



Contra Costa
County

Extreme Heat Response After Action Report

Response Date: July 1 - July 8, 2024
Final Report: September 2024



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Introduction

On June 30th, the National Weather Service (NWS) issued an Excessive Heat Warning for the Bay Area and Central Coast. A Red Flag Warning was also issued for the Marin Coastal Range, Sonoma Coastal Range, and East Bay Hills due to the high potential for wildfires. Extremely high daytime temperatures and little overnight relief were experienced throughout this event.

For the first time in the history of the Bay Area, the County experienced the longest extreme heat event and triggered all conditions for a Phase III Emergency Response of the Emergency Operations Plan Extreme Heat Annex. Throughout this event, multiple cooling centers and places to cool were opened, transportation coordination was initiated, and the Emergency Operations Center Joint Information System was activated to support the dissemination of public information.

This after-action report has been generated to provide an outline of the County’s response efforts from July 1 through July 8, 2024. This document will also identify improvement opportunities for future extreme heat responses and recommend modifications to the County’s Extreme Heat Annex

Extreme Heat Event

Weather Forecast

The National Weather Service issued an Excessive Heat Warning on June 30th for the Bay Area and Central Coast. Contra Costa County was expected to experience widespread high day-time temperatures of over 110 degrees with little overnight relief. Extreme heat was forecasted for the entire County and signified a rare level of HeatRisk for the entire population. This extreme heat event marked one of the longest extreme heat event that resided over the State of California.

The image is a weather advisory graphic from the National Weather Service's San Francisco Bay Area office, dated Tuesday, July 2. It features a blue header with the NWS logo and the text "Excessive Heat Warning and Heat Advisory". Below the header, there are four sections: "What", "When", "Where", and "Impacts & Safety", each with a list of details. To the right of these sections is a map of the Bay Area and Central Coast, color-coded to show the extent of the warnings: yellow for Heat Advisory, orange for Excessive Heat Watch, and red for Excessive Heat Warning. A text box titled "What is this?" explains that an Excessive Heat Warning means hot conditions could cause life-threatening impacts or major impacts to commerce or travel, and that there is a high to very high risk for much of the population due to long duration heat with little to no overnight relief. It also advises to prepare for dangerous heat and limit outdoor activities. At the bottom of the map, there are three colored boxes: yellow for Heat Advisory, orange for Excessive Heat Watch, and red for Excessive Heat Warning.

This series of consecutive high temperatures days was categorized to be very dangerous even deadly to anyone without proper hydration or adequate cooling. Due to these conditions, it was also expected that the County would experience some level of power outages during this event. Additionally, the National Weather Service also issued a Red Flag warning from July 2nd through the 6th. Gusty winds of 15-25 mph developed for the interior North Bay Mountains and East Bay Hills, elevating fire weather concerns for these areas.

	Mon 7/1	Tue 7/2	Wed 7/3	Thu 7/4	Fri 7/5	Sat 7/6	Sun 7/7	Mon 7/8
East Bay Oakland Concord, Livermore	Heat	Low RH Heat Fire Weather - Interior	Low RH Heat Fire Weather - Interior	Low RH Heat	Low RH Heat	Low RH Heat	Low RH Heat	Low RH Heat

While high temperatures varied throughout the County, the image above shows a snapshot HeatRisk.

Emergency Operations

The anticipated weather conditions as well as the likelihood of cascading effects activated the County’s Extreme Heat Plan. The following conditions triggered a Phase III Emergency Response for this extreme heat event.

- ✓ NWS Heat Risk Forecast Level 4 – Extreme Heat Temperatures
- ✓ NWS issued an Excessive Heat Warning that indicated the event to last three days or more.
- ✓ Weather conditions include predicted high daytime temperatures of 100 degrees or more.
- ✓ No nighttime relief with low temperatures being at 75°F or more.
- ✓ Higher than normal medical emergencies and mortality due to extreme temperatures.
- ✓ The potential for power disruptions during expected extreme temperatures.

On July 1st, the Office of Emergency Services (OES) in coordination with Contra Costa Health began holding daily multi-agency coordination calls to increase communication and coordination between the cities and county. During these meetings, OES and CCHHealth provided situation reports regarding response efforts.

Cooling Centers and Places to Cool

Several local jurisdictions as well as the County's Employment and Human Services Department (EHSD), Libraries, and hospitals opened cooling centers and places to cool. The following is a breakdown of cooling centers/places to cool:

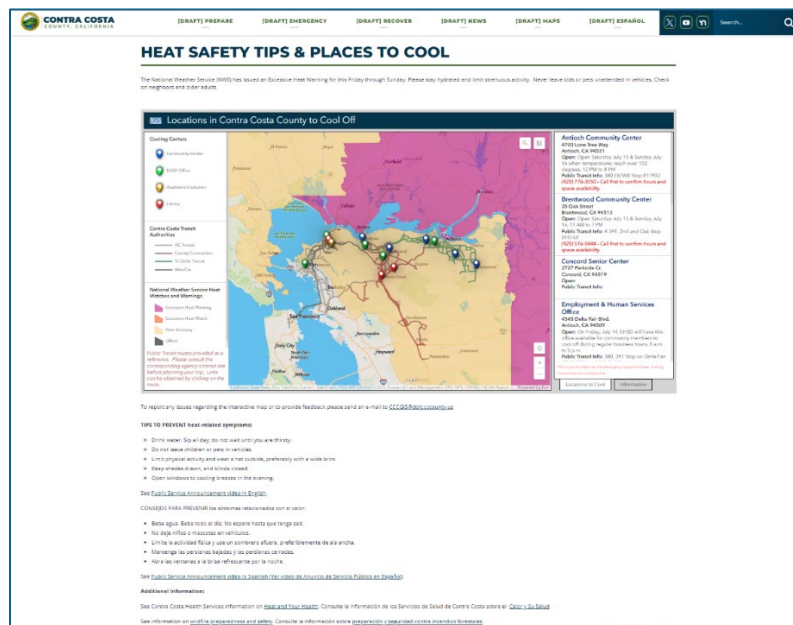
- City-run: 25
- County-run: 7
- Libraries: 24
- Hospitals: 2

A total of 58 cooling centers/places to cool were open between July 1st – July 8th.

Public Information/Joint Information Center

The County's Emergency Operations Center Joint Information System was activated to support the significant increase in public information requests and information coordination of cooling centers/places to cool, transportation information, and heat safety tips.

The Joint Information Center deployed a Heat Safety Tips and Places to Cool web page that included an interactive web map that would allow residents to find the closest weather relief center to them. This site included information from the National Weather Service, a list of cooling centers, heat safety tips, transportation information, and additional resources.



During the planning stages, OES, CCH, and GIS designed and developed this map. It was the first time this map was deployed, and it was extremely successful. This map displayed information on all opened cooling centers/places to cool, transportation routes, heat watches & warnings, locations for people experiencing homelessness, pet-friendly information, as well as special considerations. It was a one stop shop for all county residents to obtain information and it will continue to be utilized for extreme weather events.

Throughout this response, the Joint Information System updated response information accurately and timely. The JIC was composed of public information officers from CCH, EHSD, OCM, Public Works and the Sheriff's Office. The Joint Information Center answered multiple media inquiries including having Dr. Lisa Rodelo, Deputy Health Officer participate in a Spanish interview with Telemundo.



Additionally, Contra Costa Health conducted polling via ReddiNet asking hospitals to report heat-related illnesses and deaths and whether their facility would act as cooling centers throughout the event. Information obtained through ReddiNet polling was utilized by the Lead Public Information to update the website. Polling allowed information to be provided to the public information officers regarding heat related illness and cooling centers.

Information on fifty-eight cooling centers/places to cool was coordinated with libraries, hospitals, EHSD, 19 cities, and the Health, Housing, and Homelessness (H3) division of Contra Costa Health. Public information and protective actions were disseminated through a press release, email, website postings, social media, news media, and 211 in both English and Spanish.

Medical Health Branch

During the July 2024 Heatwave, the Med Health branch (Contra Costa Health- Health Emergency Response Unit) worked with the Office of Emergency Services to coordinate a response to the extreme heat among the Contra Costa Medical System. Created by the County OES's Extreme Weather Working Group, the County's Extreme Heat Plan guided these efforts to serve the county's most vulnerable populations.

July 1st, 2024

On July 1st, 2024, it was determined by the weather conditions outlined in the County's Extreme Heat Plan that the county was in a Phase III – Emergency Response. In response to this phase, the Med Health branch put together its first preparedness call to discuss the direction for their response. During this call, Contra Costa' Health(CCH) Health, Housing, and Homelessness(H3) Team talked about how they were stocking up on survival gear to

provide to their clients, drafted up transportation plans to move clients to the nearest cooling centers, and expanding upon operating hours at the current sheltering facilities. Also during this call the Health Officer requested that hospitals be polled through the ReddiNet platform to determine if they could open up their lobbies as Cooling Centers. The Health Emergency Response Unit partnered with the Emergency Medical Services Duty Officer to send out these initial notifications.

After the initial ReddiNet notification went out, many hospitals did not reply to the original ReddiNet Notification. Some receivers of the ReddiNet Notification felt that they did not have the authority to answer the notification, so they sought the approval of their management team. While others, felt like the request needed more time for approval. The Med Health branch did receive some replies from facilities via text message and phone calls. In return, the Med Health Branch asked these facilities to send their replies in the ReddiNet platform. It should be noted that the ReddiNet polling did not provide the most accurate picture for response efforts since all receivers of the message did not reply in a timely manner. This communication setback signaled the need for more formal procedures when it comes to processing ReddiNet Notifications.

July 2nd , 2024

On July 2nd, 2024, the Med Health branch held a series of calls related to the Extreme Heat response. In the morning, OES and Contra Costa Health met to discuss their next steps. During this call, it was discussed that there currently wasn't a process to capture metrics related to heat illness and heat fatalities. At the request of the Deputy Health Officer, the Med Health Branch was directed to work with the EMS Duty Officer to poll the hospitals to capture metrics related to heat illnesses and fatalities. The results from these polls were both reported in WebEOC and emailed to the Deputy Health Officer, Health Officer, and Chief Information Officer on a daily basis.

Later that morning a second ReddiNet notification was sent to our hospitals asking if they could open up their lobbies as Cooling Centers. Once again, this ReddiNet Notification did not receive many replies from local hospitals. Due to the low reply rate, the Health Officer asked the Med Health branch to call local hospitals to check on their status as a Cooling Centers for the impending heat. The EMS Department would later excuse themselves from the heat response citing that their department did not have the bandwidth to send ReddiNet Notifications. This incident stressed the need for a ReddiNet Notification workflow to be developed during extreme weather events and defined roles and responsibilities between the Emergency Medical Services Department and the Health Emergency Response Unit when it comes to using the ReddiNet platform.

In the afternoon, the Med Health branch held it's second preparedness call. On this call, the H3 team reported that they expanded operations at facilities in Concord and partnered with a variety of Community Based Organizations to expand their outreach to the county's

unsheltered populations. Contra Costa Regional Medical Center reported that their lobbies will be open on the weekend and 4th of July holiday. While CCRMC was opening up their lobby as a Cooling Center, their facility representative requested that water be provided for arriving guests. However, due to the fact that the extreme heat event was not declared a emergency where reimbursable funds would be available, their initial resource requests were not fulfilled. CCRMC was able to later source the water for their Cooling Center through other means of procurement. This incident cited the need for more monetary funds to support an overall heat response for future extreme heat events. It should also be noted the Sutter Delta Medical Center in Antioch was also able to open its lobby as a Cooling Center.

After the Contra Costa Health preparedness call, the Med Health branch also held a Adhoc Medical Health Preparedness Coalition Emergency Preparedness Call to update hospital and medical facility partners on the extreme heat event. This call consisted of hospitals, SNFs, and surgical center partners from all around Contra Costa County. During the call, the Med Health branch reviewed the current weather conditions, ReddiNet Polling and responses to ReddiNet Notifications for the extreme heat, and the County Extreme Heat response plans.

July 3rd, 2024

On July 3rd 2024, the Med Health branch held its third preparedness call. During this call, our Community, Education, and Information (CEI) reported that Deputy Health Officer, Dr. Lisa Rodelo provided an interview on Heat Safety and Illness Prevention to Telemundo. A representative from CCRMC reported that two health clinics had power disruptions that were later resolved. The CCH Hazardous Materials Team also reported that they sent a notification to all refineries advising them of potential power disruptions due to the extreme heat. The Med Health branch reported on their poll of local hospitals. The poll was to see which hospital facilities could keep their lobbies open during the 4th of July holiday and weekend. CCRMC replied that they would be open for the 4th of July Holiday and upcoming weekend.

The 4th of July Holiday posed a natural barrier to overcome since many government organizations and services were not open on the holiday. It should also be noted that the 4th of July holiday also posed an equitable challenge for our outreach teams trying to find transportation to cooling centers for the unhoused populations. Future Contra Costa Health plans should encompass business continuity actions that entail how response efforts continue even with an approaching holiday. With disasters not stopping on scheduled holidays, plans should encompass how a minimal staffing effort is maintained through the holiday.

July 5th , 2024

On July 5th, during the morning's OES/Contra Costa Health call, it was determined that the County would receive some reprieve from the extreme heat going into the weekend. Following the County's Extreme Heat Plan, OES and Contra Costa Health determined that it was appropriate to start to demobilize from the extreme heat response. Contra Costa Health Management in conjunction with the Deputy Health Officer made the determination that a full preparedness call was not needed and Contra Costa Health team could resume their normal activities.

Later that afternoon, the Med Health branch advised all of Contra Costa Health that it was determined the heat response would be demobilized due to changing weather conditions outlined within the Extreme Heat Plan. It was later learned that many felt that the demobilization was too soon and felt at least 24 hours notice would have helped prepare their clients for the closing of facilities.

Contra Costa County Fire Protection District

Contra Costa County Fire Protection District initiated public space closures in the wildland-urban interface which helped to:

- reduce the number of medical emergencies in open spaces due to heat exposure and heat related injuries
- removed the public from wildland-urban interface areas under red-flag fire conditions, potentially reducing the number of fire starts
- reduced the exposures of first responders to extreme heat conditions.

The implementation of these measures had a direct impact on the safety of the public and first responders.

Transportation

Representatives from all Contra Costa County transportation agencies collaborated before and during the heat event to ensure equity and accessibility of public transportation resources across the county. Transportation partners with Tri Delta Transit, County Connections, WestCat, and AC Transit provided their bus routes and schedules for each day of the event. The information was continuously provided to the Joint Information Center for dissemination. This allowed members of the public to easily find a cooling center near them and transportation information on the same webpage. Mobility Matters and the Crisis Center / 211 were involved in the working group as well and their call center personnel were aware of the information to share with their callers.

Demobilization

Demobilization of this response began with daily multi-agency coordination calls. On Friday, July 5th, heat impacts were discussed with County and City representatives, and it was determined that cooling centers would be open throughout the weekend and would close on Monday, July 8th.

Information on the closure of cooling centers was immediately updated online and social media posts were updated to amplify messaging due to the active Red Flag warning. While all other sections of the EOC were demobilized, the Joint Information Center stayed operational throughout the weekend and was deactivated on Monday, July 8th at 12:00 PM.

Parameters were set around the continued use of the interactive web map if two or more cities decided to continue to operate cooling centers. In addition, all agencies were notified that the Joint Information Center would be deactivated at noon on July 8th and information on how to reach the OES Duty Officer was re-distributed.

Findings and Improvement Plan

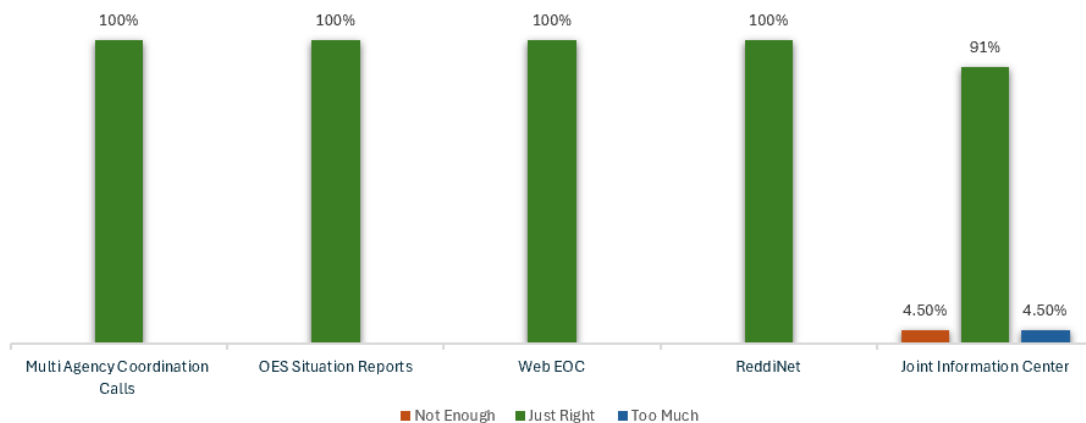
In January 2024, Contra Costa County put into effect its first Extreme Heat Plan as an annex to the County’s Emergency Operations Plan. This plan outlines actions Contra Costa County may take in support of the Operational Area when extreme heat temperatures are anticipated or have occurred. The July extreme heat event marked the county's first implementation of its Extreme Heat Plan.

Following the extreme heat response, OES and Contra Costa Health developed an after-action survey to collect information from all agencies that participated in the extreme heat response. This survey consisted of 10 questions aimed to collect information on communication, response efforts, and demobilization. In total, the survey received a total of 28 responses from various representatives from county departments, cities, and partner agencies.

Information collected in this survey will be used to improve processes, enhance capabilities, and set or validate existing response methods. All survey responses and findings will be discussed in this section.

After Action Survey Results

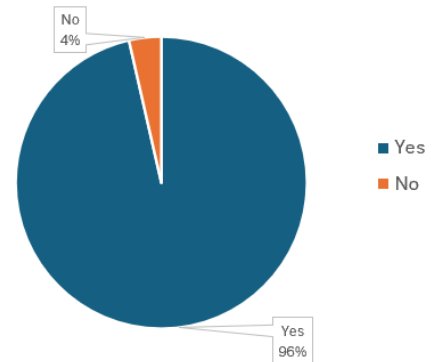
During extreme heat response, the County leveraged multiple forms of communication with county departments, local jurisdictions, and partner agencies. These communication methods were used to maintain a state of situational awareness and a common operating picture throughout the response. Through the survey, agencies were asked to provide feedback on the frequency and level of communication.



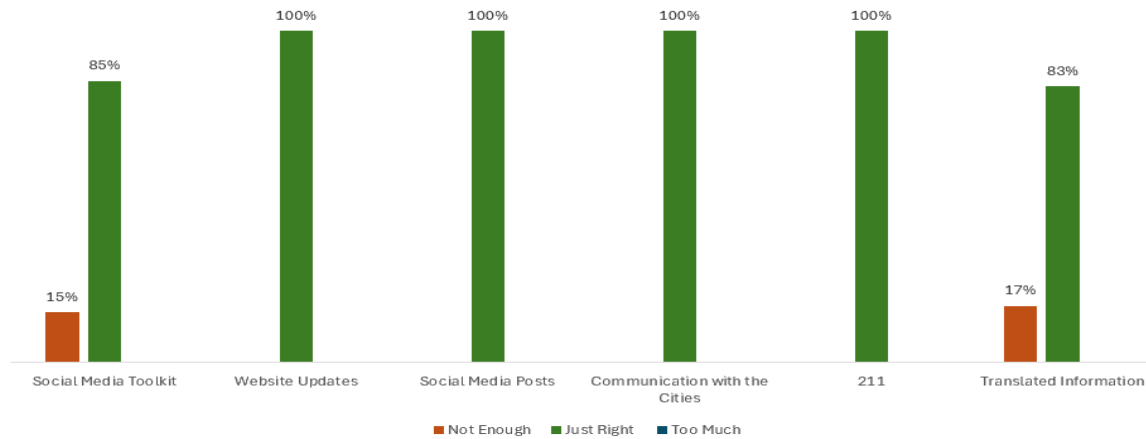
Overall, agencies that utilized these tools and responded to this question stated that the frequency of the different communication strategies was just right. Only 4.5% of respondents stated that it was either not enough or too much.

In determining if the County had provided clarity on response efforts within the county, survey participants were asked if their agency felt that the County was clear in its response efforts.

Approximately 96% of those who responded to the survey stated that the County was clear in its response throughout the extreme heat event. This signified that response efforts as well as roles and responsibilities outlined in the Extreme Heat Plan were understandable and clear enough for agencies to follow.



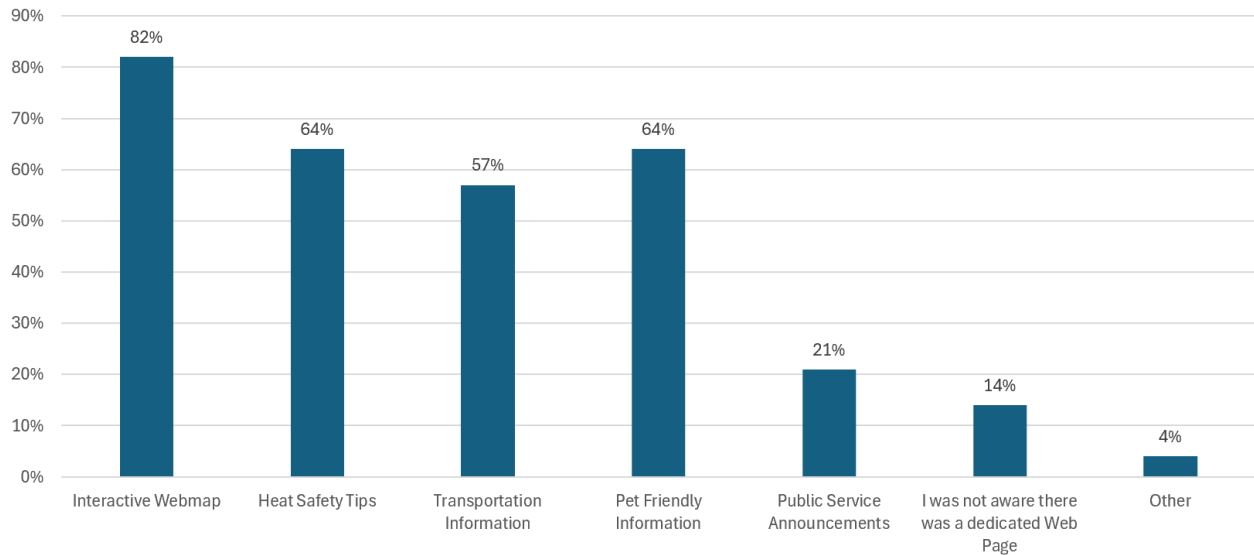
The Joint Information Center played a significant role during this event and leveraged multiple tools and strategies to coordinate public information throughout Contra Costa County. Tools such as social media toolkits, Heat Safety Tips & Places to Cool webpages, social media posts, coordination between city and county PIOs, 211, and the translation of all public information were all managed through the JIC. To identify gaps and the appropriate level of response for future activations respondents were asked to provide feedback on the frequency and level of communication coordination from the JIC.



Respondents felt that information coordination and tools were used adequately, and the frequency of public information coordination was “Just Right”. Of those who responded to the survey, 17% indicated that the level at which information was translated was “not enough”, and 15% of respondents stated that there was “not enough” material they could use from the Social Media Toolkits.

In response to the extreme heat event, the County deployed a Heat Safety Tips & Places to Cool webpage on its main website. Information collected in the survey aimed to understand what tools agencies felt were most valuable to their response efforts and identify any gaps in how information is distributed. Based on the survey results the interactive web map utilized to display active cooling centers was identified as the most

useful. This was followed by agencies (64%) indicating that “Heat Safety Tips” and “Pet-Friendly information were the second most useful tools utilized during the extreme heat event. Transportation information came third in the polling.



Additional Findings

In addition to the survey results the findings below were collected through meeting discussions, feedback provided via email, and hot washes:

- The frequency of coordination calls was adequate for the response.
- WebEOC was utilized sufficiently for this event
- Agencies found that the County reacted quickly and efficiently to the first extreme heat response.
- There is a need to post clear and visible signs for county-run cooling centers to provide more accessibility to the public.
- Seven out of 58 cooling facilities were pet friendly.
- A longer response would not be sustainable without re-evaluating the appropriate number of cooling centers that should be utilized.
- Having the JIC operational throughout the response allowed for additional public information coordination to take place during the weekend.
- Contra Costa Health should increase coordination with Med Health entities during demobilization to provide a 24-hour notice of cooling center closures.
- There is a need to further discuss the transportation capabilities of each organization, including regional partners, to ensure equitable and accessible transportation for the whole community.
- The Holiday and Weekend impacted cooling center services as well as public transportation. This put a significant strain on resources.

- There is a need to have a flowchart or document procedures on how ReddiNet should be utilized during extreme heat events.
 - The lack of workflow delayed communication with hospitals to obtain information.
 - Hospitals weren't sure they had to respond or did not know how to respond to polling.
- Some facilities were opened as cooling centers but did not want to be displayed on the cooling center map.
- Consider adding BART line(s) on the interactive map to complement the existing bus transportation routes.
- Listing amenities of cooling centers in addition to the hours and location: water, food, pet-friendly
- More social media-ready posts with weather updates.
- Other languages to support the County's diverse demographics.

Improvement Plan

#	Finding	Improvement Plan	Assigned Agency	Due Date
1.	There is a need to post clear and visible signs for county-run cooling centers to provide more accessibility to the public.	Extreme Weather Working Group should consider adding this to the Cooling Center Checklist.	OES/Extreme Weather Working Group	December 2024
2.	A longer response would not be sustainable without re-evaluating the appropriate number of cooling centers that should be utilized.	Re-evaluating the number of appropriate cooling centers to sustain a longer response.	OES/Extreme Weather Working Group	Continuous
3.	Contra Costa Health should increase coordination with Med Health entities during demobilization to provide a 24-hour notice of cooling center closures	Set processes to increase internal coordination with MedHealth entities	Contra Costa Health	Continuous
4.	There is a need to further discuss the transportation capabilities of each organization, including regional partners, to ensure equitable and accessible transportation for the whole community.	Continue discussion to support transportation to and from weather relief facilities during extreme weather events.	OES/Transportation Working Group/Extreme Weather Working Group	Continuous
5.	The Holiday and Weekend Impacted cooling center services as well as public transportation. This put a significant strain on resources.	Continue the discussion on staffing cooling centers and providing transportation for weekends/holidays to evaluate if there is an available solution	OES/Transportation Working Group/Extreme Weather Working Group	Continuous
6.	The lack of workflow delayed communication with hospitals to obtain information. Hospitals weren't sure they had to respond or did not know how to respond to polling.	There is a need to have a flowchart or document procedures on how Reddinet should be utilized during extreme heat events.	Contra Costa Health	September 2025
7.	Some facilities were opened as cooling centers but did not want to be displayed on the cooling center map.	Consider adding to the Cooling Center Checklist that when a facility opens up as a cooling center it is important to recognize that this facility will be added to	OES/Extreme Weather Working Group	December 2024

		the website to ensure residents can obtain information		
8.	New California regulations regarding animals under Government Code Section 11135 on the types of animals permitted in public facilities.	Socialize this regulation with agencies that open weather relief facilities.	OES/Extreme Weather Working Group	Continuous
9.	Seven out of 58 cooling facilities were pet friendly.	Work with Animal Services to determine what capabilities they have to support cooling centers for people with pets.	OES/ Extreme Weather Working Group.	Continuous
10.	Consider adding BART line(s) on the interactive map to complement the existing bus transportation routes.	Explore the potential of adding more transportation information on the interactive web map.	OES/CCH/GIS	December 2024
11.	There is a need for more social media-ready posts with weather updates.	Evaluating social media toolkits to identify gaps or missing content.	OES/ Joint Information Center	Continuous
12.	There is a need for other languages to support the County's diverse demographics.	Obtain translation services to support emergency response	OES	January 2024
13.	There was a challenge in identifying a Lead PIO as it was unclear who would become the Lead PIO in the absence of the County PIO.	Develop a roster for Lead PIOs that can support the JIC and institute a process for quickly filling the role.	OES/ Joint Information Center	December 2024
14.	The Health Officer wanted to enhance the ability to communicate health advisories through multiple communication platforms	Health Services, CWS, and OES are working together to enhance public alerts and warnings to include public health advisories.	OES/CWS/ Contra Costa Health	Continuous

Appendix A: Extreme Weather Terminology

Definitions

CLEAN AIR CENTERS - A network of locations where residents can find a respite from wildfire smoke during poor air quality.

COOLING CENTERS - Facilities that are made available by public, private, and volunteer organizations as a heat relief station. There is no agreement that these facilities will be exempt from power outages. These facilities are normally open to the public during regular business hours. During periods of extreme high temperatures, hours of operation may be extended beyond business hours but do not provide overnight accommodation.

Excessive Heat Warning: issued within 12 hours of the onset of extremely dangerous heat conditions.

PLACES TO STAY COOL - Places to stay cool can be described as any place that is open to the public that offers relief from excessive heat conditions. Resources are generally not provided.

ReddiNet – The mass notification system that is utilized by Contra Costa County Medical System.

WebEOC – Contra Costa County’s incident management software.

Excessive Heat Warning: issued within 12 hours of the onset of extremely dangerous heat conditions.

Red Flag Warning: this means warm temperatures, very low humidities, and stronger winds are expected to combine to produce an increased risk of fire danger.

Acronyms

BART – Bay Area Rapid Transit

CCHealth – Contra Costa Health

CCRMC – Contra Costa Regional Medical Center

DoIT – Department of Information Technology

EHSD – Employment and Human Services Department

EOC – Emergency Operations Center

EMS – Emergency Medical Services

GIS – Geographic Information System

H3 – Health, Housing, and Homeless Services

HERU – Health Emergency Response Unit

JIC – Joint Information Center

Med/Health – Medical Health Branch

NWS – National Weather Service

OCM – Office of Communications and Media

OES – Office of Emergency Services

PIO – Public Information Officer