

1. SONOMA COUNTY

1.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact¹

Katrina Braehmer, Supervising Planner
Permit Sonoma
2550 Ventura Avenue
Santa Rosa, CA 95405
Telephone: 707-565-1903
E-mail Address: Katrina.Braehmer@sonoma-county.org

Alternate Point of Contact

Jorge Rodriguez, Supervising Emergency Services
Coordinator
Department of Emergency Management
2300 County Center Drive, Ste B
Santa Rosa, CA 95403
Telephone: 707-565-6095
E-mail Address: Jorge.Rodriguez@sonoma-county.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Mitigation Planning Team Members

Name	Agency/Department	Title
Lisa Hulette	Permit Sonoma	Grants Manager
John Mack	Permit Sonoma	Natural Resource Manager
Shelly Bianchi-Williamson	Permit Sonoma	GIS Supervisor
Caerleon Safford	Permit Sonoma	Department Analyst/Fire Prevention
Chris Godley	Department of Emergency Management	Director

1.2 JURISDICTION PROFILE

1.2.1 Location and Features

Sonoma County, the most northerly of the nine counties in the San Francisco Bay Region, is located along the Pacific coastline about 40 miles north of San Francisco and the Golden Gate Bridge. At just over 1,500 square miles, it is the largest of the nine Bay Area counties. Sonoma County is bordered by the Pacific Ocean on the west, Marin County and San Pablo Bay to the south, Solano, Napa and Lake Counties to the east, and Mendocino County to the north.

¹ This annex was updated in June 2023, including updates to the Primary and Alternate Points of Contact.

The climate of Sonoma County is determined by the marine (ocean) airflow and the effects of geography in diverting that airflow. During an average summer there are many days when fog maintains a band of cold air all along the coastline and cold breezes blow a fog bank in through the Petaluma gap northward toward Santa Rosa, and northwestward toward Sebastopol. It also moves around Sonoma Mountain, not quite reaching Glen Ellen. This fog bank is accompanied by a rapid decrease in temperature which can be as much as 50 °F. The time of day when this occurs and the duration of the fog designates three distinct major climatic zones: Marine, Coastal Cool, and Coastal Warm. Several microclimates also exist especially near the borders of the three major zones. Microclimates can be designated by elevation, air drainage, proximity to mountain peaks, and sun exposure. Chilling hours (below 45 °F) range from 700 to 1,850 hours and average 1,300 hours per year.

1.2.2 History

Sonoma County was incorporated in January 1850 as one of California’s original eighteen missions. Before the European settlement, what is today Sonoma County was inhabited by the Pomo, Miwok, and Kashia Indians. In 1812, the Russians established the short-lived Fort Ross along the coast north of the Russian River. Further east, the Sonoma Mission was established during the Mexican period in 1823. Shortly afterwards, Sonoma became the county’s first town, a pueblo, under General Mariano Vallejo. Around the turn of the century, the Russian River developed as a vacation resort, a destination for those in the San Francisco Bay Area. During this time, Santa Rosa also enjoyed an increase in population and importance as the center of finance and county government. Until World War II, the poultry industry, the processing of local fruit, and the production of hops sustained the economy throughout the county. In 1935, Sonoma County ranked tenth in the nation in overall agricultural production. Today the southwestern part of the county continues to support cattle grazing and dairy farms. Toward the north many of the ranches and orchards have been replaced with acres of vineyards and thriving winery operations that rival Napa County. The Russian River area still caters to vacationers and the cities along the freeway continue to expand to provide housing and services with new subdivisions, business parks, and shopping centers (Sonoma County, 2020).

1.2.3 Governing Body Format

Sonoma County Board of Supervisors sits as the governing board of Sonoma County and of various special jurisdictions such as the Sonoma County Water Agency, the Agricultural Preservation and Open Space District, County Sanitation Districts, and the Community Development Commission. The Board is composed of five supervisors elected from supervisorial districts. Each supervisor serves a four-year term (Sonoma County, 2020).

The Sonoma County Board of Supervisors assumes responsibility for the adoption of this plan; Permit Sonoma and Sonoma County Department of Emergency Management will oversee its implementation.

1.3 CURRENT TRENDS

1.3.1 Population

According to the United States Census Bureau, the population of Sonoma County as of July 2019 was 494,336. Since 2010, the population has grown at an average annual rate of 2.2 percent.

1.3.2 Development

Since the completion of the last Hazard Mitigation Plan in 2017, development has continued at a steady pace with an average of approximately 4,000 completed building permits per year. Much of this activity is improvements to existing structures and residences. The approximate number of completed new residential units has increased over time from 235 in 2017 to 550 in 2019. Reconstruction of residences destroyed by wildfires during the three-year time is well underway and is a significant percentage of development activity.

Table 1-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 1-2. Recent and Expected Future Development Trends

Criterion	Response																														
<p>Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i></p>	<p>No</p> <p>In general, the county loses land to incorporated cities as a result of annexation</p>																														
<p>Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i></p>	<p>No</p> <p>N/A</p> <p>N/A</p>																														
<p>Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i></p>	<p>Yes</p> <p>The County is currently preparing a draft EIR to analyze the possible rezoning of 59 sites countywide for higher-density housing to add to the next Housing Element site inventory. The EIR identified potentially significant wildfire risk-related impacts due to the proximity of some of the potential sites to moderate, high, and very high fire hazard severity zones.</p> <p>The County also has several specific plans in progress at the time of this plan's preparation. An update of the Airport Industrial Area Specific Plan addresses the development of several opportunity sites within the urbanized area. Some sites within the planning area are subject to flood risks.</p> <p>The Springs Specific Plan, in progress for a 180-acre area in the Sonoma Valley, contemplates future development in areas that may be subject to wildfire and landslide risk.</p> <p>The area addressed by the Sonoma Developmental Center Specific Plan underway includes historic structures that may need seismic retrofitting.</p>																														
<p>How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?</p>	<table border="1"> <thead> <tr> <th></th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>Single Family</td> <td>N/A</td> <td>N/A</td> <td>230</td> <td>193</td> <td>506</td> </tr> <tr> <td>Multi-Family</td> <td>N/A</td> <td>N/A</td> <td>5</td> <td>171</td> <td>49</td> </tr> <tr> <td>Other (commercial, mixed use, etc.)</td> <td>N/A</td> <td>N/A</td> <td>3,467</td> <td>3,894</td> <td>4,169</td> </tr> <tr> <td>Total</td> <td>N/A</td> <td>N/A</td> <td>3,702</td> <td>4,258</td> <td>4,724</td> </tr> </tbody> </table>		2015	2016	2017	2018	2019	Single Family	N/A	N/A	230	193	506	Multi-Family	N/A	N/A	5	171	49	Other (commercial, mixed use, etc.)	N/A	N/A	3,467	3,894	4,169	Total	N/A	N/A	3,702	4,258	4,724
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<p>Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.</p>	<p>With the excepting of development permits within the FEMA designated Special Flood Hazard Area pursuant to the requirements for the National Flood Insurance program, Sonoma County does not currently track development permits by hazard area.</p>																														

Criterion	Response
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	New residential and building potential is generally limited. The majority of the County is under agricultural or rural zoning without access to sewer and water services. Limited residential potential exists within sanitation district boundaries. Periodically, the County will rezone sites with access to services as they become available to create more potential housing sites.

1.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in Table 1-3.
- Development and permitting capabilities are presented in Table 1-4.
- An assessment of fiscal capabilities is presented in Table 1-5.
- An assessment of administrative and technical capabilities is presented in Table 1-6.
- An assessment of education and outreach capabilities is presented in Table 1-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-8.
- Classifications under various community mitigation programs are presented in Table 1-9.
- The community’s adaptive capacity for the impacts of climate change is presented in Table 1-10.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions.

Table 1-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	No
Comment:	<i>Sonoma County Code (SCC), Chapter 7, Article II, section 7-13, adopts the suite of CA Building Codes. Ord. No. 6295, § I, 12-2-2019</i>			
Fire Safety Laws	Yes	Yes	Yes	Yes
Comment:	<ul style="list-style-type: none"> • 2019 California Fire Code as adopted with local amendments in Sonoma County Code Chapter 13. • Government Code 4290-4291 • California Department of Forestry and Fire Protection (Board of Forestry) regulations that apply to the State Responsibility Area throughout Sonoma County. These laws cover 70% of Sonoma County and impact access, emergency water supplies, fire breaks and defensible space. These regulations also ensure subdivision safety and adequate ingress and egress. The Board of Forestry may be offering significant grant funds to communities that incorporate fire safety best practices to help vulnerable and socially disadvantaged communities ensure fire safety. • Sonoma County Code Chapter 13A (vegetation management on improved and unimproved parcels) 			

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Zoning Code <i>Comment:</i> SCC, Chapter 26, Article 1-100, Ord. No. 6140, § II(Exh. B), 1-5-2016 Chapter 26C (Coastal Zoning Code) Coastal Commission has another Jurisdiction authority.	Yes	Yes	Yes	Yes
Subdivisions <i>Comment:</i> SCC, Chapter 25, Articles 1-7, Ord. No. 5404 § 2, 2003	Yes	No	No	Yes
Stormwater Management <i>Comment:</i> SCC, Chapter 11A, Ord. No. 5819, § 6, adopted December 12, 2009	Yes	No	No	Yes
Post-Disaster Recovery <i>Comment:</i> SCC Chapter 40, SONOMA COMPLEX FIRE DISASTER RECOVERY SCC, Chapter 40A, KINCADE FIRE DISASTER RECOVERY SCC, Chapter 40B, COVID-19 RECOVERY SCC, Chapter 40C, LNU LIGHTNING COMPLEX FIRES RECOVERY SCC, Chapter 40D—GLASS INCIDENT DISASTER RECOVERY	Yes	No	No	Yes
Real Estate Disclosure <i>Comment:</i> CA State Civil Code 1102 requires disclosure for all sales of real property. Enforcement is not under the authorities of Sonoma County	No	Yes	Yes	No
Growth Management <i>Comment:</i> The General Plan is the blueprint for land use in unincorporated Sonoma County. It includes maps that show where agricultural, residential, commercial, and other land uses will be located, and a series of policies that guide future decisions about growth, development and conservation of resources. The General Plan provides the basis for development while maintaining the quality of life that Sonoma County residents treasure. Adopted by Resolution No. 08-0808 of the Sonoma County Board of Supervisors, September 23, 2008. Amended by Resolution No. 16-0283 on August 2, 2016	Yes	No	Yes	Yes
Site Plan Review <i>Comment:</i> SCC, Chapter 25, Article III, Ord. No. 5404 § 2, 2003	Yes	No	No	No
Environmental Protection <i>Comment:</i> SCC, Chapter 23A, Articles I-V, (Ord. No. 3411 § II	Yes	No	No	Yes
Flood Damage Prevention <i>Comment:</i> SCC, Chapter 7B—Ord. No. 5700 § 1, 2007	Yes	No	No	Yes
Emergency Management <i>Comment:</i> SCC, Chapter 10, Articles I-III, Ord. 5761 § 1, 2007	Yes	No	Yes	Yes
Climate Change <i>Comment:</i> Climate Change Action Resolution No. 18-0166. On May 8, 2018, the Board of Supervisors of Sonoma County adopted the Climate Change Action Resolution to support a county-wide framework for reducing greenhouse gas emissions and to pursue local actions that support the identified goals therein.	Yes	No	No	Yes
Other <i>Comment:</i> SCC, Chapter 7D3—WATER EFFICIENT LANDSCAPE, Ord. No. 6138, § I(Exh. A), 12-8-2015 SCC, Chapter 7D4—SMALL RESIDENTIAL ROOFTOP SOLAR ENERGY SYSTEM REVIEW PROCESS SCC, Chapter 23—RIVERS AND STREAMS	Yes	No	No	Yes
Planning Documents				
General Plan <i>Is the plan compliant with Assembly Bill 2140?</i> Yes <i>Comment:</i> Public Safety Element	Yes	No	Yes	Yes
Local Coastal Plan <i>Comment:</i> Plan has separate authority from the General plan, relevant policies, and is an opportunity for integration. Coast Commission has authority	Yes	Yes	Yes	Yes
Capital Improvement Plan <i>How often is the plan updated?</i> Yearly <i>Comment:</i> Capital Improvement Plan for 2020-2025	Yes	No	No	Yes

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Disaster Debris Management Plan <i>Comment: State's Consolidated Debris Removal Program and the County's Department of Transportation of Public Works is developing a Sonoma County Debris Management Plan (in process)</i>	No	Yes	No	Yes
Floodplain or Watershed Plan <i>Comment: The County of Sonoma has been awarded a Pre-Disaster Mitigation grant from the Federal Emergency Management Agency (FEMA) for an in-depth study of the flood threat near Villa Grande along the Russian River.</i>	Pending	No	No	Yes
Stormwater Plan <i>Comment: Southern Sonoma Storm Water Resources Plan, 2019</i>	Yes	No	No	Yes
Urban Water Management Plan <i>Comment: Urban Water Management Plan, 2015</i>	Yes	No	No	Yes
Habitat Conservation Plan <i>Comment: SCC, Chapter 26, Article 65. The RC combining zone is established to protect biotic resource communities, including critical habitat areas within and along riparian corridors, for their habitat and environmental value, and to implement the provisions of the General Plan Open Space and Resource Conservation and Water Resources Elements.</i>	Yes	No	No	Yes
Economic Development Plan <i>Comment: Strategic Sonoma Action Plan, 2018</i>	Yes	No	No	Yes
Shoreline Management Plan <i>Comment: Local Coastal Plan, 2001</i>	Yes	No	No	Yes
Community Wildfire Protection Plan <i>Comment: 2016 CWPP Complete. The update to the 2016 CWPP was approved by the Sonoma County Board of Supervisors in May 2023, and is incorporated by reference into the Sonoma County annex of the MJHMP</i>	Yes	No	No	Yes
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment: The Regional Climate Protection Authority collaborated with a countywide Staff Working Group under the direction of the Regional Climate Protection Authority Board of Directors to develop a document entitled, Climate Action 2020 Plan: A Regional Program for Sonoma County Communities.</i>	Yes	No	Yes	Yes
Emergency Operations Plan <i>Comment: Sonoma County/Operational Area Emergency Operations Plan, 2021</i>	Yes	No	Yes	Yes
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment: Part of the Bay Area Urban Areas Security Initiative</i>	No	Yes	No	No
Post-Disaster Recovery Plan <i>Comment: Sonoma County Recovery & Resiliency Framework, 2017</i>	Yes	No	No	Yes
Continuity of Operations Plan <i>Comment: Sonoma County/COOP Plan 2018</i>	Yes	No	No	Yes
Public Health Plan <i>Comment: The Healthcare Disaster Planning Forum meets quarterly to discuss planning and coordination of emergency preparedness and response for disasters affecting the health of the public. Formed in 2002, membership includes local healthcare facilities and agencies, the Santa Rosa Junior College Health Program, the Sonoma County Departments of Health Services and Emergency Services, and other partners in the county health system.</i>	Yes	No	No	Yes

Table 1-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Permit Sonoma
Does your jurisdiction have the ability to track permits by hazard area?	The County has the ability but is not currently doing so, with the exception of development within the mapped flood zone.
Does your jurisdiction have a buildable lands inventory?	No

Table 1-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	All of these services are provided by Taking entities or service providers within the County.
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Has not occurred in the past
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 1-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	General Services/Facilities Development & Management/Capital Projects Manager, Transportation and Public Works/Land Development/Engineering Technician & Engineer, Permit Sonoma
Engineers or professionals trained in building or infrastructure construction practices	Yes	Permit Sonoma, Transportation and Public Works, Community Development Commission
Planners or engineers with an understanding of natural hazards	Yes	Permit Sonoma; Transportation and Public Works, Department of Emergency Management, Permit Sonoma, Fire Prevention
Staff with training in benefit/cost analysis	Yes	Multiple Departments
Surveyors	Yes	Multiple Departments
Personnel skilled or trained in GIS applications	Yes	Permit Sonoma Department Information Service; County Information Service Department, Transportation and Public Works/GIS Technician
Scientist familiar with natural hazards in local area	Yes	Permit Sonoma, Sonoma County Agricultural Preservation and Open Space District, Department of Emergency Management, Community Development Commission; Transportation and Public Works
Emergency manager	Yes	Christopher Godley, CEM; Director, Department of Emergency Management
Grant writers	Yes	Permit Sonoma, Grant Manager, Transportation and Public Works, Grant Manager, Analyst, Administrative Aide, Engineer
Other	N/A	General Services/Facilities Development & Management/Capital Projects Manager

Table 1-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe.</i>	Yes SoCoAdapts.org and Hazard Mitigation Plan Update – https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation-Update/ Personal/home information also at SoCoEmergency.org Sonoma County Community Wildfire Protection Plan (CWPP), https://permitsonoma.org/sonomacountycwpp and CWPP Hub Site, https://sonoma-county-cwpp-hub-site-sonomacounty.hub.arcgis.com/
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe.</i>	Yes Facebook, Twitter and NextDoor
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe.</i>	Yes Sonoma County Emergency Council Community Action Councils, Citizens Organized to Prepare for Emergency (COPE), Community Emergency Response Team (CERT)
Do you have any other programs already in place that could be used to communicate hazard-related information? <i>If yes, briefly describe.</i>	Yes DEM is working on a Wildfire Watch Camera system and monitoring project funded by Cal OES/FEMA. Sonoma County also has a partnership with U. Nevada Reno/UCSD Scripps
Do you have any established warning systems for hazard events? <i>If yes, briefly describe.</i>	Yes SoCo Alert, Integrated Public Alert & Warning System, NOAA Weather Radio, Nixle

Table 1-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Permit Sonoma
Who is your floodplain administrator? (department/position)	Permit Sonoma, Deputy Director
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2007
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i>	Exceeds 1-Foot of Freeboard, Lower substantial Improvement thresholds
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	Not known at this time.

Criterion	Response
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	Yes A preliminary FIRM that was produced under the RiskMAP program was in process at the time of this plan update
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	No The County has prepared its own mapping that better reflects current and future conditions along the Russian River. The effective FEMA Flood Insurance Rate Map (FIRM) does not reflect future conditions.
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i>	Yes Training to any degree is always welcome
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> <i>If no, is your jurisdiction interested in joining the CRS program?</i>	Yes Yes N/A
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> <i>What is the premium in force?</i>	2,236 \$566,074,500 \$3,117,241
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i>	6,545 \$116,836,034

a. According to FEMA statistics as of 10/13/2020

Table 1-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	06097	N/A
DUNS #	Yes	080126444	N/A
Community Rating System	Yes	10	10/1/1992
Building Code Effectiveness Grading Schedule	Yes	2/2	11/19/2020
Public Protection	Yes	See Individual FD Ratings	N/A
Storm/Tsunami Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 1-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating ^a
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts <i>Comment: Staff participate in regional and local working groups, and regularly participate in outside training</i>	High
Jurisdiction-level monitoring of climate change impacts <i>Comment: Monitoring of climate change impacts will increase as staff gains access to resources and training</i>	Medium
Technical resources to assess proposed strategies for feasibility and externalities <i>Comment: Some resources are achieved in house but additional training will increase this ability</i>	Medium
Jurisdiction-level capacity for development of greenhouse gas emissions inventory <i>Comment: Some staff expertise exists. Additional resources may be needed.</i>	Medium

Criterion	Jurisdiction Rating ^a
Capital planning and land use decisions informed by potential climate impacts <i>Comment: Potential climate impacts inform decision-making</i>	High
Participation in regional groups addressing climate risks <i>Comment: The County has multiple departments participating in regional groups addressing climate risks</i>	High
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes <i>Comment: The County of Sonoma has an adopted Resolution with targets applied in land use, development, and other decision-making</i>	High
Identified strategies for greenhouse gas mitigation efforts <i>Comment: The County General Plan 2020 calls for the development of a Greenhouse Gas Emissions Reduction Program.</i>	High
Identified strategies for adaptation to impacts <i>Comment: Additional studies would inform additional adaptation strategies</i>	Medium
Champions for climate action in local government departments <i>Comment: The Board of Supervisors has identified climate action as a high priority.</i>	High
Political support for implementing climate change adaptation strategies <i>Comment: The County has strong local advocacy for implementation of climate adaptation strategies.</i>	High
Financial resources devoted to climate change adaptation <i>Comment: The County often seeks outside funding for climate adaptation projects and studies</i>	Medium
Local authority over sectors likely to be negative impacted <i>Comment: The County has many local advocates and grassroots efforts related to climate change adaptation.</i>	High
Public Capacity	
Local residents knowledge of and understanding of climate risk <i>Comment: The County has many local advocates and grassroots efforts related to climate change adaptation.</i>	High
Local residents support of adaptation efforts <i>Comment: The County has many local advocates and grassroots efforts related to climate change adaptation.</i>	High
Local residents' capacity to adapt to climate impacts <i>Comment: The County has many local advocates and grassroots efforts related to climate change adaptation.</i>	High
Local economy current capacity to adapt to climate impacts <i>Comment: Some infrastructure is constrained.</i>	Medium
Local ecosystems capacity to adapt to climate impacts <i>Comment:</i>	Medium

a. High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement; Low = Capacity does not exist or could use substantial improvement; Unsure= Not enough information is known to assign a rating.

1.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- County’s Emergency Operation Plan
- General Plan pursuant to AB2140
- Sonoma County Op Area Hazardous Material Incident Response Plan
- Sonoma County Oil Spill Contingency Plan
- Dam Inundation Contingency Plan
- 2016 Sonoma County Community Wildfire Protection Plan²
- Sonoma County General Plan

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Future General Plan updates
- Future Specific or Area Plans or updates to existing plans
- County Capital Facilities Planning
- Sonoma County Five-Year Strategic Plan
- Local Coastal Plan
- Update to the 2016 Sonoma County Community Wildfire Protection Plan³

1.6 RISK ASSESSMENT

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-11 lists past occurrences of natural hazards for which specific damage was recorded in Sonoma County.

Table 1-11. Historical Sonoma County Natural Hazard Events

Year	Event Name	Dates	EOC Activated	Gubernatorial Declaration	Presidential Declaration
1964	Heavy Rains and Flooding	December 24			✓
1969	Severe Storms, Flooding	January 26			✓

² The update to the 2016 Sonoma County Community Wildfire Protection Plan (CWPP) was approved by the Sonoma County Board of Supervisors in May 2023. The 2023 CWPP is incorporated by reference into this Sonoma County annex of the MJHMP. MJHMP recommendations are included in the 2023 CWPP.

³ This is completed. The update to the 2016 Sonoma County Community Wildfire Protection Plan (CWPP) was approved by the Sonoma County Board of Supervisors in May 2023. MJHMP recommendations are included in the 2023 CWPP.

Year	Event Name	Dates	EOC Activated	Gubernatorial Declaration	Presidential Declaration
1981-1982	Severe Storms, Flood, Mudslides, High Tide	December 19 – January 8			✓
1983	Coastal Storms, Floods, Slides, Tornadoes	January 21 – March 30			✓
1986	Severe Storms, Flooding	February 12 – March 10			✓
1990-1991	Freeze of '91	December 90 – February 91		✓	✓
1993	Flood of '93	January 20-25	✓	✓	✓
1994	Fishing Emergency	May – September		✓	✓
1995	Flood of '95, Part 1	January 8-31	✓	✓	✓
1995	Flood of '95, Part II	March 7-15	✓	✓	✓
1995	December Winter Storm	December 11-12	✓		
1996	February Winter Storm	February 4-5	✓		
1996	Cavedale Fire	July 31 – August 20	✓		
1996	Jenner Sandbarrier	July 31 – August 20			
1996	Porter Creek Fire	October 27-28	✓		
1996-1997	New Year's Flood	December 30, 1996 – January 4, 1997	✓	✓	✓
1997	Superbowl Flood	January 25	✓		
1998-2000	Flood of '98/ Rio Nido Debris Flow	February 2, 1998 – January 4, 2000	✓	✓	✓
1999	February Winter Storm	February 8-10		✓	
2002-2003	December Winter Storms	December 17, 2002 – April 8, 2003			
2004	Geysers Fire	September 3-8	✓		
2005-2006	New Year's Floods	December 31, 2005 – January 3, 2006	✓	✓	✓
2006	Late Spring Storms	March 29 – April 16		✓	✓
2007	SF Oil Spill	November 7		✓	
2009	H1N1 Influenza Pandemic	April – May	✓		
2011	Great Tohoku Tsunami	March 11	✓	✓	✓
2012	Holiday Decoration Flood	December 2	✓		
2014-2016	Drought	February 25		✓	
2014	South Napa Earthquake	August 24	✓	✓	✓
2014	December Winter Storm	December 11-12	✓		
2015	Valley Fire	September 12-25	✓	✓	✓
2017	Severe Winter Storms, Flooding, and Mudslides	January 3-12	✓		✓
2017	Severe Winter Storms, Flooding, Mudslides	February 1-23	✓	✓	✓
2017	LNU Complex Fires	October 8-31	✓	✓	✓
2018	PG&E Power Shutoff	October	✓		
2019	Severe Winter Storms, Flooding, Landslides, and Mudslides	February 24 – March 1	✓	✓	✓
2019	PG&E Power Shutoffs	September – November	✓		
2019	Kincadee Wildfire	Oct. 23 – November 7	✓	✓	
2020	COVID-19 Pandemic	January 20 – present	✓	✓	✓
2020	LNU Lightning Wildfires	Aug. 18 – September 26	✓	✓	✓
2020	PG&E Power Shutoffs	September – October	✓		

Year	Event Name	Dates	EOC Activated	Gubernatorial Declaration	Presidential Declaration
2020	Glass Wildfire	September 28 – October 5	✓	✓	✓

Sources: Sonoma County Department of Emergency Management, www.gov.ca.gov, www.fema.gov/disaster

1.6.2 Hazard Risk Ranking

The Risk Assessment for the unincorporated area of the County has been segregated into 5 areas designated by County Supervisor District. Tables 1-12a, to 1-12e show the risk ranking results by Supervisorial District; Table 1-12f presents the aggregate ranking for the entire unincorporated of the County. These are hazard rankings of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 1-12a. Hazard Risk Ranking for the 1st Supervisorial District

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Wildfire	45	High
2	Landslide	42	High
3	Earthquake	36	High
4	Severe Weather	30	Medium
5	Flood	18	Medium
5	Sea Level Rise	18	Medium
6	Dam Failure	12	Low
7	Drought	6	Low
8	Tsunami	0	None

Table 1-12b. Hazard Risk Ranking for the 2nd Supervisorial District

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	36	High
2	Severe Weather	30	Medium
3	Landslide	24	Medium
4	Wildfire	18	Medium
4	Flood	18	Medium
4	Sea Level Rise	18	Medium
5	Dam Failure	16	Medium
6	Drought	6	Low
7	Tsunami	3	Low

Table 1-12c. Hazard Risk Ranking for the 3rd Supervisorial District

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	36	High
2	Wildfire	35*	High
3	Severe Weather	30	Medium
4	Flood	24	Medium
5	Landslide	18	Medium
6	Dam Failure	12	Low
7	Drought	6	Low
7	Sea Level Rise	0	None
7	Tsunami	0	None

* Quantitative rankings have been qualitatively adjusted based on local experience and knowledge.

Table 1-12d. Hazard Risk Ranking for the 4th Supervisorial District

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Landslide	30*	Medium
2	Earthquake	36	High
3	Wildfire	35*	High
3	Severe Weather	30	Medium
4	Dam Failure	26	Medium
5	Flood	33*	High
6	Drought	16*	Medium
7	Sea Level Rise	0	None
7	Tsunami	0	None

* Quantitative rankings have been qualitatively adjusted based on local experience and knowledge.

Table 1-12e. Hazard Risk Ranking for the 5th Supervisorial District

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Landslide	54	High
2	Earthquake	34	Medium
3	Wildfire	35*	High
3	Severe Weather	30	Medium
4	Flood	33	High
5	Dam Failure	24	Medium
6	Sea level Rise	18	Medium
7	Tsunami	6	Low
7	Drought	6	Low

* Quantitative ranking has been qualitatively adjusted based on local experience and knowledge.

Table 1-12f. Hazard Risk Ranking-Aggregate Unincorporated County

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	36	High
1	Landslide	36	High
2	Wildfire	35	High
3	Severe Weather	30	Medium
4	Flood	21	Medium
5	Dam Failure	18	Medium
6	Drought	11	Low
7	Sea Level Rise	11	Low
8	Tsunami	2	Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for the jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Wildfire

The 2023 Sonoma County Community Wildfire Protection Plan (CWPP) is incorporated by reference into the Sonoma County Annex of the MJHMP, and contains detailed jurisdiction-specific wildfire hazard, risk, and vulnerability information.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 904 as of 3/28/2021
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 261 as of 3/28/2021
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: Unknown at this time.

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- A lack of County facilities and resources outside of the central Santa Rosa area limits the capacity of the County to support and coordinate response efforts in locations that have been historically isolated by disaster events.
- Community disaster preparedness education and training efforts have not been completely successful in identifying and reaching individuals with access and functional needs or communities facing economic or cultural barrier challenges (ex. migrant farm laborers)

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

1.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-13 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Amend General Plan Safety Element Hazard maps to reflect updated mapping of hazard areas identified by this Hazard Mitigation Plan, FEMA, CAL FIRE, or the CA Seismic Hazards Mapping Program. Comment: The General Plan Safety Element is currently in the update process			✓	SC-1
Update County websites to provide public access to parcel specific natural hazard information and educational materials that identify ways to reduce hazards. Comment: This action has been completed as part of this plan update with the development of the Story-map and plan website. This action will be maintained as part of the plan implementation and maintenance strategy for this plan update	✓			
Utilize hazard mitigation information presented in the Sonoma County Climate Action Plan 2020 and Local Climate Adaptation Policy Guide for Local Governments (Cal OES) to reduce risks exacerbated by climate change and to adapt to climate change impacts. Integrate climate adaptation actions across regional and local General Plan Public Safety Elements, Coastal Plans, mitigation planning efforts, and infrastructure planning and development. Support Countywide greenhouse gas reduction initiatives outlined in the Community Climate Action Plan and led by the Regional Climate Protection Authority Comment:			✓	SC-2
Incorporate digital FEMA Flood Insurance Rate Maps (FIRMS) and maintain updated flood hazard maps in County GIS. Review and update the County F1 (Floodway) and F2 (Floodplain) Zoning Combining Districts accordingly. Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objective # 8 of this plan update.		✓		
Request a FEMA prepared updated flood insurance study analysis of the Russian River flood plain. Utilize an in-depth record of USGS flow data and LIDAR-generated topographical base tied to the NAD88 vertical datum and other sources of A PRMD 2016-2021 TBD information as available. Comment:			✓	SC-3
Improve flood and topographic mapping along the Russian River. Re-evaluate hydrologic floodways and recurrence levels. Comment: This action was combined with the action above and is being carried over as action SC-3			✓	SC-3
Work with stakeholders and the general public to develop and implement a long-term strategy, consistent with Policy PS-2d of the GP2020 Safety Element, to reduce repetitive flood losses in the Russian River basin. This strategy shall be incorporated into future updates of the Local Hazard Mitigation Plan. Comment:			✓	SC-4
Consider the adoption of code regulations, policies, procedures, or interagency Memorandums of Understanding to set forth requirements and procedures applicable to the repair and reconstruction of structures damaged by natural and man-made disasters which will facilitate disaster recovery Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Expand the "Geologic Hazard" Combining District or develop new Combining District(s) to incorporate all types of geological hazards including areas of high ground-shaking, landslide and liquefaction, and coastal bluff hazards. Comment:			✓	SC-5
Incorporate land uses, zoning, and other measures to minimize risks along transmission pipeline rights-of-way recommendations and guidelines from the U.S. Department Transportation's (DOT) Office of Pipeline Safety (OPS), the Pipeline and Hazardous Materials Safety Administration (PHMSA), and the Federal Energy Regulatory Commission (FERC). Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		
Adopt an ordinance requiring strengthening and/or reinforcement of unreinforced masonry buildings, except residential structures, considering the cost of the work and the value, frequency of use, and level of occupancy. Comment:			✓	SC-6
Revise the County Code to address development on existing lots subject to flooding. Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		
Periodically inspect properties for compliance with vegetation management standards. Coordinate code enforcement for vegetation management between fire districts and CAL FIRE to ensure consistency and frequency of inspections in the highest fire hazard zones. Comment: This action has been removed as this has been identified as an ongoing capability of the County. In accordance with Sonoma County Fire Code Chapter 13 A, and/or Public Resource Code 4290-4291		✓		
Work with the appropriate local, state and federal agencies to assure that post fire reports include an assessment of secondary landslide or mudslide risks in the burned over areas and erosion and landslide control measures that can be taken. Consider adoption of post-fire erosion and sediment control requirements to mitigate the secondary impacts in burned areas arising from storm runoff, erosion, mudflows and landslides Comment: This action has been removed as this has been identified as an ongoing capability of the County. Will be included in Sonoma County CWPP Update		✓		
Adopt County Code amendments or develop a departmental policy to require residential structures in landslide risk zones to conduct geologic soil investigation, prepared by a California licensed Civil or Geotechnical Engineer, to evaluate the proposed unit's landslide risks, prior to permit or construction approval. Comment:			✓	SC-7
The Coastal Zoning Ordinance and Sonoma County Building Code should be amended to regulate new development and redevelopment on coastal bluffs Regulations should require new development to be set back a sufficient distance or otherwise sited, and designed to eliminate or minimize inundation, flooding, and/or coastal erosion resulting from projected future sea level rise and other coastal hazards over a 100-year economic life of the development (Coastal Plan Policy C-PS-4j). Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Develop a model ordinance which would provide for the orderly regulation of land uses in areas which may be affected by sea level rise. Comment:			✓	SC-8
Require Coastal Permits for new development and improvements to existing or new public facilities and infrastructure. Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		
Continue to incorporate hazard assessments during site selection, design, siting or leasing county facilities. Comment: This action has been removed as this has been identified as an ongoing capability of the County and is met by objectives 1, 9, 11, and 12 of this plan update.		✓		
Conduct a natural hazard risk and vulnerability assessment of all County-owned/leased/maintained emergency response and critical facilities to identify site-specific improvements to increase resiliency to hazard events and their post disaster functionality. Comment:			✓	SC-9
Work with independent fire districts to prioritize necessary structure assessments of unreinforced masonry buildings and seek funding for seismic retrofits or structure replacements to ensure that fire and emergency services are not degraded. Consider potential liquefaction, ground-shaking, and fault rupture when prioritizing sites. Comment: This action is being identified as “completed” as the County has set in motion the request for grant funding. Approved NOI 0342 DR4558 Sub-application for Advance Assistance for development of the Western Ecological Research Center project to identify and plan future mitigation projects for Critical facilities, County owned facilities and Lifelines. Application submitted to Cal OES 03/05/2021 This request was specifically for West CO. Sup Dis 5	✓			
Conduct seismic upgrades to planned major repairs of county buildings to increase resistance to earthquake damage, especially buildings critical to emergency response and recovery. These include buildings proposed for remodeling in the Capital Project Plan (CPP). Comment: This action is being identified as “completed” as the County has set in motion the request for grant funding. Seismic Rehabilitation and Retrofit of Secondary Treatment Clarifiers, Russian River County Sanitation District; Approved NOI 0342 DR4558 Sub-application for Advance Assistance for development of the Western Ecological Research Center project to identify and plan future mitigation projects for Critical facilities, County owned facilities and Lifelines. Application submitted to Cal OES 03/05/2021 This request was specifically for West CO. Sup Dis 5	✓			
Selectively remove or trim trees in Right-of Ways that pose a risk to traffic circulation and impeding disaster response and recovery. Partner with utility companies to facilitate the work. Provide offsetting plantings elsewhere. Seek to include vegetation management requirements in franchise agreements for utilities. Comment: This action is being reported as “completed” for the performance period of the plan and is no considered to be an ongoing capability.	✓			
Request a vulnerability report from PG&E on gas pipelines in Sonoma County. Obtain updated natural gas safety training for firefighters. Encourage the use of the Underground Service Alert (USA) Program by contractors and property owners to locate and avoid underground utilities. Comment: This action has been determined to be no longer feasible and is being removed from the action plan. The County will continue to coordinate with PG&E on information/risk communication of PG&E facilities.		✓		
Assess the vulnerability of critical county infrastructure including roads, bridges, pipelines, water treatment plants, culverts, and other essential facilities.			✓	SC-10

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Comment:</p> <p>Perform seismic retrofitting or replacement County owned bridges.</p>			✓	SC-11
<p>Comment:</p> <p>Strengthen/ retrofit critical county infrastructure to increase ability to convey or store flood waters, remain operable during floods, and reduce the potential for flood damage.</p>			✓	SC-12
<p>Comment:</p> <p>Identify possible opportunities to: reduce runoff; maintain and/or increase temporary stormwater retention; decrease downstream flooding; increasing water retention in the Laguna de Santa Rosa, terrace pits, flood plains, developed sites and development sites and off-channel agricultural reservoirs, consistent with regulatory requirements and restrictions.</p> <p>Comment: This action is being removed as it is considered to be an ongoing capability for the County and is addressed by objectives 1, 9, 11 and 12</p>		✓		
<p>Conduct a systematic fire safety analysis of all County owned assets that are known to be in wildland fire zones and identify site-specific mitigation actions to improve wildland fire resistance.</p> <p>Comment: This action is considered to be ongoing and in process at the time of this plan update.</p>			✓	SC-13
<p>Implement targeted outreach, education, preparedness, and mitigation initiatives to better prepare the County's residents with Access and Functional Needs, especially in high hazard areas and incorporate equity considerations. Identify, evaluate, validate, and implement communications, warning technologies Radio Disaster Alert Devices for Vulnerable Populations</p> <p>Comment:</p>			✓	SC-14
<p>Continue and expand structural retrofit mitigation activities carried out by the Community Development Commission under their existing Earthquake Resistant Bracing Systems Program. Structural retrofit activities to vulnerable buildings may be carried out or incentivized by the program.</p> <p>Comment: Under current plan 65 Income qualified structures mitigated with CDBG funding, 212 non income qualified mitigated with Current HMGP DR4240-0064 grant. By close of current plan estimate another 40 structures mitigated for a total of 317. Closeout dr4240-0064 09/22/2021 intend to apply for future awards as the threat and demand for mitigation is high.</p>			✓	SC-15
<p>Adopt pre-approved standard plans for seismic retrofits of existing residences to improve the home's chances of surviving an earthquake. The plan will set forth standard prescriptive measures recommended to homeowners and contractors in accordance with building codes. Once approved, the plan will allow for a simple, low cost permitting process.</p> <p>Comment: Under current plan a sub-application was submitted (DR4344) which identified 3,753 structures eligible for mitigation. The sub-application was not approved but the important mitigation work remains a high priority for Sonoma County.</p>			✓	SC-16
<p>Provide materials to educate and inform owners of the potentially greater risks associated with the following building types in the highest earthquake hazard zones in the County, as well as voluntary mitigations and retrofit options available to strengthen and reduce the vulnerability of such structures.</p> <p>Comment:</p>			✓	SC-17

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Continue the flood elevation program to elevate qualifying flood damage prone properties. Consistent with FEMA/NFIP and give priority to the repetitive loss properties both within and outside the mapped flood zones.</p> <p>Comment: Flood Elevation Program (funds awarded) During the current plan term fifteen structures were successfully elevated including 8 severe repetitive loss structures 4 repetitive loss structures and 3 flood-prone homes. Five sub-applications have been submitted under the current plan, two for FMA and three for HMGP. One FMA application was not approved due to low BCA. Two HMGP applications were approved and work is progressing, one FMA and one HMGP application are still under review at the FEMA level. All structures elevated have foundations inspected and if they are not up to current code standards and able to support the elevation foundations are either replaced or enhanced thereby providing protection from the seismic hazard as a secondary project benefit. The Sonoma County Flood Elevation Program will continue mitigating the flood hazard to residential properties for years to come</p>			✓	SC-18
<p>Identify means to reduce flood risks such as public acquisition, flood proofing, relocation of flood prone properties; and give priority to the repetitive loss properties.</p> <p>Comment: This action is being removed as it is considered to be an ongoing capability and is now adequately addressed by objective #3</p>		✓		
<p>Initiate Sonoma County's re-participation in the National Flood Insurance Program (NFIP) Community Rating System (CRS) to qualify area residents for flood insurance premium discounts to help offset increases in flood insurance.</p> <p>Comment: Sonoma County participates in the NFIP CRS</p>		X		
<p>Update the Russian River Response Plan to map inundation areas associated with different size floods. A digital terrain model should be made available on an interactive web viewer. The plan will include the minimum content requirements of California Water Code Section 9650. The response plan shall be integrated into any other local agency emergency plan, coordinated with the State emergency plan, and be consistent with AB 156 Guidelines.</p> <p>Comment: This action is being removed as it pertains to ongoing capabilities of the County and is now addressed by objective #8.</p>		✓		
<p>Implement education and awareness programs via community outreach, information kiosks, media and County websites. Notify owners of properties in the flood zones and/or on the repetitive loss list of the applicable regulations and mitigation programs.</p> <p>Comment: This action is being removed as it pertains to ongoing capabilities of the County and is now addressed by objective #8.</p>		✓		
<p>Work with the Chamber of Commerce and others to identify strategies for reduce the level of flood damage to commercial properties and multi-family housing where structure elevation is not feasible. Give priority to the repetitive loss properties.</p> <p>Comment: This action is being removed as it is considered to be an ongoing capability of the County and is now addressed by objectives 2, 3 and 8</p>		✓		
<p>Cooperate with the City of Petaluma to preserve and enhance natural flood water retention in the headwaters of the Petaluma River Basin, the confluence of the Willow and Lichau Creeks and the Liberty and Wiggins Creeks, to reduce downstream flooding in Petaluma.</p> <p>Comment:</p>			✓	SC-19
<p>Monitor and evaluate repetitive loss property mitigation initiatives. Report updates to appropriate federal and state agencies.</p> <p>Comment: This action is being removed as it is considered to be an ongoing capability and is now addressed by objectives 2 and 3.</p>		✓		
<p>Prepare Sea Level Rise and Coastal Hazards Risk and Vulnerability Assessments, focused on the highest risk of sea level rise as provided by the best available science, on the Sonoma County Coast.</p> <p>Comment:</p>			✓	SC-20

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Develop a Sea Level Rise and Coastal Hazards Adaptation Plan for the Sonoma County Coast. Comment: This action is being listed as “completed” as the local Coastal Plan development was in process at the time of this plan update.	✓			
Analyze and identify green infrastructure actions which may be taken to increase coastal resiliency to climate change. Comment:			✓	SC-21
Work with CAL FIRE and local fire districts to improve vegetation management consistent with the Public Resources and County Codes and scenic resource policies. Support hazardous fuel reduction programs developed through “Sonoma County Community Wildland Fire Protection Plans” within the fire districts included in County Service Area 40. Comment: This action is being removed as it is considered to be an ongoing capability and will be a part of the County-wide CWPP that is currently being developed.		✓		
Carry out a public education program to increase risk awareness and promote implementation of fire safe practices by residents in wildland urban interface areas, such as vegetation management, fire resistant construction, onsite water storage, adequate access and other fire prevention measures. Comment: This action is being listed as complete as this is now considered an ongoing capability, bolstered by the “SoCoAdpats.Org” website and the Sonoma County Hazard Story Map created as part of this plan update process.	✓			
Provide fire hazard information signs identifying areas or time periods of high wildland fire risk. Comment: This action is being removed as this function will now be directed by the Community Wildfire Protection Plan Update		✓		
Develop strategies and incentives that may be implemented by the County or independent districts to encourage voluntary improvements and upgrades to existing structures and or facilities to bring them more into compliance with current fire safety regulations. Give priority to areas designated as “Very High” or “High” fire hazard severity zones Comment: This action is being listed as “complete” as the strategies have been developed through the pursuit of grant funding, though there is more work to be done to perform these tasks when the community receives grant support. Wildfire Adapted Sonoma County; Proposal in Process through BRIC (i.e., Wildfire Resilient Sonoma County—Nature-based Mitigation to Adapt in an Era of Megafire—proposal in process and Sonoma County Megafire Program—Scoping for Regional Wildfire Resilience—proposal in process)	✓			
Increase Fire Marshal capacity to periodically inspect properties for compliance with vegetation management standards. Comment: In accordance with Sonoma County Fire Code Chapter 13 A, and/or Public Resource Code 4290-4291	✓			
Partner with special districts, state, and federal partners to identify and mitigate natural hazard threats that pose a risk to potable and wastewater systems infrastructure. Comment: This action is being removed as it is considered to be an ongoing capability that is now addressed by objectives 2 and 6.		✓		
Evaluate existing emergency power systems at county facilities and provide emergency power generation capacity/storage at county owned/leased/maintained facilities critical for emergency response and recovery to ensure continuity of government services. Comment:			✓	SC-22
Create a “Roadside Hazard Abatement Program” to monitor access clearances for vehicles and defensible space along roadway infrastructure. Comment: This action is being removed as it is considered to be an ongoing capability.		✓		

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Improve county communications capacity, interoperability capabilities, and disaster resilience to help maintain critical post disaster operability by: • Develop a strategy to relocate critical Information Systems Department equipment and facilities from their current location to reduce their vulnerability to natural hazards.</p> <p>Comment: Action to be reframed as part of this plan update</p>			✓	SC-23
<p>Develop a strategy to prioritize strengthening or replacing county owned emergency response facilities that have structural weaknesses as determined through an engineering analysis.</p> <p>Comment: This action is being removed as it is redundant with actions SC-9, SC-10, SC-12 and SC-13. This action is also addressed with object #6.</p>		✓		
<p>Continue to develop and improve the County's Continuity of Operations Plans (COOP) to ensure the performance of essential functions under a broad range of natural hazards and disaster events.</p> <p>Comment: This action is being removed as it has been identified as an ongoing capability and is addressed by Object 5.</p>		✓		
<p>Continue to develop and fund the Comprehensive Community County Facilities Plan, which, in addition to other goals, seeks to increase the resiliency of county facilities to natural hazards and disaster events in order to maintain essential services and critical government functions.</p> <p>Comment: This action is being removed as it has been identified as an ongoing capability and is addressed by objectives 5 and 6..</p>		✓		
<p>Require annual department budgets and work programs to allocate funds and staff for HMP implementation work. Funding to update the Sonoma County Hazard Mitigation Plan should be incorporated into the 2020/21 budget.</p> <p>Comment: This action was completed during the performance period</p>	✓			
<p>Develop a strategic plan for damage assessment and recovery of essential public facilities following earthquakes, prioritize areas of high public occupancy.</p> <p>Comment:</p>			✓	SC-24
<p>Seek funding to engage an engineering consultant to conduct a seismic evaluation of facilities critical to emergency response or recovery operations and buildings with high occupancy. Incorporate seismic assessment upgrades in major remodel projects at existing buildings. All new construction shall conform to current codes at the time of the permit.</p> <p>Comment:</p>			✓	SC-25
<p>Encourage and facilitate Fire District consolidation recommendations of Local Agency Formation Commission municipal service reviews and support implementation of any recommendations which would improve fire services, response, and readiness, including possible consolidation of fire service districts.</p> <p>Comment: Completed through fire protection district consolidation in 2019, though more consolidations may take place in coming years</p>	✓			

1.8 HAZARD MITIGATION ACTION PLAN

Table 1-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 1-15 identifies the priority for each action. Table 1-16 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-14. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action SC-1 —Amend General Plan Safety Element Hazard maps to reflect updated mapping of hazard areas identified by this Hazard Mitigation Plan, FEMA, CAL FIRE, or the CA Seismic Hazards Mapping Program.						
<u>Hazards Mitigated:</u> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
New	1, 4, 7, 8, 9, 10, 12	Permit Sonoma	Board of Supervisors	Low	General Fund	Short-Term
Action SC-2 —Utilize hazard mitigation information presented in the Sonoma County Climate Action Plan 2020 and Local Climate Adaptation Policy Guide for Local Governments (Cal OES) to reduce risks exacerbated by climate change and to adapt to climate change impacts. Integrate climate adaptation actions across regional and local General Plan Public Safety Elements, Coastal Plans, mitigation planning efforts, and infrastructure planning and development. Support Countywide greenhouse gas reduction initiatives outlined in the Community Climate Action Plan and led by the Regional Climate Protection Authority						
<u>Hazards Mitigated:</u> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
New and Existing	1, 4, 7, 8, 9, 10, 12	Permit Sonoma	Board of Supervisors	Low	General Fund	Short-Term
Action SC-3 —Request a FEMA prepared updated flood insurance study analysis of the Russian River and Laguna de Santa Rosa floodplains. Utilize an in-depth record of USGS flow data and LIDAR-generated topographical base tied to the NAD88 vertical datum and other sources of information as available. As part of this update, improve flood and topographic mapping along the Russian River. Re-evaluate hydrologic floodways and recurrence levels.						
<u>Hazards Mitigated:</u> Flood						
New and Existing	4, 8, 9, 12	Permit Sonoma	Sonoma Water	Medium	General Fund, FEMA's CTP Program	Short-term
Action SC-4 —Work with stakeholders and the general public to develop and implement a long-term strategy, consistent with Policy PS-2d of the GP2020 Safety Element, to reduce repetitive flood losses in the Russian River basin. This strategy shall be incorporated into future updates of the Local Hazard Mitigation Plan.						
<u>Hazards Mitigated:</u> Flood						
Existing	3, 8, 12	Permit Sonoma	Sonoma Water	Medium	General Fund	Short-Term
Action SC-5 —Expand the “Geologic Hazard” Combining District or develop new Combining District(s) to incorporate all types of geological hazards including areas of high ground-shaking, landslide and liquefaction, and coastal bluff hazards.						
<u>Hazards Mitigated:</u> Earthquake, Landslide/Mass Movement						
New and Existing	1, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	General Fund	Short term
Action SC-6 —Adopt an ordinance requiring strengthening and/or reinforcement of unreinforced masonry buildings, except residential structures, considering the cost of the work and the value, frequency of use, and level of occupancy.						
<u>Hazards Mitigated:</u> Earthquake						
Existing	1, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	FEMA BRIC (C&CB) Grant, General Fund	Short-Term
Action SC-7 —Adopt County Code amendments or develop a departmental policy to require residential structures in landslide risk zones to conduct geologic soil investigation, prepared by a California licensed Civil or Geotechnical Engineer, to evaluate the proposed unit's landslide risks, prior to permit or construction approval.						
<u>Hazards Mitigated:</u> Landslide/ Mass Movement						
New	1, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	FEMA BRIC (C&CB) Grant, General Fund	Short-Term
Action SC-8 —Develop a model ordinance which would provide for the orderly regulation of land uses in areas which may be affected by sea level rise.						
<u>Hazards Mitigated:</u> sea-level rise						
New and Existing	1, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	FEMA BRIC (C&CB) Grant, General Fund	Short-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action SC-9—Conduct a natural hazard risk and vulnerability assessment of all County-owned/leased/maintained emergency response and critical facilities to identify site-specific improvements to increase resiliency to hazard events and their post disaster functionality. Determine facility performance under extreme loads including seismic, wind, wildfire and flood hazards. Identify practical, cost-effective solutions to reduce risk to personnel, equipment, systems and infrastructure, and provide solutions to maintain continued operations.</p> <p><u>Hazards Mitigated:</u> Earthquake, Flood, Severe Weather, Wildfire</p>						
Existing	3, 6	OEM	Permit Sonoma	High	FEMA HMA Grants, EMPG, HSGP	Short-Term, depending on funding
<p>Action SC-10—Assess the vulnerability of critical county infrastructure including roads, bridges, pipelines, water treatment plants, culverts, and other essential facilities.</p> <p><u>Hazards Mitigated:</u> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire</p>						
Existing	3, 5, 6, 8	DEM	Permit Sonoma, Transportation & Public Works	High	FEMA HMA Grants, EMPG, HSGP	Short-Term, depending on funding
<p>Action SC-11—Perform seismic retrofitting or replacement County owned bridges.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
Existing	3, 6	Transportation & Public Works	N/A	High	FEMA HMA, CDBG-DR, DOT, County CIP	Long-term, depending on funding
<p>Action SC-12—Strengthen/ retrofit critical county infrastructure to increase ability to convey or store flood waters, remain operable during floods, and reduce the potential for flood damage.</p> <p><u>Hazards Mitigated:</u> Dam Failure, Flood, sea-level rise, Tsunami</p>						
Existing	3, 6	Transportation & Public Works	Permit Sonoma	High	FEMA HMA, CDBG-DR, DOT, County CIP	Long-term, depending on funding
<p>Action SC-13—Conduct a systematic fire safety analysis of all County owned assets that are known to be in wildland fire zones and identify site-specific mitigation actions to improve wildland fire resistance.</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
Existing	6, 8, 12	Transportation & Public Works	Permit Sonoma	High	FEMA HMA, CDBG-DR, DOT, County CIP	Ongoing
<p>Action SC-14—Implement targeted outreach, education, preparedness, and mitigation initiatives to better prepare the County’s residents with Access and Functional Needs, especially in high hazard areas and incorporate equity considerations. Identify, evaluate, validate, and implement communications, warning technologies Radio Disaster Alert Devices for Vulnerable Populations</p> <p><u>Hazards Mitigated:</u> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire</p>						
New and Existing	2, 8, 10	DEM	Permit Sonoma	Low	General Fund	Short-term, ongoing
<p>Action SC-15—Continue and expand structural retrofit mitigation activities carried out by the Community Development Commission under their existing Earthquake Resistant Bracing Systems Program. Structural retrofit activities to vulnerable buildings may be carried out or incentivized by the program.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
Existing	2, 3, 8	Community Development Commission	Permit Sonoma	Medium	FEMA HMA Grants, CDBG-DR & MIT, Local Funds	Ongoing
<p>Action SC-16—Adopt pre-approved standard plans for seismic retrofits of existing residences to improve the home’s chances of surviving an earthquake. The plan will set forth standard prescriptive measures recommended to homeowners and contractors in accordance with building codes. Once approved, the plan will allow for a simple, low cost permitting process.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
Existing	2, 3, 8	Permit Sonoma	Community Development Commission	Medium	FEMA HMA Grants, (BRIC C&CB), CDBG-DR & MIT, Local Funds	Short-Term, ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action SC-17 —Provide materials to educate and inform owners of the potentially greater risks associated with the following building types in the highest earthquake hazard zones in the County, as well as voluntary mitigations and retrofit options available to strengthen and reduce the vulnerability of such structures.						
<i>Hazards Mitigated:</i> Earthquake						
Existing	2, 3, 8	Permit Sonoma	DEM	Low	General Fund	Ongoing
Action SC-18 —Continue the implementation of the flood elevation program to elevate qualifying flood damage prone properties. Consistent with FEMA/NFIP and give priority to the repetitive loss properties both within and outside the mapped flood zones.						
<i>Hazards Mitigated:</i> Flood						
Existing	2, 7, 8, 10	Permit Sonoma	DEM	Medium	FEMA HMA Grants, CDBG-DR and MIT, Local Funds	Ongoing
Action SC-19 —Coordinate with the City of Petaluma to identify opportunities to preserve and enhance natural flood water retention in the headwaters of the Petaluma River Basin, the confluence of the Willow and Lichau Creeks and the Liberty and Wiggins Creeks, to reduce downstream flooding in Petaluma.						
<i>Hazards Mitigated:</i> Dam Failure, Flood						
New and Existing	2, 8, 12	Permit Sonoma	City of Petaluma	Medium	FEMA HMA, EPA programs, County CIP	Ongoing
Action SC-20 —Prepare Sea Level Rise and Coastal Hazards Risk and Vulnerability Assessments, focused on the highest risk of sea level rise as provided by the best available science, on the Sonoma County Coast.						
<i>Hazards Mitigated:</i> sea-level rise, Tsunami						
New and Existing	6, 8, 10	Permit Sonoma	Transportation & Public Works	High	FEMA HMA Grants, NOAA Sea Grants, General Fund	Long-term, depending on funding
Action SC-21 —Analyze and identify feasible and cost-effective green infrastructure actions which may be taken to increase coastal resiliency to climate change and mitigate future flood and sea-level rise impacts						
<i>Hazards Mitigated:</i> Flood, sea-level rise, Tsunami						
New and Existing	1, 3, 8, 12	Permit Sonoma	Transportation & Public Works	High	FEMA HMA Grants, EPA Funding, NOAA Sea Grants, General Fund	Long-term, depending on funding
Action SC-22 —Evaluate and enhance where necessary existing emergency power systems at county facilities and provide emergency power generation capacity/storage at county owned/leased/maintained facilities critical for emergency response and recovery to ensure continuity of government services.						
<i>Hazards Mitigated:</i> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
Existing	6, 8	Transportation & Public Works	DEM	High	FEMA HMA grants, General Fund	Short-term, depending on funding
Action SC-23 —Improve county communications capacity, interoperability capabilities, and disaster resilience to help maintain critical post disaster operability by developing a strategy to relocate critical Information Systems Department equipment and facilities from their current location to reduce their vulnerability to natural hazards.						
<i>Hazards Mitigated:</i> Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
New and Existing	3, 5, 6	DEM	Permit Sonoma	High	EMPG, HSGP, General Fund	Short-Term
Action SC-24 —Develop a strategic plan for damage assessment and recovery of essential public facilities following earthquakes, prioritize areas of high public occupancy.						
<i>Hazards Mitigated:</i> Earthquake						
Existing	6, 8	Transportation & Public Works	DEM	Medium	EMPG, HSGP, General Fund	Short-term, depending on funding

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action SC-25—Seek funding to engage an engineering consultant to conduct a seismic evaluation of facilities critical to emergency response or recovery operations and buildings with high occupancy. Incorporate seismic assessment upgrades in major remodel projects at existing buildings. All new construction shall conform to current codes at the time of the permit.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
Existing	6, 8	Transportation & Public Works	DEM	High	FEMA HMA grants, EMPG, HSGP, General Fund	Long-term, depending on funding
<p>Action SC-26—Develop and implement a hazardous fuels reduction program within two miles of homes and communities identified to be at risk to wildfires.</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
Existing	2, 4, 6, 11	Permit Sonoma	All Planning Partners	Medium	FEMA HMA (BRIC, HMGP), HUD (CDBG-DR, CDBG-MIT), CAL FIRE, Local funds for match contributions	Short-term, Ongoing
<p>Action SC-27—Conduct a Structural Seismic Risk and Vulnerability Assessment. This planning effort will be focused on the development of a Sonoma County-specific brace-and-bolt program. The planning process will identify and develop shovel-ready concepts for structures at high risk of damage from seismic activities, with a specific focus on soft-story buildings.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
New & Existing	2, 3, 11	Permit Sonoma	Community Development Commission	High	FEMA HMA (BRIC, HMGP), Sonoma County General Fund	Short-term, Ongoing
<p>Action SC-28—Conduct a Russian River Flood Risk and Vulnerability Assessment. The objective of this planning related activity is to focus and plan for the way Sonoma County interacts with the Russian River floodplain; including flood risk and planning efforts to move people away from flood-prone areas and the evaluation and adoption of county policy to reduce risk from flood events. The projects would include the identification of ways to maintain flood plain as open space; community flood planning and zoning; discouraging development in high risk flood areas and site-specific project identification.</p> <p><u>Hazards Mitigated:</u> Flood, Dam Failure</p>						
New & Existing	2, 3, 11	Permit Sonoma, Transportation & Public Works	Sonoma Water	Medium	FEMA HMA (BRIC, HMGP, FMA), Sonoma County General Fund	Short-term, depending on funding
<p>Action SC-29—Continue to maintain good standing and compliance under the National Flood Insurance Program (NFIP) through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Dam failure, flooding, severe weather, tsunami, sea level rise</p>						
New & Existing	1, 3, 4, 7, 8, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	Staff Time, General Funds	Ongoing
<p>Action SC-30—Implement “Nature-based Mitigation to Adapt in an Era of Mega-fires” from Wildfire Resilient Sonoma County. This wildfire mitigation project will reduce or prevent regional property and loss by employing the following techniques and methods:</p> <ul style="list-style-type: none"> • Defensible space implementation around 100% of homes throughout the State Responsibility Area • Structural hardening • Landscape level fuel breaks, including parks and green spaces around population dense areas of the County. <p>By working at the regional level this project will reduce wildfire risk throughout the County, while at the same time providing other community benefits like recreation and wildlife habitat.</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New & Existing	2, 4, 6, 11	Permit Sonoma	All Planning Partners	High	FEMA HMA (BRIC, HMGP), HUD (CDBG-DR, CDBG-MIT), CAL FIRE, Local funds for match contributions	Long-Term depending upon funding

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action SC-31 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<i>Hazards Mitigated:</i> Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire						
Existing	2, 3, 10	Community Development Commission	Department of Emergency Management	High	FEMA HMA (BRIC, HMGP, FMA), Sonoma County General Fund	Long Term
Action SC-32 —Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the County General Plan, Emergency Operations Plan, Climate Action Plan, Community Wildfire Protection Plan, etc.						
<i>Hazards Mitigated:</i> Dam Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Sea-Level Rise, Tsunami, Wildfire						
New and Existing	1, 2, 4, 7, 8, 9, 12	Permit Sonoma	Department of Emergency Management	Low	Staff Time, General Funds	Ongoing
Action SC-33 —Develop community-based disaster preparedness and response resilience facilities and resources in areas or communities that are disproportionately economically disadvantaged or that face social equity challenges.						
<i>Hazards Mitigated:</i> Dam Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Tsunami, Wildfire						
New and Existing	2, 5, 6, 12	DEM	GSD	Medium	FEMA HMA (BRIC, HMGP), HUD (CDBG-DR, CDBG-MIT), Local funds for match contributions, Board of Forestry grants (when available for this purpose in the future)	Long-Term
Action SC-34 —Participate in state and federal hazard-specific mitigation/preparedness and emergency management certification programs that support community awareness/preparedness (ex. NOAA StormReady) and enhancement of response capabilities (ex. Emergency Management Accreditation Program).						
<i>Hazards Mitigated:</i> Earthquake, Flood, Severe Weather, Tsunami, Wildfire						
New and Existing	2, 8, 12	DEM	Permit Sonoma	Low	Staff Time, General Funds	Ongoing
Action SC-35 —Provide seismic structural retrofits to mobile homes through the Sonoma County Earthquake Resistant Bracing System Program, which pays to install seismic retrofit bracing systems on mobile homes throughout the unincorporated areas of Sonoma County and participating cities and towns.						
<i>Hazards Mitigated:</i> Earthquake						
Existing	2, 3, 8	Community Development Commission	Permit Sonoma	High	CDBG, HMGP, R&R	Ongoing
Action SC-36 —Develop mapping strategy for roads & infrastructure for flood and/or dam failure inundation. Prepare localized maps to support emergency response personnel.						
<i>Hazards Mitigated:</i> Dam Failure, Flood						
New and Existing	2, 5, 6	Transportation & Public Works	DEM	Medium	General Fund	Short-Term
Action SC-37 —Prepare a plan to protect road infrastructure from flood erosion. Conduct bank repair project on River Road, Geyserville.						
<i>Hazards Mitigated:</i> Flood						
Existing	2, 5, 6	Transportation & Public Works	Permit Sonoma	Medium	FEMA HMA Grants, CIP, General Fund	Short-Term, depending on funding
Action SC-38 —Coordinate with the Geyserville/Alexander Valley Municipal Advisory Council on the “Alexander Valley Watershed Action Plan” with support from Sonoma Water						
<i>Hazards Mitigated:</i> Flood						
New and Existing	2, 4, 8, 12	Transportation & Public Works	Permit Sonoma	Low	General Fund	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action SC-39 —Evaluate unincorporated towns for flood risk and prepare list of prioritized flood mitigation projects. Pursue FEMA grant for Geyserville Drainage project.						
<i>Hazards Mitigated:</i> Flood						
New and Existing	2, 8, 12	Transportation & Public Works	Permit Sonoma	Medium	FEMA RiskMAP Program, CA DWR Measure 85 funds, CIP, General Fund	Long-Term, depending on funding
Action SC-40 —Partner with fire districts and others in a roadside hazard abatement program to clear fuels from road rights of way.						
<i>Hazards Mitigated:</i> Wildfire						
New and Existing	2, 6, 12	Transportation & Public Works	Permit Sonoma	Medium	CAL FIRE Funds, FEMA HMA grants, General Fund	Ongoing
Action SC-41 —Create a plan for other lands managed by Transportation & Public Works to be maintained for fire resilience. Property such as the Healdsburg Transfer Station (grant applied for) to be maintained as a fuel break for the City of Healdsburg. “Debris Management Plan”						
<i>Hazards Mitigated:</i> Wildfire						
Existing	2, 4, 8, 12	Transportation & Public Works	Permit Sonoma	Medium	EMPG, HSGP, General Fund	Short-term
Action SC-42 —Improve transportation routes for ingress/egress by replacing the temporary bridge at Asti.						
<i>Hazards Mitigated:</i> Flood, Wildfire, Landslide/Mass Movement						
New and Existing	2, 5, 6, 12	Transportation & Public Works	DEM	High	DOT funds, FEMA HMA Grant Funds, CIP, General Fund	Long-term, depending on funding
Action SC-43 —Secure funding to purchase infrastructure for resilience at airport, road yards, etc.: generators; ham radio system; evacuation stair systems; light towers						
<i>Hazards Mitigated:</i> Severe Weather						
Existing	5, 6	Transportation & Public Works	DEM	High	FEMA HMA Grants, EMPG, HSGP, General Fund	Long-term, depending on funding
Action SC-44 —Improve emergency preparedness awareness with an emphasis on outreach to vulnerable and socially disadvantaged populations by increasing coordination with them to ensure hazard risks, preparedness, and evacuation information is available and well understood in multiple languages. Tailored outreach can be conducted to ensure socially vulnerable and disadvantaged populations understand what actions need to occur during hazard events that may require shelter in place or evacuation procedures.						
<i>Hazards Mitigated:</i> Dam Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Sea-Level Rise, Tsunami, Wildfire						
New and Existing	2, 8, 10	Permit Sonoma	DEM	Low	General Fund	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

See the introduction to this volume for list of acronyms used here.

Table 1-15. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
SC-1	7	Medium	Low	Yes	No	Yes	High	N/A
SC-2	7	Medium	Low	Yes	No	Yes	High	N/A
SC-3	4	Medium	Medium	Yes	Yes	Yes	High	High
SC-4	3	Medium	Medium	Yes	No	Yes	High	N/A
SC-5	4	Medium	Low	Yes	No	Yes	High	N/A
SC-6	4	High	Low	Yes	Yes	Yes	High	High
SC-7	4	High	Low	Yes	Yes	Yes	High	High
SC-8	4	High	Low	Yes	Yes	Yes	High	High
SC-9	2	High	High	Yes	Yes	No	Medium	High
SC-10	4	High	High	Yes	Yes	No	Medium	High
SC-11	2	High	High	Yes	Yes	No	Medium	High
SC-12	2	High	High	Yes	Yes	No	Medium	High
SC-13	3	High	High	Yes	Yes	No	Medium	High
SC-14	3	Medium	Low	Yes	No	Yes	High	N/A
SC-15	3	High	Medium	Yes	Yes	Yes	High	High
SC-16	3	Medium	Medium	Yes	Yes	Yes	High	High
SC-17	3	Medium	Low	Yes	No	Yes	High	N/A
SC-18	4	High	Medium	Yes	Yes	Yes	High	High
SC-19	3	Medium	Medium	Yes	Yes	Yes	High	High
SC-20	3	High	High	Yes	Yes	No	Medium	High
SC-21	4	High	High	Yes	Yes	No	Medium	Medium
SC-22	2	High	High	Yes	Yes	No	Medium	High
SC-23	3	High	High	Yes	Yes	No	Medium	High
SC-24	2	Medium	Medium	Yes	Yes	Yes	High	Medium
SC-25	2	High	High	Yes	Yes	No	Medium	High
SC-26	4	High	Medium	Yes	Yes	Yes	High	High
SC-27	3	High	High	Yes	Yes	No	Medium	High
SC-28	3	Medium	Medium	Yes	Yes	Yes	High	High
SC-29	8	Medium	Low	Yes	No	Yes	High	N/A
SC-30	4	High	High	Yes	Yes	No	Medium	High
SC-31	3	High	High	Yes	Yes	No	Medium	High
SC-32	7	Medium	Low	Yes	No	Yes	High	N/A
SC-33	4	High	Medium	Yes	Yes	Yes	High	Medium
SC-34	3	Medium	Low	Yes	No	Yes	High	N/A
SC-35	3	High	High	Yes	Yes	No	Medium	High
SC-36	3	Medium	Medium	Yes	No	Yes	High	N/A
SC-37	3	Medium	Medium	Yes	Yes	Yes	High	High
SC-38	4	Medium	Low	Yes	No	Yes	High	N/A
SC-39	3	Medium	Medium	Yes	Yes	Yes	High	Medium
SC-40	3	High	Medium	Yes	Yes	Yes	High	Medium
SC-41	4	Medium	Medium	Yes	Yes	Yes	High	Medium
SC-42	4	High	High	Yes	Yes	No	Medium	High
SC-43	2	High	High	Yes	Yes	No	Medium	High
SC-44	3	Medium	Low	Yes	No	Yes	High	N/A

a. See the introduction to this volume for explanation of priorities.

Table 1-16. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
Earthquake	1, 2, 5, 6, 9, 16, 27, 32, 34	10, 11, 15, 25, 31, 35	14, 17, 44	31	22, 24, 25, 33, 34		1, 2	1, 2, 5, 6, 9, 14, 16, 17, 24, 27, 32, 33
Landslide	1, 2, 7, 32	10, 31	14, 44	31	22, 33, 42		1, 2	1, 2, 7, 14, 32, 33
Wildfire	1, 2, 9, 13, 30, 32, 34, 40, 41	10, 26, 30, 31, 40, 41	14, 30, 44	26, 30, 31, 40	22, 33, 34, 42		1, 2	1, 2, 9, 13, 30, 32, 33, 40
Medium-Risk Hazards								
Dam Failure	1, 2, 19, 32, 36	10, 12, 31	14, 44	31	22, 33	19	1, 2	1, 2, 14, 19, 32, 33, 36
Flood	1, 2, 3, 4, 9, 19, 28, 29, 32, 34, 36, 37, 38, 39	10, 12, 18, 29, 31	3, 4, 14, 29, 44	28, 31	22, 33, 34, 42	19, 21, 38	1, 2, 28	1, 2, 3, 4, 9, 14, 19, 28, 29, 32, 33, 36, 37, 38, 39
Severe Weather	1, 2, 9, 32, 34	10, 31	14, 44	31	22, 33, 34, 43		1, 2	1, 2, 9, 14, 32, 33
Low-Risk Hazards								
Drought	1, 2, 32	10, 31	14, 44	31	22, 33		1, 2	1, 2, 14, 32, 33
Sea Level Rise	1, 2, 8, 20, 32	10, 12, 31	14, 44	31	22, 33	21	1, 2, 8, 20	1, 2, 8, 14, 20, 32, 33
Tsunami	1, 2, 20, 32, 34	10, 12, 31	14, 44	31	22, 33, 34	21	1, 2, 20	1, 2, 14, 20, 32, 33

a. See the introduction to this volume for explanation of mitigation types.

1.9 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed for this annex.

- **Sonoma County Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Sonoma County Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Sonoma County General Plan 2020**—The County General Plan was reviewed for land use policies applicable to the hazards of concern and hazard mitigation. Please note that the County was updating its General Plan at the Time of this plan update.
- **Sonoma County 2016 Wildfire Protection Plan (CWPP)**—The CWPP was reviewed ~~of~~ for information on wildfire risk and the incorporation of actions into the mitigation plan. The County was updating its

CWPP at the time of this plan update; it is expected to be finalized and incorporated into this hazard mitigation plan in 2022.⁴

- **Climate Action, 2020 and Beyond**—The Counties Climate Action Plan was reviewed for relevant policies that support the enhancement of the adaptive capacity of the County pursuant to CA SB 379.
- **2018 Sonoma County Water Agency Hazard Mitigation Plan**—The Sonoma County Water Agency HMP was reviewed for relevant actions that might be integrated into the County’s jurisdictional Annex.
- **2016 Sonoma County Operational Area Hazard Mitigation Plan**—The prior HMP of record for the County was reviewed to reconcile all prior actions identified in that plan.
- **The 2014 Sonoma County Operational Area Emergency Operations Plan**—The EOP was reviewed to confirm the hazards of concern and the inform the definition of “critical facilities/infrastructure” for this HMP update.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- **FEMA Region IX, Local Hazard Mitigation Plan Review Tool**—The Plan review tool was utilized the crosswalk the 44 CFR, section 201.6 requirements for local hazard mitigation plans to the content of this plan update.

⁴ An update to the 2016 CWPP was approved by the Sonoma County Board of Supervisors in May 2023. The 2023 CWPP is incorporated by reference into the Sonoma County annex of the MJHMP.