EXTREME TEMPERATURE EMERGENCY ANNEX

MARIN COUNTY OPERATIONAL AREA
EMERGENCY OPERATIONS PLAN

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Introduction

Marin County normally enjoys a moderate Mediterranean-type climate ranging from an average low of 41°F to a high of 81°F. However, these are average temperatures and Marin County has historically encountered temperatures in the summer ranging as high as 110°F in 1961 to a low of 20°F in the winter of 1990. As recently as July 2006, Marin County experienced a high temperature of 108°F.

While winter temperatures tend to be mild in Marin County, there have been occasions when they have dropped to below 40°F and a few occasions where they have dropped below freezing. When coupled with heavy rain and wind, these low temperatures can pose significant health risks.

These unexpected extremes of temperature can be dangerous to segments of the population unable to take adequate measures to protect themselves. Extreme temperatures increase the number of heat and cold-related injuries and can cause death. Marin County has developed this Extreme Temperature Annex to help reduce the effects of extreme temperature events.

The purpose of this annex is to establish a system for identifying potential extreme temperature events, establish a mechanism for coordinating response to such an event, and provide decision-makers with options that can be used to prepare and respond to extreme temperature events.

Since this annex is written in general rather than specific terms, it can also serve as a template for local jurisdictions wishing to add an extreme temperature emergency annex to their local emergency plans.

The Extreme Temperature Emergency Annex supports and will be used in conjunction with the Marin Operational Area Emergency Operations Plan (MOA-EOP). The MOA-EOP is based on the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).This document is not intended to and does not create additional obligations for agencies and organizations involved in providing care to vulnerable populations. It also does not describe specific details of planning and response which are contained in other documents. Tasks identified in this annex are to be addressed on an as needed basis and are not dependent upon the formal activation of the Marin Operational Area Emergency Operations Center (MOA-EOC*).*

Definitions

Extreme Temperature Center

Facilities meeting the criteria in Appendix C that can be opened during an extreme temperature emergency to provide relief to affected residents.

Extreme Temperature Emergency

An extreme temperature emergency is defined as weather that is substantially hotter or colder than normal and that, in the opinion of the Department of Health and Human Services (DHHS) Public Health Officer, the Medical Health Operational Area Coordinator (MHOAC) and the Sheriff's Office of Emergency Services, can increase the incidence of mortality and morbidity in affected populations.

Vulnerable population

Individuals possessing any combination of the following characteristics or conditions are at greater risk for experiencing an extreme temperature-attributable adverse health outcome:

1. **Physical constraints:** This at-risk group includes infants, older people (age 65 and older, who may also be less likely to recognize symptoms of excessive heat exposure), the very obese, the bedridden, those with underlying medical conditions (e.g., heart disease, diabetes), those taking certain medications (e.g., for high blood pressure, depression, insomnia), and individuals under the influence of drugs or alcohol.

2. **Mobility constraints:** People with mobility constraints are at higher risk during extreme temperature emergencies if the constraints limit their ability to access appropriately cooled/heated locations. This group includes the very young and the bedridden.

3. **Cognitive impairments:** People with mental illnesses, with cognitive disorders, or under the influence of drugs or alcohol may be unable to make rational decisions that would help limit their exposure to excessive heat or cold or to recognize symptoms of excessive heat or cold exposure.

4. **Economic constraints:** The poor may be disproportionately at risk during extreme temperature emergencies if their homes lack air conditioning or heating or if they are less likely to use available utilities because of the cost. In addition, if the poor disproportionately reside in high crime areas, fear of crime can increase their risks by hindering their willingness to take appropriate responses [e.g., opening doors and windows for circulation, visiting cooling/warming centers].

5. **Social isolation:** Socially isolated individuals are less likely to recognize symptoms of excessive heat or cold exposure. This can delay or prevent treatment and result in more serious health outcomes. Members of this group, which include the homeless and those living alone, may also be less willing or able to reach out to others for help.

Assumptions

- It is the responsibility and authority of the County to ensure that the governmental response to an event of extreme temperature is appropriate.

- The County may initiate specified actions independently, but will communicate to and coordinate those actions with local government.

- The County actions identified in the annex will assist local government (cities, towns and special districts).
- Local governments may have programs to address extreme cold/heat and those programs may vary in organization and operation but are consistent with SEMS and NIMS.
- Nothing in this plan serves to restrict local government operations as long as they are consistent with SEMS and NIMS.

Concept of Operations

General

Marin County uses a three-phase approach to extreme temperature emergencies consistent with the State of California's contingency plans for extreme cold and excessive heat emergencies. These three phases are:

- Phase 1: Seasonal Readiness
- Phase 2: Warning and Preparation
- Phase 3: Emergency Response

Activities during these three phases are coordinated by a task force chaired by the Department of Health and Human Services (see Appendix D), until their Department Operations Center (DOC) and/or Operational Area EOC are activated. Monitoring of potential extreme temperature events is the joint responsibility of the Office of Emergency Services, the Public Health Officer, and the Medical Health Operational Area Coordinator (MHOAC).

The Department of Health and Human Services is the lead agency for extreme temperature events. OES is the lead agency monitoring life-threatening events, including extreme temperatures. In response to indicators of extreme temperature emergencies (see Appendix A and B) DHHS will activate its DOC and may request support from the Sheriff's Office of Emergency Services (OES) to support specific DOC functions. When response demand exceeds DOC capabilities or depending on the severity of the event, the Operational Area Emergency Operations Center (EOC) will be activated. As the DOC and/or the EOC are activated, task force members transition into their assigned DOC/EOC positions.

Beginning with Phase I, the Office of Emergency Services, the Public Health Officer, and the MHOAC will monitor a series of extreme temperature indicators. These indicators include:

- National Weather Service (NWS) warnings and advisories
- Heat/cold related illnesses/deaths above average
- Severe temperature accompanied by power outages/rolling black outs

- Two or more jurisdictions declare temperature related emergencies
- State declares a severe temperature emergency

Indicators specific to the type of event (i.e. cold or heat) are described in Appendix A and B.

While National Weather Service (NWS) forecasts are an important indicator, the NWS is not the sole determinant of an extreme temperature event. For example, a single day of high heat may not trigger an emergency but high temperatures and humidity in excess of three days could. Similarly, a freeze warning may not cause concern but a freeze warning combined with a power outage might. The decision on whether circumstances constitute a potential or actual extreme temperature emergency is made by the Public Health Officer, the MHOAC and OES.

When there is a potential for an extreme temperature event, the Department of Health and Human Services may convene the extreme temperature task force (Appendix D) to develop possible strategies appropriate to the nature of the potential event. In doing so, the task force may consider the strategies suggested in this annex or propose new ones. The decision on which strategies will be implemented will be made by DHHS Director or designee, the Public Health Officer, and the MHOAC.

Phase I: Seasonal Readiness

Seasonal readiness is primarily focused on raising public awareness of the risks of an extreme temperature event in the upcoming season and in preparing county personnel to recognize and respond to such an event.

Conditions for Activation

Phase I is routinely activated at the beginning of the summer and winter seasons to help prevent heat and cold injuries through awareness and preparation.

Options

- Convene extreme temperature task force to review and update plans
- Identify and maintain list of potential extreme temperature centers
- Develop a coordinated public education program for extreme temperatures
- Issue public service announcements through the media
- Provide information on preventing temperature-related injuries on agency websites and through social media
- Provide information through direct mail (e.g. utility bill enclosures, etc.)
- Send notification and prevention tips through schools, businesses and associations

- Post public information tips at hospitals, medical offices, grocery stores, community centers
- Provide outreach to parks and recreation, coaches and outdoor activity venues, senior and day care centers and organizations serving Special Needs Populations
- Monitor extreme temperature indicators (see Appendices A and B)

Public Message

The public messages for Phase I are primarily public service announcements issued by departments and agencies to raise awareness of the potential risks associated with the season. Messages are general in nature and focused on preventing the effects of extreme heat or cold by providing safety awareness and health tips. See Appendix F for examples of these public service announcements.

Phase II: Warning and Preparation

Phase II is initiated when an extreme temperature emergency is expected within the next three days, based on an NWS Excessive Heat/Winter Storm Outlook and/or other indicators. It is characterized by public warnings and preparations by departments and agencies for a response to such an emergency.

Conditions for Activation

Based on an assessment of extreme temperature indicators, OES, the County Public Health Officer, and MHOAC determine that an extreme temperature emergency is likely to occur within three days. Indicators may include the following. More detailed information on indicators and risks can be found in Appendix A and B.

Heat Emergency	Cold Emergency
• NWS Excessive Heat Outlook • NWS Excessive Heat Watch • Data showing weather thresholds associated with increased morbidity (illness) and mortality. • Heat index (heat and humidity). • Predicted high daytime temperatures accompanied with night temperatures of 75°F or more. • Number of consecutive days over 90°F	• NWS Winter Storm Outlook • NWS Winter Storm Watch • NWS Freeze Watch

Options

- Convene extreme temperature task force to develop strategy and action plans for the potential emergency
- Monitor indicators, particularly temperature related injuries and deaths
- Consider activation of the DHHS DOC
- Issue public warnings through media, websites and social media
- Increase outreach and information flow to vulnerable populations
- Identify and prepare to open selected extreme temperature centers
- Issue reminders on treatment protocols to physicians and hospitals
- Identify social workers for potential redeployment to increase contacts with vulnerable populations
- Identify public health nurses for extended outreach to vulnerable populations

Public Message

Public messages in Phase II are directed at warning the public of the imminent hazard and providing specific information on how to reduce their risk of injury. Messages provide information on both prevention and immediate treatment of potential injuries.

Messages may also include information on specific actions being taken by government to prepare for a response.

Phase III: Emergency Response

Phase III is initiated when an extreme temperature emergency is occurring. It is characterized by a coordinated government response to the emergency.

Conditions for Activation

Based on an assessment of extreme temperature indicators, OES, the County Health Officer, and MHOAC determine that an extreme temperature emergency is occurring. Indicators may include the following. More detailed information on indicators and risks can be found in Appendix A and B.

Heat Emergency	Cold Emergency
• NWS Heat Advisory	• NWS Winter Storm Warning
• NWS Excessive Heat Warning	• NWS Severe Weather Statement

Heat Emergency	Cold Emergency
• California Independent System Operator (CALISO) Stage 3 Electrical Emergency • High heat accompanied by electrical blackouts.	• NWS Freeze Warning • NWS Wind Chill Advisory • NWS Wind Chill Warning • Issuance of a NWS Freeze Warning (28°F and below) with a duration of three or more consecutive days. • Issuance of an NWS Extreme Weather Statement identifying objective conditions which in combination may cause cold injury to unprotected humans. • Cal ISO Stage 3 Electrical Emergency lasting more than 5 hours during a period for which a Freeze Warning has been issued by the NWS.

Options

- Convene/continue extreme temperature task force to coordinate inter-agency activities, integrate into DHHS DOC or EOC if activated
- Activate DHHS DOC
- Activate the Marin Operational Area EOC to support response activities
- Activate a Joint Information Center
- Monitor indicators, particularly temperature related injuries and deaths
- Issue public information through media, websites and social media
- Deploy social workers to increase contact with vulnerable populations (e.g. status checks, etc.)
- Deploy public health nurse to increase outreach to vulnerable populations
- Activate extreme temperature centers

Public Message

Public messages during Phase III are oriented towards providing information related to the response. Messages are specific and tell the public how and where they can access

government services (e.g. location of extreme temperature centers, when to use 911 and hospital emergency departments, etc.).

Messages should also include information from Phase II relating to mitigating the effects of the emergency.

Roles and Responsibilities

Activity	Responsible Agency
PHASE I	
Convene extreme temperature task force to review and update plans	DHHS
Identify and maintain list of potential extreme temperature centers	DHHS/OES
Develop a coordinated public education program for extreme temperatures	DHHS
Issue public service announcements through the media	DHHS/PIO
Provide information on preventing temperature-related injuries on agency websites and through social media	DHHS/OES
Provide information through direct mail (e.g. utility bill enclosures, etc.)	DHHS
Send notification and prevention tips through schools, businesses and associations.	DHHS
Post public information tips at hospitals, medical offices, grocery stores, and community centers.	DHHS/PIO
Provide outreach to parks and recreation, coaches and outdoor activity venues, senior and day care centers and organizations serving Special Needs populations.	DHHS
Monitor extreme temperature indicators (see Appendices B and C)	DHHS/OES
PHASE II	
Convene extreme temperature task force to develop strategy and action plans for the potential emergency	DHHS
Monitor indicators, particularly temperature related injuries and deaths	DHHS/OES
Consider activation of the DHHS DOC	DHHS
Issue public warnings through media, websites and social media	DHHS/PIO

Activity	Responsible Agency
Increase outreach and information flow to vulnerable populations	DHHS/OES
Identify and prepare to open selected extreme temperature centers	DHHS
Issue reminders on treatment protocols to physicians and hospitals	DHHS
Identify social workers for potential redeployment to increase contacts with vulnerable populations	DHHS
Identify public health nurses for extended outreach to vulnerable populations	DHHS
PHASE III	
Convene/continue extreme temperature task force to coordinate inter-agency activities, integrate into DHHS DOC or EOC if activated	DHHS
Activate DHHS Department Operations Center	DHHS
***Activate the Marin Operational Area EOC	DHHS/OES
Activate a Joint Information Center	OES
Monitor indicators, particularly temperature related injuries and deaths	DHHS/OES
Issue public information through media, websites and social media	OA EOC/PIO/JIC
Deploy social workers to increase contact with vulnerable populations (e.g. status checks, etc.)	DHHS
Deploy public health nurse to increase outreach to vulnerable populations	DHHS
Activate extreme temperature centers	DHHS

* In the event extreme temperatures cause significant and/or extreme county-wide impact, the Operational Area (OA) EOC may be activated. The OA EOC's staffing flexibility would allow for a partial or a full EOC activation. The key OA EOC components likely to be heavily tasked are listed below, although other staff will be activated as appropriate.

Special Needs Advocate (Access and Functional Needs (AFN) Liaison)

- Provide subject matter guidance shelter staff regarding specialized AFN needs

- Liaison with AFN non-profit and private sector organizations to facilitate specialized resource requests
- Liaison at all levels with Special Needs, Non Government, and Community Based Organizations and individuals

PIO/JIC

- Distribute Shelter Operations messaging
- Be prepared to supply public information to volunteers for shelter and transportation information
- Be prepared to utilize government affiliated Volunteer, Community Based, and Private Sector organizations to conduct alternative public outreach and strategies
- Distribute closing of shelter operations messaging

Care and Shelter (DHHS)

- Lead overall shelter operations, coordinating with all county jurisdictions, American Red Cross, Salvation Army, Non Government, Community Based and all key agencies
- Staff OA EOC Care and Shelter Branch
- Coordinate the activation of shelter locations with the Logistics Section to link to transportation routes
- Coordinate all Shelter Operations logistics, including ADA compliance and staff to satisfy Special Needs/AFN populations
- Conduct Shelter entry screening procedures
- Coordinate shelters to satisfy populations with Specialized Medical Conditions
- Provide PIO/JIC with updated Shelter status and public messaging
- Coordinate with the JIC to conduct public outreach regarding shelter information
- Coordinate with the EOC Law Branch and Transportation Unit to prepare for shelter population movement
- Coordinate with the Medical/Health Branch to address Emergency Medical, Public Health, Mental Health and Hospital related services
- Facilitate resource requests to State Department of Social Services (CDSS), the American Red Cross and other shelter service providers as necessary
- Establish procedures for closure of shelters

Volunteers

- Coordinate directly with Volunteer organizations for affiliated volunteer shelter work
- Coordinate with the Center for Volunteer and Non-Profit Leadership (CVNL) for supplemental volunteer support

Transportation

- Lead overall transportation operations in coordination with shelter locations and objectives
- Coordinate pubic information regarding transportation issues with PIO/JIC
- Coordinate directly with Volunteer organizations for affiliated volunteer shelter work

Supply

- Be prepared to assist with feeding and other shelter needs as needed

After Action Report

Following an extreme temperature event, DHHS will conduct an after action debriefing for participants and develop an after action report identifying areas that could be improved in future operations. This report will be submitted to OES for inclusion in a Corrective Action Plan (CAP). If the DHHS DOC and/or the EOC have been activated, the debriefing and comments should be included in the after action report by the Planning and Intelligence Section and a separate DHHS report is not necessary.

Annex Maintenance

The Marin County Sheriff's Office of Emergency Services delegates responsibility for the update, revision and record of revisions of this Extreme Temperature Emergency Annex document to the Department of Health and Human Services (DHHS). This annex may be modified as a result of post-incident analysis and/or post-exercise critiques. It may also be modified if responsibilities, procedures, laws, rules or regulations pertaining to emergency management, mass care or shelter operations change.

Those agencies and organizations listed as having anticipated roles and responsibilities under this annex shall inform DHHS when they are aware that changes need to be made. The Marin County Board of Supervisors must approve all modifications to this Annex.

References

Environmental Protection Agency, 2006, *Excessive Heat Events Guidebook*

Governor's Office of Emergency Services, 2008, *Contingency Plan for Excessive Heat Emergencies: a supporting document to the California State Emergency Plan*

2008, *Contingency Plan for Extreme Cold/Freeze Emergencies: a supporting document to the California State Emergency Plan*

Health and Safety Code Section:

§101040: Authority to take preventive measures during emergency. "The county health officer may take any preventive measure that may be necessary to protect and preserve the public health from any public health hazard during any "state of war emergency," "state of emergency," or "local emergency," as defined by Section §8558 of the Government Code, within his or her jurisdiction.

"Preventive measure" means abatement, correction, removal or any other protective step that may be taken against any public health hazard that is caused by a disaster and affects the public health….

The county health officer, upon consent of the county board of supervisors or a city governing body, may certify any public health hazard resulting from any disaster condition if certification is required for any federal or state disaster relief program.

§101475: Gives the public health officer authority to take preventive measures to protect public health.

See also, Medical/Health Annex to Marin Operational Area EOP

Appendix A: Extreme Heat Emergencies

Indicators

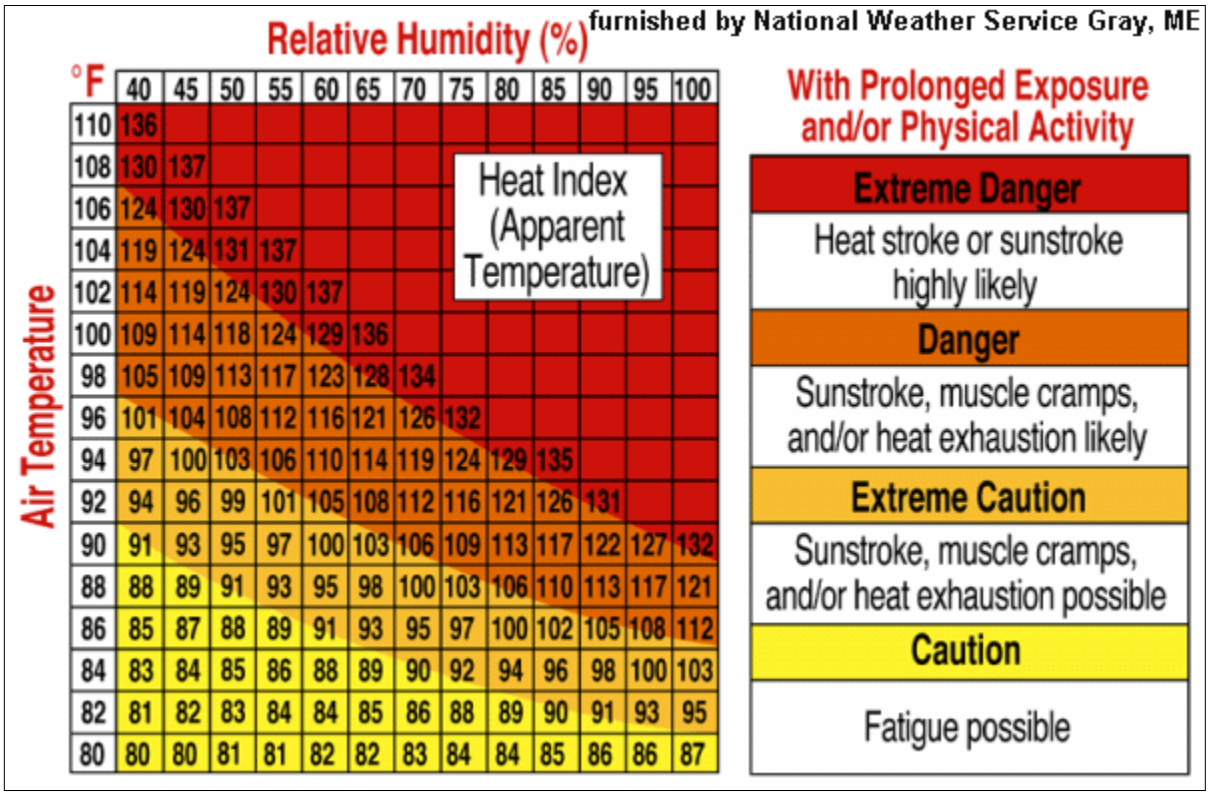
National Weather Service Forecasts

Excessive Heat Outlook: When the potential exists for an excessive heat event in the next 3 to 7 days. An outlook is used to indicate that a heat event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event, such as public utilities, emergency management and public health officials.

Excessive Heat Watch: Conditions favorable for an excessive heat event to meet/exceed heat warning criteria in the next 12 to 48 hours.

Heat Advisory: Heat index of 105°F daytime and/or 80°F nighttime

Excessive Heat Warning: Heat Index at least 115°F for 3 hours or more, with minimum nighttime heat index at or above 80°F or based on the heat health watch warning system.



Other Indicators

- Data showing weather thresholds associated with increased morbidity (illness) and mortality.
- Heat index (heat and humidity).
- California Independent System Operator (CALISO) Stage 3 Electrical Emergency.
- High heat accompanied by electrical blackouts.
- Predicted high daytime temperatures accompanied with night temperatures of 75°F or more.
- Number of consecutive days over 90°F.

Risks

Medical Condition	Symptoms	Responses
Heat cramps	Painful muscle cramps and spasms, usually in muscles of abdomen, arms and legs. Heavy sweating.	Gently stretch and massage affected muscle groups. Stop all activity and sit in a cool place. Drink clear juice or a sports beverage. Consult with a clinician or physician if individual has cardiac problems or cramps do not subside within one hour.
Heat syncope (fainting)	Skin moist and cool. Light-headedness, dizziness, fainting.	Sit or lie down in a cool place. Slowly drink water, clear juice, or a sports beverage.
Heat exhaustion	Heavy sweating, weakness, skin is cool, pale, and clammy. Rapid but weak pulse. Normal temperature possible. Possible muscle cramps, dizziness, fainting, headache, fatigue, nausea, and vomiting.	Move individual out of sun and into shady or air-conditioned location. Lay him or her down, elevate legs, and loosen or remove clothing. Apply cool, wet cloths or use mister and fan. Give sips of cool water or other non-alcoholic beverage without caffeine. Seek medical attention if symptoms worsen or last longer than one hour. Monitor carefully, as can quickly progress to heat stroke.
Heat stroke (sunstroke)	Altered mental state—irritable, personality changes. Rapid heartbeat. Rapid shallow breathing. Possible throbbing headache, confusion, nausea, and dizziness. High body temperature (> 104°F). Rapid and strong pulse possible. Possible unconsciousness. Skin may be hot and dry due to lack of sweating, or moist if caused by exertion.	Heat stroke is a medical emergency. Summon emergency medical assistance or get the individual to a hospital immediately. Delay can be fatal. Move individual to a cooler, preferably air-conditioned, environment. Reduce body temperature with a water mister, covering with cool sheets or sponging. Use air conditioners. Use fans if heat index temperatures are below the high 90s. Remove clothing. If temperature rises again, repeat process. Offer cool water or other non-alcoholic beverage without caffeine.

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Heat Cramps

Muscular pains and spasms due to sweating during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt or other electrolyte levels in muscles causes painful cramps. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat. May also be a sign of heat exhaustion.

Heat Syncope

Usually occurs with prolonged standing or sudden rising from a sitting or lying position.

Heat Exhaustion

Signs and symptoms of heat exhaustion often begin suddenly, sometimes after excessive exercise, heavy perspiration, and inadequate fluid or salt intake. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

Heat Stroke

A life-threatening condition. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

Appendix B: Extreme Cold Emergencies

Indicators

National Weather Service Forecasts

Winter Storm Outlook: Issued prior to a Winter Storm Watch. The outlook is given when forecasters believe winter storm conditions are possible and are usually issued 48 to 60 hours in advance of a winter storm.

Winter Storm Watch: Alerts the public to the possibility of a blizzard, heavy snow, freezing rain, or heavy sleet. Winter Storm Watches are usually issued 12 to 36 hours before the beginning of a Winter Storm.

Winter Storm Warning: Issued when a combination of heavy snow, heavy freezing rain, or heavy sleet is expected. Winter Storm Warnings are usually issued six to 24 hours before the event is expected to begin.

Severe Weather Statement: Issued when the forecaster wants to follow up a warning with important information on the progress of severe weather elements.

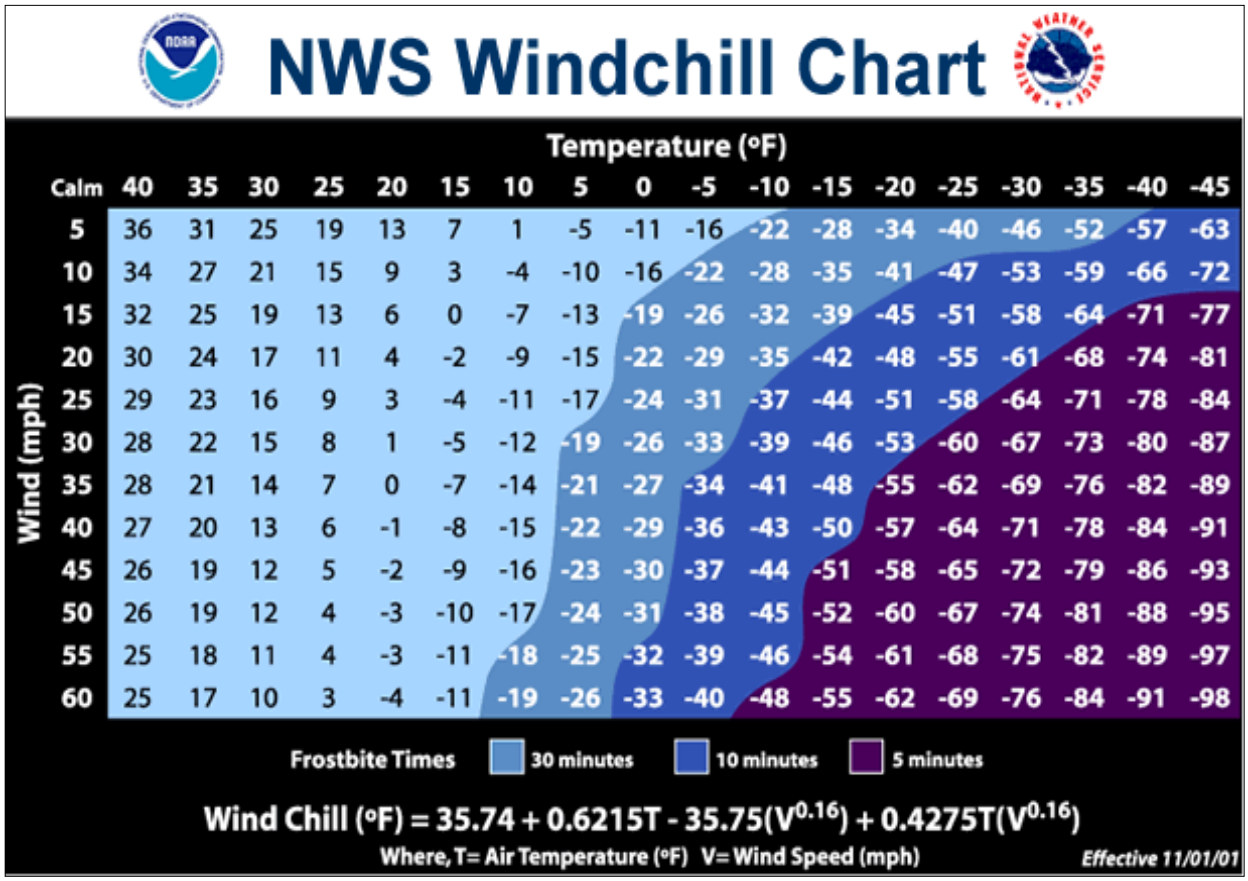
Freeze Watch: Conditions are favorable for a freeze event to meet or exceed Freeze Warning criteria in the next 12 to 48 hours.

Freeze Warning: Any time minimum temperature is expected to be <= 28°F for a minimum of two consecutive hours at two or more locations within the zone.

Wind Chill Advisory: Issued when wind chill temperatures are expected to be between 20 below and 34 degrees below zero.

Wind Chill Warning: Issued when wind chill temperatures are expected to be less than 34 degrees below zero.

One of the gravest dangers of winter weather is wind chill. The wind chill is based on the rate of heat loss from exposed skin by combined effects of wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. Animals are also affected by wind chill.



Other Indicators

- Issuance of a NWS Freeze Warning (28°F and below) with a duration of three or more consecutive days.
- Issuance of an NWS Extreme Weather Statement identifying objective conditions which in combination may cause cold injury to unprotected humans.
- Cal ISO Stage 3 Electrical Emergency lasting more than 5 hours during a period for which a Freeze Warning has been issued by the NWS.
- Other conditions that in the judgment of the Health Officer indicate a higher risk of injury or health impairment to the general public due to cold temperatures.

Risks

Medical Condition	Symptoms	Reponses
Hypothermia	**Adults:** shivering, exhaustion, confusion, fumbling hands, memory loss, slurred speech, drowsiness **Infants:** bright red, cold skin very low energy	Take the person's temperature. If it is below 95°, get medical attention immediately. Get the victim into a warm room or shelter. If the victim has on any wet clothing, remove it. Warm the center of the body first (chest, neck, head and groin) using an electric blanket, if available, or skin-to-skin contact under loose, dry layers of blankets. Warm beverages can help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person. After body temperature has increased, keep the person dry and wrapped in a warm blanket.
Frostbite	a white or grayish-yellow skin area, skin that feels unusually firm or waxy, numbness	Get into a warm room as soon as possible. Immerse the affected area in warm—not hot—water or warm the affected area using body heat. Do not rub the frostbitten area with snow or massage it at all. This can cause more damage. Don't use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.
Carbon monoxide poisoning	The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and altered mental status.	Consult a health care professional immediately. Healthcare professional will administer 100% oxygen until the patient is symptom-free, usually about 4-5 hours.

Hypothermia

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and won't be able to do anything about it.

Hypothermia is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

Victims of hypothermia are often (1) elderly people with inadequate food, clothing, or heating; (2) babies sleeping in cold bedrooms; (3) people who remain outdoors for long periods—the

homeless, hikers, hunters, etc.; (4) people who drink alcohol or use illicit drugs; and (5) people with psychiatric illness.

Frostbite

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

Carbon Monoxide Poisoning

Carbon monoxide (CO) is an odorless, colorless gas that can cause sudden illness and death if inhaled. When power outages occur during emergencies such as winter storms, the use of alternative sources of fuel or electricity for heating or cooking can cause CO to build up in a home, garage, or camper and to poison the people and animals inside. Babies and infants, the elderly, and people with chronic heart disease, anemia or respiratory illness are particularly at risk.

Appendix C Extreme Temperature Center Criteria

There are no established criteria for extreme temperature centers. In addition to the criteria suggested below, planners may also wish to consider the information provided in the *Marin Local Assistance Center (LAC) Handbook* available from OES.

Planners may also wish to consult the National Shelter System (NSS) database in selecting potential sites for extreme temperature centers. While extreme temperature centers are *not* shelters, the NSS database contains information on facilities and their capabilities. Many of the facilities contained in the database could also be used as extreme temperature centers.

The criteria doesn't give information on scale, so one may think if you're considering using a center that it should be open 24/7. In some instances (depending on the weather), you may only need to refer people to existing public facilities that meet the following minimum criteria for a cooling center during the heat of the day rather than opening one 24/7. For example, County H&HS currently has a list of potential cooling centers that have agreed to extend their hours of operation and where people could go to get out of the heat of the day. In other instances, you may choose to open a cooling center 24/7.

The following is a list of important criteria for setting up an extreme temperature center recommended in State contingency plans.

Minimum Criteria

Facilities designated for warming/cooling centers need to meet the following criteria:

- Air conditioning or equivalent (temperature maintained at 79°F) for heat-related emergencies
- Heating or equivalent (temperature maintained at a minimum of 68°F) for cold-related emergencies
- Accessible to people with disabilities / ADA compliant (including bathroom and parking facilities)
- Ample seating appropriate to the jurisdiction
- Access to potable water (drinking fountain, etc)
- Access to 911 services (payphone)
- Publicly advertised
- Parking access
- Proximity to public transit

Suggested Criteria

Suggested criteria are highly desirable and should be considered when establishing an extreme temperature center.

- Back-up generators
- Area for pets
- Secure: Facility has security service
- Communications: Phone (including TDD/TTY), internet access, sign-language interpreters
- Child friendly with play materials, toys and small furniture for children
- Medical Personnel such as nurses and/or aides
- 24 hour, 7 days a week operation
- Large capacity
- Personnel Assistance Services for people with disabilities
- Available televisions, books, games
- Transportation for those lacking their own, including wheelchair accessible services
- Follow-up procedures for those in need of additional services (health care, social services, etc.)
- Veterinary resources available if needed
- Continuous Staffing (registration, coordination 1-2 persons per facility)
- Sleeping capability to include raised cots for accessibility

Appendix D Extreme Temperature Task force

The following individuals, agencies and organizations are potential members of the extreme temperature task force. Actual participants in a specific incident will be determined by DHHS depending on the nature of the emergency. When activated during a specific incident, the task force will be organized according to SEMS principles.

Task Force Members

- Office of Emergency Services
- Homeward Bound
- Marin Interfaith Council
- American Red Cross
- HHS Emergency Medical Services
- Ritter House
- Law Enforcement
- Fire Department/EMS
- Marin Center for Independent Living
- Extreme temperature center facilities directors
- Director, HHS Adult Social Services
- Director, HHS Division of Aging and Adult Services
- Marin Interagency Disaster Coalition
- Director, HHS Public Health Division
- WhistleStop
- Meals of Marin
- Board of Supervisors representative
- County Administrator representative
- Local jurisdiction representatives
- Other Community-based organizations representatives

Appendix E Sample Hotline Script

HEAT EVENT HOTLINE SCRIPT

Welcome to the Marin County Extreme Temperature Emergency Hotline. To hear this message in English please press _(x)__ For Spanish press _(x)__

IF THIS IS A MEDICAL EMERGENCY PLEASE HANG UP and DIAL 9-1-1.

DURING THIS TIME OF HIGH HEAT IT IS IMPORTANT TO STAY WELL HYDRATED AND AVOID STRENUOUS OUTDOOR ACTIVITY. THE FOLLOWING ARE SUGGESTIONS FOR ADULTS, CHILDREN AND THE ELDERLY TO PREVENT HEAT-RELATED INJURY:

1. STAY OUT OF THE SUN.
2. LIMIT OUTDOOR ACTIVITY.
3. WEAR LIGHT COLORED, LOOSE FITTING CLOTHING.
4. DRINK PLENTY OF WATER, JUICE OR SPORTS DRINKS.
5. AVOID ALCOHOLIC OR CAFFEINATED DRINKS.
6. BE AWARE THAT YOUR PRESCRIPTION MEDICATION MAY AFFECT YOUR HEAT TOLERANCE. CHECK WITH YOUR DOCTOR.
7. EAT LIGHT MEALS.
8. WEAR WIDE-BRIMMED HATS WHEN OUTSIDE.
9. TAKE FREQUENT COOL SHOWERS OR BATHS.
10. KEEP YOUR AIR CONDITIONER WELL MAINTAINED.
11. IF YOUR INDOOR TEMPERATURE REMAINS ABOVE 90 DEGREES FAHRENHEIT, SEEK SHELTER IN AN AIR-CONDITIONED BUILDING.

SYMPTOMS THAT NEED IMMEDIATE MEDICAL ATTENTION INCLUDE:

a. PROFUSE SWEATING AND MUSCLE CRAMPING.

b. BODY TEMPERATURE OF 105°F WITH HOT DRY SKIN.

c. CONFUSION OR UNCONSCIOUSNESS.

COLD EVENT HOTLINE SCRIPT

Welcome to the Marin County Extreme Temperature Emergency Hotline. To hear this message in English please press _(x)__ For Spanish press _(x)__

IF THIS IS A MEDICAL EMERGENCY PLEASE HANG UP and DIAL 9-1-1.

DURING THIS TIME OF COLD TEMPERATURES IT IS IMPORTANT TO STAY WARM AND DRY. THE FOLLOWING ARE SUGGESTIONS FOR ADULTS, CHILDREN AND THE ELDERLY TO PREVENT COLD-RELATED INJURY:

1. KEEP MOVING BY EXERCISING BIG MUSCLES (ARMS, LEGS) TO KEEP WARM;
2. AVOID ALCOHOL USE;
3. AVOID ALL TOBACCO PRODUCTS;
4. EAT ALL MEALS TO MAINTAIN ENERGY;
5. DRINK WATER OR WARM NON-CAFFEINATED/ALCOHOLIC FLUIDS TO PREVENT DEHYDRATION;
6. LIMIT THE AMOUNT OF TIME OUTSIDE ON EXTREMELY COLD DAYS;
7. WEAR PROPER CLOTHING;
8. PROTECT FEET, HANDS, HEAD, FACE AND EARS;
9. ENSURE PROPER VENTILATION TO PREVENT CARBON MONOXIDE POISONING

SYMPTOMS THAT NEED IMMEDIATE MEDICAL ATTENTION INCLUDE:

A. SHIVERING,
B. EXHAUSTION,
C. CONFUSION,
D. FUMBLING HANDS,
E. MEMORY LOSS,
F. SLURRED SPEECH,
G. DROWSINESS

Appendix F Sample Press Releases

For Immediate Release
Date:

News Release
Contact: _____
Public Information Officer
Tel:

Stay Safe During Cold Weather

Marin County can expect colder than normal temperatures this winter. Here are a number of steps you can take to prepare your household for cold weather or a power outage:

Stock emergency supplies (blankets, fire extinguisher, first aid kit, flashlight, battery powered radio, extra batteries, manual can opener), as well as several days' supply of canned/prepared foods, medications, and extra drinking water in case your pipes freeze.

Use care when heating your home with a fireplace, wood stove, or space heater, and make sure you have a functioning smoke detector and carbon monoxide detector. Space heaters are associated with approximately 20,000 home fires and 300 deaths each year in the U.S. Select a space heater with an automatic shut-off switch and non-glowing elements, and do not place near drapes, bedding, furniture, or anything else that may catch on fire. Carbon monoxide poisoning kills over 500 Americans a year - never use a gas oven to heat your home or fuel-burning devices such as grills, camp stoves, or generators inside your home or in enclosed areas.

Listen to forecasts to be aware of severe weather predicted for your area. During especially cold weather or a power outage, check daily on elderly neighbors and relatives who live alone. The risk of hypothermia is greatest at very cold temperatures, but can also occur during cooler temperatures when people become chilled from rain, sweat, or cold water. Certain groups - infants, the elderly, the homeless, and people who drink alcohol or use illegal drugs – are at greater risk. Signs include shivering, fatigue, confusion, lack of coordination, and slurred speech; infants may have bright red, cold skin, and very low energy. Seek immediate medical attention if you suspect someone has hypothermia.

Please visit our website at _____ for more information.

For Immediate Release
Date:

News Release
Contact: _____
Public Information Officer
Tel:

Stay Safe During Hot Weather

Marin County can expect hotter than normal temperatures this summer. Here are a number of steps you can take to stay safe during hot weather.

- Stay indoors as much as possible and limit exposure to the sun.
- Stay on the lowest floor out of the sunshine if air conditioning is not available.
- Consider spending the warmest part of the day in public buildings such as libraries, schools, movie theaters, shopping malls, and other community facilities. Circulating air can cool the body by increasing the rate of evaporation of perspiration.
- Eat well-balanced, light, and regular meals. Avoid using salt tablets unless directed to do so by a physician.
- Drink plenty of water. Persons who have heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake.
- Limit intake of alcoholic beverages.
- Dress in loose-fitting, lightweight, and light-colored clothes that cover as much skin as possible.
- Protect face and head by wearing a wide-brimmed hat.
- Check on family, friends, and neighbors who do not have air conditioning and who spend much of their time alone.
- Never leave children or pets alone in closed vehicles.
- Avoid strenuous work during the warmest part of the day. Use a buddy system when working in extreme heat, and take frequent breaks.

For Immediate Release

News Release

Date:

Contact: _____
Public Information Officer
Tel:

Extreme Temperature (Cooling) Centers Opened

In response to the ongoing heat emergency, extreme temperature centers have been opened at the following locations for residents who need to escape the heat.

Location 1 name	Location 2 name	Location 3 name
Address	Address	Address
Hours of operation	Hours of operation	Hours of operation

What is an extreme temperature center?

When the heat index is predicted to be dangerously high, the county may open extreme temperature (cooling) centers in air conditioned facilities like community and senior centers for people seeking relief from the heat.

Who should seek a cooling center?

- Anyone who can't escape the heat. Staying cool is more critical for the very young and the elderly because their bodies are less able to tolerate extremes of temperature.
- Infants and children up to four years of age are particularly sensitive to the effects of high temperatures and rely on others to regulate their environments and provide adequate liquids.
- People 65 years of age or older may not compensate for heat stress efficiently and are less likely to sense and respond to change in temperature.
- People who are overweight may be prone to heat sickness because of their tendency to retain more body heat.
- People who overexert during work or exercise may become dehydrated and susceptible to heat sickness.
- People who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be particularly vulnerable to extreme heat.

Why is it important to seek shelter in extreme heat?

Extreme heat can result in serious illness and even death.

What can be expected at an extreme temperature center?

Many facilities will provide a chair and water only. Things citizens should consider being responsible for:

- Medication such as aspirin/Tylenol. The facility cannot give out ANY medication.
- Snacks - In some cases, centers like those supported by the Red Cross may also provide snacks/food.

How long will the center stay open?

Centers will remain open as long as the heat emergency lasts and people are at risk.

For Immediate Release

News Release

Date:

Contact: _____
Public Information Officer
Tel:

Extreme Temperature (Warming) Centers Opened

In response to the ongoing cold emergency, extreme temperature centers have been opened at the following locations for residents who need to escape the heat.

Location 1 name	Location 2 name	Location 3 name
Address	Address	Address
Hours of operation	Hours of operation	Hours of operation

What is an extreme temperature center?

When temperatures are predicted to be dangerously low, the county may open extreme temperature (warming) centers in heated facilities like community and senior centers for people seeking relief from the cold.

Who should seek a warming center?

- Anyone who can't escape the cold. Staying warm is more critical for the very young and the elderly because their bodies are less able to tolerate extremes of temperature.
- Infants and children up to four years of age are particularly sensitive to the effects of low temperatures and rely on others to regulate their environments.
- People 65 years of age or older may not compensate for cold stress efficiently and are less likely to sense and respond to change in temperature.
- People who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be particularly vulnerable to extreme cold.

Why is it important to seek shelter in extreme heat?

Extreme cold can result in serious illness and even death.

What can be expected at an extreme temperature center?

Many facilities will provide a chair and water only. Things citizens should consider being responsible for:

- Medication such as aspirin/Tylenol. The facility cannot give out ANY medication.
- Snacks - In some cases, centers like those supported by the Red Cross may also provide snacks/food.

How long will the center stay open?

Centers will remain open as long as the cold emergency lasts and people are at risk.

Appendix G Pet Vulnerabilities

Hot Weather

Dogs and cats are designed to conserve heat and are less efficient at cooling than humans. They are in danger of heat stroke at 110° Fahrenheit. Pets' sweat glands are located on the nose and footpads, which are inadequate for cooling on hot days. Panting and drinking water help cooling, but if the air temperature is high, brain and organ damage can occur in 15 minutes. Risk factors for heat stress include body size, age (young and old), breed (short nosed breeds, such as bulldogs), obesity, and existing metabolic, cardiovascular or respiratory disease.

Facts

Car with window rolled down slightly + windows collecting light, trapping heat inside = pressure cooker effect:

Outside air = 85° Fahrenheit

- After 10 minutes: inside car = 102°F
- After 30 minutes: inside car = 120°F

Outside air = 72° Fahrenheit + humidity

- After 30 minutes: inside car = 104°F
- After 60 minutes: inside car = 112°F

Prevention

- Never leave pets in a car on warm days.
- Be alert for any sign of heat stress: heavy panting, glazed eyes, a rapid pulse, unsteadiness, a staggering gait, vomiting, deep red or purple tongue.
- Never leave pets tied up without shade, air circulation, and fresh water.
- Offer a cool place to rest when temperatures are uncomfortable.
- Call animal control or police immediately if an animal is in distress in a car.

Treatment:

- Overheated pets must be cooled immediately.
- Move pet to shade.
- Apply cool water all over body.
- Apply ice packs to neck and chest area.
- Allow licking ice and small amount of water (large amount will cause vomiting).
- Take to veterinarian immediately for evaluation.

Cold Weather

Facts

Domesticated animals require human care for protection from freezing weather. Pets should not be left outdoors in freezing weather or unprotected in wind-chilled open air. Hypothermia and dehydration are the most likely life-threatening conditions for animals in cold weather, with wet conditions and wind-chill greatly adding to cold-stress.

Prevention

- Schedule a veterinarian checkup before temperatures drop below freezing. Chronic illnesses like arthritis can worsen in winter. Very young, old or ill pets with medical conditions like diabetes or serious wounds are more susceptible to cold and injuries.
- Keep pets indoors when the temperature drops below freezing (32 °F). If they must be in the open, provide shelter, warm bedding and a water source that is not frozen. Proper hydration helps pets regulate their body temperature.
- Check your pet's paw pads after walks. Ice crystals can quickly form in paws and ears damaging the tissue, and you won't see signs of the resulting frostbite until days later.
- Wipe paw pads with a wet cloth to remove any antifreeze and salt residues after a walk. Pets will lick this and possibly be poisoned or damage their delicate digestive tissues.
- Learn and watch for the signs of hypothermia or cold injuries. Shivering, whining, limping, slowing down, lying down or burrowing are signals that your pet cannot regulate his body temperature.
- Always honk before turning on engines and moving your car in the winter to scare off any huddled animals from under your car.

Treatment

- Be careful with any frozen tissue and don't rub. Instead, simply soak in warm (not hot) water to try to restore circulation.
- Wrap your pet in a warm blanket to help ease discomfort.
- Take to a veterinarian if you suspect hypothermia, frostbite, injury or illness.