in diameter and/or wind gusts of at least 50 knots (58 MPH) occurring or imminent.
Tornado Warning	Tornado occurring or imminent.

Winds		
HIGH WIND WARNING (Issued up to36 hrs in advance of event)	**ALL AREAS**	Sustained winds of 40+ MPH (35+ KTS) and/or gusts of 58+ MPH (50+ KTS) for 2-3 hours out of a 4-6 hour period.
DUST STORM WARNING (Issued up to 36 hrs in advance of event)	Same criteria as High Wind Warning, but with visibilities reduced to 1/4 mile or less.	
WIND ADVISORY (Issued up to 36 hrs in advance of event)	**SAN JOAQUIN VALLEY**	Sustained winds of 25-39 MPH (22-34 KTS) and/or gusts of 35-57 MPH (30-49 KTS) for 2-3 hours out of a 4-6 hour period.
	MOUNTAINS DESERTS	Sustained winds of 30-39 MPH (26-34 KTS) and/or gusts of 45-57 MPH (39-49 KTS) for 2-3 hours out of a 4-6 hour period.
BLOWING DUST ADVISORY (Issued up to 36 hrs in advance of event)	Same criteria as Wind Advisory, but with visibilities reduced to 1/4 mile or less.	
LAKE WIND ADVISORY (Issued up to 36 hrs in advance of an event)	Lake winds of **25 mph** or greater lasting for at least three hours. (Only issued if winds not reaching Wind Advisory criteria or greater in the surrounding area.)	
HIGH WIND WATCH (Issued 12-48 hrs in advance of event)	Issued to give advance notice of the possibility of high winds. Same criteria as High Wind Warning.	
HIGH WIND OUTLOOK (Issued 3-7 days in advance of event)	Issued to give more advance notice of the possibility of high winds. Same criteria as High Wind Warning.	

Flash Floods	
Flash Flood Warning	Flash-flooding is imminent or occurring, or a dam break is imminent or occurring.
Flash Flood Watch (Normally issued 6-48 hours in advance of an event)	Issued to give advance notice of the possibility of flash flooding, or there is concern about the safety of a dam, but a break is not imminent.

4 CONCEPT OF OPERATIONS

The San Joaquin County Emergency Operations Center (EOC) will be activated at the direction of the Director of Emergency Services to a level as outlined in the EOP. This extreme weather plan may be activated at any of the phases outlined in the next section. In addition to the actions described, the County may provide supplemental support to Cities and special districts during any of the phases of an extreme weather emergency as necessary.

The County will adhere to SEMS. When the EOC is not activated, the OES Duty Officer will act as the coordinator for jurisdictions within the OA requesting support or assistance and for all State inquiries. Once the EOC has been activated, the EOC will become the centralized point of coordination for all State, County, and Local jurisdictions with regard to the OA. The ESF-05 Management further describes the EOC operations.

OES and the EOC are co-located. The OES Duty Officer is the initial point of contact for requests or information. The OES Duty Officer may be reached by contacting the OES at 209-953-6200 during regular business hours, or by calling the Sheriff's Dispatch at 209-468-4421 and requesting the OES Duty Officer.

If the event includes multiple jurisdictions, the need for collaboration and coordination between several entities through the operational area may be necessary. The use of the San Joaquin Multi-Agency Coordination Group (MAC Group) may be essential to develop or implement countywide policy-level decisions. The MAC Group as covered in the San Joaquin County Multi-Agency Coordination Support Annex, is to evaluate threat conditions, determine incident priorities, maintain situational awareness, or determine priorities related to the use of critical resources.

The following sections outline activation phases for seasonal weather extremes.

4.1 EXTREME TEMPERATURE RESPONSES

County-level planning efforts are based on NWS products. Preparation for extreme temperatures and response activities should be carried out in consultation and coordination with local and county agencies, state agencies, Cal OES Regions, and impacted Oas. The County Director of Emergency Operations or designee will determine the need to activate this guidance upon receipt of a forecast indicating such conditions will prevail.

The following phases are guidelines to determine the most appropriate level of response.

The phases for extreme temperatures are:

I. Seasonal Readiness

II. Heat or Cold /Freeze Alert

III. Extreme Heat or Cold / Freeze Warning

4.1.1 Phase I – Seasonal Readiness

Phase I actions are taken in the hotter months for extreme heat (May through August) and in cooler months for extreme cold/freezing (November through February) to prepare for and maintain a state of increased readiness.

Phase I actions may include the following:

- Orientation and training of plans and procedures.
- Review of existing plans, procedures, and resources.
- Verification of use/availability of key facilities and resources.

- Updating/validating alert and warning notification processes.
- Initiating public awareness campaigns through various media outlets.

Refer to the Roles and Responsibilities Tables for a comprehensive list of Phase I County Agency Actions during extreme temperature events.

4.1.2 Phase II – Heat or Cold /Freeze Alert

Phase II actions are taken because of credible predictions by the NWS of excessive heat, cold, or of power disruptions during abnormal weather conditions. During this phase, contact with local agencies, county agencies and coordination among state agencies increases. The location of the extreme temperatures may affect the triggering of this phase. For example, extreme heat in areas of San Joaquin County during the hotter months would be normal. If watches and warnings are extended for more than three days or nights, this does not automatically initiate Phase II of the plan.
Phase II Actions may be initiated when one or more of the following exists, or at the discretion of the OES Director:

- NWS issuing a Cold or Freeze Warning indicating extreme cold or hard freeze for three days or more.
- Issuance of an Excessive Heat Warning with three nights or more with poor overnight recovery.
- NWS issuing an Excessive Heat Watch that lasts for five or more days Extreme Temperature Response Plan (ca.gov)consecutively.
- The credible prediction of power disruptions, Public Safety Power Shutoffs, or rotating blackouts (e.g., CA ISO Energy Emergency Alert 3, notifications from another electric balancing authority) during periods of high heat or cold weather.
- Notification(s) from an OA(s) that the jurisdiction is issuing a special notice (Warning, alert, etc.).
- An abnormal animal mortality rate or loss of agricultural crops associated with an extreme temperature.

4.1.3 Heat Phase III – Extreme Heat or Cold /Freeze Warning

Phase III actions are taken when conditions in one or more Oas pose a severe threat, when one or more of the following exists, or at the discretion of the OES Director:

- Notification from an OA that one or more jurisdictions have proclaimed an emergency related to extreme temperatures.
- NWS extreme cold/freeze warnings or wind chill warnings indicate weather conditions of extreme cold/freeze conditions that endanger human life with credible weather forecasts of more than three consecutive days. These weather conditions include low daytime temperatures accompanied by night temperatures of 32°F or less.
- NWS issues excessive heat warnings that indicate heat that can endanger human life with credible weather forecasts of three consecutive days or more. These weather conditions include temperatures at or above record levels for daytime highs and overnight lows.
- Higher than normal medical emergencies and mortality due to extreme temperatures.
- Higher than normal animal mortality rates due to extreme temperatures.
- Energy notifications from an electric balancing authority (e.g., CA ISO Energy

Emergency Alert) and/or extended power disruptions during expected extreme temperatures.

Phase III actions include the following:

- Continuing actions identified in Phase II
- Coordination calls will increase as needed.
- Engage with state and local programs, including housing and homelessness programs.
- Coordinating with local jurisdictions to ensure accessible transportation is being provided for individuals with access or functional needs, including individuals experiencing homelessness, to and from cooling/warming centers.
- Activation of the EOC as needed.
- Coordinating requests for mutual aid and state assistance in accordance with SEMS.
- Mobilizing warming or cooling centers if requested.
- The Governor may proclaim a State of Emergency in the affected area

Key Decisions

- Key decisions to consider during an extreme temperature emergency include the following: Scheduling and coordination of conference calls.
- Identifying local assets that can be used as cooling/warming centers.
- Opening and staffing of cooling/warming centers.
- Prioritizing resource allocations.
- Proclaiming an emergency
- Activating the EOC

4.2 Roles and Responsibilities Table –

The following table specifies specific agency roles and responsibilities for each phase. The agencies are listed in the left column and are broken down by emergency support function.

CRITERIA	PHASE 1 Pre-Season Preparedness	PHASE 2 NWS Heat or Cold /Freeze Alert	PHASE 3 NWS Extreme Heat or Cold /Freeze Warning
ESF#1 – TRANSPORTATION			
San Joaquin Regional Transit District	• Review Heat Appendix • Review Extreme Weather Plan • Review transportation plan	• Initiate transportation plan	• Implement transportation plan to Centers
Purchasing & Support Services	• Review Heat Appendix • Review Extreme Weather Plan Review transportation plan		• Implement transportation plan
ESF#2 – COMMUNICATIONS			
Information Systems Division	• Review Heat Appendix • Review Extreme Weather Plan Prepare/post Heat OES page website	• Post information on website as provided by PIO	• Post information on website as provided by PIO. • Ensure systems remain functional.
ESF#3 – CONSTRUCTION AND ENGINEERING			
Public Works	• Review Heat Appendix • Review Extreme Weather Plan	• Prepare to receive carcasses if needed	• Receive carcasses if needed
ESF #5 –EMERGENCY MANAGEMENT			
Office of Emergency Services	• Review Heat Appendix • Review Extreme Weather Plan • Coordinate with NWS • Update websites and social media	• Activate EOC as needed. • Emergency Management Committee • Inform Cal OES Inland Region • Implement JIC / PIO as needed. • Issue heat awareness messaging • Issue cold/freeze awareness and warming zones • Stage critical resources • Coordinate transportation plan. • Share cooling location information.	• Process mutual aid requests • Submit reports to Inland Region • Coordinate with power utilities. • Distribute heat-related information. • Participate in Cal OES and NWS briefings. • Request warming centers to open. • Monitor usage of warming centers • Monitor usage of cooling centers

Cities	• Review Heat Appendix • Review Extreme Weather Plan • Identify pet accommodations at Centers	• Open Cooling Centers as needed. • Open Warming Centers as needed. • Notify OA • Assign PIO to JIC as needed. • Coordinate messaging. • Locate vulnerable populations. • Provide transportation as needed	• Request/supply critical resources • Request OA open additional Warming or Cooling Centers as needed. • Coordinate with County EOC, while activated
ESF #6 – CARE AND SHELTER			
AGENCY	**PHASE 1**	**PHASE 2**	**PHASE 3**
Human Services Agency	• Review Heat Appendix • Review Extreme Weather Plan • Update critical resource list. • Convene Housing/Shelter Working Group • Review Warming or Cooling Center operation criteria	• Coordinate locating vulnerable populations with cities, PHS, EHD, BHS and DRC. • Activate Warming or Cooling Centers as needed. • Consider Care & Shelter Branch needs at County EOC	• Participate in meetings, etc. • Survey Centers for accessibility • Assess the need for commodities. • Coordinate needs to provide wellness checks on vulnerable populations with cities, PHS, BHS, EHD and DRC • Provide support to the Care and Shelter Branch in EOC, as needed.
American Red Cross	• Member of Outreach Group • Member of Shelter/Housing Working Group	• Activate facilities as Warming or Cooling Centers • Coordinate with OA EOC	• Support ARC Centers with logistical resources • Inspect ARC Centers for health/safety. • Coordinate with OA EOC
VOAD	• Member of Outreach Group • Member of Shelter/Housing Working Group	• Support locating vulnerable populations with has, PHS, BHS, EHD, and cities. • Activate facilities such as Warming or Cooling Centers. • Stage critical resources at centers • Coordinate with OA EOC	• Outreach with heat-injury materials • Monitor use/effectives at DRC centers. • Coordinate with OA EOC • Support notification of vulnerable populations wihasHSA, PHS, EHD, BHS, and cities.
ESF #7- RESOURCES			
Purchasing & Support Services	• Review Heat Appendix • Review Extreme Weather Plan • Review transportation plan	• Stage critical resources at Warming or Cooling Centers, as needed	• Stage critical resources at cooling Centers, as needed. • Implement transportation plan

ESF #8 – PUBLIC HEALTH AND MEDICAL			
AGENCY	**PHASE 1**	**PHASE 2**	**PHASE 3**
Public Health Services	• Review Heat Appendix • Review Extreme Weather Plan • Coordinate outreach materials; templates should include media, public, and social media releases.	• Prepare to declare a health emergency. • Assign PIO / Participate in JIC • Consider tracking heat-related illnesses at hospital emergency departments. • Assign EOC Medical/health Branch Director	• Possible Health Emergency Declaration • Issue health advisories for outdoor activities as needed. • Outreach to distribute cold or heat injury materials. • Track cold or heat-related fatalities. • Track cold or heat-related illnesses at hospital emergency departments. • Support notification of vulnerable populations
Emergency Medical Services	• Review Heat Appendix • Review Extreme Weather Plan	• Coordinate/Monitor medical facilities and health agencies of heat or cold emergencies. • Consider the support needs of OA EOC at Medical/health Branch	• Monitor the EMS system for heat-related illness. • Support OA EOC Medical/Health Branch
Behavioral Health Services	• Review Heat Appendix • Review Extreme Weather Plan • Identify vulnerable populations. • Assist with education materials	• Locate vulnerable populations. • Support locating other vulnerable populationshasth HSA, cities, EHD, PHS, and DRC. • Provide information for protection to vulnerable target populations and others, to extent possible. • Consider the support needs of OA EOC in the Medical/Health Branch or Care & Shelter Branch	• Perform wellness checks on vulnerable BHS populations. • To the extent possible, assist in efforts to provide wellness checks on other vulnerable populations. • Coordinate with PHAS BHS, HSA, DRC, and cities on wellness checks for vulnerable populations. • Provide information on warming or cooling centers to the target population. • Support OA EOC Medical/Health Branch or Care & Shelter Branch
Environmental Health Department	• Review Heat Appendix • Review Extreme Weather Plan	• Assign agency representative to coordinate with EOC. • Coordinate on outreach activities. • Coordinate with PHAS BHS, HSA, DRC, and cities on outreach activities	• Outreach to vulnerable populations, as needed. • Monitor small public water systems. • Monitor food facilities. • Support notification of vulnerable populations with HSA, PHS, BHS, DRC, and cities • Support OA EOC Medical/Health Branch or Care & Shelter Branch

ESF #11- FOOD AND AGRICULTURE			
AGENCY	**PHASE 1**	**PHASE 2**	**PHASE 3**
Ag Commissioner	• Review Heat Appendix Review Extreme Weather Plan • Review Rendering Plan • Develop educational materials.	• Outreach to Ag community • Assist with rendering activities as needed. • Monitor Effects • Assist with outreach materials	• Outreach to Ag community • Monitor carcass collection; disposal activities. • Prepare and submit Disaster Report Forms
Environmental Health Department	• Review Heat Appendix • Review Extreme Weather • Review Rendering Plan	• Assign agency representative to coordinate with EOC. • Coordinate with Ag about animal fatalities monitoring	• Inspect Warming or Cooling Centers for safe food service. • Monitor carcass disposal activities. • Coordinate approval of alternative disposal sites
UC Cooperative Extension	• Review Heat Appendix • Review Extreme Weather	• Outreach to the agricultural community	• Outreach to the agricultural community
ESF #12- UTILITIES			
PG&E		• Monitor power availability	• Monitor power availability. • Coordinate with EOC
NWS Sacramento	• Issue definition of terms for cold or heat emergency	• Issue/update expected weather conditions	• Update weather conditions
ESF #13- LAW ENFORCEMENT			
Sheriff's Coroner	• Review Heat Appendix • Review Extreme Weather	• Monitor situation	• Report cold or heat-related fatalities to Public Health
Sheriff's Animal Services	• Review Heat Appendix • Review Extreme Weather Plan	• Monitor County area for animal carcasses. • Monitor HSA-operated Centers for pet accommodations	• Monitor the County area for animal carcasses. • Monitor HSA-operated Centers for pet accommodations
Sheriff's Communications	• Review Heat Appendix • Review Extreme Weather Plan	• Share incidents with Mutual Aid or Duty Officer as needed. • Report major incidents to duty officer or EOC	• Distribute cold or heat-related information to local jurisdictions
ESF #15- PUBLIC INFORMATION			
Public Information Officer	• Review Extreme Weather • Develop/select educational material. • Prepare media releases of seasonal awareness	• Issue heat injury cold injury prevention advisories • Post information on websites and social media. • Participate in JIC/JIS	• Distribute cold or heat-related information. • Issue outdoor activity advisories • Issue a list of warming or cooling Centers

5 AUTHORITIES AND REFERENCES

- Cal OES Contingency Plan for Extreme Cold / Emergencies
- National Weather Service Western Region Weather Summary for Prolonged Atmospheric Events in California December 26, 2022- January 17, 2023
- NSSL NOAA National Severe Storms Laboratory Severe Weather 101

6 DEFINITIONS

Community Based Organization or *CBO* means “a public or private nonprofit organization of demonstrated effectiveness that: Is representative of a community or segments of a community; and provides educational or related services to individuals in the community”.

Contingency Plan - Refers to a subset of an existing emergency plan focused on addressing the particulars of a specific emergency scenario (i.e., earthquake, flood, etc.).

Cool Zones - A Cool Zone is a location to get out of the heat for a period of time to let your body cool down. Cool Zone facilities may include libraries, community centers, malls, and senior centers. During a heat event, community and senior centers may extend hours into the evening to give citizens a longer period of respite.

Cooling Centers - A Cooling Center is a temporary air-conditioned public space set up by local authorities to deal with the health effects of extreme heat over an extended period of time. Usually sited at several locations throughout a city, Cooling Centers are meant to prevent hyperthermia, especially among the elderly without air conditioning at home. Cooling Centers provide shade, water, and sometimes medical attention, along with referrals to social services.

Cooling Stations - Facilities that can be used for heat relief that are exempt from rotating power outages (mandated by CPUC Decision 02-04-060, 4/25/02). Typically, these are facilities such as hospitals, skilled nursing facilities, etc.

Emergency Plans - As defined in Government Code §8560 (a) "Emergency Plans" means those official and approved documents which describe the principles and method to be applied in carrying out emergency operations or rendering mutual aid during emergencies. These plans include such elements as continuity of government, the emergency services of governmental agencies, mobilization of resources, mutual aid, and public information.

Faith Based Organization or *FBO* - means a religious-based organization that provides community services.

HeatRisk Output – Used by the NWS as tool to determine Potential Heat Risks up to seven (7) days in advance. The Risk is assessed by comparing the official NWS temperature forecast to local thresholds which change through the year based on climatology. The approach considers: 1) how significant above high and low temperatures are at your location in a 24-hour period; 2) Time of year; 3) Duration of unusual heat expected; 4) If temperatures pose an elevated risk for heat complications and; 5) If overnight lows and humidity allow temporary relief or enhancement of the heat wave. *HeatRisk* is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale. Essentially, the higher the value, the greater the potential heat risk.

Heat Wave (Extreme / Excessive Heat Event) - When temperatures reach 10° or more above the average high temperature for the region, last, or predicted to last, for a prolonged period of time. A heat wave is often accompanied by high humidity.

Joint Information Center - A centralized facility for coordinating an organized, integrated, release of critical emergency information, crisis communications and public affairs functions, which is timely, accurate, and consistent.

Local Government - As defined in SEMS regulations §2402 (m), " . . . means local agencies as defined in Government Code §8680.2 and special districts defined in California Code of Regulations, Title 19, §2900(y).”

NWS Information - Using the climate-region-specific criteria, if NWS forecasters predict for a given region an extreme temperature event, then the NWS will issue alerts in the form of a Partner email that is based on several criteria, including how far in advance of the event they are making the prediction.

Operational Area - As defined in Government Code §8559 (b), "An 'Operational Area' is an intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area."

Rotating Blackout - A process of cutting off service to selected customers for a predetermined period (usually not more than two hours) in order to retain the integrity of the power grid.

Standardized Emergency Management System (SEMS) - As defined in California Code of Regulations §2401, " . . . based upon the Incident Management System (ICS) adapted from the system originally developed by Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE) program including those currently in use by state agencies, the Multi-Agency Coordination System (MACs) as developed by FIRESCOPE program, the operational area concept, and the Master Mutual Aid Agreement and related mutual aid systems."

WebEOC – Software tool used by emergency managers to track an incident or events. Initial rollout includes San Joaquin County Healthcare Coalition agencies, Office of Emergency Services and County Fire Districts.

7 ACRONYMS

Acronyms used throughout this plan and their full names are listed below in alphabetical order by their acronyms.

ADA	American Disabilities Act
BHS	Behavioral Health Services
BOS	Board of Supervisors
CAL	ISO - California Independent System Operator
Cal OES	California Office of Emergency Services
CAO	County Administrative Officer
CBO	Community Based Organization
CPUC	California Public Utility Commission
EHD	Environmental Health Department
EMC	Emergency Management Committee
EMS	Emergency Medical Services
EOC	Emergency Operations Center
FBO	Faith Based Organization
HSA	Human Services Agency
IAP	Incident Action Plan
ICS	Incident Command System
JIC	Joint Information Center
MHOAC	Medical Health Operational Area Coordinator
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
OA	Operational Area
OES	Office of Emergency Services (County)
PG&E	Pacific Gas and Electric
PHS	Public Health Services
PHO	Public Health Officer
PNP	Private Non-Profit
PIO	Public Information Officer
SEMS	Standardized Emergency Management System
UHI	Urban Heat Island
WebEOC	Software tool used by emergency managers to track an incident or events