

## 4. CITY OF SONOMA

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### 4.1 LOCAL HAZARD MITIGATION PLANNING TEAM

#### Primary Point of Contact

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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 4-1.

**Table 4-1. Local Mitigation Planning Team Members**

Name	Title
Dave Jeffries	Hazard Mitigation Plan Consulting Project Manager
Wayne Wirick	Development Services Director / Building Official— Hazard Mitigation Plan Management Lead
Colleen Ferguson	Public Works Director / City Engineer
David Storer	Planning and Community Services Director
Chris Pegg	Public Works Operations Manager
Trevor Smith	Fire Marshal—Sonoma Valley Fire District

### 4.2 JURISDICTION PROFILE

#### 4.2.1 Location and Features

The City of Sonoma is a historic city in northern California at the heart of the renowned Sonoma Valley winemaking region. The City is a small municipality, located in Sonoma County, 45 miles north of the San Francisco Golden Gate Bridge.

The current boundaries generally extend south to north from Leveroni Road/Napa Rd to Verano Avenue/Brazil Street and generally extend west to east from Sonoma Highway to Sixth Street East/Knight Street, encompassing an area of 2.72 square miles in size.

Sonoma has a typical lowland near-coastal Californian warm-summer Mediterranean climate (Köppen climate classification Csb) with hot, dry summers (although nights are comfortably cool) and cool, wet winters. In January, the normal high is 57.2°F and the typical low is 37.2°F.

## 4.2.2 History

Sonoma was first incorporated as a city on April 4, 1850. When California achieved statehood on September 9, 1850, Sonoma County was one of the original counties. Sonoma's founder and leading citizen, General Vallejo, who had been elected as a state senator in the new state legislature, unsuccessfully lobbied to have Sonoma remain as the county seat of Sonoma County but it was moved to Santa Rosa in 1854 as the result of a disputed election. General Vallejo later had the city unincorporated on April 26, 1862, for the benefit of certain land owners such as himself. Then it was re-incorporated as a City on September 3, 1883, and the cornerstone of the Sonoma City Hall was laid on February 24, 1906.

Today, the citizens of Sonoma observe the founding of the Pueblo de Sonoma in 1835 on an annual Pueblo Day each June 24th. The Hispanic community of Sonoma Valley celebrates annually Cinco de Mayo on May 5th which is the date in 1862 that Mexico's army defeated French forces at the Battle of Puebla. The incursion of the Bear Flaggers in 1846 on June 14th is also observed annually with a re-enactment of the events of that day.

## 4.2.3 Governing Body Format

Sonoma operates under the Council/Manager form of government. The City Council is the elected body that oversees all municipal operations. The City Council provides policy leadership and acts as the legislative arm of City government. The five members of the City Council are elected to overlapping four-year terms, ensuring that there are Council Members with experience guiding the City at all times.

The City provides law enforcement services by contract with the Sonoma County Sheriff's Office. Fire services are provided by contract with the Sonoma Valley Fire District. Schools are provided and operated by the Sonoma Valley Unified School District. Sewer service is provided by the Sonoma Valley County Sanitation District, managed and operated by Sonoma Water. Sonoma Valley Hospital services are provided through the Sonoma Valley Health Care District. The City of Sonoma operates its own water system, with the primary source of supply being provided by Sonoma Water (a County agency).

The Sonoma City Council assumes responsibility for the adoption of this plan and will oversee its implementation through its City Manager.

## 4.3 CURRENT TRENDS

### 4.3.1 Population

According to the State Department of Finance, Demographics Research Unit, the City of Sonoma had a population of 11,050 on January 1, 2020. This was a decrease of 1.0% from the year prior of 11,164.

### 4.3.2 Development

The City does not approve large subdivision tracts on a yearly basis or add large commercial projects. In fact, the City's housing stock has only grown from 5,544 housing units in 2010 to 5,702 units in 2020 representing an increase in 158 housing units. Of these units, approximately 56% are single-family detached units. The City's population per household is very low as compared to other jurisdictions in the State at 2.15 people per unit.

Since 2010, construction of new non-residential buildings within Sonoma has averaged 0.64 buildings per year.

Table 4-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

**Table 4-2. Recent and Expected Future Development Trends**

Criterion	Response																														
<p>Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?</p> <ul style="list-style-type: none"> <li>If yes, give the estimated area annexed and estimated number of parcels or structures.</li> </ul>	<p>Yes</p> <p>The property is known as the "Montini Preserve" (approximately 60 acres) and is a hillside property dedicated as Open Space</p>																														
<p>Is your jurisdiction expected to annex any areas during the performance period of this plan?</p> <ul style="list-style-type: none"> <li>If yes, describe land areas and dominant uses.</li> <li>If yes, who currently has permitting authority over these areas?</li> </ul>	<p>No, however annexations of unincorporated islands within the City could occur.</p>																														
<p>Are any areas targeted for development or major redevelopment in the next five years?</p> <ul style="list-style-type: none"> <li>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</li> </ul>	<p>Yes</p> <p>Infill commercial, multi-family and single family that are not located within known hazard risk areas.</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>16</td> <td>32</td> <td>10</td> <td>11</td> <td>33</td> </tr> <tr> <td>Multi-Family</td> <td>0</td> <td>8</td> <td>5</td> <td>24</td> <td>24</td> </tr> <tr> <td>Other (commercial, mixed use, etc.)</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>1</td> </tr> <tr> <td><b>Total</b></td> <td><b>16</b></td> <td><b>40</b></td> <td><b>15</b></td> <td><b>37</b></td> <td><b>58</b></td> </tr> </tbody> </table>		2015	2016	2017	2018	2019	Single Family	16	32	10	11	33	Multi-Family	0	8	5	24	24	Other (commercial, mixed use, etc.)	0	0	0	2	1	<b>Total</b>	<b>16</b>	<b>40</b>	<b>15</b>	<b>37</b>	<b>58</b>
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<b>Total</b>	<b>16</b>	<b>40</b>	<b>15</b>	<b>37</b>	<b>58</b>																										
<p>Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.</p>	<ul style="list-style-type: none"> <li>Special Flood Hazard Areas: 1</li> <li>Landslide: 0</li> <li>High Liquefaction Areas: 0</li> <li>Tsunami Inundation Area: 0</li> <li>Wildfire Risk Areas: 2</li> </ul>																														
<p>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.</p>	<p>The City has very few remaining parcels of vacant lands in which to develop. These lands are anticipated to develop with housing units for the most part consistent with the General Plan and Housing Element. Over the next 8 years, the City will need to provide zoning to accommodate approximately 330 new housing units</p>																														

## 4.4 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.

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.

The findings of the assessment are presented as follows:

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

**Table 4-3. Legal and Regulatory Capability**

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
<b>Codes, Ordinances, &amp; Requirements</b>				
<b>Building Code</b> <i>Comment: 2019 CA Building Standards Code; Fire Department has authority for CA Fire Code and selected other sections of the CA Building Standards Code. Adopt the CA Building Standards Code tri-annually as adopted by the State. Sonoma Municipal Code Chapter 14.10.</i>	Yes	Yes	Yes	Yes
<b>Zoning Code</b> <i>Comment: Title 19 of Sonoma Municipal Code</i>	Yes	No	Yes	Yes
<b>Subdivisions</b> <i>Comment: See Title 19 of Sonoma Municipal Code</i>	Yes	No	Yes	Yes
<b>Stormwater Management</b> <i>Comment: City of Sonoma Storm Water Management Program (2005), updated in 2015 for State required programs for MS4 jurisdictions</i>	Yes	No	Yes	No
<b>Post-Disaster Recovery</b> <i>Comment:</i>	No	State	No	No
<b>Real Estate Disclosure</b> <i>Comment:</i>	No	No	No	No
<b>Growth Management</b> <i>Comment: See Title 19 of Sonoma Municipal Code</i>	Yes	No	No	Yes
<b>Site Plan Review</b> <i>Comment: See Title 19 of Sonoma Municipal Code</i>	Yes	No	No	No
<b>Environmental Protection</b> <i>Comment: Pursuant to CEQA Guidelines</i>	Yes	No	No	No
<b>Flood Damage Prevention</b> <i>Comment: Sonoma Municipal Code Chapter 14.25; Consider a higher level of flood damage prevention regulations in the context of climate change impacts related to flooding.</i>	Yes	No	Yes	Yes
<b>Emergency Management</b> <i>Comment: City of Sonoma 2015 EOP, County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff; Plan is in need of updating in light of lessons learned from 2017 wildfires and 2020 Covid-19 pandemic.</i>	Yes	Yes	Yes	Yes
<b>Climate Change</b> <i>Comment: Pursuant to CEQA Guidelines</i>	Yes	No	No	No
<b>Other</b> <i>Comment:</i>	No	No	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
<b>Planning Documents</b>				
<b>General Plan</b>	Yes	No	Yes	Yes
<i>Is the plan compliant with Assembly Bill 2140? No</i>				
<i>Comment: The City has not adopted a hazard mitigation plan for inclusion in the General Plan</i>				
<b>Capital Improvement Program</b>	Yes	No	No	Yes
<i>How often is the plan updated?</i>	Annually			
<i>Comment: The Capital Improvement Program is a planning and budgeting document for investment in public infrastructure.</i>				
<b>Disaster Debris Management Plan</b>	No	No	No	No
<i>Comment:</i>				
<b>Floodplain or Watershed Plan</b>	Yes	No	No	Yes
<i>Comment: 2011 Storm Drain Master Plan; No update to the plan is contemplated.</i>				
<b>Stormwater Plan</b>	Yes	No	Yes	No
<i>Comment: City of Sonoma Storm Water Management Plan (2005), updated in 2015 for State Regional Water Quality Control Board required programs for MS4 jurisdictions; No update to the plan is contemplated.</i>				
<b>Urban Water Management Plan</b>	Yes	No	Yes	Yes
<i>Comment: 2016 Urban Water Management Plan; Update to the plan is underway</i>				
<b>Habitat Conservation Plan</b>	No	No	No	Yes
<i>Comment: N/A</i>				
<b>Economic Development Plan</b>	No	No	No	No
<i>Comment:</i>				
<b>Shoreline Management Plan</b>	No	No	No	No
<i>Comment: No shoreline within City limits.</i>				
<b>Community Wildfire Protection Plan</b>	No	Yes Sonoma County	No	No
<i>Comment: Sonoma County Community Wildfire Protection Plan <a href="https://www.firesafesonoma.org/documents-resources-2/">https://www.firesafesonoma.org/documents-resources-2/</a></i>				
<b>Forest Management Plan</b>	No	No	No	No
<i>Comment: No forest areas within City limits.</i>				
<b>Climate Action Plan</b>	No	No	No	No
<i>Comment: 2007 Greenhouse Gas Emissions Reduction Action Plan</i>				
<b>Emergency Operations Plan (EOP)</b>	Yes	Yes	Yes	Yes
<i>Comment: Emergency Operations Plan—2015; County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff</i>				
<b>Threat &amp; Hazard Identification &amp; Risk Assessment (THIRA)</b>	No	Yes	No	Yes
<i>Comment: Emergency Operations Plan—2015 has a section (2.1) that includes hazard risks and threat assessments; County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff have some responsibilities related to hazard risks and threat assessments. Bay Area THIRA</i>				
<b>Post-Disaster Recovery Plan</b>	No	Yes	No	Yes
<i>Comment: Emergency Operations Plan—2015 has a section (IV) that includes Recovery Operations; County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff have some responsibilities related to Recovery Operations.</i>				
<b>Continuity of Operations Plan</b>	Yes	Yes	No	Yes
<i>Comment: Emergency Operations Plan—2015 has a section (1.8) that includes Continuity of Government; County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff have some responsibilities related to Continuity of Government.</i>				
<b>Public Health Plan</b>	No	Yes	Yes	No
<i>Comment: Sonoma County Public Health</i>				

**Table 4-4. Development and Permitting Capability**

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Planning Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

**Table 4-5. 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	Yes, Water
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Yes, available fund balance

**Table 4-6. Administrative and Technical Capability**

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Department / City Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Department / City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Planning Department / City Engineer
Staff with training in benefit/cost analysis	Yes	Finance Department
Surveyors	Yes	By Contract when Needed
Personnel skilled or trained in GIS applications	Yes	Planning Dept. and PW Dept.
Scientist familiar with natural hazards in local area	No	None
Emergency manager	Yes	City Manager / Development Services Director
Grant writers	No	None
Other	No	

**Table 4-7. Education and Outreach Capability**

Criterion	Response
Do you have a public information officer or communications office?	Yes PT Management Analyst
Do you have personnel skilled or trained in website development?	Yes City Clerk, PT Management Analyst, etc.
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe.</i>	Yes <a href="#">Earthquake Brace + Bolt—Foundation Retrofit Grant Program</a>
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe.</i>	Yes <a href="http://www.sonomacity.org/departments/emergency-prep/">www.sonomacity.org/departments/emergency-prep/</a> Regularly post emergency preparation and hazard mitigation information on our website, include in electronic newsletters, share on Nextdoor and social media.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe.</i>	No
Do you have any other programs already in place that could be used to communicate hazard-related information? <i>If yes, briefly describe.</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe.</i>	Yes, through Sonoma County Department of Emergency Management and Sonoma County Sheriff Sonoma County SoCo Alert. Nixle, NOAA Radios, Wireless Emergency Alerts, Emergency Alert System, Hi-Lo Law Enforcement Sirens

**Table 4-8. National Flood Insurance Program Compliance**

Criterion	Response
What local department is responsible for floodplain management?	Building, Planning & City Engineer
Who is your floodplain administrator? (department/position)	Development Services Director / Building Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2002 (Ord. 2002-09)
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i>	Meets minimum requirements Sonoma Municipal Code Chapter 14.25
When was the most recent Community Assistance Visit or Community Assistance Contact?	2001
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	Yes
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>	No

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)?	No
If yes, is your jurisdiction interested in improving its CRS Classification?	
If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? <sup>a</sup>	33
What is the insurance in force?	\$2,321,200
What is the premium in force?	\$28,880
How many total loss claims have been filed in your jurisdiction? <sup>a</sup>	0
How many claims are still open or were closed without payment?	9
What were the total payments for losses?	\$124,173

a. According to FEMA statistics as of November 11, 2020

**Table 4-9. Community Classifications**

	Participating?	Classification	Date Classified
FIPS Code	Yes	0609772646	N/A
DUNS #	Yes	004952891	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	ISO Classification 2	6/14/2016
Public Protection	Yes	ISO Classification 1	9/2016
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

**Table 4-10. Adaptive Capacity for Climate Change**

Criterion	Jurisdiction Rating <sup>a</sup>
<b>Technical Capacity</b>	
<b>Jurisdiction-level understanding of potential climate change impacts</b>	Medium
<i>Comment: City staff are continuously identifying adaptive management strategies.</i>	
<b>Jurisdiction-level monitoring of climate change impacts</b>	Low
<i>Comment: No dedicated funding or staff. City relies on county and state government information.</i>	
<b>Technical resources to assess proposed strategies for feasibility and externalities</b>	Low
<i>Comment: No dedicated funding or staff.</i>	
<b>Jurisdiction-level capacity for development of greenhouse gas emissions inventory</b>	Medium
<i>Comment: The City relies on the GHG inventory produced by the Regional Climate Protection Authority-Sonoma County. The most recent inventory update for 2018 was released in 2020. Local volunteers have produced a municipal operations GHG inventory for 2018.</i>	
<b>Capital planning and land use decisions informed by potential climate impacts</b>	High
<i>Comment: Through the general plan update process.</i>	
<b>Participation in regional groups addressing climate risks</b>	Medium
<i>Comment: City is a partner with the Regional Climate Protection Authority-Sonoma County, which helps to identify climate risks. Otherwise we rely on state information.</i>	

Criterion	Jurisdiction Rating <sup>a</sup>
<b>Implementation Capacity</b>	
<b>Clear authority/mandate to consider climate change impacts during public decision-making processes</b> <i>Comment: Through the general plan update process.</i>	High
<b>Identified strategies for greenhouse gas mitigation efforts</b> <i>Comment: The city has a climate action strategy from 2007 and in 2020 adopted a climate action workplan to identify strategies for GHG reductions. The City Council recently approved a standing Climate Action Subcommittee to provide direction on climate actions.</i>	High
<b>Identified strategies for adaptation to impacts</b> <i>Comment: There are adaption strategies related to wildfire impacts and local street flooding but no other strategies developed specifically to adapt to impacts from climate change.</i>	Low
<b>Champions for climate action in local government departments</b> <i>Comment: The City hired a sustainability coordinator who resides in the Planning Department.</i>	High
<b>Political support for implementing climate change adaptation strategies</b> <i>Comment:</i>	High
<b>Financial resources devoted to climate change adaptation</b> <i>Comment: The City hired a sustainability coordinator who resides in the Planning Department.</i>	High
<b>Local authority over sectors likely to be negative impacted</b> <i>Comment:</i>	High
<b>Public Capacity</b>	
<b>Local residents knowledge of and understanding of climate risk</b> <i>Comment: In general there is high degree of knowledge and understanding of climate risk by city residents.</i>	High
<b>Local residents support of adaptation efforts</b> <i>Comment: Elected city officials, which have been supported by local residents, have been supportive of climate adaptation efforts.</i>	Medium
<b>Local residents' capacity to adapt to climate impacts</b> <i>Comment: The greatest non-economic climate impacts are wildfires and drought, which have had a significant impact on the area with a strong degree of adaptive capacity.</i>	High
<b>Local economy current capacity to adapt to climate impacts</b> <i>Comment: The local economy is predominantly a service-based economy highly dependent on tourism, which limits its adaptive capacity.</i>	Low
<b>Local ecosystems capacity to adapt to climate impacts</b> <i>Comment: The city has a relatively high proportion of preserved open spaces with a high degree of native vegetation.</i>	High

- 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.

## 4.5 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.

### 4.5.1 Existing Integration

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

- **2016 Urban Water Management Plan**—This plan identifies measures to be implemented or projects to be undertaken to reduce water demands and address water supply shortfalls, and actions to be implemented in the event of a catastrophic interruption in water supplies. As required, the plan is being updated to include a drought risk assessment and a seismic risk assessment. The updated plan is scheduled for adoption before July 1, 2021. The 2020 Water Demand Analysis and Water Conservation Measure Update has been completed.
- **2018 Water Supply Strategies Action Plan (Sonoma Water)**—Projects identified in the 2018 Water Supply Strategies Action Plan will help achieve supply reliability, well resilience, public safety, and cost-effective renewal and replacement of aging system components.
- **Southern Sonoma County Storm Water Resources Plan (2019)**—This plan builds on local storm water management objectives and identifies and prioritizes projects that capture, treat or reuse storm water and dry weather runoff. These projects must provide at least two benefits which may include environmental enhancement, flood protection, groundwater recharge, water quality improvement and/or recreational opportunities. The plan provides a framework for submitting, quantifying, scoring, and ranking future projects in an objective and data driven format. Continued adaptation of the Storm Water Resources Plan will allow for productive stakeholder engagement and planning emphasizing a previously overlooked resource. This is an invaluable tool in the midst of changing climatic conditions that will continue to alter our local water supply resources and needs, contribute to water quality impairments, and exacerbate flood management challenges.
- **2008 Greenhouse Gas Emissions Reduction Action Plan**—This plan was produced by a local non-profit with partial funding from the California Public Utilities Commission and direction by the city in response to the City Council’s adoption of a reduction target for internal operations of 20% below 2000 levels by 2010. It identified 15 actions (measures) to reduce greenhouse gas emissions primarily related to municipal operations. Between 2000 and 2018, GHG emissions from municipal operations decreased by 52.6%. In November 2020, a grant-funded consultant audited major city buildings to assess further GHG reductions through energy conservation, switching from natural gas to electricity, and to increase production via PV solar.
- **2020/21 Capital Improvement Program (CIP)**—The CIP includes projects that can help mitigate potential hazards. These include projects identified in the 2018 Water Master Plan Update to achieve supply reliability, well resilience, public safety, and cost-effective renewal and replacement of aging system. Three creeks flow through the City: Nathanson Creek, Sonoma Creek, and Fryer Creek. Catch basins, roadside ditches, and storm drainage piping collect and convey storm water runoff to these creeks. CIP projects can protect local creeks and the bay from pollutants associated with storm water runoff, and can provide flood prevention for the City's transportation network, residents, and businesses. The ongoing challenge for storm water projects is complying with the stringent and costly State and Federal mandates that are largely unfunded. The CIP proposes safety improvements, replacement of a degraded bridge, construction of a new pedestrian and bicycle bridge, parks/cemeteries/facilities upgrades and sidewalk repairs. The City will act to ensure consistency between the hazard mitigation plan and the current and future CIP. The hazard mitigation plan may identify new possible funding sources for CIP projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Seismically Unsafe Building Regulations.** The City’s regulations for the review, rehabilitation and abatement of existing seismically unsafe buildings (Sonoma Municipal Code Chapter 14.24) are

regulations designed to reduce the risk of death or injury resulting from earthquake hazards in existing masonry or concrete buildings in an economically feasible manner, while preserving the historic character of historic buildings.

- **Flood Damage Prevention Regulations.** The City’s Flood Damage Prevention Regulations (Sonoma Municipal Code Chapter 14.25) was updated in 2002. The provisions of the regulations are intended to minimize public and private losses due to flood conditions.
- **Building Code and Fire Code.** The City’s adoption of the 2019 California Building Standards Code (Sonoma Municipal Code Chapter 14.10), incorporated local modifications to account for the climatic, topographic and geographic conditions that exist in the City as appropriate.
- **General Plan.** This is a broad policy planning document guiding the City’s future development goals and provides policy statements to achieve those development goals. The City adopted the General Plan in 2006 and has updated the General Plan as recently as 2016 (in part) to guide the growth and land development of the community for both the current period and the long term. The General Plan is the foundation for establishing goals, purposes, zoning and activities allowed on each land parcel to provide compatibility and continuity to the entire region as well as each individual City neighborhood.
- **Sonoma Citizens Organized to Prepare for Emergencies**—Training and organization of community members and groups designed to facilitate emergency preparation and response.
- **Staffing for Adequate Fire and Emergency Response Grants**—Provides funding directly to fire departments and volunteer firefighter interest organizations to help them increase or maintain the number of trained, "front line" firefighters available in their communities. The goal of this grant program is to enhance the local fire departments' abilities to comply with staffing, response and operational standards established by the NFPA (NFPA 1710 and/or NFPA 1720).
- **Community Risk Reduction Messaging Program**—In collaboration with the Northern California Fire Prevention Officers Association and the National Fire Protection Agency our agency actively engages the community in Community Risk Reduction Messaging via in person training, social media outreach and engagement, website publications and through the press.
- **Creation of a newly formed fire district**—The creation of the newly formed Fire District (Sonoma Valley Fire District) along with a contract for services with the City of Sonoma allows the fire department to take advantage of shared resources. These shared resources and realized cost savings allow the newly formed district to operate more effectively.

#### 4.5.2 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:

- **Emergency Operations Plan**—The City’s Emergency Operations Plan is in the process of being updated. The City will act to ensure consistency between the hazard mitigation plan and the emergency operations plan. Shortfalls identified in the EOP update may produce HMP action items to be addressed in future years.
- **Capital Improvement Program**—The updated HMP risk assessment may inform CIP projects to be addressed in future years.
- **Urban Water Management Plan and Water Master Plan Update (2021)**—The updated plans will include a drought risk assessment and a seismic risk assessment and may produce HMP actions to be addressed in future years.

- **Risk and Resilience Assessment and Emergency Response Plan (2021) required by America’s Water Infrastructure Act**—Shortfalls identified in the assessment and plan may produce HMP actions to be addressed in future years.
- **Climate Action Plan**—The City’s *Greenhouse Gas Emissions Reduction Action Plan (2008)* is in need of updating into a Climate Action Plan (CAP). The City Council recently adopted a Climate Emergency Resolution and created a new joint standing Climate Action Subcommittee to address this issue. The HMP risk assessment and action items can help guide implementation goals of the CAP.
- **Sonoma Valley Fire Unmanned Aircraft Fire Prevention & Safety Unit**—The Sonoma Valley Fire District has recently implemented a UAS (small unmanned aircraft system) program that may provide intelligence and information used to meet or identify future hazard mitigation goals.

## 4.6 RISK ASSESSMENT

### 4.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 4-11 lists past occurrences of natural hazards for which specific damage was recorded in Sonoma. Other hazard events that broadly affected the entire planning area, including Sonoma County, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

**Table 4-11. Past Natural Hazard Events**

Event Name	FEMA Disaster #	Date	Damage Assessment
1986—Severe Storms, Flooding	758	2/18/1986	\$6,950
1988—Winter Wind Storm	No	12/14/1988	\$210,700
1989—Loma Prieta Earthquake	845	10/17/1989	Damage Sustained but not Quantified
1995—Flooding	1044	1/8/1995	\$49,150
1998—Winter Storm	1203	2/2/1998	Damage Sustained but not Quantified
2002—Flooding	No	12/13/2002	Damage Sustained but not Quantified
2005—Flooding	No	12/31/2005	\$2,419,800
2014—South Napa Earthquake	No	8/24/2014	\$443,900
2017—Nuns Fire, Partrick Fire, California Wildfires	5220, 5222, 4344	10/8/2017	Smoke Damage Sustained but not Quantified
2018—PG&E Power Shutoff	No	October 2018	Damage Sustained but not Quantified
2019—Flooding	No	2/19/2019	\$1,059
2020—COVID-19 Pandemic	3428, 4482	1/20/2020 – present	Damage Sustained but not Quantified
2020—LNU Lightning Fires	5331	8/17/2020	Smoke Damage Sustained but not Quantified

### 4.6.2 Hazard Risk Ranking

Table 4-12 presents a local ranking 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 4-12. Hazard Risk Ranking

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

NOTE: Landslide susceptibility was modified from Medium to Low risk (18 to 12) based on the landslide susceptibility map, probability, impact and the lack of recent observed or historical data to show that landslides will be a significant hazard within Sonoma city limits in other than very low populated areas. A landslide hazard event is not likely to occur within 100 years and 9 percent or less of the population is exposed to the hazard.

### 4.6.3 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.

#### ***Repetitive Loss Properties***

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: Four (4) as of 3/28/2021
- Number of FEMA-identified Severe-Repetitive-Loss Properties: None as of 3/28/2021
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: None as of 3/28/2021

#### ***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:

- City administrative services may be impacted during power outages due to a lack of backup emergency generators for city administrative facilities.

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

## 4.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 4-13 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.

**Table 4-13. Status of Previous Plan Actions**

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p><b>INFR – a-8:</b> Pre-position emergency power generation capacity (or have rental/lease agreements for these generators) in critical buildings of cities, counties, and special districts to maintain continuity of government and services.</p> <p><b>Comment:</b> Emergency power generator in place for public safety &amp; water system facilities. A permanent emergency generator is currently being installed at the Veterans Memorial Building (the City’s primary shelter location). No generators are currently installed for Schools or City Administrative offices but generators for the sites are available through rental/lease agreements on an as needed basis.</p>	Yes			
<p><b>INFR – a-21:</b> As an infrastructure operator, designate a back-up Emergency Operations Center with redundant communications systems.</p> <p><b>Comment:</b> Primary EOC is located at the City’s Police Station; The Backup EOC is located at Sonoma Valley Fire District Station #1. Virtual EOC meeting capability has also been added as an EOC backup.</p>	Yes			
<p><b>INFR – b-1:</b> Expedite the funding and retrofit of seismically deficient city- and county-owned bridges and road structures by working with Caltrans and other appropriate governmental agencies.</p> <p><b>Comment:</b> The Chase Street bridge over Nathanson Creek has been identified as a structurally deficient bridge. The City’s request for funding to construct a replacement ridge has been approved but the funds have not yet been made available by Caltrans. The City is prepared to proceed with bridge construction as soon as Caltrans confirms that construction funds are available. No other bridges in Sonoma have been identified as structurally deficient at this time.</p>	No			
<p><b>INFR – d-8:</b> Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to conform with the Regional Water Quality Control Board’s Best Management Practices.</p> <p><b>Comment:</b> Part of the City’s adopted storm water management plan. City hired an Environmental Compliance Analyst to enforce provisions. The City has not established a special statutory authority to keep watercourses free of obstructions in excess of nuisance abatement through civil action or through the acceptance of drainage easements. The City’s Stormwater Management Ordinance prohibits illicit discharges to the City’s storm drains, but does not create a positive duty upon private property owners to keep watercourses free of obstructions which are not released, added, or deposited by a person. Examples of obstructions of this type include obstructions formed by natural sediment aggradation, natural vegetative growth, accumulation of woody debris, or impoundments constructed by beavers.</p>	No			
<p><b>INFR – d-17:</b> Improve monitoring of creek and watercourse flows to predict potential for flooding downstream by working cooperatively with land owners and the cities and counties in the watershed.</p> <p><b>Comment:</b> Public Works Director sits on the Flood Control Zone 3A technical advisory committee. The City authorized Sonoma Water to install a rain gauge on the City’s Thornsberry water tank and a stream gauge at the Second Street East bridge over Nathanson Creek as part of the Sonoma One Rain network (<a href="https://sonoma.onerain.com/">https://sonoma.onerain.com/</a>). The gauges improve monitoring and could be part of a system to predict potential for flooding downstream. The information provided by these gauges informs implementation of storm preparedness plans and public information and outreach.</p>	Yes			
<p><b>INFR – d-18:</b> Using criteria developed by EPA for asset management, inventory existing assets, the condition of those assets, and improvements needed to protect and maintain those assets. Capture this information in a Geographic Information System (GIS) and use it to select locations for creek monitoring gauges.</p> <p><b>Comment:</b> Sonoma Ecology Center and Sonoma County Water Agency provide information to County. As noted under d-17, a rain gauge and stream gauge have been installed. The City will continue to populate its asset inventory for storm drain infrastructure as capital improvements are constructed, or as-built surveys are performed. The City intends to continue to update its asset inventory and the information will likely be used to set inspection/maintenance schedules and potentially support updates and calibration of the hydraulic modeling detailed in the current Storm Drain Master Plan.</p>	Yes			

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p><b>INFR – g-1:</b> Provide materials to the public related to planning for power outages.</p> <p><b>Comment:</b> Materials are available at public counters at City Hall. Management Analyst hired to serve as Public Information Officer and web master for City. Power Outage materials are available on the City’s web site. Hired Management Analyst to serve as Public Information Officer and web master for City. Continually manage and update Emergency Preparedness web pages <a href="https://www.sonomacity.org/departments/emergency-prep/">https://www.sonomacity.org/departments/emergency-prep/</a>. Regularly include preparedness information in e-newsletters and the City’s social media. Materials available at City Hall. Sonoma Valley Fire District &amp; Sonoma PD distribute materials at community events. The City conducts as-needed briefings with approximately 50 individuals representing a broad spectrum of community partners, organizations and agencies during disasters, emergencies and events that may impact the community.</p>	Yes			
<p><b>INFR – g-7:</b> Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website related to infrastructure issues.</p> <p><b>Comment:</b> Hired Management Analyst to serve as Public Information Officer and web master for City. Continually manage and update Emergency Preparedness web pages <a href="https://www.sonomacity.org/departments/emergency-prep/">https://www.sonomacity.org/departments/emergency-prep/</a>. Regularly include preparedness information in e-newsletters and the City’s social media. Materials available at City Hall. Sonoma Valley Fire District &amp; Sonoma PD distribute materials at community events. Culturally—the City website is compliant with AFN &amp; translation capabilities and have made the translation feature on website more visible. In addition, the City has a translator available to translate materials into Spanish as needed and have translated key materials into Spanish. The City is continually working with community partners to provide information to senior, LatinX, homeless and AFN populations and shares information between groups and the public provided by those partners.</p>	Yes			
<p><b>HSNG – a-2:</b> Create incentives for private owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior’s <i>Guidelines for Rehabilitation</i>.</p> <p><b>Comment:</b> NO PROGRESS—No funding or other incentives have been identified for this strategy item. Adopted CDA Resolution 1999-1 for seismic retrofitting of buildings, but program has expired. The City has promoted the 2020 Earthquake Brace+Bolt program <a href="https://www.earthquakebracebolt.com/">https://www.earthquakebracebolt.com/</a> as a resource on its web site. The program provides incentives for private owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize earthquake damage. No further action is recommended due to the lack of resources to allocate to the measure.</p>	Yes— Partial			
<p><b>HSNG – b-7:</b> Provide retrofit classes or workshops for homeowners in your community, or help promote utilization of subregional workshops in the region as such workshops become available through outreach using existing community education programs.</p> <p><b>Comment:</b> Promotion of subregional workshops have occurred when available. No funding available for locally sponsored classes or workshops. The City has promoted the 2020 Earthquake Brace+Bolt program <a href="https://www.earthquakebracebolt.com/">https://www.earthquakebracebolt.com/</a> as a resource on its web site. The program provides incentives for private owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize earthquake damage. No further action is recommended due to the lack of resources to allocate to the measure.</p>	Yes— Partial			
<p><b>HSNG – c-4:</b> Conduct an inventory of privately-owned existing or suspected soft-story residential structures as a first step in establishing voluntary or mandatory programs for retrofitting these buildings.</p> <p><b>Comment:</b> Preliminary survey completed—No funding available for full inventory.</p>	No			
<p><b>HSNG – g-10:</b> Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.</p> <p><b>Comment:</b> Public Resource Code—Our efforts working with local Fire Safe Councils have secured some grant funding for vegetation management within the Sonoma Valley Fire District. Additionally we were part of the leadership group that put forward “Measure G” in March 2020. This measure would have provided funding for a County Fuels Reduction Crew and a Vegetation Management Prevention Officer within our district. This measure missed passing by less than 2%.</p>	Partial & Ongoing			

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p><b>HSNG – g-11:</b> Work with residents in rural-residential areas to ensure adequate plans are developed for appropriate access and evacuation in wildland-urban-interface fire threatened communities or in areas exposed to high-to extreme fire threat. For example, in some areas, additional roads can be created, and in other areas, the communities will need to focus on early warning and evacuation because additional roads are not feasible.</p> <p><b>Comment:</b> Public Resource Code. Evacuation Zones for the City of Sonoma have been established and published. Evacuation routes have been pre-planned for wildland-urban-interface fire threatened areas by the Sonoma County Sheriff. Early warning systems have been significantly improved through the use of auto-dialing, Nixle, SoCo Alert and NWS radios, etc. implemented by the County of Sonoma Department of Emergency Management.</p>	Yes			
<p><b>HSNG – g-16:</b> Conduct periodic fire-safety inspections of all multifamily buildings, as required by State law.</p> <p><b>Comment:</b> California Fire Code—Fire Inspections of all state-mandated occupancies are a priority including multi-family dwellings. Limitations on operational ability and capacity along with the Covid-19 Pandemic have made 100 percent compliance difficult.</p>	Partial & Ongoing			
<p><b>HSNG – k-16:</b> Distribute appropriate materials related to disaster mitigation and preparedness to residents. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website and from nongovernmental organizations that work with these communities on an ongoing basis.</p> <p><b>Comment:</b> The City continually manages and updates its Emergency Preparedness web pages with resources <a href="https://www.sonomacity.org/departments/emergency-prep/">https://www.sonomacity.org/departments/emergency-prep/</a>." It regularly includes preparedness information in e-newsletters and the City's social media. Materials available to pick up at City Hall. Sonoma Valley Fire District &amp; Sonoma PD distribute materials at community events. A link to <a href="http://www.preparenow.org">http://www.preparenow.org</a> website is provided on the City's web site. Regular communication with community organizations. The City conducts as-needed briefings with approximately 50 individuals representing a broad spectrum of community partners, organizations and agencies during disasters, emergencies and events that may impact the community. Culturally—the City website is compliant with AFN &amp; translation capabilities and have made the translation feature on website more visible. In addition, the City has a translator available to translate materials into Spanish as needed and have translated key materials into Spanish. The City is continually working with community partners to provide information to senior, LatinX, homeless and AFN populations and shares information between groups and the public provided by those partners.</p>	Yes			
<p><b>ECON – h-3:</b> Work with private building owners to help them recognize that many strategies that increase earthquake resistance also decrease damage in an explosion. In addition, recognize that ventilation systems can be designed to contain airborne biological agents.</p> <p><b>Comment:</b> This strategy measure is no longer considered feasible due to lack of support and lack of resources to carry out the measure.</p>	No			
<p><b>ECON – i-5:</b> Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. See <a href="http://quake.abag.ca.gov/recovery/info-repair-ord.html">http://quake.abag.ca.gov/recovery/info-repair-ord.html</a>.</p> <p><b>Comment:</b> NO PROGRESS—Building Department staff working on this as time permits. Anticipated adoption as part of a repair and reconstruction ordinance. No additional appropriation is necessary to accomplish this task</p>	No			
<p><b>ECON – i-6:</b> Establish preservation-sensitive measures for the repair and re-occupancy of historically significant privately owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures.</p> <p><b>Comment:</b> NO PROGRESS—Building Department staff working on this as time permits. Anticipated adoption as part of a repair and reconstruction ordinance. No additional appropriation is necessary to accomplish this task</p>	No			

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p><b>ECON – j-3:</b> Develop and print materials, conduct workshops, and provide outreach to Sonoma private businesses focusing on business continuity planning.</p> <p><b>Comment:</b> The Sonoma Chamber of Commerce and Economic Development Board Encourages business continuity planning. The City holds monthly Emergency Operations Center (EOC) briefings with Community Partners to share emergency preparedness and response information that helps businesses with business continuity planning. City shares those resources.</p>	Yes			
<p><b>ECON – j-9:</b> Encourage the formation of a community and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the <i>Fire Wise Program</i>. This effort is important because grant funds are currently available to offset costs of specific council-supported projects.</p> <p><b>Comment:</b> Fire Safe Sonoma—In conjunction with Fire Safe Sonoma, Cal-Fire, Sonoma County Fire Prevention Officers Association community outreach and information was disseminated in public meetings, local media, and social media. We have also assisted in the development of fire safe councils within the Sonoma Valley</p>	Yes			
<p><b>ECON – j-13:</b> Distribute appropriate materials related to disaster mitigation and preparedness to private business owners. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website and from nongovernmental organizations that work with these communities on an ongoing basis.</p> <p><b>Comment:</b> Web site link to <a href="http://www.preparenow.org">http://www.preparenow.org</a> and other preparedness resources are available on the City's web site. Actively and working to promote Sonoma Chamber of Commerce and Economic Development Board materials and resources related to disaster mitigation and preparedness. Culturally—the City website is compliant with AFN &amp; translation capabilities and have made the translation feature on website more visible. In addition, the City has a translator available to translate materials into Spanish as needed and have translated key materials into Spanish. The City is continually working with community partners to provide information to senior, LatinX, homeless and AFN populations and shares information between groups and the public provided by those partners.</p>	Yes			
<p><b>GOVT – a-4:</b> Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical buildings from being functional after major natural disasters. Such contents and equipment includes computers and servers, phones, files, and other tools used by staff to conduct daily business.</p> <p><b>Comment:</b> Administration staff continues to work on its Continuity of Operations Plan (COOP) as time allows. The City has hardened its Internet service for emergency services by transitioning from coaxial cable service to fiber optic. The City has also purchased additional notebook computers to allow City staff to work from remote locations. This allows most critical City functions and its emergency services to operate remotely, outside of normal critical facilities. The City's computer server is located in the Police Station, which has been structurally constructed as an essential facility.</p>	Partial & Ongoing			
<p><b>GOVT – c-25:</b> Support and encourage planning and identification of facilities for the coordination of distribution of water, food, blankets, and other supplies, coordinating this effort with the American Red Cross.</p> <p><b>Comment:</b> Ongoing progress is being made to coordinate facilities for supply distribution with County Department of Emergency Management. The City has added emergency supplies to existing City inventories.</p>	Partial & Ongoing			
<p><b>GOVT – d-6:</b> Participate in multi-agency efforts to mitigate fire threat, such as the Hills Emergency Forum (in the East Bay), various <i>FireSafe</i> Council programs, and city-utility task forces. Such participation increases a jurisdiction's competitiveness in obtaining grants.</p> <p><b>Comment:</b> Fire Safe Sonoma—Partnered with Sonoma County PRMD—Fire Prevention Office and participated in the Hazardous Vegetation Inspection &amp; Abatement Program in the unincorporated areas of Sonoma County. Within the City limits we worked directly with the community and City Code Enforcement to enforce and mitigate fire hazards</p>	Yes			

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p><b>ENVI – a-6:</b> Comply with applicable performance standards of any <i>National Pollutant Discharge Elimination System</i> municipal stormwater permit that seeks to manage increases in stormwater run-off flows from new development and redevelopment construction projects.</p> <p><b>Comment:</b> The City has obtained coverage for discharges from its Municipal Separate Storm Sewer System under NPDES Permit No. CAS000004 [California General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)]. Provision E.12 of NPDES Permit No. CAS000004 require the City to manage increases in stormwater runoff from new development and redevelopment projects. The City revised its Stormwater Management Ordinance in 2015 to effect compliance with Provision E.12.</p>	Yes			
<p><b>ENVI – b-6:</b> Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money.</p> <p><b>Comment:</b> Eco-Audit; Adopted Greenhouse Gas Reduction Climate Protection Action Plan—The City has implemented many of the measures set forth in its Greenhouse Gas Reduction Climate Protection Action Plan and has completed energy audits and lighting retrofits in all significant City owned facilities. The City is currently working with a BayREN-funded energy consultant to conduct a new energy efficiency audit of selected municipal buildings to determine if additional energy savings can be achieved.</p>	Yes			
<p><b>ENVI – c-6:</b> For purposes of creating an improved hazard mitigation plan for the region as a whole, ABAG, and Bay Area cities and counties, jointly request geographically defined repetitive flooding loss data from FEMA for their own jurisdictions.</p> <p><b>Comment:</b> Only 4 Repetitive Flood Losses within the City of Sonoma as of 3/28/2021. No Severe Repetitive Flood Losses within the City as of 3/28/2021. Repetitive flood loss data is available from FEMA as needed.</p>	Yes			

NOTE: This table does not include all mitigation strategies listed in the City of Sonoma Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation. It lists only the mitigation strategies that necessitated mitigation action (funded or not) or that were underfunded existing programs, including the following categories:

- Existing Program—Underfunded
- Very High—Adopted as part of plan with no funding required.
- High—Actively Looking for Funding

## 4.8 HAZARD MITIGATION ACTION PLAN

Table 4-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 4-15 identifies the priority for each action. Table 4-16 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 4-14. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met <sup>a</sup>	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline <sup>b</sup>
<b>Action SCI-1</b> —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> Earthquake, severe weather, wildfire, flooding						
Existing	1, 3, 4, 10, 11	City of Sonoma Planning Dept.		High	HMGP, PDM, FMA	Long-term
<b>Action SCI 2</b> —Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the City’s General Plan, Development Code, Urban Water Management Plan, Risk and Resilience Assessment and Emergency Response Plan, Sonoma Water’s Water Supply Strategies Action Plan, Greenhouse Gas Emissions Reduction Action Plan, Climate Action Plan, Capital Improvement Program and Flood Damage Prevention Regulations.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide, drought						
New & Existing	1, 3, 4, 5, 7, 8, 10, 11	City of Sonoma Planning Dept.	City of Sonoma Water Dept; Sonoma Valley Fire District	Low	Staff Time, General Funds	Ongoing
<b>Action SCI-3</b> —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1, 5, 8	County of Sonoma	City of Sonoma	Low	Staff Time, General Funds	Short-term
<b>Action SCI-4</b> —Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:						
<ul style="list-style-type: none"> <li>Enforce the flood damage prevention ordinance.</li> <li>Participate in floodplain identification and mapping updates.</li> <li>Provide public assistance/information on floodplain requirements and impacts.</li> </ul>						
<i>Hazards Mitigated:</i> Severe weather, flooding, landslide						
New & Existing	1, 5, 7, 8, 10, 11	City of Sonoma Building Dept.	FEMA	Low	Staff Time, General Funds	Ongoing
<b>Action SCI-5</b> —Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following:						
<ul style="list-style-type: none"> <li>Reduce vehicle emissions by adopting vehicle-miles-traveled thresholds in the General Plan as projects are reviewed pursuant to CEQA.</li> <li>Consider adopting a General Plan policy to protect and acquire and manage ecosystems in buffers zones along rivers &amp; creeks within the City to improve flood control and water quality management.</li> <li>Consider adopting a General Plan policy to adopt Green Infrastructure that can help reduce run-off and stormwater flows that may otherwise exceed system capacity—infrastructure such as encouraging bio-retention areas (rain gardens); low impact development methods such as green roofs, swales (depressions that capture water) and the use of vegetation or pervious materials instead of impervious surfaces.</li> </ul>						
<i>Hazards Mitigated:</i> Severe weather, flooding, landslides, drought						
New & Existing	1, 4, 7, 8, 10	City of Sonoma Planning Dept.		Low	FSR, PDM, Staff Time, General Funds	Short-term
<b>Action SCI-6</b> —Purchase generators for critical facilities and infrastructure that lack adequate emergency backup power, including Sonoma City Hall complex and pre-designated emergency shelters.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide						
Existing	2, 6, 12	City of Sonoma Public Works Dept.		High	PDM	Long term
<b>Action SCI-7</b> —Expedite the funding and retrofit of seismically deficient city-owned bridges and road structures by working with Caltrans and other appropriate governmental agencies, including the replacement of the structurally deficient Chase Street Bridge.						
<i>Hazards Mitigated:</i> Earthquake, flooding, landslide, wildfire						
Existing	2, 3, 6, 10	City of Sonoma Public Works Dept.	County of Sonoma	High	Federal Highway Bridge Program (through Caltrans), Staff Time, General Funds,	Short-term

Benefits New or Existing Assets	Objectives Met <sup>a</sup>	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline <sup>b</sup>
<b>Action SCI-8</b> —Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to conform with the Regional Water Quality Control Board's Best Management Practices.						
<i>Hazards Mitigated:</i> Severe weather, flooding, landslide						
New & Existing	1, 2, 4, 7, 8, 9, 10, 11, 12	City of Sonoma Public Works Dept.		Low	HMGP, PDM, FMA, FSR, County Zone 3A, Staff Time, General Funds	Ongoing
<b>Action SCI-9</b> —Conduct an inventory of privately-owned existing or suspected soft-story residential structures as a first step in establishing voluntary or mandatory programs for retrofitting these buildings. Engage consulting services as needed to support activities related to the development of enhanced building codes to help mitigate suspected soft-story residential structures.						
<i>Hazards Mitigated:</i> Earthquake						
Existing	1, 2, 8	City of Sonoma Building Dept.		Medium	PDM, BRIC, Staff Time, General Funds	Short-term
<b>Action SCI-10</b> —Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.						
<i>Hazards Mitigated:</i> Wildfire						
Existing	3, 8, 11, 12	Sonoma Valley Fire District	City of Sonoma	High	Local Bond funding, HMGP, PDM, CAL FIRE Grants, CA Fire Foundation, PGE Grants, CSAA	Short-term
<b>Action SCI-11</b> —Conduct periodic fire-safety inspections of all multifamily buildings, as required by State law.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire						
New & Existing	2, 11	Sonoma Valley Fire District	City of Sonoma	Low	Staff Time, General Funds	Ongoing
<b>Action SCI-12</b> —Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. Engage consulting services as needed to support activities related to amending building codes related to repair and reconstruction.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide						
Existing	1, 6, 10, 11, 12	City of Sonoma Building Dept.		Medium	HMGP, PDM, BRIC, Staff Time, General Funds	Short-term
<b>Action SCI-13</b> —Establish preservation-sensitive measures for the repair and re-occupancy of historically significant privately owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures. Engage consulting services as needed to support activities related to building codes.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide						
Existing	1, 6, 10, 11, 12	City of Sonoma Building Dept.		Medium	HMGP, PDM, BRIC, Staff Time, General Funds	Short-term
<b>Action SCI-14</b> —Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical buildings from being functional after major natural disasters. Such contents and equipment includes computers and servers, phones, files, and other tools used by staff to conduct daily business.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide						
Existing	2, 5, 6, 8, 12	City of Sonoma EOC Working Group		Medium	HMGP, PDM, FMA, Staff Time, General Funds,	Short-term
<b>Action SCI-15</b> —Support and encourage planning and identification of facilities for the coordination of distribution of water, food, blankets, and other supplies, coordinating this effort with the American Red Cross.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide, drought.						
New & Existing	2, 10, 12	City of Sonoma EOC Working Group	American Red Cross	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met <sup>a</sup>	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline <sup>b</sup>
<b>Action SCI-16</b> —Develop and implement a program to capture and maintain data after significant events (e.g. high water marks, preliminary damage estimates, damage photos, etc.) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide, drought						
New & Existing	3, 4, 5, 6, 8, 9, 10, 12	City of Sonoma EOC Working Group	Sonoma City Clerk	Low	FMA, Staff Time, General Funds	Short-term
<b>Action SCI-17</b> —Acquire software and hardware, and associated training, to assist with plan reviews, permitting, inspections, and records retention to help support the identification and mitigation of structures and projects located in hazard prone areas and to quickly and efficiently aid in post-disaster recovery efforts.						
<i>Hazards Mitigated:</i> Earthquake, severe weather, wildfire, flooding, landslide, drought						
New and Existing	1, 3, 7, 8, 9, 10, 11, 12	City of Sonoma Building Department		High	BRIC, Staff Time, General Funds	Short-term

a. Numbered Objectives can be found in Section 1.11.

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

Acronyms used here are defined at the beginning of this volume.

**Table 4-15. 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 <sup>a</sup>	Grant Pursuit Priority <sup>a</sup>
SCI-1	5	High	High	Yes	Yes	No	Medium	High
SCI-2	7	Medium	Low	Yes	No	Yes	High	Low
SCI-3	3	Low	Low	Yes	No	Yes	High	Low
SCI-4	6	Medium	Low	Yes	No	Yes	High	Low
SCI-5	5	Medium	Low	Yes	Yes	Yes	Medium	Medium
SCI-6	3	Low	High	No	Yes	No	Low	Medium
SCI-7	4	High	High	Yes	Yes	Yes	Medium	High
SCI-8	9	Medium	Low	Yes	Yes	Yes	High	Medium
SCI-9	3	Medium	Medium	Yes	Yes	No	Medium	Medium
SCI-10	4	High	High	Yes	Yes	No	Medium	High
SCI-11	2	Medium	Low	Yes	No	Yes	High	Low
SCI-12	5	Medium	Medium	Yes	Yes	No	Medium	Medium
SCI-13	5	Medium	Medium	Yes	Yes	No	Medium	Medium
SCI-14	5	High	Medium	Yes	Yes	No	Medium	Medium
SCI-15	3	High	Low	Yes	No	Yes	Medium	Low
SCI-16	8	High	Low	Yes	Yes	Yes	Medium	High
SCI-17	8	Medium	High	No	Yes	No	Low	Medium

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

**Table 4-16. Analysis of Mitigation Actions**

Hazard Type	Action Addressing Hazard, by Mitigation Type <sup>a</sup>							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
<b>High-Risk Hazards</b>								
<b>Earthquake</b>	SCI-1, 2, 3, 9, 11, 12, 13, 14, 15, 16, 17	SCI-1, 7, 9	SCI-9, 11	SCI-2	SCI-6, 7	SCI-7		SCI-3, 5, 11, 12, 13, 15, 16, 17
<b>Medium-Risk Hazards</b>								
<b>Severe Weather</b>	SCI-1, 2, 3, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17	SCI-1, 4, 8	SCI-4, 11	SCI-8	SCI-6		SCI-5, 8	SCI-3, 5, 11, 12, 13, 15, 16, 17
<b>Flood</b>	SCI-1, 2, 3, 4, 5, 8, 12, 13, 14, 15, 16, 17	SCI-1, 4, 7, 8	SCI-4	SCI-8	SCI-6, 7	SCI-7		SCI-3, 5, 12, 13, 15, 16, 17
<b>Wildfire</b>	SCI-1, 2, 3, 11, 12, 13, 14, 15, 16, 17	SCI-1, 7	SCI-11		SCI-6, 7, 10	SCI-7		SCI-3, 5, 11, 12, 13, 15, 16, 17
<b>Low-Risk Hazards</b>								
<b>Landslide</b>	SCI-2, 3, 5, 8, 12, 13, 14, 15, 16, 17			SCI-8	SCI-6, 7			SCI-3, 5, 12, 13, 15, 16, 17
<b>Drought</b>	SCI-2, 3, 5, 15, 16							SCI-3, 5, 15, 16, 17

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

## 4.9 INFORMATION SOURCES USED FOR THIS ANNEX

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

- **Sonoma Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Sonoma Municipal Code Chapter 14.25—Flood Damage Prevention Regulations**—The flood damage prevention regulations were reviewed for compliance with the National Flood Insurance Program.
- **City of Sonoma 2015 Emergency Operations Plan**—Reviewed for consistency and for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Sonoma General Plan**—reviewed or consistency and for hazard mitigation planning and capability assessment.
- **Sonoma Municipal Code Chapter 14.24—Review, Rehabilitation and Abatement of Existing Seismically Unsafe Buildings**—This section of the Sonoma Municipal Code was reviewed to evaluate requirements for unreinforced masonry buildings and for identifying opportunities for action plan integration.
- **2019 California Building Standards Code and Sonoma Municipal Code Chapter 14.10**—for the full capability assessment and for identifying opportunities for action plan integration.
- **Sonoma Municipal Code Title 19—Development Code**—Reviewed for legal consistency and regulatory capability assessment.
- **Sonoma Capital Improvement Program**—Reviewed for project planning, funding and capability assessment.

- **Sonoma 2007 Greenhouse Gas Emissions Reduction Action Plan**—Reviewed for action planning and capability assessment.
- **City of Sonoma Storm Water Management Plan (2005) as updated in 2015 for State Regional Water Quality Control Board**—reviewed for legal and regulatory capability assessment.
- **2015 Urban Water Management Plan**—reviewed for action planning and capability assessment.
- **2018 Water Master Plan Update**—reviewed for action planning and capability assessment.
- **2011 Storm Drain Master Plan**—reviewed for action planning and capability assessment.
- **Caltrans Bridge Inspection Reports for City of Sonoma**—reviewed for identification of structurally deficient bridges

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 Repetitive Flood Loss Data**—to determine repetitive flood loss data within the City of Sonoma.
- **FEMA statistics**—reviewed to determine flood losses.
- **FEMA’s list of Declared Disasters**—to determine Declared Disaster Events, dates and FEMA Declaration Numbers
- **Sonoma County Community Wildfire Protection Plan**—reviewed for action planning and capability assessment.

## 4.10 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

As required by America’s Water Infrastructure Act, the City is preparing a Risk and Resiliency Assessment and an Emergency Response Plan for the City’s water system. Sonoma Water, the wholesaler who provides 90% of the City’s potable water supply, is completing a Risk and Resiliency Assessment of its water infrastructure. The City is also updating its Urban Water Management Plan. These reports and plans will help the City better understand risk and vulnerability of the City’s water supply, storage and distribution infrastructure

## 4.11 OBJECTIVES

The references to the numbered objectives listed in Table 1-14 are as follows:

1. Incorporate mitigation best management measures into plans, codes, and other regulatory standards for the private sector, nonprofit agencies, and community-based organizations within the operational area.
2. Maintain established partnerships in the identification and implementation of mitigation measures in the Sonoma County Planning area.
3. Retrofit, purchase, mitigate or relocate structures in high hazard areas, with an emphasis on those subject to repetitive damages.
4. Promote and implement hazard mitigation plans and projects that are consistent with state, regional, and local climate action and adaptation goals, policies, and programs.

5. Improve and expand systems that provide warning and emergency communications to the whole community.
6. Increase resilience and capabilities of community lifelines.
7. Prevent (or discourage) new development in hazardous areas or ensure that if building occurs in high-risk areas that it is done in such a way as to minimize risk
8. At the local government level, continually improve understanding of the location and potential impacts of natural hazards, utilizing the best available data and science
9. Consider the impacts of natural hazards in all planning mechanisms that address current and future land uses within the planning area
10. Minimize adverse impacts from flood risk on vulnerable communities.
11. Through the enforcement of relevant federal, State and local regulations, sustain life and property protection measures for all communities and structures located in the Sonoma County Planning area.
12. All cities, the county, special districts, and tribal organizations will develop, adopt, and implement local hazard mitigation principles that may be integrated with local comprehensive plan safety elements, Community Wildfire Protection Plans, floodplain management plans, facilities master plans, and other local planning initiatives.

# Sonoma

## Dam Failure Inundation Area

-  Inundation Area
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Source: ESRI Basemap,  
Sonoma Co., CA DWR



0 0.175 0.35 0.7  
Miles

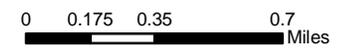


# Sonoma

## NEHRP Soil Classifications

-  C (Dense soil/soft rock)
-  D (Stiff soil)
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Source: ESRI Basemap, Sonoma Co., CGS



# Sonoma

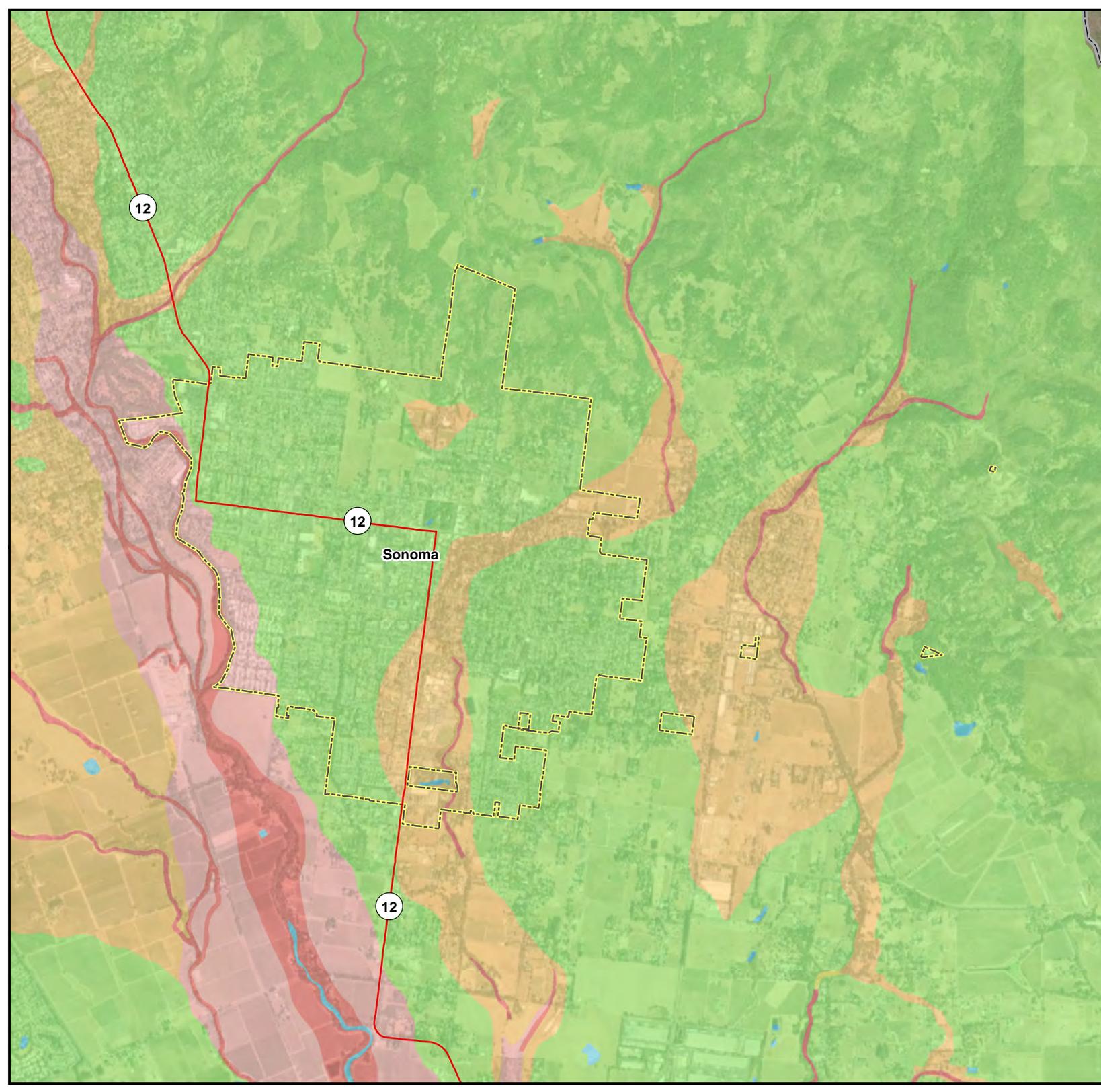
## Liquefaction Susceptibility

-  Water
-  Very Low
-  Low
-  Moderate
-  High
-  Very High
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Source: ESRI Basemap,  
Sonoma Co., USGS



0 0.175 0.35 0.7 Miles



# Sonoma

## 100-year Probabilistic Earthquake Scenario

### Mercalli Intensity Scale

 VII (Very Strong/Moderate)

 Selected City

 Incorporated Cities

 Sonoma County

 Highways

Intensity scale described as:  
(perceived shaking / potential damage)

Data Source: ESRI Basemap,  
Sonoma Co., USGS



0 0.175 0.35 0.7 Miles

# Sonoma

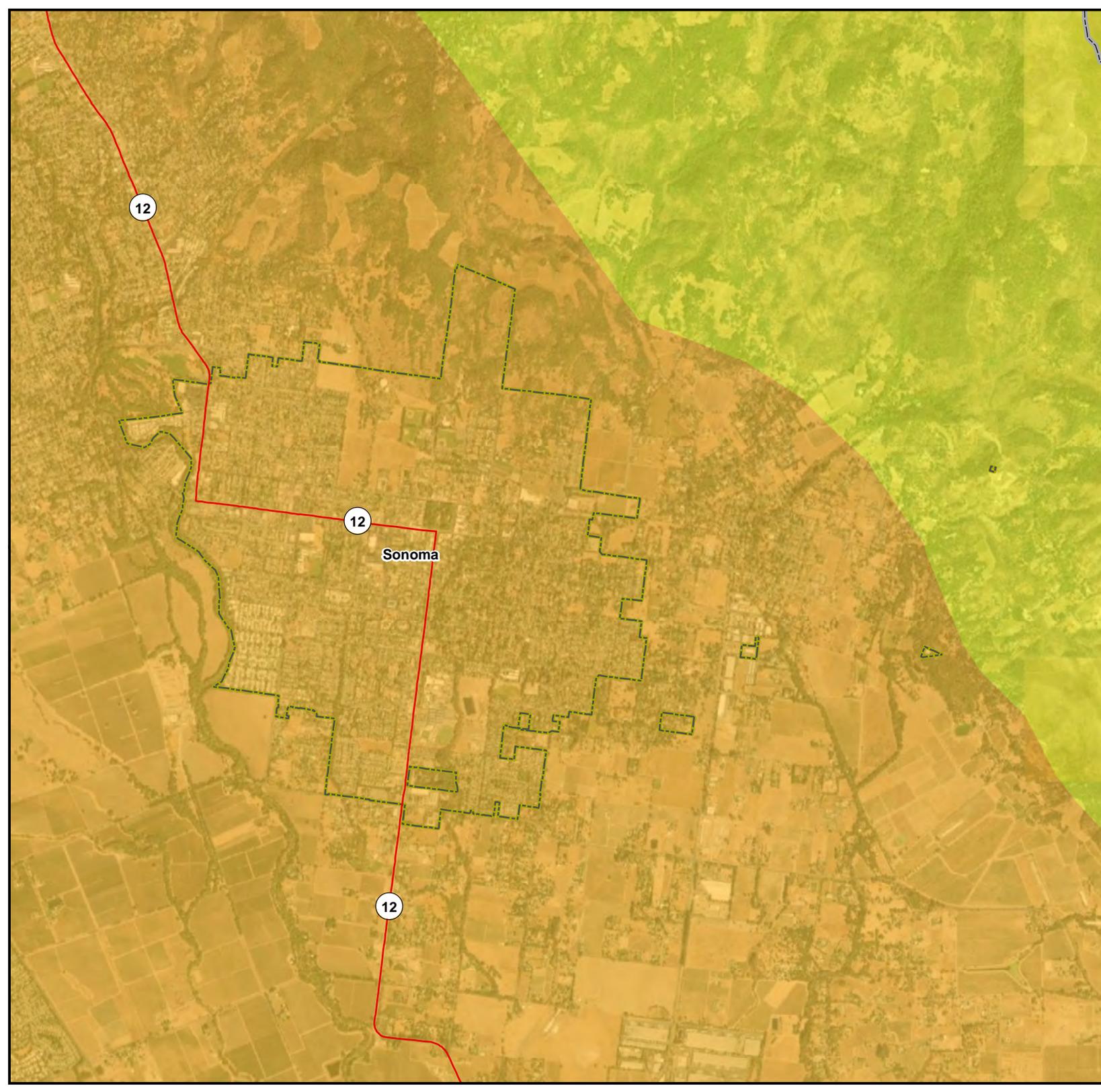
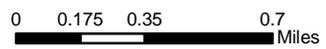
## Hayward M7.57 Earthquake Scenario

### Mercalli Intensity Scale

-  VII (Very Strong/Moderate)
-  VIII (Severe/Moderate-Heavy)
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Intensity scale described as:  
(perceived shaking / potential damage)

Data Source: ESRI Basemap,  
Sonoma Co., USGS



# Sonoma

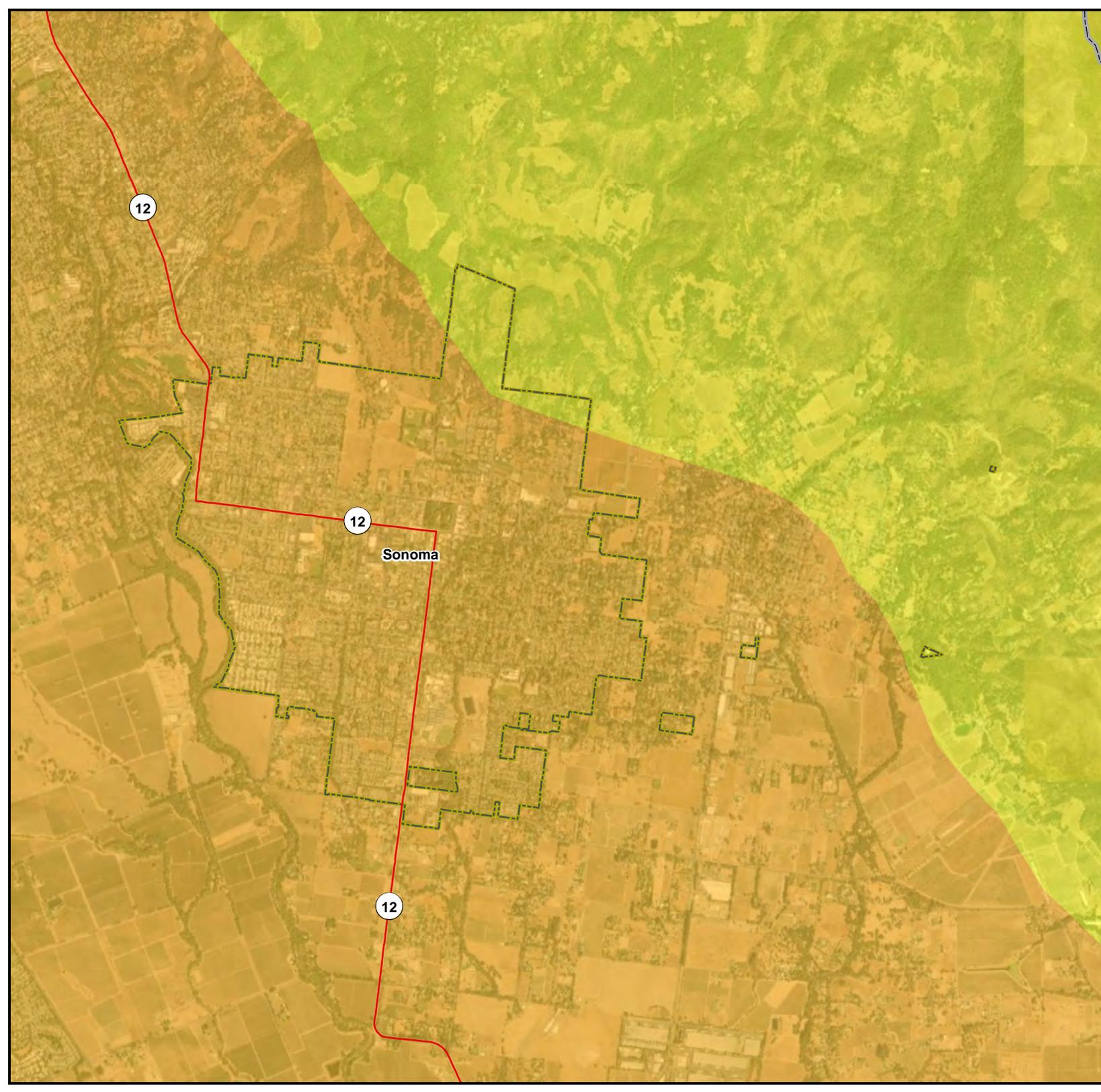
## Healdsburg M7.19 Earthquake Scenario

### Mercalli Intensity Scale

-  VII (Very Strong/Moderate)
-  VIII (Severe/Moderate-Heavy)
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Intensity scale described as:  
(perceived shaking / potential damage)

Data Sources: Esri Basemap,  
Sonoma Co., USGS



# Sonoma

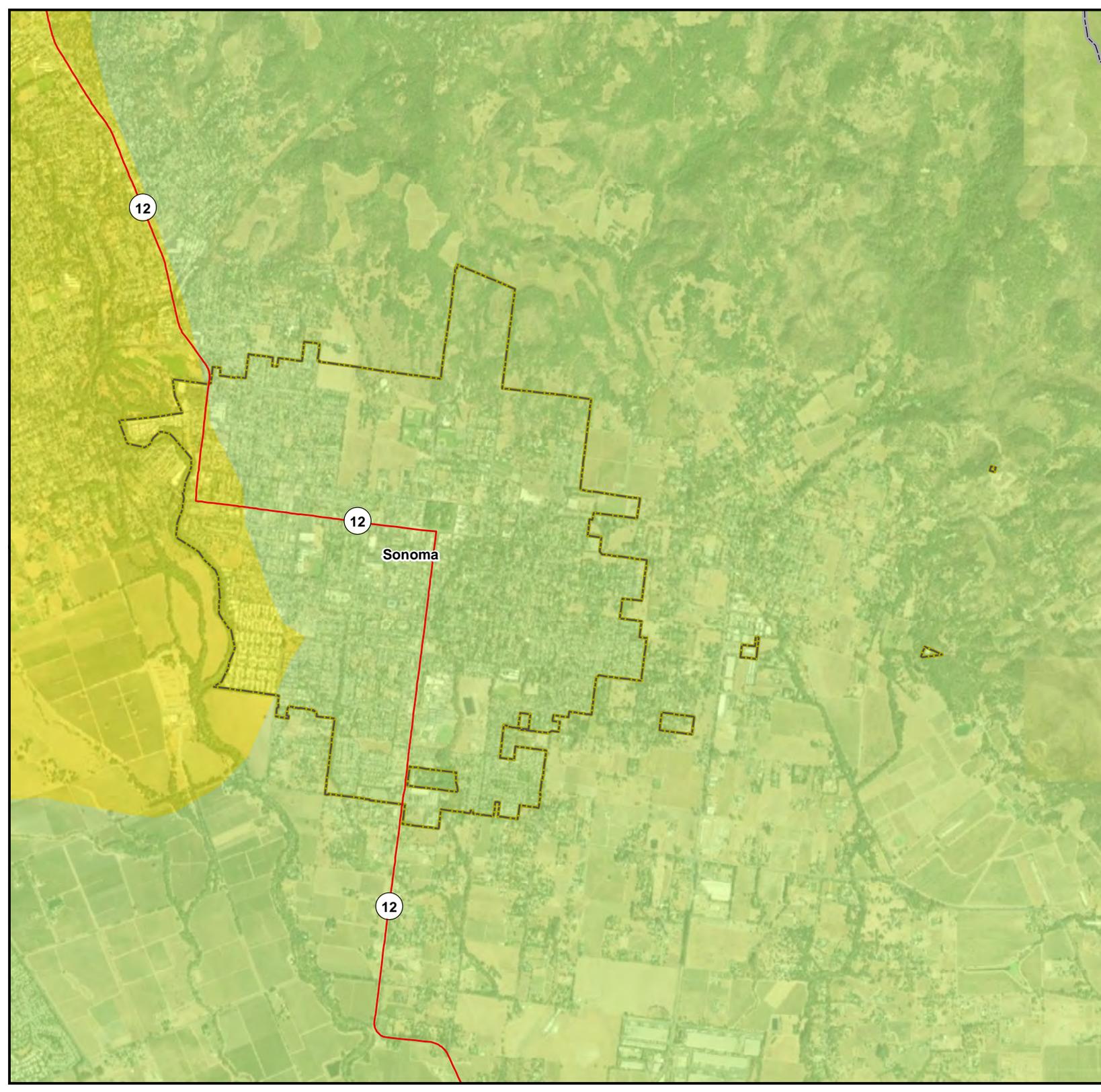
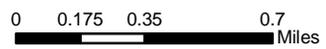
## Maacama M7.5 Earthquake Scenario

### Mercalli Intensity Scale

- VI (Strong/Light)
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

Intensity scale described as:  
(perceived shaking / potential damage)

Data Source: ESRI Basemap,  
Sonoma Co., USGS



# Sonoma

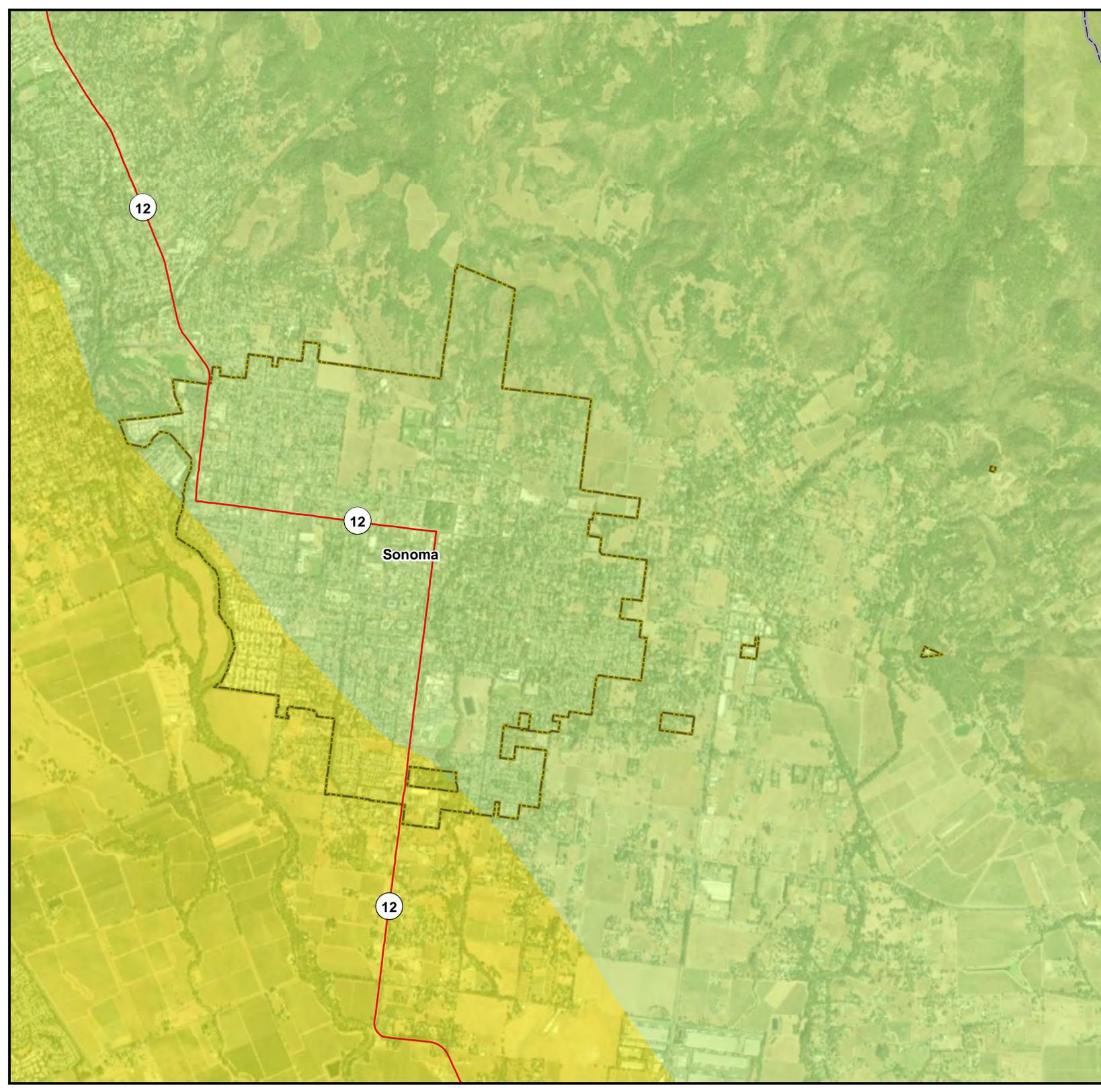
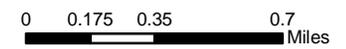
## San Andreas M8.04 Earthquake Scenario

### Mercalli Intensity Scale

- VI (Strong/Light)
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

Intensity scale described as:  
(perceived shaking / potential damage)

Data Source: ESRI Basemap,  
Sonoma Co., USGS

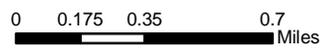


# Sonoma

## Flood Hazard Areas

-  1% Annual Chance Flood (100-Year)
-  0.2% Annual Chance Flood (500-Year)
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Sources: Esri Basemap, Sonoma Co., FEMA

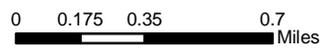


# Sonoma

## Flood Awareness Areas

-  Flood Awareness Areas
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Sources: Esri Basemap, Sonoma Co.

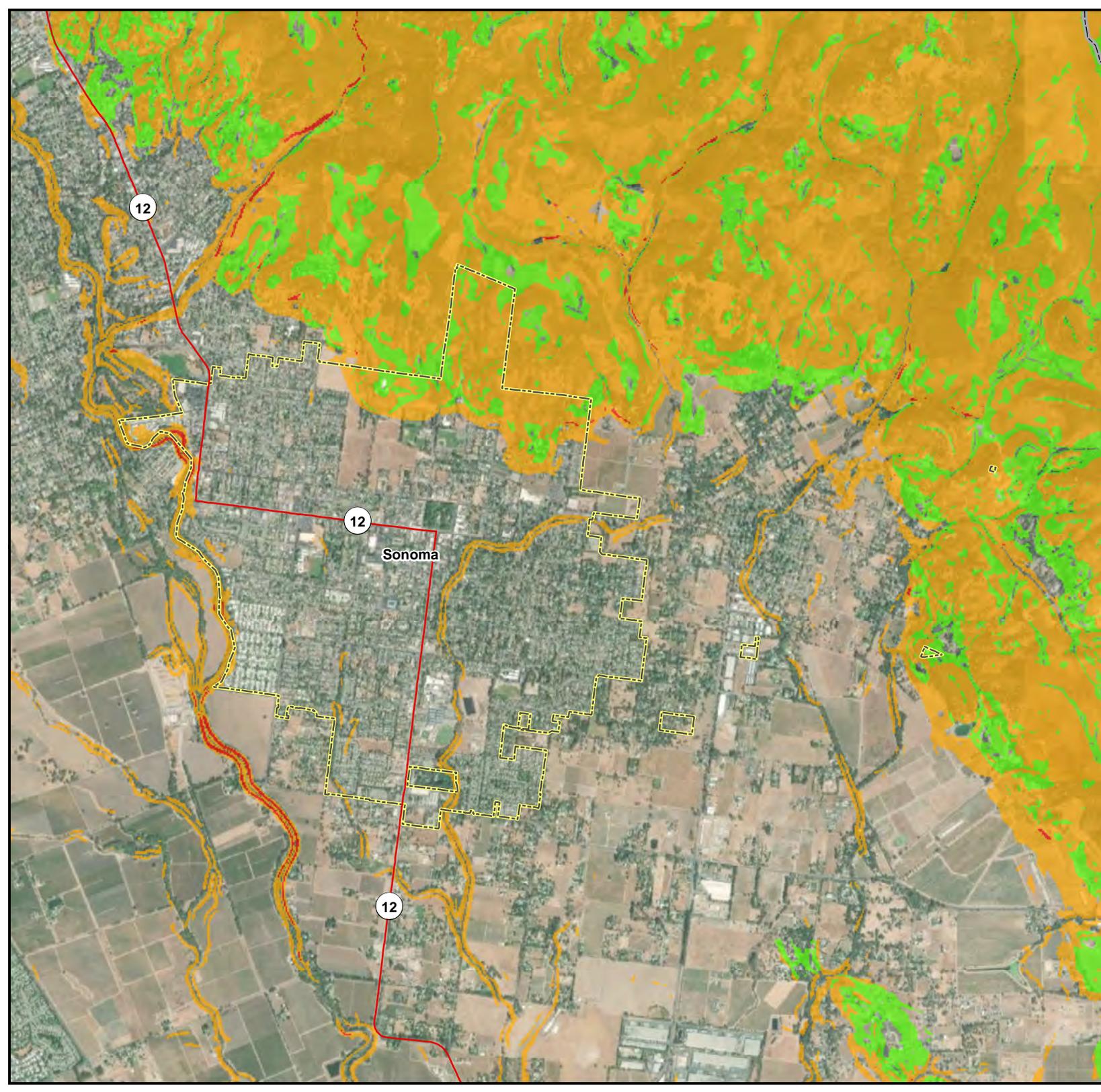
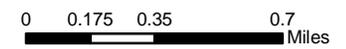


# Sonoma

## Susceptibility to Deep-Seated Landslides

-  Low
-  Moderate
-  High
-  Very High
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Sources: Esri Basemap, Sonoma Co., CGS



# Sonoma

## Wildfire Hazard Index

-  Very High Relative Hazard
-  High Relative Hazard
-  Moderate Relative Hazard
-  Low Relative Hazard
-  Very Low Relative Hazard
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Sources: Esri Basemap, Sonoma Co.

