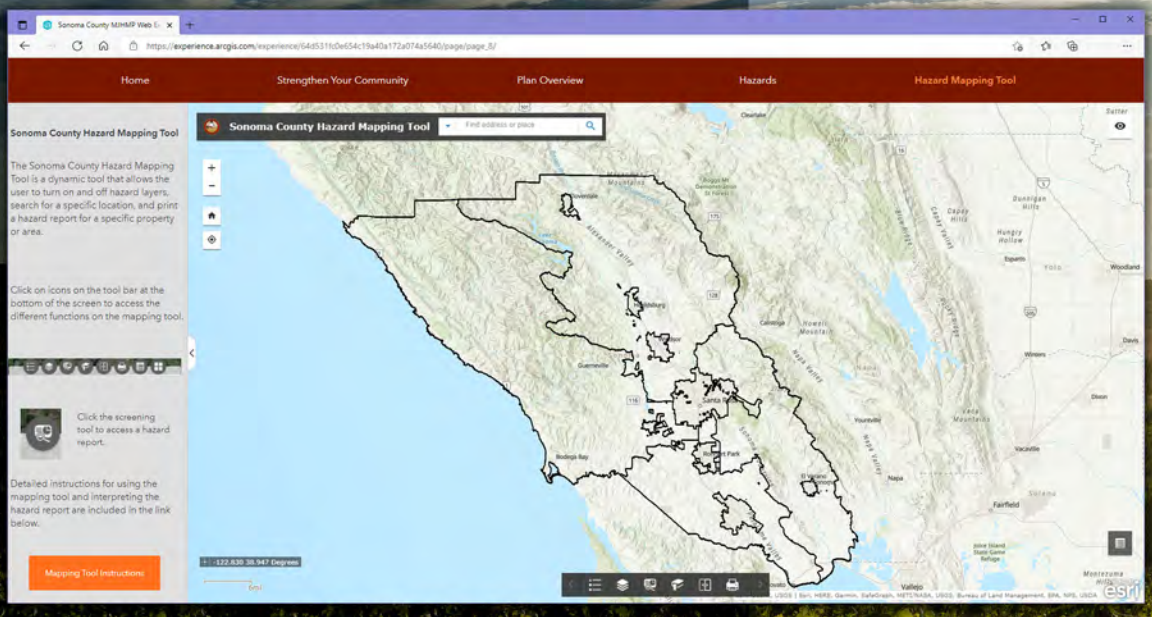
Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021

Volume 2
Planning Partner Annexes

October 2021



TETRA TECH

Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021

Volume 2—Planning Partner Annexes

October 2021

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Tetra Tech Project #103S6990
2021-10-19_SonomaCountyHMP_Vol2_Adoption Draft.docx

CONTENTS

Appendices

ACRONYMS

The following acronyms are used throughout the annexes in this volume:

- AFG—Assistance to Firefighters Grant
- AFGP—Assistance to Firefighters Grant Program
- BRIC—Building Resilient Infrastructure and Communities
- C&CB—Capability and Capacity Building
- Cal OES—California Office of Emergency Services
- CAL FIRE—California Department of Forestry and Fire Protection
- CDBG—Community Development Block Grants
- CERT—Community Emergency Response Team
- COOP/COG—continuity of operations and continuity of government
- CWPP—community wildfire protection plan
- DWR—Department of Water Resources
- EMPG—Emergency Management Performance Grants
- EOC—emergency operations center
- EOP—emergency operations plan
- FEMA—Federal Emergency Management Agency
- FIRM—flood insurance rate map
- FMA—Flood Mitigation Assistance Grant Program
- FMAG—Fire Management Assistance Grant Program
- FPD—fire protection district
- GHG—greenhouse gas
- HMA—Hazard Mitigation Assistance
- HMGP—Hazard Mitigation Grant Program
- HSGP—Homeland Security Grant Program
- HMP—Hazard Mitigation Program
- ISO—Insurance Services Office (insurance underwriter)
- JPA—joint powers authority
- MOA—memorandum of agreement
- MOU—memorandum of understanding
- NOAA—National Oceanic and Atmospheric Administration
- NRCS—Natural Resources Conservation Service

- NSCFPD— North Sonoma Coast Fire Protection District
- NSCVFA—North Sonoma Coast Volunteer Firefighter Association
- OES—Office of Emergency Services (can refer to either county or state office)
- PDM—Pre-Disaster Mitigation
- POC—point of contact
- PRMD—Sonoma County Permit & Resource Management Department
- RCD—resource conservation district
- SVFD—Sonoma Valley Fire District
- TCFPD— Timber Cove Fire Protection District
- TSR—The Sea Ranch
- TSRA—The Sea Ranch Association
- USDA—U.S. Department of Agriculture
- UWMP—urban water management plan
- WUI—wildland urban interface

INTRODUCTION

BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

> "Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan." (Section 201.6(a)(4)).

For the *Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021*, a planning partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act for as many eligible local governments as possible. The Disaster Mitigation Act defines a local government as follows:

> "Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity."

In addition, federally recognized tribes may participate in local/tribal multi-jurisdictional plans as long as the requirements of Section 201.7 of 44 CFR are met for tribal components of the plan.

Two types of planning partners participated in this process for the *Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021*, with distinct needs and capabilities:

- Incorporated municipalities
- Special districts

Each participating planning partner prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

A planning team made up of Sonoma County and consultant staff solicited the participation of all eligible municipalities and special districts at the outset of this project. A kickoff meeting was held on June 10, 2020, to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce

the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments in the planning area were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Review the *2016 Sonoma County Operational Area Hazard Mitigation Plan* and planning partnership
- Outline the work plan for this hazard mitigation plan.
- Describe the benefits of multi-jurisdictional planning.
- Outline planning partner expectations.
- Solicit planning partners.
- Solicit volunteers/recommendations for the steering committee.

Local governments wishing to join the planning effort were asked to provide the planning team with a "letter of intent to participate" that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, the planning team received formal commitment from 13 planning partners in addition to the County. A map showing the location of participating special purpose districts is provided at the end of this introduction. Maps showing risk assessment results for participating cities are provided in the individual annexes for each city. Risk assessment maps for all planning areas countywide are provided in Volume 1 of this hazard mitigation plan.

Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were provided and discussed at the kickoff meeting (see Appendix A for details):

- Complete a "letter of intent to participate."
- Designate a lead point of contact for this effort.
- Support and participate in the selection and function of the Steering Committee.
- Provide support required to implement the public involvement strategy.
- Participate in the process through opportunities such as:
  - Steering Committee meetings
  - Public meetings or open houses
  - Workshops and planning partner specific training sessions
  - Public review and comment periods prior to adoption.
- Attend the mandatory jurisdictional annex workshop.
- Complete the jurisdictional annex.
- Perform a "consistency review" of all technical studies, plans and ordinances specific to hazards.
- Review the risk assessment and identify hazards and vulnerabilities specific to the jurisdiction.
- Review and determine if the mitigation recommendations chosen in Volume 1 will meet the needs of the jurisdiction.

- Create an action plan that identifies each project, who will oversee the task, how it will be financed, and when it is estimated to occur.
- Formally adopt the hazard mitigation plan.

By adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

Final Coverage

All of the following planning partners submitted letters of intent to participate fully met the participation requirements for this update, completed an annex template, and will be covered by the current hazard mitigation plan upon FEMA approval and adoption by their governing bodies:

- County of Sonoma
- City of Cotati
- City of Santa Rosa
- City of Sonoma
- Town of Windsor
- Cloverdale Fire Protection District
- North Sonoma Coast Fire Protection District
- Northern Sonoma County Fire Protection District
- Rancho Adobe Fire Protection District
- Sonoma Valley Fire Protection District
- Timber Cove Fire Protection District
- Gold Ridge Resource Conservation District
- Sonoma Resource Conservation District
- Sonoma County Agricultural Preservation & Open Space District

Linkage Procedures

Eligible local jurisdictions that did not participate in development of this multi-jurisdictional plan may comply with Disaster Mitigation Act requirements by linking to this plan following procedures outlined in Appendix B.

PARTNER ANNEX DEVELOPMENT

Capability Assessment

All participating jurisdictions compiled an inventory and analysis of existing authorities and capabilities called a “capability assessment.” A capability assessment creates an inventory of a jurisdiction’s mission, programs, and policies, and evaluates its capacity to carry them out. This assessment identifies potential gaps in the jurisdiction’s capabilities. If the capability assessment identified an opportunity to add a missing core capability or expand an

existing one, then doing so has been selected as an action in the jurisdiction's action plan. The sections below describe the specific capabilities evaluated under the assessment.

Planning and Regulatory Capabilities

Jurisdictions can develop policies and programs and implement rules and regulations to protect and serve residents. Local policies are typically identified in planning documents, implemented via a local ordinance, and enforced by a governmental body. Because the planning and regulatory authority of municipal partners is generally broader than that of special-purpose districts, the assessment of these capabilities is more detailed for the municipal partners.

Development and Permitting Capability

This set of capabilities is not applicable to special purpose districts and was assessed only for municipal partners (cities and the County). Municipal jurisdictions regulate land use through the adoption and enforcement of zoning, subdivision, and land development ordinances, building codes, building permit ordinances, floodplain, and stormwater management ordinances. When effectively prepared and administered, these regulations can lead to hazard mitigation.

Fiscal Capabilities

Assessing a jurisdiction's fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant-funding eligibility, and local jurisdictional authority to generate internal financial capability, such as through impact fees.

Administrative and Technical Capabilities

Without appropriate personnel, the mitigation strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers.

Education and Outreach Capability

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing this outreach and education capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community based on education and public engagement.

Compliance with National Flood Insurance Program Requirements

The National Flood Insurance Program (NFIP) is not available to special purpose districts, so this set of capabilities was assessed only for municipal partners (cities and the County). Flooding is the costliest natural hazard in the United States and homeowners face increasingly high flood insurance premiums. Community participation in the NFIP opens up opportunity for additional grant funding associated specifically with flooding issues. Assessment of a jurisdiction's current NFIP status and compliance provides a greater understanding of the local flood management program, opportunities for improvement, and available grant funding opportunities.

Participation and Classification in Other Programs

Other programs, such as the Community Rating System, Storm/Tsunami Ready, and Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum requirements set forth by local, state, and federal regulations in order to create a more resilient community. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community. The programs reviewed here are applicable to municipal partners only so they are not included in the capability assessments for special-purpose districts.

Adaptive Capacity

An adaptive capacity assessment evaluates a jurisdiction's ability to anticipate impacts from future conditions. By looking at public support, technical adaptive capacity, and other factors, jurisdictions identify their core capability for resilience against issues such as sea level rise. The adaptive capacity assessment provides jurisdictions with an opportunity to identify areas for improvement by ranking their capacity high, medium, or low.

Mitigation Action Plan Development

Risk Ranking

In the risk-ranking exercise, each planning partner was asked to review the ranked risk specifically for its jurisdiction, based on the impact on its population and/or facilities. Municipalities based this ranking on probability of occurrence and the potential impact on people, property, and the economy. Special purpose districts based this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities, and the facilities' functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. The objectives of this exercise were to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" and "medium" for each jurisdiction as a result of this exercise were considered to be priorities for identifying mitigation actions, although jurisdictions also identified actions to mitigate "low" ranked hazards, as appropriate.

Information Reviewed to Develop Action Plan

The tool kits were used during the workshops and in follow-up work conducted by the planning partners. A large portion of the workshop focused on how the tool kit should be used to develop the mitigation action plan. Planning partners were specifically asked to review the following to assist in the identification of actions:

- The Jurisdiction's Capability Assessment—Reviewed to identify capabilities that the jurisdiction does not currently have but should consider pursuing or capabilities that should be revisited and updated to include best available information; also reviewed to determine how existing capabilities can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- The Jurisdiction's National Flood Insurance Program Compliance Table—Reviewed to identify opportunities to increase floodplain management capabilities.
- The Jurisdiction's Review of Its Adaptive Capacity for Climate Change—Reviewed to identify ways to leverage or continue to improve existing capacities and to improve understanding of other capacities.

- The Jurisdiction's Identified Opportunities for Future Integration—Reviewed to identify specific integration actions to be included in the mitigation strategy.
- Jurisdiction-Specific Vulnerabilities—Reviewed to identify actions that will help reduce known vulnerabilities.
- The Mitigation Best Practices Catalog—Reviewed to identify actions that the jurisdiction should consider including in its action plan.
- Public Input—Reviewed to identify potential actions and community priorities.

Action Plan Prioritization

The actions recommended in the action plan were prioritized based on the following factors:

- Cost and availability of funding
- Benefit, based on likely risk reduction to be achieved
- Number of plan objectives achieved
- Timeframe for project implementation
- Eligibility for grand funding programs

Two priorities were assigned for each action:

- A high, medium or low priority for implementing the action
- A high, medium or low priority for pursuing grant funding for the action.

The sections below describe the analysis of benefits and costs and the assignment of the two priority ratings.

Benefit/Cost Review

The action plan must be prioritized according to a benefit/cost analysis of the proposed actions (44 CFR, Section 201.6(c)(3)(iii)). For this hazard mitigation plan, a qualitative benefit-cost review was performed for each action by assigning ratings for benefit and cost as follows:

- Cost:
  - **High**—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
  - **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - **Low**—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- Benefit:
  - **High—**Action will provide an immediate reduction of risk exposure for life and property.
  - **Medium—**Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.
  - **Low—**Long-term benefits of the action are difficult to quantify in the short term.

To assign priorities, each action with a benefit rating equal to or higher than its cost rating (such as high benefit/medium cost, medium benefit/medium cost, medium benefit/low cost, etc.) was considered to be cost-beneficial. This is not the detailed level of benefit/cost analysis required for some FEMA hazard-related grant programs. Such analysis would be performed at the time a given action is being submitted for grant funding.

Implementation Priority

Implementation priority ratings were assigned as follows:

- **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
- **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
- **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.

Grant Pursuit Priority

Grant pursuit priority ratings were assigned as follows:

- **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

Classification of Actions

Each recommended action was classified based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this classification are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed

management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.

- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resiliency**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

Annex-Preparation Process

Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Separate templates were created for the two types of jurisdictions participating in this plan. The templates were created so that all criteria of Section 201.6 of 44 CFR for local governments would be met based on the partners' capabilities and mode of operation. Separate templates were available for partners updating a previous hazard mitigation plan and those developing a first-time hazard mitigation plan. These templates were deployed in three phases during the course of this plan update process. These phases are described as follows:

- **Phase 1**—Profile, Trends, Previous Plan Status
  - Deployed: November 26, 2020
  - Due: December 31, 2020
- **Phase 2**—Capability Assessment and Information Sources
  - Deployed: February 19, 2021
  - Due: March 29, 2021
- **Phase 3**—Risk Ranking, Action Plan, and Information Sources
  - Multiple on-line Phase 3 Jurisdictional Annex Workshops: week of March 29, 2021
  - Due: May 14, 2021

The templates were set up to lead all partner through steps to generate Disaster Mitigation Act-required elements specific to their jurisdictions. The templates and their instructions are included in Appendix C of this volume.

Tool Kit

Each planning partner was provided with a tool kit to assist in completing the annex template and developing an action plan. The tool kits contained the following:

- The *2016 Sonoma County Operational Area Hazard Mitigation Plan* Annexes
- A catalog of mitigation best practices and adaptive capacity
- The guiding principle, goals and objectives developed for the update to the plan
- A list of jurisdiction-specific issues noted during the risk assessment
- Information on the FEMA Hazard Mitigation Assistance grant program
- Information on past hazard events that have impacted the planning area
- County-wide and jurisdiction-specific maps for hazards of concern
- Special district boundary maps showing the sphere of influence for each special purpose district partner
- The risk assessment results developed for this plan
- Information on climate change and expected impacts in the planning area
- Jurisdiction-specific annex templates, with instructions for completing them
- FEMA guidance on plan integration
- The results of a public survey conducted as part of the public involvement strategy
- A copy of the presentation that was given at the workshop sessions.

Workshop

All partners were required to participate in a technical assistance workshop, where key elements of the template were discussed, and the templates were subsequently completed by a designated point of contact for each partner and a member of the planning team. Multiple online workshops were held the week of March 29, 2021 and attended by at least one representative from each planning partner, addressed the following topics:

- The templates and the tool kit
- Natural events history
- Jurisdiction-specific issues
- Risk ranking
- Status of prior actions
- Developing your action plan
- Cost/benefit review
- Prioritization protocol
- Next steps.

Special Purpose District Boundaries

- Gold Ridge RCD
- Sonoma RCD
- Fire Protection Districts
- County Boundary
- Highways

N

0 5 10 Miles

Data Sources: Sonoma Co.

Note: The service area for the Sonoma County Agricultural Preservation & Open Space District is the entire county

1. SONOMA COUNTY

1.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Lisa Hulette, Grants Manager
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Telephone: 707-565-3709
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Alternate Point of Contact
Christopher Godley, Director
Department of Emergency Management
2300 County Center Drive, Ste B
Santa Rosa, CA 95403
Telephone: 707-565-2502
E-mail Address: Christopher.Godley@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.

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 ºF. 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 ºF) 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
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	No In general, the county loses land to incorporated cities as a result of annexation
Is your jurisdiction expected to annex any areas during the performance period of this plan? *If yes, describe land areas and dominant uses.* *If yes, who currently has permitting authority over these areas?*	No N/A N/A
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas*	Yes 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. 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. 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. The area addressed by the Sonoma Developmental Center Specific Plan underway includes historic structures that may need seismic retrofitting.
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	

	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

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	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.
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: *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*				
Fire Safety Laws	Yes	Yes	Yes	Yes
Comment: • *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)*				
Zoning Code	Yes	Yes	Yes	Yes
Comment: *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.*				
Subdivisions	Yes	No	No	Yes
Comment: *SCC, Chapter 25, Articles 1-7, Ord. No. 5404 § 2, 2003*				
Stormwater Management	Yes	No	No	Yes
Comment: *SCC, Chapter 11A, Ord. No. 5819, § 6, adopted December 12, 2009*				
Post-Disaster Recovery	Yes	No	No	Yes
Comment: *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*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Real Estate Disclosure	No	Yes	Yes	No
Comment: CA State Civil Code 1102 requires disclosure for all sales of real property. Enforcement is not under the authorities of Sonoma County				
Growth Management	Yes	No	Yes	Yes
Comment: 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				
Site Plan Review	Yes	No	No	No
Comment: SCC, Chapter 25, Article III, Ord. No. 5404 § 2, 2003				
Environmental Protection	Yes	No	No	Yes
Comment: SCC, Chapter 23A, Articles I-V, (Ord. No. 3411 § II				
Flood Damage Prevention	Yes	No	No	Yes
Comment: SCC, Chapter 7B—Ord. No. 5700 § 1, 2007				
Emergency Management	Yes	No	Yes	Yes
Comment: SCC, Chapter 10, Articles I-III, Ord. 5761§ 1, 2007				
Climate Change	Yes	No	No	Yes
Comment: 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.				
Other	Yes	No	No	Yes
Comment: 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*				
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? Yes *Comment: Public Safety Element*				
Local Coastal Plan	Yes	Yes	Yes	Yes
Comment: Plan has separate authority from the General plan, relevant policies, and is an opportunity for integration. Coast Commission has authority				
Capital Improvement Plan	Yes	No	No	Yes
How often is the plan updated? Yearly *Comment: Capital Improvement Plan for 2020-2025*				
Disaster Debris Management Plan	No	Yes	No	Yes
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)				
Floodplain or Watershed Plan	Pending	No	No	Yes
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.				
Stormwater Plan	Yes	No	No	Yes
Comment: Southern Sonoma Storm Water Resources Plan, 2019				
Urban Water Management Plan	Yes	No	No	Yes
Comment: Urban Water Management Plan, 2015				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Habitat Conservation Plan	Yes	No	No	Yes
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.*				
Economic Development Plan	Yes	No	No	Yes
Comment: *Strategic Sonoma Action Plan, 2018*				
Shoreline Management Plan	Yes	No	No	Yes
Comment: *Local Coastal Plan, 2001*				
Community Wildfire Protection Plan	Yes	No	No	Yes
Comment: *2016 CWPP Complete. Update In development. Anticipated completion in 2021*				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	Yes	No	Yes	Yes
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.*				
Emergency Operations Plan	Yes	No	Yes	Yes
Comment: *Sonoma County/Operational Area Emergency Operations Plan, 2021*				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Yes	No	No
Comment: *Part of the Bay Area Urban Areas Security Initiative*				
Post-Disaster Recovery Plan	Yes	No	No	Yes
Comment: *Sonoma County Recovery & Resiliency Framework, 2017*				
Continuity of Operations Plan	Yes	No	No	Yes
Comment: *Sonoma County/COOP Plan 2018*				
Public Health Plan	Yes	No	No	Yes
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.*				

Table 1-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	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? *If yes, briefly describe.*	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
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe.*	Yes Facebook, Twitter and NextDoor
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe.*	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? *If yes, briefly describe.*	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? *If yes, briefly describe.*	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? *If exceeds, in what ways?*	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? *If so, state what they are.*	Not known at this time.
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	Yes A preliminary FIRM that was produced under the RiskMAP program was in process at the time of this plan update

Criterion	Response
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	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? *If so, what type of assistance/training is needed?*	Yes Training to any degree is always welcome
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	Yes Yes N/A
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* *What is the premium in force?*	2,236 $566,074,500 $3,117,241
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?*	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 *Comment: Staff participate in regional and local working groups, and regularly participate in outside training*	High
Jurisdiction-level monitoring of climate change impacts *Comment: Monitoring of climate change impacts will increase as staff gains access to resources and training*	Medium
Technical resources to assess proposed strategies for feasibility and externalities *Comment: Some resources are achieved in house but additional training will increase this ability*	Medium
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment: Some staff expertise exists. Additional resources may be needed.*	Medium
Capital planning and land use decisions informed by potential climate impacts *Comment: Potential climate impacts inform decision-making*	High
Participation in regional groups addressing climate risks *Comment: The County has multiple departments participating in regional groups addressing climate risks*	High

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

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 Plan
- 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 Plan which is occurring during preparation of this plan.

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			✓
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	✓		

Year	Event Name	Dates	EOC Activated	Gubernatorial Declaration	Presidential Declaration
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	Kincade 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	✓		
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.

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.

Table 1-13. Status of Previous Plan Actions

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.			✓	SC-1
Comment: The General Plan Safety Element is currently in the update process				
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				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in 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			✓	SC-2
Comment:				
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.			✓	SC-3
Comment:				
Improve flood and topographic mapping along the Russian River. Re-evaluate hydrologic floodways and recurrence levels.			✓	SC-3
Comment: This action was combined with the action above and is being carried over as action 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.			✓	SC-4
Comment:				
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.				
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.			✓	SC-5
Comment:				
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.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in 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.			✓	SC-6
Comment:				
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.			✓	SC-7
Comment:				
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.				
Develop a model ordinance which would provide for the orderly regulation of land uses in areas which may be affected by sea level rise.			✓	SC-8
Comment:				
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.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in 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.			✓	SC-9
Comment:				
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
Comment:				
Perform seismic retrofitting or replacement County owned bridges.			✓	SC-11
Comment:				
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.			✓	SC-12
Comment:				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
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.		✓		
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				
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.			✓	SC-13
Comment: This action is considered to be ongoing and in process at the time of this plan update.				
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			✓	SC-14
Comment:				
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.			✓	SC-15
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.				
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.			✓	SC-16
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.				
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.			✓	SC-17
Comment:				
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.			✓	SC-18
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				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
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.		✓		
Comment: This action is being removed as it is considered to be an ongoing capability and is now adequately addressed by objective #3				
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.		X		
Comment: Sonoma County participates in the NFIP CRS				
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.		✓		
Comment: This action is being removed as it pertains to ongoing capabilities of the County and is now addressed by objective #8.				
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.		✓		
Comment: This action is being removed as it pertains to ongoing capabilities of the County and is now addressed by objective #8.				
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.		✓		
Comment: This action is being removed as it is considered to be and ongoing capability of the County and is now addressed by objectives 2, 3 and 8				
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.			✓	SC-19
Comment:				
Monitor and evaluate repetitive loss property mitigation initiatives. Report updates to appropriate federal and state agencies.		✓		
Comment: This action is being removed as it is considered to be an ongoing capability and is now addressed by objectives 2 and 3.				
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.			✓	SC-20
Comment:				
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.			✓	SC-21
Comment:				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
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 and 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.			✓	SC-22
Comment:				
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.				
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.			✓	SC-23
Comment: Action to be reframed as part of this plan update				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Develop a strategy to prioritize strengthening or replacing county owned emergency response facilities that have structural weaknesses as determined through an engineering analysis.		✓		
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.				
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.		✓		
Comment: This action is being removed as it has been identified as an ongoing capability and is addressed by Object 5.				
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.		✓		
Comment: This action is being removed as it has been identified as an ongoing capability and is addressed by objectives 5 and 6..				
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.	✓			
Comment: This action was completed during the performance period				
Develop a strategic plan for damage assessment and recovery of essential public facilities following earthquakes, prioritize areas of high public occupancy.			✓	SC-24
Comment:				
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.			✓	SC-25
Comment:				
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.	✓			
Comment: Completed through fire protection district consolidation in 2019, though more consolidations may take place in coming years				

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.						
Hazards Mitigated:	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						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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]
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.						
Hazards Mitigated: Earthquake, Flood, Severe Weather, Wildfire						
Existing	3, 6	OEM	Permit Sonoma	High	FEMA HMA Grants, EMPG, HSGP	Short-Term, depending on funding
Action SC-10—Assess the vulnerability of critical county infrastructure including roads, bridges, pipelines, water treatment plants, culverts, and other essential facilities.						
Hazards Mitigated: Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
Existing	3, 5, 6, 8	DEM	Permit Sonoma, Transportation & Public Works	High	FEMA HMA Grants, EMPG, HSGP	Short-Term, depending on funding
Action SC-11—Perform seismic retrofitting or replacement County owned bridges.						
Hazards Mitigated: Earthquake						
Existing	3, 6	Transportation & Public Works	N/A	High	FEMA HMA, CDBG-DR, DOT, County CIP	Long-term, depending on funding
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.						
Hazards Mitigated: Dam Failure, Flood, sea-level rise, Tsunami						
Existing	3, 6	Transportation & Public Works	Permit Sonoma	High	FEMA HMA, CDBG-DR, DOT, County CIP	Long-term, depending on funding
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.						
Hazards Mitigated: Wildfire						
Existing	6, 8, 12	Transportation & Public Works	Permit Sonoma	High	FEMA HMA, CDBG-DR, DOT, County CIP	Ongoing
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						
Hazards Mitigated: Dam Failure, Drought, Earthquake, Flood, Landslide, Sea-Level Rise, Severe Weather, Tsunami, Wildfire						
New and Existing	2, 8, 10	DEM	Permit Sonoma	Low	General Fund	Short-term, ongoing
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.						
Hazards Mitigated: Earthquake						
Existing	2, 3, 8	Community Development Commission	Permit Sonoma	Medium	FEMA HMA Grants, CDBG-DR & MIT, Local Funds	Ongoing
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.						
Hazards Mitigated: Earthquake						
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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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.						
Hazards Mitigated:	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]
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.						
Hazards Mitigated: Earthquake						
Existing	6, 8	Transportation & Public Works	DEM	High	FEMA HMA grants, EMPG, HSGP, General Fund	Long-term, depending on funding
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.						
Hazards Mitigated: Wildfire						
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
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.						
Hazards Mitigated: Earthquake						
New & Existing	2, 3, 11	Permit Sonoma	Community Development Commission	High	FEMA HMA (BRIC, HMGP), Sonoma County General Fund	Short-term, Ongoing
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.						
Hazards Mitigated: Flood, Dam Failure						
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
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: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Dam failure, flooding, severe weather, tsunami, sea level rise						
New & Existing	1, 3, 4, 7, 8, 9, 11, 12	Permit Sonoma	Board of Supervisors	Low	Staff Time, General Funds	Ongoing
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: • 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. 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.						
Hazards Mitigated: Wildfire						
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.						
Hazards Mitigated: 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.						
Hazards Mitigated: 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.						
Hazards Mitigated: 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).						
Hazards Mitigated: 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.						
Hazards Mitigated: 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.						
Hazards Mitigated: 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.						
Hazards Mitigated: 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						
Hazards Mitigated: 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.						
Hazards Mitigated: 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.						
Hazards Mitigated: 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"						
Hazards Mitigated: 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.						
Hazards Mitigated: 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						
Hazards Mitigated: 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.						
Hazards Mitigated: 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 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.
- **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

2. CITY OF COTATI

2.1 LOCAL HAZARD MITIGATION PLANNING TEAM

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Alternate Point of Contact
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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 2-1.

Table 2-1. Local Mitigation Planning Team Members

Name	Title
Katie Duran	Administrative Analyst
Damien O'Bid	City Manager
Noah Housh	Community Development Director
Craig Scott	Public Works Director/City Engineer
Angela Courter	Administrative Services Director
Michael Parish	Chief of Police

2.2 JURISDICTION PROFILE

2.2.1 Location and Features

The City of Cotati is an incorporated city in Sonoma County, California, U.S., located about 45 mi (70 km) north of San Francisco in the U.S. 101 corridor between the cities of Rohnert Park and Petaluma.

The city has a total area of 1.89 sq mi (4.9 km^2), 0.53% of which is water.

The city is about 17 mi (27 km) from the Pacific Ocean. It lies entirely in the drainage basin of the Laguna de Santa Rosa (river). The Petaluma River watershed begins just south of town. To the west is the Stemple Creek watershed. The sources of all three watercourses lie in the hilly area between Stony Point Road and U.S. 101, just west of town.

A gap in the coastal ridges near Petaluma often allows coastal fog to reach Cotati in the summer, giving it a marine climate that is noticeably cooler and less sunny than the "coastal" climates of nearby Santa Rosa and Sebastopol. Cotati averages fewer than 800 hours per growing season in the 70–90°F range.

2.2.2 History

The City of Cotati was incorporated July 2, 1963, less than a year after the incorporation of the lands north of town to form Rohnert Park; voters approved (by a 284 to 41 margin) incorporation of Cotati as a separate city.

2.2.3 Governing Body Format

The City of Cotati is governed by a five-member city council. The City consists of six departments: Administrative Services, Community Development, Public Works/Engineering, Police, and the City Manager's Office. The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.

2.3 CURRENT TRENDS

2.3.1 Population

According to California Department of Finance, the 2021 estimate for City of Cotati was 7429, a drop of 1 percent from the previous year.

2.3.2 Development

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

2.4 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 legal and regulatory capabilities is presented in Table 2-3.
- Development and permitting capabilities are presented in Table 2-4.
- An assessment of fiscal capabilities is presented in Table 2-5.
- An assessment of administrative and technical capabilities is presented in Table 2-6.
- An assessment of education and outreach capabilities is presented in Table 2-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 2-8.
- Classifications under various community mitigation programs are presented in Table 2-9.
- The community’s adaptive capacity for the impacts of climate change is presented in Table 2-10.

Table 2-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	Not Applicable This is Cotati's first hazard mitigation plan
Is your jurisdiction expected to annex any areas during the performance period of this plan? *If yes, describe land areas and dominant uses.* *If yes, who currently has permitting authority over these areas?*	Yes Commercial/Industrial County of Sonoma
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas*	Yes The Highway 116 Corridor, Downtown Specific Plan (DSP) Area, and Cotati Station Area Specific Plan Area. Each of these are designated ABAG Priority Development Areas and/or Priority Production Areas. The DSP has known localized areas of flood hazard. No other areas have known hazard risks specific to those areas.
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	

	2015	2016	2017	2018	2019
Single Family	2	18	36	0	3
Multi-Family	0	0	0	0	0
Other (commercial, mixed use, etc.)	0	2	11	2	3
Total	2	20	47	2	6

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: Unknown, but limited numbers of individual properties • Landslide: 0 • High Liquefaction Areas: Unknown, but likely significant portion of community • Tsunami Inundation Area: 0 • Wildfire Risk Areas: not available at this time
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.	A majority of the existing parcels within the City of Cotati have some level of development on them. The exception to this, is a few larger commercial and residential parcels on the west side of the City and some larger residential and agricultural properties toward the south end of the City. However, many of these previously developed properties are significantly under-developed based on their current land use designations, or the existing development is nearing the end of its functional life and is in need to significant investment to update the structures or re-develop the parcels. The City of Cotati General Plan does not include a buildable lands inventory.

Table 2-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	No
Comment: Cotati Municipal Code, Title 14, Chapter 14.04, Section 14.04.030 adopts the California Building Code; Ord. 887 §2(part), 2019: Ord. 864 § 2(part), 2016: Ord. 843 § 1(part), 2013: Ord. 829 § 1(part), 2011: Ord. 815 § 1(part), 2008				
Zoning Code	Yes	No	Yes	Yes
Comment: CMC, Title 17, Chapters 17.20 – 17.28; Ord. 766 § 2 Exh. A (part), 2004				
Subdivisions	Yes	No	Yes	Yes
Comment: CMC, Title 17, Chapter 17.70, Sections 010-120; Ord. 766 § 2 Exh. A (part), 2004				
Stormwater Management	Yes	No	No	Yes
Comment: CMC, Title 13, Chapter 13.68, Sections 010-230; Ord. 870 § 2(part), 2017: Ord. 795 § 1(part), 2007: Ord. 759 § 1(part), 2004				
Post-Disaster Recovery	No	Yes	No	Yes
Comment: Sonoma County				
Real Estate Disclosure	No	Yes	Yes	No
Comment: CA State Civil Code 1102 requires disclosure for all sales of real property. Enforcement is not under the authorities of the City of Cotati				
Growth Management	Yes	No	Yes	Yes
Comment: CMC, Title 17, Chapter 17.52, Sections 010-050; Ord. 766 § 2 Exh. A (part), 2004; growth management is also covered within the city's General Plan.				
Site Plan Review	Yes	No	No	No
Comment: CMC, Title 17, Chapter 17.42, Sections 010-210; Ord. 766 § 2 Exh. A (part), 2004				
Environmental Protection	Yes	No	No	Yes
Comment: CMC, Title 17, Chapters 17.54, Sections 010-080 (tree preservation and protection) & 17.56, Sections (wetland protection and restoration); Ord. 766 § 2 Exh. A (part), 2004 covers both chapters				
Flood Damage Prevention	Yes	No	No	Yes
Comment: CMC, Title 15, Chapter 15.04, section 040—methods of reducing flood losses; Ord. 819 § 2(part), 2008: Ord. 667 § 2(part), 1997				
Emergency Management	Yes	No	Yes	Yes
Comment: City Manager is the City's Emergency Manager				
Climate Change	No	No	No	No
Comment:				
Other	Yes	No	No	Yes
Comment: CMC, Title 2, Chapter 2.24 Emergency Organization and Functions, Sections 010-080—discusses the Cotati Disaster Council's roles and duties; 2.24.080 Emergency Plan—The Cotati Disaster Council shall be responsible for the development of the city emergency plan				
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? Yes				
Comment: Cotati General Plan, Adopted 03/24/2015—safety element discusses seismic, geologic, and flooding hazards in addition to flood protection measures				
Capital Improvement Plan	Yes	No	No	Yes
How often is the plan updated? Every five years				
Comment: City of Cotati Capital Improvement Program FYs 2020/21 – 2024/25				
Disaster Debris Management Plan	No	No	No	No
Comment:				
Floodplain or Watershed Plan	No	No	No	Yes
Comment:				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Stormwater Plan	Yes	No	No	Yes
Comment: Phase II NPDES Storm Water Management Plan, March 2005				
Urban Water Management Plan	No	Yes	No	No
Comment: Sonoma County Water Agency 2015 Urban Water Management Plan—City of Cotati is referenced as having participated in the development of the plan				
Habitat Conservation Plan	No	No	No	No
Comment:				
Economic Development Plan	In process	No	No	Yes
Comment: Economic Development Strategy and Implementation Program; also economic vitality chapter within the general plan				
Shoreline Management Plan	No	No	No	No
Comment:				
Community Wildfire Protection Plan	Pending—Other	Yes	No	Yes
Comment: Sonoma County Community Wildfire Protection Plan, 2018 (Update pending)				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	Yes	No	Yes	Yes
Comment: Sonoma County Regional Climate Action Plan, July 2016—City of Cotati website links to this plan, contents list actions taken within general plan and through code & ordinance adoption				
Emergency Operations Plan	Yes	No	No	Yes
Comment: City of Cotati Emergency Operations Plan—updated 2019				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	No	No
Comment: Bay Area Urban Areas Security Initiative				
Post-Disaster Recovery Plan	No	Yes	No	No
Comment: Sonoma County Recovery & Resiliency Framework, December 2018				
Continuity of Operations Plan	No	Yes	No	Yes
Comment: Sonoma County has a COOP Plan				
Public Health Plan	Yes	No	No	Yes
Comment: Community Health & Wellness chapter in the general plan				
Other				
Comment:				

Table 2-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	Yes Community Development Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	Yes

Table 2-5. 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 & sewer
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	N/A

Table 2-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Development Department, Planning
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works and Engineering
Planners or engineers with an understanding of natural hazards	Yes	Community Development & City Engineer
Staff with training in benefit/cost analysis	Yes	Administrative Service Director
Surveyors	Yes	By contract only
Personnel skilled or trained in GIS applications	Yes	Community Development & City Engineer
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Damien O'Bid, City Manager
Grant writers	No	
Other	N/A	

Table 2-7. 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? *If yes, briefly describe.*	Yes Ref: Sonoma County website
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe.*	Yes Facebook & Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe.*	Yes Planning Commission
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, briefly describe.*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe.*	Yes Nixle, SoCo Alert

Table 2-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Public Works and Engineering
Who is your floodplain administrator? (department/position)	Public Works Director
Are any certified floodplain managers on staff in your jurisdiction?	Public Works Director
What is the date that your flood damage prevention ordinance was last amended?	2008
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	Yes Updating regulations
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	No Yes
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* *What is the premium in force?*	73 $22,711,000 $58,393
How many total loss claims have been filed in your jurisdiction?[a] *How many claims are still open or were closed without payment?* *What were the total payments for losses?*	5 0 $2,275

a. According to FEMA statistics as of December 2020

Table 2-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	0609716560	N/A
DUNS #	Yes	020016119	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 2-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Medium
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	High
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Medium
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Medium
Identified strategies for adaptation to impacts *Comment:*	Medium
Champions for climate action in local government departments *Comment:*	Medium
Political support for implementing climate change adaptation strategies *Comment:*	High
Financial resources devoted to climate change adaptation *Comment:*	High
Local authority over sectors likely to be negative impacted *Comment:*	Unsure
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	High
Local residents support of adaptation efforts *Comment:*	Medium

Criterion	Jurisdiction Rating[a]
Local residents' capacity to adapt to climate impacts *Comment:*	Medium
Local economy current capacity to adapt to climate impacts *Comment:*	Unsure
Local ecosystems capacity to adapt to climate impacts *Comment:*	Unsure

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.

2.5 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.

2.5.1 Existing Integration

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

- Sonoma County HMP
- Rohnert Park HMP
- Sonoma Water HMP
- City's Capital Improvement Plan
- City's General Plan

2.5.2 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:

- Rancho Adobe Fire Strategic Plan
- Laguna Waste Water HMP
- Sonoma County HMP
- Location tracking of building development in specific hazard areas

2.6 RISK ASSESSMENT

2.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-11 lists past occurrences of natural hazards for which specific damage was recorded in the City of Cotati. Other hazard events that broadly affected the entire planning area, including the City of Cotati, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 2-11. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Heavy Rains and Flooding	DR-183	December 24, 1964	Unknown
Severe Storms, Flooding	DR-253	January 26, 1969	Unknown
Severe Storms, Flood, Mudslides, High Tide	DR-651	December 19, 1981 – January 8, 1983	Unknown
Coastal Storms, Floods, Slides, Tornadoes	DR-677	January 21 – March 30, 1983	Unknown
Severe Storms, Flooding	DR-758	February 12 – March 10, 1986	Unknown
Freeze of '91	DR-894	December 1990 – February 1991	Unknown
Flood of '93		January 20 – 25, 1993	Unknown
Fishing Emergency		May – September 1994	Unknown
Flood of '95, Part 1		January 8 – 31, 1995	Unknown
Flood of '95, Part 2		March 7 – 15, 1995	Unknown
December Winter Storm		December 11 – 12, 1995	Unknown
February Winter Storm		February 4 – 5, 1996	Unknown
Cavedale Fire		July 31 – August 20, 1996	Unknown
Jenner Sandbarrier		July 31 – August 20, 1996	Unknown
Porter Creek Fire		October 27 – 28, 1996	Unknown
New Year's Flood		December 30, 1996 – January 4, 1997	Unknown
Superbowl Flood		January 25, 1997	Unknown
Flood of '98/Rio Nido Debris Flow		February 2, 1998 – January 4, 2000	Unknown
February Winter Storm		February 8 – 10, 1999	Unknown
December Winter Storms		December 17, 2002 – April 8, 2003	Unknown
Geysers Fire		September 3 – 8, 2004	Unknown
New Year's Floods		December 31, 2005 – January 3, 2006	Unknown
Late Spring Storms		March 29 – April 16, 2006	Unknown
SF Oil Spill		November 7, 2007	Unknown
H1N1 Influenza Pandemic		April – May 2009	Unknown
Great Tohoku Tsunami		March 11, 2011	Unknown
Holiday Decoration Flood		December 2, 2012	Unknown
Lopez Protests		October 29 and November 5, 2013	Unknown
Drought		2014 – 2016	Unknown
South Napa Earthquake		August 24, 2014	Unknown
December Winter Storm		December 11 – 12, 2014	Unknown
Valley Fire	FM-5112	September 12 – 25, 2015	Unknown
Severe Winter Storms, Flooding, and Mudslides	DR-4301	January 3 – 12, 2017	Unknown
Severe Winter Storms, Flooding, Mudslides	DR-4308	February 1 – 23, 2017	Unknown
LNU Complex Fires		October 2017	Unknown

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires	DR-4344	October 8 – 31, 2017	Unknown
PG&E Power Shutoff (PSPS)		October 2018	Unknown
Severe Winter Storms, Flooding, Landslides, and Mudslides	DR-4434	February 24 – March 1, 2019	Unknown
PG&E Power Shutoff (PSPS)		October 2019	Unknown
Kincade Fire	FM-5295	October 23 – November 7, 2019	Unknown
COVID-19 Pandemic	DR-4482	January 2020 – present	Unknown
Wildfires	DR-4558	August 14 – September 26, 2020	Unknown
Wildfires	DR-4569	September 4 – November 17, 2020	Unknown

2.6.2 Hazard Risk Ranking

Table 2-12 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 2-12. Hazard Risk Ranking

Rank	Hazard	Risk Rating Score	Risk Category
1	Earthquake	36	High
2	Wildfire	18	High*
2	Severe Weather	30	Medium
3	Flood	18	Medium
3	Landslide	18	Medium
6	Dam Failure	12	Low
7	Drought	6	N/A
8	Sea Level Rise	0	Low
8	Tsunami	0	Low

* Due to recent Countywide fire history Changed by City of Cotati

2.6.3 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: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

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:

- None listed

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

2.7 HAZARD MITIGATION ACTION PLAN

Table 2-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 2-14 identifies the priority for each action. Table 2-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 2-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action COT-1—Implement Water System Emergency Monitoring and Leak Detection (includes water quality monitoring and zone isolation)						
Hazards Mitigated:	Earthquake, Severe Weather					
Existing	2, 3, 4, 6	City of Cotati		High	Water Enterprise; grant funding	short term
Action COT-2—Collaborate with Sonoma Water on building an emergency interconnect and loop main (Cotati Tanks direct interconnect, looping main to Madrone Road)						
Hazards Mitigated:	Earthquake, Severe Weather					
New & Existing	2, 3, 4, 6	City of Cotati	Sonoma Water	High	Water Enterprise; grant funding	Long term
Action COT-3—Collaborate with the City of Rohnert Park to build a Cotati-Rohnert Park Water System Emergency Interconnect						
Hazards Mitigated:	Earthquake					
New & Existing	2, 3, 4, 6	City of Cotati	City of Rohnert Park	Medium	Water Enterprise; grant funding	Long term
Action COT-4—Collaborate with the City of Rohnert Park to build a Cotati-Rohnert Park Sewer system Emergency Interconnect						
Hazards Mitigated:	Earthquake					
New & Existing	2, 3, 4, 6	City of Cotati	City of Rohnert Park	Medium	Sewer Enterprise; grant funding	Long term
Action COT-5—Fund and build Well sites/Tank Intrusion Monitoring						
Hazards Mitigated:	Earthquake					
New & Existing	3, 4, 6	City of Cotati		Low	Water Enterprise; grant funding	Short trm
Action COT-6—Fund and build Well Site emergency power interconnects (adding generator hook ups to all well sites)						
Hazards Mitigated:	Earthquake					
Existing	3, 4, 6	City of Cotati		Low	Water Enterprise; grant funding	short term
Action COT-7—Fund a Redwood Drive and Myrtle Sewer lift station emergency back-up power source.						
Hazards Mitigated:	Earthquake					
Existing	3, 4, 6	City of Cotati		Medium	Sewer Enterprise; grant funding	short term
Action COT-8—Fund critical facilities Emergency Stationary Back-up Power System and back-up power project						
Hazards Mitigated:	Earthquake, Severe Weather, Wildfire					
Existing	3, 4, 6	City of Cotati		High	Grant funding	long term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action COT-9—Support ongoing hazard mitigation efforts in the county.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Flood, Landslide, Dam Failure, Drought, Sea Level Rise, Tsunami						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	City of Cotati		Low	Staff time	Ongoing
Action COT-10—Fund and implement Evacuation Coordination Project						
Hazards Mitigated: Earthquake, Wildfire						
New & Existing	3, 4, 5, 6	City of Cotati		Medium	Grant funding, General Fund	short term
Action COT-11—Develop an Infrastructure Asset Management System for Inspection/Rapid Repair						
Hazards Mitigated: Earthquake						
New	1, 2, 3, 4, 6, 8, 11, 12	City of Cotati		Medium	Grant funding	Short term
Action COT-12—Fund Emergency Water Storage and Supply Projects						
Hazards Mitigated: Wildfire, Earthquake						
New	2, 3, 4, 6, 12	City of Cotati	Rancho Adobe Fire Protection District	High	Water Enterprise, Grant funding	Long term
Action COT-13—Fund Fire Flow Booster Pump System						
Hazards Mitigated: Wildfire, Earthquake						
New	2, 3, 4, 6, 12	City of Cotati	Rancho Adobe Fire Protection District	Medium	Grant funding, Water Enterprise	long term
Action COT-14—Fund Water Main Fire Flow projects						
Hazards Mitigated: Wildfire						
New	2, 3, 4, 6, 7, 9	City of Cotati	Rancho Adobe Fire Protection District	High	Grant funding, Water Enterprise	long Term
Action COT-15—Purchase a back-up power source for Traffic Signal Solar Red Flasher to assist with community movement in the event of power loss						
Hazards Mitigated: Wildfire, Severe Weather, Flood, Earthquake						
New & Existing	3, 4, 5, 6, 10	City of Cotati		Medium	Grant funding, General Fund	short term
Action COT-16—Fund a Laguna de Santa Rosa/East Cotati Avenue Storm Drain Flood Improvement Project						
Hazards Mitigated: Flood, Severe Weather						
New & Existing	1, 3, 4, 6, 7, 8, 9, 10, 11, 12	City of Cotati		High	Grant funding	Long Term
Action COT-17—Maintain participation in NFIP Program						
Hazards Mitigated: Flood, Severe Weather						
New & Existing	1, 3, 4, 6, 7, 8, 9, 10, 11, 12	City of Cotati		Low	Staff time	Short term
Action COT-18—Ensure compliance, adoption and coordination between General Plan's Safety Element and HMP						
Hazards Mitigated: All hazards						
New & Existing	1, 3, 4, 6, 7, 8, 9, 10, 11, 12	City of Cotati		Low	Staff Time	short term

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 2-14. 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]
COT-1	4	High	High	Yes	Yes	No	High	High
COT-2	4	High	High	Yes	Yes	No	High	High
COT-3	4	High	Medium	Yes	Yes	No	Medium	Medium
COT-4	4	High	Medium	Yes	Yes	No	Medium	Medium
COT-5	3	High	Low	Yes	Yes	No	High	High
COT-6	3	High	Low	Yes	Yes	No	High	High
COT-7	3	High	Medium	Yes	Yes	No	Medium	Medium
COT-8	3	High	High	Yes	Yes	No	High	High
COT-9	12	High	Low	Yes	No	Yes	High	High
COT-10	4	High	Medium	Yes	Yes	No	Medium	Medium
COT-11	8	High	Medium	Yes	Yes	No	High	High
COT-12	5	High	High	Yes	Yes	No	High	High
COT-13	5	High	Medium	Yes	Yes	No	High	High
COT-14	6	High	High	Yes	Yes	No	Medium	Medium
COT-15	5	High	Medium	Yes	Yes	No	High	High
COT-16	10	High	High	Yes	Yes	No	Low	High
COT-17	10	High	Low	Yes	No	Yes	High	No
COT-18	10	High	Low	Yes	No	Yes	High	No

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

Table 2-15. 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	9	1 – 11	10		8, 10, 15	1 – 11		9, 18
Wildfire	9		15		8, 10, 15	12-16		9, 18
Medium-Risk Hazards,								
Severe Weather	9	16, 17	15		8, 15	15,16		9, 18
Flood	9	16, 17	15	17	8, 15	15,16		9, 18
Landslide	9	17		17	8, 15			9, 18
Low-Risk Hazards								
Dam Failure	9	17		17				9, 18
Sea Level Rise	9							9, 18
Tsunami	9							9, 18

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

2.8 PUBLIC OUTREACH

Table 2-16 lists public outreach activities for this jurisdiction.

Table 2-16. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Cotati City Council Meeting—HMP Presentation	05/11/2021	25
City Website HMP Highlight	February 2021	
City Utility Newsletter HMP Outreach	January 2021	

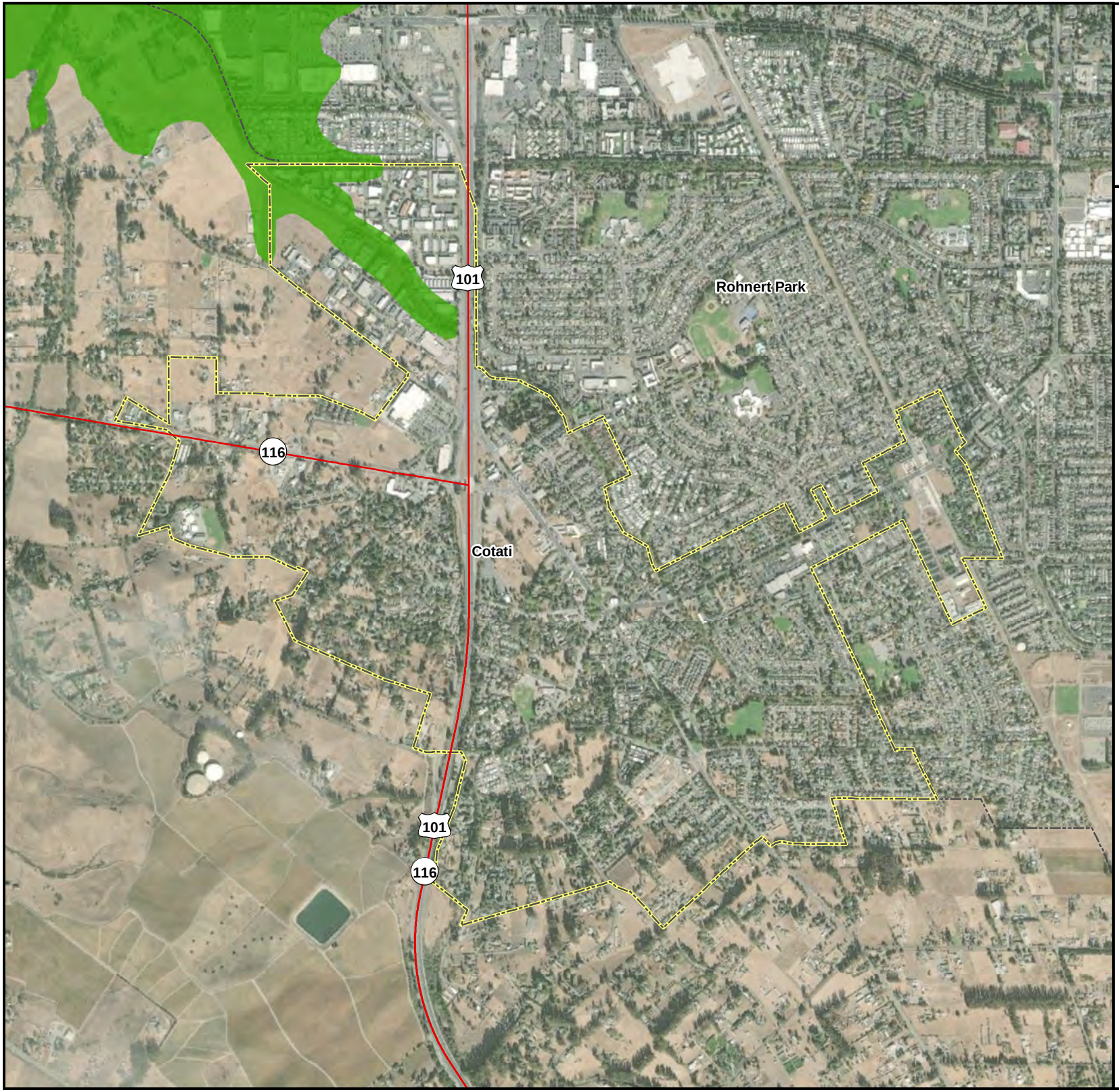
2.9 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

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

- **Cotati Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Cotati Flood Damage Prevention Ordinance (***Cotati Municipal Code, Title 15, Chapter 15.04, section 040)*—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Cotati Capital Improvement Program**
- **Sonoma Water 2015 Urban Water Management Plan—**City of Cotati is referenced as having participated in the development of the plan
- **Cotati General Plan**
- **Sonoma County Continuity of Operations Plan**
- **Sonoma County Regional Climate Action Plan**
- **Sonoma County Community Wildfire Protection Plan**

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.



Cotati

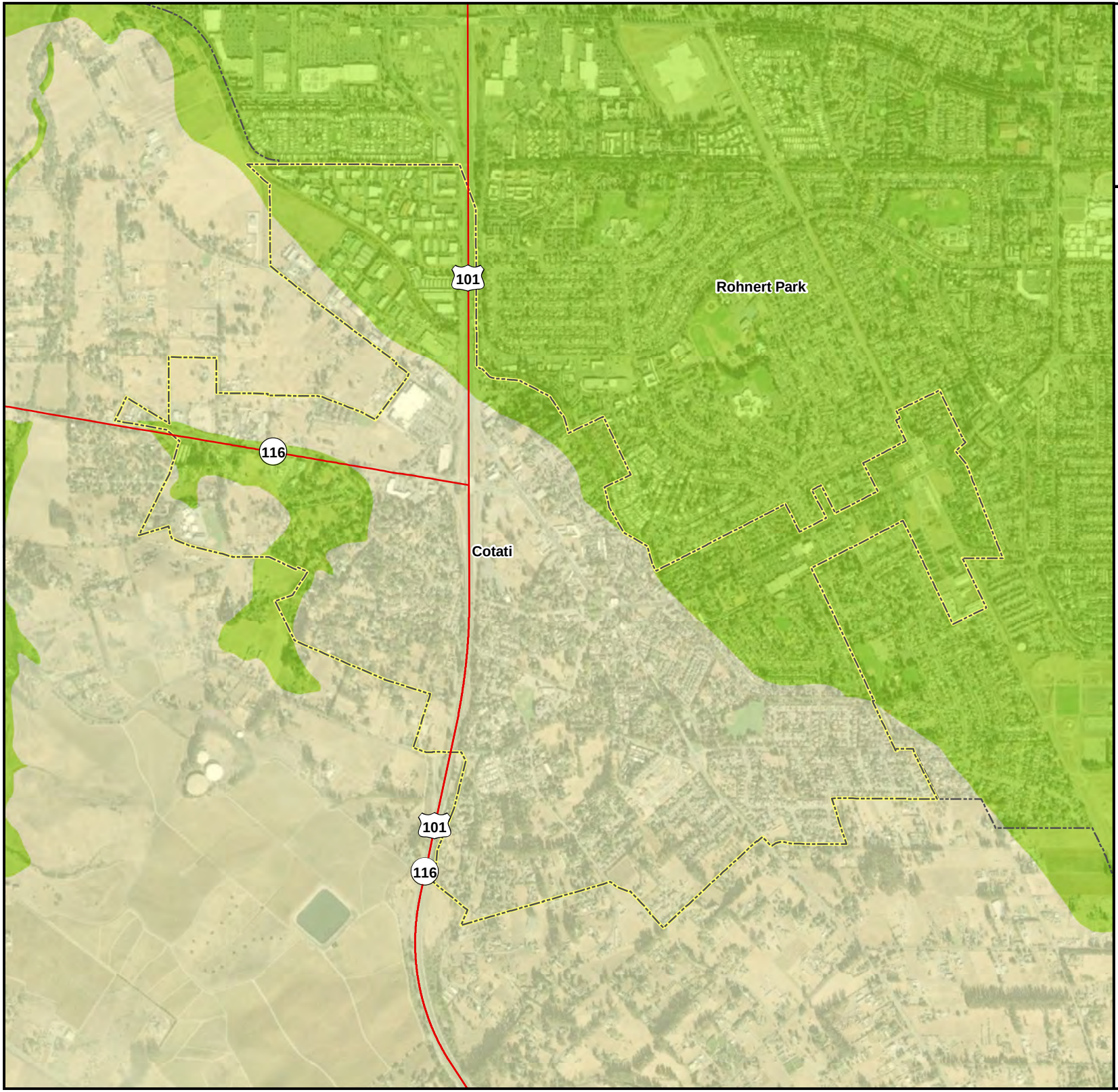
Dam Failure Inundation Area

Inundation Area
Selected City
Incorporated Cities
Sonoma County
Highways

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

N

0 0.1 0.2 0.4 Miles



Cotati

NEHRP Soil Classifications

C (Dense soil/soft rock)

D (Stiff soil)

Selected City

Incorporated Cities

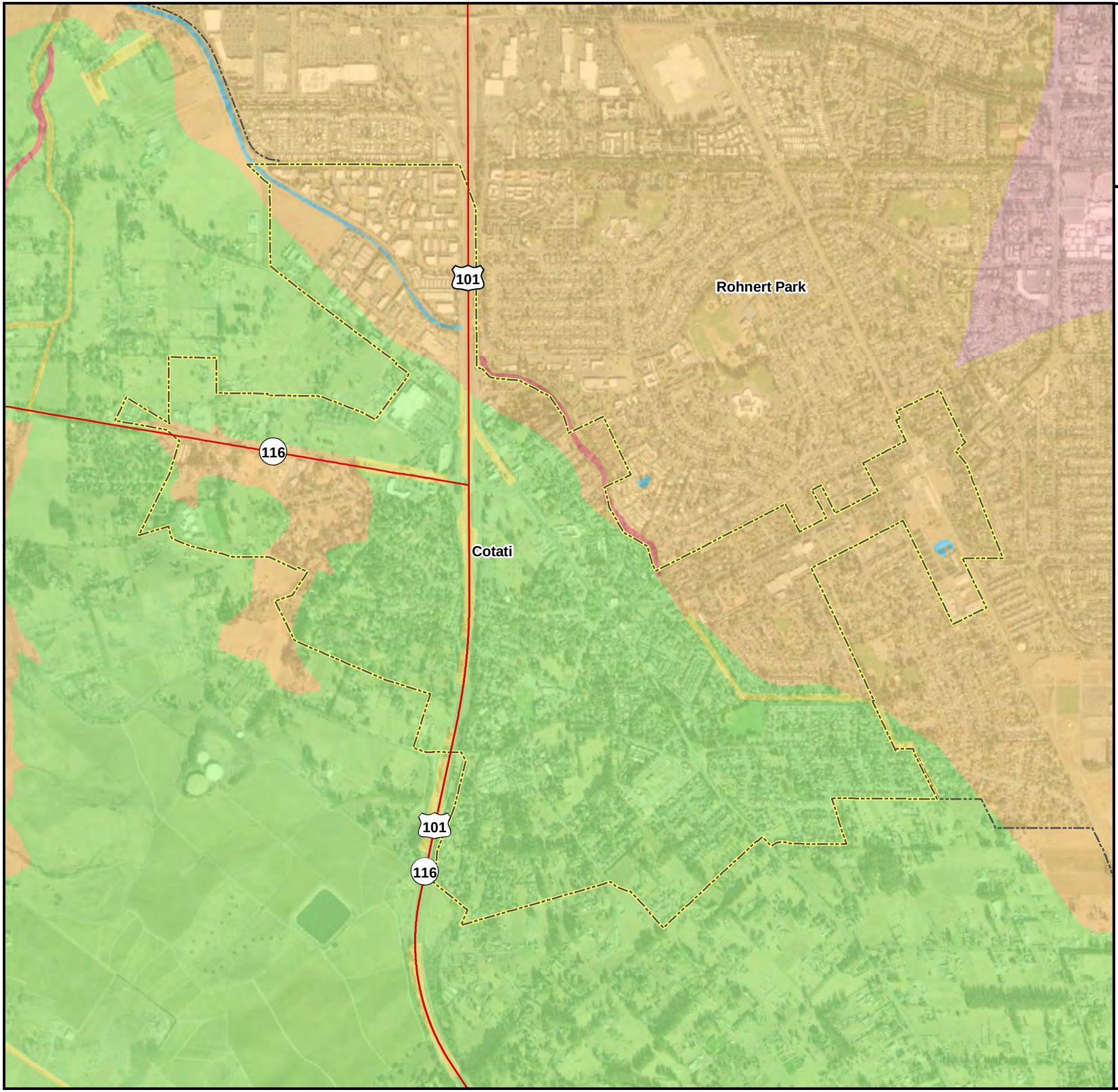
Sonoma County

Highways

Data Source: ESRI Basemap, Sonoma Co., CGS

N

0 0.1 0.2 0.4 Miles



Cotati

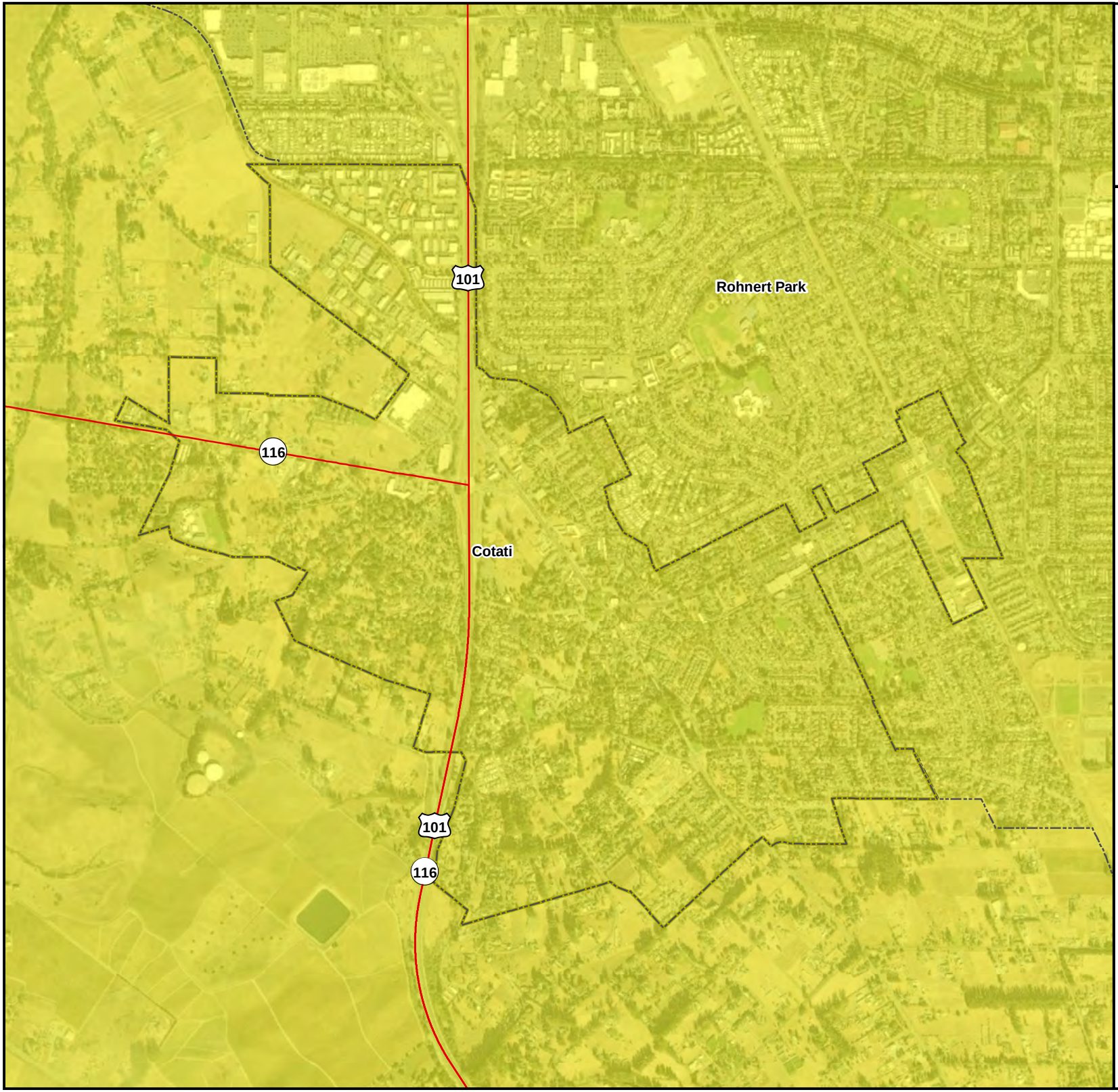
Liquefaction Susceptibility

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

100-year Probalistic Earthquake Scenario

Mercalli Intensity Scale

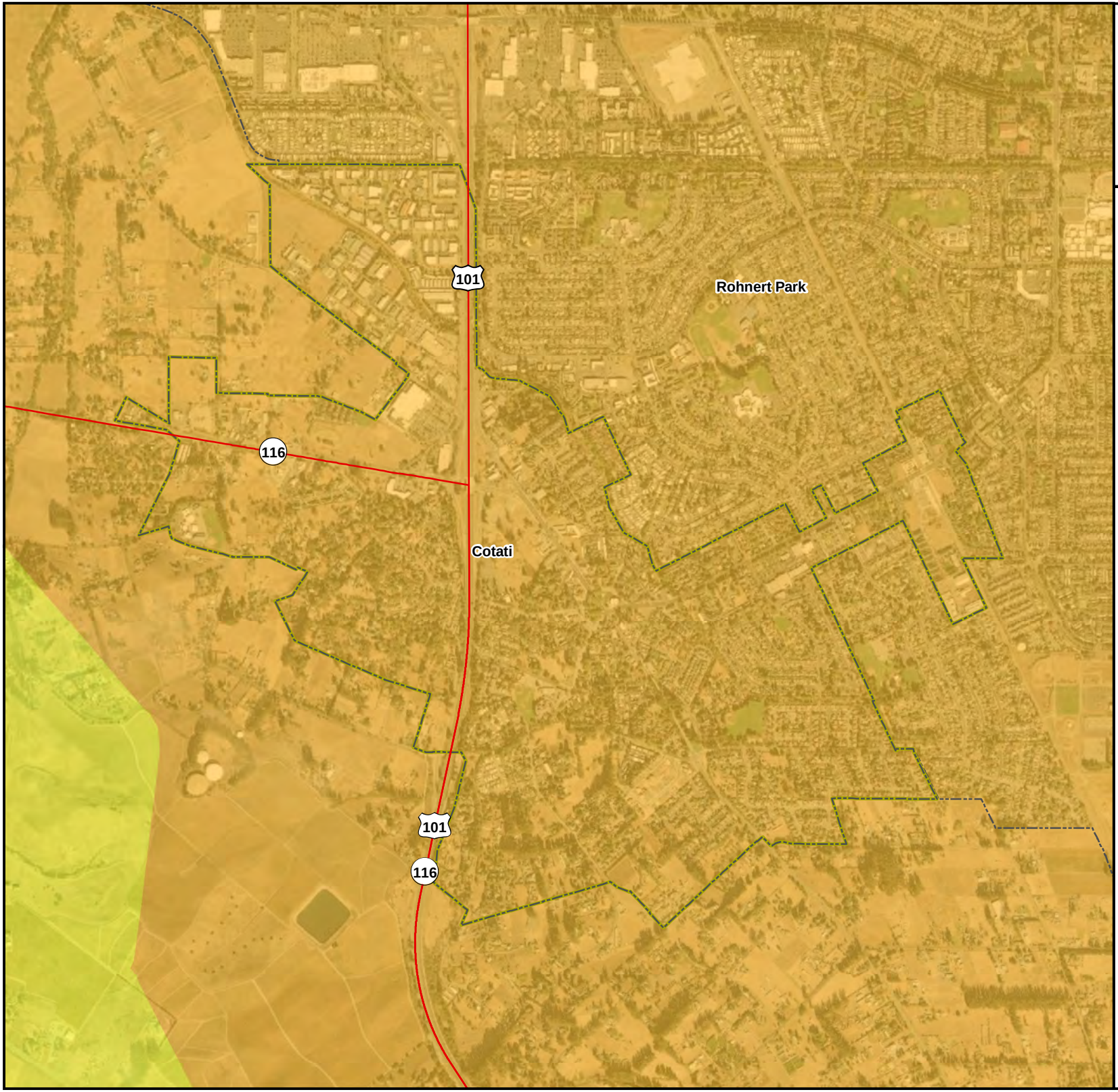
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

Hayward M7.57 Earthquake Scenario

Mercalli Intensity Scale

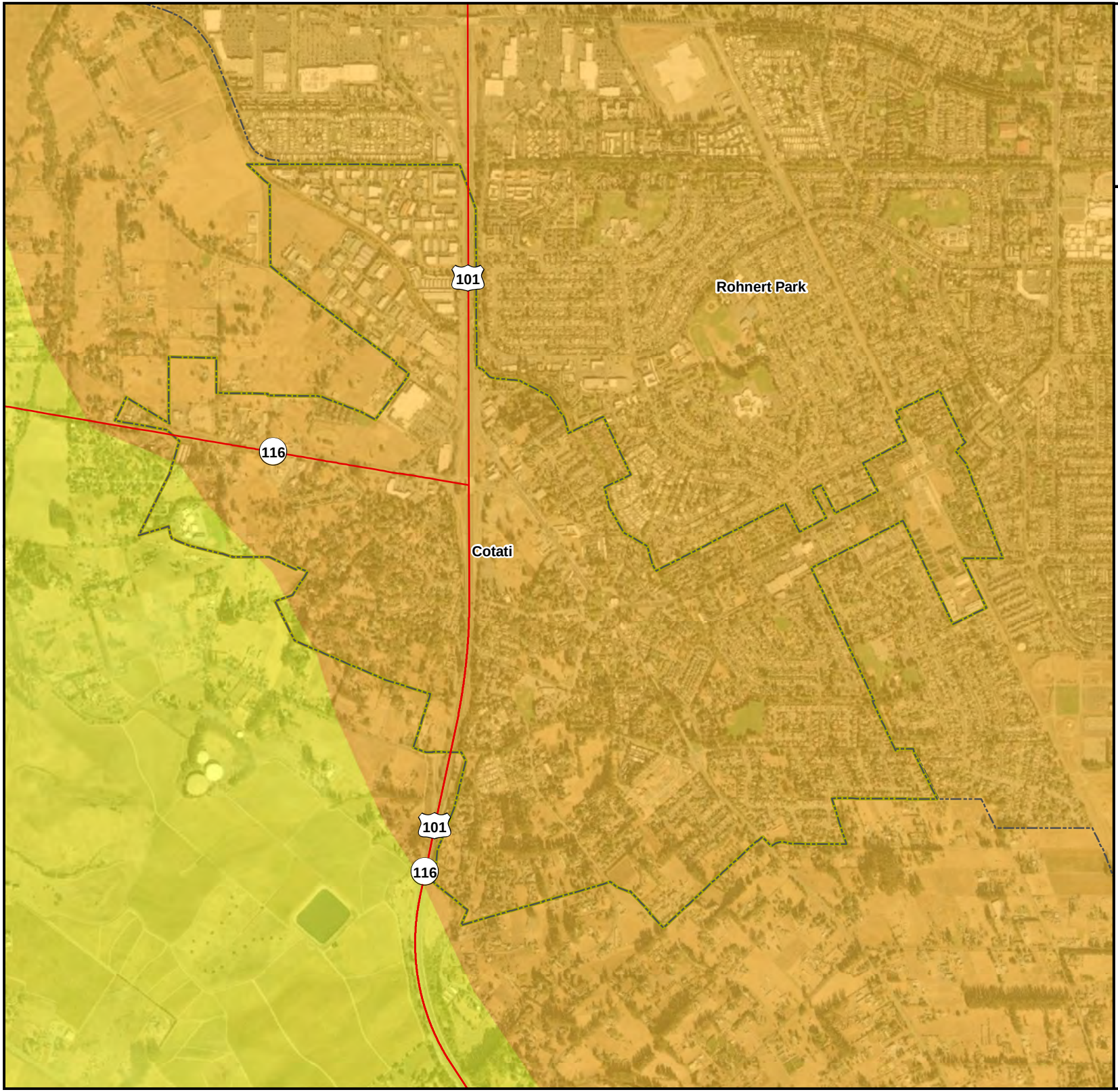
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

Healdsburg M7.19 Earthquake Scenario

Mercalli Intensity Scale

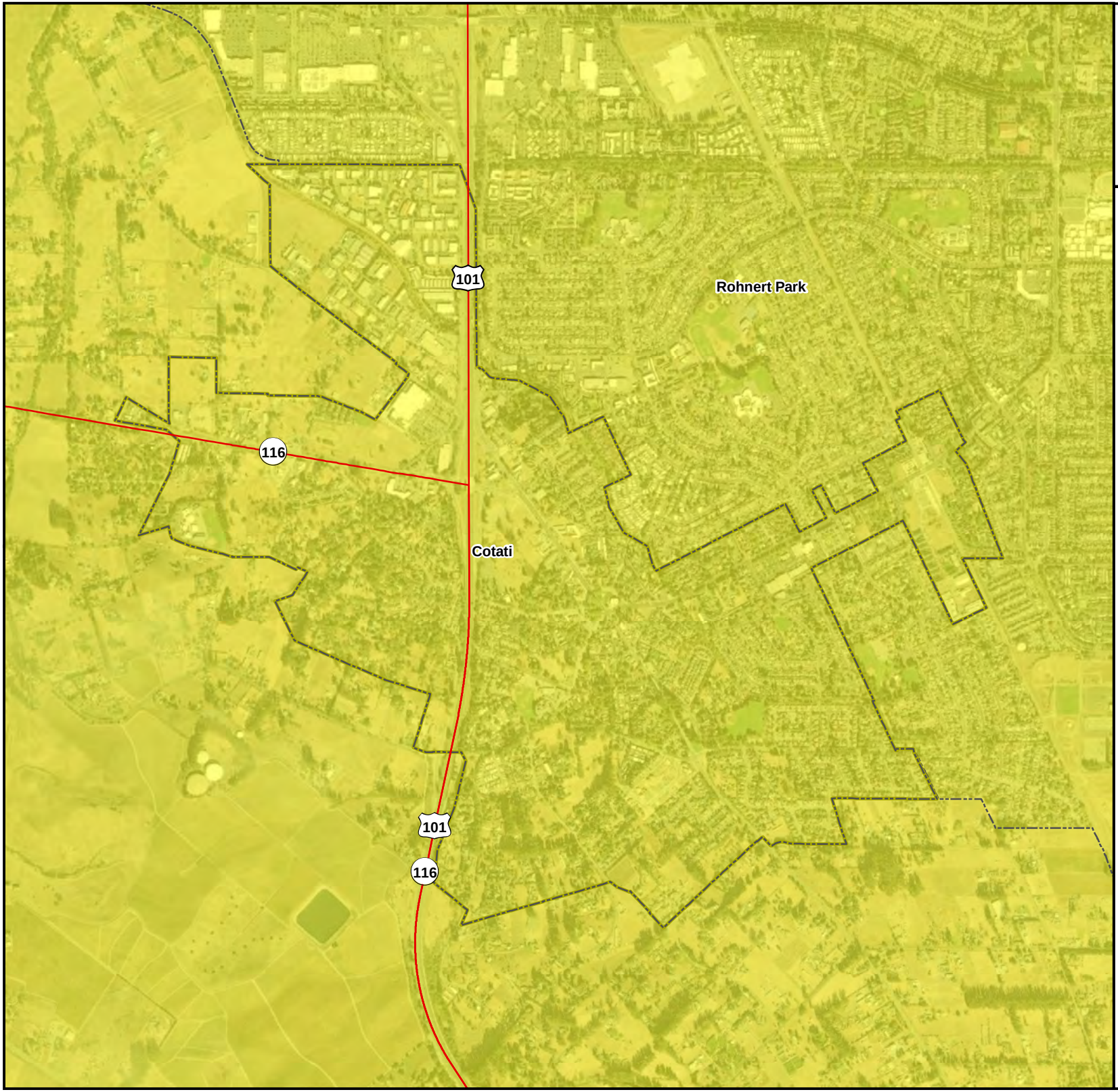
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Sources: Esri Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

Maacama M7.55 Earthquake Scenario

Mercalli Intensity Scale

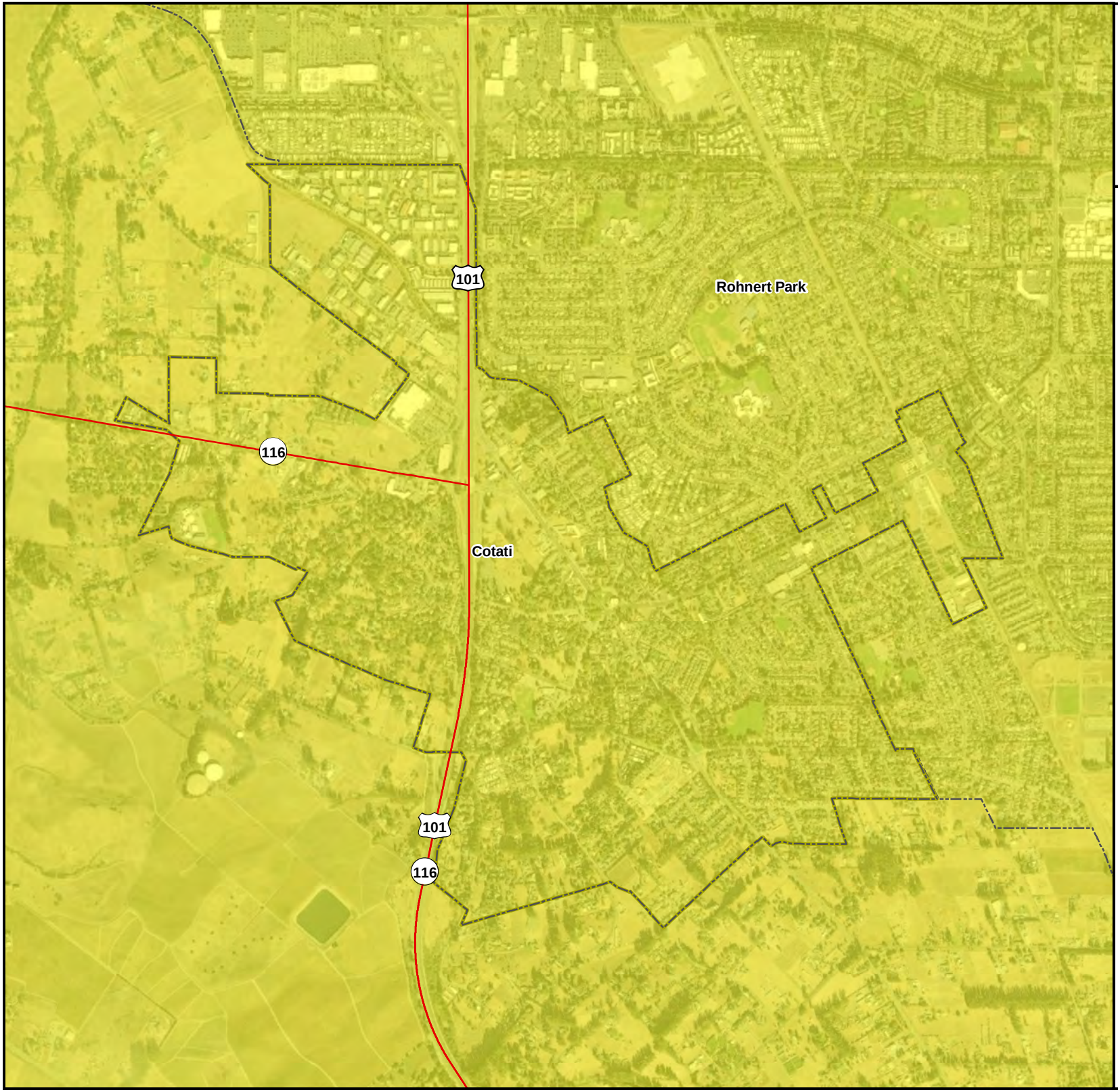
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

San Andreas M8.04 Earthquake Scenario

Mercalli Intensity Scale

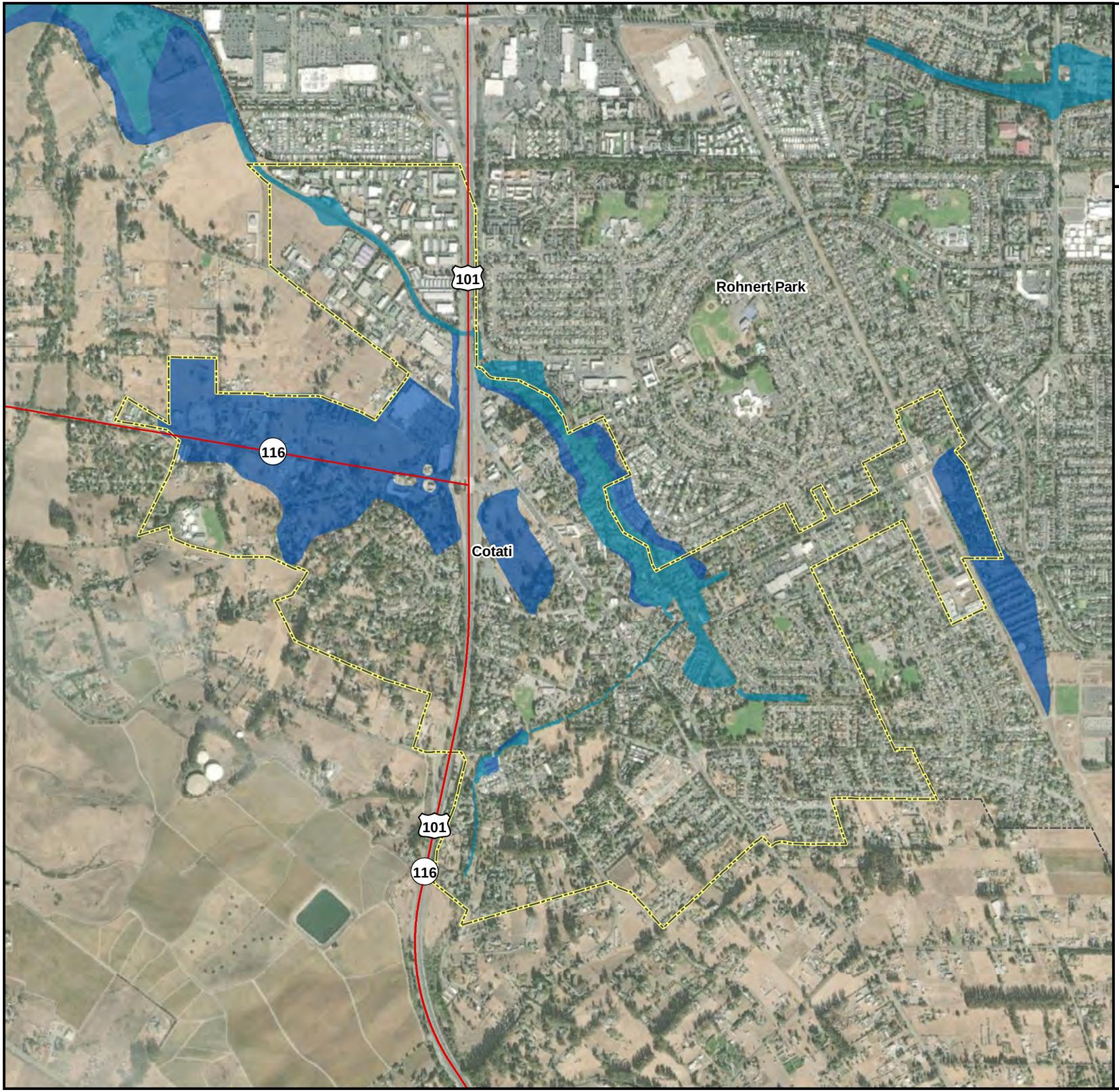
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.1 0.2 0.4 Miles



Cotati

Flood Hazard Areas

1% Annual Chance Flood (100-Year)

0.2% Annual Chance Flood (500-Year)

Selected City

Incorporated Cities

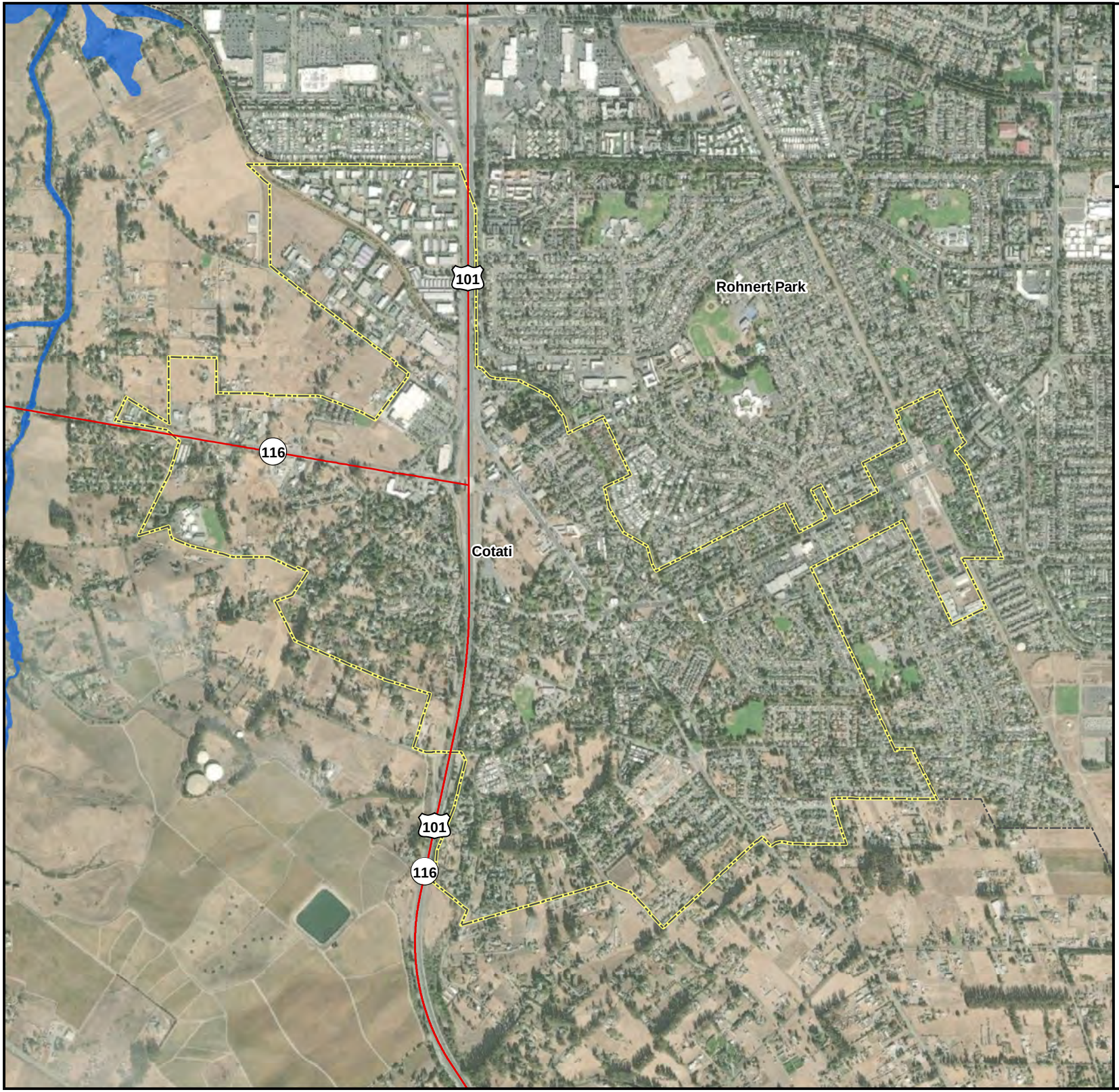
Sonoma County

Highways

Data Sources: Esri Basemap, Sonoma Co., FEMA

N

0 0.1 0.2 0.4 Miles



Cotati

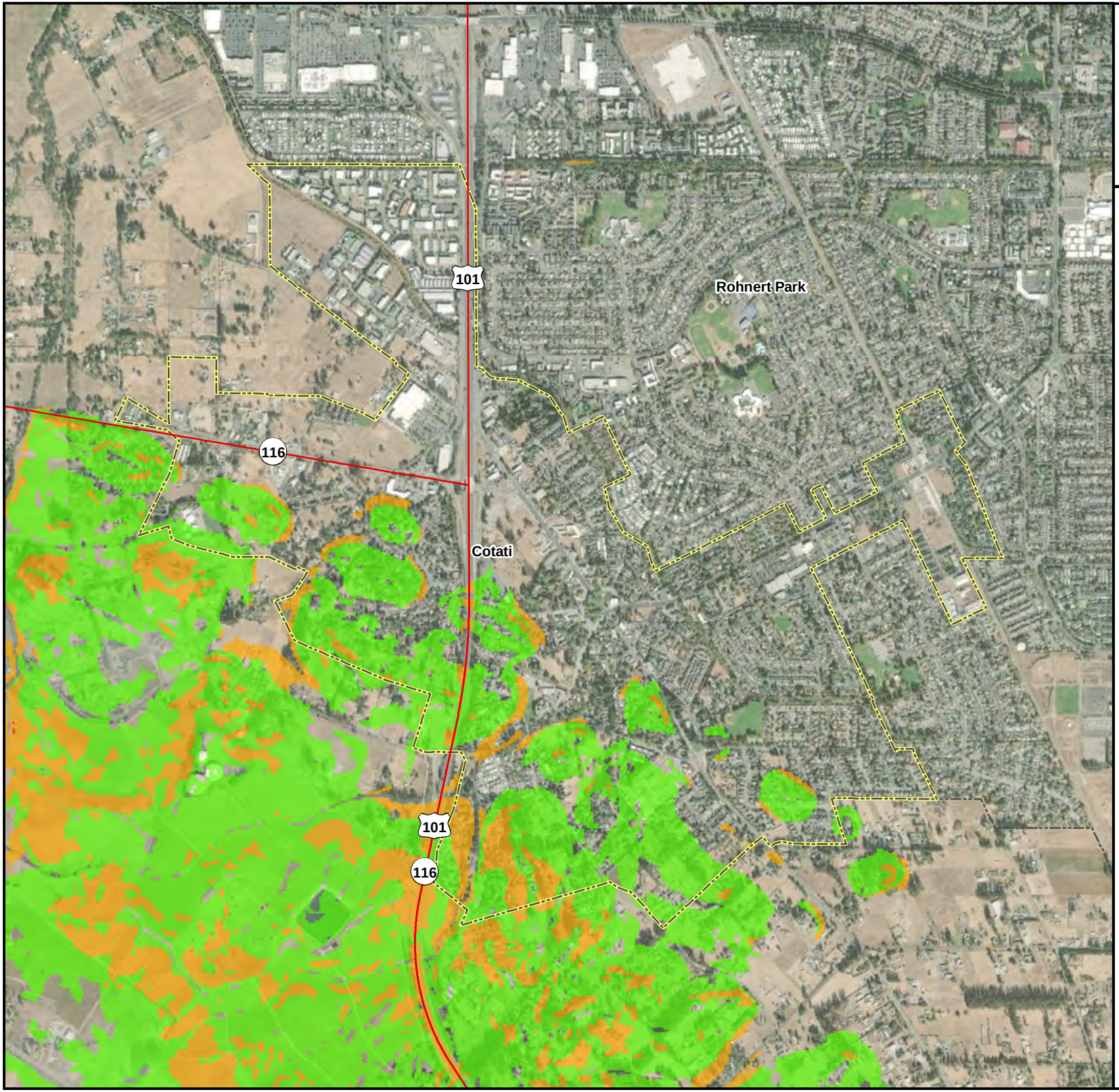
Flood Awareness Areas

Flood Awareness Areas
Selected City
Incorporated Cities
Sonoma County
Highways

Data Sources: Esri Basemap, Sonoma Co.

N

0 0.1 0.2 0.4 Miles



Cotati

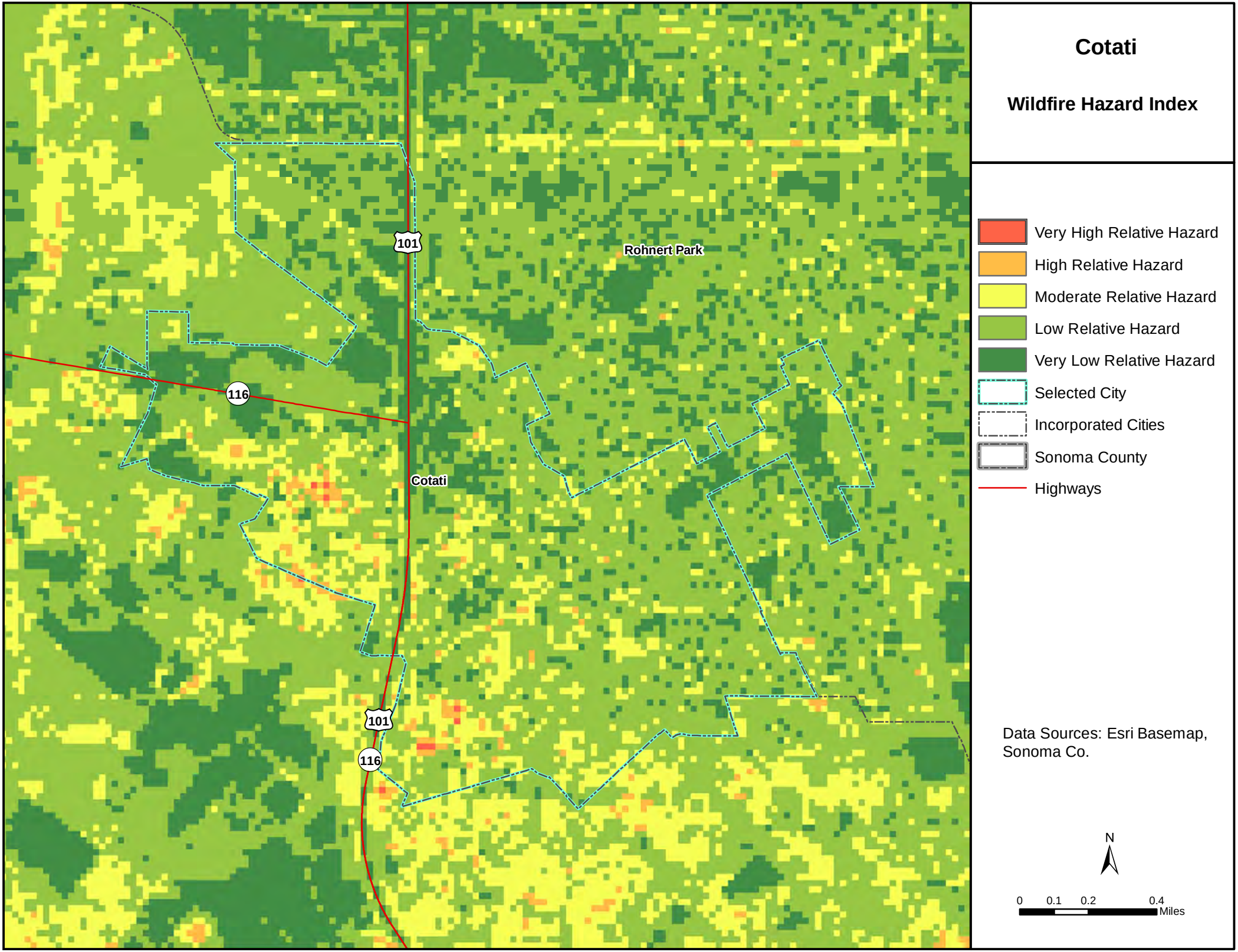
Susceptibility to Deep-Seated Landslides

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

Data Sources: Esri Basemap, Sonoma Co., CGS

N

0 0.1 0.2 0.4 Miles


Cotati
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
Rohnert Park
Cotati
101
116
101
116
Data Sources: Esri Basemap, Sonoma Co.
N
0 0.1 0.2 0.4
Miles

3. CITY OF SANTA ROSA

3.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Shari Meads, City Planner
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Telephone: 707-544-4665
e-mail Address: smeads@srcity.org

Alternate Point of Contact
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Santa Rosa, California 95404
Telephone: 707-544-3410
e-mail Address: alyle@srcity.org

This annex was developed by the primary point of contact, Shari Meads, with assistance from the members of the local mitigation planning team listed in Table 3-1.

Table 3-1. Local Hazard Mitigation Planning Team Members

Name	Title	Name	Title
Neil Bregman	Emergency Preparedness Manager	Mike Enright	Supervising Engineer
Brittany Miller	Deputy Emergency Preparedness Coordinator	Jessie Oswald	Chief Building Official
Paul Lowenthal	Assistant Fire Marshal	Ron Simi	Streets Crew Supervisor
Scott Moon	Division Chief Fire Marshal	Doug Williams	Facilities Maintenance Coordinator
Kemplen Robbins	Assistant Fire Marshal	Marcus Sprague	Police Lieutenant
Megan Basinger	Housing & Community Services Manager	Joe Schiavone	Deputy Director Water & Sewer Operations
Kelley Magnuson	Deputy Director, Recreation	Andy Allen	Supervising Engineer
Kelli Kuykendall	Housing & Community Services Manager	Dominique Blanquie	Risk Manager
Chris Greene	GIS Analyst	Sean McNeil	Deputy Director, Environmental Services
Mike Hargreaves	GIS Analyst	Colin Close	Senior Water Resource Planner
Matt Stull	GIS Coordinator	Ron Marincic	Utility System Superintendent Water
Shari Meads	City Planner	Jason Tibbals	Utility System Superintendent Water
Amy Lyle	Supervising Planner	Kyle Philip	Police Sergeant
Andy Abel	Assistant City Attorney	Jeremy Gundy	Deputy Director, Field Services

3.2 JURISDICTION PROFILE

3.2.1 Location and Features

The City of Santa Rosa is in central Sonoma County, located approximately 55-miles north of San Francisco along US Highway 101 and 20 air miles from the Pacific Ocean. Santa Rosa is bisected by US Highway 101, which runs north to south through the City and State Route (SR) 12 which runs east to west across the City,

roughly dividing Santa Rosa into quadrants. Santa Rosa is bordered by unincorporated Sonoma County on most sides. Sebastopol is to the southwest of the City and Rohnert Park is located approximately eight-miles due south. Prominent terrain features east of the City include Bennett Peak, Mount Hood, and Sonoma and Taylor Mountains. Santa Rosa is the largest city in Sonoma County with an urban growth boundary (UGB) that spans 42.81-square-miles.

Santa Rosa is in the California region known as the Coast Ranges geomorphic province and lies in the Santa Rosa Plain to the east of the Laguna de Santa Rosa catchment basin which is a major tributary of the Russian River watershed.

The City is home to the Santa Rosa Junior College, Keysight Technologies, La Tortilla Factory, Amy's Kitchen, the Charles M. Schulz Museum, Luther Burbank Home & Gardens, the first Nissan green auto dealership in the United States, Medtronic's Aortic and Peripheral Disease Management and Coronary and Structural Heart Disease Management business units, and many world-renowned wineries and breweries.

According to the Köppen climate classification, Santa Rosa has a warm-summer Mediterranean climate with cool, wet winters and warm, dry summers. Fog and low overcast often move in from the Pacific Ocean during the mornings and evenings usually clearing up to warm, sunny weather by late morning or noon. Santa Rosa's average annual rainfall is 32.20-inches falling on 74 days annually.

3.2.2 History

Santa Rosa has a rich history and cultural heritage. Santa Rosa was a site of Native American habitation beginning approximately 7,000 years ago. The Pomo, Miwok, and Wappo Indians populated the area before Spanish settlement in the early 1800s. The first deeded land was held as the Rancho Cabeza de Santa Rosa and was given to Señora Maria Ignacia Lopez de Carrillo by Spanish authorities in 1841. The Gold Rush, along with California's statehood, initially brought an influx of travelers along the roads past Santa Rosa. The region's rich soils drew in numerous passersby creating a flourishing agricultural community. Commercial ventures followed to support the new economy creating the City's town square in the early 1850s.

In 1867, the Sonoma County's Board of Supervisors recognized Santa Rosa as an incorporated city and in 1868, the state officially confirmed the incorporation. Santa Rosa is the County seat.

According to the US Census, in 1870 Santa Rosa was the eighth largest city in California, and the county seat of one of the most populous counties in the state. Growth and development after that was generally steady but not rapid. The City continued to grow when other early population centers declined or stagnated, but by 1900, it was being overtaken by many of the other newer population centers in the San Francisco Bay Area and Southern California. The 1906 San Francisco Earthquake sent Santa Rosa into a period of economic downturn but had little effect on the population. Although the town reconstructed most decimated buildings, the Great Depression two decades later further stymied growth and economic development.

Santa Rosa grew substantially following World War II with wartime workers flocking to the Bay Area. The City was also a convenient location for San Francisco travelers bound for the Russian River, and population increased by two-thirds between 1950 and 1970. Between 1970 and 2000, Santa Rosa grew by approximately 3,000 residents a year—triple the average growth during the previous 20 years. Most of this growth was in new suburban neighborhoods to the north, west, and south of downtown, with additional suburban and rural growth along the hillsides and valleys to the east and northeast. Between 2000 and 2010, Santa Rosa grew at an average

of 2,000 residents a year, but growth slowed to an average of less than 900 new residents per year between 2010 and 2016. The population has decreased approximately two percent between 2017 and 2020.

In October 2017, approximately five percent of Santa Rosa's homes were destroyed in the Tubbs and Nuns wildfires. Three years later approximately 50-percent of homes have been rebuilt and another 30-percent are in some phase of the rebuild process. Twenty percent, or roughly 500 parcels, are still inactive in the rebuild areas. As of September 15, 2020, 31-percent of the inactive parcels had been sold. It is expected that most outstanding parcels will eventually submit a permit to rebuild, but due to a variety of circumstances, these may manifest at different times. In September 2020, the Glass Fire destroyed an additional 34 housing units and damaged 23 residential units in eastern Santa Rosa.

Santa Rosa has remained an economic and cultural center for Sonoma County in the more than 150 years since inception. The rich agricultural setting that initially drew settlers to the area has continued to flourish and is a center for the tourism economy surrounding the region's world-renowned wineries and breweries.

3.2.3 Governing Body Format

The City of Santa Rosa is governed by a seven-person City Council (Council). The Council elects one of its members to serve as Mayor, the executive head of the City; and appoints a City Manager, the administrative head of the City. The City consists of 17 departments/divisions: the City Attorney's Office, the City Manager's Office, Communications &Intergovernmental Relations, Community Engagement, Finance, Fire, Housing & Community Services, Human Resources, Information Technology, Parking, Planning and Economic Development, Police, Real Estate Services, Recreation & Parks, Transportation and Public Works, and Water.

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

3.3 CURRENT TRENDS

3.3.1 Population

According to the California Department of Finance, the population of Santa Rosa as of January 2020 was 173,628. The City experienced small but steady population gains between the years 2000 and 2016, growing under one percent per year on average. From January 2017 through January 2020, Santa Rosa experienced a two-percent overall population loss but remains the fifth most populous San Francisco Bay Area city.

3.3.2 Development

Anticipated development levels for Santa Rosa are in the lower-moderate to moderate range consisting primarily of residential development. Most recent development has been infill. The City does not have vast tracks of vacant land for residential or industrial subdivision development.

The City of Santa Rosa adopted its General Plan in November of 2009 and is currently working on a comprehensive update which will focus on issues of the greatest concern to the community including how to make the City even more sustainable, resilient, healthy, and inclusive. City actions, such as those relating to land use, annexations, zoning, and capital improvements, must be consistent with the plan. Future growth and development in the City will be managed as identified in the General Plan.

Table 3-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 3-2. Recent and Expected Future Development Trends

Criterion	Response					
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? *If yes, give the estimated area annexed and estimated number of parcels or structures.*	Yes Approximately 716 acres including 1,756 parcels					
Is your jurisdiction expected to annex any areas during the performance period of this plan? *If yes, describe land areas and dominant uses.* *If yes, who currently has permitting authority over these areas?*	No					
Are any areas targeted for development or major redevelopment in the next five years? *If yes, briefly describe, including whether any of the areas are in known hazard risk areas*	No					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?		2016	2017	2018*	2019*	2020*
	Single Family	84	164	276	232	251
	Multi-Family	42	177	75	165	309
	Other (including commercial, second dwelling units, inc.)	29	18	88	60	71
	Total *Not including replacement construction after the 2017 wildfires	155	359	439	457	631
Provide the number of new construction permits for each hazard area or provide a qualitative description of where development has occurred.	Residential and non-residential growth has occurred in each of the City's four quadrants since the last Plan update. New residential development within the Wildland Urban Interface includes the Round Barn Village subdivision, a 237-unit multi-family residential development of which approximately 10-percent is currently in construction and Canyon Oaks, a 96-unit condominium project which has been completed. There has been no development in other hazard areas.					
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.	The City of Santa Rosa is relatively built out with well-established residential neighborhoods at lower densities than the greater San Francisco Bay Area. Low density, primarily single-family residential is the predominant land use in the city. Commercial uses are generally located in the heart of Santa Rosa and along US Highway 101 (Highway 101), with 15 unique commercial districts in addition to Downtown Santa Rosa, which operates as a mixed-use district. Over half of all commercial in the City is strip retail. Industrial uses are generally situated in the northern and southern outskirts of Santa Rosa, often near Highway 101, and occupy only about four percent of the City's land area.					

3.4 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 3-3.
- Development and permitting capabilities are presented in Table 3-4.
- An assessment of fiscal capabilities is presented in Table 3-5.
- An assessment of administrative and technical capabilities is presented in Table 3-6.
- An assessment of education and outreach capabilities is presented in Table 3-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 3-8.
- Classifications under various community mitigation programs are presented in Table 3-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 3-10.

Table 3-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	Yes
Comment: *2019 California Code with local amendments adopted by City Council Ordinance No. 2019-022 on November 19, 2019—effective January 1, 2020.*				
Zoning Code	Yes	No	Yes	Yes
Comment: *Title 20 of the Santa Rosa City Code adopted by City Council Ordinance No. 3677 on August 3, 2004—effective September 3, 2004 and as subsequently amended.*				
Subdivisions	Yes	No	Yes	No
Comment: *Title 19 of the Santa Rosa City Code adopted by City Council Ordinance No. 2622 on August 11, 1987—effective September 11, 1987 and as subsequently amended.*				
Stormwater Management	Yes	Yes	Yes	Yes
Comment: *Local jurisdiction in the Storm Water Ordinance (City Code Chapter 17-12) adopted by City Council Ordinance No. 3272 in 1996 and as subsequently amended. The City has provided design guidelines for permanent storm water features in a series of manuals since July 13, 2005. The most recent Low Impact Development Technical Design Manual is dated May 3, 2017. Federally mandated Clean Water Act requirements are enacted by State Water Resources Control Board.*				
Post-Disaster Recovery	No	Yes	No	Yes
Comment: *FEMA for flood, Stormwater Permit for State*				
Real Estate Disclosure	No	No	Yes	No
Comment: *CA State Civil Code 1102 requires full disclosure on natural hazard exposure of the sale/re-sale of all real property.*				
Growth Management	Yes	No	No	No
Comment: *Chapter 21-03 of the Santa Rosa City Code adopted by City Council Ordinance No. 29060 on June 9, 1992 and as subsequently amended.*				
Site Plan Review	Yes	No	No	Yes
Comment: *Through Building, Engineering and Planning requirements.*				
Environmental Protection	Yes	Yes	Yes	Yes
Comment: *Title 17 of the Santa Rosa City Code adopted by City Council Ordinance No. 2587. The City complies with CEQA, Clean Air Act, Clean Water Act, Endangered Species Act and other State and Federal Laws for public and private development.*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Flood Damage Prevention	Yes	Yes	No	Yes
Comment: *Local jurisdiction in the Storm Water Ordinance (City Code Chapter 17-12) adopted by City Council Ordinance No. 3272 in 1996 and as subsequently amended. City crews maintain storm drain system and some creeks for flood capacity. Sonoma Water manages the Central Sonoma Watershed Project with includes four flood attenuation reservoirs and enhanced capacity flood control channels.*				
Emergency Management	Yes	Yes	Yes	Yes
Comment: *City of Santa Rosa Emergency Operations Plan*				
Climate Change	Yes	No	No	Yes
Comment: *City Council adopted a Declaration of a Climate Emergency and Immediate Emergency Mobilization to Restore a Safe Climate, Resolution Number 2020-002, January 14, 2020.*				
Other	N/A	N/A	N/A	N/A
Comment:				
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? *Yes*				
Comment: *The current City of Santa Rosa General Plan 2035 was adopted in 2009; however in 2019, the City began a multi-year process to comprehensively update the plan.*				
Capital Improvement Plan	Yes	No	Yes	Yes
How often is the plan updated? *Annually*				
Comment: *The City's Capital Improvement Plan is a five-year plan which is updated annually.*				
Disaster Debris Management Plan	No	Yes	No	Yes
Comment:				
Floodplain or Watershed Plan	No	No	No	Yes
Comment: *The City would like to partner with the flood control agency Sonoma Water to develop floodplain plans in developed areas at risk of flooding.*				
Stormwater Plan	No	Yes	Yes	Yes
Comment: *The City of Santa Rosa is part of the Integrated Regional Water Management Plan. See https://northcoastresourcepartnership.org/site/assets/uploads/2018/04/NCIRWMP_PhaseIII_Aug14_final_w_appendix.pdf for more information.*				
Urban Water Management Plan	Yes	Yes	Yes	Yes
Comment: *City of Santa Rosa 2015 Urban Water Management Plan is currently being updated. https://srcity.org/DocumentCenter/View/13875/Urban-Water---2015-Management-Plan-Without-Appendices*				
Habitat Conservation Plan	No	No	No	Yes
Comment: *The City of Santa Rosa is participating in a Sonoma County led effort to develop an HCP for the Santa Rosa Plain.*				
Economic Development Plan	Yes	No	No	No
Comment:				
Shoreline Management Plan	No	No	No	No
Comment:				
Community Wildfire Protection Plan	Yes	No	No	Yes
Comment: *City of Santa Rosa Community Wildfire Protection Plan approved by City Council on September 18, 2020 https://srcity.org/DocumentCenter/View/30136/City-of-Santa-Rosa-Community-Wildfire-Protection-Plan-CWPP_91820*				
Forest Management Plan	Yes	No	No	Yes
Comment: *City of Santa Rosa Community Wildfire Protection Plan approved by City Council on September 18, 2020 exceeds the requirements of the 2003 Healthy Forests Restoration Act. https://srcity.org/DocumentCenter/View/30136/City-of-Santa-Rosa-Community-Wildfire-Protection-Plan-CWPP_91820*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Climate Action Plan	Yes	Yes	Yes	Yes
Comment: *Santa Rosa Community-wide Climate Action Plan adopted by City Council Resolution Number 28115 on June 5, 2012 https://srcity.org/DocumentCenter/View/10762/Climate-Action-Plan-PDF?bidId= Santa Rosa Municipal Operations Climate Action Plan adopted by City Council Resolution Number 28323 on August 6, 2013 https://srcity.org/DocumentCenter/View/10759/Municipal-Climate-Action-Plan-PDF?bidId=*				
Emergency Operations Plan	Yes	No	Yes	Yes
Comment: *City of Santa Rosa Emergency Operations Plan*				
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Yes	No	Yes
Comment: *Sonoma County is included in the Bay Area Urban Areas Security Initiative*				
Post-Disaster Recovery Plan	Yes	No	No	Yes
Comment:				
Continuity of Operations Plan	Yes	No	No	No
Comment: *City of Santa Rosa Continuity of Operations Plan dated April 2017 https://srcity.org/DocumentCenter/View/16433/Continuity-of-Operation-Plan City of Santa Rosa, California Continuity of Operations / Government (COOP/COG) Plan dated March 2020 https://srcity.org/DocumentCenter/View/16434/Emergency-Operation-Plan*				
Public Health Plan	No	No	No	No
Comment: *Performed at County Level*				
Other	N/A	N/A	N/A	N/A
Comment:				

Table 3-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	Yes Planning and Economic Development Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	Yes

Table 3-5. 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 (Utility User Tax for Gas/Electric; Water/Sewer fees for service we provide)
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

Table 3-6. 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 and Economic Development Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Planning and Economic Development, Water, and Public Works Departments
Planners or engineers with an understanding of natural hazards	Yes	Planning and Economic Development Department
Staff with training in benefit/cost analysis	Yes	Finance Department and analysists in other departments (as specified by job description)
Surveyors	Yes	Public Words Department
Personnel skilled or trained in GIS applications	Yes	Information Technology and Water Departments. The City has three GIS Analysts and one Coordinator
Scientist familiar with natural hazards in local area	Yes	Water Department, Public Works
Emergency manager	Yes	Fire Department/ Emergency Preparedness Manager
Grant writers	Yes	Designated staff members within each City department
Other	N/A	N/A

Table 3-7. 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? *If yes, briefly describe.*	Yes • Local Hazard Mitigation Plan: https://srcity.org/540/Local-Hazard-Mitigation-Plan • Community Wildfire Protection Plan: https://srcity.org/3114/Community-Wildfire-Protection-Plan • Climate Action Planning: https://srcity.org/1634/Climate-Action-Planning • Vegetation Management/ defensible space/ home hardening: srcity.org/WUI • Erosion Control: srcity.org/RainReady and srcity.org/BeRainReady
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe.*	Yes Various City Departments' Twitter, Instagram, Facebook handles are used for hazard mitigation outreach messaging. The City also utilizes a Nextdoor account for hazard mitigation education and outreach. A combination of graphics, video, photos and shared links are utilized for this effort.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe.*	No
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes The City currently utilizes the following additional tools for hazard mitigation outreach, and these tactics remain available for future needs:

Criterion	Response
If yes, briefly describe.	• Media relations strategies to gain earned news coverage for critical hazard mitigation messaging • Weekly newsletter distributed via email and SMS messaging; over 90K subscribers are on the distribution list. • Water bill inserts and direct mailers • Community/neighborhood meetings • Paid seasonal radio Public Safety Announcements
Do you have any established warning systems for hazard events? *If yes, briefly describe.*	Yes Information on each of the City's alert and warning systems is available at srcity.org/KnowYourAlerts

Table 3-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Planning and Economic Development
Who is your floodplain administrator? (department/position)	Planning and Economic Development Chief 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?	2008
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Meets N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No N/A
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	Yes FEMA led update, primarily in urban growth boundary south of City limit
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No N/A
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	No N/A No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* *What is the premium in force?*	157 $50,498,400 $91,924
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?*	43 $465,603

a. According to FEMA statistics as of October 20, 2020

Table 3-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	0609770098	N/A
DUNS #	Yes	071879464	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	85.11—Residential 83.54—Commercial	06/26/2013
Public Protection	Yes	1/1Y	2016
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 3-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment: City is engaging in a Climate Adaptation workshop with a non-profit group with a National Science Foundation grant January 2021 to identify and dive into local climate change impacts. The City is also updating its Climate Action Plan in conjunction with the General Plan update with an anticipated completion date in 2022.*	Medium
Jurisdiction-level monitoring of climate change impacts *Comment: No assigned City staff to this task.*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment: No assigned City staff to this task.*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment: All new development projects must be consistent with the City's Community Climate Action Plan adopted in 2012.*	Medium
Participation in regional groups addressing climate risks *Comment: Several Planners attend Regional Climate Meetings throughout the year and strategize with other professionals in the County.*	High
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment: Based on adopted Climate Action Plan (2012) and also the City Council placing implementation of the Climate Action Plan as a Tier One Council Goal. This formed a Council Subcommittee on addressing Climate Action matters.*	High
Identified strategies for greenhouse gas mitigation efforts *Comment: Included in Climate Action Plan (2012) for which all new development projects must be consistent with. There are also other measures through CEQA for mitigating GHG impacts.*	High
Identified strategies for adaptation to impacts *Comment: The adaptation strategies in the 2012 Climate Action Plan are limited. Following the Climate Adaptation workshop and updated to the General Plan and Climate Action Plan, additional strategies will be identified and implemented.*	Low
Champions for climate action in local government departments *Comment: Staff members are spread throughout the City who work on various efforts. However, no coordinator exists to spearhead these efforts.*	Medium
Political support for implementing climate change adaptation strategies *Comment:*	High

Criterion	Jurisdiction Rating[a]
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negative impacted *Comment:*	Unsure
Public Capacity	
Local residents' knowledge of and understanding of climate risk *Comment: Challenging to gauge. The 2017, 2019, and 2020 wildfires have brought awareness to increase hazards and the relationship to climate change.*	Unsure
Local residents support of adaptation efforts *Comment: A number of very committed residents attend Climate Action Subcommittee and Council meetings with stated support for supporting adaptation efforts. However, this may not be representative of the community at large.*	Unsure
Local residents' capacity to adapt to climate impacts *Comment:*	Unsure
Local economy current capacity to adapt to climate impacts *Comment:*	Unsure
Local ecosystems capacity to adapt to climate impacts *Comment:*	Unsure

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.

3.5 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.

3.5.1 Existing Integration

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

- **Capital Improvement Plan**—The Capital Improvement Plan includes projects that can help mitigate potential hazards. The City will act to ensure consistency between the Hazard Mitigation Plan and the current and future capital improvement plans. The Hazard Mitigation Plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code and Fire Code**—The City's adoption of the 2019 California Building and Fire Codes incorporated local modifications to account for the climatic, topographic, and geologic conditions that exist in the City.
- **General Plan**—The General Plan includes a "Noise and Safety" element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:

- Geologic and seismic hazards
- Fire hazards
- Hazardous materials
- Flood control

The General Plan's "Open Space and Conservation" element includes goals and policies related to air quality, use of sustainable energy sources, and other issues related to climate change.

- **Climate Action Plan**—The City's Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change. These projects were reviewed to identify cross-planning initiates that serve both adaptation and mitigation objectives.
- **Community Wildfire Protection Plan**—The Community Wildfire Protection Plan builds upon the October 2016 City of Santa Rosa Hazard Mitigation Plan providing more site-specific wildfire assessments and an action plan to address the wildfire threat to the City.

3.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Local Threat & Hazard Identification & Risk Assessment (THIRA)
- Floodplain or Watershed Plan
- Post-Disaster Recovery Plan

3.6 RISK RANKING

3.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 3-11 lists past occurrences of natural hazards for which specific damage was recorded in Santa Rosa. 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.

3.6.2 Hazard Risk Ranking

Table 3-12 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. Note that the City of Santa Rosa has elevated Wildfire to a High ranking based on addition of the 2019 Kincade and 2020 Glass Fires to the Risk Assessment as well as information contained in the City's Community Wildfire Protection Plan.

Table 3-11. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Drought		2021 to present	
PG&E PSPS events		Approximately nine PSPS events during 2018 – 2020	
Glass Fire (wildfire)	DR-4558-CA	September 2020	
Kincade Fire (wildfire)	DR-4569-CA	October 2019	~$4,000,000
Nuns Fire (wildfire)	FM-5220-CA	October 2017	Included with Tubbs Fire Damage Assessment 3 fatalities
Tubbs Fire (wildfire)	FM-5215-CA	October 2017	~$154,000,000 22 fatalities
Drought		2014-2016	unknown
Hazardous Materials Incidents		10 incidents between April 2011 and September 2015. 73 Hazardous Materials Team callouts between 2016 and 2021.	unknown
Drought		2007-2009	unknown
New Year's flooding and landslides		2005-2006	
Lofty Perch Fire (wildfire)		June 2003	One structure destroyed Several firefighters injured
Drought		1988-1991	unknown
Severe Storms, Flooding		February 12 through March 10, 1986	unknown
Drought	EM-3023-CA	1976-1977	unknown
1969 Santa Rosa earthquakes		October 2, 1969	unknown
Hanly Fire (wildfire)		September 1964	Approximately 149 structures destroyed
Nuns Canyon (wildfire)		September 1964	Approximately 20 structures destroyed
Airport Fire (wildfire)		September 1939	unknown
Statewide drought		1928-1937	unknown
Mayacamas Fire (wildfire)		September 1923	unknown
1906 San Francisco Earthquake		April 18, 1906	unknown
The Great Fire (wildfire)		October 1870	unknown

Table 3-12. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	36	High
2	Wildfire	34	High
3	Severe Weather	30	Medium
4	Dam Failure	26	Medium
5	Flood	18	Medium
6	Landslide	18	Medium
7	Drought	6	Low
8	Sea Level Rise	0	None
9	Tsunami	0	None

3.6.3 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: Two (2) 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

3.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 3-13 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 3-13. Status of Previous Plan Actions

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue to apply appropriate development conditions/ restrictions for projects in higher hazard zones to reduce risks.		✓		
Comment: This is an existing core capability that is now addressed by Plan Objectives 1, 7, 9 and 11.				
In accordance with the adaptation strategies of the Climate Action Plan integrate climate change adaptation into future updates of the Zoning Code, Building Code, General Plan, Urban Water Management Plan, and other related documents.			✓	SRO-1
Comment:				
Continue to coordinate with Sonoma County and surrounding jurisdictions on emergency notifications, including alerts of imminent threats or a need to evacuate. Alerts should be made available through multiple methods, in commonly spoken languages in Santa Rosa, and easily accessible to persons with access and functional needs.		✓		
Comment: This is an existing core capability that is now addressed by Plan objectives 2 and 5.				
To the extent possible, avoid locating new critical facilities in areas of elevated hazard risks. Use extensive mitigation measures to reduce vulnerability if no suitable alternative site exists.		✓		
Comment: This is addressed by Plan objectives 6 and 7.				
Continue to work with regional utility companies and service agencies, including energy providers, telecommunication services, and transit operators, to maintain basic services as much as possible during emergency conditions and to restore services as quickly as possible following an emergency event.		✓		
Comment: This ongoing capability is addressed by Plan objectives 2 and 6				
Work to improve estimates of potential casualties and property damage as a result of different emergency situations.		✓		
Comment: This is an ongoing core capability that is now addressed by Plan objective 8				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Continue to update the City's emergency planning documents every five years to ensure consistency with state and federal law, local conditions, and best practices and the most recent science.			✓	SRO-2
Comment:				
Assure the continuity of operations of the City's water supply system through projects that address identified vulnerabilities and/or enhance the system's capabilities following hazard events.			✓	SRO-3
Comment:				
Identify current and future vegetation management ordinance requirements in the Wildland-Urban Interface fire area for existing and new development.			✓	SRO-4
Comment:				
Continue to analyze and improve emergency response communications. This strategy should include building redundant capacity into public safety alerting and answering points as well as replacing or hardening microwave and simulcast systems.		✓		
Comment: This is an ongoing core capability that is now addressed by Plan objectives 5 and 6.				
Continue to assess the vulnerability of critical facilities to damage from natural disasters, including the availability of backup power and sufficient supplies to maintain essential functions, and make recommendations for appropriate mitigation.		✓		
Comment: This is an ongoing capability that is addressed by Plan objectives 3, 8, and 9				
Retrofit, replace, or relocate critical facilities that are shown to be vulnerable to damage in natural disasters.			✓	SRO-5
Comment:				
Continue to participate not only in general mutual-aid agreements but also in agreements with adjoining jurisdictions and special districts for cooperative response to fires, floods, earthquakes, and other disasters.		✓		
Comment: This is an ongoing capability that is addressed by Plan objectives 2 and 5.				
In accordance with the adaptation strategies of the Climate Action Plan, continue to regularly train, inform, and solicit feedback from City organizations on potential climate change risks and hazards. Emphasize climate change risk and hazards with the Fire Department, Police Department, Transportation and Public Works Department, Water Department, and other City departments as relevant.		✓		
Comment: This is an ongoing capability that is addressed by Plan objectives 2, 8 and 9.				
In accordance with the adaptation strategies of the Climate Action Plan, revise Santa Rosa's General Plan, Capital Improvement Program, and other applicable documents to better integrate and prioritize climate change issues and best practices during required updates and as funding permits.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 8 and 9.				
In accordance with the adaptation strategies of the Climate Action Plan, assess the possible impacts of climate change on a proposed project or area plan in the development review or policy development process.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 1, 2, 6, 8, 9 and 11.				
Update the City's Wildland-Urban Interface (WUI) overlay designation to reflect up-to-date information on wildfire hazards and WUI exposure to prepare for future fire risk.			✓	SRO-31
Comment: This action item is now included with SRO-31				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Identify and implement vegetation management projects in and around WUI zone (including unincorporated areas)..			✓	SRO-31
Comment: This action item is now included with SRO-31				
Work with residents and property owners to develop an incentive program to replace shake roofs in the WUI.			✓	SRO-6
Comment:				
Continue to implement improvements to water flow capacity in the WUI.			✓	SRO-7
Comment:				
Ensure adequate road or fire road access for fire equipment to developed and open space areas.		✓		
Comment: We have determined that this action item is not currently feasible				
Continue to tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement.			✓	SRO-8
Comment:				
Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet NFIP requirements to: Enforce the flood damage prevention ordinance. Participate in floodplain identification and mapping updates. Provide public assistance/information on floodplain requirements and impacts.			✓	SRO-9
Comment:				
When FEMA creates, updates, and publishes flood zone mapping of the 100-year and 500-year floodplains, integrate information from the maps into the City's geographical information system and use flood information in the development review and public project review process. In areas with high flood risk, continue to evaluate and implement flood hazard mitigation projects to reduce potential for property damage, street flooding, and stream erosion.			✓	SRO-10
Comment:				
Based on identified vulnerability and/or potential for capacity enhancement, upgrade pump station to feasible specifications.			✓	SRO-11
Comment:				
Evaluate, monitor, and maintain the City's stormwater drainage system to ensure it can effectively handle anticipated stormwater volumes to the maximum extent possible, and make upgrades and repairs as needed. Coordinate with the Sonoma Water to clear debris and remove vegetation and sediment in flood control channels within the City to protect flow capacity.			✓	SRO-12
Comment:				
Identify and implement waterway restoration projects that result in bank stabilization, enhanced habitat and flood capacity.			✓	SRO-13
Comment:				
Retrofit public areas, including plazas, sidewalks, and parking lots as feasible, to use permeable paving and other low-impact development features that promote infiltration and reduce stormwater runoff.			✓	SRO-14
Comment:				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Evaluate, prioritize, and implement flood protection measures to protect wastewater treatment facilities from flooding during a predetermined recurrence interval.			✓	SRO-15
Comment:				
Replace or retrofit water-retention structures that are determined to be structurally deficient, including levees, dams, reservoirs, and tanks. Continue to analyze and identify needs for future upgrades. Evaluate, reinforce, and/or enhance wastewater treatment facility structures with seismic risk.			✓	SRO-16
Comment:				
Develop funding mechanisms to assist building owners to afford retrofits to unreinforced masonry, soft-story, and/or non-ductile concrete structures.			✓	SRO-17
Comment:				
Require the retrofit of seismically vulnerable structures consistent with City Code. This program should include community education and outreach.			✓	SRO-18
Comment:				
Identify/analyze sanitary sewer trunk lines that are determined to be structurally deficient where crossing fault zones. Retrofit/replace as necessary.			✓	SRO-19
Comment:				
Conduct seismic evaluations on City-owned leased buildings that contain critical facilities/operations to determine the need for upgrades/retrofitting.			✓	SRO-20
Comment:				
Require comprehensive geotechnical investigations prior to development approval, where applicable. Investigations shall include evaluation of landslide risk, liquefaction potential, settlement, seismically induced land sliding, or weak and expansive soils.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 1, 6, 7, 8, 9, and 11				
Restrict development from areas where people might be adversely affected by known natural or man-made geologic hazards, including unstable slopes, liquefiable or expansive soils, and poorly engineered fills, as determined by a California-registered geologist or engineer.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 7 and 9.				
Pursue implementation of regulatory requirements related to erosion and sediment control. As needed, adopt additional, mandatory, minimum sediment and erosion control measures for current properties and those under construction that exhibit high erosion potential, are in areas of steep slopes, or have experienced past erosion problems. Sediment and erosion control measures shall reduce soil erosion from primary erosional agents, including wind, construction operations, and stormwater runoff.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 7 and 9.				
Provide reliable water delivery and wastewater collection, treatment, and disposal services during and after disasters to reduce the risk to public health and the environment.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objective 6.				
Promote public awareness and participation in household waste management, control, and recycling through County programs including the Sonoma County Household Hazardous Waste Management Plan.			✓	
Comment: This is an ongoing capability that is addressed by Plan Objectives 2, 4, and 12				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Improve Fire Department capabilities to respond to new hazardous materials incidents/ emergencies by pursuing Type 1 HazMat Team status			✓	SRO-21
Comment:				
Update the Hazardous Materials Area Response Plan.			✓	SRO-22
Comment:				
Protect existing groundwater resources from former hazardous material sites.			✓	SRO-23
Comment:				
Continue to provide and improve outreach to businesses that store, handle, and use hazardous materials over the state threshold or generate hazardous waste.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 6, 8, and 11				
Complete and implement recommendations of the Santa Rosa Emergency Groundwater Supply project, including construction of emergency groundwater wells consistent with the recommendations of the adopted Emergency Groundwater Master Plan.			✓	SRO-24
Comment:				
Continue to participate in the Russian River Watershed Association to provide water conservation guidance, encourage drought-tolerant landscaping, and reduce the consumption of potable water.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 1, 2, and 11				
Replace water meters in existing development to allow customers to track real-time water use and support water conservation efforts, consistent with Climate Action Plan Action 7.1.3.	✓			
Comment: Action was completed during the performance period of the prior plan.				
Implement advanced metering infrastructure to facilitate water conservation, consistent with Climate Action Plan Action 7.1.4.	✓			
Comment: Action was completed during the performance period of the prior plan.				
Develop a plan for expediting the repair and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water/Wastewater Agency Response Network (WARN). Communicate that plan to local governments and critical facility operators.			✓	SRO-25
Comment:				
Host regular workshops and classes on water conservation strategies, including drought-tolerant landscaping and available rebates for water conservation and water efficiency actions. Continue workshops, classes, and other educational efforts even in the absence of drought conditions.		✓		
Comment: This is an ongoing capability that is addressed by Plan Objectives 1, 2, and 11				
Support the State's efforts to conduct periodic inspections of local dams and implement recommended actions to ensure all safety measures are in place			✓	SRO-26
Comment:				
Integrate updated dam inundation mapping from the State Office of Emergency Services into the City's geographic information system and utilize the information in the development review process.	✓			
Comment: Action was completed during the performance period of the prior plan.				

3.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 3-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 3-15 identifies the priority for each action. Table 3-16 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 3-14. Hazard Mitigation Action Plan Matrix

Applies to New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline *a*
SRO-1: In accordance with the adaptation strategies of the Climate Action Plans integrate climate change adaptation into future updates of the Zoning Code, Building Code, General Plan, Urban Water Management Plan, and other related documents.						
Hazards Mitigated: Wildfire, Severe Weather, Flood, Landslide, Drought						
New and Existing	1, 2, 4, 6, 7, 8, 9, 10, 12	City of Santa Rosa	N/A	Medium	Staff time, General Fund, HMGP, PDM, Other grant sources, Water Enterprise Funds	Short and Long-Term
SRO-2: Continue to update the City's emergency planning documents every five years to ensure consistency with state and federal law, local conditions, and best practices and the most recent science.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood, Landslide, Drought						
New and Existing	1, 2, 4, 5, 8, 9, 12	City of Santa Rosa	N/A	Medium	Staff time, General Fund, HMGP, PDM	Short-term
SRO-3: Assure the continuity of operations of the City's water supply system through projects that address identified vulnerabilities and/or enhance the system's capabilities following hazard events.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood, Landslide, Drought						
New and Existing	2, 3, 4, 6, 9	City of Santa Rosa	N/A	High	General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-4: Prepare a Zoning Code update to identify vegetation management requirements in the Wildland-Urban Interface zone for existing and new development.						
Hazards Mitigated: Wildfire, Landslide						
New and Existing	1, 2, 4, 6, 7, 8, 9, 11, 12	City of Santa Rosa	N/A	Medium	Staff time, General Fund, PDM	Short-term
SRO-5: Retrofit, replace, or relocate critical facilities that are shown to be vulnerable to damage in natural disasters prioritizing those structures that have experienced repetitive losses and/or are located in a high or medium ranked hazard.						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood, Landslide, Drought						
New and Existing	1, 3, 6, 8, 9, 10, 11, 12	City of Santa Rosa	N/A	High	General Fund, HMGP, PDM, FMA, Other grant sources, Water Enterprise Funds	Short and Long term
SRO-6: Work with residents and property owners to develop an incentive program to replace shake roofs in the WUI.						
Hazards Mitigated: Wildfire						
Existing	1, 2, 3, 6	City of Santa Rosa	N/A	Medium	General Fund, HMGP, PDM, FMAG, Other Grant Sources	Ongoing

Applies to New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline *a*
SRO-7: Continue to implement improvements to water flow capacity in the WUI.						
Hazards Mitigated: Wildfire						
New and Existing	3, 4, 6, 8, 9	City of Santa Rosa	N/A	High	General Fund, HMGP, PDM, FMAG, Other Grant Sources, Water Enterprise Funds	Long-term
SRO-8: Continue to tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement.						
Hazards Mitigated: Wildfire, Landslide						
New and Existing	1, 2, 4, 6, 7, 8, 9, 11, 12	City of Santa Rosa	N/A	High	General Fund, HMGP, PDM, FMAG, Other Grant Sources	Ongoing
SRO-9: Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet NFIP requirements to: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Flood, Dam Failure						
New and Existing	1, 3, 5, 7, 8, 9, 10, 12	City of Santa Rosa	N/A	Low	Staff Time, General Fund	Ongoing
SRO-10: When FEMA creates, updates, and publishes flood zone mapping of the 100-year and 500-year floodplains, integrate information from the maps into the City's geographical information system and use flood information in the development review and public project review process. In areas with high flood risk, continue to evaluate and implement flood hazard mitigation projects to reduce potential for property damage, street flooding, and stream erosion.						
Hazards Mitigated: Flood						
New and Existing	2, 7, 8, 9, 10, 12	City of Santa Rosa	N/A	Low	Staff time, General Fund, HMGP, PDM, FMA, Other Grant Sources	Short and Long-term
SRO-11: Based on identified vulnerability and/or potential for capacity enhancement, upgrade pump station to feasible specifications.						
Hazards Mitigated: Flood						
New and Existing	3, 6	City of Santa Rosa	N/A	High	General Fund, HMGP, PDM, FMA, Other Grant Sources, Water Enterprise Funds	Short-term
SRO-12: Evaluate, monitor, and maintain the City's stormwater drainage system to ensure it can effectively handle anticipated stormwater volumes to the maximum extent possible, and make upgrades and repairs as needed. Coordinate with the Sonoma Water to clear debris and remove vegetation and sediment in flood control channels to protect flow capacity within the City..						
Hazards Mitigated: Flood						
New and Existing	2, 3, 10	City of Santa Rosa	Sonoma Water	High	Staff Time, General Fund, HMGP, PDM, FMA, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-13: Identify and implement waterway restoration projects that result in bank stabilization, enhanced habitat and flood capacity.						
Hazards Mitigated: Flood, Landslide, Drought, Dam Failure						
New and Existing	2, 3, 4, 10	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, FMA, Other Grant Sources, Water Enterprise Funds	Ongoing

Applies to New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [a]
SRO-14: Retrofit public areas, including plazas, sidewalks, and parking lots with permeable paving and other low-impact development features that promote infiltration and reduce stormwater runoff.						
Hazards Mitigated: Flood, Landslide, Drought, Dam Failure						
Existing	3, 10	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, FMA, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-15: Evaluate, prioritize, and implement flood protection measures to protect wastewater treatment facilities from flooding during a predetermined recurrence interval.						
Hazards Mitigated: Flood, Landslide, Dam Failure						
New and Existing	2, 3, 6, 8, 10, 12	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, FMA, Other Grant Sources, Water Enterprise Funds	Short and Long-term
SRO-16: Replace or retrofit water-retention structures that are determined to be structurally deficient, including levees, dams, reservoirs, and tanks. Continue to analyze and identify needs for future upgrades. Evaluate, reinforce, and/or enhance wastewater treatment facility structures with seismic risk.						
Hazards Mitigated: Earthquake, Drought, Flood, Landslide, Dam Failure						
Existing	3, 4, 8, 10	City of Santa Rosa	N/A	Medium	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-17: Create inventory and develop funding mechanisms to assist building owners to retrofit unreinforced masonry, soft-story, and/or non-ductile concrete structures.						
Hazards Mitigated: Earthquake						
Existing	1, 2, 3	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP	Long-term
SRO-18: Require the retrofit of seismically vulnerable structures consistent with City Code. This program should include community education and outreach.						
Hazards Mitigated: Earthquake						
Existing	1, 2, 3, 4, 6, 8, 9, 11, 12	City of Santa Rosa	N/A	Medium	Staff Time, General Fund, HMGP	Long-term
SRO-19: Identify/analyze sanitary sewer trunk lines that are determined to be structurally deficient where crossing fault zones. Retrofit/replace as necessary.						
Hazards Mitigated: Earthquake, Flood						
Existing	3, 6, 8, 10	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Short-term
SRO-20: Conduct seismic evaluations on City-owned leased buildings that contain critical facilities/operations to determine the need for upgrades/retrofitting.						
Hazards Mitigated: Earthquake						
Existing	3, 4, 6, 8, 11, 12	City of Santa Rosa	N/A	Low	General Fund, HMGP	Short-term
SRO-21: Pursue Type 1 HazMat Team status						
Hazards Mitigated: Fire						
New and Existing	1, 2, 4, 8	City of Santa Rosa	N/A	Low	Staff Time, General Fund, HMGP	Short-term

Applies to New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [a]
SRO-22: Prepare a comprehensive Hazardous Materials Area Response Plan update.						
Hazards Mitigated: Fire						
New and Existing	1, 2, 4, 8, 9, 11, 12	City of Santa Rosa	N/A	Medium	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Short-term
SRO-23: Protect existing groundwater resources from former hazardous material sites.						
Hazards Mitigated: Drought						
Existing	1, 3, 6	City of Santa Rosa	N/A	Medium	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-24: Complete and implement recommendations of the Santa Rosa Plain Groundwater Sustainability Agency, including construction of emergency groundwater wells consistent with the recommendations of the adopted Emergency Groundwater Master Plan.						
Hazards Mitigated: Drought						
New and Existing	3, 4, 6	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-25: Support the State's efforts to conduct periodic inspections of local dams and implement recommended actions to ensure all safety measures are in place						
Hazards Mitigated: Dam Failure, Flood						
New and Existing	1, 2, 8, 10, 11	City of Santa Rosa	N/A	Medium	General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Ongoing
SRO-26: Conduct Microgrid feasibility study						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood						
New and Existing	4, 6, 8, 9, 11, 12	City of Santa Rosa	N/A	High	Staff Time, General Fund, HMGP, PDM, Other Grant Sources,	Short-term
SRO-27: Secure redundant power supply for City-owned and leased facilities and infrastructure that lack adequate back-up power						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood, Landslide, Drought						
New and Existing	2, 3, 6, 9	City of Santa Rosa	N/A	Medium	Staff time, General Fund, HMGP, PG&E settlement funds, Congressional earmark process	Short-term
SRO-28: Relocate/Update EOC to City-owned facility that can accommodate use and renovation to permanent warm/hot EOC with appropriate equipment for communication and situational awareness						
Hazards Mitigated: Earthquake, Wildfire, Severe Weather, Dam Failure, Flood, Landslide, Drought						
New and Existing	3, 4, 5, 6, 10	City of Santa Rosa	N/A	High	Staff time, General Fund, HMGP, PG&E settlement funds, Congressional earmark process	Short-term
SRO-29: Implement Actionable Items identified within the City of Santa Rosa Community Wildfire Protection Plan						
Hazards Mitigated: Wildfire, Severe Weather, Landslide						
New and Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12	City of Santa Rosa	N/A	High	Staff time, General Fund, HMGP, PDM, AFG, FMAG, AFGP, CAL FIRE, PG&E settlement funds, Congressional earmark process	Ongoing

Applies to New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [a]
SRO-30: Actively participate in the annual maintenance protocols outlined in Volume I of this Hazard Mitigation Plan.						
Hazards Mitigated:	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildfire					
New and Existing	1, 5, 8, 12	City of Santa Rosa	County of Sonoma	Low	Staff Time, General Fund	Short-term
SRO-31: Support the County-wide initiatives identified in Volume I of this Hazard Mitigation Plan.						
Hazards Mitigated:	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildfire					
New and Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	City of Santa Rosa	County of Sonoma	High	Staff time, General Fund, HMGP, PDM, AFG, FMAG, AFGP, CAL FIRE, PG&E settlement funds, Congressional earmark process	Short-term
SRO-32: Integrate the Hazard Mitigation Plan into other plans, ordinances and programs that dictate land use decisions within the community including the General Plan, Specific Plans, and the City Code.						
Hazards Mitigated	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildfire					
New and Existing	1, 3, 4, 5, 6, 7, 8, 10, 12	City of Santa Rosa	N/A	Low	Staff Time, General Fund	Ongoing
SRO-33: Develop a plan for expediting the repair and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water/Wastewater Agency Response Network (WARN). Communicate that plan to local governments and critical facility operators						
Hazards Mitigated	Drought, Flood, Dam Failure Earthquake, Wildfire, Landslide, Severe Weather					
Existing	1, 2, 4, 6, 11, 12	City of Santa Rosa	N/A	Medium	Staff Time, General Fund, HMGP, PDM, Other Grant Sources, Water Enterprise Funds	Short-term
SRO-34: Explore the feasibility of resilience hubs within the City of Santa Rosa						
Hazards Mitigated	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildfire					
New and Existing	1, 2, 4, 5, 6, 8, 10, 11,	City of Santa Rosa	N/A	Low	Staff Time, EMPG, General Fund, PDM Other Grant Sources	Long-term
SRO-35: Coordinate with Sonoma Water on grant eligible projects within the City of Santa Rosa						
Hazards Mitigated	Flood, Dam Failure, Drought					
New and Existing	2, 4, 6, 8, 9, 10, 11, 12	City of Santa Rosa	Sonoma Water	Medium	General Fund, Staff Time, HMGP	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 3-15. 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]
SRO-1	9	Medium	Medium	Yes	Yes	Yes	High	Medium
SRO-2	7	Medium	Medium	Yes	Yes	Yes	Low	Medium
SRO-3	5	High	High	Yes	Yes	No	High	High
SRO-4	9	Medium	Medium	Yes	Yes	Yes	High	High
SRO-5	8	High	High	Yes	Yes	No	Medium	Medium
SRO-6	4	Medium	Medium	Yes	Yes	No	Low	Low
SRO-7	5	High	High	Yes	Yes	Yes	High	High
SRO-8	9	High	High	Yes	Yes	No	High	High
SRO-9	8	Medium	Low	Yes	Yes	Yes	High	High
SRO-10	6	Medium	Low	Yes	Yes	Yes	High	Medium
SRO-11	2	High	High	Yes	Yes	Yes	High	Medium
SRO-12	3	High	High	Yes	Yes	No	Medium	Medium
SRO-13	4	High	High	Yes	Yes	No	Medium	Medium
SRO-14	2	Low	High	No	Yes	No	Low	Low
SRO-15	6	High	High	Yes	Yes	No	High	High
SRO-16	4	High	Medium	Yes	Yes	No	High	High
SRO-17	3	High	High	Yes	Yes	No	High	High
SRO-18	9	High	Medium	Yes	Yes	Yes	High	High
SRO-19	4	High	Medium	Yes	Yes	Yes	High	High
SRO-20	6	High	Low	Yes	Yes	Yes	High	High
SRO-21	4	Medium	Low	Yes	Yes	Yes	Low	Low
SRO-22	4	Medium	Low	Yes	Yes	Yes	Low	Low
SRO-23	3	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SRO-24	3	High	High	Yes	Yes	Yes	Medium	Medium
SRO-25	5	Medium	Medium	Yes	Yes	No	Low	Low
SRO-26	6	High	High	Yes	Yes	No	High	High
SRO-27	4	Medium	Medium	Yes	Yes	No	Medium	High
SRO-28	5	High	High	Yes	Yes	No	Medium	High
SRO-29	11	High	High	Yes	Yes	No	Medium	High
SRO-30	4	Low	Low	Yes	Yes	Yes	High	Medium
SRO-31	11	High	High	Yes	Yes	No	Medium	High
SRO-32	9	High	Low	Yes	No	Yes	High	High
SRO-33	6	High	Medium	Yes	Yes	Yes	Medium	Medium
SRO-34	8	High	Low	Yes	Yes	No	High	High
SRO-35	8	Medium	Medium	Yes	Yes	Yes	Medium	Medium

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

Table 3-16. 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	SRO-2, 3, 26, 30, 31, 33, 34, 35	SRO-3, 5, 16, 17, 18, 19, 20, 27, 28, 31, 34	SRO-17,18, 20, 26, 28, 30, 32, 31, ,	SRO-3, 16, 31, 33	SRO-3, 16, 19, 26, 27, 28, 31, 33	SRO-3, 16, 17, 19, 31, 34	SRO-2, 2 26, 27, 30, 31, 32, 34	SRO-3, 16, 17, 18, 19, 20, 26, 27, 28, 30, 31, 32, 33, 34
Wildfire	SRO-1, 2, 4, 7, 8, 22, 26, 29, 30, 31, 32, 33, 34	SRO-3, 5, 6, 27, 28, 29, 31, 34	SRO-6, 8, 21, 26, 28, 29, 30, 31, 32, 34	SRO-3, 8, 29, 31, 33	SRO-3, 7, 8, 21, 22, 26, 27, 28, 29, 31, 33, 34	SRO-3, 7, 29, 31, 34	SRO-1, 2, 4, 7, 8, 26, 27, 29, 30, 31, 32, 34	SRO-3, 6, 7, 8, 21, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34
Medium-Risk Hazards								
Severe Weather	SRO-1, 2, 26, 29, 30, 31, 32, 33, 34	SRO-3, 27, 28, 29, 31, 34	SRO-26, 28, 29, 30, 31, 32, 34	SRO-3, 29, 31, 33	SRO-3, 26, 27, 28, 29, 31, 33, 34	SRO-3, 29, 31, 34	SRO-1, 2, 26, 27, 29, 30, 31, 32, 34	SRO-3, 26, 27, 28, 29, 30, 31, 32, 33, 34
Dam Failure	SRO-2, 10, 13, 25, 26, 30, 31, 32, 33, 34,35	SRO-3, 10, 13, 16, 25, 27, 28, 31, 34	SRO-10, 26, 28, 30, 31, 32, 33, 34, 35	SRO-3, 10, 13, 16, 25, 31, 33, 35	SRO-3, 10, 16, 26, 27, 28, 31, 33, 34	SRO-3, 10, 16, 25, 31, 34, 35	SRO-2, 10, 26, 27, 30, 31, 32, 34, 35	SRO-3, 10, 16, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35
Flood	SRO-1, 2, 9, 10, 11, 12, 13, 14, 15, 25, 26, 30, 31, 32, 33, 34, 35	SRO-3, 5, , 10, 12, 13, 15, 16, 19, 25, 27, 28, 31, 34	SRO-9, 10, 26, 28, 30, 31, 32, 33, 34, 35	SRO-3, 9, 10, 11, 12, 13, 14, 15, 16, 25, 31, 33, 35	SRO-3, 10, 11, 16, 19, 21, 22, 26, 27, 28, 31, 33, 34	SRO-3, 9, 10, 11, 12, 14, 15, 16, 19, 25, 31, 34, 35	SRO-1, 2, 1, 9, 10, 12, 14, 26, 27, 30, 31, 32, 34, 35	SRO-3, 9, 10, 11 12, 14, 16, 19, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35
Landslide	SRO-, 13, 29, 30, 31, 32, 33, 34	SRO-3, 13, 16, 27, 28, 29, 31, 34	SRO-28, 29, 30, 31, 32, 33, 34	SRO-3, 13, 16, 29, 31, 33	SRO-3, 16, 27, 28, 29, 33, 34	SRO-3, 16, 29, 30, 31, 34	SRO-29, 30, 31, 32, 34	SRO-3, 16, 27, 28, 29, 30, 31, 32, 33, 34
Low-Risk Hazard								
Drought	SRO-1, 2, 13, 25, 30, 31, 32, 33, 34, 35	SRO-3, 13, 16, 24, 27, 28, 31, 34	SRO-28, 30, 31, 32, 33, 34, 35	SRO-3, 13, 16, 23, 24, 31, 33, 35	SRO-3, 16, 24, 27, 28, 31, 33, 34, 35	SRO-3, 16, 24, 31, 34, 35	SRO-1, 2, 24, 27, 30, 31, 32, 34, 35	SRO-3, 16, 23, 24, 27, 28, 30, 31, 32, 33, 34, 35

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

3.9 INFORMATION SOURCES USED FOR THIS ANNEX

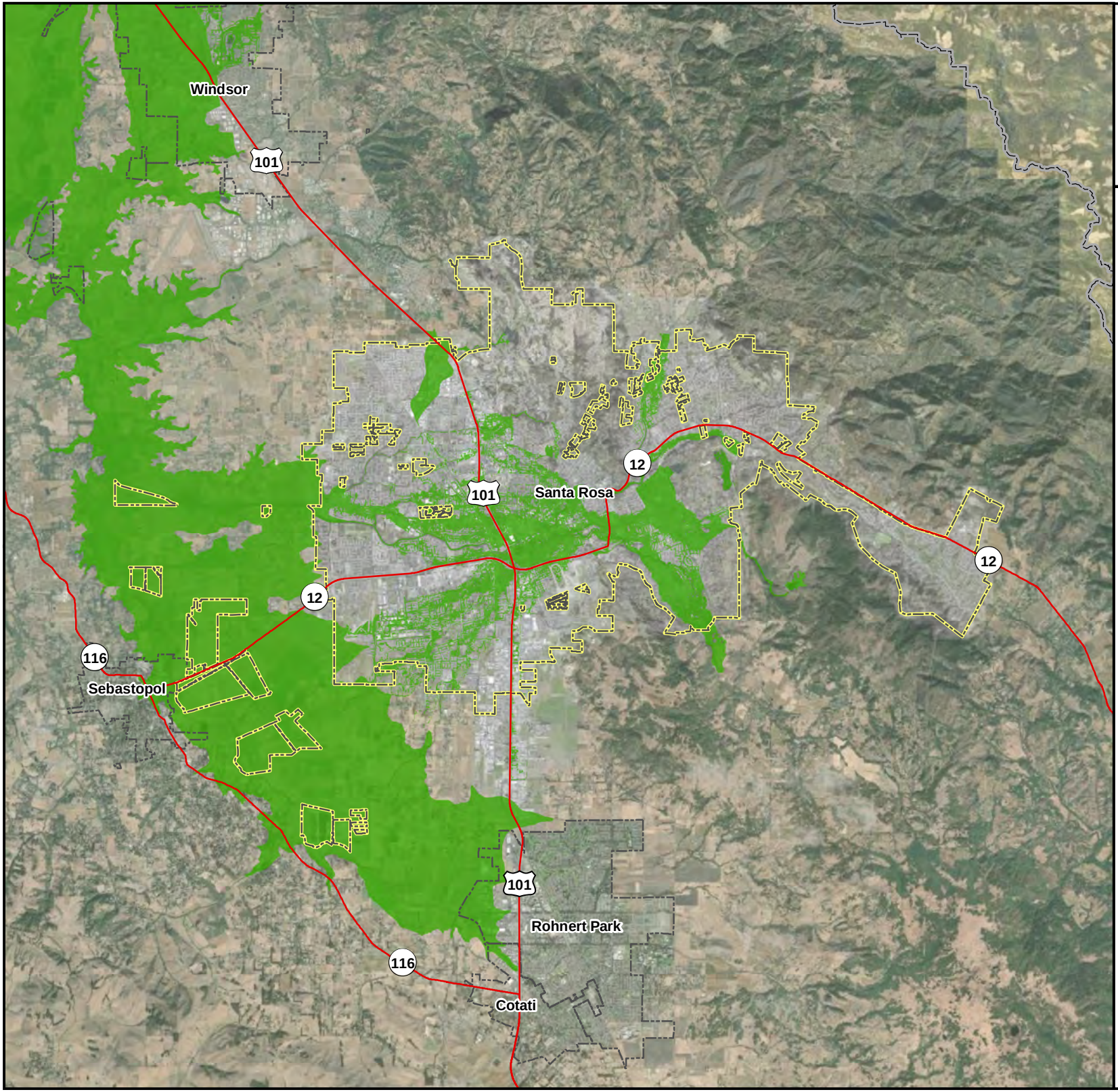
The following technical reports, plans, and regulatory mechanisms were reviewed for this annex.

- **City of Santa Rosa Municipal Code**—The Municipal Code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa Emergency Operations Plan**—The Emergency Operations Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa Municipal Climate Action Plan**—The City of Santa Rosa Municipal Climate Action Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.

- **City of Santa Rosa Community-wide Climate Action Plan**—The City of Santa Rosa Community-wide Climate Action Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa Continuity of Operations Plan**—The Continuity of Operations Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa General Plan 2035**—The General Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa Capital Improvement Plan**—The Capital Improvement Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa 2015 Urban Water Management Plan**—The Urban Water Management Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Santa Rosa Community Wildfire Protection Plan**—The Community Wildfire Protection Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.

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.



Santa Rosa

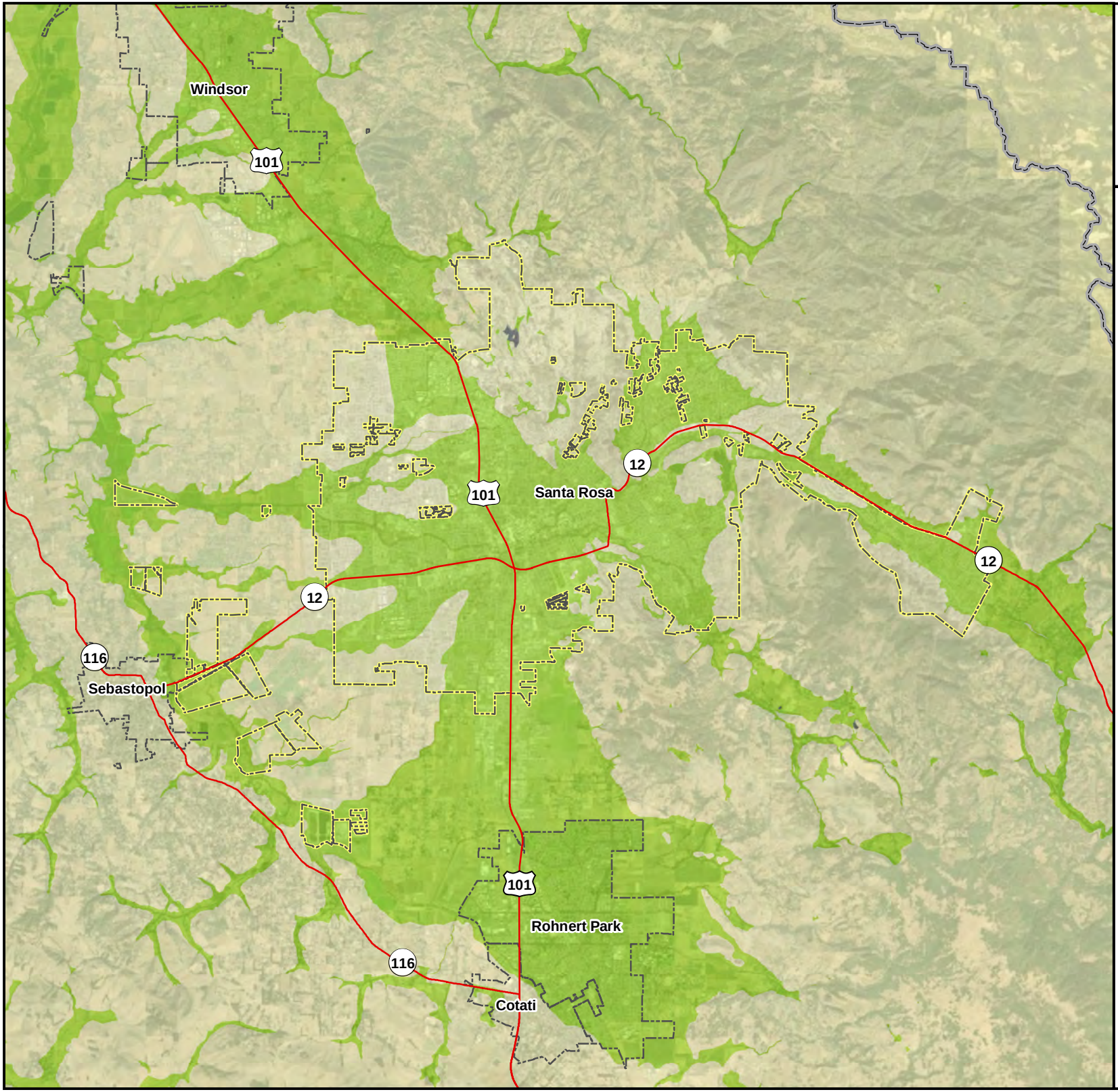
Dam Failure Inundation Area

Inundation Area
Selected City
Incorporated Cities
Sonoma County
Highways

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

N

0 0.5 1 2 Miles



Santa Rosa

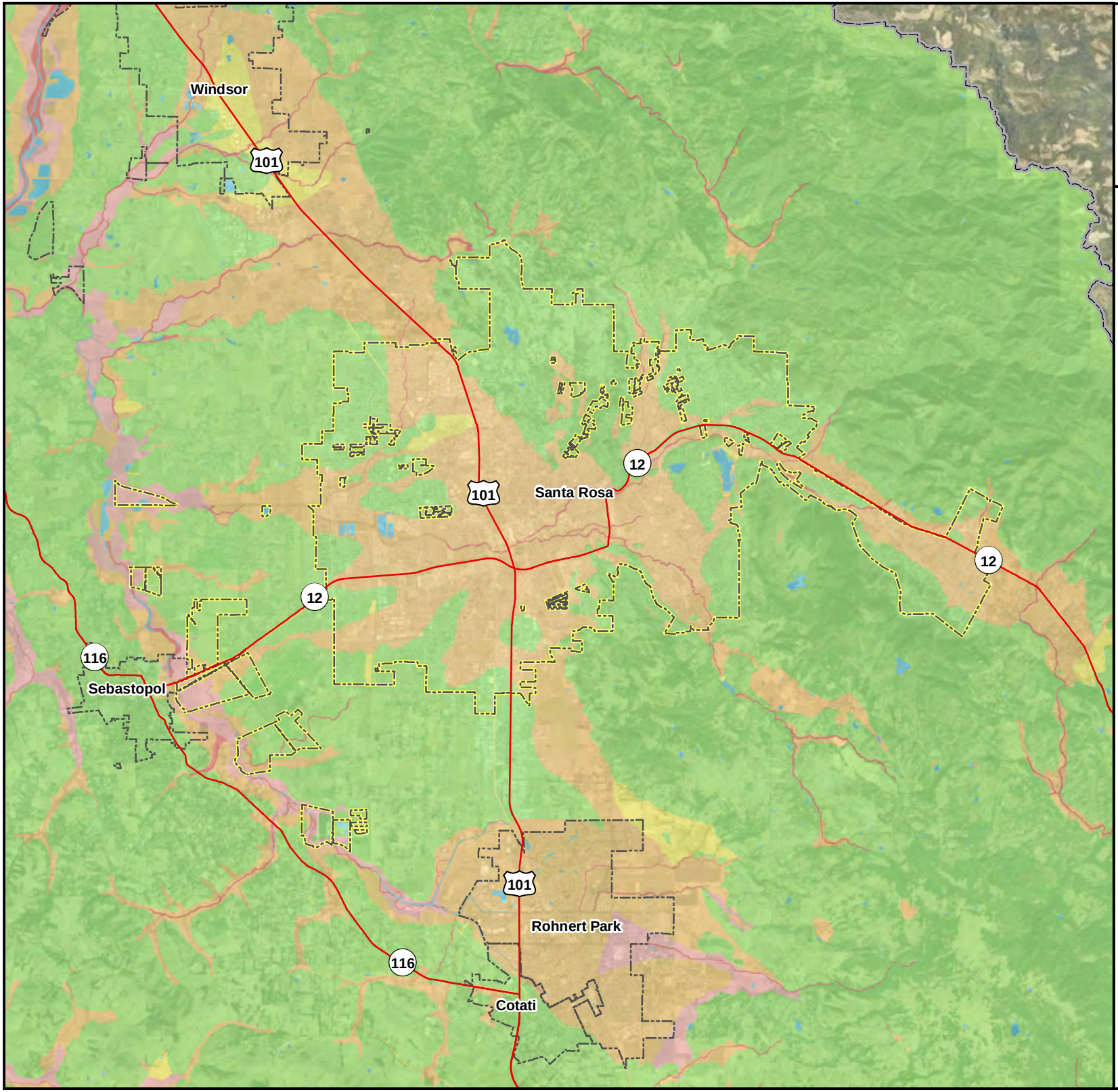
NEHRP Soil Classifications

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

Data Source: ESRI Basemap, Sonoma Co., CGS

N

0 0.5 1 2 Miles



Santa Rosa

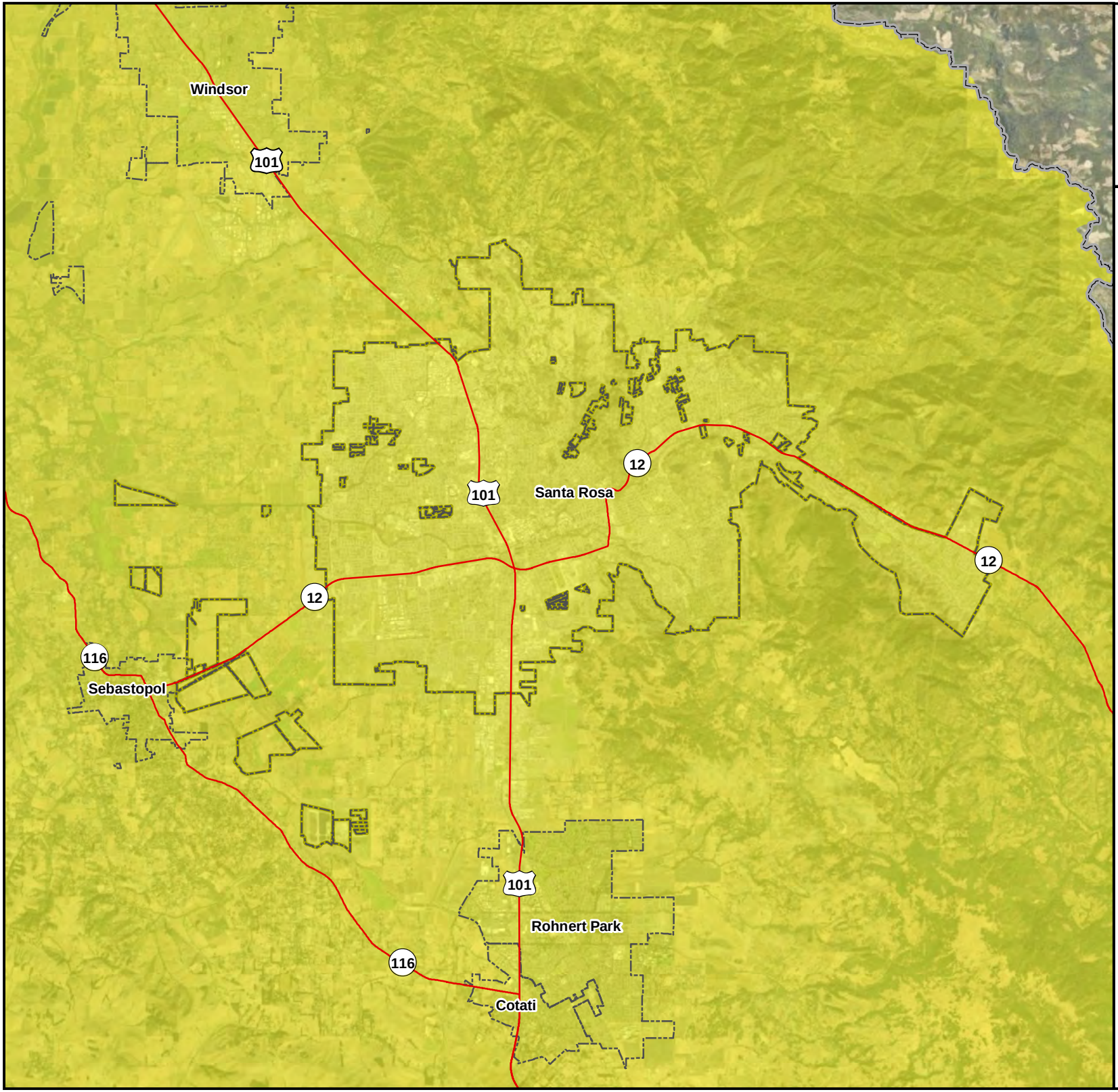
Liquefaction Susceptibility

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

100-year Probalistic Earthquake Scenario

Mercalli Intensity Scale

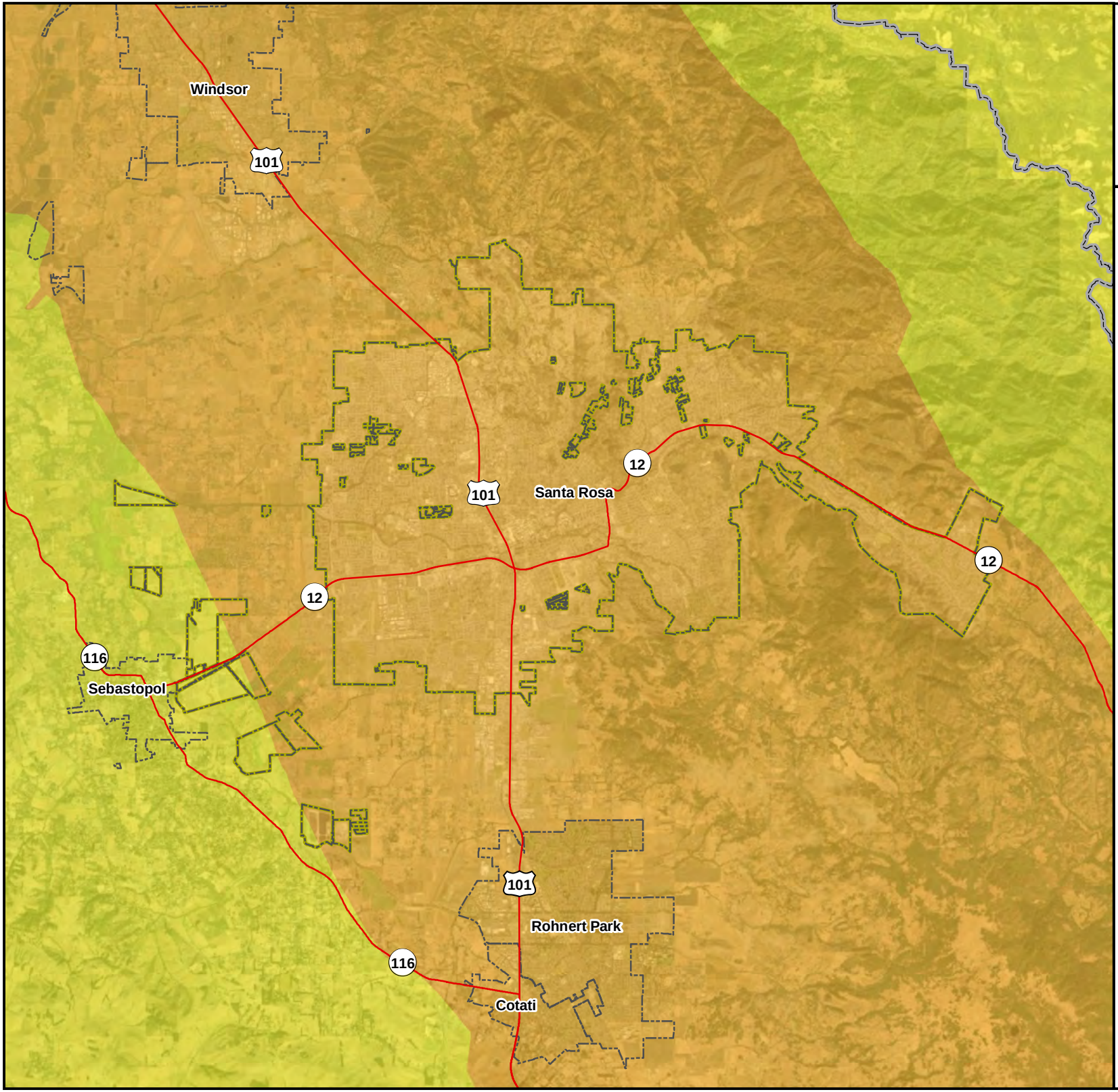
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

Hayward M7.57 Earthquake Scenario

Mercalli Intensity Scale

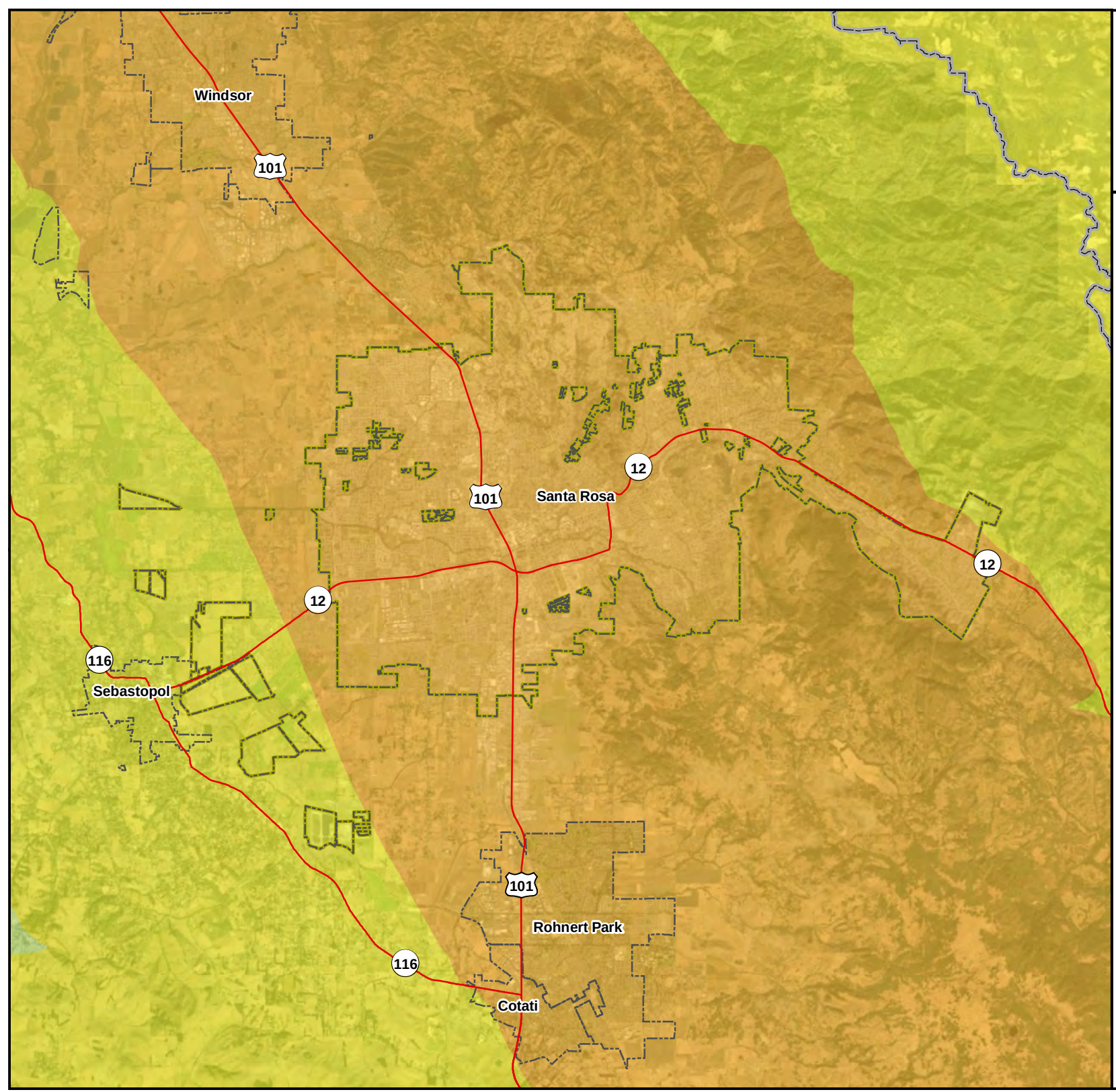
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

Healdsburg M7.19 Earthquake Scenario

Mercalli Intensity Scale

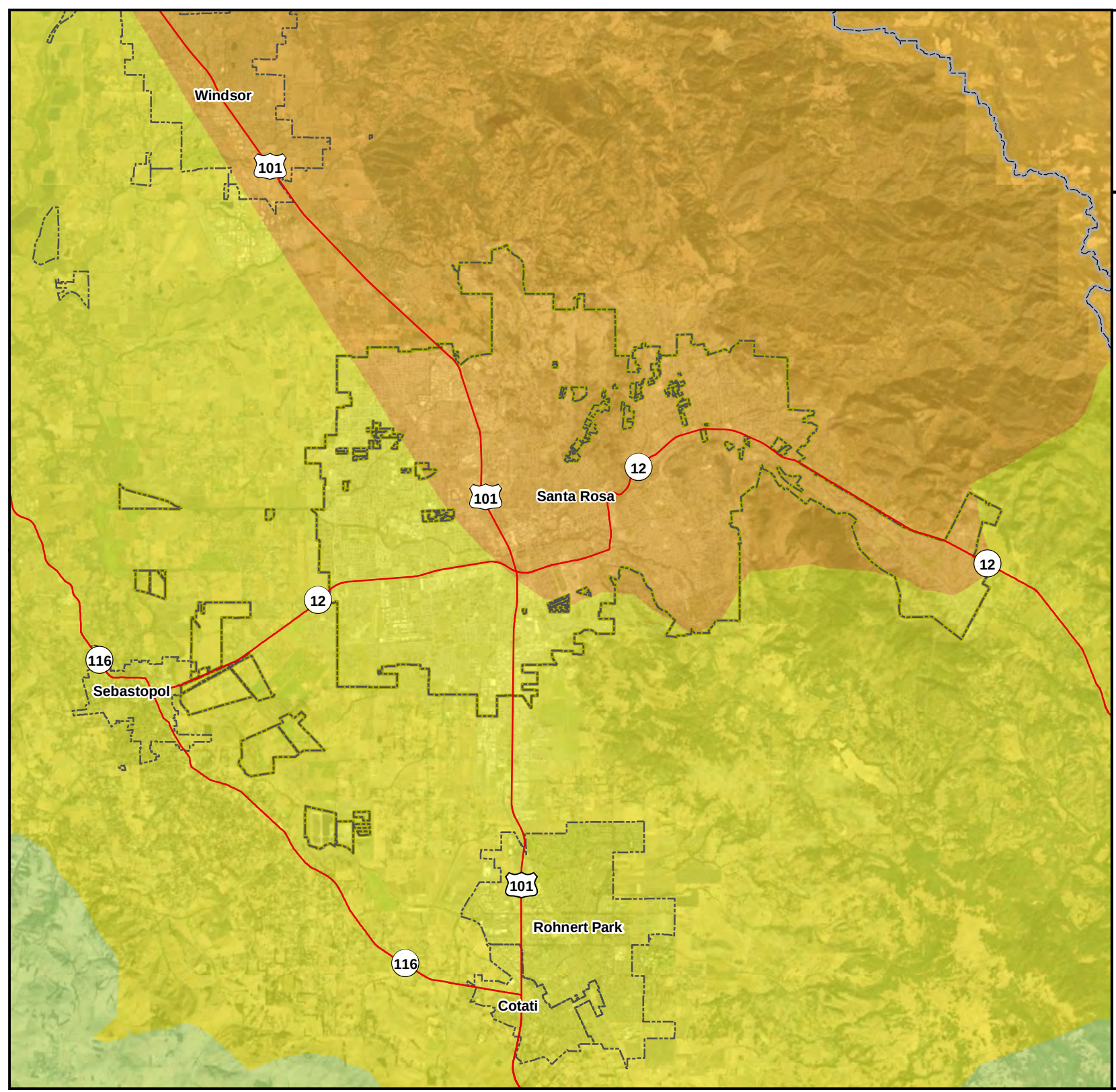
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Sources: Esri Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

Maacama M7.55 Earthquake Scenario

Mercalli Intensity Scale

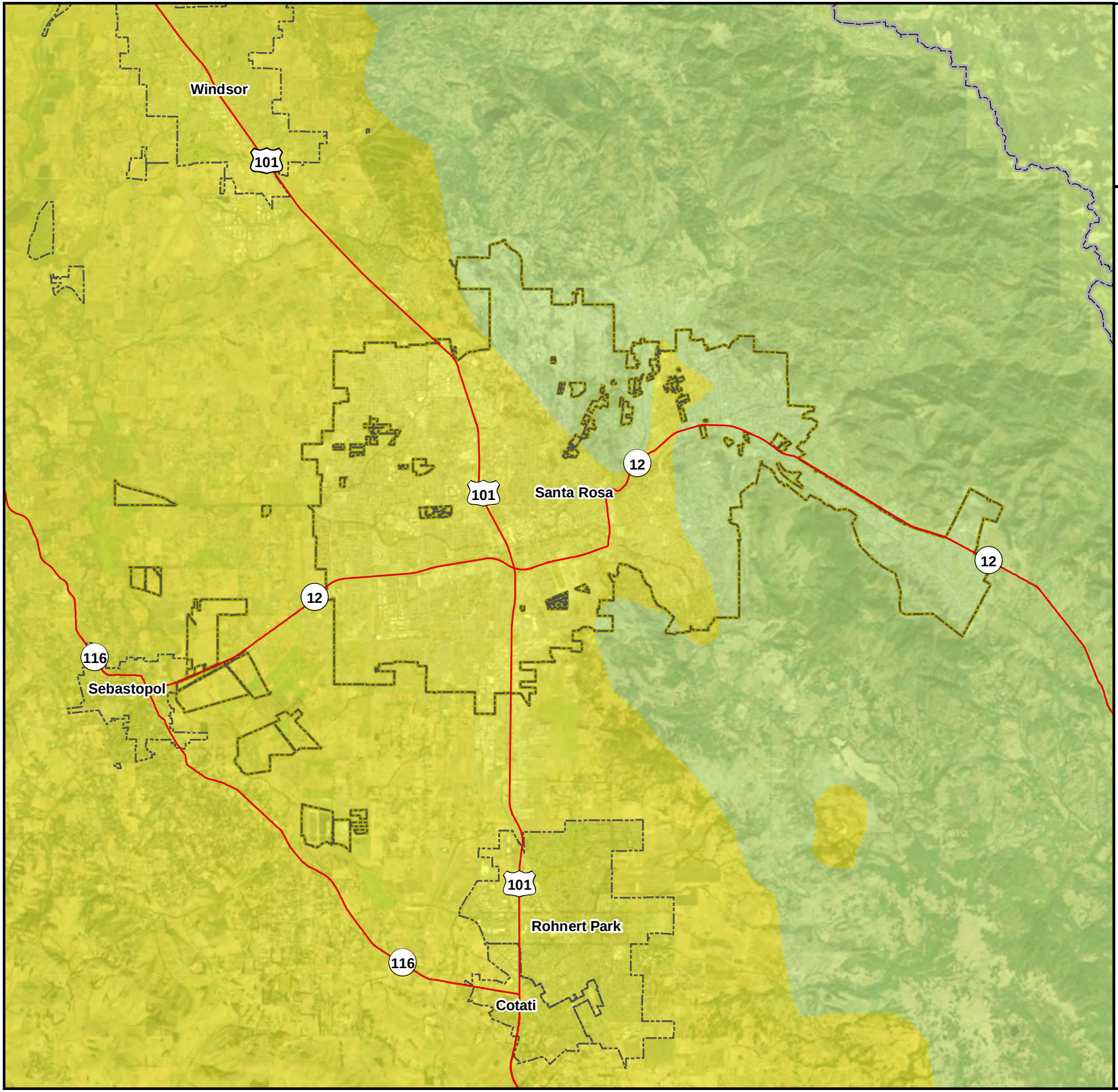
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

San Andreas M8.04 Earthquake Scenario

Mercalli Intensity Scale

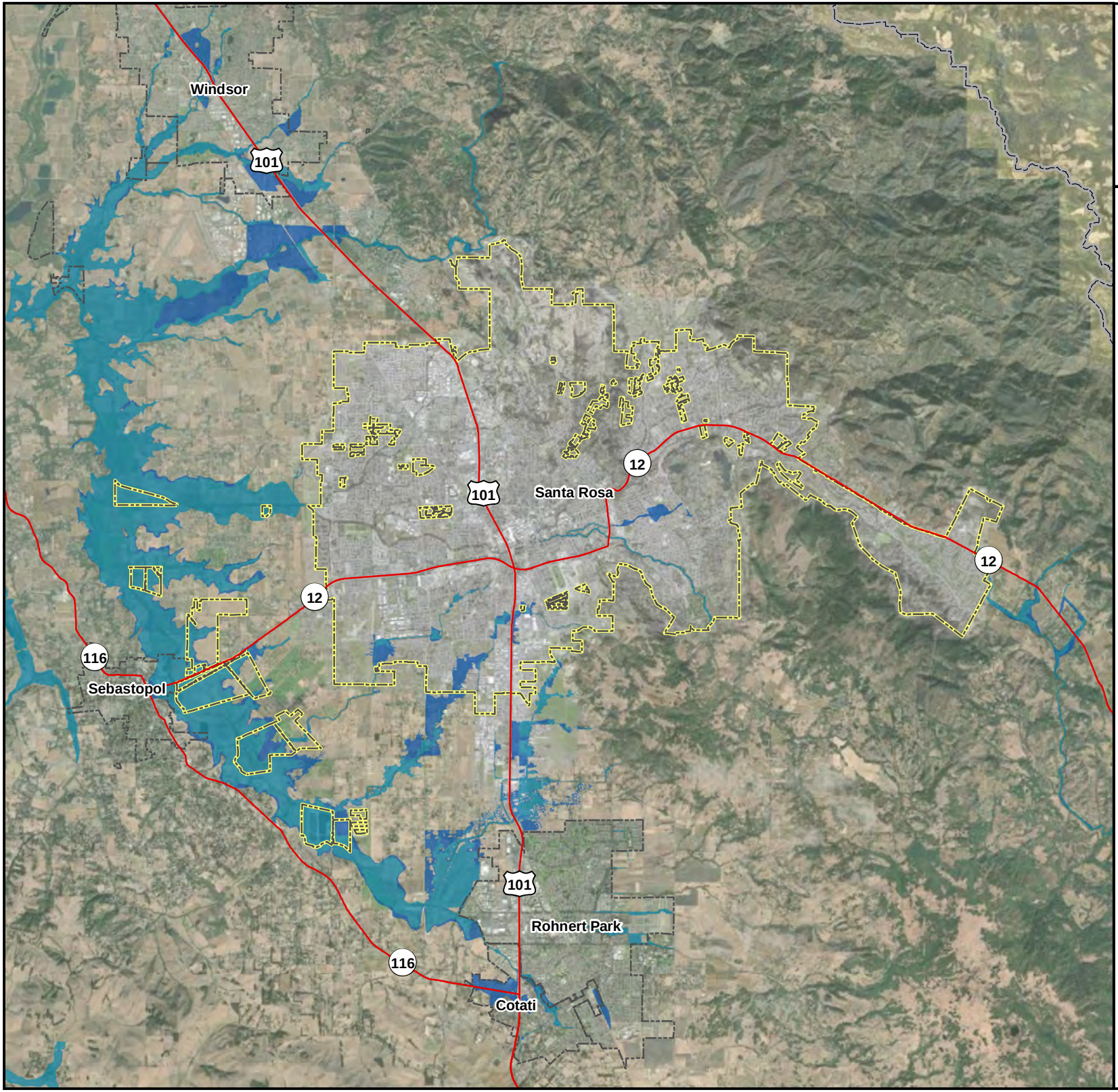
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.5 1 2 Miles



Santa Rosa

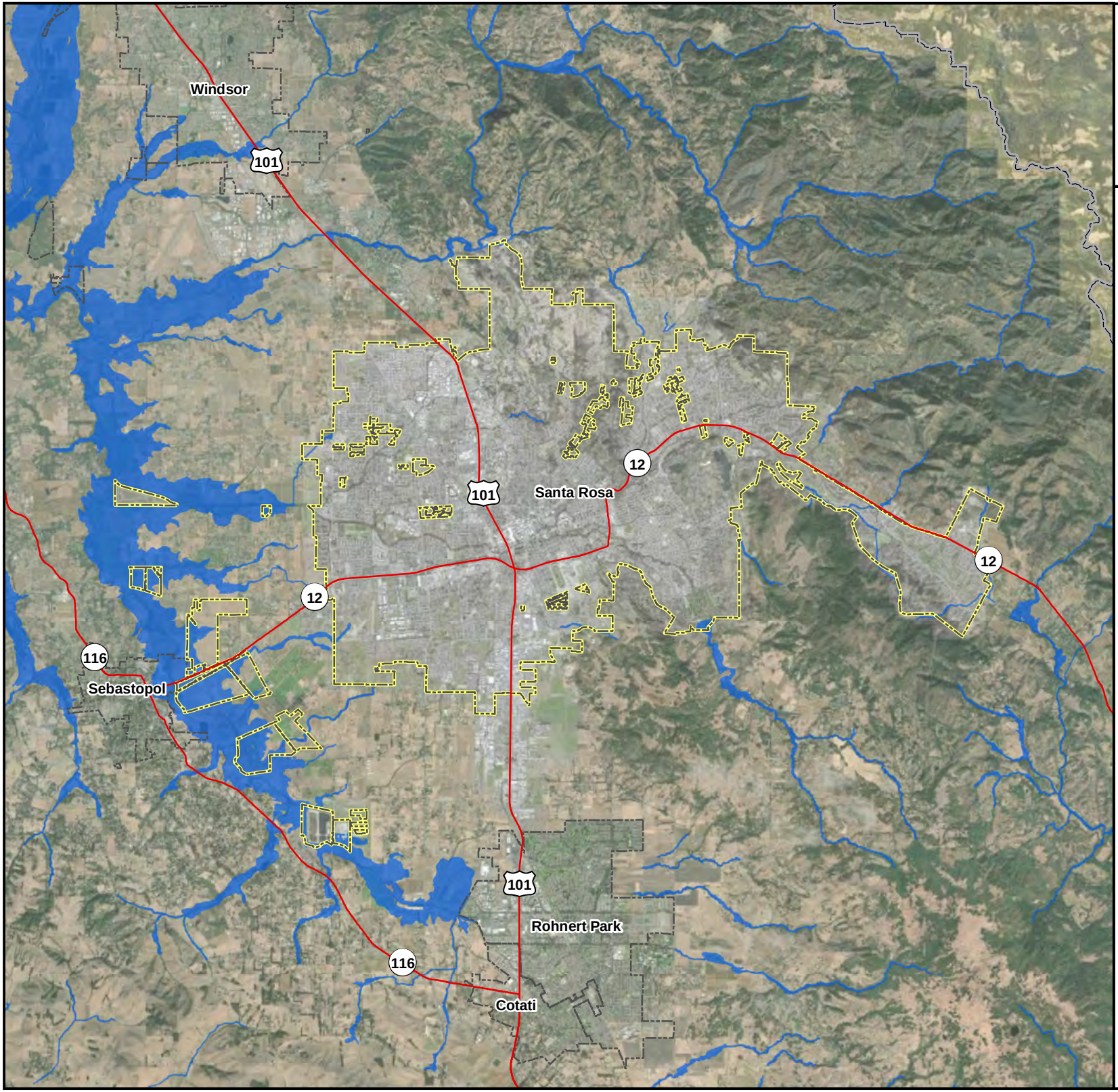
Flood Hazard Areas

- 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

N

0 0.5 1 2 Miles



Santa Rosa

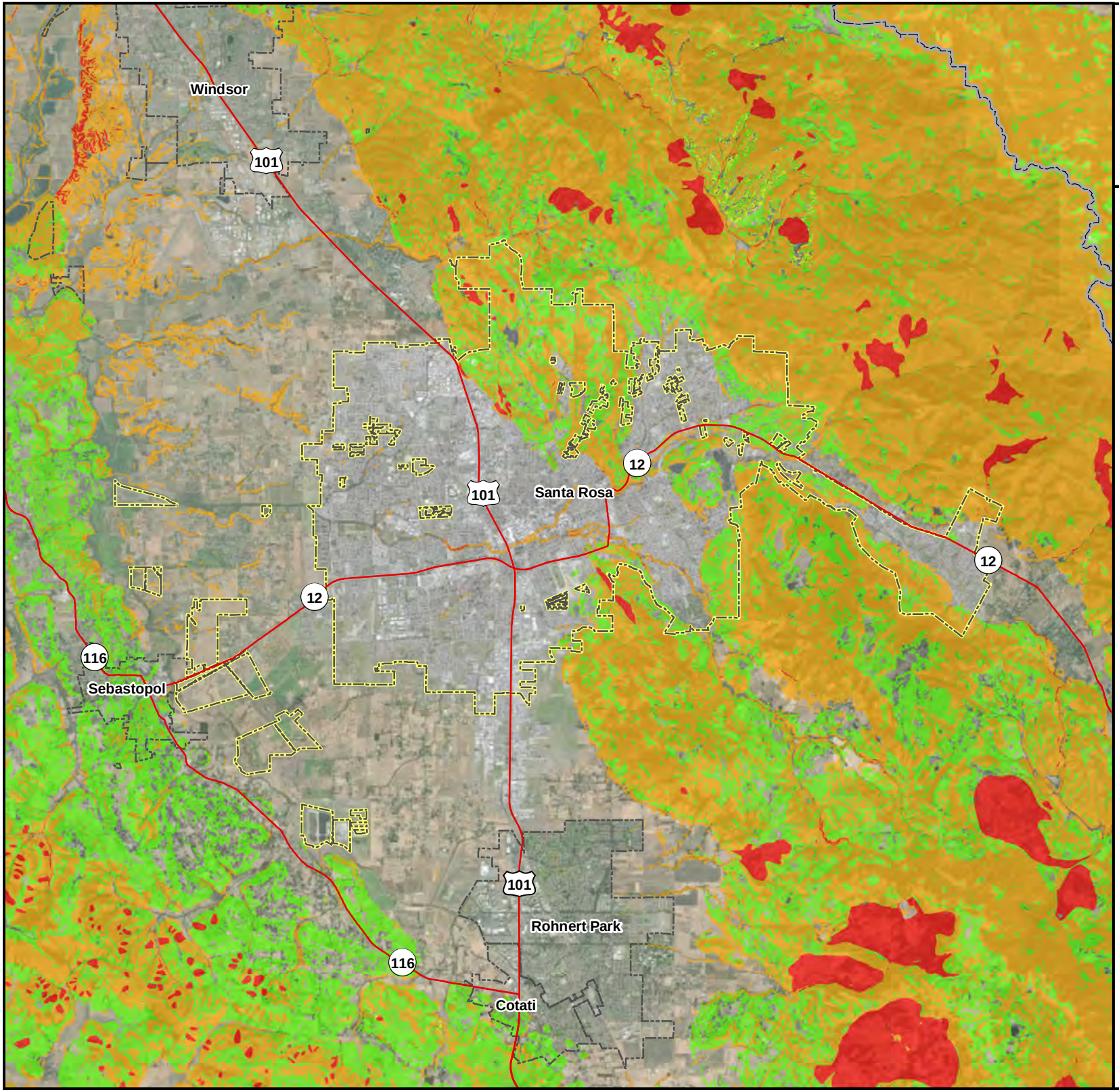
Flood Awareness Areas

Flood Awareness Areas
Selected City
Incorporated Cities
Sonoma County
Highways

Data Sources: Esri Basemap, Sonoma Co.

N

0 0.5 1 2 Miles



Santa Rosa

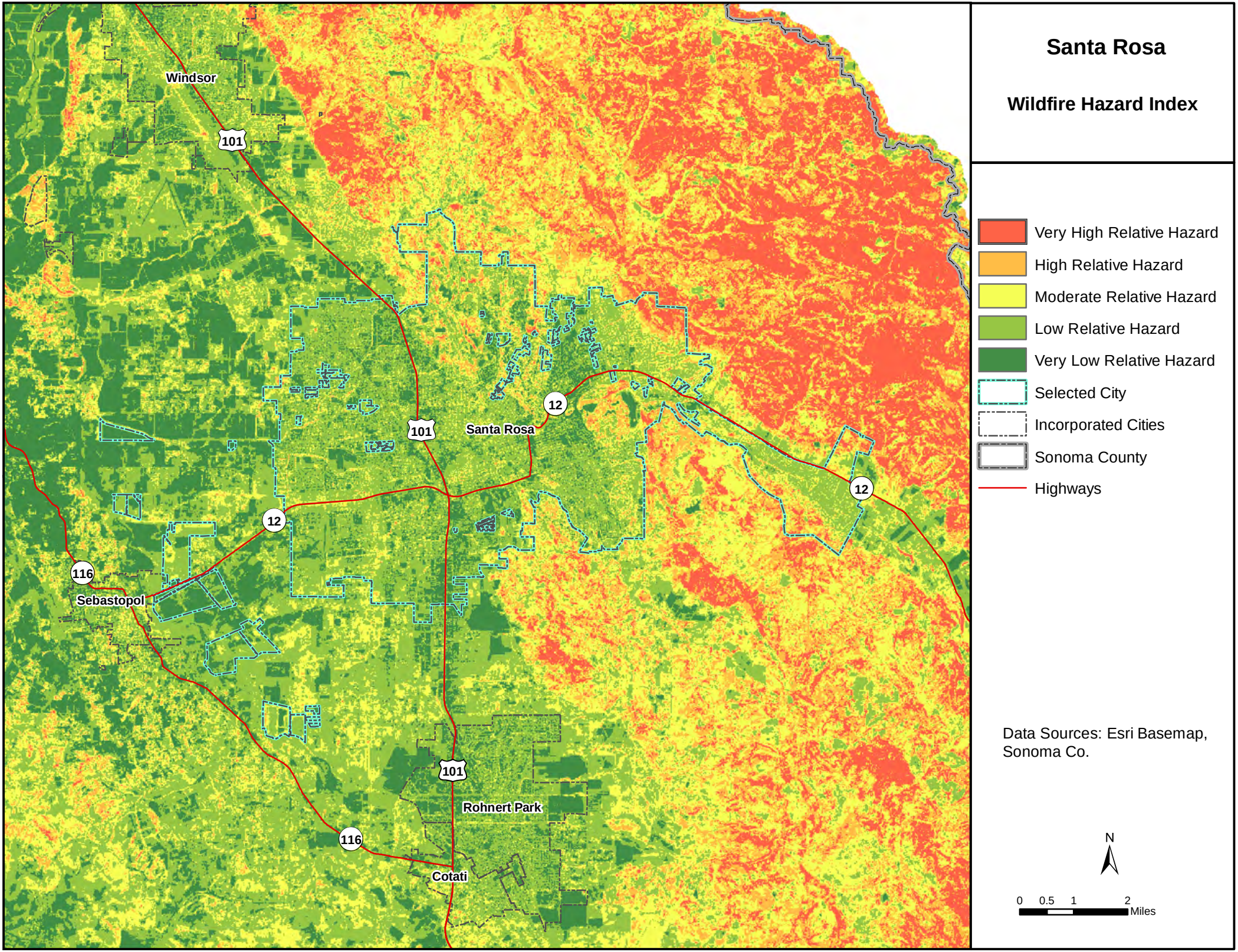
Susceptibility to Deep-Seated Landslides

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

Data Sources: Esri Basemap, Sonoma Co., CGS

N

0 0.5 1 2 Miles



Santa Rosa

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.

N

0 0.5 1 2 Miles

4. CITY OF SONOMA

4.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Dave Jeffries, Consulting Hazard Mitigation Plan Project Manager
PO Box 368
Cotati, CA 94931
Telephone: 707-483-1098
e-mail Address: dave@jeffriespsc.com

Alternate Point of Contact
Wayne Wirick, Development Services Director / Building Official
#1 The Plaza, Sonoma, CA 95476
Telephone: (707) 933-2211
e-mail Address:wwirick@sonomacity.org

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 Sherriff’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
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	Yes The property is known as the "Montini Preserve" (approximately 60 acres) and is a hillside property dedicated as Open Space
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	No, however annexations of unincorporated islands within the City could occur.
Are any areas targeted for development or major redevelopment in the next five years? • If yes, briefly describe, including whether any of the areas are in known hazard risk areas	Yes Infill commercial, multi-family and single family that are not located within known hazard risk areas.
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	

	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
Total	16	40	15	37	58

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 1 • Landslide: 0 • High Liquefaction Areas: 0 • Tsunami Inundation Area: 0 • Wildfire Risk Areas: 2
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.	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

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?
Codes, Ordinances, & Requirements				
Building Code	Yes	Yes	Yes	Yes
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.				
Zoning Code	Yes	No	Yes	Yes
Comment: Title 19 of Sonoma Municipal Code				
Subdivisions	Yes	No	Yes	Yes
Comment: See Title 19 of Sonoma Municipal Code				
Stormwater Management	Yes	No	Yes	No
Comment: City of Sonoma Storm Water Management Program (2005), updated in 2015 for State required programs for MS4 jurisdictions				
Post-Disaster Recovery	No	State	No	No
Comment:				
Real Estate Disclosure	No	No	No	No
Comment:				
Growth Management	Yes	No	No	Yes
Comment: See Title 19 of Sonoma Municipal Code				
Site Plan Review	Yes	No	No	No
Comment: See Title 19 of Sonoma Municipal Code				
Environmental Protection	Yes	No	No	No
Comment: Pursuant to CEQA Guidelines				
Flood Damage Prevention	Yes	No	Yes	Yes
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.				
Emergency Management	Yes	Yes	Yes	Yes
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.				
Climate Change	Yes	No	No	No
Comment: Pursuant to CEQA Guidelines				
Other	No	No	No	No
Comment:				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? *No*				
Comment: The City has not adopted a hazard mitigation plan for inclusion in the General Plan				
Capital Improvement Program	Yes	No	No	Yes
How often is the plan updated? *Annually*				
Comment: The Capital Improvement Program is a planning and budgeting document for investment in public infrastructure.				
Disaster Debris Management Plan	No	No	No	No
Comment:				
Floodplain or Watershed Plan	Yes	No	No	Yes
Comment: 2011 Storm Drain Master Plan; No update to the plan is contemplated.				
Stormwater Plan	Yes	No	Yes	No
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.				
Urban Water Management Plan	Yes	No	Yes	Yes
Comment: 2016 Urban Water Management Plan; Update to the plan is underway				
Habitat Conservation Plan	No	No	No	Yes
Comment: N/A				
Economic Development Plan	No	No	No	No
Comment:				
Shoreline Management Plan	No	No	No	No
Comment: No shoreline within City limits.				
Community Wildfire Protection Plan	No	Yes Sonoma County	No	No
Comment: Sonoma County Community Wildfire Protection Plan https://www.firesafesonoma.org/documents-resources-2/				
Forest Management Plan	No	No	No	No
Comment: No forest areas within City limits.				
Climate Action Plan	No	No	No	No
Comment: 2007 Greenhouse Gas Emissions Reduction Action Plan				
Emergency Operations Plan (EOP)	Yes	Yes	Yes	Yes
Comment: Emergency Operations Plan—2015; County Department of Emergency Management, Sonoma Valley Fire, Sonoma County Sheriff				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Yes	No	Yes
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				
Post-Disaster Recovery Plan	No	Yes	No	Yes
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.				
Continuity of Operations Plan	Yes	Yes	No	Yes
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.				
Public Health Plan	No	Yes	Yes	No
Comment: Sonoma County Public Health				

Table 4-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	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? *If yes, briefly describe.*	Yes Earthquake Brace + Bolt—Foundation Retrofit Grant Program
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe.*	Yes www.sonomacity.org/departments/emergency-prep/ 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? *If yes, briefly describe.*	No
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, briefly describe.*	No
Do you have any established warning systems for hazard events? *If yes, briefly describe.*	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? *If exceeds, in what ways?*	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? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed?*	No

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	No No
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* *What is the premium in force?*	33 $2,321,200 $28,880
How many total loss claims have been filed in your jurisdiction?[a] *How many claims are still open or were closed without payment?* *What were the total payments for losses?*	0 9 $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[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: City staff are continuously identifying adaptive management strategies.	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: No dedicated funding or staff. City relies on county and state government information.	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: No dedicated funding or staff.	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Medium
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.	
Capital planning and land use decisions informed by potential climate impacts	High
Comment: Through the general plan update process.	
Participation in regional groups addressing climate risks	Medium
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.	

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: Through the general plan update process.	
Identified strategies for greenhouse gas mitigation efforts	High
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.	
Identified strategies for adaptation to impacts	Low
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.	
Champions for climate action in local government departments	High
Comment: The City hired a sustainability coordinator who resides in the Planning Department.	
Political support for implementing climate change adaptation strategies	High
Comment:	
Financial resources devoted to climate change adaptation	High
Comment: The City hired a sustainability coordinator who resides in the Planning Department.	
Local authority over sectors likely to be negative impacted	High
Comment:	
Public Capacity	
Local residents knowledge of and understanding of climate risk	High
Comment: In general there is high degree of knowledge and understanding of climate risk by city residents.	
Local residents support of adaptation efforts	Medium
Comment: Elected city officials, which have been supported by local residents, have been supportive of climate adaptation efforts.	
Local residents' capacity to adapt to climate impacts	High
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.	
Local economy current capacity to adapt to climate impacts	Low
Comment: The local economy is predominantly a service-based economy highly dependent on tourism, which limits its adaptive capacity.	
Local ecosystems capacity to adapt to climate impacts	High
Comment: The city has a relatively high proportion of preserved open spaces with a high degree of native vegetation.	

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	Carried Over to Plan Update: Action # in Update
INFR – a-8: 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.	Yes			
Comment: Emergency power generator in place for public safety & 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.				
INFR – a-21: As an infrastructure operator, designate a back-up Emergency Operations Center with redundant communications systems.	Yes			
Comment: 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.				
INFR – b-1: 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.	No			
Comment: 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.				
INFR – d-8: 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.	No			
Comment: 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.				
INFR – d-17: 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.	Yes			
Comment: 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 (https://sonoma.onerain.com/). 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.				
INFR – d-18: 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.	Yes			
Comment: 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.				

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
INFR – g-1: Provide materials to the public related to planning for power outages.	Yes			
Comment: 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 https://www.sonomacity.org/departments/emergency-prep/. Regularly include preparedness information in e-newsletters and the City's social media. Materials available at City Hall. Sonoma Valley Fire District & 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.				
INFR – g-7: Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the http://www.preparenow.org website related to infrastructure issues.	Yes			
Comment: Hired Management Analyst to serve as Public Information Officer and web master for City. Continually manage and update Emergency Preparedness web pages https://www.sonomacity.org/departments/emergency-prep/. Regularly include preparedness information in e-newsletters and the City's social media. Materials available at City Hall. Sonoma Valley Fire District & Sonoma PD distribute materials at community events. Culturally—the City website is compliant with AFN & 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.				
HSNG – a-2: 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 *Guidelines for Rehabilitation.*	Yes—Partial			
Comment: 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 https://www.earthquakebracebolt.com/ 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.				
HSNG – b-7: 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.	Yes—Partial			
Comment: 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 https://www.earthquakebracebolt.com/ 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.				
HSNG – c-4: 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.	No			
Comment: Preliminary survey completed—No funding available for full inventory.				
HSNG – g-10: 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.	Partial & Ongoing			
Comment: 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%.				

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
HSNG – g-11: 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.	Yes			
Comment: 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.				
HSNG – g-16: Conduct periodic fire-safety inspections of all multifamily buildings, as required by State law.	Partial & Ongoing			
Comment: 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.				
HSNG – k-16: 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 http://www.preparenow.org website and from nongovernmental organizations that work with these communities on an ongoing basis.	Yes			
Comment: The City continually manages and updates its Emergency Preparedness web pages with resources https://www.sonomacity.org/departments/emergency-prep/." 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 & Sonoma PD distribute materials at community events. A link to http://www.preparenow.org 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 & 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.				
ECON – h-3: 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.	No			
Comment: This strategy measure is no longer considered feasible due to lack of support and lack of resources to carry out the measure.				
ECON – i-5: 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 http://quake.abag.ca.gov/recovery/info-repair-ord.html.	No			
Comment: 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				
ECON – i-6: 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.	No			
Comment: 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				

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
ECON – j-3: Develop and print materials, conduct workshops, and provide outreach to Sonoma private businesses focusing on business continuity planning.	Yes			
Comment: 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.				
ECON – j-9: Encourage the formation of a community and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the *Fire Wise Program*. This effort is important because grant funds are currently available to offset costs of specific council-supported projects.	Yes			
Comment: 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				
ECON – j-13: 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 http://www.preparenow.org website and from nongovernmental organizations that work with these communities on an ongoing basis.	Yes			
Comment: Web site link to http://www.preparenow.org 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 & 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.				
GOVT – a-4: 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.	Partial & Ongoing			
Comment: 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.				
GOVT – c-25: 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.	Partial & Ongoing			
Comment: 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.				
GOVT – d-6: Participate in multi-agency efforts to mitigate fire threat, such as the Hills Emergency Forum (in the East Bay), various *FireSafe* Council programs, and city-utility task forces. Such participation increases a jurisdiction's competitiveness in obtaining grants.	Yes			
Comment: Fire Safe Sonoma—Partnered with Sonoma County PRMD—Fire Prevention Office and participated in the Hazardous Vegetation Inspection & 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				

Strategy No. / Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
ENVI – a-6: Comply with applicable performance standards of any *National Pollutant Discharge Elimination System* municipal stormwater permit that seeks to manage increases in stormwater run-off flows from new development and redevelopment construction projects.	Yes			
Comment: 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.				
ENVI – b-6: 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.	Yes			
Comment: 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.				
ENVI – c-6: 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.	Yes			
Comment: 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.				

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[a]	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [b]
Action SCI-1—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.						
Hazards Mitigated: Earthquake, severe weather, wildfire, flooding						
Existing	1, 3, 4, 10, 11	City of Sonoma Planning Dept.		High	HMGP, PDM, FMA	Long-term
Action SCI 2—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.						
Hazards Mitigated: 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
Action SCI-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: All hazards						
New & Existing	1, 5, 8	County of Sonoma	City of Sonoma	Low	Staff Time, General Funds	Short-term
Action SCI-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Severe weather, flooding, landslide						
New & Existing	1, 5, 7, 8, 10, 11	City of Sonoma Building Dept.	FEMA	Low	Staff Time, General Funds	Ongoing
Action SCI-5—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following: • Reduce vehicle emissions by adopting vehicle-miles-traveled thresholds in the General Plan as projects are reviewed pursuant to CEQA. • Consider adopting a General Plan policy to protect and acquire and manage ecosystems in buffers zones along rivers & creeks within the City to improve flood control and water quality management. • 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.						
Hazards Mitigated: 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
Action SCI-6—Purchase generators for critical facilities and infrastructure that lack adequate emergency backup power, including Sonoma City Hall complex and pre-designated emergency shelters.						
Hazards Mitigated: Earthquake, severe weather, wildfire, flooding, landslide						
Existing	2, 6, 12	City of Sonoma Public Works Dept.		High	PDM	Long term
Action SCI-7—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.						
Hazards Mitigated: 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[a]	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [b]
Action SCI-8—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.						
Hazards Mitigated: 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
Action SCI-9—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.						
Hazards Mitigated: Earthquake						
Existing	1, 2, 8	City of Sonoma Building Dept.		Medium	PDM, BRIC, Staff Time, General Funds	Short-term
Action SCI-10—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.						
Hazards Mitigated: 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
Action SCI-11—Conduct periodic fire-safety inspections of all multifamily buildings, as required by State law.						
Hazards Mitigated: Earthquake, severe weather, wildfire						
New & Existing	2, 11	Sonoma Valley Fire District	City of Sonoma	Low	Staff Time, General Funds	Ongoing
Action SCI-12—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.						
Hazards Mitigated: 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
Action SCI-13—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.						
Hazards Mitigated: 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
Action SCI-14—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.						
Hazards Mitigated: 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
Action SCI-15—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.						
Hazards Mitigated: 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[a]	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline [b]
Action SCI-16—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.						
Hazards Mitigated: 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
Action SCI-17—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.						
Hazards Mitigated: 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[a]	Grant Pursuit Priority[a]
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[a]							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
Earthquake	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
Medium-Risk Hazards								
Severe Weather	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
Flood	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
Wildfire	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
Low-Risk Hazards								
Landslide	SCI-2, 3, 5, 8, 12, 13, 14, 15, 16, 17			SCI-8	SCI-6, 7			SCI-3, 5, 12, 13, 15, 16, 17
Drought	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

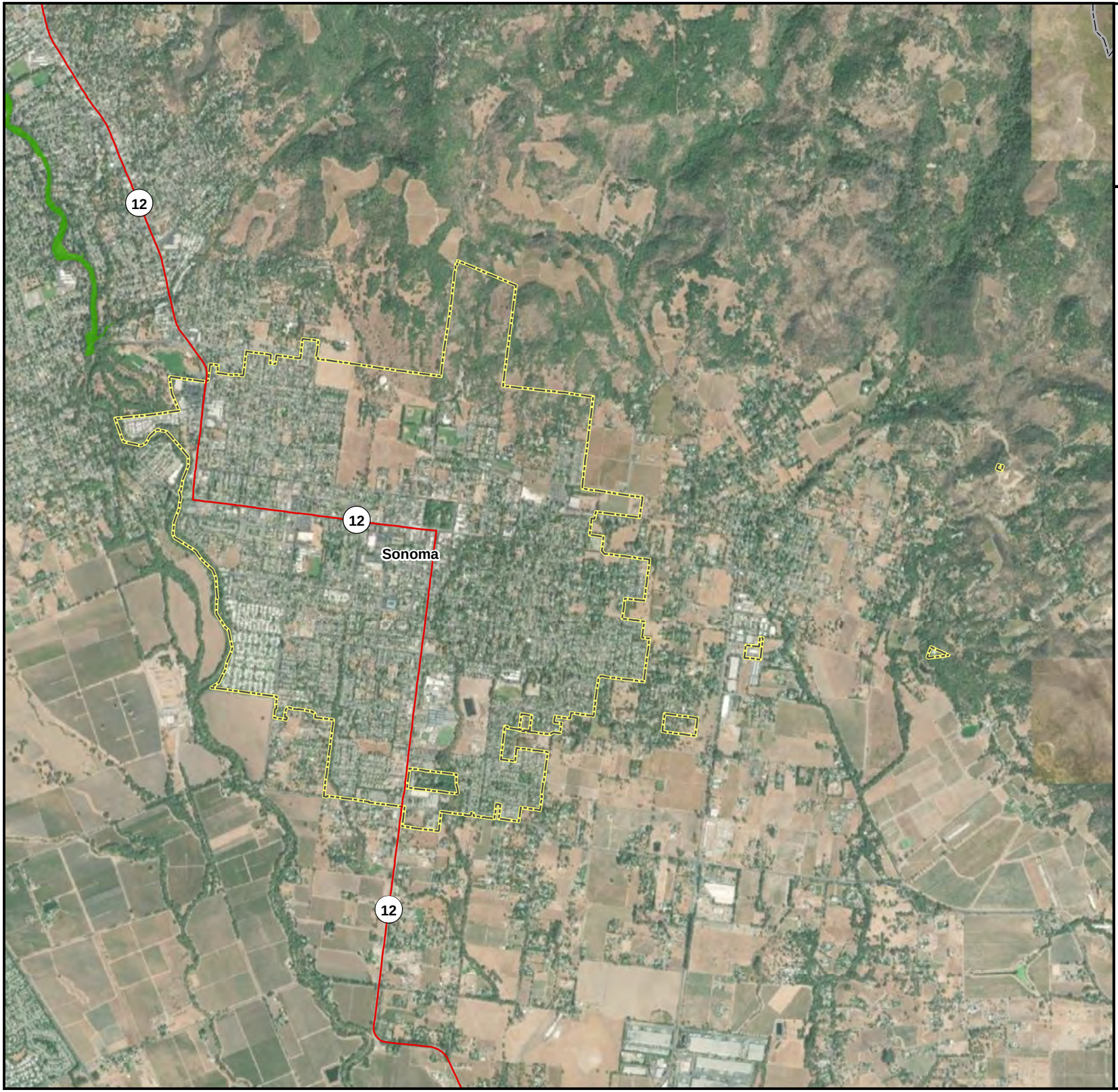
As required by America's Water Infrastructure Act, the City is preparing a Risk and Resiliency Assessment and an Emergency Response Plan for the City's water system. Sonoma Water, the wholesaler who provides 90% of the City's potable water supply, is completing a Risk and Resiliency Assessment of its 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

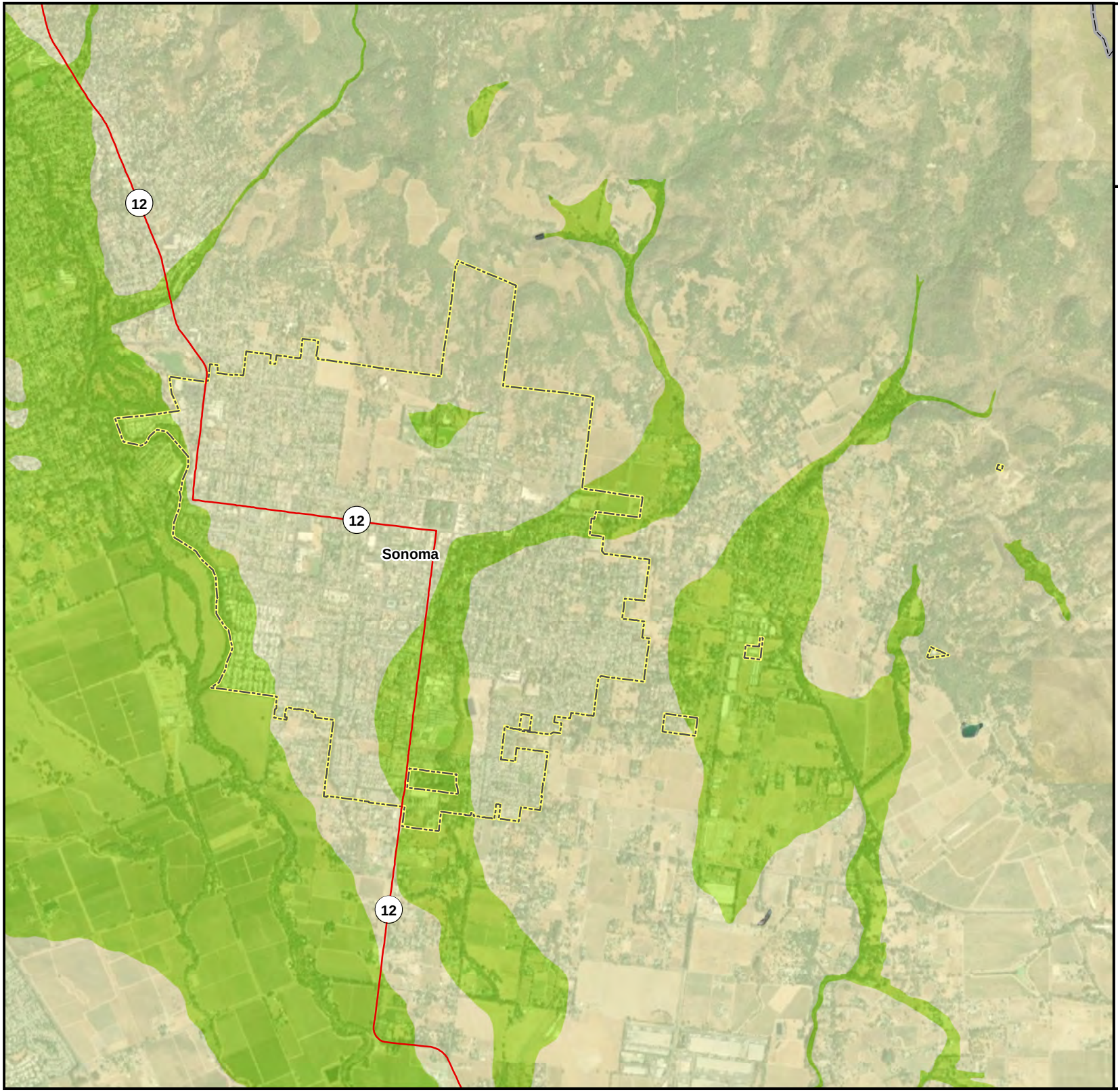
Dam Failure Inundation Area

Inundation Area
Selected City
Incorporated Cities
Sonoma County
Highways

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

N

0 0.175 0.35 0.7 Miles



Sonoma

NEHRP Soil Classifications

C (Dense soil/soft rock)

D (Stiff soil)

Selected City

Incorporated Cities

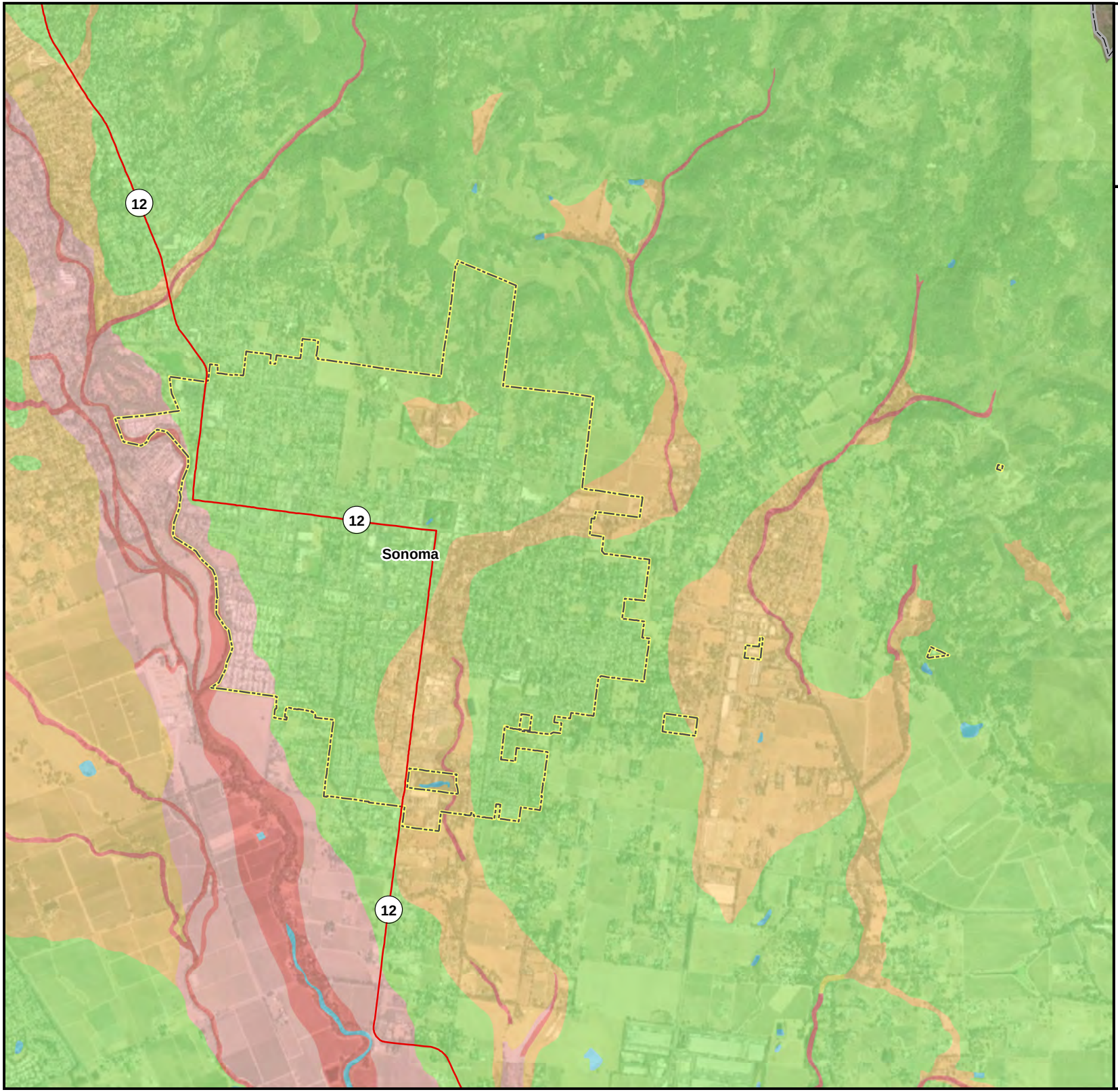
Sonoma County

Highways

Data Source: ESRI Basemap, Sonoma Co., CGS

N

0 0.175 0.35 0.7 Miles



Sonoma

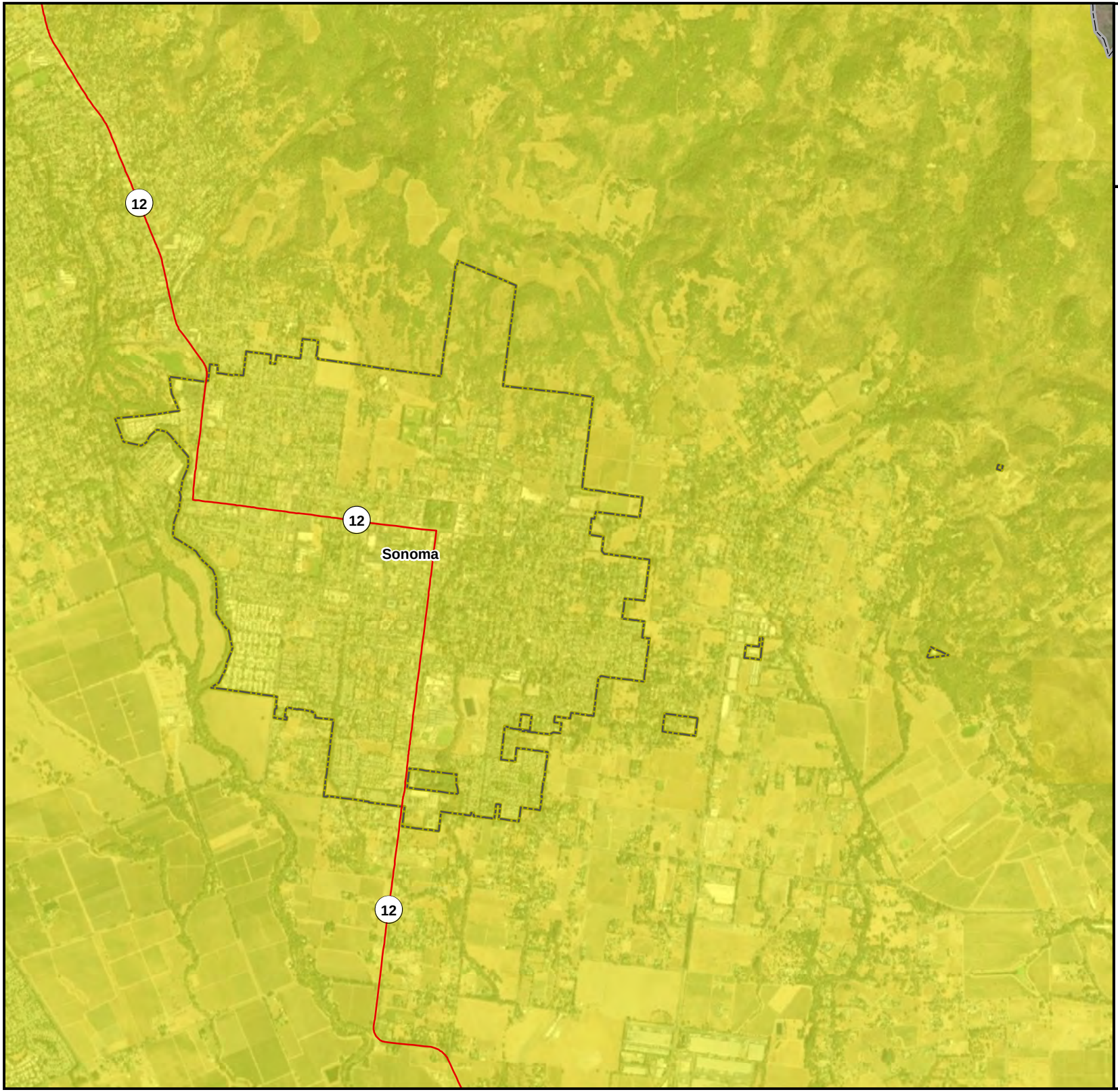
Liquefaction Susceptibility

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.175 0.35 0.7 Miles



Sonoma

100-year Probalistic Earthquake Scenario

Mercalli Intensity Scale

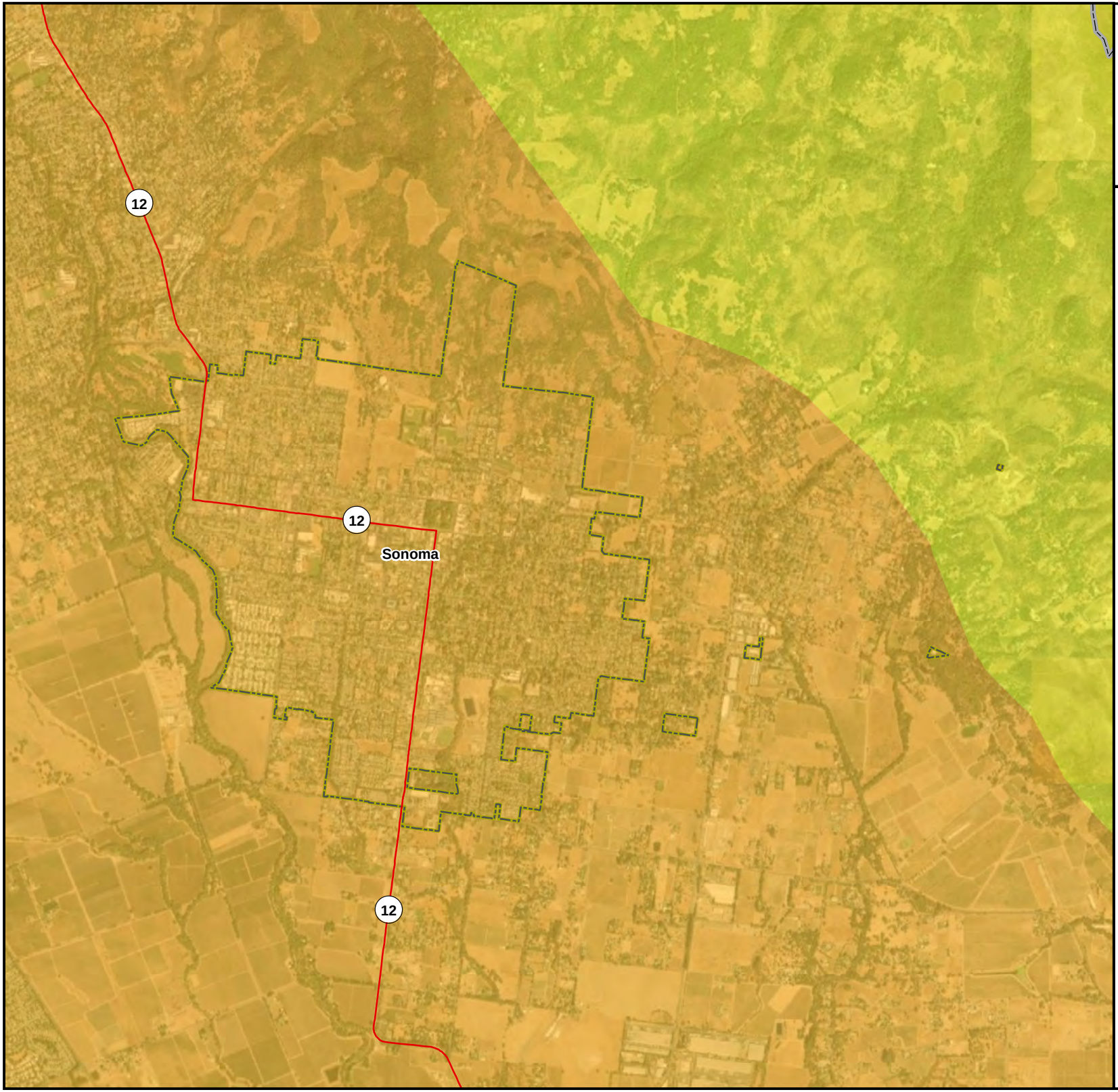
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.175 0.35 0.7 Miles



Sonoma

Hayward M7.57 Earthquake Scenario

Mercalli Intensity Scale

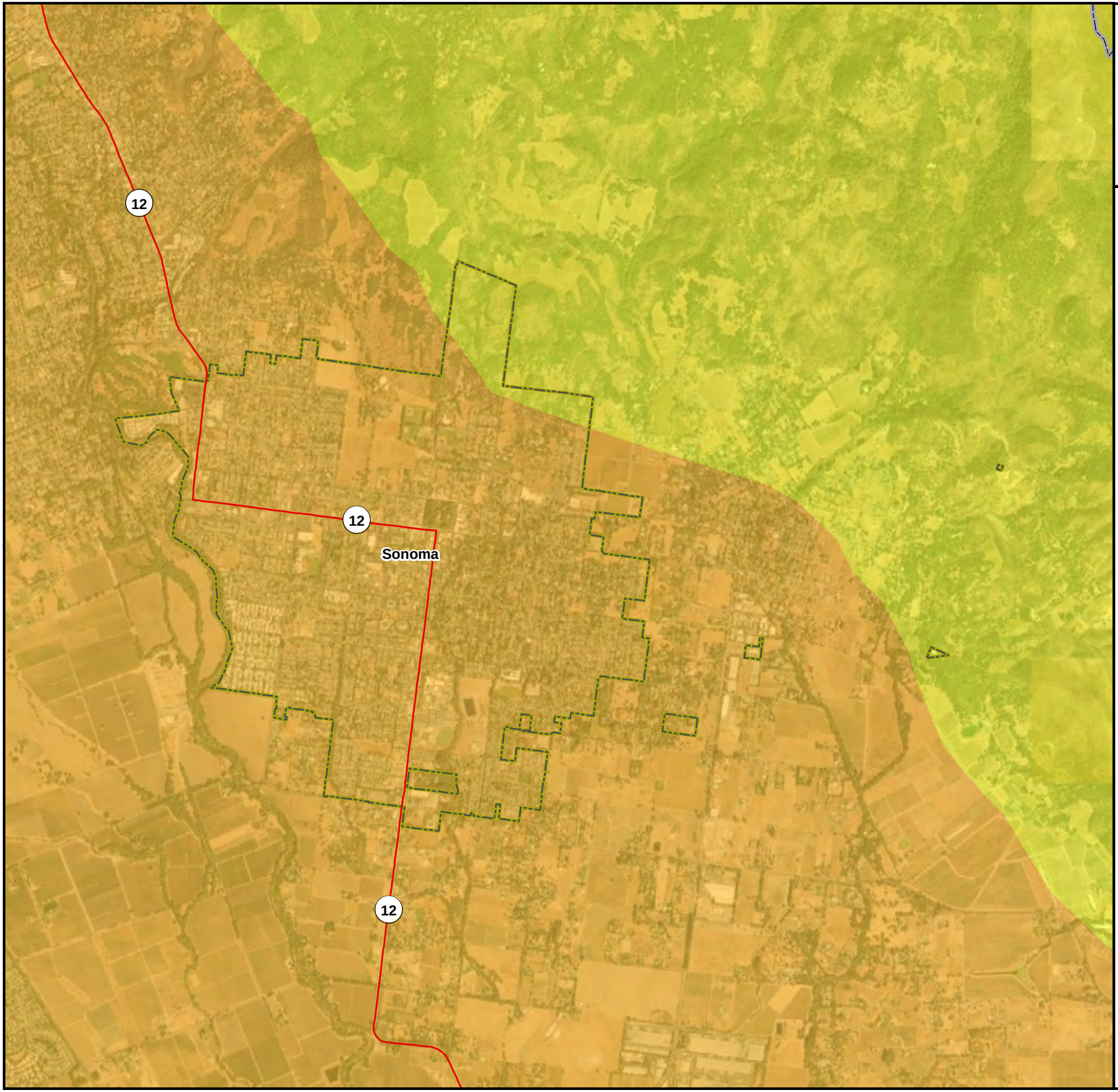
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.175 0.35 0.7 Miles



Sonoma

Healdsburg M7.19 Earthquake Scenario

Mercalli Intensity Scale

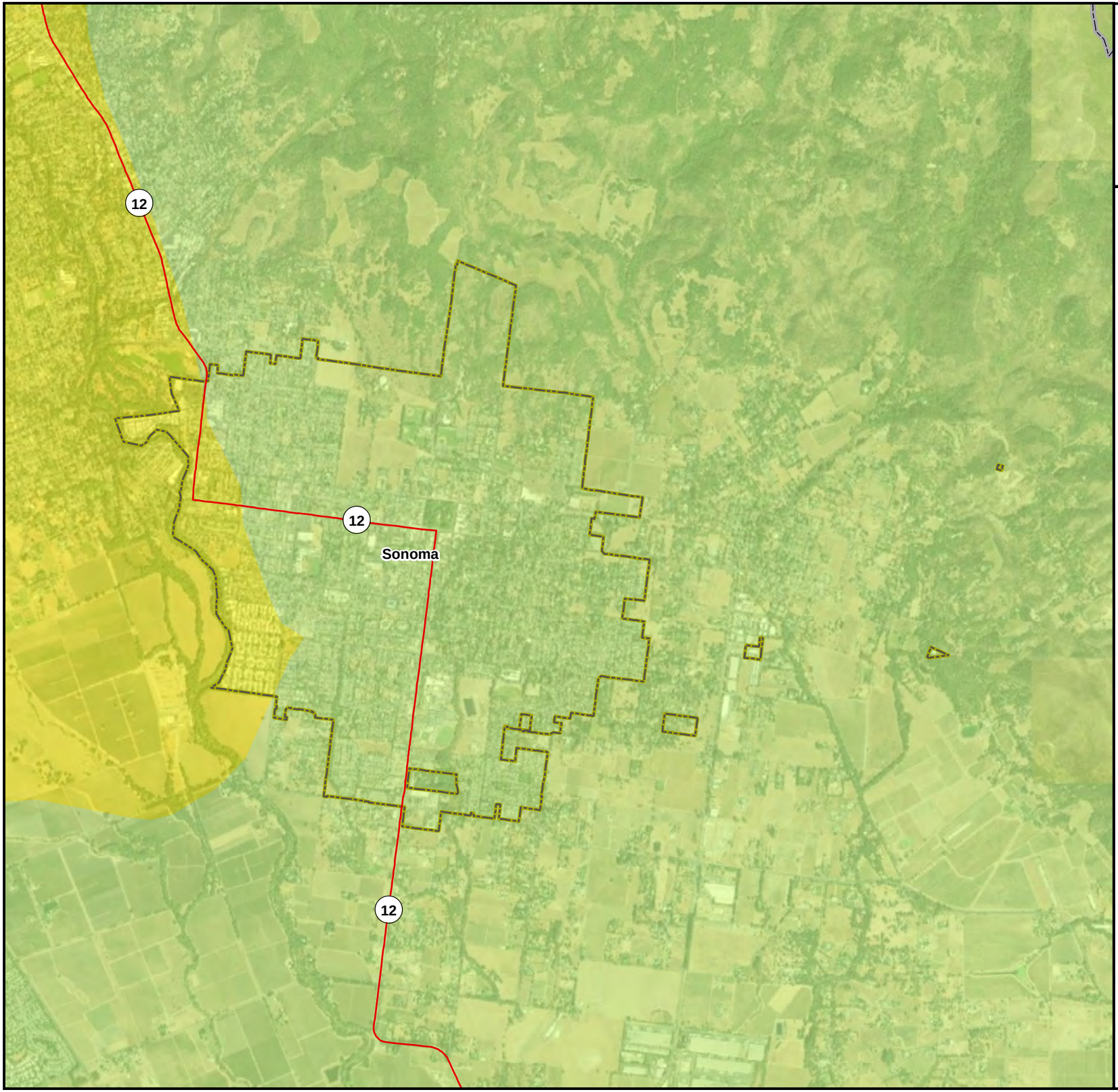
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Sources: Esri Basemap, Sonoma Co., USGS

N

0 0.175 0.35 0.7 Miles



Sonoma

Maacama M7.55 Earthquake Scenario

Mercalli Intensity Scale

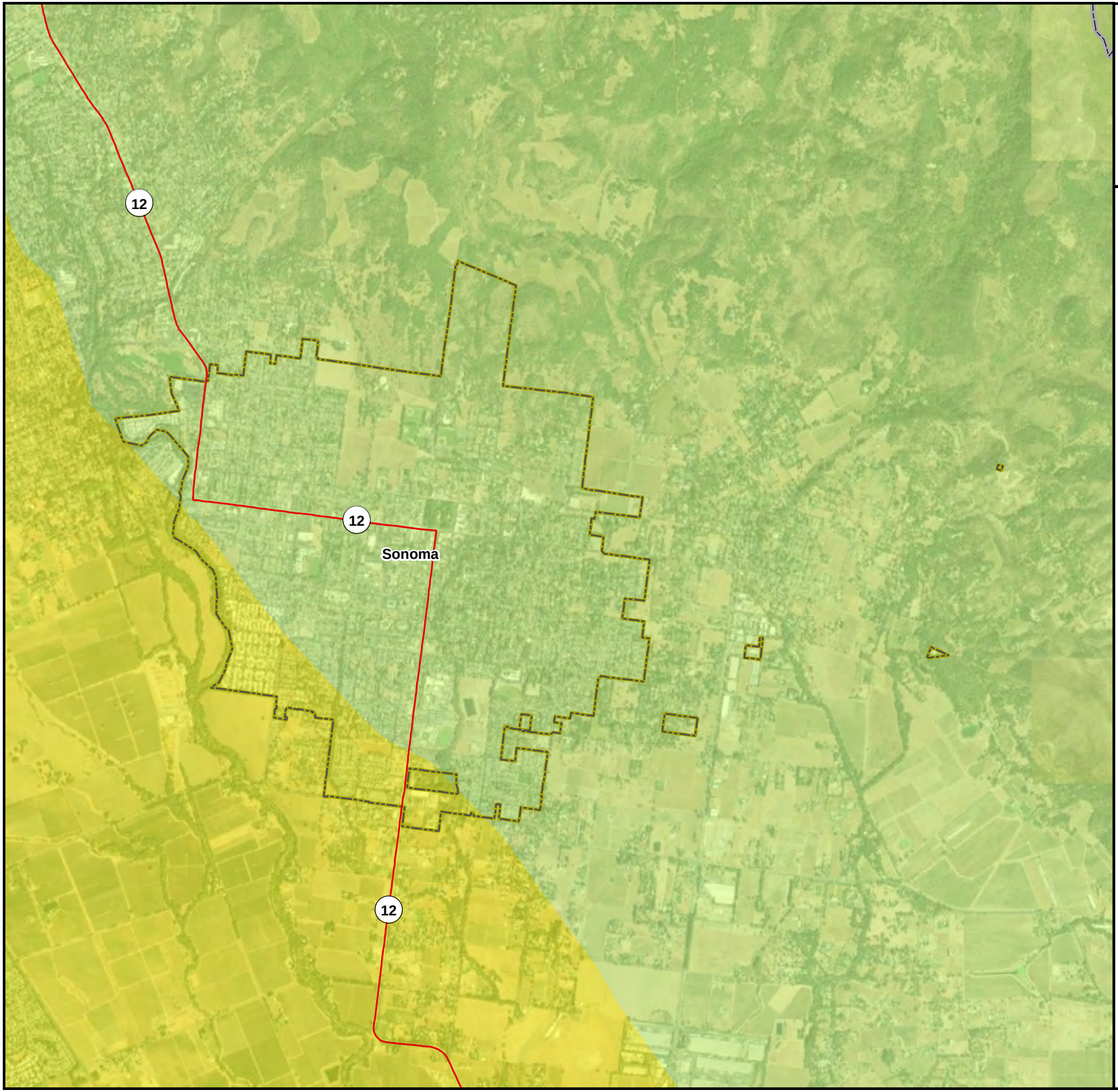
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.175 0.35 0.7
Miles



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

N

0 0.175 0.35 0.7 Miles

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

N

0 0.175 0.35 0.7 Miles

Sonoma

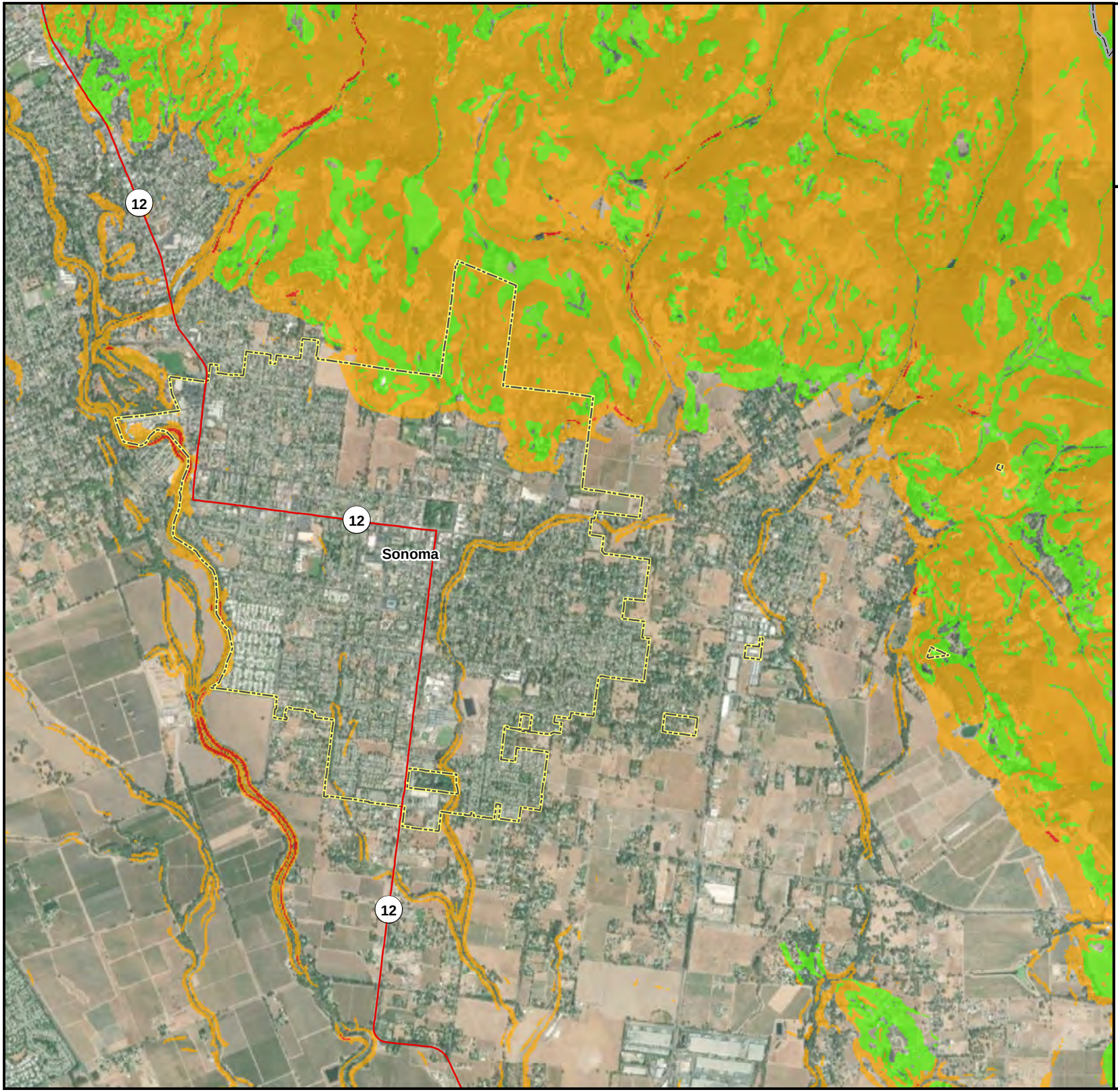
Flood Awareness Areas

Flood Awareness Areas
Selected City
Incorporated Cities
Sonoma County
Highways

Data Sources: Esri Basemap, Sonoma Co.

N

0 0.175 0.35 0.7
Miles



Sonoma

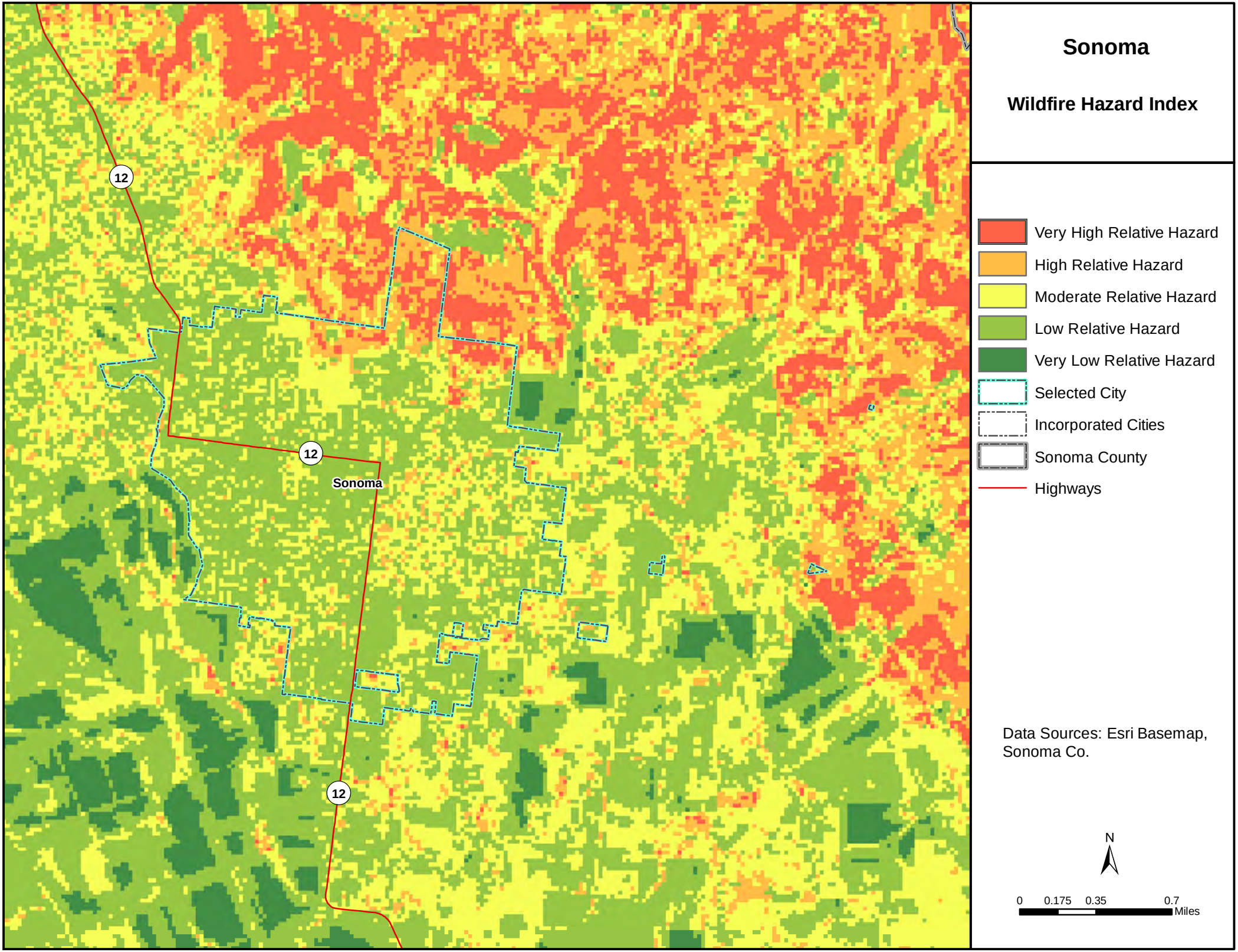
Susceptibility to Deep-Seated Landslides

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

Data Sources: Esri Basemap, Sonoma Co., CGS

N

0 0.175 0.35 0.7 Miles



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.

N

0 0.175 0.35 0.7 Miles

5. TOWN OF WINDSOR

5.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Kimberly Jordan, Planner III
Community Development Department
9291 Old Redwood Hwy
Windsor, CA 95492
Telephone: 707-838-5331
e-mail Address: kjordan@townofwindsor.com

Alternate Point of Contact
Jessica Jones, Community Development Director
Community Development Department
9291 Old Redwood Hwy
Windsor, CA 95492
Telephone: 707-838-5313
e-mail Address: jjones@townofwindsor.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 5-1.

Table 5-1. Local Mitigation Planning Team Members

Name	Title	Name	Title
Jessica Jones	Community Development Director	Kimberly Jordan	Planner III
Cynthia Foreman	Fire Marshal	Olivia Lemen	Parks and Facilities Manager
Ruben Martinez	Police Chief	Jeneen Peterson	Administrative Services Director
Doug Hughes	Building Official	James Leon	Human Resources Director
Mike Cave	Public Works Deputy Director of Operations	Tim Ricard	Economic Development Manager
Mickie Tagle	Senior Management Analyst, Town Manager's Office		

5.2 JURISDICTION PROFILE

5.2.1 Location and Features

Windsor is located approximately 58 miles north of San Francisco and 72 miles west of Sacramento, in Sonoma County, approximately five miles north of Santa Rosa and five miles south of Healdsburg. It is located on mostly flat land, bordered by hills to the north, east, and west. US Highway 101 runs through the middle of the Town along its north–south axis. Windsor is approximately 20 miles from the Pacific Ocean and two miles east of the Russian River, although a range of small hills divides the river from the Town itself.

The Town's boundaries generally extend from Sotoyome Creek, Arata Lane, and Foothill Regional Park in the north, Windsor Road and Starr Road to the west, Shiloh Road to the South, encompassing an area of 7.4 square miles. An additional 0.1 square miles is located outside of Town limits and within the Town's Urban Growth Boundary.

climate of Windsor is semi-arid Mediterranean, characterized by dry, mild summers and moderately moist, cool winters. Over 90 percent of the rainfall occurs between October and May. Average summer temperatures are in the low 80s (degrees Fahrenheit) with highs in the upper 80s. Average temperatures in the winter are in the 50s. Temperature variations between night and day tend to be relatively large during summer with a difference of up to 35 degrees and limited during winter with an average difference of 19 degrees. Precipitation generally occurs between October and May and the average rainfall is approximately 40 inches per year.

5.2.2 History

The area that is now Windsor was originally occupied by the Pomo people, who covered large sections of modern-day Sonoma, Mendocino, and Humboldt Counties. The Pomo hunted, fished, and foraged for a variety of food, including acorns, which were the primary plant staple. The Pomo lived in villages of grass-thatched homes during the winter and built temporary camps along streams in the summer. Prior to the arrival of Europeans in the area, the Pomo population is estimated at approximately 8,000.

The first known European expedition to the area occurred in 1810 by the Spanish army officer Gabriel Moraga. In 1812, Russia established Fort Ross as an outpost for fur hunting activities on the coast, approximately 24 miles from modern-day Windsor but ignored much of the interior. After the discovery of gold in 1848, California became part of the United States. Following the Mexican-American War, settlers began to arrive in the area in earnest. The first permanent settlers in modern-day Windsor came in 1851, when Henry Bell purchased 160 acres of land and founded a store that became the center of the new settlement. The first postmaster of the Town, Hiram Lewis, named the Town Windsor as it reminded him of the grounds around Windsor Castle in England. A rail line connected Windsor to San Francisco in 1872, spurring a rapid growth in agriculture. A U.S. Army air base (now Charles M. Schultz Sonoma County Airport) was established a short distance outside of the Town during World War II. New housing developments and the increasing popularity of Sonoma County's wine industry brought growth to Windsor in the 1980s, leading to incorporation of the Town in July 1992.

5.2.3 The Governing Body Format

The Town of Windsor is governed by the Town Council, which is comprised of the mayor and four council members. Beginning with the November 3, 2020 election, Windsor began the transition to a district-based election system for Town council members and the mayor. The Town is divided into four council districts. The council member for each district is elected to serve a four-year term. The mayor is elected at large to serve a two-year term. The daily administration of the Town is overseen by the Town Manager, who is appointed by the Town Council.

The Windsor Town Council assumes responsibility for the adoption of this plan; the Town Manager will oversee its implementation.

5.3 CURRENT TRENDS

5.3.1 Population

According to the California Department of Finance, the population of Windsor as of January 2020 was 28,248. Since 1995, the population has grown at an average annual rate of 1.9 percent.

5.3.2 Development

The primary land use in Windsor is single-family residential. Commercial uses include local-serving commercial uses located in the Town Green area and in small commercial centers. Regional-serving retail is located the southeast part of Windsor proximate to Highway 101. Larger single-family developments are planned for the northernmost part of Town, in the area north of Arata Lane that was annexed to the Town in 2018. Higher density multi-family development is located in the Station Area/Downtown Specific Plan area, which is close the SMART station which will open in 2021 and the bus depot. The Station Area/Downtown Specific Plan supports higher density mixed-use development in the downtown core. Additional mixed-use and higher density residential development is focused along Old Redwood Hwy and the eastern part of Shiloh Road, between Highway 101 and Old Redwood Hwy. Existing and new industrial development is located in the southwestern part of the Town, south of Shiloh Road and west of Highway 101 and in the Conde Lane/Mitchell Road/ Bell Road area.

Table 5-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

5.4 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 5-3.
- Development and permitting capabilities are presented in Table 5-4.
- An assessment of fiscal capabilities is presented in Table 5-5.
- An assessment of administrative and technical capabilities is presented in Table 5-6.
- An assessment of education and outreach capabilities is presented in Table 5-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 5-8.
- Classifications under various community mitigation programs are presented in Table 5-9.
- The community's adaptive capacity for the impacts of climate change is presented in Table 5-10.

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 5-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?	Yes
If yes, give the estimated area annexed and estimated number of parcels or structures.	18 parcels totaling 112 acres
Is your jurisdiction expected to annex any areas during the performance period of this plan?	Yes
If yes, describe land areas and dominant uses.	3 parcels totaling 22 acres: two parcels are developed with one single-family home each and the third parcel is used for agriculture and includes one single-family home.
If yes, who currently has permitting authority over these areas?	County of Sonoma
Are any areas targeted for development or major redevelopment in the next five years?	Yes
If yes, briefly describe, including whether any of the areas are in known hazard risk areas	Development of parcels within the Station Area/Downtown Specific Plan area with higher density residential, mixed use, and hotel. The only hazard risks in this area are those that are area wide (e.g. drought, extreme heat, earthquake) The area north of Arata Lane east of Hwy 101 and west of Marcella Drive would be developed with approximately 300 residential units. The only hazard risks identified for this area are those that would be area wide that were noted above. The North of Arata area was affected by the 2019 Kincade Fire. 150 Affordable housing units are planned along Old Redwood Hwy. 225 residential as part of mixed-use development on Shiloh Road, with a portion of the site located in a Special Flood Hazard area (100-year flood plain).
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	

	2015	2016	2017	2018	2019
Single Family	1	1	0	9	14
Accessory Dwelling Unit	0	2	5	9	9
Multi-Family	54	0	0	0	60
Other (commercial, mixed use, etc.)	9	2	3	2	0
Total	64	5	8	20	83

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 4 commercial projects partially in 100-year flood plain • Landslide: 0 • High Liquefaction Areas: 0 • Tsunami Inundation Area: N/A • Wildfire Risk Areas: 0
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.	Vacant and underutilized land totals 362 acres (8%) of land within the Town limits and 422 acres (9%) within the Urban Growth Boundary (UGB) (2040 General Plan Environmental Impact Report, Table 19).

Table 5-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	Yes
Comment: Windsor Municipal Code				
Zoning Code	Yes	No	Yes	Yes
Comment: Windsor Zoning Ordinance				
Subdivisions	Yes	No	No	Yes
Comment: Windsor Subdivision Ordinance, Municipal Code Article XVI, Chapter 8				
Stormwater Management	Yes	No	Yes	Yes
Comment: Public Works Department oversees the Stormwater Resources Management Plan				
Post-Disaster Recovery	No	No	No	No
Comment:				
Real Estate Disclosure	No	No	No	No
Comment:				
Growth Management	Yes	No	No	Yes
Comment: The Town's Municipal Code includes a Growth Control Ordinance (Article XVI, Chapter 4) that limits growth rate to an average of 1.4% per year. The Town also has a voter approved Urban Growth Boundary that is in place until 2040.				
Site Plan Review	Yes	No	No	Yes
Comment: Zoning Ordinance Article 4—Land Use and Development Permit requires Site Plan and Design Review approval for all development, except single-family homes.				
Environmental Protection	Yes	No	No	Yes
Comment: The Zoning Ordinance includes requirements for Creekside development and preservation and protection of some species of oaks, as well as California Bay trees and Buckeyes. There is an opportunity to include other requirements for environmental protection. The 2040 General Plan includes polices to protect public health and safety in the Health and Safety Element and for the protection of natural resources and the environment in the Environmental Resources Element.				
Flood Damage Prevention	Yes	No	No	Yes
Comment: Windsor Municipal Code Title IX—Flood Damage, Flood Control and Drainage is the Town's Flood Plain Management Ordinance. The Zoning Ordinance includes a Flood Hazard Overlay District that generally corresponds with the 100-year floodplain with specific requirements for development in the 100-year flood plain. The 2040 General Plan Health and Safety Element includes policies that address flooding.				
Emergency Management	Yes	Yes	Yes	Yes
Comment: The County of Sonoma oversees emergency management.				
Climate Change	Yes	No	No	Yes
Comment: The 2040 General Plan Health and Safety Element includes policies that address Climate Change Adaptation. The Town Council adopted a Climate Emergency Resolution (Resolution 3548-19) that identifies specific measures that are currently being undertaken to address climate change and additional measures that the Town should implement. The 2040 General Plan includes a Qualified Greenhouse Gas Emissions Reduction Plan. The Town does not have a town-wide Climate Action Plan. The Town has a Greenhouse Gas Reduction Plan for Town operations. The Town is in the process of preparing a Climate Adaptation (Windsor Ready) Plan that is expected to be completed in January 2022.				
Other	No	No	No	No
Comment:				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Planning Documents				
General Plan	Yes	No	Yes	Yes
Is the plan compliant with Assembly Bill 2140? Yes				
Comment: 2040 Windsor General Plan				
Capital Improvement Plan	Yes	No	No	Yes
How often is the plan updated? 2 years				
Comment: The CIP is a 5-year plan that is reviewed and updated every 2 years as part of the Town's biennial budget process. Each year the budget is reviewed and adjusted as needed, including CIP projects to be undertaken in that budget year. Town departments review the hazard mitigation measures included in the hazard mitigation plan as part of the CIP and budget process and identify measures to include the budget.				
Disaster Debris Management Plan	No	No	No	No
Comment: The Town does not have a plan. Debris management as part of a disaster or hazard is overseen by the County as part of the Local Enforcement Agency (LEA).				
Floodplain or Watershed Plan	Yes	No	No	Yes
Comment: (Sonoma Water) Flood Management design Manual, March 2020				
Stormwater Plan	Yes	No	Yes	Yes
Comment: River Stormwater Resource Management Plan (July 2018) and Storm Drain Mater Plan (Phase 1 Sept 2017) (Phase 2 Feb 2020)				
Urban Water Management Plan	Yes	No	Yes	Yes
Comment: 2015 UWMP, finalized June 2016 (State regulations require an updated UWMP every 5 years). The 2020 UWMP is being updated now.				
Habitat Conservation Plan	No	No	No	No
Comment: The Town does not have a Habitat Conservation Plan. Parts of the Town are located within the Santa Rosa Plain Habitat Conservation Plan.				
Economic Development Plan	No	No	No	Yes
Comment: The Town does not have a standalone Economic Development Plan. The 2040 General Plan includes an Economic Development Element. There is an opportunity to include/integrate measures into the Economic Development Element of the General Plan.				
Shoreline Management Plan	No	No	No	No
Comment: Not Applicable—No shoreline				
Community Wildfire Protection Plan	No	Yes	No	Yes
Comment: The 2040 General Plan Health and Safety Element includes policies that address wildfire. The Town's Local Hazard Mitigation Plan includes mitigation measures for Wildfire. Additional measures were adopted by Town Council in 2019 in response to the October 2017 Nuns and Tubbs fires. The Town and Sonoma County Fire Protection District prepared the Riparian Corridor Wildfire Fuel Management Plan which was accepted by Town Council in June 2020. The County of Sonoma is preparing a Community Wildfire Protection Plan.				
Forest Management Plan	No	No	No	No
Comment:				
Climate Action Plan	No	No	Yes	Yes
Comment: The 2040 General Plan Health and Safety Element includes policies that address Climate Change Adaptation. The Town Council adopted a Climate Emergency Resolution (Resolution 3548-19) that identifies specific measures that are currently being undertaken to address climate change and additional measures that the Town should implement. The 2040 General Plan includes a Qualified Greenhouse Gas Emissions Reduction Plan. The Town does not have a town-wide Climate Action Plan. The Town has a Greenhouse Gas Reduction Plan for Town operations. The Town is in the process of preparing a Climate Adaptation (Windsor Ready) Plan that is expected to be completed in January 2022.				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Emergency Management Plan	Yes	No	No	Yes
Comment:				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Yes	No	No
Comment: Bay Area Urban Areas Security Initiative				
Post-Disaster Recovery Plan	No	No	No	No
Comment:				
Continuity of Operations Plan	No	Yes	No	Yes
Comment: The County has a Continuity of Operations Plan (COOP).				
Public Health Plan	No	Yes	No	No
Comment: Public Health is the responsibility of the County of Sonoma.				
Other	No	No	No	No
Comment: N/A				

Table 5-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? *If no, who does? If yes, which department?*	Yes Community Development Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	Yes—for housing sites

Table 5-5. 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 and sewer)
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	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 5-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planners, Community Development Department Engineers, Public Works Department.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Official and Building Inspectors, Community Development Department Engineers and Inspectors, Public Works Department
Planners or engineers with an understanding of natural hazards	Yes	Planners, Community Development Department Deputy Director of Water and Environment, Environmental Program Manager, Public Works Department
Staff with training in benefit/cost analysis	Yes	Administrative Services Department
Surveyors	Yes	Consultant Services Public Works Department
Personnel skilled or trained in GIS applications	Yes	IT Manager and Management Analyst, Administrative Services Department Engineer 1, Public Works Department
Scientist familiar with natural hazards in local area	Yes	Deputy Director of Water and Environmental, Public Works Department
Emergency manager	Yes	Town Manager
Grant writers	Yes	Consultant Services to all Town Departments
Other	No	N/A

Table 5-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes A staff person in the Town Manager's Office serves in this role as needed.
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, briefly describe.*	Yes The Town's current Local Hazard Mitigation Plan is available on the Town's website.
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe.*	Yes Facebook, Next Door
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe.*	No
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, briefly describe.*	Yes Press Release, Town website, Town email list
Do you have any established warning systems for hazard events? *If yes, briefly describe.*	Yes SoCo Alerts, Nixle, reverse 911 On Red Flag days, Red Flags are flown outside fire stations. During evacuations, Hi-Lo sirens are used by the Police Department to notify residents of the need to evacuate.

Table 5-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	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?	2016
Does your floodplain management program meet or exceed minimum requirements? *If exceeds, in what ways?*	Exceeds Development in the floodway is prohibited.
When was the most recent Community Assistance Visit or Community Assistance Contact?	2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? *If so, state what they are.*	No
Are any RiskMAP projects currently underway in your jurisdiction? *If so, state what they are.*	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? *If no, state why.*	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? *If so, what type of assistance/training is needed? It would be helpful to have a certified floodplain manager on staff,*	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? *If yes, is your jurisdiction interested in improving its CRS Classification?* *If no, is your jurisdiction interested in joining the CRS program?*	No No Potentially
How many flood insurance policies are in force in your jurisdiction?[a] *What is the insurance in force?* *What is the premium in force?*	66 $20,538,100 $84,580
How many total loss claims have been filed in your jurisdiction?[a] *What were the total payments for losses?*	3 $45,252

a. According to FEMA statistics as of November 30, 2020

Table 5-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	0608185922	N/A
DUNS #	Yes	094865953	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	3	December 23, 2019
Public Protection	Yes	2	December 1, 2015
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 5-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Windsor is a small jurisdiction with limited resources that have been further constrained due to recent wildfires and the Covid-19 pandemic. T	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: Windsor is a small jurisdiction with limited resources. We lack staff and financial resources for jurisdiction-level monitoring.	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: The Town lacks the staff and financial resources and would need to rely on federal and State grant funding.	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: The Town does not have the resources or staff with the appropriate technical skills to prepare this. The Town has used a consultant in the past to prepare the Town's municipal-operations GHG inventory, but a Town-wide inventory has not been prepared.	
Capital planning and land use decisions informed by potential climate impacts	High
Comment: Resources are limited. When considering capital projects, the projects included in the Local Hazard Mitigation Plan are considered. The 2040 General Plan includes GHG reduction and Climate Resiliency policies. The Town's adopted Building Code exceeds minimum requirements. The Town has historically required compliance Cal Green Tier 1 standards.	
Participation in regional groups addressing climate risks	High
Comment: The Town participates in the Regional Climate Protection Authority and the Town Council adopted a Climate Emergency Resolution in 2019 that includes measures to reduce GHG emissions in order to reduce climate change impacts.	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: The Town Council adopted a Climate Emergency resolution that identifies existing GHG reduction measures and new measures to reduce climate change impacts. The 2040 General Plan includes a qualified GHG reduction plan that includes policies that apply to public and private projects.	
Identified strategies for greenhouse gas mitigation efforts	Medium
Comment: The 2040 General Plan includes a Qualified GHG Reduction Plan. The Town's adopted 2019 Building Code requires Tier 1 for construction projects. Additional resources to find and implement strategies would be helpful.	
Identified strategies for adaptation to impacts	Medium
Comment: The 2040 General Plan Health and Safety Element includes policies that address Climate Change Adaptation. The Town Council adopted a Climate Emergency Resolution (Resolution3548-19) that identifies specific measures that are currently being undertaken to address climate change and additional measures that the Town should implement. The 2040 General Plan includes a Qualified Greenhouse Gas Emissions Reduction Plan. The Town is in the process of preparing a Climate Adaptation (Windsor Ready) Plan that is expected to be completed in January 2022.	
Champions for climate action in local government departments	High
Comment: The Town has staff members in all departments and at all levels of the organization that support climate action initiatives.	
Political support for implementing climate change adaptation strategies	High
Comment: The Town Council has adopted an Emergency Climate Resolution and the Town has had a GHG Reduction Plan for Town-operations since approximately 2006. The Town Council considers climate impacts in its decision-making.	
Financial resources devoted to climate change adaptation	Low
Comment: Windsor is a small jurisdiction with limited resources, especially in light of the recent wildfires and the current Covid-19 pandemic. The Town does not have the resources for a full-time staff position to be devoted to this. The Town does have a consultant that identifies grant opportunities and the preparation of grant applications.	
Local authority over sectors likely to be negative impacted	High
Comment: Windsor is a small jurisdiction with limited resources, especially in light of the recent wildfires and the current Covid-19 pandemic. However, there are staff in all departments, especially Public Works, Parks and Facilities, and Community Development with authority over areas likely to be impacted by hazards.	

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents knowledge of and understanding of climate risk	Medium
Comment: Additional education of the general public would be helpful. There are a few members of the general public that are involved and aware of climate risk. The Town is preparing a Climate Adaptation (Windsor Ready) Plan that should be completed in January 2022. The community engagement that will be done as part of the Windsor Ready Plan will help educate more members of the public.	
Local residents support of adaptation efforts	Medium
Comment: The Town Council strongly supports adaptation efforts and the Town is currently preparing a Climate Adaptation (Windsor Ready) Plan. There are representatives of the business community and general public that are highly interested in climate adaptation efforts.	
Local residents' capacity to adapt to climate impacts	Medium
Comment: The Town and County have been impacted recently by a series of wildfires, drought, and the Covid-19 pandemic. The residents have become more resilient and better prepared for hazards and better understand the effects of climate on wildfires and drought.	
Local economy current capacity to adapt to climate impacts	Low
Comment: The Town and County have been impacted recently by a series of wildfires, drought, and the Covid-19 pandemic. The wildfires and pandemic have taken a substantial financial toll on the local business community.	
Local ecosystems capacity to adapt to climate impacts	Unsure
Comment:	

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.

5.5 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.

5.5.1 Existing Integration

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

- **2040 Town of Windsor General Plan—**The Windsor 2040 General Plan includes a Public Health and Safety Element that addresses hazards, as well as a GHG section and Climate Change and Resiliency section.
- **2019 Building Code**—Windsor's 2019 Building Code requires certain Fire (7A) building materials and methods for all new construction, including additions.
- **Town of Windsor Capital Improvement Program**—Four different Capital Improvement Programs (CIP) include hazard mitigation related projects: 1) Water (Potable) CIP, which includes projects for the treatment and delivery of water; 2) Water Reclamation CIP, which includes sewer, recycled water, and water treatment projects; 3) Drainage CIP, which includes projects for the conveyance and detention of

stormwater to prevent flooding; and 4) Traffic, which includes traffic and circulation improvements for pedestrians, bicycles, and vehicles, including sidewalks, trails, and roadways.

- **Water Master Plan** –The latest plan was adopted in November 2019
- **Riparian Corridor Wildfire Fuel Management Plan**—The Plan was accepted by the Town Council in June 2020 and implements one of the actions listed in the Town's local hazard mitigation plan.

5.5.2 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:

- **Zoning Ordinance—**The Zoning Ordinance includes land uses and development standards for private property. The Town is in the process of preparing an update to the Zoning Ordinance. The intent is to include requirements related to reducing the spread of wildfire due to ember-cast by including landscaping, fencing, and porch/deck requirements.
- **Regional Water Resiliency Plan—**The Regional Water Resiliency Plan is expected to be completed in Spring 2022.
- **Water Risk and Resiliency Assessment (As Required by The American Water Infrastructure Act/Plan)—**The Water Risk and Resiliency Assessment is due June 30, 2021 (1st submittal due) and December 31, 2021 (2nd submittal due).
- **Windsor Climate Adaptation Plan—**The Windsor Climate Adaptation Plan (Windsor Ready) is currently being prepared and will include measures that Windsor can take to adapt to climate change and will assist in the implementation of the Hazard Mitigation Plan. The Plan is expected to be completed in January 2022.
- **Water Shortage Contingency Plan Update** –The Water Shortage contingency Plan Update is due June 30, 2021.
- **Drought Contingency Ordinance Update** –The Drought Contingency Ordinance update will begin after adoption of the Water Shortage Contingency Plan Update.

5.6 RISK ASSESSMENT

5.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 5-11 lists past occurrences of natural hazards for which specific damage was recorded in Windsor. 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 5-11. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Drought	Unknown	2021 to present	Unknown
Wildfire (Glass)	Unknown	September 27 to October 20, 2020	Unknown
Wildfire (Walbridge)	Unknown	August 17 to October 20, 2020	Unknown
Covid-19 Pandemic	Unknown	February 2020 to present	Unknown
Wildfire (Kincade)	Unknown	October 23 – November 7, 2019	Unknown
PG&E Power Shutoff	Unknown	October 2019	Unknown
PG&E Power Shutoff	Unknown	October 2018	Unknown
Severe Weather, Flooding	Unknown	February 4 to March 1, 2019	Unknown
Drought	Unknown	2012 to 2016	Unknown
Severe Weather, Flooding, Power Outages	Unknown	March 29 to April 16, 2006	Unknown
Severe Weather, Flooding, Power Outages	Unknown	December 31, 2005 to January 3, 2006	Unknown
Landslide (Eastern Hills)	Unknown	January 1980	Unknown

5.6.2 Hazard Risk Ranking

Table 5-12 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 5-12. Hazard Risk Ranking

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

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

Windsor's Hazard Mitigation Planning Team modified the following rankings: Wildfire changed from "Medium" to "High"; Landslide changed from "Medium" to "Low,"; and Drought changed from "Low" to "Medium."" The basis for the changing in the ranking of these hazards if provided below.

- **Wildfire.** The ranking for Wildfire was changed from medium to high based on: (1) the Kincade Fire in October 2019 resulted in the evacuation of all of Windsor and was expected to engulf the entire Town. The Town was spared due to a change in wind direction and the preparation, staging, and actions of firefighters; (2) the Walbridge Fire, which started on August 17, 2020, resulted the northwestern area of Windsor being under an evacuation warning; and (3) based on the risk assessment prepared for the Climate Adaptation Plan, there are two types of wildfire risk facing the Town, traditional wildfire risk

focused on buildings and people in the WUI, which creates a gradient of risk from the edges of Town and the emerging firestorm storm risk fueled by climate change that creates ember-cast that spreads wildfire to areas that not adjacent to the WUI. The map prepared for the Climate Adaptation Plan supports a risk ranking of High and is included as an attachment to this Annex.

- **Landslide.** The ranking for Landslide was changed to low from medium based on: (1) Windsor's topography being generally flat, with slopes limited to the northeastern hills which is less densely developed; (2) this hazard is less likely to occur than most of the other hazards; and (3) the extent and severity of the risk is more limited than the other hazards facing the Town.
- **Drought.** The ranking for Drought was changed from Low to Medium is based on: (1) the Town is currently experiencing a drought; (2) the Town experienced a prolonged drought from 2012 to 2017; (2) the likelihood of droughts becoming more frequent, longer in duration, and more severe; and (3) the potential impact on people and businesses depending on the measures enacted at the State and local level to ensure adequate water quantity and quality.

5.6.3 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.

Windsor's Hazard Mitigation Planning Team identified the following jurisdiction-specific vulnerabilities: (1) localized flooding; (2) spread of wildfire along riparian corridors; (3), narrow bridges that could impede emergency access and evacuation during hazard events; and (4) neighborhoods with one point of access. Each of these vulnerabilities is described in greater detail below.

- **Localized Flooding**: During rain and storm events, localized flooding occurs in several areas throughout Windsor, including Pool Creek at Windsor Road, Dawn Way near the intersection with Old Redwood Hwy, and the intersections of Arata Lane/Highway 101, Shiloh Road/Caletti Avenue, and Shiloh Road/Hwy 101 southbound on-ramp.
- **Wildfire Spread Along Riparian Corridors**: Based on experience with recent fires in our area, riparian corridors have been identified as areas that can provide a pathway for the spread of wildfire through Windsor, especially if regular fuel management is not occurring in these areas. Windsor is in the process of developing a climate adaptation plan (Windsor Ready Plan), which identifies creek corridors as areas that could result in the spread of wildfire throughout the Windsor. Most of the creeks in Windsor are bordered by residential development on both sides, placing people and homes at risk. The Town and Sonoma County Fire District have prepared the Riparian Corridor Wildfire Management Plan and is currently seeking funding to implement the plan.
- **Narrow Bridges**: Narrow two-lane bridges are located in several areas in Windsor, including Caletti Lane, Hembree Lane, Conde Lane, and Old Redwood Hwy between Billington Lane and Deanna Place. The bridge on Caletti Avenue is a wooden bridge that serves as the access point for the Town's industrial area. Hembree Lane and Old Redwood Hwy are primary crosstown streets that provide access to Hwy 101. Impeded access in these areas would limit emergency access and evacuation. Conde Lane is also a crosstown street that provides access to Hwy 101 via Shiloh Road.
- **Single-Point of Access Areas:** A climate adaptation plan is currently being developed for the Town, which has identified neighborhoods with a single-point of access. Much of Windsor was developed when it was standard practice to develop neighborhoods with a curvilinear street design with cul-de-sacs, rather than on a grid system that provides multiple points of access and better connectivity. For some areas, due

to the number of homes and served by the single-point of access, this could impede emergency access to these locations and evacuation if the access is blocked.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: None 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

No other jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources.

5.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 5-13 summarizes the actions that were recommended in the previous version of the hazard mitigation plan (Town of Windsor Local Hazard Mitigation Plan) and their implementation status at the time this update was prepared.

Table 5-13. Status of Previous Plan Actions

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Measure 1.1 Develop a community education/outreach program that widely distributes information to community members about the hazards that may affect Windsor and ways to mitigate those hazards, improving the Town's resiliency. Use print, broadcast, digital, and social media to reach community members, as well as in-person training sessions and events. Emphasize solutions that are cost-effective and widely applicable. Conduct Spanish-language outreach as part of this effort. Potential topics for the program may include: • Drought hazards and the ways to reduce water use and conserve in times of need. • Earthquake hazards and the activities that residents and businesses can do to reduce damage from shaking • Flood hazards and activities that residents and businesses can take to reduce impacts • Extreme Heat hazards and ways to prevent heat stroke and exhaustion • Wildfire impacts and ways to secure properties from wildfire threats.			✓	WIN-43

Comment: This measure has been revised. See Action WIN-43 in Table 1.14 below.

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Measure 1.2 Improve the resiliency of key roadways leading out of Windsor, particularly those connecting to hospital facilities by working with the City of Santa Rosa, Sonoma County, and Caltrans.			✓	WIN-52
Comment: Climate adaptation plan currently in progress that will address this measure. Included as Action WIN-52 in Table 1.14 below.				
Measure 1.3 Establish a resident-based emergency response program (Community Emergency Response Team [CERT], Citizen Corps, and others) in Windsor, and encourage participation among residents and employees.			✓	WIN-39 and WIN-42
Comment: Revised measures carried over to Plan Update. CERT and COPE will be separate into two actions. See actions WIN-39 and WIN-42 in Table 1.14 below.				
Measure 1.4 Distribute emergency notifications, through multiple forms of media and in both English and Spanish, about potential, imminent, and ongoing emergency situations. Ensure that all notifications are available to socially isolated persons and individuals with disabilities and that the notification network has sufficient redundancy in the event some communication systems are disrupted. (Continue Current Practice)	✓			
Comment: This has been implemented through the Town Manager's Office. Move to EOC team for continued implementation.				
Measure 1.5 Encourage private employers in Windsor to develop continuity of operations plans and conduct regular employee training sessions.		✓		
Comment: Removing from the HMP and moving to EOC team for implementation. The Town wants to focus on other measures.				
Measure 1.6 Conduct regular inspections of Town-owned critical facilities, especially water and wastewater systems and facilities, and retrofit facilities to reduce vulnerabilities to current and projected hazard conditions.			✓	WIN-2
Comment: Revised as Action WIN-2 in Table 1.14 below.				
Measure 1.7 To the extent possible, avoid siting new Town-owned facilities in hazard zones, and work with other organizations to encourage similar siting standards for critical facilities not owned by the Town.	✓			
Comment: This is required by policies in the Public Health and Safety Element of the Windsor 2040 General Plan and part of the Town's practice, so it is addressed by other plans.				
Measure 1.8 Perform an annual inventory of emergency supply storage locations and identify retrofit needs to be more resilient to natural hazards, if necessary. During this process inventory emergency supplies and modify inventories to meet changing community needs.	✓			WIN-2
Comment: An inventory of supplies is conducted by Facilities. This measure is partly covered by Action WIN-2 in Table 1.14 below.				
Measure 1.9 Construct new Town facilities to remain usable and operable following emergency conditions as feasible.	✓			
Comment: This is required by policies in the Public Health and Safety Element of the Windsor 2040 General Plan and part of the Town's practice, so it is addressed by other plans. Water and Wastewater facilities are constructed to seismic Zone 4 requirements as a standard practice.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Measure 1.10 Evaluate the resiliency of utility infrastructure in the Town, and repair or replace vulnerable components by working closely with utility companies and other service providers.		✓		
Comment: This is ongoing and will be addressed in the Climate Adaptation (Windsor Ready) Plan that should be completed in January 2022.. The Town would like to focus on other actions that it has more control over implementing.				
Measure 1.11 Construct on-site renewable energy generation and storage systems at Town-owned facilities to support continued operations in the event of a power outage. Encourage residents and businesses to install energy generation and storage systems on their properties.			✓	WIN-53
Comment: Included as Action WIN-53 in Table 1.14 below.				
Measure 1.12 Regularly review and apply for available funding opportunities to implement hazard mitigation activities. Prioritize hazard mitigation retrofits and other construction activities in Windsor's Capital Improvement Program (CIP).			✓	WIN-56
Comment: Ongoing. It is the Town's practice as part of the development of its CIP and bi-annual budget to provide funding for mitigation actions. The Town has a consultant that helps identify and apply for grant funding to implement hazard mitigation actions.				
Measure 1.13 Conduct periodic hazard mitigation activity coordination with Sonoma County, nearby cities, and special districts to allow for a more unified County-wide mitigation approach.		✓		
Comment: This measure will be replaced with measure WIN 5 & WIN 6 in Table 1.14 below.				
Measure 1.14 Develop programs in coordination with community organizations, assisted care centers, and medical facilities to support emergency awareness and mitigation among elderly and disabled persons, including providing transportation to evacuation and cooling centers as needed.		✓		
Comment: Remove. This can be shifted to EOC measures, since it does not prevent or mitigate hazards.				
Measure 1.15 Monitor emerging information about how hazards may change in the future, particularly hazards related to climate change. Refine estimates of damage from hazard scenarios. Incorporate new and updated information into future planning efforts. WIN 5 and WIN 6			✓	WIN-5 WIN-6
Comment: This measure will be replaced by measure WIN 5 & WIN 6 in Table 1.14 below.				
Measure 1.16 Establish a vulnerable population support network, working closely with community organizations and assisted care centers to foster informal support networks through a program to encourage people to check in with and provide assistance to elderly and disabled neighbors.	✓			
Comment: Remove. This can be shifted to EOC measures, since it does not prevent or mitigate hazards. The Town Manager's Office and Senior Center have begun a program to do check-in calls during the Covid-19 pandemic. This program will continue to be developed and expanded.				
Dam Failure 2.1 Support efforts by the US Army Corps of Engineers and other dam owners/operators to conduct dam safety inspections and retrofits as needed.		✓		
Comment: Since Windsor does not own any dams and new actions included in this plan would have more of an impact in responding in the event of a dam failure, this action is being removed.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Dam Failure 2.2 Support dam inundation map and dam emergency action plan updates in coordination with Sonoma County.		✓		
Comment: Since Windsor does not own any dams and new actions included in this plan would have more of an impact in responding to a dam failure, this action is being removed.				
Drought 3.1 Expand opportunities to use recycled water and graywater in Windsor, including supporting the use of dual-pipe systems in new and substantially retrofitted structures.			✓	WIN-18
Comment: Included as Action WIN-18 in Table1.14 below.				
Drought 3.2 Increase redundancy in the Town's water distribution network through multiple backup connections, particularly across fault lines.			✓	WIN-19
Comment: Included as Action WIN-19 in Table1.14 below.				
Drought 3.3 Expand use of xeriscaping or drought-tolerant native plants in Town-maintained landscaped areas to the extent possible. (Continue Current Practice)	✓			
Comment: This is the Town's practice and is implemented through the Parks and Recreation Department. It does not need to be included as a mitigation action, since it is already Town practice and the Town wants to focus on other actions.				
Drought 3.4 Encourage all new landscaping projects to exceed minimum state water efficiency requirements.		✓		
Comment: The Town's Water Efficiency Ordinance requires compliance with State requirements. The Town wants to focus on other actions that would better address drought.				
Drought 3.5 Incorporate drought frequency (i.e., multiple-dry year hydrologic conditions) into Town's urban water management planning efforts.	✓			
Comment: The Town's Urban Water Management Plan (UWMP) is required to include this information. The Town is updating its UWMP at this time and the update includes this information as required.				
Drought 3.6 Offer incentives for water efficiency retrofits to existing homes and businesses, and explore ways to expand incentive opportunities.	✓			
Comment: The Town's PAYS program, a program that allows property owners to finance improvements and repay installments on their utility bills, is an ongoing program. The County of Sonoma allows improvements to be made and repaid through installments as part of their property tax bill. This program is open to property owners in Sonoma County.				
Earthquake 4.1 Require new development in a seismic hazard area, or in an area of extreme or heavy ground shaking, to prepare a geotechnical hazard report and to implement earthquake seismic safety measures as appropriate. (Continue Current Practice)	✓			
Comment: This is required by policies in the Public Health and Safety Element of the Windsor 2040 General Plan and part of the Town's practice, so it is addressed by other plans. It is also required by the Building Code since the Town is an area of seismic activity.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Earthquake 4.2 Develop incentives or requirements for property owners to retrofit seismically vulnerable structures.		✓		
Comment: Most buildings in Windsor were built in the mid-1980s or later, so the buildings are consistent with modern seismic requirements. The Building Code requires water heaters to be strapped down to address seismic hazards. Since water heaters last approximately 10 years, it is likely that water heaters in Windsor are consistent with this requirement. Due to the above, retrofits would likely be cost prohibitive.				
Earthquake 4.3 Identify incentives to encourage residential project applicants to build new residential structures so they remain safely habitable following a substantial earthquake.	✓			
Comment: Since the Town is in an area of seismic activity, the Building Code requires buildings to be constructed to meet specific seismic requirements.				
Extreme Heat 5.1 Designate community facilities to operate as cooling centers when temperatures reach an established threshold, and ensure designated facilities are adequately stocked with necessary supplies. Widely distribute information about cooling centers to Windsor residents. Ensure that there is sufficient staffing and other resources to allow cooling centers to operate on all days, including weekends and holidays if needed. (Continue Current Practice and Preparedness Related Activity)	✓			
Comment: This item has been moved to the EOC team for ongoing implementation.				
Extreme Heat 5.2 Encourage property owners to weatherize homes and businesses in Windsor, particularly older structures, including the planting of shade trees.		✓		
Comment: Since this action does not include a project or program, the Town has decided it would like to focus on other actions.				
Extreme Heat 5.3 Educate Town employees, particularly employees who frequently work outdoors, about extreme heat hazards. Encourage other employers in Windsor to provide extreme heat training to their employees. (Preparedness Related)	✓			
Comment: This is done by the Human Resources, which also provides alerts Town employees on extreme heat/weather days and days with unhealthy air quality.				
Extreme Heat 5.4 Provide shade structures at bus stops, and in public parks and other landscaped areas.	✓			WIN-29
Comment: The Parks and Recreation Department plants trees in public parks that provide shade. This action has been revised as action WIN-29 in Table 1.14 below.				
Flooding 6.1 Identify areas that frequently flood during intense precipitation events. Upgrade storm drains in these areas, including expanding capacity or installing additional drains, to reduce localized flooding.				WIN-24 and WIN-25
Comment: This action has been revised. See Actions WIN-24 and WIN-25 in Table 1.14 below.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Flooding 6.2 Conduct storm drain maintenance regularly to ensure systems are operating at peak capacity, especially in advance of and during the rainy season. (Preparedness Related)			✓	WIN-25
Comment: This is ongoing standard practice for the Public Works Department before and during rain events. Included as Action WIN-25 in Table 1.14 below.				
Flooding 6.3 Retrofit public surfaces and landscapes, including plazas, parking lots, and parks, to use low-impact development strategies such as permeable paving, rain gardens, and bioswales. (Continue Current Practice)		✓		
Comment: This action, since it implements low impact development (LID), has a nominal effect on flooding or severe weather events. The use of LID is also a Town requirement and standard practice. Other actions have been included that better mitigate flooding and severe weather events.				
Flooding 6.4 Restrict land uses in floodways to uses that are compatible with occasional flooding, including agricultural operations, open space, and natural conservation land. Discourage new development within the 100-year floodplain. (Continue Current Practice)	✓			
Comment: The Town's Floodplain Management Ordinance restricts development in the floodway and discourages development in the 100-year floodplain by requiring development to be elevated above the base flood level and allowing "no net runoff" from the site.				
Flooding 6.5 Explore requiring all new development in the 100-year and 500-year floodplains to implement flood mitigation strategies, emphasizing the use of low-impact development and "soft" strategies.		✓		
Comment: This action has been determined to be infeasible. There are few areas in Windsor that are in the 500-year floodplain and they have already been developed.				
Flooding 6.6 Require that new development projects, including infrastructure, will not change local hydrology and cause an increase in flood risks for surrounding properties.			✓	WIN-26
Comment: This is required by the Town's Municipal Code and Building Code. Continue current practice. Included as Action WIN-26 in Table 1.14 below.				
Flooding 6.7 Develop passive detention basins to better collect and manage stormwater flows, designing and building the basins to be consistent with low-impact development strategies.			✓	WIN-27
Comment: Low impact development and detention are different types of actions and should not have been included in the same action. Revised this action to delete the reference to low impact development. See Action WIN-27 in Table 1.14 below.				
Landslide 7.1 Require any development in landslide hazard zones to use minimal grading and to site development in locations with the least exposure to unstable slopes, to the greatest extent feasible.			✓	WIN-30
Comment:				
Landslide 7.2 Work with Sonoma County and CAL FIRE to replant and stabilize recently burned slopes from wildfires.			✓	WIN-49
Comment:				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Landslide 7.3 Support the use of vegetation with strong root systems, natural drainage swales, and other "soft" solutions to improve slope stability.		✓		
Comment: This action has been determined to have a nominal effect on mitigating landslide hazards.				
Liquefaction 8.1 Require new development in liquefaction-prone areas to conduct a geotechnical analysis and to include features that decrease the risk of damage from liquefaction events.			✓	WIN-47
Comment:				
Wildfire 9.1 Ensure compliance with vegetation management standards and other County fire safe standards to reduce wildfire risk in the area surrounding Windsor, working with Sonoma County, and the Sonoma County Fire Protection District.			✓	WIN-50
Comment: Measure revised to change Windsor Fire District and Rincon Valley Fire District to Sonoma County Fire Protection District, since the two fire districts consolidated in 2020. Included as Action WIN-50.				
Wildfire 9.2 Participate in mutual aid agreements to provide wildfire protection services in Foothill Regional Park. (Continue Current Practice)			✓	WIN-49
Comment:				
Wildfire 9.3 Provide air quality alerts through the Town's notification system about smoke exposure, wildfire particulate matter, and other risks from regional wildfires, in concert with the Bay Area Air Quality Management District and the Northern Sonoma County Air Pollution Control District. (Preparedness Related)	✓			
Comment: Remove since this is occurring through the Town Manager's Office as part of EOC operations. Information is provided to Town employees and to the community on the Town's website and through social media.				
Wildfire 1 added in 2019 Identify and map areas located within and proximate to a moderate or high fire severity zone and require fire-wise building design and materials, and fire-wise landscaping materials and design in these areas for new construction, additions and retrofits.	✓			WIN-33
Comment: The Town and Sonoma County Fire Protection District have decided to take a Town-wide approach to these actions. Completed the Fire-Wise building requirements as amendments to the adopted 2019 Building Code. The landscaping requirements will be completed with the Town's Zoning Ordinance Update, which should be completed by the end of 2022. Landscaping part of this measure is included as Action WIN-33 in Table 1.14 below.				
Wildfire 2 added in 2019 Identify and map primary and secondary evacuation routes for wildfire fire-related evacuation and educate residents and businesses of their evacuation route(s).			✓	WIN-44
Comment: The Town has prepared and posted on its website an evacuation zone map. The map identifies primary evacuation routes for each evacuation zone. The Town is preparing a Climate Adaptation Plan that will include this information. The Plan should be completed in January 2022. This action was revised and is included as Action WIN-44 in Table 1.14 below.				
Wildfire 3 added in 2019 Design and construct extension of Los Amigos Road and northbound ramp to US101 to provide an evacuation route to US 101 and provide fire break to limit the spread of the fire.		✓		WIN-31
Comment: This action has been revised. See Action WIN-31 in the Table 1.14 below.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Wildfire 4 added in 2019 Identify and map priority locations for the undergrounding of utilities and consider proximity to an evacuation route, moderate and high fire severity zones, and critical facilities when determining priorities.		✓		WIN-45
Comment: Undergrounding utilities is also required by the Town's Municipal Code. This action has been revised. See Action WIN-45 in Table 1.14 below.				
Wildfire 5 added in 2019 Require the undergrounding of utilities as part of development projects. (Continue current practice)			✓	WIN-45
Comment: Undergrounding utilities is required by the Town's Municipal Code. This action has been revised. See Action WIN-45 in Table 1.14 below.				
Wildfire 6 added in 2019 Identify and map Town-owned and operated critical facilities, identify critical facilities with backup power sources, and prioritize acquisition of backup power sources for those facilities without backup power.		✓		WIN-9 and WIN-10
Comment: Since the Town now has a better understanding of the backup power needed, this action is being replaced with Actions WIN-9 and WIN-10 in Table 1.14 below.				
Wildfire 7 added in 2019 Work with other agencies, residents, and homeowner associations to reduce fuel loads, such as the removal of vegetation in Foothill and Shiloh Ridge parks.			✓	WIN-46
Comment:				
Wildfire 8 added in 2019 Identify and map areas most at risk of Wildfire based on proximity to the Wildland Urban Interface (WUI) and moderate/high fire severity, prevailing winds, and age of construction and focus initial outreach and education on areas and populations identified as most at risk.		✓		
Comment: Based on the Town's experience with the Kincade Fire, which threatened the entire Town, the Town has decided to focus measures Town-wide.				
Wildfire 9 added in 2019 Identify and map neighborhoods in Windsor, especially neighborhoods or areas comprised of vulnerable populations and individuals, who may need assistance in the event of a disaster (elderly, disabled, limited mobility, lack of transportation, non-English speaking) and establish a vulnerable population support network, working closely with community organizations and assisted care centers to foster informal support networks through a program to encourage people to check in with and provide assistance to elderly and disabled neighbors.			✓	WIN-34
Comment:				
Wildfire 10 added in 2019 Educate the community on the use of fire-wise building and landscape design and materials to prevent the spread of wildfire, including providing materials on the Town's website.		✓		WIN-43
Comment: Revised this measure to a "general" community outreach and education action for all hazards. See Action WIN-43 in Table 1.14 below.				

Action Item	Completed	Removed; No longer Feasible	Carried Over to Plan Update: Check if Yes	Carried Over to Plan Update: Action # in Update
Wildfire 11 added in 2019 Identify and map the location of alternate water sources, as part of the Town's Water Master Plan, to provide backup water sources in case primary source(s) fail or are unavailable and make these sources available.			✓	WIN-48
Comment: Included as Action WIN-48 in Table 1.14 below.				
Wildfire 12 added in 2019 Identify and map properties owned or operated by the Town, Water District, Windsor Unified School District, other public agencies, and religious and service organizations that can be used for RVs, trailers, etc. and large animals in the event of an evacuation and establish relationships and enter into MOA or MOU with these entities for the use of these properties in the event of an evacuation.			✓	WIN-35
Comment: Action carried forward. See Action WIN-35 in Table 1.14 below.				
Wildfire 13 added in 2019 Identify and map potential shelter locations and the features of each location (e.g. type of parking, singles, families, large animal, small animal, etc.) on properties owned or operated by the Town, Water District, Windsor Unified School District, other public agencies, and religious and service organizations and establish partnerships with these entities to educate and distribute this information to residents and businesses prior to and during an emergency requiring evacuation and to provide assistance in the event of an emergency. Enter MOAs or MOUs as applicable.			✓	WIN-36
Comment: Action carried forward. See Action WIN-36 in Table 1.14 below.				
Wildfire 14 added in 2019 Establish and provide training for a staff-based emergency response program (Community Emergency Response Team [CERT]). and establish and provide training for residents through Citizen Corps, *Citizens Organized to Prepare for Emergencies* [COPE], or other) in Windsor, and encourage participation among residents and employees.		✓		WIN-39 and WIN-42
Comment: Action carried forward as two separate measures. COPE has been established. Need to implement CERT training. In updated Plan, CERT and COPE will be separate actions. See Actions WIN-39 and WIN-42 in Table 1.14 below.				
Wildfire 15 added in 2019 Expand community education and outreach through community meetings, social media, website, etc.	✓			WIN-43
Comment: This action has been completed. Since this will be an ongoing action, Action WIN-43 in Table 1.14 below.				
Wildfire 16 Added in 2019 Identify transportation options and potential ways to provide the transportation identified for people who do not drive or have limited mobility.			✓	WIN-54
Comment: Included as Action WIN-54 below. The Climate Adaptation Plan, which should be completed in January 2022, should include information that will assist in implementing this measure.				
Wildfire 17 Added in 2019 Identify communication methods for people with limited/no technology.			✓	WIN-55
Comment: Included as Action WIN-55 below. The Climate Adaptation Plan, which should be completed in January 2022, should include information that will assist in implementing this measure.				

5.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 5-14 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 5-15 identifies the priority for each action. Table 5-16 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 5-14. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
Existing	3, 4, 10	Windsor		High	HMGP, BRIC, FMA	Ongoing
Action WIN-2—Inspect critical facilities and infrastructure, identify those that are recommended to be retrofitted or relocated, and retrofit or relocate as appropriate, prioritizing structures and infrastructure located in high or medium ranked hazard areas.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, wildfire						
Existing	3, 4, 6	Windsor		High	HMGP, BRIC, FMA	Ongoing
Action WIN-3—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community including the General Plan, Building Code, Zoning Ordinance, Municipal Code, Emergency Operations Plan, Climate Adaptation Plan., Riparian Corridor Wildfire Fuel Management Plan, etc.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, wildfire						
New & Existing	1, 3, 4, 5, 7, 8, 10	Windsor		Medium	Staff Time, General Fund, BRIC	Ongoing
Action WIN-4—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
New & Existing	1, 5, 8	Windsor		Low	Staff Time, General Fund, BRIC	Short-term
Action WIN-5—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
New & Existing	all	Windsor	County of Sonoma	Low	Staff Time, General Fund	Ongoing
Action WIN-6—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.						
Hazards Mitigated:						
New & Existing	all	Windsor	County of Sonoma	Low	Staff Time, General Fund	Ongoing
Action WIN-7—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: Enforcement of the flood damage prevention ordinance; Participate in floodplain identification and mapping updates; and Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Severe weather, flooding						
New & Existing	1, 3, 5, 7, 8, 10	Windsor		Low	Staff Time, General	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-8—Implement plans and ordinances that include measures that avoid or reduce the impacts of hazards and increase resiliency, such as the 2040 General Plan, Municipal Code, Building Code, Riparian Corridor Wildfire Fuel Management Plan, Storm Drain Master Plan, Water Master Plan, Ground Water Sustainability Plan, Windsor Resiliency Plan (Windsor Ready), Urban Water Management Plan, Collection System Master Plan.						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, severe weather, wildfire						
New & Existing	1, 3, 4, 5, 6, 7, 8	Windsor		High	Staff Time, General Fund, BRIC	Ongoing
Action WIN-9—Purchase a minimum of two permanent generators for critical facilities and infrastructure that lack adequate backup power, including for the water reclamation facility and river wells that are 1 to 1.5 MW each and natural gas or diesel.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
Existing	2, 6, 9	Windsor		High	HMGP, BRIC, Capital Improvement Program, General Fund	Short-term
Action WIN-10—Purchase eight portable generators and ten switch gear for critical infrastructure and facilities to maintain water and wastewater services and to allow critical facilities to remain operational during hazard events.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
New	2, 6, 9	Windsor		High	HMGP, BRIC, Capital Improvement Program, General Fund	Short-term
Action WIN-11—Develop a post-disaster recovery plan, continuity of operations, and a debris management plan.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
Existing	1, 3, 6	Windsor		Medium	General Fund, BRIC	Short-term
Action WIN-12—Participate in programs such as the Community Rating System and the ISO's Building Code Effectiveness Grading Schedule and Public Protection.						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, wildfire						
	1, 6, 9, 11	Windsor		Low	General Fund, BRIC	Ongoing
Action WIN-13—Work with building officials to identify ways to improve the jurisdiction's Building Code Effectiveness Grading Schedule classification.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
New and Existing	1, 6, 8, 10, 11	Windsor	County of Sonoma City of Santa Rosa City of Cotati City of Sonoma	Low	Staff Time, General Fund	Ongoing
Action WIN-14—Establish protocols for regular communications with the owners/operators of dams that have the potential to impact Windsor, request current emergency response plans, and maintain communication consistent with these protocols.						
Hazards Mitigated: Dam failure						
Existing	5, 8, 10	Windsor		Medium	Staff Time, General Fund	Short-term
Action WIN-15—Create an emergency warning link between the dam's alerting system and the Town.						
Hazards Mitigated: Dam failure						
Existing	5, 8, 10	Windsor		Low	Staff Time, General Fund	Short-term
Action WIN-16—Develop a public outreach plan to educate residents on dam failure and response.						
Hazards Mitigated: Dam failure						
Existing	5, 8, 10	Windsor		Low	Staff Time, General Fund	Short-term
Action WIN-17—Incorporate a dam failure annex as part of the Town's emergency operations plan (EOP).						
Hazards Mitigated: Dam failure						
Existing	1, 6, 8, 10	Windsor		Medium	Staff Time, General Fund, BRIC	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-18—Expand opportunities to use recycled water and graywater in Windsor, including storage, supporting the use of dual-pipe systems in new and substantially retrofitted structures.						
Hazards Mitigated: Drought						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program Funds, Grant Funding	Ongoing
Action WIN-19—Increase redundancy in the Town's water distribution network through multiple backup connections, particularly across fault lines.						
Hazards Mitigated: Drought, earthquake, flooding, severe weather, wildfire						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program Funds, Grant Funding	Ongoing
Action WIN-20—Construct improvements that improve the supply of potable water and that provide alternative sources for potable water, including new Town wells to offset use of water from the Russian River, expansion of the recycled water system, and improvements of the distribution system.						
Hazards Mitigated: Drought, Flooding						
New and Existing	1, 6	Windsor		High	HMGP, BRIC, FMA, General Fund, Capital Improvement Program	Long-term
Action WIN-21—Implement the Storm Drain Master Plan, including the construction of improvements that reduce flooding events.						
Hazards Mitigated: Flooding, Severe Weather						
New & Existing	1, 4, 6, 10, 11	Windsor		High	HMGP, BRIC, FMA, General Fund, Funds	Long-term
Action WIN-22—Construct improvements to the wastewater system to ensure adequate sizing to prevent overflow during severe weather or flooding.						
Hazards Mitigated: Flooding, Severe Weather						
New & Existing	1, 4, 6, 10, 11	Windsor		High	Capital Improvement Funds, Grant Funds	Long-term
Action WIN-23—Identify areas that experience frequent localized flooding during intense precipitation events. In areas with frequent localized flooding construct improvements to reduce flooding, including upgrading storm drains, and installing additional drains.						
Hazards Mitigated: Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	Bonds, Capital Improvement Program Funds, HMGP, BRIC, FMA	Long-term
Action WIN-24—Identify areas that experience frequent riparian flooding during intense precipitation events. In areas with frequent riparian flooding evaluate and construct improvements to reduce flooding impacts where practical, including detention areas, moving infrastructure out of flood plain or raising it above frequent flood elevation, increasing flow capacity of riparian channels to minimize upstream and downstream flood impacts.						
Hazards Mitigated: Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	Bonds, Capital Improvement Program Funds, HMGP, BRIC, FMA	Long-term
Action WIN-25—Conduct storm drain maintenance regularly to ensure systems are operating at peak capacity, especially in advance of and during the rainy season.						
Hazards Mitigated: Flooding, Severe Weather						
Existing	1, 10	Windsor		Low	General Fund, Staff Time	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-26—Require that new development projects, including infrastructure, will not change local hydrology and cause an increase in flood risks for surrounding properties.						
Hazards Mitigated: Flooding, Severe Weather						
New	1, 4, 7, 9, 10, 11	Windsor	Sonoma Water	Low	Staff Time, General Fund	Ongoing
Action WIN-27—Develop passive detention basins to better collect and manage stormwater flows.						
Hazards Mitigated: Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	HMGP, BRIC, FMA, Capital Improvement Program Funds	Long-term
Action WIN-28—When developing or retrofitting public spaces such as bus stops, public parks and other public landscaped areas, provide shade through the use of shade structures, sail cloth, trees, or similar methods.						
Hazards Mitigated: Severe Weather						
Existing	1, 3	Windsor	Sonoma County Transit	Low	General Fund	Ongoing
Action WIN-29—Work with Sonoma County and CAL FIRE to replant and stabilize recently burned slopes from wildfires.						
Hazards Mitigated: Landslide						
Existing	1, 2, 4	Sonoma County, CAL FIRE	Windsor Sonoma County FPD	Low	Staff Time, General Fund	Ongoing
Action WIN-30—Require any development in landslide hazard zones to use minimal grading and to site development in locations with the least exposure to unstable slopes, to the greatest extent feasible.						
Hazards Mitigated: Landslide						
New	1, 7, 11	Windsor		Low	Staff Time, General Fund	Ongoing
Action WIN-31—Design and construct roadway improvements and extensions and that improve or maintain emergency vehicle access and evacuation and that provide staging areas and fire breaks, including the Eastside Connector Road (aka North-South Jensen Lane in 2040 General Plan), the extension of Los Amigos Road, and US 101 northbound onramp.						
Hazards Mitigated: Dam Failure, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor	Cal Trans County of Sonoma	High	HMGP, General Fund, Capital Improvement Program	Long-term
Action WIN-32—Design and construct bridge improvements, including widening, that improve or maintain emergency vehicle access and evacuation, prioritizing bridges in areas with a single point of access or that are too narrow to allow for adequate emergency access.						
Hazards Mitigated: Dam Failure, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor	Cal Trans	High	HMGP, General Fund, Capital Improvement Program	
Action WIN-33—Adopt measures to require landscaping and fencing that meet recommendations from the Sonoma County Fire Protection District to prevent the spread of wildfire, such as the location and type of materials allowed proximate to structures.						
Hazards Mitigated: Wildfire						
New & Existing	1, 4, 7, 9, 11	Windsor	Sonoma County FPD	Low	Staff Time, General Fund, HMGP, BRIC	Short-term
Action WIN-34—Identify and map neighborhoods in Windsor, especially neighborhoods or areas comprised of vulnerable populations and individuals, who may need assistance in the event of a disaster (elderly, disabled, limited mobility, lack of transportation, non-English speaking) and establish a vulnerable population support network, working closely with community organizations and assisted care centers to foster informal support networks through a program to encourage people to check in with and provide assistance to elderly and disabled neighbors.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-35—Identify and map properties owned or operated by the Town, Water District, Windsor Unified School District, other public agencies, and religious and service organizations that can be used for RVs, trailers, etc. and large animals in the event of an evacuation and establish relationships and enter into MOA or MOU with these entities for the use of these properties in the event of an evacuation.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund	Short-term
Action WIN-36—Identify and map potential shelter locations and the features of each location (e.g. type of parking, singles, families, large animal, small animal, etc.) on properties owned or operated by the Town, Water District, Windsor Unified School District, other public agencies, and religious and service organizations and establish partnerships with these entities to educate and distribute this information to residents and businesses prior to and during an emergency requiring evacuation and to provide assistance in the event of an emergency. Enter MOAs or MOUs as applicable.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund	Short-term
Action WIN-37—Develop a GIS system that includes infrastructure, critical facilities, Town assets, hazards, and land use information and train staff in the use and maintenance of the system.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6, 8, 9, 10	Windsor		High	Staff Time, General Fund, BRIC	Short-term
Action WIN-38—Develop and implement a system to track permits issued in hazard areas.						
Hazards Mitigated: Dam Failure, Flooding, Landslide, Wildfire						
New	7, 8	Windsor		Medium	Staff Time, General Fund, BRIC	Short-term
Action WIN-39—Establish and provide training for a staff-based emergency response program (Community Emergency Response Team [CERT]).						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe weather, Wildfire						
New & Existing	5, 6	Windsor	Sonoma County FPD	Medium	Staff Time, General Fund	Short-term
Action WIN-40—Have the appropriate Building Division and Public Works staff obtain certification as floodplain managers.						
Hazards Mitigated: Flooding						
New & Existing	1, 7, 8, 10, 11	Windsor		Medium	Staff Time, General Fund, BRIC	Short-term
Action WIN 41—Train the appropriate staff in post disaster safety assessment.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
Existing	6, 11	Windsor		Low	Staff Time, General Fund, HMGP, BRIC	Short-term
Action WIN-42—Support and promote the expansion of Citizens Organized to Prepare for Emergencies (COPE) and work with COPE to educate and inform the community.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor	Sonoma County FPD	Low	Staff Time, General Fund	Ongoing
Action WIN-43—Continually expand and improve community outreach and education related to all hazards facing Windsor and climate resiliency, including through the use of the Town's website, social media platforms, COPE, community meetings, and neighborhood, business, and community groups. Conduct Spanish-language outreach as part of this effort.						
Hazards Mitigated: Dam Failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildfire						
New & Existing	5, 6, 10	Windsor	Sonoma County Sonoma County FPD	Low	Staff Time, General Fund	Ongoing
Action WIN-44—Develop and provide information on evacuation zones, evacuation routes, preparedness, and responding to hazard events.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund, Grant Funding	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-45—Continue to require the undergrounding of utilities as part of the development projects and seek funding for the undergrounding of utilities in areas where redevelopment or new development is unlikely to occur that are located on evacuation routes, in proximity to moderate or high severity zones, or critical facilities.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	1, 2, 4, 6, 7	Windsor		High	HMGP, General Fund	Long term
Action WIN-46—Work with other agencies, residents, and homeowner associations to reduce fuel loads, such as the removal of vegetation in Foothill and Shiloh Ridge parks.						
Hazards Mitigated: Wildfire						
New & Existing	1, 2, 11	Windsor	Sonoma County CAL FIRE Sonoma County FPD	Low	Staff Time, General Fund, HMGP, BRIC	Ongoing
Action WIN-47—Require new development in liquefaction-prone areas to conduct a geotechnical analysis and to include features that decrease the risk of damage from liquefaction events.						
Hazards Mitigated: Earthquake						
New	1, 7, 11	Windsor		Low	Staff Time, General Fund	Ongoing
Action WIN-48—Identify and pursue alternate water sources, as part of the Town's Water Master Plan, to provide backup water sources in case primary source(s) fail or are unavailable and make these sources available.						
Hazards Mitigated: Drought, Earthquake, Wildfire						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program, General Fund, Staff Time	Ongoing
Action WIN-49—Participate in mutual aid agreements to provide wildfire protection services in Foothill Regional Park.						
Hazards Mitigated: Wildfire						
New & Existing	2	Sonoma County FPD	County of Sonoma Windsor	Low	Staff Time, General Fund	Ongoing
Action WIN-50—Ensure compliance with vegetation management standards and other County fire safe standards to reduce wildfire risk within Windsor and the area surrounding Windsor, working with private property owners, the County of Sonoma, and the Sonoma County Fire Protection District.						
Hazards Mitigated: Wildfire						
New & Existing	1, 2, 11	Sonoma County FPD	County of Sonoma Windsor	Low	Staff Time, General Fund	Ongoing
Action WIN-51—Work with other agencies to develop and implement a rainwater catchment program, including a program to provide rainwater barrels for existing residential development.						
Hazards Mitigated: Drought						
Existing	2, 4	County of Sonoma	Sonoma Water Windsor City of Santa Rosa	Medium	Staff Time, BRIC	Short-term
Action WIN-52—Improve the resiliency of key roadways leading out of Windsor, particularly those connecting to hospital facilities by working with the City of Santa Rosa, Sonoma County, and Caltrans.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	County of Sonoma City of Santa Rosa	Windsor	High	Bonds, Capital Improvement Program	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action WIN-53—Construct on-site renewable energy generation and storage systems at Town-owned facilities to support continued operations in the event of a power outage. Encourage residents and businesses to install energy generation and storage systems on their properties.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor		High	General Fund, Bonds, Capital Improvement Program, HMGP, BRIC	Short-term
Action WIN-54—Identify transportation options and potential ways to provide the transportation identified for people who do not drive or have limited mobility.						
Hazards Mitigated: Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor	Sonoma County Transit	Medium	Staff Time, General Fund	Short-term
Action WIN-55—Identify and implement communication methods for people with limited/no technology.						
Hazards Mitigated: Dam Failure, Drought, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	6	Windsor		Medium	Staff Time, General Fund	Short-term
Action WIN-56—Regularly review and apply for available funding opportunities to implement hazard mitigation activities. Prioritize hazard mitigation retrofits and other construction activities in Windsor's Capital Improvement Program (CIP).						
Hazards Mitigated: Dam Failure, Drought, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	3, 4, 6, 10	Windsor		Low	Staff Time, 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 5-15. 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]
WIN-1	3	High	High	Yes	Yes	No	Medium	High
WIN-2	3	Medium	Low	Yes	No	Yes	High	Low
WIN-3	7	Low	Low	Yes	No	Yes	High	Low
WIN-4	3	Medium	Low	Yes	No	Yes	High	Low
WIN-5	10	Medium	Low	Yes	No	Yes	High	Medium
WIN-6	10	High	Medium	Yes	Yes	No	Medium	High
WIN-7	6	Medium	Low	Yes	No	Yes	Low	Low
WIN-8	7	Medium	Low	Yes	Yes	No	Medium	Low
WIN-9	3	High	High	Yes	Yes	No	High	High
WIN-10	3	High	High	Yes	Yes	No	High	High
WIN-11	3	Medium	Medium	Yes	Yes	No	Medium	Medium
WIN-12	4	Low	Low	Yes	No	Yes	Low	Low
WIN-13	5	Low	Low	Yes	No	Yes	Low	Low
WIN-14	3	Medium	Medium	Yes	No	No	Medium	Low
WIN-15	3	Medium	Low	Yes	No	Yes	Medium	Low
WIN-16	3	Medium	Low	Yes	No	Yes	Medium	Low
WIN-17	4	Medium	High	No	Yes	No	Medium	Low
WIN-18	3	Medium	High	No	No	No	Medium	Low
WIN-19	3	High	High	Yes	No	No	Medium	Low
WIN-20	2	High	High	Yes	Yes	No	Medium	High
WIN-21	5	High	High	Yes	Yes	No	Medium	High
WIN-22	5	High	High	Yes	No	No	Medium	Low
WIN-23	3	High	High	Yes	Yes	No	Medium	High
WIN-24	3	High	High	Yes	Yes	No	Medium	High
WIN-25	2	High	Low	Yes	No	Yes	High	Low
WIN-26	7	Medium	Low	Yes	No	Yes	High	Low
WIN-27	3	Medium	High	No	Yes	No	Medium	Medium
WIN-28	2	High	Low	Yes	No	Yes	Medium	Low
WIN-29	3	Low	Medium	Yes	No	Yes	High	Low
WIN-30	3	Medium	Low	Yes	No	Yes	Medium	Low
WIN-31	2	Medium	High	No	No	No	High	Low
WIN-32	2	Medium	High	Yes	No	No	Medium	Low
WIN-33	5	Medium	Medium	Yes	Yes	No	High	High
WIN-34	2	Low	Low	Yes	No	No	Medium	Low
WIN-35	2	Low	Low	Yes	No	No	Medium	Low
WIN-36	2	Low	Low	Yes	No	No	Medium	Low
WIN-37	5	Medium	Medium	Yes	Yes	No	Medium	High
WIN-38	2	Medium	Medium	Yes	Yes	No	Low	Medium
WIN-39	2	Low	Medium	No	No	No	Low	Low
WIN-40	5	Medium	Medium	Yes	Yes	No	Medium	High
WIN-41	2	Medium	Low	Yes	Yes	Yes	Medium	High

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]
WIN-42	2	Medium	Low	Yes	No	No	Medium	Low
WIN-43	3	High	Low	Yes	No	Yes	High	Low
WIN-44	2	High	Medium	Yes	No	No	High	Low
WIN-45	5	High	High	Yes	Yes	No	Medium	High
WIN-46	3	Medium	Low	Yes	No	Yes	High	Low
WIN-47	3	Low	Low	Yes	No	Yes	Low	Low
WIN-48	3	High	High	Yes	No	No	Low	Low
WIN-49	1	Medium	Low	Yes	No	Yes	Medium	Low
WIN-50	3	Medium	Low	Yes	No	Yes	Medium	Low
WIN-51	2	Medium	Medium	Yes	Yes	No	Medium	Medium
WIN-52	2	High	High	Yes	No	No	Low	Low
WIN-53	2	High	High	Yes	Yes	No	Medium	High
WIN-54	2	Medium	Medium	Yes	No	No	Medium	Low
WIN-55	1	Medium	Medium	Yes	No	No	Medium	Low
WIN-56	4	Low	Low	Yes	No	Yes	High	Low

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

Table 5-16. 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								
Dam Failure	WIN-3, WIN-17, WIN-45	WIN-1	WIN-15, WIN-16, WIN-37, WIN-38, WIN-42, WIN-43, WIN-44		WIN-2, WIN-9, WIN-10, WIN-14, WIN-15, WIN-16, WIN-36, WIN-37, WIN-39, WIN-41, WIN-42	WIN-31, WIN-32, WIN-45, WIN-54, WIN-56	WIN-3, WIN-53	WIN-3, WIN-4, WIN-5, WIN-6, WIN-17, WIN-34, WIN-35, WIN-36, WIN-37, WIN-38, WIN-39, WIN-41, WIN-42, WIN-54, WIN-55
Earthquake	WIN-3, WIN-12, WIN-45, WIN-48	WIN-1	WIN-37, WIN-38, WIN-42, WIN-43, WIN-44		WIN-2, WIN-9, WIN-10, WIN-36, WIN-39, WIN-41, WIN-42	WIN-19, WIN-31, WIN-32, WIN-45, WIN-49, WIN-54, WIN-56	WIN-3, WIN-53	WIN-3, WIN-4, WIN-5, WIN-6, WIN-34, WIN-35, WIN-36, WIN-37, WIN-38, WIN-39, WIN-41, WIN-42, WIN-53, WIN-54

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
Wildfire	WIN-3, WIN-12, WIN-33, WIN-45, WIN-51	WIN-1	WIN-37, WIN-38, WIN-42, WIN-43, WIN-44	WIN-46	WIN-2, WIN-9, WIN-10, WIN-11, WIN-36, WIN-39, WIN-41, WIN-42	WIN-19, WIN-31, WIN-32, WIN-45, WIN-48, WIN-54, WIN-56	WIN-3, WIN-51	WIN-3, WIN-4, WIN-5, WIN-6, WIN-11, WIN-34, WIN-35, WIN-36, WIN-37, WIN-38, WIN-39, WIN-41, WIN-42, WIN-46, WIN-49, WIN-53, WIN-54, WIN-55
Medium-Risk Hazards								
Severe Weather	WIN-3, WIN-12, WIN-26, WIN-27, WIN-45	WIN-1, WIN-14	WIN-37, WIN-38, WIN-42, WIN-43, WIN-44	WIN-23, WIN-25	WIN-2, WIN-9, WIN-10, WIN-11, WIN-39, WIN-41, WIN-42	WIN-19, WIN-21, WIN-22, WIN-24, WIN-25, WIN-28, WIN-31, WIN-32, WIN-45, WIN-47, WIN-54, WIN-56	WIN-3, WIN-8, WIN-53	WIN-3, WIN-4, WIN-5, WIN-6, WIN-11, WIN-34, WIN-35, WIN-36, WIN-37, WIN-38, WIN-39, WIN-41, WIN-42, WIN-53, WIN-54
Flooding	WIN-3, WIN-7, WIN-12, WIN-26, WIN-45	WIN-1, WIN-7	WIN-7, WIN-37, WIN-38, WIN-42, WIN-43, WIN-44, WIN-55	WIN-23, WIN-25	WIN-2, WIN-9, WIN-10, WIN-11, WIN-36, WIN-39, WIN-41, WIN-42	WIN-19 WIN-20, WIN-21, WIN-22, WIN-24, WIN-25, WIN-27, WIN-28, WIN-31, WIN-32, WIN-45, WIN-46, WIN-51, WIN-56	WIN-3, WIN-50	WIN-3, WIN-4, WIN-5, WIN-6, WIN-11, WIN-14, WIN-34, WIN-35, WIN-36, WIN-37, WIN-38, WIN-39, WIN-40, WIN-41, WIN-42, WIN-53
Drought	WIN-3	WIN-52				WIN-19, WIN-20, WIN-47, WIN-49, WIN-56	WIN-3	WIN-3, WIN-5, WIN-6, WIN-52, WIN-54
Low-Risk Hazards								
Landslide	WIN-3, WIN-12, WIN-30, WIN-45	WIN-1	WIN-43, WIN-44		WIN-2, WIN-9, WIN-10, WIN-11, WIN-35, WIN-36	WIN-2, WIN-31, WIN-32, WIN-45, WIN-52, WIN-56	WIN-3, WIN-50	WIN-3, WIN-4, WIN-5, WIN-6, WIN-11, WIN-34, WIN-35, WIN-36, WIN-53, WIN-54

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

5.9 PUBLIC OUTREACH

The survey and information on the Plan were distributed in January 2021 in the following manner.

- Email to all Town employees
- Email to Town boards and commissions, including Town Council, Planning Commission, Parks and Recreation Commission, Public Art Advisory Commission, Senior Citizens Advisory Commission
- Posting to the Town's social media accounts, including Facebook and Next Door (example on next page)
- Posting to the Town's website

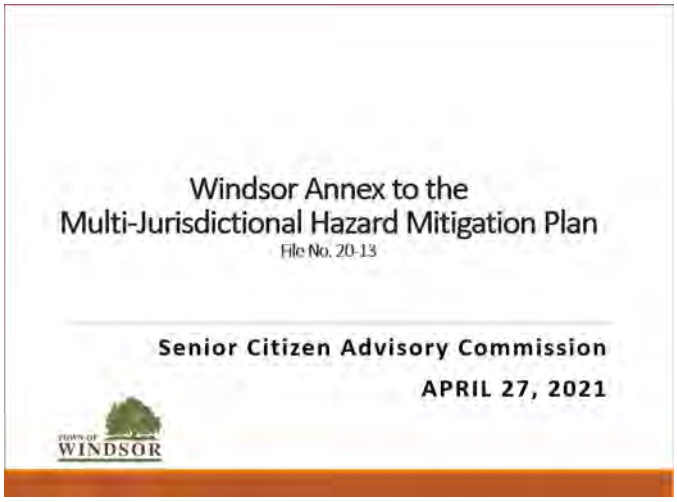
- Email to the Windsor Chamber of Commerce and Downtown Windsor Merchants Association

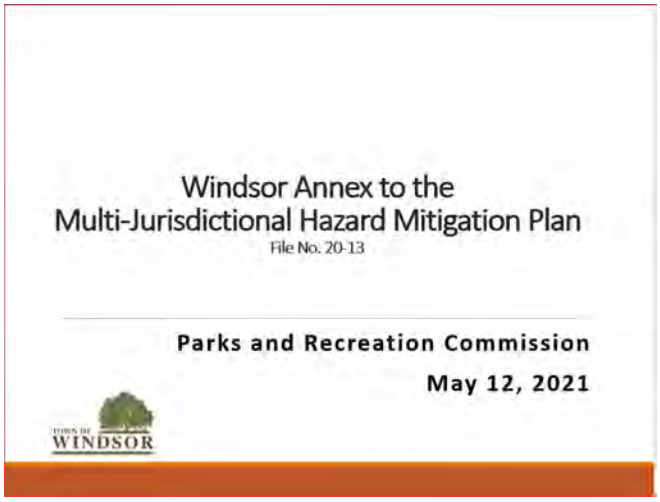
Sonoma County staff presented the Multi-Jurisdiction Hazard Mitigation Plan, Town staff presented Windsor's Annex to the Plan, and Public Works staff presented the Windsor Climate Adaptation (Windsor Ready) Plan to the following Town Commissions (example presentation covers below).

- Senior Citizen Advisory Commission presentation April 27, 2021
- Parks and Recreation Commission May 12, 2021
- Planning Commission May 25, 2021

Sonoma County staff presented the Multi-Jurisdiction Hazard Mitigation Plan and Town staff presented Windsor's Annex to the Plan to the Town Council on June 16, 2021.

Example Social Media Announcement





Example Public Outreach Presentations

5.10 INFORMATION SOURCES USED FOR THIS ANNEX

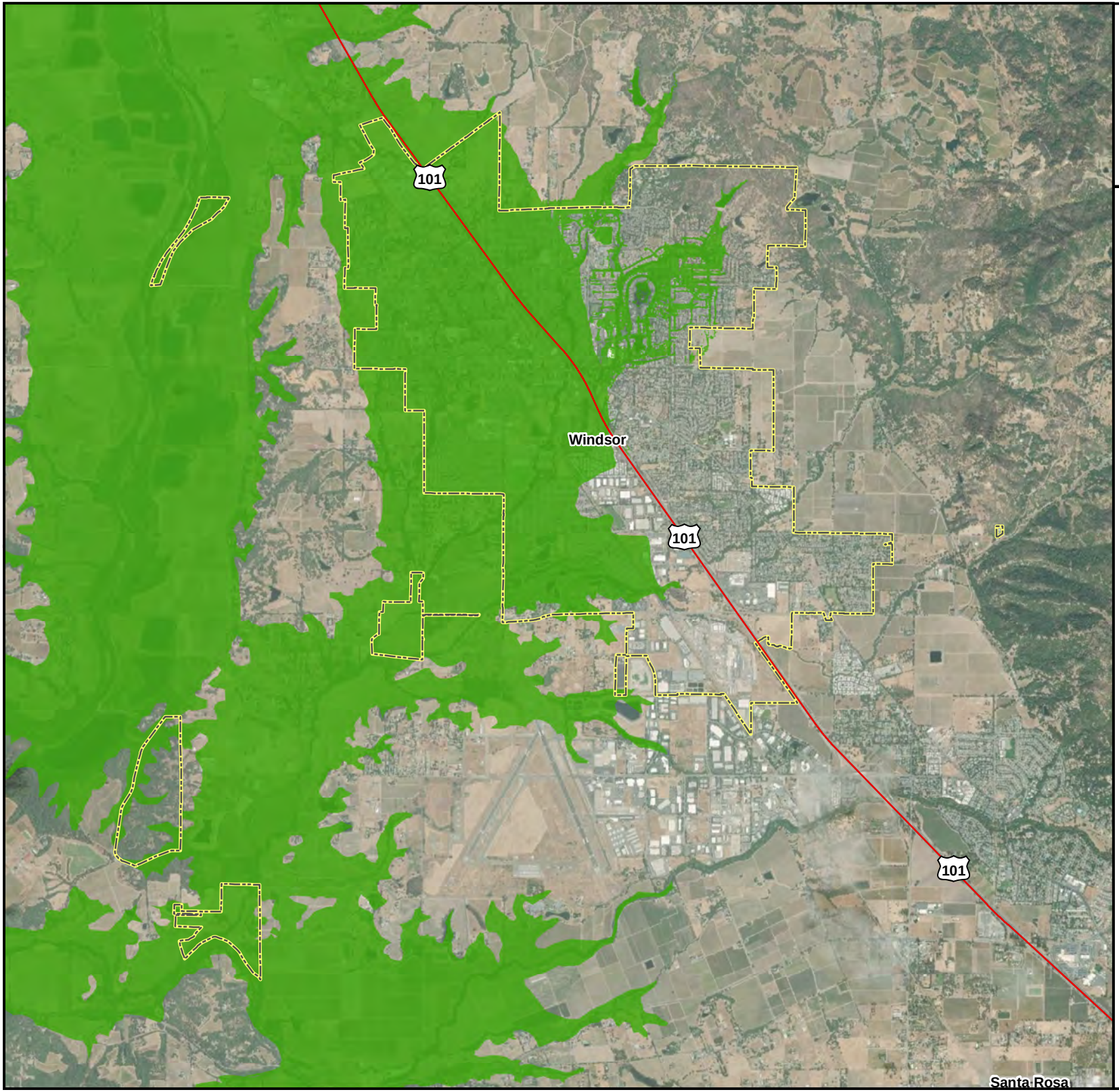
The following technical reports, plans, and regulatory mechanisms were reviewed for this annex.

- Windsor 2040 General Plan

- Windsor Municipal Code—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- Windsor Zoning Ordinance
- Windsor Building Code
- Flood Damage Prevention Ordinance—The flood damage prevention ordinance is included in the Town's Municipal Code and was reviewed for compliance with the National Flood Insurance Program.
- Collection System Master Plan
- Groundwater Sustainability Plan
- Urban Water Management Plan
- Storm Drainage Master Plan
- Water Master Plan
- Windsor Local Hazard Mitigation Plan adopted February 2018

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.



Windsor

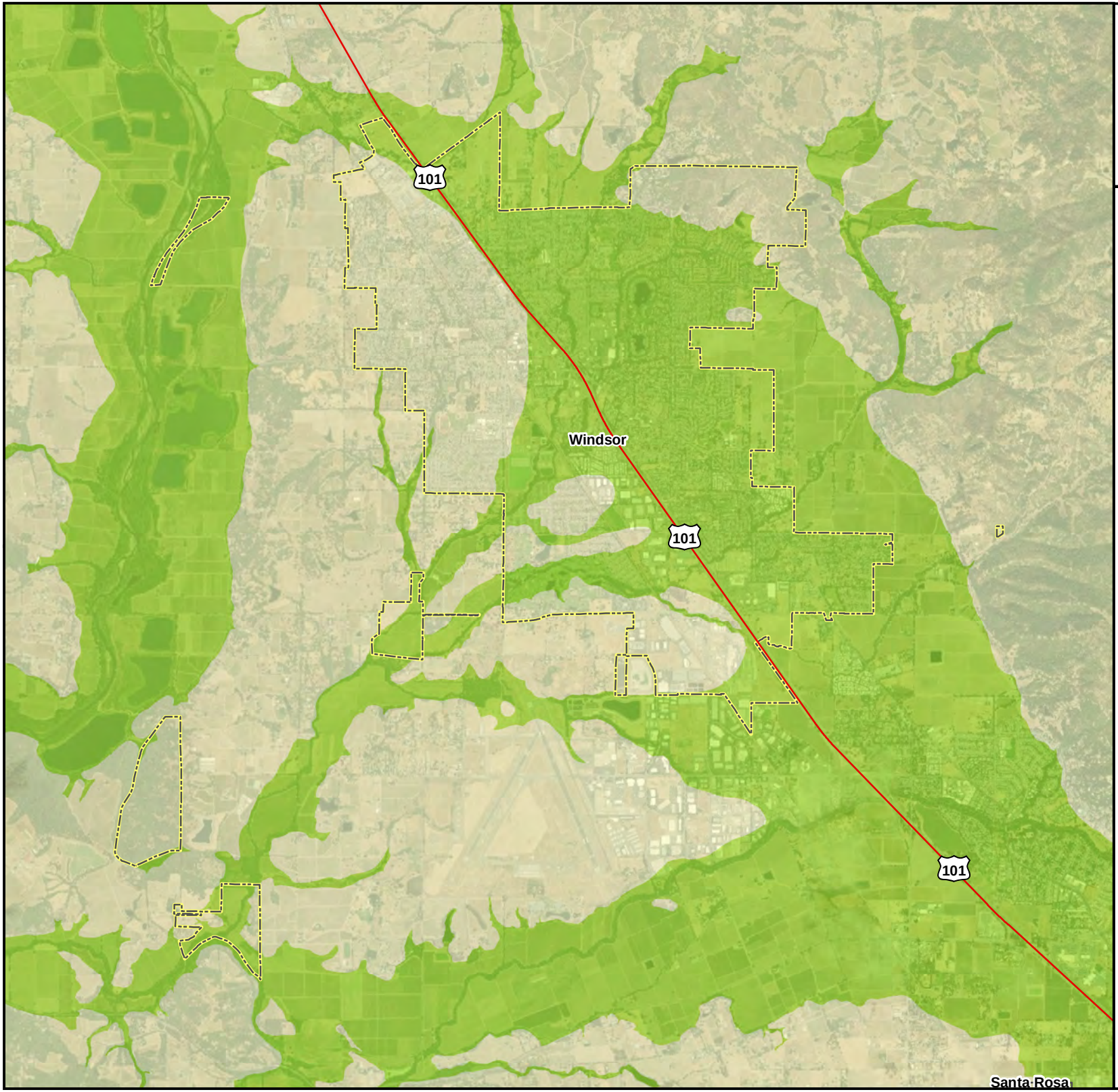
Dam Failure Inundation Area

Inundation Area
Selected City
Incorporated Cities
Sonoma County
Highways

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

N

0 0.25 0.5 1 Miles



Windsor

NEHRP Soil Classifications

C (Dense soil/soft rock)

D (Stiff soil)

Selected City

Incorporated Cities

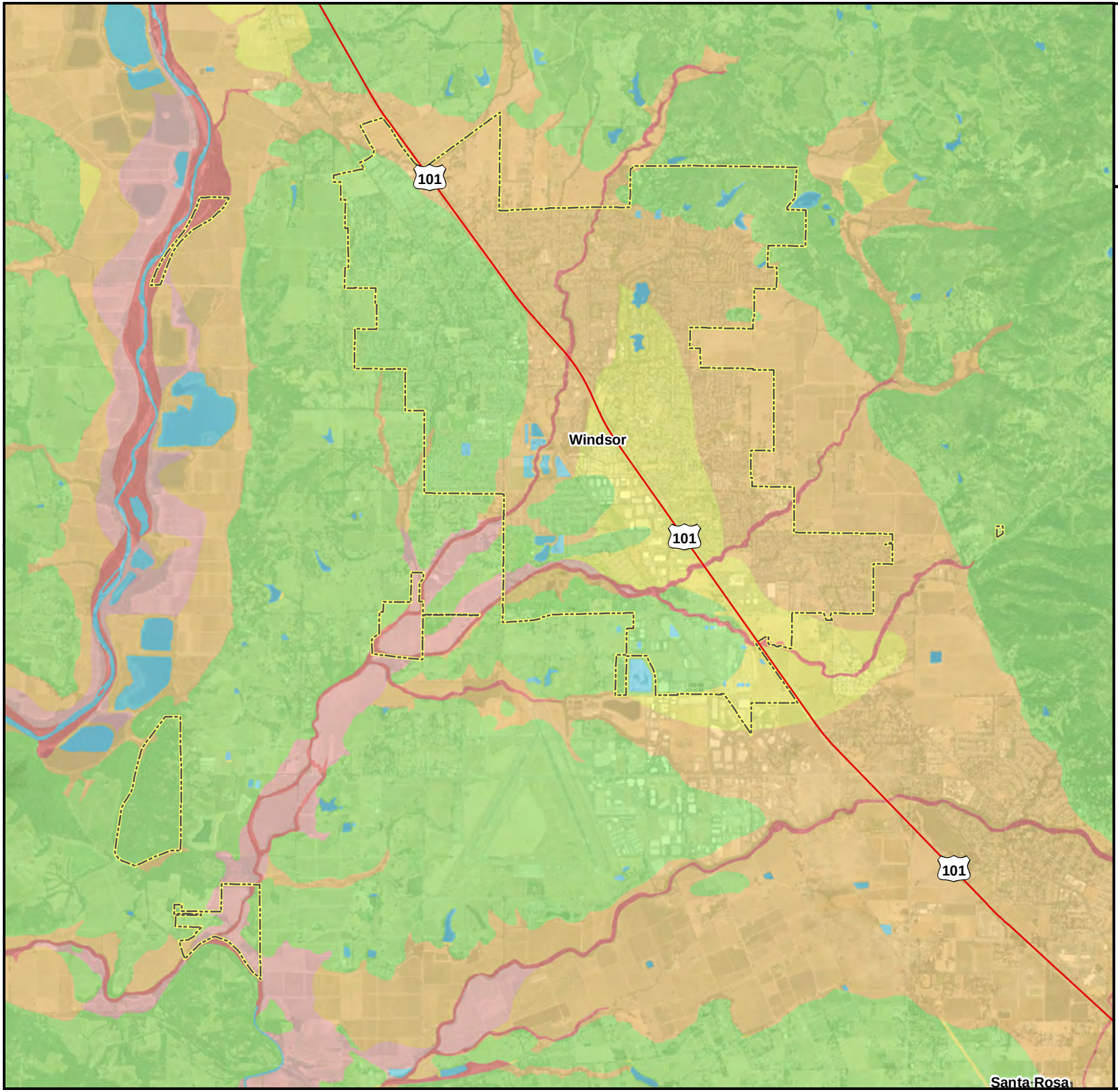
Sonoma County

Highways

Data Source: ESRI Basemap, Sonoma Co., CGS

N

0 0.25 0.5 1 Miles



Windsor

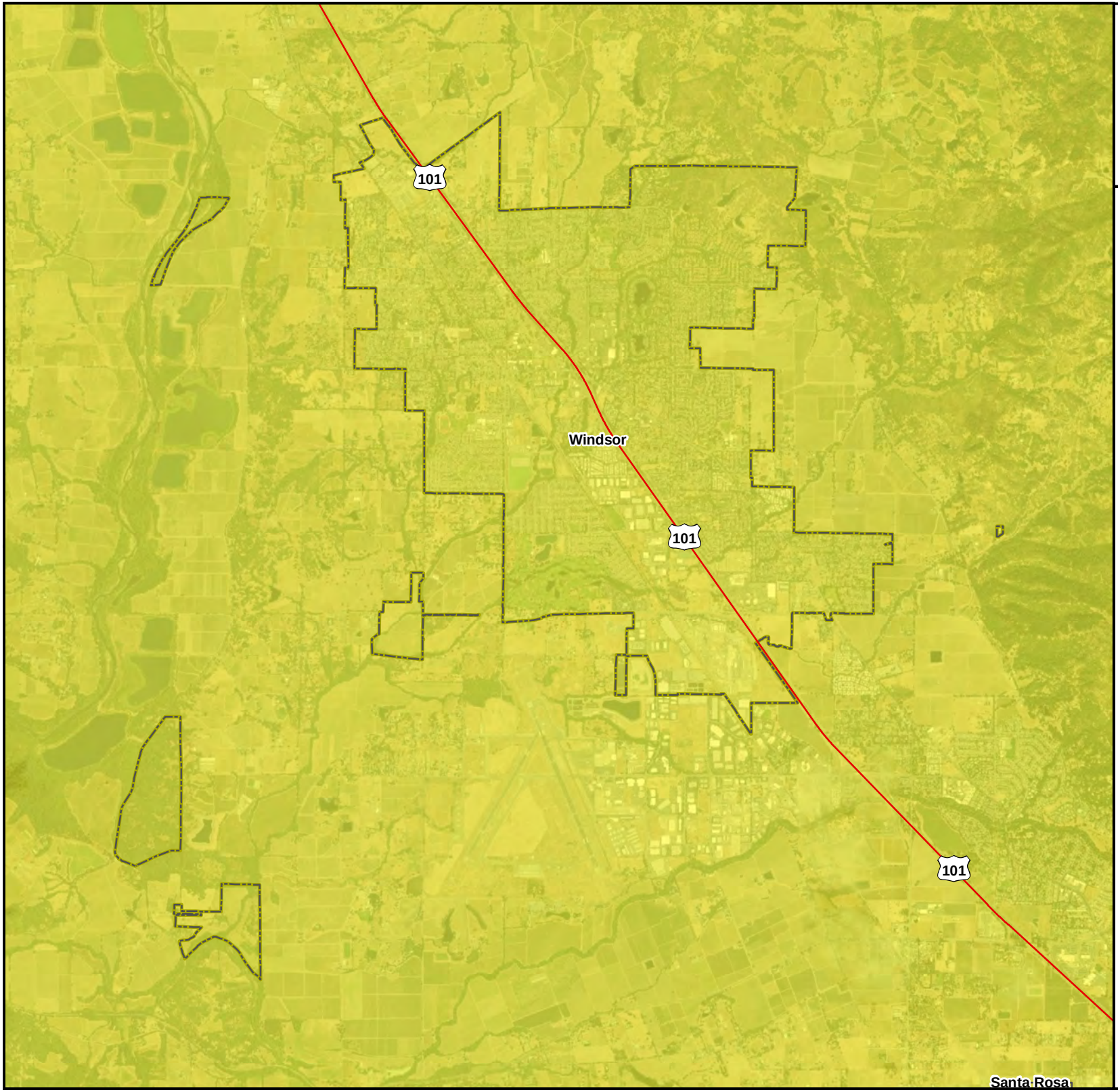
Liquefaction Susceptibility

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

100-year Probalistic Earthquake Scenario

Mercalli Intensity Scale

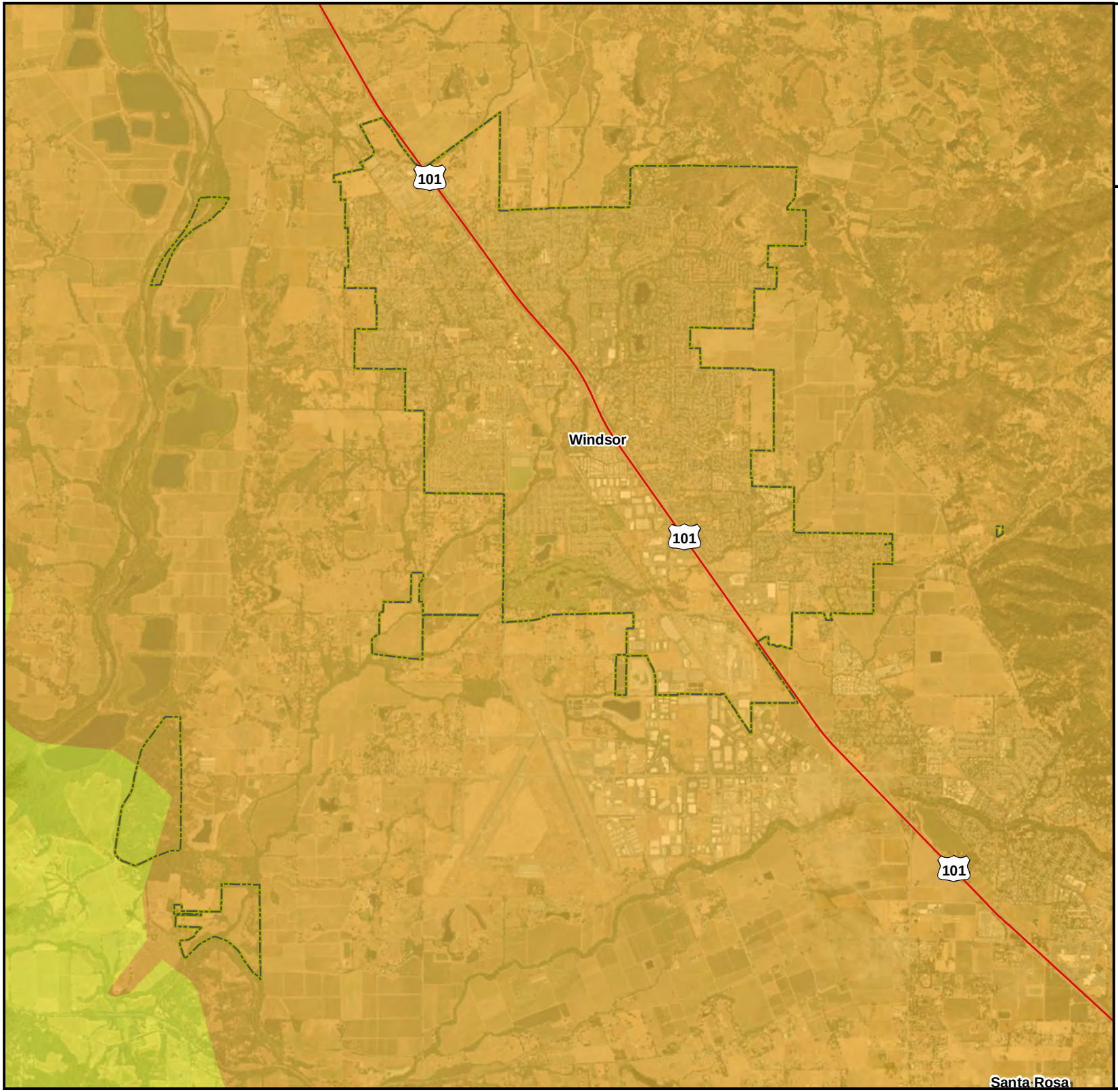
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

Hayward M7.57 Earthquake Scenario

Mercalli Intensity Scale

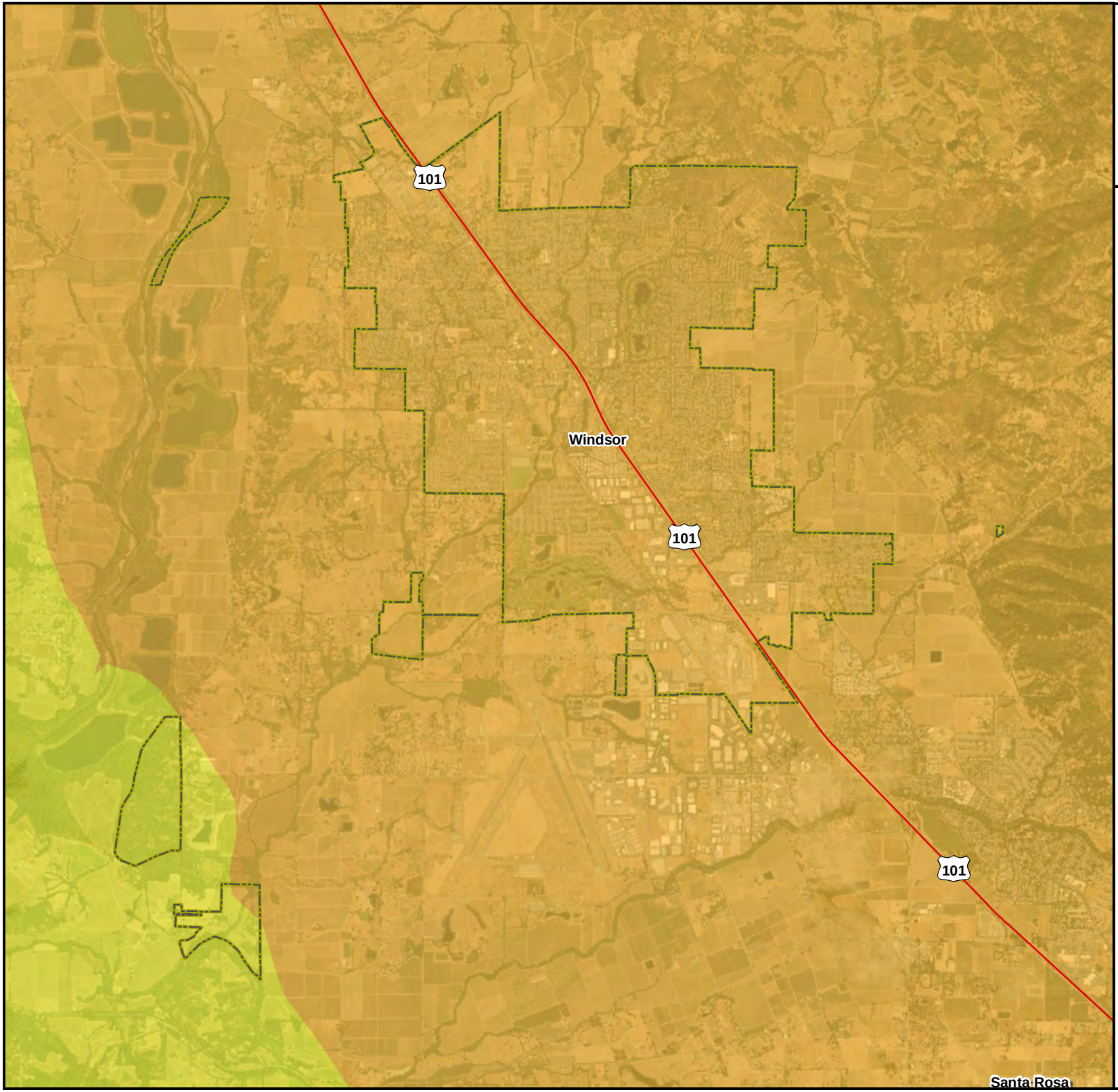
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

Healdsburg M7.19 Earthquake Scenario

Mercalli Intensity Scale

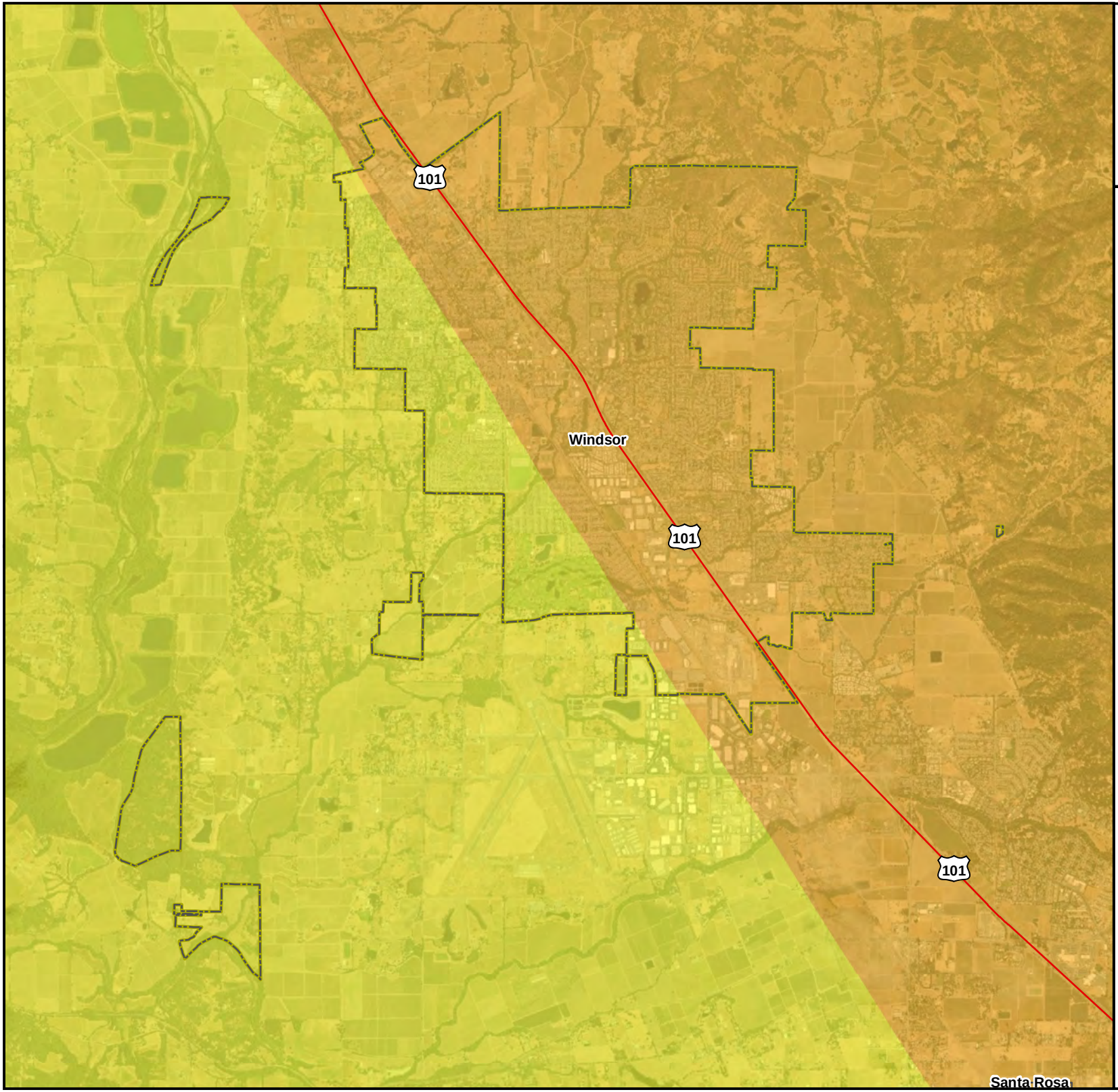
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Sources: Esri Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

Maacama M7.55 Earthquake Scenario

Mercalli Intensity Scale

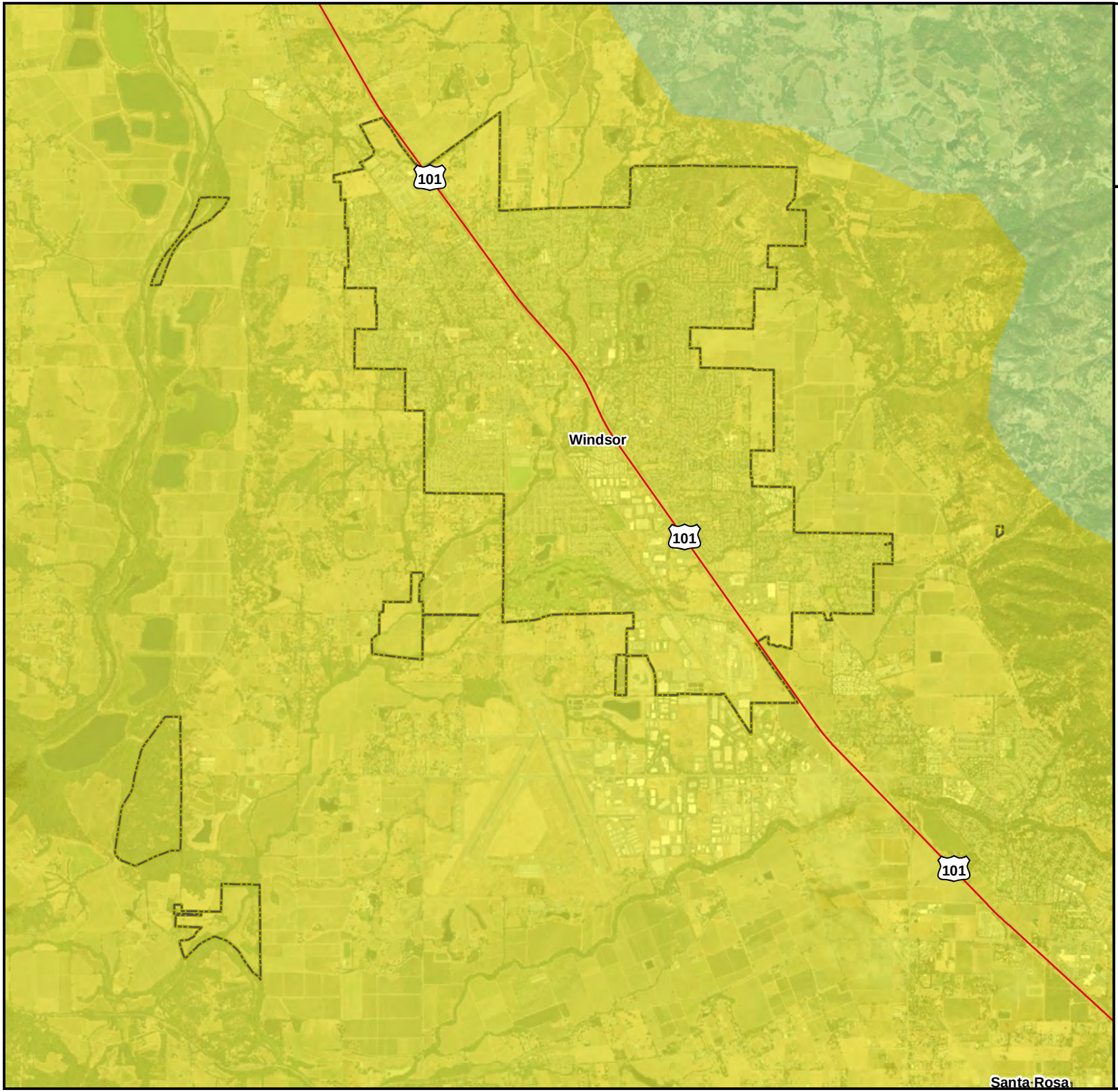
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

San Andreas M8.04 Earthquake Scenario

Mercalli Intensity Scale

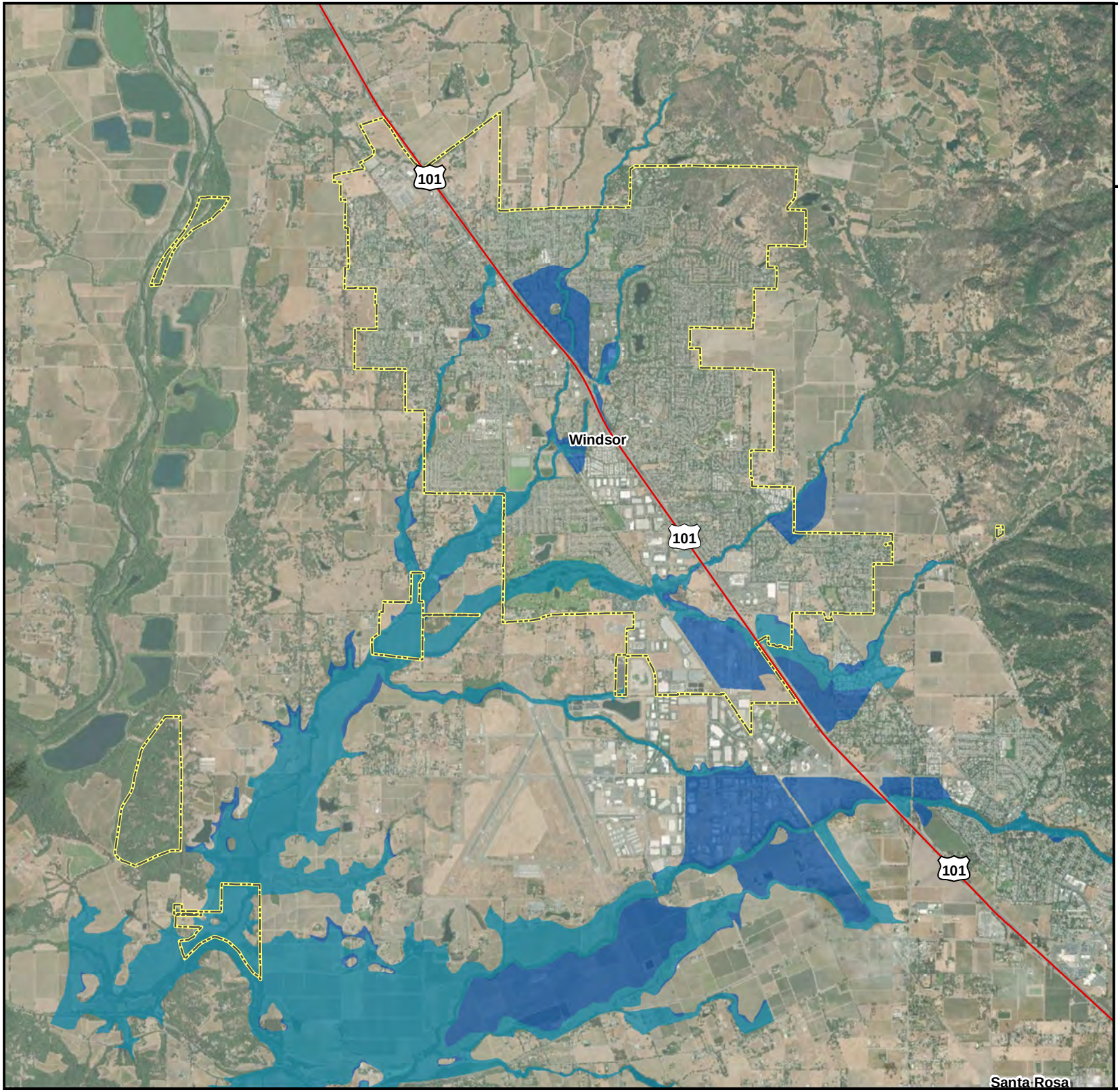
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- Selected City
- Incorporated Cities
- Sonoma County
- Highways

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

Data Source: ESRI Basemap, Sonoma Co., USGS

N

0 0.25 0.5 1 Miles



Windsor

Flood Hazard Areas

1% Annual Chance Flood (100-Year)

0.2% Annual Chance Flood (500-Year)

Selected City

Incorporated Cities

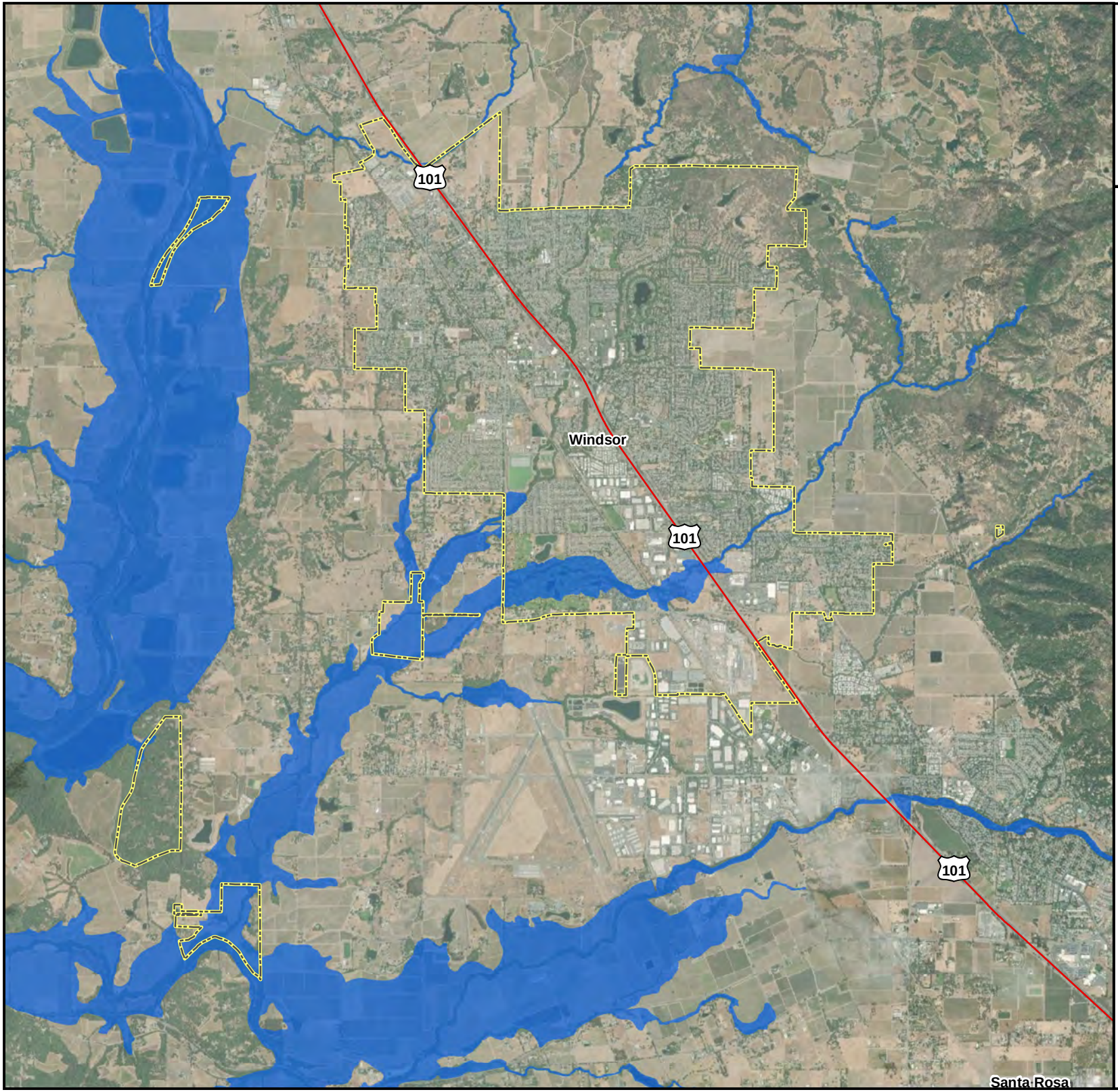
Sonoma County

Highways

Data Sources: Esri Basemap, Sonoma Co., FEMA

N

0 0.25 0.5 1 Miles



Windsor

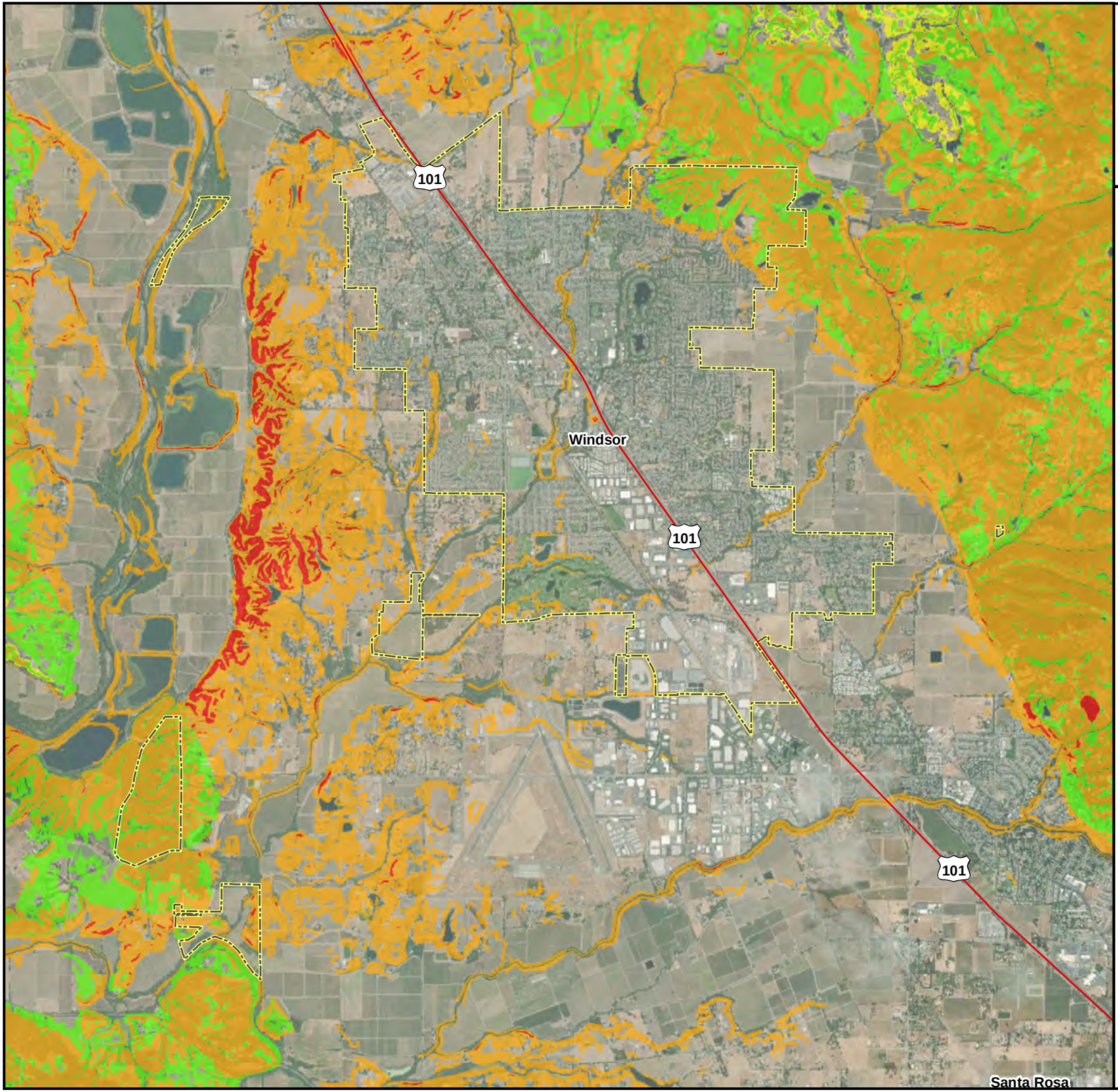
Flood Awareness Areas

Flood Awareness Areas
Selected City
Incorporated Cities
Sonoma County
Highways

Data Sources: Esri Basemap, Sonoma Co.

N

0 0.25 0.5 1 Miles



Windsor

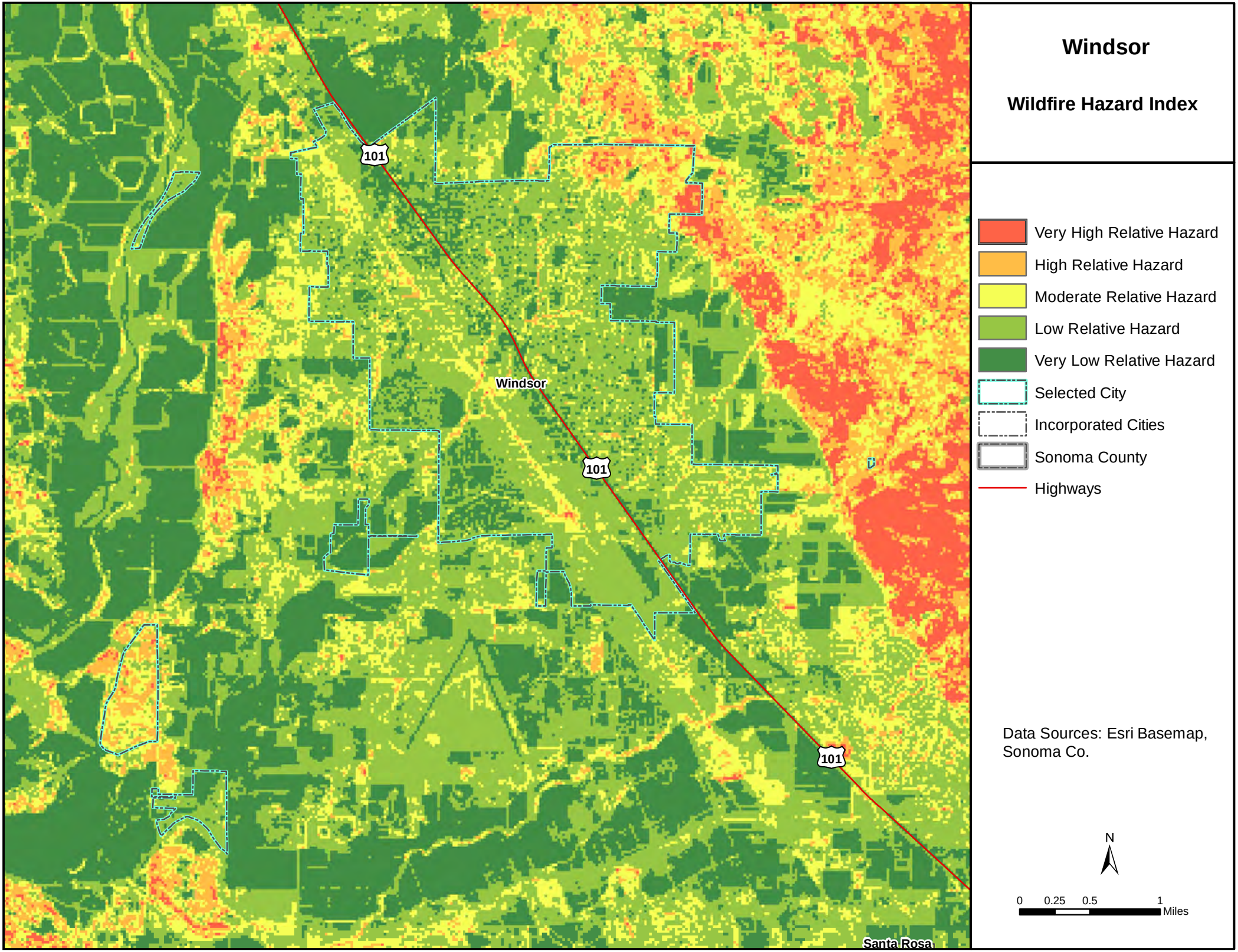
Susceptibility to Deep-Seated Landslides

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

Data Sources: Esri Basemap, Sonoma Co., CGS

N

0 0.25 0.5 1 Miles


Windsor
Wildfire Hazard Index
101
Windsor
101
101
Santa Rosa
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.
N
0 0.25 0.5 1
Miles

6. CLOVERDALE FIRE PROTECTION DISTRICT

6.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Jason Jenkins
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Cloverdale, CA 95425
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Alternate Point of Contact
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Cloverdale, CA 95425
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e-mail Address: blackmon@cloverdlalefire.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 6-1.

Table 6-1. Local Mitigation Planning Team Members

Name	Title
Jason Jenkins	Fire Chief
Rick Blackmon	Battalion Chief
Carol Pigoni	Board President
Michelle Black	Fire Admin

6.2 JURISDICTION PROFILE

6.2.1 Overview

The Cloverdale Fire Department was a city fire department and became a Fire Protection District was in 1996, and is governed by a five member Board of Directors, elected by the voters of the District. The Cloverdale Fire Protection District is currently operating under a Joint Powers Agreement with the Northern Sonoma County Fire Protection District. The JPA and department is known as Northern Sonoma County Fire. The Cloverdale Fire Protection District is funded by taxes and a special assessment passed by voters at the creation of the district.

The District covers approximately 76 square miles. The City of Cloverdale population is 9800 and the area served is 2.0 square miles. The remaining 74 square miles of the district are urban/rural areas. The Cloverdale District also has primary response coverage for approximately an additional 273 square miles throughout northern Sonoma County for a total of 349 Square miles. The district also covers auto aid 5 miles into Mendocino County for all emergency incidents.

The Cloverdale Fire District assumes responsibility for the adoption of this plan; The fire chief and district board will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 3 within 5 miles of the fire station and 10 beyond that.

6.2.2 Service Area

The District service area covers 76 square miles of northern Sonoma County from north of Lake Sonoma to the Sonoma/Mendocino County line, south of Asti to Zanzi Lane in the community of Chianti. And east to Mendocino/Lake county line. The service area has an estimated population of 15,000 with high tourism due to the Russian River and wineries. The District also responds to The Geysers which are home to the largest geothermal area in North America. Incidents per year range between 1300-1400 calls which includes mutual and automatic aid responses.

6.2.3 Assets

Table 6-2 summarizes the critical assets of the district and their value.

Table 6-2. Special Purpose District Assets

Asset	Value
Property	
Cloverdale Fire Station, 451. S. Cloverdale Blvd.	$20,000,000
Property	$875,000
Total Value	*$20,875,000*
Equipment	
UTV Trailer Versatile Enclosed 2017	$10,000
UTV Honda 2021	$25,000
Facility Generator	$150,000
6100 Chevrolet Silverado 2020	$60,000
6501 Chevrolet Silverado 2020	$60,000
6590 Water Tender 2000 Gal Water	$300,000
6540 Chevrolet Silverado 2021	$65,000
6541 Chevrolet Silverado 2008	$20,000
6555 Ford F550 Type 6 engine	$300,000
6560 International 4x4 engine 2003	$450,000
6570 International engine 1997	$350,000
6580 KME fire engine 1998	$450,000
6581 Pierce Fire engine 1999	$15,000
6580 Toyne fire engine 2021	$675,000
6530 Heavy Rescue 2005	$550,000
Covered Parking Structures	$30,000
Personal Protective Equipment	$120,000
Communications Equipment	$160,000
Fire Hose And Firefighting Equipment	$220,000
Total:	*$22,385,000*
Critical Facilities	
See Property assets value above	
Total:	*$20,000,000*

6.3 CURRENT TRENDS

The District has experienced approximately 100 call increase over the past two years. The Cloverdale Fire District has seen an overall service area increase call total of 1400 calls annually. Development in the Fire District is ongoing with several large low income residential units in plan review and expected to be built in the coming years. There are currently no plans to build new/additional fire stations.

6.4 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 6-3.
- An assessment of fiscal capabilities is presented in Table 6-4.
- An assessment of administrative and technical capabilities is presented in Table 6-5.
- An assessment of education and outreach capabilities is presented in Table 6-6.
- Classifications under various community mitigation programs are presented in Table 6-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 6-8.

Table 6-3. Planning and Regulatory Capability*

Plan, Study or Program	Date of Most Recent Update	Comment
Locally adopted fire code	2019	
California Fire Code	2016	
California Building Code	2016	
American Disabilities Act		
Fire Safe Sonoma	Annual	
Sonoma County Emergency Operations Plan		

* The Cloverdale Fire Protection District uses the County of Sonoma for planning and regulatory capabilities, including review of building plans for compliance with building and fire codes as well as Firesafe Standards for county areas within the district and fire chief/fire marshal for areas within the city.

Table 6-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Other	The Fire District has a fee schedule to enable collection of fees for service ranging from mandated state inspections, plan checks and firefighter stand by services.

Table 6-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Fire Marshall Consultant
Engineers or professionals trained in building or infrastructure construction practices	Yes	Fire Chief/Fire Marshall Consultant
Planners or engineers with an understanding of natural hazards	Yes	Fire Marshall Consultant
Staff with training in benefit/cost analysis	Yes	Fire Department Command Staff
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Fire Chief
Scientist familiar with natural hazards in local area	No	
Emergency manager	No	
Grant writers	Yes	COPE Manager, District Staff
Other	No	

Table 6-6. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? *If yes, please briefly describe*	No
Do you use social media for hazard mitigation education and outreach? *If yes, please briefly describe*	Yes Information shared about fires, prevention, and safety tips
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, please briefly specify*	Yes COPE leadership group
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, please briefly describe*	Yes Citizens Organized to Prepare for Emergencies, Cert Team, Community Social Media Page
Do you have any established warning systems for hazard events? *If yes, please briefly describe*	Yes Utilize County of Sonoma and local PD for warning and notification of hazard events.

Table 6-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	967416566	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	Yes	3 within 5 miles of the fire station and 10 beyond that	
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 6-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	Medium
Local residents support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Low
Local economy current capacity to adapt to climate impacts *Comment:*	Low
Local ecosystems capacity to adapt to climate impacts *Comment:*	Low

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.

6.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

6.5.1 Existing Integration

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

- Integration will occur with local CWPP plans in the development process once completed.
- **Implementation of Advanced Life Support Services**—Cloverdale Health Care Ambulance District. provides ALS personnel and fire district help staff ambulances EMT positions.
- **Disaster Operations Policies and Procedures**—Cloverdale Fire District, has standing policies and procedures dictating emergency operations preparing for, during, and after natural disasters. These policies include not only emergency operations but also assessment of District owned capital assets after such events.
- **Department Social Media—**Posts continuous message throughout the Fire District to educate and inform our populace on a wide variety of topics that include fire safety and disaster preparation.
- **Continuance of Community Risk Reduction Program—**Cloverdale Fire District, maintains a prevention/community risk reduction program ranging from building inspections, construction plan review, community education.
- **Continue to participate in general mutual aid agreements with adjoining jurisdictions and statewide—**Cloverdale Fire District, participates in various mutual and automatic aid agreements with neighboring fire districts as well as is an active participant in the statewide mutual system, especially during wildfire season.
- **North County Citizens Organized to Prepare for Emergencies (COPE)—**Training and organization of community members and groups designed to facilitate emergency preparation and response.
- **North County Citizens Emergency Response Team (CERT)** Training and organization of specifically trained community members to facilitate emergency preparation and response.
- **Staffing for Adequate Fire and Emergency Response Grants**—Provide 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

- **Hazardous Vegetation Inspection & Abatement Program**—In cooperation with the Sonoma County PRMD Fire Prevention Office the Cloverdale Fire District inspects properties for compliance. Selected properties that are not within city limits (improved and unimproved) may be part of the inspection program. Critical to protect homes from wildfire, defensible space includes a "lean, clean and green" zone 30 feet (or to the property line) from buildings, and a "reduced fuels zone," which can have more natural vegetation, from 30 feet to 100 feet (or to the property line) from structures.
- **Creation of a newly formed Joint Powers Agreement—**The creation of the newly formed North County Fire is a partnership with former Geyserville Fire District, Now North County Fire Protection District to provide coordinated services throughout the north county. This allows the fire department to standardize and provide shared resources.

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:

- Continue to pursue grant funding opportunities for updating facilities and equipment
- Help form, train, and participate in a county-wide incident management team, overhead incident requests.
- Help further develop, train, and build relationships with both county and city EOCs.
- Conduct on going risk assessments for the Cloverdale Fire District and the ability to focus on key risk factors identified therein.
- Collaborate with area fire agencies on preparedness, response, planning, recovery, and mitigation plans, strategies, and protocols.
- Integrate the Sonoma County Wildfire Mitigation Plan with this plan
- Integrate any city or specific community CWPP plan with the plan.

6.6 RISK ASSESSMENT

6.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 6-9 lists past occurrences of natural hazards for which specific damage was recorded in the north county. Other hazard events that broadly affected the entire planning area, including jurisdictions in Sonoma County are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

6.6.2 Hazard Risk Ranking

Table 6-10 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 6-9. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires	DR-4569-CA	September 4-November 17, 2020	Unknown
Wildfires	DR-4558-CA	August 14-September 26, 2020	Unknown
Covid-19 Pandemic	DR-4442-CA	January 2020-Present	Unknown
Kincade Fire	FM-5295-CA	October 23-November 7, 2019	Unknown
PG&E Power Shutoff		October 2019	Unknown
Severe Winter Storms Flooding	DR-4434-CA	February 24-March 1, 2019	Unknown
PG&E Power Shutoff		October 2018	Unknown
Wildfires	DR-4344-CA	October 8-31, 2017	Unknown
Tubbs Fire	FM-5220-CA	October 8, 2017	Unknown
Severe Winter Storms Flooding	DR-4308-CA	February 1-23, 2017	Unknown
Severe Winter Storms Flooding	DRE-4301-CA	January 3-12, 2017	Unknown
Valley Fire	DR-4240-CA	September 12-25, 2017	Unknown
South Napa Earthquake	DR-4193-CA	August 24, 2014	Unknown
Drought		2014-2016	Unknown
H1N1 Influenza		April/May 2009	Unknown
New Year's Floods	DR-1628-CA	December 31, 2005 – January 3, 2006	Unknown
Geysers Fire	FM-2554-CA	September 3 – 8, 2004	Unknown
Rio Nido Debris Flow	DR-1203-CA	February 2, 1998	Unknown
New Year's Flood	DR-1155-CA	December 28, 1996 – January 4, 1997	Unknown
Cavedale Fire		July 31 – August 20, 1996	Unknown
Freeze of 1991		December 1990 – February 1991	Unknown

Table 6-10. Hazard Risk Ranking

Rank	Hazard	Risk Rating Score	Risk Category
1	Earthquake	38	High
2	Wildfire	32	High
3	Landslide	30	High
4	Flood 100/yr.	18	Medium
5	Flood Awareness	18	Medium
6	Flood 500/yr.	16	Medium
7	Sea Level Rise All	9	Low
8	Dam Failure	16	Medium
9	Tsunami	0	Low

6.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Earthquake
- Wildfire
- Landslide

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

6.7 HAZARD MITIGATION ACTION PLAN

Table 6-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 6-12 identifies the priority for each action. Table 6-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 6-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action CLD-1—Where appropriate, work with community organizations, such as COPE, CERT, and homeowner associations, to identify and make usable safety zones and evacuation routes located in high fire hazard areas, prioritizing those that have experienced fire threat and/or are located in high fire severity zones.						
Hazards Mitigated:						
Existing	3, 4, 10	Cloverdale Fire Dist.	TBD	High	HMGP, PDM, FMA	Short-term
Action CLD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	All hazards					
New & Existing	1, 5, 8	Cloverdale Fire Dist.	TBD	Low	Staff Time, General Funds	Short-term
Action CLD-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including evacuation centers.						
Hazards Mitigated:	Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire					
Existing	2, 6, 9					
Action CLD-4—Participate in hazard fuel reduction projects based on the findings of the Sonoma County CWPP and along major transportation and evacuation corridors within the district.						
Hazards Mitigated:	Wildfire					
	1, 2, 3, 6, 7, 8	Cloverdale Fire Dist.	CalFire, Sonoma County, City of Cloverdale, Fire Safe Sonoma, Local Fire Safe Councils	Depends on complexity of projects	HMGP, PDM, Private Funding, Private Grants	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 6-12. 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]
CLD-1	3	High	High	Yes	Yes	No	High	High
CLD-2	3	Medium	Low	Yes	No	No	Medium	Low
CLD-3	3	Medium	Medium	Yes	Yes	No	Medium	Medium
CLD-4	3	High	High	Yes	Yes	No	High	High

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

Table 6-13. 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								
Wildfire	2, 4	1, 2, 3, 4	1, 2	1, 2, 4	1, 2, 3	3	2	1, 2
Earthquake		2, 3	2		2, 3	2, 3		2
Landslide	2, 4	2, 3, 4	2	2, 4	2, 3	2, 3	2	
Medium-Risk Hazards								
Flood Dam Failure		2, 3	2	2	2, 3	2, 3	2	2
Low-Risk Hazards								
Sea Level Rise All Tsunami		2, 3	2	2	3	2, 3	2	2

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

6.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- **Cloverdale Fire District's Fire Records Management software**—Used to analyze incident data, apparatus and equipment resource data, occupancy and fire inspection data and history.
- **Technical data and values for fire apparatus and other infrastructure obtained from department records and vendor data—**Used as reference.
- **North County Fire MSR 2020—**Used as reference

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.
- **Area population census data**– Used as reference.
- **Community Wildfire Protection Plan (Sonoma County)**—Used as reference.
- **County of Sonoma GIS Website–** Used as reference.
- **Fire Safe Sonoma—**Used as reference.

7. North Sonoma Coast Fire Protection District

7.1 Local Hazard Mitigation Planning Team

Primary Point of Contact
Susie Gilley, Emergency Manager, TSRA
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The Sea Ranch, CA 95497
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e-mail Address: sgilley@tsra.org

Alternate Point of Contact
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The Sea Ranch, CA 95497
Telephone: 707-227-8918
e-mail Address: deankackley@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 7-1.

Table 7-1. Local Mitigation Planning Team Members

Name	Title
Malay Thaker	Firefighter/EMT NSCFPD
Chris Aitchison	Assistant Chief, NSCFPD
Chuck Breier	Captain, NSCFPD
Susie Gilley	Emergency Manager, TSRA
Dean Kackley	Administrator, Sea Ranch Fire Safe Council.
Bonnie Plakos	Chief, NSCFPD

7.2 Jurisdiction Profile

7.2.1 Overview

The North Sonoma Coast Fire Protection District (NSCFPD) was formed on April 1, 2016. Previously, fire protection in the Sea Ranch / Annapolis / Stewart's Point area was provided by the Sea Ranch Volunteer Fire Department, the Annapolis Volunteer Fire Department, and CAL FIRE. All funds supporting these operations were from property taxes, which were transferred to Sonoma County Service Area #40 (CSA40). CSA40 in turn contracted with The Sea Ranch Volunteer Fire Department, the Annapolis Volunteer Fire Department, and CAL FIRE to provide fire protection. The new district covers the areas previously served by The Sea Ranch and Annapolis Volunteer Fire Companies, with the continued support of CAL FIRE.

The highest density of population and structures within the district falls within the boundaries of The Sea Ranch Association (TSRA). TSRA and associated TSR Water Company provide facilities that are essential to the operations of NSCFPD. These include water service and hydrants throughout The Sea Ranch (TSR) as well as broadband communications for district facilities located in TSR.

TSRA provides various support for the Fire District including but not limited to administrative services, maintenance, and emergency management services.

The climate in the Fire District ranges from 4 1°F to 80 °F to 100 °F inland—east of Annapolis. is 41 – 80 degrees at the coast to 100 degrees to the east in Annapolis.

NSCFPD assumes responsibility for the adoption of this plan and will oversee its implementation. NSCFPD is a Fire Protection District, as defined and governed by California's Fire District Law of 1987. The NSCFPD has a five-member Board of Directors.

7.2.2 Service Area

North Sonoma Coast Fire Protection District is in the northwestern corner of Sonoma County. The boundaries extend from the Mendocino/Sonoma county line south to include The Sea Ranch with lots and homes from the ocean bluff, meadows, and forest to Stewart's Point to Timber Cove. East from The Sea Ranch to Annapolis and beyond to the border of the Northern Sonoma County Fire Protection District, a total of 172.4 square miles.

7.2.3 Assets

Table 7-2 summarizes the critical assets of the district and their value.

Table 7-2. Special Purpose District Assets

Asset	Value
Property	
0 acres	$0
Equipment	
Firefighting	$57,500
Personal Protective Gear	$105,360
Apparatus	$2,844,000
Generators	$3,000
SCBAs & Air compressor	$119,300
Rescue and Extrication Equipment	$12,000
Equipment : Medical Equipment: Office Equipment: Monitors Equipment: Communication Equipment	$18,500 $2,050 $8,500 $100,120
Total:	*$1,703,350*
Critical Facilities and Infrastructure	
The Sea Ranch North Fire Station	$1,695,200
Apparatus building at Annapolis Station No. 1	$250,000
Apparatus building at Annapolis Station No. 2	$15,000
Total:	*$1,743,600*

7.3 CURRENT TRENDS

According to the 2010 Census, as noted in Wikipedia, the population of the Fire District was reported as 1,305 and for The Sea Ranch and Annapolis as 401. Records from our Design department reflect that there are currently 1,776 single-family homes with an additional 45 units under the Burbank (HUD). The population varies seasonally seeing more people relocating here full time as opposed to vacationing here from all over the country and Europe.

Trends in construction are generally low for the Sea Ranch area until this year where we have seen an uptick of building with 20 open builds in progress or newly completed. Less than 10 of newly developed properties in the Annapolis area and no significant development planned anywhere in the District. Table 7-3 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 7-3. Recent and Expected Future Development Trends

Criterion	Response					
Are any areas targeted for development or major redevelopment in the next five years? • If yes, briefly describe, including whether any of the areas are in known hazard risk areas	Yes This would be development of single-family residences on existing land parcels within The Sea Ranch Community. Wildfire is our major concern here as well as earthquake and the possible ensuing of a Tsunami if the quake is large enough.					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?		2015	2016	2017	2018	2019
	Single Family	1	5	8	4	7
	Multi-Family	0	0	0	0	0
	Other (commercial, mixed-use, etc.)	0	0	0	0	0
	Total	1	5	8	4	7
Provide the number of new construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: none • Landslide: unknown • High Liquefaction Areas: unknown • Tsunami Inundation Area: Approx. 302 properties at a <50' elevation • Wildfire Risk Areas: 1,721 Several private residences or commercial agricultural properties have been developed in the last few years in the Annapolis area of the District. These are all in high wildfire risk areas.					
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.	There are an additional 435 lots left to build upon on The Sea Ranch.					

7.4 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 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 7-4.
- An assessment of fiscal capabilities is presented in Table 7-5.
- An assessment of administrative and technical capabilities is presented in Table 7-6.
- An assessment of education and outreach capabilities is presented in Table 7-7.
- Classifications under various community mitigation programs are presented in Table 7-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 7-9.

Table 7-4. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
California Building Code	N/A	Reviewed the State's 2020 code
California Fire Code	2019	
Sonoma County Fire Code	2019	District adopted by reference, and without change, the county fire code in March of 2020
Sonoma County Community Fire Protection Plan	N/A	Ongoing effort with Sonoma Co. Fire Safe Council (education purposes only)
The Sea Ranch Community Wildfire Protection Plan	2019	

Table 7-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes—by cooperating agency (NSCVFA*) funding
Authority to Levy Taxes for Specific Purposes	Yes—the district has the power to levy fees
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes
Other	Yes—by cooperating agency (NSCVFA*) funding

* North Sonoma Coast Volunteer Firefighter Association (NSCVFA) is a non-profit organization dedicated to the benefit of the district by raising funds for new apparatus, owning and maintaining the TSR North Fire Station, and making it available for the district's sole use.

Table 7-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	By arrangement with TSRA Design Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	By arrangement with TSRA Design Department
Planners or engineers with an understanding of natural hazards	Yes	By arrangement with TSRA Design and Facility & Resources Departments
Staff with training in benefit/cost analysis	No	
Surveyors	No	

Staff/Personnel Resource	Available?	Department/Agency/Position
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	By arrangement with TSRA Security
Grant writers	Yes	Fire Chief and Captains and by arrangement with Sea Ranch Fire Safe Council Administrator

Table 7-7. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	Yes, by arrangement with TSRA
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	Yes Both District and TSRA websites have dedicated emergency info web pages
Do you use social media for hazard mitigation education and outreach? • If yes, please briefly describe	Yes Opt-in notification via text and email from TSRA
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	Yes Sea Ranch Fire Safe Council, TSRA Design Committee, TSRA planning Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	Yes TSRA InfoAlerts, PRC 4291 code inspections, coastal fire and safety fair, educational materials at annual public events in Annapolis and TSR
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes • SoCo Alert • TSRA Emergency Messaging (for the TSR area) • One Call Now (for the Annapolis area)

Table 7-8. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	080541123	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	No		
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 7-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High
Comment: Understanding of the impact of increased fire risk to local community and forested areas	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: Ongoing monitoring of the Commons and forested lands at TSR, ongoing Fuels Management Program—dead and dying tree removal	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment:	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: By arrangement with TSRA Design Dept	
Participation in regional groups addressing climate risks	High
Comment: Active participation in County Fire Safe Council, Fire Chiefs Association	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: By arrangement with TSRA Design Dept	
Identified strategies for greenhouse gas mitigation efforts	Low
Comment:	
Identified strategies for adaptation to impacts	Low
Comment:	
Champions for climate action in local government departments	High
Comment: Active participation by community members in the Fire District Board of Directors decisions	
Political support for implementing climate change adaptation strategies	High
Comment:	
Financial resources devoted to climate change adaptation	Medium
Comment: New projects are in planning stages. Funding is not secured.	
Local authority over sectors likely to be negatively impacted	Medium
Comment:	
Public Capacity	
Local residents knowledge of and understanding of climate risk	High
Comment:	
Local residents support of adaptation efforts	Medium
Comment:	
Local residents' capacity to adapt to climate impacts	Medium
Comment:	
Local economy current capacity to adapt to climate impacts	Medium
Comment:	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment: Ongoing efforts by community groups to preserve and restore Coho Salmon habitat along the Gualala River.	

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.

7.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

7.5.1 Existing Integration

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

- **North Sonoma Coast Volunteer Firefighter Association**—Support organization for district, raises funds for district's expenditures on apparatus, equipment, and PPE, publishes district newsletter, sponsors community events.
- **Horicon School—**emergency evac zone for Annapolis area. Air medical evac landing zone. Venue for ongoing public education by the district for fire and hazard mitigation.
- **Coast Life Support District—**Local ALS ambulance service. Provides EMS education and training. Several district personnel are also part-time EMS providers with this EMS agency.
- **CalFire**—Schedule A fire captain performs fire safety inspections and participates in community events to provide fire safety education
- **General Mutual Aid**—with adjoining jurisdictions, assistance given with IT and radio programming tasks
- **Sea Ranch Community Wildfire Protection Plan—**North Sonoma Coast Fire Protection District participated in the creation of the Sea Ranch CWPP.

7.5.2 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:

- **NSCVFA**—Continue close cooperation for the use of the North Fire Station facilities and to raise funds for equipment and maintenance
- **Creation of a district-wide CWPP**—Current Community Wildfire Protection Plan covers TSR only. An opportunity exists to create a CWPP for the entire district, including Annapolis
- **County and state organizations**—Continue working with county emergency organizations and Fire Safe Council, as well as CalFire.

7.6 RISK ASSESSMENT

7.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 7-10 lists past occurrences of natural hazards for which specific damage was recorded in the North Sonoma Coast Fire Protection District. Other hazard events that broadly affected the entire planning area, including North Sonoma Coast Fire Protection District, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 7-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires	DR-4558-CA	August 14 – September 26, 2020	Unknown
Covid-19 Pandemic	DR-4482-CA	January 2020—Present	Unknown
PG&E Power Shutoff (PSPS)	N/A	October 2019	Unknown
Severe Weather	DR-4434-CA	February 24 – March 1, 2019	Unknown
Wildfire	DR-4344-CA	October 8 – 31, 2017	Unknown
Severe Weather	DR-4308-CA	February 1 – 23, 2017	Unknown
Severe Weather	DR-4301-CA	January 3 – 12, 2017	Unknown
H1N1 Influenza	N/A	April – May 2009	Unknown
Salt Point Fire	N/A	April 1, 2009	Unknown
New Year's Floods	DR-1628-CA	December 31, 2005 – Jan 3, 2006	Unknown
Yardarm Fire	N/A	July 11, 1997	Unknown

7.6.2 Hazard Risk Ranking

Table 7-11 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 7-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Wildfire	40	High
2	Earthquake	34	High
3	Landslide	30	Medium
4	Severe Weather	30	Medium
5	Drought	6	Low
6	Tsunami	5	Low
7	Flood	5	Low
8	Sea Level Rise	5	Low
9	Dam Failure	5	Low

7.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Wildfire
- Earthquake
- Landslide
- Severe Storm

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

7.7 HAZARD MITIGATION ACTION PLAN

Table 7-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 7-13 identifies the priority for each action. Table 7-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 7-12. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action NSC-1—Participate in hazardous fuel reduction projects based on the findings of the Sonoma County CWPP and along evacuation and medical response corridors within the NSCFPD.						
Hazards Mitigated: Wildfire						
Existing	1, 2, 4, 6, 11, 12	NSCFPD	CAL FIRE, Sonoma County, Fire Safe Sonoma, Local Fire Safe Councils	High	HMGP, PDM, Private Funding, Private Grants	Ongoing
Action NSC-2—Participate and Create CWPP for the Annapolis area of NSCFPD.						
Hazards Mitigated: Wildfire						
Existing	1, 4, 9	NSCFPD	Fire Safe Sonoma, Local Fire Safe Councils	Medium	Staff Time, General Funds	Short-term
Action NSC-3—-Retrofit, elevate, and/or relocate critical facilities located in hazard areas.						
Hazards Mitigated: Flood, Landslide, Earthquake, Severe Weather						
Existing	3, 6, 10	NSCFPD	None	High	HMGP, PDM, FMA, BRIC	Long-term
Action NSC-4—Improve drainage along Hwy 1 within the Fire District to prevent flooding during periods of severe weather and traffic incidents and soil erosion						
Hazards Mitigated: Flood, Landslide, Earthquake, Severe Weather						
Existing	2, 4, 10	NSCFPD	CalTrans	High	CalTrans	Short-Term
Action NSC-5—Improve road upgrade along South Branch Rd to allow access and egress during periods of severe weather or prolonged winter storms. Including such as elevating, grading, paving, and appropriate drainage in critical sections of road subject to becoming too muddy to drive on to facilitate year-round use for first responders.						
Hazards Mitigated: Flood, Landslide, Earthquake, Severe Weather						
Existing	3, 6, 9, 10	NSCFPD	TBD	High	HMGP, PDM, FMA, BRIC	Short-Term
Action NSC-6—Create a shaded fuel break between the east side of The Sea Ranch and Gualala Redwood Timber properties.						
Hazards Mitigated: Wildfire						
Existing	1, 2, 4, 6, 11, 12	NSCFPD	CAL FIRE, Sonoma County, Fire Safe Sonoma, Local Fire Safe Councils	High	HMGP, PDM, Private Funding, Private Grants	Short Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action NSC-7—Perform fuel reduction and clearing to create a 300' perimeter around the Moonraker Communications tower						
Hazards Mitigated: Wildfire						
Existing	3, 5, 6	NSCFPD	TSRA, CAL FIRE, Local Fire Safe Council	High	Sonoma County Veg Mgmt. Grant, CAL FIRE Grant, HMGP, BRIC	Short Term
Action NSC-8—Work with Sonoma County to mitigate repetitive landslides on Annapolis Rd—a primary access road for fire response						
Hazards Mitigated: Earthquake, Flood, Landslide						
Existing	1, 2, 3, 4	NSCFPD	Sonoma County Roads	High	TBD	Long Term
Action NSC-9—Removal of dead and dying trees and combustible vegetation on unstable banks of Annapolis Rd.						
Hazards Mitigated: Severe Weather, Wildfire, Landslide						
Existing	6	NSCFPD	Sonoma County Roads, CAL FIRE, Local Fire Safe Council	High	Sonoma County Veg Mgmt. Grant, CAL FIRE Grant, HMGP, BRIC	Long Term

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 7-13. 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]
NSC-1	6	High	High	Yes	Yes	No	Medium	High
NSC-2	3	Med	Med	Yes	Yes	Yes	Medium	Med
NSC-3	3	High	High	Yes	Yes	No	Medium	High
NSC-4	3	Med	Med	Yes	Yes	No	Medium	Med
NSC-5	4	Med	High	No	Yes	No	Low	Med
NSC-6	6	High	High	Yes	Yes	No	Medium	High
NSC-7	3	High	High	Yes	Yes	No	High	High
NSC-8	4	Med	High	No	Yes	No	Low	Med
NSC-9	1	Low	High	No	Yes	No	Low	Med

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

Table 7-14. 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								
Wildfire	NSC-2		NSC-2	NSC-1, 6, 7	NSC-1, 6, 7, 9			NSC-2
Earthquake		NSC-3, 5		NSC-4, 8	NSC-3, 4, 5, 8			
Medium-Risk Hazards								
Landslide		NSC-3, 5		NSC-4, 8	NSC-3, 8, 9			
Severe Weather		NSC-3, 5		NSC-9	NSC-3, 4, 5, 9			
Low-Risk Hazards								
Drought								
Tsunami								
Flood		NSC-3, 5		NSC-4, 8	NSC-3, 4, 5, 8			
Sea Level Rise								
Dam Failure								

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

7.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- NSCFPD's fire records management system (ImageTrend)
- 2016 Sonoma County Operational Area Hazard Mitigation Plan
- Association of Bay Area Governments (ABAG) Hazard Viewer

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.
- Community Wildfire Protection Plan (The Sea Ranch)—Used as reference.

8. NORTHERN SONOMA COUNTY FIRE PROTECTION DISTRICT

8.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Marshall Turbeville, Fire Chief
Post Office Box 217
Geyserville, CA 95441
Telephone: 707-857-4373
e-mail Address: mturbeville@nosocofire.com

Alternate Point of Contact
Anneke Turbeville, Administrative Manager
Post Office Box 217
Geyserville, CA 95441
Telephone: 707-857-4373
e-mail Address: aturbeville@nosocofire.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 8-1.

Table 8-1. Local Mitigation Planning Team Members

Name	Title
Marshall Turbeville	Fire Chief
Rob Stewart	Board Member
Scott Newman	Board Member
Anneke Turbeville	Administrative Manager

8.2 JURISDICTION PROFILE

8.2.1 Overview

The Northern Sonoma County Fire Protection District was formed in 2020 after the Geyserville Fire Protection District annexed the Knights Valley Volunteer Fire Company service area. The Geyserville Fire Protection District was formed in 1996 and was previously the Geyserville Volunteer Fire Company which dates back to 1910 which serves the community of Geyserville and surrounding area.

The Northern Sonoma County Fire Protection District is located in a Mediterranean climate with a rainy, cool season lasting from November through April and dry, warm conditions the remainder of the year. The District receives less amount of coastal influence (cool weather and occasional fog) than other portions of the county in elevations less than 1,000 feet. The average monthly high temperature is between 90 and 58 degrees with the average monthly low temperature between 52 and 36 degrees. Rainfall averages between 25 and 30 inches. Flooding and fire are becoming more common.

The Northern Sonoma County Fire Protection District is an independent special district with a five member Board of Directors. The Board position include a president, vice president, and treasurer.

The Northern Sonoma County Fire Protection District Board of Directors assumes responsibility for the adoption of this plan; The Fire Chief will oversee its implementation.

8.2.2 Service Area

The Northern Sonoma County Fire Protection District is a rural jurisdiction located between Healdsburg and Cloverdale in northern Sonoma County encompassing 273 square miles. In the east the District stretches from Mt. St. Helena where the Sonoma County line meets the Lake and Napa County Lines to West of Lake Sonoma where it meets the Mendocino County Line. The District encompasses the Dry Creek Valley, Alexander Valley, Knights Valley, and Franz Valley. The District provides services to Lake Sonoma, which provides water to 600,000 residents in Sonoma and Marin County, and covers a majority of the upper portion of the Russian River that is located in Sonoma County.

8.2.3 Assets

Table 8-2 summarizes the assets of the District and their value.

Table 8-2. Special Purpose District Assets

Asset	Value
Property	
Geyserville Fire Station (Headquarters), 20975 Geyserville Ave, Geyserville Land—1.02 acres	$510,000
Alexander Valley Fire Station, 6571 Highway 128, Healdsburg Land—0.569 acres on easement	$170,700
Dry Creek Valley Fire Station, 3697 Highway 128, Healdsburg Land—0.25 acres (estimated) on easement	$75,000
Total Property Value	$755,700
Equipment	
UTV Trailer 14' Versatile Flatbed 2021	$10,000
UTV Honda 2021	$25,000
Yellow Chipper Vermeer BC 1000XL 2021	$50,000
6144 Chevrolet Silverado 2020	$50,000
6100 Chevrolet Silverado 2020	$60,000
6159 Multiquip 525 Gal Water Trailer 2020	$10,000
6140 Ford F-250 2019	$70,000
6156 Ford F-550 2019	$200,000
6181 Spartan Metro Star 2019	$900,000
Red Chipper Vermeer BC1000XL 2018	$50,000
6141 Ford X5G9 2016	$350,000
6143 Ford F-150 2013	$40,000
6131 Ford Chassis 2009	$225,000
6182 Westates Type I 2004	$800,000
6275 Ford F-550 2003	$150,000

Asset	Value
Support H-H Trailer 2002	$30,000
6171 International 4900 Type II/III Pumper 1998	$600,000
6142 Ford F-450	$60,000
6172 International 4900 Type II/III Pumper 1996	$600,000
6173 International 4900 Type II/III Pumper 1996	$600,000
6265 International 4000 Series	$600,000
6192 Volvo Tanker 1984	$500,000
6295 Ford 1750 Gallon Water Tender 1978	$400,000
Kitchen Trailer 1960	$20,000
Total:	$6,400,000
Critical Facilities and Infrastructure	
Geyserville Fire Station (Headquarters), 20975 Geyserville Ave, Geyserville Building 12,500 sq. ft.	$15,000,000
Geyserville Fire Station Training Tower, 20975 Geyserville Ave, Geyserville Building 1,280 sq. ft.	$500,000
Geyserville Fire Station Shop, 20975 Geyserville Ave, Geyserville Building 640 sq. ft.	$20,000
Alexander Valley Fire Station, 6571 Highway 128, Healdsburg Building 2,400 sq. ft.	$2,000,000
Dry Creek Valley Fire Station, 3697 Highway 128, Healdsburg Building 630 sq. ft.	$750,000
Total:	*$* 18,270,000

8.3 CURRENT TRENDS

Population has remained consistently due to lack of significant increase in housing. Population is estimated around 6,000 residents. The population can fluctuate due to recreation, tourism, seasonal agriculture, and occupancy of vacation rentals and second homes.

The Northern Sonoma County Fire Protection District encompasses a large area of rural undeveloped lands. Residential, commercial, mixed use and agriculture land exist throughout the District with most structures being along US Highway 101, CA Highway 128, and in the Dry Creek Valley. Development in Geyserville is limited by water and sewer connections.

8.4 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 8-3.
- An assessment of fiscal capabilities is presented in Table 8-4.
- An assessment of administrative and technical capabilities is presented in Table 8-5.
- An assessment of education and outreach capabilities is presented in Table 8-6.
- Classifications under various community mitigation programs are presented in Table 8-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 8-8.

Table 8-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Chapter 13A—Duty to Maintain Defensible Space and Abate Hazardous Vegetation and Combustible Material	12/02/2019	County Ordinance to provide for increased requirements for property owners to maintain vegetation and defensible space with the intention of reducing the risk of wildfire.
Northern Sonoma County Citizens Organized to Prepare for Emergencies (COPE)		The Northern Sonoma County Fire Protection District has worked with residents to form community groups based upon neighbor helping neighbor to prepare for emergencies with the primary focus on wildfires.
Sonoma County Community Wildfire Protection Plan (CWPP)	In process	The 2016 CWPP is being updated with scheduled completion in 2022. The goal of the CWPP is to enhance efforts to protect communities and other at-risk lands from catastrophic wildfire. A CWPP is not a regulatory document, but provides wildfire hazard and risk assessments, community descriptions, options for addressing issues of structural vulnerability to wildfire, and provides a prioritized list of projects which, if implemented, can serve to reduce wildfire hazards.
DRAFT Northeast Geyserville Community Wildfire Protection Plan (CWPP)	In process	

Table 8-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Assorted non State and Federal Grants	Yes
Non Profit Fundraising	Yes
Fee for Provided Services	Yes

Table 8-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/ Agency/Position
Planners or engineers with knowledge of land development and land management practices	No	NA
Engineers or professionals trained in building or infrastructure construction practices	No	NA
Planners or engineers with an understanding of natural hazards	No	NA
Staff with training in benefit/cost analysis	No	NA
Surveyors	No	NA
Personnel skilled or trained in GIS applications	No	NA
Scientist familiar with natural hazards in local area	No	NA
Emergency manager	No	NA
Grant writers	Yes	Fire Chief
Other	NA	NA

Table 8-6. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes but we also contract for services
Do you have hazard mitigation information available on your website?	Yes
Do you use social media for hazard mitigation education and outreach?	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, briefly describe:* COPE	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:* Via the Sonoma County Department of Emergency Management	Yes

Table 8-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	**364457812**	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	No		
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 8-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	High
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negative impacted *Comment:*	Low
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	Medium
Local residents support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Medium
Local economy current capacity to adapt to climate impacts *Comment:*	Low
Local ecosystems capacity to adapt to climate impacts *Comment:*	Low

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.

8.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

8.5.1 Existing Integration

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

- Wildland Vegetation Management Program including a "fuels crew" which is performing vegetation management and modification to reduce the intensity of future fires.
- Implementation of prescribed burning with a focus on burning near structures.
- Defensible Space Inspections and Assessments to increase awareness, educate, and abate regarding vegetation management around structures and along roads.
- Wildland pre-attack maps to assist with effective evacuations, structure defense, and wildfire perimeter control.
- Community meetings and educational videos to increase awareness for prevention and preparedness.

8.5.2 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:

- Building life safety inspections to reduce structure fires and prevent the loss of life.
- Increase coordination with US Army Corps for potential dam failure and associated response plan for the Warm Springs Dam.
- Expand the Lower Russian River Flood plan to the remaining portions of the Russian River in Sonoma County.
- Develop and implement FIREWISE USA (and/or CWPP) projects including vegetation management fuel reduction projects.
- Fire impact fees

8.6 RISK ASSESSMENT

8.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 8-9 lists past occurrences of natural hazards for which specific damage was recorded in the Northern Sonoma County Fire Protection District.

Table 8-9. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires	DR-4558-CA	8/14-9/26, 2020	Not available
Covid-19 Pandemic	DR-4442-CA	1/20, 2020 – Present	Not available
Kincade Fire	FM-5295-CA	10/23-11/07, 2019	Not available
PG&E Power Shutoff	N/A	October 2019	Not available
Severe Winter Storms Flooding	DR-4434-CA	2/24-3/01, 2019	Not available
PG&E Power Shutoff	N/A	October 2018	Not available
Wildfires	DR-4344-CA	10/08-31, 2017	Not available
Severe Winter Storms Flooding	DR-4308-CA	2/01-23, 2017	Not available
Severe Winter Storms Flooding	DRE-4301-CA	1/03-12, 2017	Not available
Valley Fire	DR-4240-CA	9/12-25, 2017	Not available
Drought	N/A	2014-2016	Not available
H1N1 Influenza	N/A	April/May 2009	Not available
New Year's Floods	DR-1628-CA	12/31, 2005 – 1/03, 2006	Not available
Geysers Fire	FM-2554-CA	9/03-08, 2004	Not available
New Year's Flood	DR-1155-CA	12/28, 1996 – 1/04, 1997	Not available
Freeze of 1991	N/A	Dec 1990 – Feb.1991	Not available

8.6.2 Hazard Risk Ranking

Table 8-10 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 8-10. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	38	High
2	Wildfire	32	High
3	Landslide	30	Medium
4	Flood 100/yr.	18	Medium
5	Flood Awareness	18	Medium
6	Flood 500/yr.	16	Medium
7	Sea Level Rise All	9	Low
8	Dam Failure	6	Low
9	Tsunami	0	Low

8.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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: earthquake; wildfire; landslide.

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

8.7 HAZARD MITIGATION ACTION PLAN

Table 8-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 8-12 identifies the priority for each action. Table 8-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 8-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action SCN-1—Provide earthquake, wildfire, and flooding retrofitting for hardening and to build resilience to critical infrastructure (fire stations and District buildings).						
Hazards Mitigated: Earthquake, wildfire, flooding						
Existing	1, 2, 4	Fire District		Unknown	FEMA Grants, BRIC	Ongoing
Action SCN-2—Develop water supply accessibility including pipelines and water storage tanks in outlying and rural areas						
Hazards Mitigated: Wildfire						
Existing	2	Fire District	CA Water	$15,000/ea	Grants, donations	Ongoing
Action SCN-3—Plan and implement vegetation management and fuel reduction projects.						
Hazards Mitigated: Wildfire						
Existing	2	Fire District	County fire agencies	Variable	Grants, donations, General funds	Ongoing
Action SCN-4—Participation in regional groups addressing climate risks.						
Hazards Mitigated: All						
New & Existing	All	Co of Sonoma	Fire District	Low	None needed	Short
Action SCN-5—Partner and support the County of Sonoma in increasing awareness and preparedness for all hazards						
Hazards Mitigated: All						
New & Existing	All	Co of Sonoma	Fire District	Low	None needed	Short
Action SCN-6—Adopt building and fire code; perform comprehensive building life safety inspections						
Hazards Mitigated: All						
New & Existing	All	Fire District	Sonoma County	$150,000/yr	Grant, General funds	Short
Action SCN-7—Upgrade Emergency Medical Services from Basic Life Support to Advanced Life Support						
Hazards Mitigated: All						
New & Existing	All	Fire District	Various	$1 million/yr	Grants, General funds	Long
Action SCN-8—Develop a community based risk reduction program (Neighbors helping neighbors)						
Hazards Mitigated: All						
New & Existing	All	Fire District	Community Groups	Low	Grants, General funds	Ongoing
Action SCN-9—Partner with US Army Corps of Engineers for to develop dam failure planning and response protocols and procedures and alerting procedures						
Hazards Mitigated: Dam failure						
New & Existing	6	US Army Corps	Co of Sonoma, Fire District	Low	Grants, US Army Corps	Long

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 8-12. 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]
SCN-1	3	High	High	Yes	Yes	Partially	High	High
SCN-2	1	High	Low	Yes	Yes	Partially	High	High
SCN-3	1	High	High	Yes	Yes	Partially	High	High
SCN-4	9	Medium	Low	Yes	TBD	Yes	Medium	Low
SCN-5	9	Medium	Low	Yes	TBD	Yes	Medium	Low
SCN-6	9	Medium	Medium	Yes	Yes	Partially	Medium	Medium
SCN-7	9	Medium	Medium	Yes	Yes	No	Medium	Medium
SCN-8	9	High	Low	Yes	Yes	Yes	High	High
SCN-9	1	High	Low	Yes	TBD	Yes	Medium	Medium

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

Table 8-13. 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	5, 8	1, 5, 6, 8	5, 8	5, 8	1, 5	1	1, 8	5, 8
Wildfire	3, 5, 8	1, 2, 3, 5, 8	5, 8	2, 3, 5, 8	1, 2, 3	1, 2, 3	1, 3, 8	5, 8
Landslide	4, 5, 8	4, 5, 8	4, 5, 8				4, 5, 8	4, 5, 8
Flood	4, 5, 8	1, 4, 5, 8	4, 5, 8		1	1	1, 4, 5, 8	4, 5, 8
Sea Level Rise	4, 5, 8	4, 5, 8	4, 5, 8				4, 5, 8	4, 5, 8
Dam Failure	5, 8, 9	5, 8, 9	5, 8, 9				5, 9	5
Tsunami	5, 8	5, 8	5, 8				5	5

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

8.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- 2016 Sonoma County Hazard Mitigation Plan
- Sonoma County Hazard Mapping Tool
- 2016 Sonoma County Community Wildfire Protection Plan
- Sonoma County Community Wildfire Protection Plan Hub Site (online maps)
- Draft Northeast Geyserville, and Franz and Knights Valley Community Wildfire Protection Plans
- CAL FIRE Fire Hazard Severity Zones

9. RANCHO ADOBE FIRE PROTECTION DISTRICT

9.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Andy Taylor, Battalion Chief
11000 Main St.
Penngrove, CA 94951
Telephone: 707 795-6011
e-mail Address: ataylor@rafd.org

Alternate Point of Contact
Tim Caldwell, Fire Captain
11000 Main St.
Penngrove, CA 94951
Telephone: 707 795-6011
e-mail Address: tcaldwell@rafd.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 9-1.

Table 9-1. Local Mitigation Planning Team Members

Name	Title
Andy Taylor	Battalion Chief / Fire Marshal
Tim Caldwell	Fire Captain

9.2 JURISDICTION PROFILE

9.2.1 Overview

The District was formed in 1993 through the consolidation of the Cotati and the Penngrove Fire Protection Districts.

The climate of Rancho Adobe Fire Protection District is similar to the County of Sonoma. Petaluma has a mild Mediterranean climate. Its dry summer is characterized by typically warm days and cool nights with a large degree of diurnal temperature variation. Summer mornings often start out foggy and chilly, but the fog usually clears by midday or so, giving way to clear skies and warmth for the remainder of the day. August is usually the warmest month, with average daily temperatures ranging from 82 °F (28 °C) to 53 °F (12 °C). December is usually the coldest month, with average daily temperatures ranging from 57 °F (14 °C) to 39 °F (4 °C). Winter is cool and rainy, with frost occasionally occurring on clear nights.

The Rancho Adobe Fire Protection District Board of Directors assumes responsibility for the adoption of this plan; the Fire Chief will oversee its implementation.

9.2.2 Service Area

The Rancho Adobe Fire Protection District encompasses approximately 86 square miles located just east of the cities of Rohnert Park and Petaluma. Its service area includes the City of Cotati, Sonoma State University, and the unincorporated communities of Penngrove and Canon Manor.

9.2.3 Assets

Table 9-2 summarizes the assets of the District and their value.

Table 9-2. Special Purpose District Assets

Asset	Value
Property	
5 acres of land	$1,750,000
Equipment	
Three Type I Fire Engines_	$2,000,000
Three Type III Fire Engines_	$1,750,000
Type II Fire Engine	$300,000
Two 2200 Gallon Water Tenders	$400,000
Type VI	$150,000
Two Command Vehicles	$120,000
Utility Vehicle	$20,000
Total:	*$4,813,000*
Critical Facilities and Infrastructure	
Fire Station #1 1 E. Cotati Ave, Cotati	$2,000,000
Fire Station #2 11000 Main St., Penngrove	$1,500,000
Fire Station #3 99 Liberty Rd, Petaluma	$2,000,000
Total:	*$5,500,000*

9.3 CURRENT TRENDS

According to U.S. Census Bureau, the population of City of Cotati as of October 2020 was 7,619 Since 2010, the population has grown at an average annual rate of 0.13 percent. Penngrove is a census-designated place in Sonoma County, California, United States, situated between the cities of Petaluma and Cotati, at the foot of the western flank of Sonoma Mountain. It is part of the North Bay sub region of the San Francisco Bay Area. The population was 2,522 at the 2010. Petaluma is a city in Sonoma County, part of the North Bay sub-region of the San Francisco Bay Area, located 37 mi north of San Francisco. Its population was 61,917 according to the 2018 Census. The Rancho Petaluma Adobe, located in Petaluma, is a National Historic Landmark.

Development in the District is residential with light commercial.

9.4 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 9-3.
- An assessment of fiscal capabilities is presented in Table 9-4.
- An assessment of administrative and technical capabilities is presented in Table 9-5.
- An assessment of education and outreach capabilities is presented in Table 9-6.
- Classifications under various community mitigation programs are presented in Table 9-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 9-8.

Table 9-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
California Fire Code	2019	
California Building Code	2019	
Fire Safe Sonoma Plan	2019	
American Disabilities ACT	2019	
Sonoma County Emergency Operations Plan	2018	

Table 9-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes
Other	N/A

Table 9-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	City of Cotati County of Sonoma
Engineers or professionals trained in building or infrastructure construction practices	Yes	City of Cotati County of Sonoma
Planners or engineers with an understanding of natural hazards	Yes	City of Cotati County of Sonoma
Staff with training in benefit/cost analysis	Yes	City of Cotati County of Sonoma
Surveyors	Yes	County of Sonoma
Personnel skilled or trained in GIS applications	Yes	Rancho Adobe Fire Protection District/ Command Staff
Scientist familiar with natural hazards in local area	No	
Emergency manager	No	Insert appropriate information
Grant writers	Yes	Rancho Adobe FPD personnel assigned as collateral duty
Other Fire Prevention/ hazard mitigation	Yes	Rancho Adobe FPD Fire Marshall

Table 9-6. Education and Outreach

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? *If yes, please briefly describe*	Yes Social Media utilized to notify public of ongoing or anticipated incidents, hazards, etc. Also used for public outreach and education
Do you use social media for hazard mitigation education and outreach? *If yes, please briefly describe*	Yes Social Media utilized to notify public of ongoing or anticipated incidents, hazards, etc. Also used for public outreach and education
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, please briefly specify*	Yes Rancho Adobe Fire Protection District Board of Directors is an elected body of citizens chosen to oversee the management of the district.
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, please briefly describe*	Yes Rancho Adobe FPD maintains an active community education program, teaching citizens of all ages, topics ranging from fire safety to the community disaster preparedness.
Do you have any established warning systems for hazard events? *If yes, please briefly describe*	Yes Through our county dispatch center (REDCOM) Cotati P.D. and Sonoma State University P.D. we have the ability to use reverse 9-1-1 system to send broadcast emergency messages/warnings to the public and traditional media for the same.

Table 9-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	837792522	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A
Tsunami Ready	N/A	N/A	N/A

Table 9-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negative impacted *Comment:*	Low

Criterion	Jurisdiction Rating[a]
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	Low
Local residents support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Low
Local economy current capacity to adapt to climate impacts *Comment:*	Low
Local ecosystems capacity to adapt to climate impacts *Comment:*	Low

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.

9.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

9.5.1 Existing Integration

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

- Implementation of Basic Life Support Services—Rancho Adobe Fire Protection District through a JPA with Petaluma Fire Dept., provides part time BLS support and transport throughout the district. The district is looking into Advanced Life Support services in the future through the JPA.
- Citizens Organized to Prepare For Emergencies (COPE) Rancho Adobe Fire Protection District, through the JPA with Petaluma Fire Dept. and the Red Cross train and maintains a citizen volunteer COPE team.
- Continuance of Community Risk Reduction Program—Rancho Adobe Fire Protection District, maintains a fire prevention/community risk reduction programs ranging from building inspections, construction plan review, community education, and other activities.
- Departmental Social Media (Next Door, Twitter, Facebook, Instagram, District Website) Publishes information to educate and inform the public on a wide variety of topics that include fire safety and disaster preparation.
- Continue to participate in general mutual aid agreements with adjoining jurisdictions and statewide—Rancho Adobe Fire Protection District participates in various mutual and automatic aid agreements with neighboring fire districts as well as is an active participant in the statewide mutual system, especially during wildfire season.

9.5.2 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:

- Continue to pursue grant funding opportunities for updating facilities and equipment.
- Expand our Community Risk Reduction division in personnel and capability.
- Help further develop, train, and build relationships with both county and city EOCs
- Conduct on going risk assessments for the Rancho Adobe Fire Protection District and the ability to focus on key risk factors identified therein.

9.6 RISK ASSESSMENT

9.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 9-9 lists past occurrences of natural hazards for which specific damage was recorded in Sonoma County, Ca. Other hazard events that broadly affected the entire planning area, including the Rancho Adobe Fire Protection District are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 9-9. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires		September 4 – November 17, 2020	Unknown
Wildfires		August 14 – September 26, 2020	Unknown
Covid-19 Pandemic		January 2020 – Present	Unknown
PG&E power shut off (PSPS)		October 2019	Unknown
Kincaid Fire		October 23 – November 7, 2019	Unknown
Severe Winter Storms, Flooding		February 24 – March 2019	Unknown
PG&E power shut off		October 2018	Unknown
LNU Complex		October 2017	Unknown
Severe Winter Storms, Flooding		February 1 – 23, 2017	Unknown
Severe Winter Storms, Flooding		January 3 – 12, 2017	Unknown
Drought		2014 – 2016	Unknown
Valley Fire		September 12-25, 2015	Unknown
Dec. winter storms		December 11-12, 2014	Unknown
Geysers Fire		September 3 – 8, 2004	Unknown
Rainesville Fire		2003	Unknown

9.6.2 Hazard Risk Ranking

Table 9-10 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 9-10. Hazard Risk Ranking

Rank	Hazard	Risk Rating Score	Risk Category
1	Earthquake	39	High
2	Wildfire	32	High
3	Severe Weather	30	Medium
4	Flooding	18	Medium
5	Landslide	18	Medium
6	Dam Failure	12	Low
7	Drought	6	Low
8	See Level Rise	0	Low
9	Tsunami	0	Low

9.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Wildfire—A large portion of the fire district is in WUI which has had a significant increase of destructive fires that have burned into the communities in the last 5 years.
- Flooding—The communities of Penngrove, Cotati, and unincorporated have a history of localized flooding along the flood plain of the Laguna de Santa Rosa (river).

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

9.7 HAZARD MITIGATION ACTION PLAN

Table 9-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 9-12 identifies the priority for each action. Table 9-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 9-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action RAF-1—Where appropriate, retrofit, 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.						
Hazards Mitigated:	Earthquake, flooding, landslide, tsunami, wildfire					
New	1, 2, 3, 4, 5	RAF		High	General Fund	Short-term
Action RAF-2—Secure funding to study localized Flood Reduction Programs						
Hazards Mitigated:	Flood, severe weather					
New	3, 4	RAF		Medium	Grant Funding	Short-term
Action RAF-3—Purchase stationary generators for critical facilities and infrastructure that lack adequate backup power and upgrading electrical Facility wiring.						
Hazards Mitigated:	Earthquake, flooding, landslide, severe weather, tsunami, wildfire					
Existing	1, 2, 3, 4, 5, 9, 10	RAF		High	Staff Time, General Funds, Grant Funding	Short-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action RAF-4—Develop and implement fuel reduction and vegetation management prevention program						
Hazards Mitigated: Wildfire, climate change, drought						
Existing	2, 6	RAF		Medium	Staff Time, General Funds	Long Term
Action RAF-5—Participate in county wildfire prevention and community outreach programs						
Hazards Mitigated: Wildfire, drought						
New	2, 6	RAF		Low	Staff Time, General Funds	Long Term
Action RAF-6—Integrate the hazard mitigation plan into other plans, ordinances and programs						
Hazards Mitigated: Earthquake, flooding, landslide, severe weather, tsunami, wildfire, drought						
new		RAF		Low	Staff Time	Long Term
Action RAF-7—Establish a fuel management program and staff augmentation to mitigate wildfire hazards						
Hazards Mitigated: Wildfire						
New	1, 2, 3, 4, 5, 9	RAF		Medium	Staff Time, General Funds, Grant Funding	Short Term
Action RAF-8—Designate and improve emergency evacuation routes and fire access roads in high risk areas.						
Hazards Mitigated: Wildfire, earthquake, flooding						
New & Existing	2, 6	RAF		Low	Grant Funding	Long Term
Action RAF-9—Develop water supply accessibility including pipelines and water storage tanks in outlying and rural areas						
Hazards Mitigated: Wildfire						
New & Existing	2	RAF	Water agencies	Medium	TBD	Short term

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 9-12. 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]
1	5	High	High	Yes	Yes	Yes	Medium	Low
2	2	Low	Medium	Yes	Yes	Yes	Medium	Low
3	6	High	High	Yes	Yes	No	High	High
4	2	Medium	Medium	Yes	Yes	Yes	High	High
5	2	Low	Low	Yes	Yes	Yes	High	High
6	6	High	Low	Yes	Unknown	Yes	High	High
7	6	High	Medium	Yes	Unknown	Yes	High	High
8	2	Medium	Low	Yes	Yes	Yes	High	High
9	2	High	Medium	Yes	Yes	Yes	High	High

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

Table 9-13. 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, 3, 6, 9	1, 3, 6	5, 6, 9	1, 3, 6	3, 6, 9	1, 3	1	1, 6
Wildfire	1, 3, 4, 5, 6, 7, 8, 9	4, 5, 6, 7	5, 6, 9	4, 7, 8	1, 3, 4, 5, 6, 7, 8, 9	1, 3	1	1, 6
Medium-Risk Hazards								
Severe Weather	1, 3, 6, 9	1, 2, 3, 6, 9	5, 6	1, 3, 6	1, 3, 6, 9	1, 3	1	1, 6
Flooding	1, 3, 6, 9	1, 3, 6, 9	5, 6	1, 3, 6	1, 3, 6, 9	1, 3	1	1, 6
Landslide	1, 3, 6, 9	1, 3, 6, 9	5, 6	1, 3, 6	1, 3, 6, 9	1, 3		
Low-Risk Hazards								
Dam Failure	1, 3, 6, 9	1, 3, 6, 9	5, 6	1, 3, 6	1, 3, 6, 9	1, 3		
Drought	1, 3, 6, 9	1, 3, 6, 9	5, 6	1, 3, 6	1, 3, 6, 9	1, 3		
Sea Level Rise /Tsunami	1, 3, 6, 9	6, 9	6, 9	1, 3, 6	1, 3, 6, 9	1, 3		1, 6

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

9.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- 2016 Sonoma County Hazard Mitigation Plan
- Sonoma County Hazard Mapping Tool
- 2016 Sonoma County Community Wildfire Protection Plan
- Sonoma County Community Wildfire Protection Plan Hub Site (online maps)
- CAL FIRE—Fire Hazard Severity Zones

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.
- 2016 Sonoma County Hazard Mitigation Plan

10. SONOMA VALLEY FIRE DISTRICT

10.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Trevor Smith, Fire Marshal
630 2nd St W
Sonoma, CA 95476
Telephone: 707-996-2102
e-mail Address: trevors@svfra.org

Alternate Point of Contact
Steve Akre, Fire Chief
630 2nd St W
Sonoma, CA 95476
Telephone: 707-996-2102
e-mail Address: stevea@svfra.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 10-1.

Table 10-1. Local Hazard Mitigation Planning Team Members

Name	Title
Steve Akre	Fire Chief
Trevor Smith	Fire Marshal

10.2 JURISDICTION PROFILE

10.2.1 Overview

The Sonoma Valley Fire District (SVFD) is a newly formed special district created when the Valley of the Moon Fire District, Glen Ellen Fire Protection District and the Mayacamas Volunteer Fire Company joined as one to create the new district effective July 1, 2020. This new district also provides fire and emergency medical services under contract to the incorporated City of Sonoma.

The climate of the Sonoma Valley Fire District is heavily influenced by its close proximity to nearly 60 miles of Pacific Coast shoreline, and its cool nights and temperate days create the perfect conditions to draw in layers of oceanic fog to chill Sonoma's warm interior valleys. Daytime temperatures average a comfortable 71˚F, with the warmest summer days rarely topping 84˚F. Nighttime temperatures stay mostly in the 40s, meaning hard frosts are a rarity, even during critical flowering time for grapes. At the start of fall harvest, the weather remains moderate with little to no rainfall. Sonoma County experiences no measurable snow or hail and normal rainfall measures between 25 and 30 inches a year.

The Sonoma Valley Fire District Board of Directors made up of seven elected board members, a president, vice president, treasurer and four directors.

The Sonoma Valley Fire District Board of Directors assumes responsibility for the adoption of this plan; the Sonoma Valley Fire District will oversee its implementation.

10.2.2 Service Area

The Sonoma Valley Fire District is located within the Sonoma Valley.

The current boundaries generally extend from Leveroni Rd to the North to the southern border of Kenwood Community between the Sonoma mountain range to the Mayacamas mountain range. The Sonoma Valley Fire District encompasses a large area of lands including residential, commercial, mixed use and agriculture land in unincorporated Sonoma County lands. We also provide service to the incorporated City of Sonoma.

According to the 2019 Sonoma County Economic Development Board City Profile And Projections Report, the population of the City of Sonoma as of December of 2019 is estimated to be 11,253, an average annual population growth rate of 0.65% percent. While we are unable to find Census tract data to determine exact populations for the Sonoma Valley Fire District, we estimate that in addition to the City's population, we serve an additional 37,000 residents within the Fire District.

10.2.3 Assets

Table 10-2 summarizes the assets of the District and their value.

Table 10-2. Special Purpose District Assets

Asset	Value
Property	
Fire Station #1 and Headquarters, 630 Second Street West, Sonoma Land—1.5 Acres $300,000 per acre	$450,000
Fire Station #2, 877 Center Street, Sonoma Land—0.75 Acres $300,000 per acre	$225,000
Fire Station #3, 1 West Agua Caliente Road, Sonoma Land—0.9 Acres $300,000 per acre	$270,000
Fire Station #4, 18798 Prospect Avenue, Sonoma Land—0.5 Acres $300,000 per acre	$150,000
Fire Station #5, 13445 Arnold Drive, Glen Elen Land—0.7 Acres $300,000 per acre	$210,000
Fire Station #6, 7301 Sonoma Mountain Road, Glen Ellen Land Lease	$0.00
Fire Station #8, 3252 Trinity Road, Glen Ellen Land—0.5 Acres $300,000 per acre	$150,000
Fire Station #9, 4501 Cavedale Road, Glen Ellen Land—0.5 Acres $300,000 per acre	$150,000
Vacant Land APN 128-301-029 Arnold Dr @ Leveroni Rd (20600 Arnold Dr) Land—1 Acres $300,000 per acre	$300,000
Total Property Value	$1,905,000.00
Equipment	
BC33 Command Vehicle Chevrolet Tahoe SUV 2020	$65,000
DC33 Command Vehicle Chev 4x4 2012	$50,000
3300 U-12 Command Vehicle Chevy Tahoe 2016	$67,000
3340 U-14 Shop Service Truck Chev Utility Body 2018	$77,000
3314 U-10 Command Vehicle Chevy Silverado 4x4 2012	$50,000
3320 U-11 Command Vehicle 4X4 Pickup 2012	$60,750
3330 R-33 Medium Rescue International 2010	$250,000

Asset	Value
3335 GE-R-1 Command Vehicle GMC 2003	$28,250
3340 Utility Vehicle GMC 2001	$50,000
U-8 Utility Vehicle Highlander Hybrid SUV 2008	$50,000
3341 U-4 Utility Vehicle GMC 2001	$50,000
3342 U-13 Command Vehicle Chev 4x4 2018	$60,000
3343 U-5 Utility Vehicle GMC 2001	$50,000
3344 U-6 Utility Vehicle Jeep SUV 2001	$50,000
3345 GE-U-3 Utility Vehicle Chevrolet 2018	$77,000
3346 U-9 Utility Vehicle Chevy Tahoe 4x4 2008	$50,000
3347 GE-U-2 Utility Vehicle GMC 2007	$44,500
3348 Ford F-350 Utility 2003	$60,000
3351 Trk-2 Ladder Truck Smeal 105' RM Aerial 2010	$1,000,000
3357 GE-E-4 Type 6 Engine Ford/Skeeter 4x4 2019	$300,000
3388 MYC-E-4 Type 2 Engine F-550 crew cab XLT 4x4 2020	$300,000
3359 Ford 550 Type 6 Engine 2013	$200,000
3361 E-7 Type 3 Engine KME 2014	$400,000
3362 E-10 Type 3 Engine HME 2017	$445,000
3375 GE-E-3 Type 3 Engine International 7400 2003	$400,000
3376 GE-E-2 Type 3 Engine International 2002	$400,000
OES-319 (2101) Type 1 Engine HME Westates2005	Owned by State of CA
3381 E-8 Type 1 Engine Rosenbauer 2015	$745,000
3382 E-9 Type 1 Engine Rosenbauer 2015	$745,000
3383 E-3 Type 1 Engine Pierce 2001	$490,000
3385 GE-E-1 Type 1 Engine HME 2001	$257,500
E-11 Type 1 Engine Pierce Dash 1999	$257,500
3388 Type 1 Engine International 4900 1989	$257,500
3392 WT-2 Water Tender Kenworth Bluegrass 2009	$300,000
3395 GE-WT-1 Water Tender International 2006	$300,000
3398 Water Tender International 9200 2005	$300,000
301 A-12 Ambulance Type III E-450 Leader 2019	$275,000
302 A-9 Ambulance Type III Ford E-350 Leader 2010	$222,500
303 A-11 Ambulance Type III Ford 2016	$275,000
304 A-10 Ambulance Type III Ford E-450 Leader 2013	$222,500
305 A-3 Ambulance Type III Ford E-350 Lifeline 2004	$222,500
306 A-1 Ambulance Type III Ford E-350 Lifeline 2003	$222,500
UTV-33 U-15 Polaris Ranger XP 1000 2019	$20,000
GE-T-1 Trailer Interstate 2017 $10,000 $0	$10,000
GE-T-3 Animal Rescue Trailer (enclosed) 2018	$10,000
T-1 Carry-On-Car Car Trailer 2018	$6,000
T-2 Rescue Trailer Cargo Express Enclosed 2019	$10,000
T-3 UTV-33 Trailer (enclosed) 2018	$9,000
Total:	*$9,792,000*
Critical Facilities and Infrastructure	
Fire Station #1 and Headquarters, 630 Second Street West, Sonoma Building 15,260 sq. ft. $1,225.00 per sq. ft	$18,693,500

Asset	Value
Fire Station #2, 877 Center Street, Sonoma Building 7,600 sq. ft. $1,225.00 per sq. ft	$9,310,000
Fire Station #3, 1 West Agua Caliente Road, Sonoma Building 8,251 sq. ft. $1,225.00 per sq. ft	$10,107,475
Fire Station #4, 18798 Prospect Avenue, Sonoma Building 700 sq. ft. $1,225.00 per sq. ft	$260,400
Fire Station #5, 13445 Arnold Drive, Glen Ellen Building 7,350 sq. ft. $1,225.00 per sq. ft	$9,003,750
Fire Station #6, 7301 Sonoma Mountain Road, Glen Ellen Building 700 sq. ft. $1,225.00 per sq. ft	$260,400
Fire Station #8, 3252 Trinity Road, Glen Ellen Building 1,300 sq. ft. $1,225.00 per sq. ft	$483,600
Fire Station #9, 4501 Cavedale Road, Glen Ellen Building 900 sq. ft. $1,225.00 per sq. ft	$334,800
Total:	*$48,453,925.00*

10.3 CURRENT TRENDS

Development in all zoning areas occurs at a moderate level. The Springs redevelopment project is changing some local zoning regulations and is bringing in new opportunities.

10.4 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 10-3.
- An assessment of fiscal capabilities is presented in Table 10-4.
- An assessment of administrative and technical capabilities is presented in Table 10-5.
- An assessment of education and outreach capabilities is presented in Table 10-6.
- Classifications under various community mitigation programs are presented in Table 10-7.
- The community’s adaptive capacity for the impacts of climate change is presented in Table 10-8.

Table 10-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Ordinance No. 6295 Amending Chapters 7 (Building Regulations) of the Sonoma County Code, and Adopting by Reference with Local Amendments, Selected Provisions, Chapters and Appendices of Title 24 of the California Code Of Regulations, 2019 Editions Of The California Building Standards Code	12/02/2019	Adoption and amendments to existing State Codes that are more restrictive designed to reduce hazards and provide for occupant and rescuer safety.
Ordinance No. 6296 Amending Chapter 13 (Fire Safety Ordinance) and Adopting by Reference with Local Amendments, Selected Provisions, Chapters and Appendices of Title 24 of the California Code Of Regulations, 2019 Edition Of The California Fire Code, to Amend Portions of the Fire Safe Standards,	12/02/2019	Adoption and amendments to existing State Codes that are more restrictive designed to reduce hazards and provide for occupant and rescuer safety.
Chapter 13A—Duty to Maintain Defensible Space and Abate Hazardous Vegetation and Combustible Material	12/02/2019	County Ordinance to provide for increased requirements for property owners to maintain vegetation and defensible space with the intention of reducing the risk of wildfire.
Ordinance # 06-2019 An Ordinance of The City of Sonoma Adopting New Administrative Provisions and Adopting by Reference Parts 2, 2.5, 3, 4, 5, 6, 8, 9, 10, 11 and 12 of the 2019 California Building Standards Code and Amendments.	11/04/2019	Adoption and amendments to existing State Codes that are more restrictive designed to reduce hazards and provide for occupant and rescuer safety.
Sonoma Valley Fire District Vegetation Management and Weed Abatement Programs.	11/04/2019	An internal plan to ensure compliance with applicable vegetation management and weed abatement ordinances within the district to provide for risk reduction.
Sonoma Valley Fire District, Sonoma Citizens Organized to Prepare for Emergencies.	01/01/2020	The Sonoma Valley Fire District, in cooperation with the City of Sonoma, has developed guidelines for emergency preparedness in our community.
Sonoma County CWPP	In process	The goal of the CWPP is to enhance efforts to protect communities, watersheds and other at-risk lands from catastrophic wildfire. A CWPP is not a regulatory document, but provides wildfire hazard and risk assessments, community descriptions, options for addressing issues of structural vulnerability to wildfire (Home Hardening), and provides a prioritized list of projects which, if implemented, can serve to reduce wildfire hazards.
Sonoma Valley Fire District Capital Improvement Plan	07/2020	Plan outlines timelines, funding sources and responsible staff to ensure maintenance, repair and replacement of capital assets.
Sonoma Valley Fire District Fire Impact Fee	02/2021	Impact fees are necessary to ensure that the District can adequately expand its fire protection facilities, apparatus, and equipment needed for the resident and employee growth and new structural area created by new development.

Table 10-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
If yes, specify:	
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Federal Grant Programs	Yes—Staffing for Adequate Fire and Emergency Response Grant

Table 10-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices *If Yes, Department /Position:*	No
Engineers or professionals trained in building or infrastructure construction practices *If Yes, Department /Position:*	No
Planners or engineers with an understanding of natural hazards *If Yes, Department /Position:*	No
Staff with training in benefit/cost analysis *If Yes, Department /Position:*	No
Surveyors *If Yes, Department /Position:*	No
Personnel skilled or trained in GIS applications *If Yes, Department /Position:*	No
Scientist familiar with natural hazards in local area *If Yes, Department /Position:*	No
Emergency manager *If Yes, Department /Position:* Fire / Sonoma Valley Fire District	Yes
Grant writers *If Yes, Department /Position:* Fire / Sonoma Valley Fire District / Multiple	Yes
Other *If Yes, Department /Position:*	No

Table 10-6. 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?	No
Do you have hazard mitigation information available on your website?	Yes
If yes, briefly describe: svfra.org contains references on hazard mitigation to include wildfire preparedness, hazard mitigation, disaster response plan.	
Do you use social media for hazard mitigation education and outreach?	Yes
If yes, briefly describe: The Sonoma Valley Fire District maintains a social media presence on multiple platforms to include—Facebook, Website Blog, Next Door, Ring that is utilized to communicate public education information to reduce community risk.	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
If yes, briefly describe: The Sonoma Valley Fire District Board of Directors is made up of elected members of the community.	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
If yes, briefly describe: The Sonoma Valley Fire District is responsible for the Sonoma Citizens Organized to Prepare for Emergencies. The Program organizes and instructs the community on hazard reduction and emergency preparedness.	
Do you have any established warning systems for hazard events?	Yes
If yes, briefly describe: Partners with the Sonoma County Office of Emergency Services Alert and Warning Systems.	

Table 10-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	965293157	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	No		
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 10-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	Low
Participation in regional groups addressing climate risks *Comment:*	Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negative impacted *Comment:*	Low
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	Low
Local residents support of adaptation efforts *Comment:*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Low
Local economy current capacity to adapt to climate impacts *Comment:*	Low
Local ecosystems capacity to adapt to climate impacts *Comment:*	Low

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.

10.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

10.5.1 Existing Integration

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

- **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**—Provide 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.
- **Hazardous Vegetation Inspection & Abatement Program**—In cooperation with the Sonoma County PRMD Fire Prevention Office the Sonoma Valley Fire District inspects properties for compliance. Selected properties that are not within city limits (improved and unimproved) may be part of the inspection program. Critical to protect homes from wildfire, defensible space includes a "lean, clean and green" zone 30 feet (or to the property line) from buildings, and a "reduced fuels zone," which can have more natural vegetation, from 30 feet to 100 feet (or to the property line) from structures.
- **Community Fire Safe Councils—**The Sonoma Valley Fire District continues to work with local community groups in the formation of Fire Safe Councils.
- **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.

10.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Building & Fire Code amendments and modifications—**The Sonoma Valley Fire District in collaboration with the County of Sonoma, and the incorporated City of Sonoma has the opportunity to amend and modify existing codes to make them more restrictive. Opportunities may be available to direct future changes to mitigate risks identified through this process.
- **Sonoma Valley Fire Unmanned Aircraft Fire Prevention & Safety Unit—**The Sonoma Valley Fire District has recently implemented a sUAS (small unmanned aircraft system) program that may provide intelligence and information used to meet or identify future hazard mitigation goals.
- **Expand our Community Risk Reduction division in personnel and capability**
- **Sonoma County—CWPP—**Integrate the Sonoma County Wildfire Mitigation Plan with this plan

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

10.6 RISK ASSESSMENT

10.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 10-9 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 10-9. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfires	DR-4569-CA	September 4 – November 17, 2020	Unknown
Wildfires	DR-4558-CA	August 14 – September 26, 2020	Unknown
Covid-19 Pandemic	DR-4442-CA	January 2020 – Present	Unknown
Kincade Fire	FM-5295-CA	October 23 – November 7, 2019	Unknown
PG&E Power Shutoff	N/A	October 2019	Unknown
Severe Winter Storms Flooding	DR-4434-CA	February 24 – March 1, 2019	Unknown
PG&E Power Shutoff	N/A	October 2018	Unknown
Wildfires	DR-4344-CA	October 8 – 31, 2017	Unknown
Nuns Fire	FM-5220-CA	October 8, 2017	Unknown
Severe Winter Storms Flooding	DR-4308-CA	February 1 – 23, 2017	Unknown
Severe Winter Storms Flooding	DRE-4301-CA	January 3 – 12, 2017	Unknown
Valley Fire	DR-4240-CA	September 12 – 25, 2017	Unknown
South Napa Earthquake	DR-4193-CA	August 24, 2014	Unknown
Drought	N/A	2014-2016	Unknown
H1N1 Influenza	N/A	April/May 2009	Unknown
New Year's Floods	DR-1628-CA	December 31 – January 3, 2006	Unknown
Geysers Fire	FM-2554-CA	September 3 – 8, 2004	Unknown
Rio Nido Debris Flow	DR-1203-CA	February 2, 1998	Unknown
New Year's Flood	DR-1155-CA	December 28 – January 4, 1997	Unknown
Cavedale Fire	N/A	July 31 – August 20, 1996	Unknown
Freeze of 1991	N/A	December 1990 – February 1991	Unknown

10.6.2 Hazard Risk Ranking

Table 10-10 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 district operations. Mitigation actions target hazards with high and medium rankings.

Table 10-10. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Earthquake	38	High
2	Wildfire	32	High
3	Landslide	30	Medium
4	Flood 100/yr.	18	Medium
5	Flood Awareness	18	Medium
6	Flood 500/yr.	16	Medium
7	Sea Level Rise	9	Low
8	Dam Failure	6	Low
9	Tsunami	0	Low

10.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Earthquake
- Wildfire
- Landslide

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

10.7 HAZARD MITIGATION ACTION PLAN

Table 10-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 10-12 identifies the priority for each action. Table 10-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 10-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action SVF-1—Provide earthquake retrofitting for hardening and to build resilience to critical infrastructure within the Sonoma Valley Fire District, specifically Sta.5.						
Hazards Mitigated: Earthquake, wildfire						
Existing	3, 4, 6, 9	Sonoma Valley Fire District	None	High	HMGP, BRIC, OES	Short-term
Action SVF-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: All hazards						
New & Existing	1, 5, 8	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Short-term
Action SVF-3—Participate in hazard fuel reduction projects based on the findings of the Sonoma County CWPP and along major transportation and evacuation corridors within the SVFD						
Hazards Mitigated: Wildfire						
New & Existing	1, 2, 3, 6, 7, 8	Sonoma Valley Fire District	CalFire, Sonoma County, City of Sonoma, Fire Safe Sonoma, Local Fire Safe Councils	Cost varies on complexity of projects	HMGP, PDM, Private Funding, Private Grants	Ongoing
Action SVF-4—Participation in regional groups addressing climate risks.						
Hazards Mitigated: Wildfire, Flooding, Landslide, Seal Level Rise, Dam Failure						
New & Existing	1, 2, 3, 4, 5, 6, 8	Sonoma Valley Fire District	Various	Low	Staff Time, General Funds	Ongoing
Action SVF-5—Provide training to SVFD staff and secure necessary equipment and resources to have the ability to provide internal GIS functions.						
Hazards Mitigated: Wildfire, Flooding, Landslide, Sea Level Rise, Dam Failure						
New & Existing	4, 5, 8	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Short-term
Action SVF-6—Provide training to SVFD in website development.						
Hazards Mitigated: All Hazards						
New & Existing	4, 5, 6, 8	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Short-term
Action SVF-7—Actively engage the community within our District on practices designed to mitigate the effects of climate change.						
Hazards Mitigated: Landslide, Sea Level Rise, Flooding, Damn Failure						
New & Existing	4, 5, 6	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Ongoing
Action SVF-8—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the Sonoma County CWPP and other SVFD Plans as indicated in Section 1.5.1.						
Hazards Mitigated: Wildfire, Flooding, Landslide, Sea Level Rise, Dam Failure, Earthquake						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Ongoing
Action SVF-9—Educate the public on the landslide hazard and appropriate risk reduction alternatives.						
Hazards Mitigated: Landslide						
New & Existing	4, 5, 6	Sonoma Valley Fire District	None	Low	Staff Time, General Funds	Ongoing

a. 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 10-12. 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]
SVF-1	4	High	High	Yes	Yes	No	Medium	High
SVF-2	3	High	Low	Yes	No	Yes	High	Low
SVF-3	6	High	High	Yes	Yes	No	Medium	High
SVF-4	7	Medium	Low	Yes	No	Yes	High	Low
SVF-5	3	Medium	Low	Yes	Yes	Yes	High	Low
SVF-6	3	Medium	Low	Yes	Yes	Yes	High	Low
SVF-7	3	Medium	Low	Yes	No	Yes	High	Low
SVF-8	8	High	Low	Yes	No	Yes	High	Low
SVF-9	3	Medium	Low	Yes	No	Yes	High	Low

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

Table 10-13. 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	SVF-8	SVF-1, 8	SVF-8		SVF-1, 2, 5, 6, 8		SVF-2, 4, 8	SVF-6, 7
Wildfire	SVF-8	SVF-1, 8	SVF-8	SVFD-3, 4	SVF-1, 2, 3, 5, 6, 8		SVF-2, 4, 8	SVF-6, 7
Medium-Risk Hazards								
Landslide	SVF-8	SVF-8	SVF-7, 9	SVFD-3	SVF-2, 3, 4, 5, 6, 7, 8, 9		SVF-2, 4, 8	SVF-6, 7, 9
Flood	SVF-8	SVF-8	SVF-7, 9		SVF-2, 4, 5, 6, 7, 8		SVF-2, 4, 8	SVF-6, 7
Low-Risk Hazards								
Sea Level Rise	SVF-8	SVF-8	SVF-7, 9		SVF-2, 4, 5, 6, 7, 8		SVF-2, 4, 8	SVF-6, 7
Dam Failure	SVF-8	SVF-8	SVF-7, 9		SVF-2, 4, 5, 6, 7, 8		SVF-2, 4, 8	SVF-6, 7
Tsunami	SVF-8	SVF-8	SVF-7, 9		SVF-2, 4, 5, 6, 7, 8		SVF-2, 4, 8	SVF-6, 7

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

10.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- **Sonoma Valley Fire District's fire records management software**—Used to analyze incident data, apparatus and equipment resource data, occupancy and fire inspection data and history.
- **Previous City of Sonoma HMP document**—Used as reference.
- **Technical data and values for fire apparatus and other infrastructure obtained from department records and vendor data—**Used as reference.

- **Sonoma Valley Fire District Fire Impact Fee Nexus Study 2020—**Used as reference

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.
- **Area population census data**– Used as reference.
- **Community Wildfire Protection Plan (Sonoma County)**—Used as reference.
- **County of Sonoma GIS Website**– Used as reference.
- **Grove Street Fire Safe Council**—Used as reference

11. TIMBER COVE FIRE PROTECTION DISTRICT

11.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Sharon Lynn, Admin
30800 Seaview Road
Cazadero, CA 95421
Telephone: 707-847-3299
e-mail Address: tcfpd4500a@gmail.com

Alternate Point of Contact
Erich Lynn, Chief
30800 Seaview Road
Cazadero, CA 95421
Telephone: 707-867-3626
e-mail Address tcfpd4500c@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 11-1.

Table 11-1. Local Mitigation Planning Team Members

Name	Title
Sharon Lynn	TCFPD, Admin
Grace O'Malley	Emergency Preparedness Coordinator
Scott Farmer	SOCOMac

11.2 JURISDICTION PROFILE

11.2.1 Overview

TCFPD is a special district that was formed in 1996. It was originally a volunteer fire department operating within CSA 40 in Sonoma County. The community formed a community benefit district in 1988 to fund construction of our current firehouse via a Mello-Roos. The district is responsible for providing fire suppression, emergency medical aid, ocean rescue and mutual assistant to our neighboring departments, as well as to State and County Parks.

The climate of TCFPD is generally coastal influence near the ocean, with high winds, heat and low humidity on the ridge tops and inland area. High winds and heavy rain during winter months create numerous downed trees with or without power lines, as well as rock and debris slides.

TCFPD governing body is comprised of a three-member elected Board of Directors.

The Board of Directors assumes responsibility for the adoption of this plan; TCFPD will oversee its implementation.

11.2.2 Service Area

Timber Cove Fire Protection District (TCFPD) is located in the central coast portion of Sonoma County. Bordered by the Pacific Ocean to the West and the Gualala River to the East; our district includes an eighteen mile stretch of U.S. Highway 1 from mile marker 27 on the southern end to mile marker 45 on the northern end and reaches into Bohan Dillon Road to the east. Our primary response area is approximately 48 square miles and includes steep coastal terrain and rugged, isolated, forested interior areas with limited access points. Our area is comprised of commercial vineyards and wineries, ranches, restaurants and lodging, as well as multiple housing subdivisions. We are 48% public land. Travel time from our firehouse to our farthest points within the district is 45 minutes to an hour depending on weather and road conditions.

11.2.3 Assets

Table 11-2 summarizes the assets of the district and their value.

Table 11-2. Special Purpose District Assets

Asset	Value
Property	
2.2 acres of land	$175,000
Equipment	
Roof catchment water system	$330,000
Septic System	$75,000
Fuel Tanks	$60,000
Backup Generator	$45,000
Communication Command Post	$47,000
Disaster Preparedness Trailer and Supplies	$33,000
Stored medical supplies and blankets	$45,000
Apparatus (7 units)	$2,500,000
Apparatus equipment and onsite gear	$1,800,000
Total:	*$4,935,000*
Critical Facilities and Infrastructure	
Fire House—Station 1—30800 Seaview Road, Cazadero	$3,800,000
Total:	*$3,800,000*

11.3 CURRENT TRENDS

According to Sonoma County parcel listing for the TCFPD area, the population of the Timber Cove area as of July 1, 2020 was approximately 502. The full time resident population in the Timber Cove response area has remained steady. We have experienced a growth in short term rental housing, commercial hotel and tourist visitation. In 2019, 30% of our 292 calls involved tourists and were primarily medical aid or vehicle accidents.

The Timber Cove area housing development is low. There is currently a new hotel project being considered which will be located on the coastal bluffs adding a day spa and 10 upscale cabins for visitors.

Table 11-3 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 11-3. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	No
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	Yes We are anticipating adding 35 sq. miles to our eastern border. This land is comprised of 40 acre agricultural homesteads, commercial agriculture, vineyards and wineries and a non-profit religious organization and a new state park to be dedicated in the future. Sonoma County
Are any areas targeted for development or major redevelopment in the next five years? • If yes, briefly describe, including whether any of the areas are in known hazard risk areas	Yes Ocean bluff cabins (10) and spa are located in a Tsunami Zone. The new State Park would be at the farthest easterly point of our district. The park is a redwood preserve and would be subject to possible wildland fires and medical aid requests.
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	

	2015	2016	2017	2018	2019
Single Family	1	2	2	1	0
Multi-Family					
Other (commercial, mixed use, etc.)				1	
Total	1	2	2	1	0

Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: 0 • Landslide: 0 • High Liquefaction Areas: 0 • Tsunami Inundation Area: 2 • Wildfire Risk Areas: 6
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.	There is no buildout plan for the area. A majority of the area is in the Coastal Zone and has additional permitting requirements which add time and expense to the building process. Land outside the coastal zone is generally large holdings and held by generational families.

11.4 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 11-4.
- An assessment of fiscal capabilities is presented in Table 11-5.

- An assessment of administrative and technical capabilities is presented in Table 11-6.
- An assessment of education and outreach capabilities is presented in Table 11-7.
- Classifications under various community mitigation programs are presented in Table 11-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 11-9.

Table 11-4. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
State Building Code	2019	Good for 3 years
County Building Code & Coastal Commission Regulations	2019	Both codes are undergoing revisions in specific areas

Table 11-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes
Other	No

Table 11-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	No	
Engineers or professionals trained in building or infrastructure construction practices	No	
Planners or engineers with an understanding of natural hazards	No	
Staff with training in benefit/cost analysis	No	
Surveyors	No	
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	No	
Emergency manager	N/A	
Grant writers	Yes	Staff
Other	No	

Table 11-7. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? *If yes, please briefly describe*	No
Do you use social media for hazard mitigation education and outreach? *If yes, please briefly describe*	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, please briefly specify*	Yes We have a fire education and mitigation program
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, please briefly describe*	Yes We have a fire education and mitigation program
Do you have any established warning systems for hazard events? *If yes, please briefly describe*	Yes On Call Now

Table 11-8. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	053759689	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready	No	N/A	N/A

Table 11-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Severe weather and lack of rainfall has impacted our tree health and greater more dead trees and debris	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: Our monitoring is based on our longevity of time living in this environment and the changes we see in the environment.	
Technical resources to assess proposed strategies for feasibility and externalities	Low
Comment: There have been some studies about sudden oak death and pine beetle.	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment.	
Capital planning and land use decisions informed by potential climate impacts	Low
Comment:	
Participation in regional groups addressing climate risks	Low
Comment:	

Criterion	Jurisdiction Rating[a]
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	Low
Identified strategies for adaptation to impacts *Comment:*	Low
Champions for climate action in local government departments *Comment:*	Low
Political support for implementing climate change adaptation strategies *Comment:*	Low
Financial resources devoted to climate change adaptation *Comment:*	Low
Local authority over sectors likely to be negative impacted *Comment:*	Low
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	Medium
Local residents support of adaptation efforts *Comment: Our community is aware of climate change and while not specifically organized there is the possibility for cooperation and discussion*	Low
Local residents' capacity to adapt to climate impacts *Comment:*	Medium
Local economy current capacity to adapt to climate impacts *Comment: Our economy is tourist driven and climate change has and will continue to affect what activities people may participate in*	Medium
Local ecosystems capacity to adapt to climate impacts *Comment: Covid19 lockdown in March demonstrated the impact of tourism on our environment and the need to mitigate the number of people visiting our coastal area.*	Low

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.

11.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

11.5.1 Existing Integration

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

- Timber Cove Disaster Preparedness Task Force was established in 2006 and created guidelines for community residence to use during hazardous events and as well as provide continuing education and communication support during disasters.
- Fire Mitigation and Education Program. The fire department has received grant funding in 2020 to continue education and guidance to local landowners on best practices to prepare for wildfire and possible evacuation.
- Fire Safe Sonoma. Provides education, outreach and local chipping program for homeowners.

11.5.2 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:

- Timber Cove Homes Association and Timber Cove Water District. Both entities have had varying success with fire mitigation plans and tree trimming ordinances. There may be a possibility of integrating all plans under the Disaster Preparedness Task Force to allow for better coordination and greater availability of resources.

11.6 RISK ASSESSMENT

11.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 11-10 lists past occurrences of natural hazards for which specific damage was recorded in Timber Cove Fire Protection District. Other hazard events that broadly affected the entire planning area, including Timber Cove Fire Protection District are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 11-10. Past Natural Hazard Events

Type of Event	Date	Damage Assessment
High Wind Event	11/17/2020	Multiple Trees down/road closures
Meyers Fire (LNU Complex)	08/28/2020-09/11/2020	2300 acres burned, no structures, Hwy 1 South, Fort Ross Rd East, Meyers Grade South, King Ridge East, Skaggs Springs @ 101 Closed—Hwy 1 North was only Evacuation route for area
Covid-19—Pandemic	01/20/2020 to present	
High Wind & Storm Event	01/05/2019-01/08/2019	Heavy Rain, flooding, trees down
High Wind & Storm Event	01/16/2019-01/17/2019	Heavy Rain, flooding, trees down
High Wind & Storm Event	02/12/2019-02/14/2019	Heavy Rain, debris flow, road closures, flooding, trees down
High Wind & Storm Event	02/24/2019-02/27/2019	Heavy Rain, Debris Flow, flooding, road closures, trees down
High Wind Event	05/16/2019	Trees down
Fire Wildland—Bohan Dillon	08/09/2019	10 acres, powerlines into tree
High Wind & Storm Event	11/26/2019-11/30/2019	Heavy Rain, trees down, debris flow
High Wind & Storm Event	12/06/2019	Rain, trees down, debris flow
Fire Wildland—Local	02/12/2018	>5 acres, vegetation fire
High Wind & Storm Event	04/06/2018-04/07/2018	Rain, trees down, debris flow, road closure
Fire Wildland—Local	4/18/2018	5< acres, vegetation fire
Fire Wildland—Local	07/14/2018	>5 acres, vegetation fire
High Wind & Storm Event	01/03/2017-01/12/2017	3 storms, heavy rains, flooding, debris flow, trees down, road closures

Type of Event	Date	Damage Assessment
High Wind & Storm Event	02/06/2017-02/09/2017	Heavy Rain, trees down, debris flow, road closure
Fort Fire	10/06/2017-10/10/2017	18 acres, no structures
High Wind Event	12/16/2017	Multiple down trees
Wild Fire-Salt Point St. Park	09/03/2016	<5 acres, evacuation of campground
High Wind & Storm Event	12/15/2016-12/17/2016	Heavy Rain, trees down, debris flow, road closure
High Wind & Storm Event	02/06/2015-02/09/2015	Heavy Rain, trees down, debris flow, road closure
High Wind & Storm Event	02/6/2014-02/09/2014	Heavy Rain, trees down, debris flow, road closure
Drought Declaration	02/25/2014	Dry conditions, dry wells
Rain Storm Event—moderate wind	12/10/2014-12/11/2014	Heavy rain, debris flows, flooding, road closures, trees down
High Wind Event	04/08/2013-04/09/2013	Multiple down trees
Fire Wildland—Fisk Mill	05/15/2013	>5 acres, power lines down
Fire Wildland—Bohan	09/24/2013	>5 acres, no structures
High Wind Event	10/04/2013	Multiple down trees
High Wine Event	11/21/2013-11/22/2013	Multiple down trees
High Wind & Storm Event	01/19/2012-01/20/2012	Heavy Rain, trees down, debris flows, road closures, flooding
High Wind & Storm Event	03/14/2012-03/16/2012	Heavy Rain, trees down, debris flows, road closures, flooding
High Wind & Storm Event	11/30/2012-12/05/2012	3 Storms, heavy rain, trees down, debris flows, road closures, flooding, PGE outages
High Wind & Storm Event	12/21/2012-12/23/2012	Heavy Rain, trees down, debris flows, flooding
High Wind & Storm Event	02/16/2011-20/17/2011	Heavy Rain, trees down, debris flows, flooding
Tsunami Watch	03/11/2011	Stand by—evacuation of lower coastal zone—westside of Hwy 1
High Wind & Storm Event	03/16/2011-03/20/2011	Heavy Rain, trees down, debris flows, flooding
High Wind & Storm Event	06/04/2011	Heavy Rain, trees down
High Wind & Storm Event	01/18/2010-01/20/2010	Heavy Rain, trees down, debris flow, flooding, road closures PGE outages
High Wind & Storm Event	10/24/2010-10/252010	Heavy rain, trees down, flooding, PGE outages
High Wind & Storm Event	12/28/2010-12/29/2010	Heavy rain, trees down, flooding, debris flow, road closures, PGE outages
High Wind & Storm Event	02/15/2009-02/16/2009	Heavy rain, trees down, debris flow, PGE outages
H1N1-Pandemic	04/01/2009-05/31/2009	Precautions in place—tourism
High Heat	05/17/2009-05/18/2009	Extreme heat—80 deg at coast
High Wind & Storm Event	10/13/2009-10/14/2009	Heavy rain, trees down, debris flow, PGE outages
High Wind & Storm Event	01/04/2008-01/06/2008	Heavy rain, trees down, debris flow, PGE outages
High Wind & Storm Event	11/01/2008-11/03/2008	Heavy rain, trees down, debris flow, PGE outages
Freezing Rain & Snow	12/15/2008-12/15/2008	Snow, freezing rain, wind
Wild Fire-Vegetation	10/05/2007	<5 acres, Hwy 1 MM 37
Wild Fire-Rosson	11/02/2007	<5 acres, Rosson Road
High Wind & Storm Event	12/31/2007-01/03/2006	Heavy rain, trees down, debris flow, flooding, road closures, PGE outages
Wild Fire-Meyers Grade	06/25/2006	>5 acres, escaped burn
Wild Fire—Hirsh	09/20/2006-09/21/2006	<5 acres, vegetation
High Wind & Storm Event	12/27/2006-01/01/2005	Heavy rain, trees down, debris flow, flooding road closures, PGE outages
High Wind Event	03/19/2005-03/20/2005	Trees down, PGE outages

Type of Event	Date	Damage Assessment
Wild Fire-Prairie	10/16/2005	<5 acres, State Park
Wild Fire-Stump Beach	09/11/2004	>5 acres, State Park
High Wind & Storm Event	01/01/2002-01/03/2002	Heavy rain, trees down, flooding road closures, PGE outages
High Wind & Storm Event	12/13/2002-12/16/2002	Heavy rain, trees down, flooding road closures, PGE outages
Wild Fire-Ocean Cove	07/14/2001	>5 acres, powerlines down
Wild Fire-Burn Pile	09/03/2001	>5 acres, big burn pile
High Wind & Storm Event	02/13/2000-02/14/2000	Heavy rain, trees down, flooding road closures, PGE outages
High Wind & Storm Event	02/02/1998-02/25/1998	Series of storms, flooding, debris flow, road closures, trees down, PGE outages
High Wind & Storm Event	12/29/1996-01/03/1997	Heavy rain, trees down, flooding, debris flow, road closures, PGE outages
Wild Fire-Gerstle	09/1993	700 acres, prairie to ocean burn area Both sides of Hwy 1

11.6.2 Hazard Risk Ranking

Table 11-11 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 11-11. Hazard Risk Ranking

Rank	Hazard	Risk Rating Score	Category
1	Wildfire	39	High
2	Earthquake	34	High
3	Dam Failure	34	High
4	Severe Weather	30	Medium
5	Landslide	26	Medium
6	Sea Level Rise	18	Medium
7	Flood	14	Low
8	Tsunami	6	Low
9	Drought	6	Low

11.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Wildfire access to water, must be hauled; rugged terrain; narrow access roads which function as evacuation routes.
- Earthquake may cause infrastructure failure; water; power; communications, State Hwy 1 collapse into ocean limiting accessibility to affected area.
- Water company dam failure would deny water to 25% of community as well as level everything between it and Hwy 1.

- Limited landslide activity along State Hwy 1, closure would limit accessibility to area.
- Sea Level Rise eroding cliffs and encroaching on businesses and homes located on bluffs.
- Flooding generally comes with severe weather and affects local streams and roadways.
- Drought may become a greater risk depending on length, number of failed wells, capacity of Water Company and increase hazardous fuel loads from dead and dying trees.

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

11.7 HAZARD MITIGATION ACTION PLAN

Table 11-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 11-13 identifies the priority for each action. Table 11-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 11-12. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action TIM-1—Develop community chipping program to reduce fuel load in WUI, increase visibility on roadways for incoming fire personnel and outgoing evacuees, and create safety/evacuation zones.						
Hazards Mitigated:	Wildfire, Earthquake, Severe Weather					
New	4, 5, 6	TCFPD		Medium	HMGP, PDM, FMA	Ongoing
Action TIM-2—Develop evacuation plans and staging areas for implementation in a disaster, educate and post out to community.						
Hazards Mitigated:	Wildfire, Earthquake, Flood, Dam Failure, Landslide, Tsunami, Severe Weather,					
New	1, 4, 6	TCFPD		Low	Volunteer	Short-term
Action TIM-3—Update existing Disaster Preparedness plan						
Hazards Mitigated:	Wildfire, Earthquake, Flood, Dam Failure, Landslide, Tsunami, Severe Weather					
New	1, 4, 6	TCFPD		Low	Funding secured from grant & use of volunteer labor	Ongoing
Action TIM-4—Develop an assessment and Fire Mitigation educational plan						
Hazards Mitigated:	Wildfire					
New	5, 6	TCFPD		Low	Funding secured from grant	Ongoing
Action TIM-5—Purchase a communication trailer to provide internet, radio, and phone in a disaster						
Hazards Mitigated:	Wildfire, Earthquake, Flood, Dam Failure, Landslide, Tsunami, Severe Weather					
New	4, 5, 6	TCFPD		High	Grant not secured at this time	Long-term

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 11-13. 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]
TIM-1	3	High	Medium	Yes	Yes	No	High	High
TIM-2	3	High	Low	Yes	Yes	Yes	High	Low
TIM-3	3	High	Low	Yes	Yes	Yes	High	Low
TIM-4	2	High	Low	Yes	Yes	Yes	High	Low
TIM-5	3	High	High	Yes	Yes	No	Medium	High

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

Table 11-14. 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								
Wild Fire			TIM-1, 2, 3, 4	TIM-1, 3, 4	TIM-2, 3, 4, 5		TIM-1	TIM-3, 5
Earthquake			TIM-1, 2, 3,		TIM-2, 3, 5			TIM-5
Dam Failure			TIM-1, 2, 3		TIM-2, 3, 5			TIM-5
Medium-Risk Hazards								
Severe Weather			TIM-1, 2, 3	TIM-1, 3, 4	TIM-2, 3, 5		TIM-1	TIM-5
Landslide			TIM-2, 3	TIM-1	TIM-2, 3, 5		TIM-1	TIM-5
Sea level Rise			TIM-2, 3		TIM-2, 3, 5			TIM-5
Low-Risk Hazards								
Flood			TIM-1, 2, 3, 4	TIM-1, 3, 4	TIM-2, 3, 5			TIM-5
Tsunami			TIM-2, 3		TIM-2, 3, 5			TIM-5
Drought			TIM-2, 3		TIM-2, 3, 5			TIM-5

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

11.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- Disaster Preparedness in Timber Cove (2010)
- Timber Cove Forest and Fuel Management Plan (2001)

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.
- Sonoma County Hazard Mitigation Plan (April 2017)

11.9 ADDITIONAL COMMENTS

Timber Cove Fire Protection District is comprised of 48% State and County Parks as well as a number of notable vineyards, wineries, lodging and resorts. These attractions and the natural beauty of the area draw upwards of 1,500 visitors to the area and increases our seasonal population to nearly 2,500 people daily. State Highway 1 is our main road. There are three additional side routes from State Highway 1 that lead east and inland. We have had three overturned fuel tankers that have closed State Highway 1 in the last seven years. Two of these incidents dumped 2,500 gallons plus of fuel into streams feeding the ocean, closed State Hwy 1 for more than 24 hours, and created evacuations of nearby homes and campgrounds. During the Meyers and Walbridge Fires in 2020 all three inland routes and State Hwy 1 were closed. There was essentially one way out from the area—north toward Fort Bragg. Our concern is being able to receive resources and move people to safety in an emergency situation given our small department size, limited evacuation routes and additional population created by tourism.

12. GOLD RIDGE RESOURCE CONSERVATION DISTRICT

12.1 LOCAL HAZARD MITIGATION PLANNING TEAM

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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 12-1.

Table 12-1. Local Mitigation Planning Team Members

Name	Title
Brittany Jensen	Executive Director
Adriana Stagnaro	Outreach and Project Manager
Cailin Notch	AmeriCorps CivicSpark Fellow

12.2 JURISDICTION PROFILE

12.2.1 Overview

Gold Ridge RCD was established in 1941 as one of the original Resource Conservation Districts and the first RCD in Sonoma County. Gold Ridge RCD provides free, non-discriminatory assistance and education opportunities to agricultural producers, land users, educators, and anyone with land-based resource conservation needs on a voluntary basis. Gold Ridge RCD provides non-regulatory assistance to the community on conservation education, soil erosion control, water quality enhancement, range management, vineyard development, woodland, forestry and wildlife management, watershed and stream enhancement, and wildfire prevention and preparedness.

According to a document on Sonoma County's climate from the University of California, Davis, Sonoma County has three traditional microclimate zones: marine, coastal cool, and coastal warm. The Gold Ridge RCD's boundary falls into areas that primarily experience a marine or coastal cool climate. The marine zone lies west of the first mountain ridges and is under direct ocean influence. It is the coolest of the three climates. The coastal cool climate includes the areas east of the western hills of Sebastopol and is characterized by cold foggy air. According to the North Bay Climate Adaptation Initiative, climatic trends from human-caused climate change which are projected

to occur more frequently include more extreme heat, frequent droughts, increased wildfires, warmer winters, increased floods, and higher seas.

Gold Ridge RCD is a special district that is governed by a five-member Board of Directors who are appointed by the County Board of Supervisors in lieu of elections. The Board of Directors assumes responsibility for the adoption of this plan; the Executive Director will oversee its implementation. Gold Ridge RCD currently employs a staff of 14, including two partner staff shared with Sonoma RCD. Last fiscal year Gold Ridge RCD's budget was just under $2 million. Funding primarily came through federal (37.6%), state (37.1%), and local (7.7%) grants, fees-for-service (11.9%), foundations (2.7%), parcel taxes (1.8%) and donations (1.2%).

12.2.2 Service Area

The Gold Ridge Resource Conservation District (RCD) is a 134,000-acre district in west Sonoma County, bordered by Marin County to the south, the Russian River to the north, the Pacific coastline to the west, and the Laguna de Santa Rosa to the east. Population estimates from the most available census data from within the Gold Ridge RCD boundary are listed in Table 12-2. This population information does not include unincorporated areas within the county.

Table 12-2. District Population Breakdown

Community	Population	Census	Community	Population	Census
Monte Rio	1,152	2010	Bodega	220	2010
Forestville	3,293	2010	Valley Ford	147	2010
Graton	1,707	2010	Bloomfield	345	2010
Sereno del Mar	126	2010	Sebastopol	7,674	2019 (estimate from US Census)
Carmet	47	2010	Occidental	1,115	2010
Salmon Creek	86	2010	Camp Meeker	~350 homes	
Bodega Bay	1,077	2010	TOTAL	17,339	

Based on GIS parcel data from 2019, there are 134,000 acres and approximately 3,450 residential parcels in unincorporated Sonoma County within Gold Ridge RCD's service district. Gold Ridge RCD's district boundary also includes parts of western Cotati and western Rohnert Park. From the 2019 GIS parcel data, there are approximately 733 and 5 residential parcels in Cotati and Rohnert Park respectively that fall within Gold Ridge RCD's service district.

12.2.3 Assets

Table 12-3 summarizes the assets of the District and their value.

12.3 CURRENT TRENDS

The district provides assistance on a voluntary basis to agricultural producers, land users, educators, and anyone with land-band resource conservation needs. The RCD assists on a number of conservation projects including natural and agricultural resource conservation projects for farmers through the LandSmart Planning program, water conservation, erosion control, and carbon farm planning. Gold Ridge RCD also assists residents and communities on wildfire prevention and preparedness measures, including healthy forest management education and assistance in drafting and approving neighborhood-level Community Wildfire Prevention Plans (CWPPs).

Table 12-3. Special Purpose District Assets

Asset	Value
Property	
See Valley Ford Schoolhouse below	--
Equipment	
No-till drill (6 foot)	$5,000
No-till drill (10 foot)	$10,000
Pick-up Truck	$25,000
Total:	*$40,000*
Critical Facilities and Infrastructure	
Valley Ford Schoolhouse—14355 School St, Valley Ford, CA 94972, APN 026-010-014	$350,000
Gold Ridge RCD Office (rented)—2776 Sullivan Rd, Sebastopol, CA 95472	N/A
Total:	*$350,000*

12.4 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 12-4.
- An assessment of fiscal capabilities is presented in Table 12-5.
- An assessment of administrative and technical capabilities is presented in Table 12-6.
- An assessment of education and outreach capabilities is presented in Table 12-7.
- Classifications under various community mitigation programs are presented in Table 12-8.
- The community's adaptive capacity for the impacts of climate change is presented in Table 12-9.

Table 12-4. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
County of Sonoma General Plan 2020	2008	Update currently underway.
Sonoma County Community Wildfire Protection Plan	2016	Update currently underway.
Sonoma County Hazard Mitigation Plan	2016	Update currently underway.
Public Resources Code, Section 9—Resource Conservation	2017	Enabling state legislation for natural resource conservation.
Sonoma County Recovery and Resiliency Framework	2018	Potential Actions: NR 1.2.4-.6, 1.2.8, 1.3.1, 2.1.1-.3, 2.1.5, 2.2.2, 2.4.1, 2.4.3, 2.4.5, 3.1.2, 3.1.8, 3.2.6, 3.4.3.
Fire Safe Occidental CWPP	2020	Approved Fall 2020. Assist with implementation of prioritized treatment areas and current activities.
Fire Safe Camp Meeker CWPP	2021 (est.)	In progress. Est. completion date 2021

Table 12-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes

Table 12-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer, Lead Scientist, Forester, Project Manager.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer, Lead Scientist.
Planners or engineers with an understanding of natural hazards	Yes	Engineer, Lead Scientist, Forester, Project Manager.
Staff with training in benefit/cost analysis	Yes	We can hire a consultant for this work
Surveyors	Yes	Engineer, Lead Scientist, Forester.
Personnel skilled or trained in GIS applications	Yes	Engineer, Lead Scientist, Forester, Project Manager, Project Coordinator, Program Director.
Scientist familiar with natural hazards in local area	Yes	Engineer, Lead Scientist, Forester, Outreach and Project Manager, Project Manager, Project Coordinator, Program Director, Ecologist.
Emergency manager	No	N/A
Grant writers	Yes	Executive Director, Lead Scientist, Forester, Outreach and Project Manager, Project Manager, Project Coordinator, Program Director, Ecologist.
Outreach and Education	Yes	Executive Director, Lead Scientist, Forester, Outreach and Project Manager, Project Coordinator, Ecologist.

Table 12-7. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes, we use consultants for this
Do you have hazard mitigation information available on your website? *If yes, please briefly describe*	Yes Erosion control, stormwater management, water conservation, LandSmart Planning, Carbon farm planning, etc.
Do you use social media for hazard mitigation education and outreach? *If yes, please briefly describe*	Yes Facebook, Instagram, Email Newsletter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, please briefly specify*	Yes Board of Directors

Criterion	Response
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
If yes, please briefly describe	Webinars, Meetings, Workshops, Mailers
Do you have any established warning systems for hazard events?	No
If yes, please briefly describe	

Table 12-8. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS #	Yes	615324790	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A
Tsunami Ready	N/A	N/A	N/A

Table 12-9. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High
Comment	
Jurisdiction-level monitoring of climate change impacts	High
Comment	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment	
Capital planning and land-use decisions informed by potential climate impacts	High
Comment	
Participation in regional groups addressing climate risks	Medium
Comment	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment	
Identified strategies for greenhouse gas mitigation efforts	High
Comment	
Identified strategies for adaptation to impacts	High
Comment	
Champions for climate action in local government departments	High
Comment	
Political support for implementing climate change adaptation strategies	High
Comment	

Criterion	Jurisdiction Rating
Financial resources devoted to climate change adaptation	High
Comment	
Local authority over sectors likely to be negatively impacted	Low
Comment *No authority.*	
Public Capacity	
Local residents' knowledge of and understanding of climate risk	High
Comment	
Local residents support of adaptation efforts	High
Comment	
Local residents' capacity to adapt to climate impacts	Medium
Comment	
Local economy current capacity to adapt to climate impacts	Medium
Comment	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment	

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.

12.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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 future integration. 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.

12.5.1 Existing Integration

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

- **Gold Ridge RCD Strategic Plan**—4-year plan which outlines strategies for Gold Ridge RCD to achieve vision of healthy and sustainable natural resources and resilient landscapes. The previous strategic plan ten planned actions including carbon farming and climate resiliency. The Strategic Plan is currently being updated.
- **Sonoma County Recovery and Resiliency Framework**—Draws from structure, functions, roles, and principles in the Federal Emergency Management Agency's National Disaster Recovery Framework and focuses on five key strategic areas including community preparedness and natural resources.
- **Fire Safe Occidental CWPP**—Provides a general overview and assessment of wildfire risks and prioritizes tasks to increase fire resiliency in the community of Occidental.
- **Sonoma County Draft Local Coastal Plan**—Important planning document in managing the conservation and development of Sonoma County's coastal regions.

- **California Water Plan**—The State's strategic plan for sustainably managing and developing water resources for current and future generations.
- **CAL FIRE Strategic Plan**—The plan identifies strategies to fulfill CAL FIRE's goals of improving core capabilities, enhancing internal operations, ensuring health and safety, and building an engaged, motivated, innovative workforce.

12.5.2 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:

- **Sonoma County CWPP Update—**The update includes more robust stakeholder participation in the planning and prioritization of wildfire risk reduction projects, and increased science-based risk assessment and GIS mapping.
- **Sonoma County Strategic Plan**—The five-year Strategic Plan will provide context to inform policies and projects that are funding for the next five years. The plan will guide how to align short and long-term objectives, so the County Board of Supervisors' actions reflect a clear sense of purpose.
- **Sonoma County General Plan Update**—The General Plan is a policy document that establishes a vision for the future of Sonoma County. It prioritizes, organizes, and directs development and conservation for 20-year increments and was last updated in 2008.
- **Sonoma County Local Coastal Plan Update**—Important planning document in managing the conservation and development of Sonoma County's coastal regions. The intent of the current update is not to encourage new or increased development.
- **Future Local CWPPs or similar plans**—Additional documents that provide a general overview and assessment of wildfire risks and prioritizes tasks to increase fire resiliency at the neighborhood level and certified by local officials.
- **Climate Action Plan/Climate Emergency Mobilization Plan**
- **Gold Ridge RCD Strategic Plan**
- **City Plans (Rohnert Park, Cotati and/or Sebastopol)**
- **Groundwater Sustainability Plan**

12.6 RISK ASSESSMENT

12.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 12-10 lists past occurrences of natural hazards for which specific damage was recorded in Gold Ridge RCD. Other hazard events that broadly affected the entire planning area, including Gold Ridge RCD, are listed in the risk assessments in Volume 1 of this hazard mitigation plan. Gold Ridge RCD did not include valuation of damage assessment to building or infrastructure in our planning or analysis. We do want to acknowledge that we qualitatively included the valuation of natural resources, for instance, natural capital in Sonoma County has been valued at $2.2 to $6.6 billion annually ($2,200 to $6,500 per acre). Damage assessment does not apply to Gold Ridge RCD as we do not have jurisdiction over buildings or other build infrastructure.

Table 12-10. Past Natural Hazard Events

Type of Event	Date	Damage Assessment
Historical CA Droughts	1841, 1864, 1924, 1928-35, 1947-50, 1959-60, 1976-77, 1986-92, 2007-09	Unknown
Heavy Rains and Flooding	December 24, 1964	Unknown
Severe Storms, Flooding	January 26, 1969	Unknown
Severe Storms, Flood, Mudslides, High Tide	December 19, 1981 – January 8, 1982	Unknown
Coastal Storms, Floods, Slides, Tornadoes	January 21 – March 30, 1983	Unknown
Severe Storms, Flooding	February 12 – March 10, 1986	Unknown
Freeze of '91	1990 – 1991	Unknown
Flood of '93	1993	Unknown
Fishing Emergency	May – September 1994	Unknown
Flood of '95, Part 1	January 8 – 31, 1995	Unknown
Flood of '95, Part 2	March 7 – 15, 1995	Unknown
December Winter Storm	1995	Unknown
Cavedale Fire	1996	Unknown
Jenner Sandbarrier	1996	Unknown
Porter Creek Fire	October 27-28, 1996	Unknown
New Year's Flood	December 30, 1996 – January 4, 1997	Unknown
Superbowl Flood	January 25, 1997	Unknown
Flood of '98/ Rio Nido Debris Flow	February 2, 1998 – January 4, 2000	Unknown
February Winter Storm	February 8-10, 1999	Unknown
December Winter Storms	December 17, 02 – April 8, 03	Unknown
Geysers Fire	September 3 – 8, 2004	Unknown
New Year's Floods	December 31, 2005 – January 3, 2006	Unknown
Late Spring Storms	March 29 – April 16, 2006	Unknown
SF Oil Spill	November 7, 2007	Unknown
H1N1 Influenza Pandemic	April – May, 2009	Unknown
Great Tohoku Tsunami	March 11, 2011	Unknown
Holiday Decoration Flood	December 2, 2012	Unknown
Drought	2014 – 2016	Unknown
South Napa Earthquake	August 24, 2014	Unknown
December Winter Storm	August 24, 2014	Unknown
Valley Fire	September 12-25, 2015	Unknown
Severe Winter Storms, Flooding, and Mudslides	January 3-12, 2017	Unknown
Severe Winter Storms, Flooding, and Mudslides	February 1-23, 2017	Unknown
LNU Complex Fires	October, 2017	Unknown
Wildfires	October 8-31, 2017	Unknown
PG&E Power Shutoff	October, 2018	Unknown
Severe Winter Storms, Flooding, Landslides, Mudslides	February 24 – March 1, 2019	Unknown
PG&E Power Shutoff	October 2019	Unknown
Kincade Fire	October 23 – November 7, 2019	Unknown
COVID-19 Pandemic	January 2020 – present	Unknown
Wildfires	August 14 – September 26, 2020	Unknown
Wildfires	September 4 – November 17, 2020	Unknown

Type of Event	Date	Damage Assessment
Green Valley Road Flood	2000-2019	Unknown
Drought	2021	Unknown
Valley Ford Freestone Road Flooding	2000-2019	Unknown

12.6.2 Hazard Risk Ranking

Table 12-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As an evaluation of risk for RCDs is not based solely on loss of infrastructure, we used our own ranking methodology. Gold Ridge RCD ranked risk by multiplying probability of occurrence by magnitude of impact on service by geographic extent. Hazards scoring in the top third were ranked high, hazards scoring in the middle third were ranked medium, and hazards scoring in the lower third were ranked low.

Table 12-11. Hazard Risk Ranking

Rank	Hazard Type	Risk Category
1	Wildfire	High
2	Severe Weather	High
3	Drought	High
4	Landslide	Medium
5	Dam Failure	Medium
6	Earthquake	Medium
7	Flood	Medium
8	Sea level Rise	Low
9	Tsunami	Low

12.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- **Flood—**While the geographic extent of areas affected by flood in the District is less than 10 percent, floods cause a frequent and great deal of impact from loss of property, impassable or damaged roads, mudslides, habitat destruction, and pollution. There are several areas in the District that flood multiple times a year making roads impassable and sometimes strand threatened and endangered species. Disconnection of streams from their floodplains has increased downstream flooding, bank erosion, and habitat loss for aquatic species.
- **Tsunami—**Coastal towns susceptible to tsunami include Bodega Bay, Valley Ford, Rio Nido, Monte Rio, and Salmon Creek. While these areas are not a large percentage of the District the impact of a Tsunami could be significant.
- **Agricultural Hazards—**Agricultural land and rangeland are vital to the economy and important to consider when addressing issues related to groundwater, watersheds, and wildfire. Most of the agricultural hazards in the District are weather-related (e.g., freeze, hail, prolonged high temperatures, wind, rain (flood), drought. Other hazards include insects and disease.

- **Drought—**Many residents and farms and ranches in the Gold Ridge RCD jurisdiction do not have access to municipal water and instead rely on wells, riparian water, or ponds. Drought not only affects the communities' access to water for meeting basic needs but also to grow food and affect conservation efforts aimed at improving fish and wildlife habitat. Streamflow and groundwater issues are a recurring theme on private lands within the District and are specifically addressed in watershed management plans, streamflow improvement plans, and the upcoming Santa Rosa Plain Groundwater Sustainability Plan. Parts of the District are in state-recognized groundwater basins and are now affected by new legislation that was enacted in September of 2014 by Governor Edmund G. Brown, Jr. when he signed a three-bill package known as the Sustainable Groundwater Management Act.

  Crop losses and reduced plantings have occurred during past droughts. Generally, trucking water, riparian water pumping, and ground pumping were used to offset the impacts of past droughts. Both of these alternatives are becoming less reliable as surface water is diverted to other uses, and groundwater is unreliable or scarce in some areas. The District had a prolonged drought from 2012 through 2016. The winter and spring of 2017 brought a significant amount of precipitation after which the Governor declared the official end of the 5-year drought in April 2017. Additionally, water year 2019 and 2021 to date has seen precipitation totals severely below average and a local drought emergency has been declared.

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

12.7 HAZARD MITIGATION ACTION PLAN

Table 12-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 12-13 identifies the priority for each action. Table 12-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 12-12. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action GOL-1—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.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildfire, dam failure						
Existing	3, 4, 10	County of Sonoma	Gold Ridge RCD, Sonoma RCD, Ag & Open Space	High	HMGP, BRIC, FMA, USDA NRCS EWP	Short-term
Action GOL-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: All hazards						
New & Existing	1, 4, 5, 8, 12	County of Sonoma	Gold Ridge RCD	Low	Staff Time, General Funds	Short-term
Action GOL-3—Provide outreach and education to the community regarding hazards and opportunities to mitigate on a personal scale.						
Hazards Mitigated: Wildfire, flood, drought, landslide, severe storm, tsunami, earthquake						
New & Existing	4, 10, 2	County of Sonoma	Ag + Open Space, Gold Ridge RCD, Sonoma RCD, Sonoma Water, UC Cooperative Extension, local fire districts	Medium	General funds; cooperative agreements with local government agencies; grants and contracts from agencies such as CA Department of Food & Agriculture, CA Wildlife Conservation Board, CalFire	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action GOL-4—Provide technical and funding assistance to individual landowners and communities to improve soil health including organic matter content, aggregate stability, water holding capacity, and carbon sequestration.						
Hazards Mitigated: Landslide, severe weather, drought						
Existing	4, 10	Gold Ridge RCD	Ag + Open Space, Sonoma RCD, Regional Climate Protection Authority, Zero Waste Sonoma, NRCS	High	CA Department of Food & Agriculture; USDA-NRCS; Restore CA; CA Wildlife Conservation Board	Ongoing
Action GOL-5—Provide technical and funding assistance to individual landowners and communities in planning and implementing agroforestry practices including hedgerows, windrows, riparian plantings).						
Hazards Mitigated: drought, severe storms, agricultural hazards						
New & Existing	4, 6, 9	Gold Ridge RCD	Ag + Open Space, Sonoma RCD, Regional Climate Protection Authority, Zero Waste Sonoma, NRCS	High	CA Department of Food & Agriculture; USDA-NRCS; Restore CA; CA Wildlife Conservation Board	Ongoing
Action GOL-6—Provide technical and funding assistance to individual landowners and communities to install water source and storage systems including rainwater catchment projects.						
Hazards Mitigated: drought, flooding, wildfire, severe storms, tsunami						
New & Existing	4, 10	Gold Ridge RCD	Sonoma RCD, Sonoma Water	High	CA Wildlife Conservation Board, DWR, CA Dept of Fish & Wildlife, USDA NRCS EQIP	Ongoing
Action GOL-7—Protect, enhance, or restore inland buffers by improving wetland health and size, and reducing saltwater intrusion.						
Hazards Mitigated: sea-level rise, flood, tsunami						
New & Existing	4, 8, 10	Gold Ridge RCD	Ag & Open Space, Sonoma RCD, Sonoma Water, Sonoma Land Trust, USDA	High	Ag & Open Space, BRIC, Sonoma Water, Sonoma Land Trust, USDA, EPA, State Coastal Conservancy, Private Foundations	Long-Term
Action GOL-8—Support and implement streamflow enhancement projects on individual properties or with communities.						
Hazards Mitigated: Drought						
New & Existing	4, 10	Gold Ridge RCD	Sonoma RCD, Sonoma Water	High	CA Wildlife Conservation Board, DWR, CA Dept of Fish & Wildlife, USDA NRCS EQIP	Ongoing
Action GOL-9—Plan, design, and implement stormwater management and attenuation projects.						
Hazards Mitigated: Flood, drought						
New & Existing	2, 4, 9, 10	Gold Ridge RCD	Sonoma RCD, Sonoma Water, Santa Rosa Plan Groundwater Sustainability Agency, Ag + Open Space, Sonoma County Regional Parks	High	State Water Board; Department of Conservation; Wildlife Conservation Board; BRIC	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action GOL-10—Support for communities to plan and implement defensible space programs to reduce the risk of damage from catastrophic wildfire (including support for prescribed burn association, community grazing programs, forest management planning, and strategic fuel breaks along strategic locations including along evacuation routes).						
Hazards Mitigated: Wildfire, landslide, drought, severe storm						
New & Existing	2, 9, 4	County of Sonoma	Gold Ridge RCD, Sonoma RCD, Ag + Open Space, University of California Cooperative Extension	Medium	National Association of Conservation Districts; BRIC; USDA-NRCS; CalFire	Ongoing
Action GOL-11—Plan, design, and implement groundwater recharge projects.						
Hazards Mitigated: sea-level rise, drought						
New & Existing	4	Gold Ridge RCD	Gold Ridge RCD, Sonoma RCD, Sonoma Water, County of Sonoma, Santa Rosa Plan Groundwater Sustainability Agency	Medium	Department of Water Resources, USDA NRCS, BRIC	Ongoing
Action GOL-12—Provide technical and funding assistance to agricultural producers with water conservation measures including irrigation scheduling and efficiency, alternative manure management, and alternative water sources.						
Hazards Mitigated: Drought						
New & Existing	4, 6	Gold Ridge RCD	Sonoma RCD, University of California Cooperative Extension	High	CA Department of Food & Agriculture; USDA-NRCS; CA Department of Water Resources	Ongoing
Action GOL-13—Plan, design and implement slope stability and erosion control measures where necessary and feasible.						
Hazards Mitigated: Landslide, wildfire						
New & Existing	4, 9	County of Sonoma	Gold Ridge RCD, Sonoma RCD, NRCS	High	USDA-NRCS	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 a list of acronyms used here.

Table 12-13. 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	Grant Pursuit Priority
GOL-1	3	Medium	High	No	Yes	No	Low	Low
GOL-2	5	Low	Low	Yes	No	Yes	High	Low
GOL-3	3	High	Medium	Yes	Yes	No	Medium	Medium
GOL-4	2	High	High	Yes	Yes	Yes	Medium	Medium
GOL-5	3	Medium	High	No	Yes	No	Low	Medium
GOL-6	2	High	High	Yes	Yes	No	High	High
GOL-7	3	Medium	High	No	Yes	No	Low	Low
GOL-8	2	High	High	Yes	Yes	No	High	High
GOL-9	4	Medium	High	No	Yes	No	Low	Low
GOL-10	3	High	High	Yes	Yes	No	High	High
GOL-11	1	Medium	High	No	Yes	No	Low	Low
GOL-12	2	High	High	Yes	Yes	No	Medium	Medium
GOL-13	2	High	High	Yes	Yes	No	Medium	Medium

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

Table 12-14. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
Wildfire	GOL-2	GOL-1, 10, 13	GOL-3	GOL-6, 13		GOL-1	GOL-6, 10	GOL-3, 10
Severe Weather	GOL-2	GOL-1, 10	GOL-3	GOL-4, 5, 6			GOL-4, 6, 10	GOL-3, 10
Drought	GOL-2	GOL-1, 10	GOL-3, 12	GOL-4, 5, 6, 8, 9, 11, 12			GOL-4, 6, 9, 10	GOL-3, 10
Medium-Risk Hazards								
Landslide	GOL-2	GOL-1, 10, 13	GOL-3	GOL-4, 13		GOL-1	GOL-4, 10	GOL-3, 10
Dam Failure	GOL-2,	GOL-1				GOL-1		
Earthquake	GOL-2	GOL-1	GOL-3			GOL-1		GOL-3
Low-Risk Hazards								
Sea level Rise	GOL-2	GOL-7		GOL-7, 11			GOL-7	
Flood	GOL-2	GOL-1, 7	GOL-3	GOL-6, 7, 9		GOL-1	GOL-6, 7, 9	GOL-3
Tsunami	GOL-2	GOL-1	GOL-3	GOL-1, 6, 7		GOL-1	GOL-1, 6, 7	GOL-3

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

12.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- Abt Associates (2015). *The Economic Value of Natural Capital on the Sonoma Coast*. Prepared for: Sonoma County Agricultural Preservation and Open Space District https://www.sonomaopenspace.org/wp-content/uploads/HLHE-Case-Study-Ag-Open-Space-Technical-Report-Sonoma-Coast.pdf
- Sonoma County Ag + Open Space. (2018). *Healthy Lands & Healthy Economies: The Multiple Benefits of Sonoma County Working and Natural Lands*. Santa Rosa, CA. Resource services provide natural capital that provides value to the Sonoma County economy. Table 12-15 presents a range including the low and high values estimated using the benefit transfer method for each service. This table is from page 13 of Sonoma County's Ag + Open Space report titled "Healthy Lands & Healthy Economies."https://www.sonomaopenspace.org/projects/healthy-lands-healthy-economies/
- Fresno County Multi-Jurisdictional Hazard Mitigation Plan (2018). Sierra RCD Annex
  These plans were used as an example of how an RCD can participate in a Multi-Jurisdictional Hazard Mitigation Plan and provided insight on how hazards impact agricultural and natural lands.

Table 12-15. Economic Value of Ecosystem Services in Sonoma County

Ecosystem Service	$ Millions Per Year Countywide (Low Estimate)	$ Millions Per Year Countywide (High Estimate)
Water Supply	$9 million	$180 million
Wastewater Treatment	$35 million	$117 million
Moderation of Extreme Events	$82 million	$220 million
Urban Stormwater Management	$0.2 million	$8 million
Soil Retention and Formation	$4 million	$620 million
Carbon Sequestration	$58 million	$197 million
Air Quality	$19 million	$22 million
Pollination	$218 million	$367 million
Habitat and Nursery	$4 million	$43 million
Biological Control	$8 million	$23 million
Natural Beauty	$1.214 million	$4.182 million
Recreation and Tourism	$500 million	$596 million
Total	$2.151 million (or $2.2 billion)	$6.575 million (or $6.6 billion)

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.

12.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Better understanding the value of ecosystem services, local food security, and biodiversity would serve to protect residents of Sonoma County from impacts of climate change including an increase of most of the hazards listed

above. Solely focusing on built infrastructure misses out on all the things humans need to survive such as clean water for people and wildlife, resilience to climate change and extreme events, and community health.

13. SONOMA RESOURCE CONSERVATION DISTRICT

13.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact
Valerie Quinto, Executive Director
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Aaron Fairbrook, Program Manager
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Santa Rosa, CA 95405
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e-mail Address: afairbrook@sonomarcd.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 13-1.

Table 13-1. Local Mitigation Planning Team Members

Name	Title
Valerie Quinto	Executive Director
Aaron Fairbrook	Program Manager
Erica Mikesh	Partner Engineer
Jessica Pollitz	Engineer
Jason Wells	Forester
Anya Starovoytov	Project Manager
Katie Robbins	Project Manager

13.2 JURISDICTION PROFILE

13.2.1 Overview

Sonoma RCD was incorporated in its current form in 2013. The District was the result of a series of District formations and reorganizations between 1946 and 2013. Each District was formed by vote of local landowners (as made possible by Division 9 of the CA Public Resources Code), and the reorganizations were each carried out to increase efficiency and consistent delivery of conservation services throughout that majority of the county. In its more than 70 year history, Sonoma RCD has focused on providing conservation services to willing landowners, helping them be part of the solution to pressing natural resource issues through non-regulatory pathways.

The climate of Sonoma RCD varies from the fog-influenced coastline to the warmer interior valleys. Rainfall varies widely across the landscape, averaging around 25 inches per year in much of the District, but reaching an average of 75 inches per year in the wetter northwest corner.

The Sonoma RCD is governed by a 7-member Board of Directors, each of whom serve as volunteers and are appointed by the County Board of Supervisors. The RCD Board also includes non-voting Associate and Emeritus Directors.

The Sonoma RCD Board of Directors assumes responsibility for the adoption of this plan and for overseeing its implementation. Development of this annex was carried out by Executive Director Valerie Quinto.

13.2.2 Service Area

Sonoma Resource Conservation District (RCD) is in Sonoma County

The current boundaries generally extend from the area south of the Sonoma-Mendocino county line, west of the Sonoma-Lake and Sonoma-Napa county line, north of the mainstem Russian River, east of the Laguna de Santa Rosa mainstem, and south of the Stemple Creek watershed divide to the Sonoma-Marin county line, encompassing an area of over 1,500 square miles.

13.2.3 Assets

Table 13-2 summarizes the assets of the District and their value.

Table 13-2. Special Purpose District Assets

Asset	Value
Equipment	
Pickup truck	$35,000
Office equipment	$45,000
Total:	*$80,000*
Critical Facilities and Infrastructure	
Office (rented) 1221 Farmers Lane, Suite F, Santa Rosa 95405	N/A
Total:	*$0*

13.3 CURRENT TRENDS

According to the 2010 US Census, less the population claimed by Gold Ridge RCD (the two RCDs make up the entirety of the County), the population of Sonoma RCD as of 2010 was over 460,000. According to the Sonoma County Economic Development Board, between 2010 and 2017 the population of Sonoma County has grown by 7.4 percent.

The Sonoma RCD District includes a wide variety of land uses, reflecting the overall diversity of land uses within the County. The RCD does not have authority of land use decisions, and as such does not maintain data on development trends.

Areas added to the District in recent years consisted of 12 islands that were surrounded by the District's boundaries but not previously included in its sphere of influence. The annexation was part of the District's 2013 reorganization, and was carried out at the request of the Local Agency Formation Commission and with the consent of the two Districts involved with the reorganization.

13.4 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 13-3.
- An assessment of fiscal capabilities is presented in Table 13-4.
- An assessment of administrative and technical capabilities is presented in Table 13-5.
- An assessment of education and outreach capabilities is presented in Table 13-6.
- Classifications under various community mitigation programs are presented in Table 13-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 13-8.

Table 13-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Lower Sonoma Creek Flood Management and Ecosystem Enhancement Study	2012	
Sonoma and Carriger Creek Alluvial Fan Assessment	2012	
Petaluma Valley Historical Hydrology and Ecology Study	2018	
Petaluma Watershed Enhancement Plan (draft)	2015	Update currently underway
Mill Creek Watershed Management Plan	2015	
Maacama and Upper Mark West Creek Integrated Watershed Management Plan (draft)	2015	
Program: LandSmart Planning	N/A	
Program: LandSmart On-the-Ground	N/A	
Program: LandSmart Water Resources	N/A	
Sonoma County Community Wildfire Protection Plan (CWPP)	2016	Update currently underway
Sonoma County Hazard Mitigation Plan	2016	Update currently underway
Public Resources Code, Section 9—Resource Conservation	2017	Enabling state legislation for natural resource conservation.
Sonoma County Recovery and Resiliency Framework	2018	Potential Actions: NR 1.2.4-.6, 1.2.8, 1.3.1, 2.1.1-.3, 2.1.5, 2.2.2, 2.4.1, 2.4.3, 2.4.5, 3.1.2, 3.1.8, 3.2.6, 3.4.3.
Upper Mark West Watershed CWPP	2018	
Fitch Mountain CWPP	2019	
Fort Ross Area CWPP		
Grove Street Area CWPP	2020	
Mill Creek Area CWPP	2020	
Santa Rosa Fire Department CWPP	2020	

Table 13-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes
Other—Foundation Grants, Donations	Yes

Table 13-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	2 Licensed Civil Engineers (1 shared with Gold Ridge RCD); 1 Registered Professional Forester (shared with Gold Ridge RCD); 1 Certified Professional In Erosion & Sediment Control; several other staff with professional expertise in land management practices
Engineers or professionals trained in building or infrastructure construction practices	Yes	2 Licensed Civil Engineers (same as above)
Planners or engineers with an understanding of natural hazards	Yes	Same as above
Staff with training in benefit/cost analysis	No	N/A
Surveyors	Yes	Engineers
Personnel skilled or trained in GIS applications	Yes	Several of the staff identified above
Scientist familiar with natural hazards in local area	Yes	Same as above
Emergency manager	No	N/A
Grant writers	Yes	Same as above + Executive Director

Table 13-6. Education and Outreach

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? *If yes, briefly describe:* Fire recovery resources page https://sonomarcd.org/resources/fire-recovery/	Yes
Do you use social media for hazard mitigation education and outreach? *If yes, briefly describe:* Posts directing the public to written resources, informational meetings, and technical assistance available	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, briefly describe:* Board of Directors and project-specific advisory committees (e.g. convened to prioritize projects to be implemented through a specific grant)	Yes

Criterion	Response
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, briefly describe:* Workshops (in-person and virtual); youth education programs; one-on-one or small group technical assistance	Yes
Do you have any established warning systems for hazard events? *If yes, briefly describe:*	No

Table 13-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	170143106	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	No		
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 13-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	High
Comment: Our team regularly uses knowledge of wildfire, drought, and sensitive species impacts in our work	
Jurisdiction-level monitoring of climate change impacts	Low
Comment: In most cases, we rely on partners or consultants for monitoring. Our most active widespread monitoring efforts are groundwater level monitoring.	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: Our team has significant experience with construction feasibility of land management practices, and incorporates climate change considerations such as drought into project planning	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment:	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: We have capacity for this in the rural and agricultural setting, not for public infrastructure	
Participation in regional groups addressing climate risks	Medium
Comment: Collaboration with other RCDs, Carbon Cycle Institute, other technical partners, Regional Climate Protection Authority	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: Division 9 of Public Resources Code; CEQA; grant program requirements	
Identified strategies for greenhouse gas mitigation efforts	High
Comment: Carbon farming, forest management	
Identified strategies for adaptation to impacts	High
Comment: Numerous climate adaption projects, including carbon farming, water reliability, forest management	
Champions for climate action in local government departments	High
Comment: Champions at both Board and staff levels	

Criterion	Jurisdiction Rating[a]
Political support for implementing climate change adaptation strategies	High
Comment: *Elected officials, agencies, landowners, and other stakeholders rely on us to implement climate adaptation through our programs*	
Financial resources devoted to climate change adaptation	Medium
Comment: *We bring in significant grant funding for this work, but our capacity is limited by the need to seek grants*	
Local authority over sectors likely to be negative impacted	Low
Comment: *We have no regulatory authority.*	
Public Capacity	
Local residents knowledge of and understanding of climate risk	Medium
Comment: *We serve a large and diverse district. While many residents have knowledge and understanding of risks, others are not as connected to these issues.*	
Local residents support of adaptation efforts	Medium
Comment: *Similar to the above, there are many passionate supporters of adaptation efforts, and others who are not as connected to this issue.*	
Local residents' capacity to adapt to climate impacts	Medium
Comment: *In addition to gaps in knowledge and interest among some residents, technical and financial resources are also a barrier for some.*	
Local economy current capacity to adapt to climate impacts	Medium
Comment:	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment:	

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.

13.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

13.5.1 Existing Integration

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

- **Sonoma RCD Strategic Direction 2017-2020**—Includes the following goal: Landowners and managers are empowered to manage their land in ways that promote resiliency to wildfires and other natural disasters. Communities are supported to come together and plan for natural disasters and emergencies in ways that protect natural resources in addition to human health & safety
- **Mill Creek Integrated Hydrologic Model & Streamflow Enhancement Study *and* Mark West Creek Flow Availability Analysis (both currently in draft)**—Address climate change impacts in hydrologic

modeling and identify projects to mitigate drought impacts to flow availability for both humans and fish/wildlife

- **Watershed planning documents identified in Table 13-3**—These documents identify and prioritize various actions relevant to climate adaptation
- **CWPPs identified in Table 13-3**—Provide a general overview and assessment of wildfire risks and prioritizes tasks to increase fire resiliency at the neighborhood level and certified by local officials.

13.5.2 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 hydrologic or sediment modeling**—The RCD has identified watersheds where such modeling would be helpful to inform projects that alleviate flooding and/or stream bank erosion.
- **Watershed- or neighborhood-wide forest management plans**—This approach could more efficiently (than individual plans) meet forest management planning needs for some areas
- **County CWPP Update—**The update includes more robust stakeholder participation in the planning and prioritization of wildfire risk reduction projects, and increased science-based risk assessment and GIS mapping.
- **Sonoma County Strategic Plan**—The five-year Strategic Plan will provide context to inform policies and projects that are funding for the next five years. The plan will guide how to align short and long-term objectives so the County Board of Supervisors' actions reflect a clear sense of purpose.
- **Sonoma County General Plan Update**—The General Plan is a policy document that establishes a vision for the future of Sonoma County. It prioritizes, organizes, and directs development and conservation for 20-year increments and was last updated in 2008.
- **Future Local CWPPs or similar plans**—Additional documents that provide a general overview and assessment of wildfire risks and prioritizes tasks to increase fire resiliency at the neighborhood level and certified by local officials.

13.6 RISK ASSESSMENT

13.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 13-9 lists past occurrences of natural hazards for which specific damage was recorded in Sonoma RCD. Other hazard events that broadly affected the entire planning area, including Sonoma RCD, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

13.6.2 Hazard Risk Ranking

Table 13-10 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 13-9. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Drought (Sonoma & Mendocino Counties)	N/A	Declared April 21, 2021	Unknown
Wildfire (Glass)	FM-5376-CA	September 27, 2020	Unknown
Wildfire (LNU Lightning)	FM-5331-CA	August 17, 2020	Unknown
Wildfire (Kincade)	FM-5295-CA	October 24, 2019	Unknown
Severe Winter Storms, Flooding, Landslides, and Mudslides	DR-4434-CA	February 24 – March 1, 2019	Unknown
Wildfire (Nuns)	FM-5220-CA	October 8, 2017	Unknown
Wildfire (Tubbs)	FM-5215-CA	October 8, 2017	Unknown
Severe Winter Storms, Flooding, and Mudslides	DR-4308-CA	February 1 – 23, 2017	Unknown
Severe Winter Storms, Flooding, and Mudslides	DR-4305-CA	January 18 – 23, 2017	Unknown
Drought	N/A	2014-2016	Unknown

Table 13-10. Hazard Risk Ranking

Rank	Hazard	Category
1	Wildfire	High
1	Drought	High
1	Flood	High
2	Landslide	Medium
2	Severe Weather	Medium
2	Earthquake	Medium
2	Dam Failure	Medium
2	Sea Level Rise	Medium
3	Tsunami	Low

13.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Agricultural Hazards—Agricultural land and rangeland are vital to the economy and important to consider when addressing issues related to groundwater, watersheds, and wildfire. Most of the agricultural hazards in the District are weather related (e.g., freeze, hail, prolonged high temperatures, wind, flood, drought). Other hazards include insects and disease.

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

13.7 HAZARD MITIGATION ACTION PLAN

Table 13-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 13-12 identifies the priority for each action. Table 13-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 13-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action SRCD-1—Prepare a Continuation of Operations Plan for the District						
Hazards Mitigated: Earthquake, dam inundation, wildfire, severe weather						
Existing	6	Sonoma RCD	N/A	Low	General funds	Short-term
Action SRCD-2—Relocate District electronic file storage to the cloud in order to avoid service interruptions during disasters that may cause damage or inaccessibility at the office..						
Hazards Mitigated: Earthquake, dam inundation, wildfire, severe weather						
Existing	6	Sonoma RCD	N/A	Medium	HMGP	Short-term
Action SRCD-3—Provide outreach and education to the community regarding hazards and opportunities to mitigate on a personal scale						
Hazards Mitigated: Wildfire, flood, drought, landslide, severe weather						
Existing & New	4, 10, 2	Sonoma RCD	Ag + Open Space, RCDs, Sonoma Water, UC Cooperative Extension, County of Sonoma, NGOs, Fire Safe Sonoma, local fire districts	Medium	General funds; cooperative agreements with local government agencies; grants and contracts from agencies such as CA Department of Food & Agriculture, CA Wildlife Conservation Board, CalFire	Ongoing
Action SRCD-4—Develop water source and storage systems for communities and individuals.						
Hazards Mitigated: Drought, wildfire						
Existing	4, 2	Sonoma RCD	Russian River Coho Partnership	High	CA Wildlife Conservation Board	Ongoing
Action SRCD-5—Implement strategies to Improve soil health including organic matter content, aggregate stability, water holding capacity with individuals and communities.						
Hazards Mitigated: Drought, flood, landslide, agricultural hazards						
Existing & New	4, 2, 10	Sonoma RCD	Ag + Open Space, RCDs, Regional Climate Protection Authority, Zero Waste Sonoma, Carbon Cycle Institute, North Coast Soil Health Hub, NGOs	High	CA Department of Food & Agriculture; USDA-NRCS; Restore CA; CA Wildlife Conservation Board	Ongoing
Action SRCD-6—Plan and implement agroforestry practices including hedgerows, windrows, riparian plantings with individuals and communities.						
Hazards Mitigated: Drought, severe storms, agricultural hazards						
Existing	4, 6, 9	Sonoma RCD	Ag + Open Space, RCDs, Regional Climate Protection Authority, Zero Waste Sonoma, Carbon Cycle Institute, North Coast Soil Health Hub, NGOs	High	CA Department of Food & Agriculture; USDA-NRCS; Restore CA; CA Wildlife Conservation Board	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action SRCD-7—Develop water conservation measures with agricultural producers including irrigation scheduling and efficiency, alternative manure management, and alternative water sources.						
Hazards Mitigated: Drought						
Existing	4, 2	Sonoma RCD	Agricultural support organizations (e.g. RCDs, University of California Cooperative Extension, Farm Bureau, Community Alliance with Family Farmers)	High	CA Department of Food & Agriculture; USDA-NRCS; CA Department of Water Resources	Ongoing
Action SRCD-8—Plan, design, and implement stormwater management and attenuation projects						
Hazards Mitigated: Flood, Drought						
Existing & New	10, 4, 2, 9	Sonoma RCD	Groundwater Sustainability Agencies, Land protection organizations	High	State Water Board; Department of Conservation; Wildlife Conservation Board; BRIC	Ongoing
Action SRCD-9—Protect, enhance, or restore inland buffers by improving wetland health and size, and reducing saltwater intrusion.						
Hazards Mitigated: Sea level rise, flood, tsunami						
Existing & New	4, 8, 10	Sonoma RCD	Ag & Open Space, Sonoma Water, Sonoma Land Trust, USDA	High	Ag & Open Space, BRIC, Sonoma Water, Sonoma Land Trust, USDA, EPA, State Coastal Conservancy, Private Foundations	Ongoing
Action SRCD-10—Pursue long-term permitting solutions for levee maintenance						
Hazards Mitigated: Flood						
Existing	10, 2	Sonoma RCD	Participating landowners/managers; state, federal, regional, and local permitting agencies	High	Participating landowner contributions; HMGP	Ongoing
Action SRCD-11—Plan, design and implement slope stability and erosion control measures where necessary and feasible						
Hazards Mitigated: Landslide, wildfire						
Existing	9	Sonoma RCD		High	USDA-NRCS	Ongoing
Action SRCD-12—Work with communities to plan and implement defensible space programs to reduce the risk of damage from catastrophic wildfire (including support for prescribed burn association, community grazing programs, forest management planning, and strategic fuel breaks along strategic locations including along evacuation routes).						
Hazards Mitigated: Wildfire						
Existing & New	2, 9, 4	Sonoma RCD	RCDs, County of Sonoma, COPE groups, Fire Safe Councils, Good Fire Alliance, Land protection organizations, Audubon Canyon Ranch Fire Forward program	High	National Association of Conservation Districts; BRIC; USDA-NRCS; CalFire	Ongoing
Action SRCD-13—Engage with and provide guidance to communities developing community-scale plans such as CWPPs or forest management plans.						
Hazards Mitigated: Wildfire						
Existing & New	2, 9, 4	Sonoma RCD	Fire Safe Sonoma, COPE groups, Fire Safe Councils	Medium	National Association of Conservation Districts; BRIC	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
Action SRCD-14—Plan and implement landscape-scale vegetation management to reduce the risk of damage from catastrophic wildfire *Hazards Mitigated:* Wildfire						
Existing & New	2, 4, 9	Sonoma RCD	Land protection organizations, Audubon Canyon Ranch Fire Forward program;	High	USDA-NRCS; CalFire; BRIC	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 13-12. 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]
SRCD-1	1	Medium	Low	Yes	Unknown	Yes	High	Low
SRCD-2	1	High	Medium	Yes	Unknown	Yes	High	Low
SRCD-3	3	High	Medium	Yes	Yes	Partially	High	Medium
SRCD-4	2	High	High	Yes	Yes	No	High	High
SRCD-5	3	High	High	Yes	Yes	No	High	High
SRCD-6	3	Medium	High	No	Yes	No	Medium	Medium
SRCD-7	2	High	High	Yes	Yes	No	Medium	Medium
SRCD-8	4	High	High	Yes	Yes	No	Medium	Medium
SRCD-9	3	Medium	High	No	Yes	No	Low	Low
SRCD-10	2	High	Medium	Yes	Unknown	Partially	High	High
SRCD-11	1	High	High	Yes	Yes	No	Medium	Medium
SRCD-12	3	High	High	Yes	Yes	No	High	High
SRCD-13	3	High	High	Yes	Yes	No	Medium	Medium
SRCD-14	3	High	High	Yes	Yes	No	High	High

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

Table 13-13. 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								
Wildfire		SRCD-11, 12, 14	SRCD-3, 13	SRCD-11, 14	SRCD-1, 2	SRCD-4	SRCD-4, 14	SRCD-3, 12, 13, 14
Drought			SRCD-3	SRCD-4, 5, 6, 7, 8		SRCD-4, 8	SRCD-4, 5, 7, 8	SRCD-3
Flood		SRCD-9, 10	SRCD-3	SRCD-5, 8, 9		SRCD-8	SRCD-5, 8, 9	SRCD-3, 10
Medium-Risk Hazards								
Landslide		SRCD-11	SRCD-3	SRCD-5, 11			SRCD-5	SRCD-3
Severe weather			SRCD-3	SRCD-6	SRCD-1, 2			SRCD-3
Dam Failure					SRCD-1, 2			
Earthquake					SRCD-1, 2			
Sea Level Rise		SRCD-9		SRCD-9			SRCD-9	
Low-Risk Hazards								
Tsunami		SRCD-9		SRCD-9			SRCD-9	

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

13.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- **County of Sonoma General Plan 2020** for identifying pertinent development and conservation regulations.
- **Sonoma County Community Wildfire Protection Plan (CWPP)** for identifying measures to reduce wildfire risk.
- **Sonoma County Recovery and Resiliency Framework** for identifying relevant potential actions and community resiliency.

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.

14. SONOMA COUNTY AGRICULTURAL PRESERVATION & OPEN SPACE DISTRICT

14.1 LOCAL HAZARD MITIGATION PLANNING TEAM

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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 14-1.

Table 14-1. Local Mitigation Planning Team Members

Name	Title
Sheri Emerson	Stewardship Manager, Ag + Open Space
Allison Schichtel	Senior Conservation Planner, Ag + Open Space

14.2 JURISDICTION PROFILE

14.2.1 Overview

The Sonoma County Agricultural Preservation District (Ag + Open Space) is a special district of the County of Sonoma established in 1990 to permanently protect the diverse agricultural, natural resource, and scenic open space lands of Sonoma County for future generations. In 1990, Sonoma County voters approved Measures A and C to establish Ag + Open Space. Measure A established Ag + Open Space pursuant to California Public Resources Code sections 5500 et seq., which allows for the creation of an open space district, furthering California state policy on the preservation of open space. Measure C called for a quarter-cent sales tax over a 20-year period to fund protection of agricultural lands and open space in perpetuity. In 2006, voters extended the sales tax through 2031 by passing Measure F, which updated the Expenditure Plan directing how the collected tax revenue can be spent. As of June 2020, Ag + Open Space has protected over 122,000 acres in Sonoma County, primarily through acquisition of conservation easements over land owned and managed by others, and outright purchase of some land that Ag + Open Space owns and manages.

The climate of Sonoma County is generally Mediterranean, characterized by a summer dry season, winter rainy season, and cool nights and temperate days. Within Sonoma County there is an array of microclimates; areas

closer to the coast are cooler throughout the summer and receive more fog, while inland areas, including the Santa Rosa Plain, are typically hotter and drier. Rainfall varies throughout the County from 20 to 70 inches annually.

The Sonoma County Board of Supervisors serves as the Ag + Open Space Board of Directors, and the Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation.

14.2.2 Service Area

The Sonoma County Agricultural Preservation and Open Space District was formed to serve all areas within Sonoma County.

Sonoma County is the northernmost of the nine San Francisco Bay Area counties. The current boundaries generally extend from about forty miles north of the Golden Gate Bridge, between Marin and Mendocino Counties, and from the Pacific coastline east to the Mayacamas Range bordering Napa County, encompassing an area of 1,576 square miles.

14.2.3 Assets

Table 14-2 summarizes the assets of the district and their value.

Table 14-2. Special Purpose District Assets

Asset	Value
Property	
4,178 acres of land (fee title)	$39,326,263
113,203 acres of land (conservation easement)	$391,309,458
Total:	$430,635721
Critical Facilities and Infrastructure	
Administrative Building—747 Mendocino Ave., Santa Rosa, CA 95401	$2,300,000
Total:	*$2,300,000*

14.3 CURRENT TRENDS

According to United States Census Bureau, the population of Sonoma County as of April 2010 was 483,878. Since 2010, the population has grown at an average annual rate of 2.2 percent.

14.4 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 14-3.
- An assessment of fiscal capabilities is presented in Table 14-4.
- An assessment of administrative and technical capabilities is presented in Table 14-5.
- An assessment of education and outreach capabilities is presented in Table 14-6.
- Classifications under various community mitigation programs are presented in Table 14-7.
- The community's adaptive capacity for the impacts of climate change is presented in Table 14-8.

Table 14-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Expenditure Plan	2006	Governs Ag + Open Space's expenditure of tax revenues; Exhibit "A" to Measure F, the legislation passed in 2006 to reauthorize Ag + Open Space through 2031. https://www.sonomaopenspace.org/wp-content/uploads/Measure-F_Expenditure-Plan-2006_Exhibit-A.pdf
Vital Lands Initiative	January 2021	Directs Ag + Open Space's conservation planning, acquisition, and stewardship efforts https://www.sonomaopenspace.org/wp-content/uploads/FINAL-VLI-FULL-REPORT-01.26.2021_-ADA.pdf
Fee Lands Strategy	February 2021	Guides the stewardship and conveyance of lands held in fee by Ag + Open Space https://www.sonomaopenspace.org/wp-content/uploads/Fee-Lands-Strategy_FINAL_20210301-REMEDIATED.pdf
Initial Public Access, Operation & Maintenance Policy	February 2016	Policy for budgeting and administering funds under Paragraph 6 of the Expenditure Plan https://www.sonomaopenspace.org/wp-content/uploads/IPAOM_Reso_20160203.pdf
Stewardship Policy	February 2021	Establishes guidelines for staff implementation of stewardship responsibilities https://www.sonomaopenspace.org/wp-content/uploads/Stewardship-Policy_FINAL_20210301-REMEDIATED.pdf
Mitigation Policy	July 2017	Describes Ag + Open Space's role with respect to environmental mitigation and process for evaluating environmental mitigation proposals https://www.sonomaopenspace.org/wp-content/uploads/Final-District-Mitigation-Policy_20170718.pdf

Table 14-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Federal Grant Programs	Yes

Table 14-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Acquisition Manager, Conservation Planning Manager, Stewardship Manager, Stewardship Coordinator, Acquisition Specialists, Stewardship Specialists, Senior Conservation Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Provided through contract support
Planners or engineers with an understanding of natural hazards	Yes	Acquisition Manager, Conservation Planning Manager, Stewardship Manager, Stewardship Coordinator, Acquisition Specialists, Stewardship Specialists, Senior Conservation Planner
Staff with training in benefit/cost analysis	Yes	Provided through contract support
Surveyors	Yes	Provided through contract support
Personnel skilled or trained in GIS applications	Yes	Conservation GIS Coordinator, Senior Conservation Planner, Acquisition Assistant, Stewardship Specialists, Stewardship Technicians
Scientist familiar with natural hazards in local area	Yes	Provided through contract support
Emergency manager	No	
Grant writers	Yes	Acquisition Specialists, Stewardship Specialists, Senior Conservation Planner; also provided through contract support
Other	Yes	All staff trained to fill ICS operations positions

Table 14-6. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No Through contract support only
Do you have hazard mitigation information available on your website? *If yes, please briefly describe*	Yes Blog posts about Ag + Open Space activities related to hazard mitigation and studies on benefits and economic values of open space (including for hazard mitigation)
Do you use social media for hazard mitigation education and outreach? *If yes, please briefly describe*	Yes Social media (Facebook, Instagram) and e-newsletters to notify the public of Ag + Open Space activities related to hazard mitigation
Do you have any citizen boards or commissions that address issues related to hazard mitigation? *If yes, please briefly specify*	Yes Ag + Open Space Board of Directors, Fiscal Oversight Commission, and Citizens Advisory Committee provide direction and input on Ag + Open Space projects related to hazard mitigation
Do you have any other programs already in place that could be used to communicate hazard-related information? *If yes, please briefly describe*	Yes Outreach and education program; volunteer program
Do you have any established warning systems for hazard events? *If yes, please briefly describe*	No

Table 14-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No		
DUNS#	Yes	143290547	
Community Rating System	No		
Building Code Effectiveness Grading Schedule	No		
Public Protection	No		
Storm Ready	No		
Firewise	No		
Tsunami Ready	No		

Table 14-8. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: Ag + Open Space maintains a library of GIS, remote sensing, technical reports, and studies related to local documented and projected impacts from climate change, including impacts to water quality and supply, sensitive habitats and species, ecosystem health/stability, agricultural productivity and viability, and threats to communities from fires, floods, sea level rise, and other hazards	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: Ag + Open Space maintains fine-scale maps of vegetation and other land cover types in Sonoma County and intends to monitor changes in vegetation over time. In addition, the organization maintains a library of GIS, remote sensing, technical reports, and studies related to local documented and projected impacts from climate change	
Technical resources to assess proposed strategies for feasibility and externalities	Medium
Comment: Ag + Open Space may conduct assessments using expertise of internal staff and/or through technical consultant support	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Low
Comment: Ag + Open Space does not have internal capacity to develop a greenhouse gas emissions inventory and relies on inventories prepared by the Sonoma County Regional Climate Protection Authority and other regional and state entities	
Capital planning and land use decisions informed by potential climate impacts	Medium
Comment: Ag + Open Space evaluates potential climate impacts when designing conservation easements, land management or improvement projects, and in developing countywide priorities for land conservation	
Participation in regional groups addressing climate risks	Medium
Comment: Ag + Open Space participates in climate change-related planning, education, and community engagement efforts led by the Sonoma County Regional Climate Protection Authority, North Bay Climate Adaptation Initiative, Sonoma County Office of Recovery & Resiliency, and local, regional, and state organizations	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	Medium
Comment: Climate change is not explicitly addressed in Ag + Open Space's Expenditure Plan and authorizing legislation, though the Ag + Open Space Board of Directors strongly supports decisions that limit or mitigate environmental impacts from climate change, and has declared a Climate Emergency (resolution 19-0367)	
Identified strategies for greenhouse gas mitigation efforts	Medium
Comment: Through guiding policy documents, Ag + Open Space prioritizes conservation of open space areas and implements stewardship projects that promote carbon sequestration and avoided emissions	
Identified strategies for adaptation to impacts	Medium
Comment: Ag + Open Space has conducted case studies to evaluate the role of land conservation in mitigating impacts from climate change and extreme events, and is the process of developing targeted strategies to mitigate risks to community safety and ecosystem health from fire, flood, sea level rise, and drought	

Criterion	Jurisdiction Rating[a]
Champions for climate action in local government departments	High
Comment: Ag + Open Space staff have been active in developing County goals and strategies for climate adaptation and mitigation and providing data for climate action planning	
Political support for implementing climate change adaptation strategies	High
Comment: The Ag + Open Space Board of Directors, partners, and stakeholders strongly support decisions that limit or mitigate environmental impacts from climate change	
Financial resources devoted to climate change adaptation	Medium
Comment: Ag + Open Space's core function of conserving and stewarding land supports climate change adaptation, but the organization does not have dedicated funding specifically for climate change projects	
Local authority over sectors likely to be negative impacted	Low
Comment: Ag + Open Space does not have local authority over sectors likely to be negatively impacted	
Public Capacity	
Local residents knowledge of and understanding of climate risk	Low
Comment: Unsure of residents' knowledge and understanding	
Local residents support of adaptation efforts	Medium
Comment: According to a 2016 poll conducted by Ag + Open Space, a majority of residents thought that climate change adaptation is an important benefit of Ag + Open Space's work	
Local residents' capacity to adapt to climate impacts	Low
Comment:	
Local economy current capacity to adapt to climate impacts	Low
Comment:	
Local ecosystems capacity to adapt to climate impacts	Low
Comment:	

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.

14.5 INTEGRATION REVIEW

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

14.5.1 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—**Ag + Open Space participates and supports the County's Emergency Operation Plan.
- **Sonoma County's General Plan—**Ag + Open Space was established as a result of the 1990 General Plan, and the agency implements and complements several key elements of the current General Plan.

- **Ag + Open Space's Emergency Operation and Response Plan—**Ag + Open Space has developed and continues to implement its own Emergency Operation and Response Plan.
- **Ag + Open Space Comprehensive Plan**—Ag + Open Space developed a long-term comprehensive plan, the Vital Lands Initiative. The Vital Lands Initiative identifies objectives and strategies for integrating climate change and extreme event mitigation and adaptation into all aspects of Ag + Open Space's work
- **Fee Lands Strategy**—Ag + Open space updated its Fee Lands Strategy, which highlights the natural resources management practices (including understory thinning and prescribed burning) implemented by the organization to enhance ecosystem health and support hazard mitigation.

14.5.2 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:

- The Sonoma County Community Wildfire Protection Plan (CWPP) which was being updated as of this plan update.
- Future General Plan updates
- County Capital Facilities Planning
- Sonoma County Five-Year Strategic Plan
- Local Coastal Plan

14.6 RISK ASSESSMENT

14.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 14-9 lists past occurrences of natural hazards for which specific damage was recorded in County of Sonoma. Other hazard events that broadly affected the entire planning area, including County of Sonoma, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 14-9. Past Natural Hazard Events

Type of Event	Date
Historical CA Droughts	1841, 1864, 1924, 1928-35, 1947-50, 1959-60, 1976-77, 1986-92, 2007-09
Heavy Rains and Flooding	December 24, 1964
Severe Storms, Flooding	January 26, 1969
Severe Storms, Flood, Mudslides, High Tide	December 19, 1981 – January 8, 1982
Coastal Storms, Floods, Slides, Tornadoes	January 21 – March 30, 1983
Severe Storms, Flooding	February 12 – March 10, 1986
Freeze of '91	1990 – 1991
Flood of '93	1993
Fishing Emergency	May – September 1994
Flood of '95, Part 1	January 8 – 31, 1995
Flood of '95, Part 2	March 7 – 15, 1995
December Winter Storm	1995
Cavedale Fire	1996

Type of Event	Date
Jenner Sandbarrier	1996
Porter Creek Fire	October 27-28, 1996
New Year's Flood	December 30, 96–January 4, 97
Superbowl Flood	January 25, 1997
Flood of '98/ Rio Nido Debris Flow	February 2, 1998–January 4, 2000
February Winter Storm	February 8-10, 1999
December Winter Storms	December 17, 02–April 8, 03
Geysers Fire	September 3-8, 2004
New Year's Floods	December 31, 2005–January 3, 2006
Late Spring Storms	March 29-April 16, 2006
SF Oil Spill	November 7, 2007
H1N1 Influenza Pandemic	April – May, 2009
Great Tohoku Tsunami	March 11, 2011
Holiday Decoration Flood	December 2, 2012
Drought	2014 – 2016
South Napa Earthquake	August 24, 2014
December Winter Storm	August 24, 2014
Valley Fire	September 12-25, 2015
Severe Winter Storms, Flooding, and Mudslides	January 3-12, 2017
Severe Winter Storms, Flooding, and Mudslides	February 1-23, 2017
LNU Complex Fires	October, 2017
Wildfires	October 8-31, 2017
PG&E Power Shutoff	October, 2018
Severe Winter Storms, Flooding, Landslides, Mudslides	February 24 – March 1, 2019
PG&E Power Shutoff	October 2019
Kincade Fire	October 23 – November 7, 2019
COVID-19 Pandemic	January 2020 – present
Wildfires	August 14 – September 26, 2020
Wildfires—various ones	September 4 – November 17, 2020
Green Valley Road Flood	2000-2019
Drought	2021
Valley Ford Freestone Road Flooding	2000-2019

14.6.2 Hazard Risk Ranking

Table 14-10 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. Ag + Open Space completed a qualitative ranking of potential hazards, resulting in an overall significance ranking of High, Moderate, or Low for each hazard.

Table 14-10. Hazard Risk Ranking

Rank	Hazard Type	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance Rank
1	Wildfire	Extensive	Highly Likely	Catastrophic	High
2	Flood	Significant	Likely	Catastrophic	High
3	Drought	Extensive	Likely	Critical	High
4	Earthquake	Significant	Occasional	Catastrophic	High
5	Severe Weather	Extensive	Likely	Critical	Medium
6	Soil Hazards, including Erosion and Landslide	Significant	Likely	Limited	Low
7	Sea Level Rise	Limited	Likely	Limited	Low
8	Dam Failure	Limited	Occasional	Catastrophic	Low
9	Tsunami	Limited	Occasional	Critical	Low

Note that the column headings are defined as follows (definitions are based on an example annex from Sierra Resource Conservation District in Fresno County, California):

- *Geographic Extent:* Limited (less than 10% of the service area); Significant (10-50% of the service area); Extensive (50-100% of the service area).
- *Probability of Future Occurrence:* Highly Likely (happens almost every year); Likely (Has a recurrence interval of every 10 years or less); Occasional (Has a recurrence interval of every 11 to 100 years); Unlikely (Has a recurrence interval of greater than every 100 years).
- *Magnitude/Severity:* Catastrophic (more than 50 percent of property severely damaged, shutdown of facilities for more than 30 days, and /or multiple deaths); Critical (25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and /or injuries and /or illnesses result in permanent disability); Limited (10-25 percent of property severely damaged; shutdown of facilities for more than a week; and /or injuries/illnesses treatable do not result in permanent disability); Negligible (Less than 10 percent of property severely damaged, shutdowns of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid).
- *Significance Rank:* Low (minimal potential impact); Medium (moderate potential impact); High (widespread and/or extensive potential impact).

14.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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.

Assets at risk from the hazards identified in this plan include approximately 122,000 acres in conservation easements and land. These properties include agricultural areas, wilderness areas, riparian corridors, mountaintops, wetlands, woodlands, and coastline, regional park land and trail systems, urban parks, and greenbelts between urban areas. These real property assets support key conservation and monetary values, providing a variety of services and benefits to our communities. Sonoma County's natural capital, including lands currently protected by Ag + Open Space, has the potential to adapt in the face of climate change, to reduce hazard risk for communities, and provide a high quality of life. Critical working and natural lands at risk include:

- Agricultural lands and rangeland
  - Farms, ranches, dairies, vineyards, and orchards are important contributors to Sonoma County's economy, providing local food and fiber, jobs, and revenue. In addition, working lands provide ecosystem services such as soil retention and formation, above- and below-ground carbon sequestration, reduced fuel loading, regulation of water flow and water quality, habitat for pollinators and threatened and endangered species, scenic benefits, and tourism opportunities
  - Agricultural lands and rangelands are subject to wildfires, severe weather (e.g., freeze), drought, and floods; risks include destruction of crops, livestock, and associated structures and reduction in jobs
- Wetlands, floodplains, and riparian corridors
  - Wetland and stream ecosystems are biologically rich areas that also provide numerous ecosystem services to human communities, including moderation of extreme events (e.g. flood attenuation), carbon sequestration, soil retention, assimilation of pollutants, reduction in stream temperature, support for the commercial and recreational fishery, habitat for threatened and endangered species, and recreational benefits. Tidal wetlands reduce wave action and provide flood protection and are critical for reducing impacts of sea level rise on human communities
  - Wetlands, floodplains, and riparian corridors are subject to wildfire and drought; risks include reduced water quality for people and natural communities (including from toxins in runoff, sedimentation, and increase in water temperatures), destruction of aquatic habitat for fish and amphibians, and mortality of vegetation
- Forests
  - Conifer and hardwood forests of Sonoma County are important for wood and fiber production, and also provide various ecosystems services, including carbon sequestration, avoided sedimentation, flood mitigation, habitat for threatened and endangered species, and scenic, spiritual, and recreation benefits
  - Forestlands are subject to devastating wildfires, drought, and floods. In some cases, high intensity fires may destroy this critical resource, resulting in a loss of jobs and the provision of ecosystem services
- Other wildland ecosystems, including grasslands and shrublands
  - Wildland ecosystems, including forestlands described above, grassland, and shrubland communities, are undeveloped areas that are important for maintaining high native biodiversity and providing community benefits such as clean drinking water, groundwater supply, flood control, carbon sequestration, and scenic and recreational benefits
  - Wildland ecosystems are subject to unnatural fire events which may result in vegetation mortality, species compositional shifts, erosion (from loss of tree canopy as well as fire suppression efforts), and loss of habitat. In addition, these systems are susceptible to drought, landslides, and floods which may reduce the ecosystem services provided by these areas
- Urban open space and parklands
  - Urban open spaces and parklands, including urban forests, parks, and trails, are important places for exercise and recreation and also provide community benefits such as enhancing air quality, reducing the urban heat island effect and providing areas of shade during high heat events, reducing transport of pollutants from developed areas to waterways, and helping to manage storm water (e.g., through green infrastructure projects)
  - Urban open spaces and parklands are subject to fires and floods which may destroy park infrastructure, inhibit public access, and negatively impact natural systems and ecosystem services provided within these areas

In 2015 Ag + Open Space led a study to evaluate and quantify the ecosystem services provided by Sonoma County's natural capital, and found that working and natural landscapes of Sonoma County yield $2.2 to $6.6 billion per year in economic value. The ecosystem services provided and the associated annual values are described in Table 14-11.

Table 14-11. Economic Value of Ecosystem Services in Sonoma County

Ecosystem Service	$ Millions Per Year Countywide (Low Estimate)	$ Millions Per Year Countywide (High Estimate)
Water Supply	$9M	$180M
Wastewater Treatment	$35M	$117M
Moderation of Extreme Events	$82M	$220M
Urban Stormwater Management	$0.2M	$8M
Soil Retention and Formation	$4M	$620M
Carbon Sequestration	$58M	$197M
Air Quality	$19M	$22M
Pollination	$218M	$367M
Habitat and Nursery	$4M	$43M
Biological Control	$8M	$23M
Natural Beauty	$1,214M	$4,182M
Recreation and Tourism	$500M	$596M
Grand Total	$2.2 Billion	$6.6 Billion

An additional asset is the Ag + Open Space administration building, currently occupied by Ag + Open Space staff pursuant to a lease agreement. This property, as well as the staff and the public who are present during working hours, are vulnerable to the identified hazards as well.

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

14.7 HAZARD MITIGATION ACTION PLAN

Table 14-12 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 14-13 identifies the priority for each action. Table 14-14 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 14-12. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action SAO-1—Participate in and support the County's Continuity of Operations Planning (COOP) efforts, Watershed Task Force, and other emergency response/recover efforts.						
Hazards Mitigated:	Wildfire, flood, drought, earthquake, public safety power shutoff, severe weather, soil hazards, sea level rise, dam failure, tsunami					
New & Existing	2, 4, 5, 6, 8, 9, 10	County of Sonoma	Ag + Open Space, Sonoma	Low	Staff Time, General Funds	Ongoing
Action SAO-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated:	Wildfire, flood, drought, earthquake, public safety power shutoff, severe weather, soil hazards, sea level rise, dam failure, tsunami					
New & Existing	1, 4, 8, 12	County of Sonoma	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
Action SAO-3—Coordinate vegetation management grant awards using funds from PG&E settlement						
Hazards Mitigated:	Wildfire, severe weather, soil hazards					
New & Existing	2, 4, 9	Ag + Open Space	County of Sonoma	Low	PG&E Settlement Funds	Short-term
Action SAO-4—Partner with County departments and other organizations to acquire countywide LiDAR and update land use/land cover, hydrology, topography, and vegetation structure (including fuel load) datasets						
Hazards Mitigated:	Wildfire, flood, drought, earthquake, public safety power shutoff, severe weather, soil hazards, sea level rise, dam failure, tsunami					
New & Existing	2, 6, 8	County of Sonoma	Ag + Open Space, County of Sonoma, Sonoma Water, USGS, NGOs	High	BRIC, USGS, General Funds, Private Foundations	Short-term
Action SAO-5—Develop and implement a public outreach and education campaign about the role of land conservation and stewardship in mitigating flood, drought, and wildfire risks and impacts from climate change						
Hazards Mitigated:	Wildfire, flood, drought, severe weather, soil hazards, sea level rise					
New & Existing	4, 8	Ag + Open Space		Low	General Funds	Short-term
Action SAO-6—Map potential riparian (and shoreline) buffers of adequate width, length, hydrology, soils, and vegetation to provide effective fuel breaks, flood conveyance, and groundwater recharge.						
Hazards Mitigated:	Wildfire, flood, drought					
New & Existing	4, 8, 10	Ag + Open Space	Sonoma Water, County of Sonoma, CA Department of Conservation	Medium	Staff Time, General Funds, BRIC, CA Department of Conservation	Short-term
Action SAO-7—Identify priority areas and acquire conservation easements over multi-benefit natural and working lands in hazard-prone areas to ensure fewer people and structures are at risk and to allow first responders to stage suppression and response operations						
Hazards Mitigated:	Wildfire, flood, drought, earthquake, soil hazards, sea level rise, dam failure, tsunami					
New & Existing	4, 7, 9, 10	Ag + Open Space	Sonoma Land Trust, County of Sonoma, NGOs	Medium	General Funds, BRIC, HMGP, PDM, FMA, USDA-NRCS, State Coastal Conservancy, CA Department of Conservation, CA Natural Resources Agency, Strategic Growth Council/ Sustainable Agricultural Lands Conservation, CAL FIRE, Private Foundations	Long-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action SAO-8—Partner with public agencies, non-profit organizations, and private landowners to establish strategically placed fuel buffer zones between wildlands and at-risk communities *Hazards Mitigated:* Wildfire, severe weather, soil hazards						
New & Existing	4, 7, 9	Ag + Open Space	County of Sonoma, NGOs, CAL FIRE	Medium	General Funds, HMGP, PDM, BRIC, CAL FIRE, USDA-NRCS, State Coastal Conservancy, CA Department of Conservation, CA Natural Resources Agency, Strategic Growth Council/ Sustainable Agricultural Lands Conservation, Private Foundations	Long-term
Action SAO-9—Identify priority areas and acquire conservation easements over natural and working lands which provide drought, flood, and climate change resiliency benefits, including lands with high recharge potential; wetlands, floodplains, and headwater streams; and coastal areas (including coastal wetlands) *Hazards Mitigated:* Wildfire, flood, drought, soil hazards, sea level rise, tsunami						
New & Existing	4, 7, 9, 10	Ag + Open Space	Sonoma Land Trust, County of Sonoma, Sonoma Water, CA Department of Fish & Wildlife, Coastal Conservancy	Medium	General Funds, BRIC, HMGP, PDM, FMA, USDA-NRCS, State Coastal Conservancy, CA Department of Conservation, CA Natural Resources Agency, Strategic Growth Council/ Sustainable Agricultural Lands Conservation, Private Foundations	Ongoing
Action SAO-10—Partner with public agencies and non-profit organizations to expand, create, or connect new parks and open space preserves and trails and to implement open space projects in or near incorporated cities and other communities in Sonoma County, including acquisition projects and improvement projects (restoration, public access, agriculture, recreation development) *Hazards Mitigated:* Wildfire, flood, public safety power shutoff, severe weather, sea level rise						
New & Existing	4, 7, 9, 10	Ag + Open Space	Incorporated cities, County of Sonoma, NGOs, California State Parks	Medium	General Funds, BRIC, State Coastal Conservancy, CA Department of Conservation, CA Natural Resources Agency, USDA, Private Foundations	Ongoing
Action SAO-11—Conduct and encourage forest and grassland management activities, including ecologically appropriate thinning, prescribed burning, and livestock grazing, to improve forest health and resiliency to wildfire, disease, and drought; to reduce wildfire hazards; enhance wildlife habitat; and increase carbon sequestration. *Hazards Mitigated:* Wildfire, severe weather, soil hazards						
New & Existing	2, 4, 9	County of Sonoma	Ag + Open Space, RCDs, CAL FIRE, California Conservation Corps, NGOs	Medium	HMGP, PDM, General Funds, CAL FIRE	Ongoing
Action SAO-12—Stabilize burned slopes and remove hazard trees to reduce risk of debris flows and other damage to structures, roads, and waterways following a fire *Hazards Mitigated:* Severe weather, soil hazards						
New & Existing	9, 10	County of Sonoma	Ag + Open Space, Sonoma Water, CAL FIRE, NGOs	Medium	HMGP, PDM, FMA, USDA-NRCS EWP	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action SAO-13—Monitor and assess vegetation response, carbon loss, erosion and sedimentation risks, stream channel response, and invasive/noxious species establishment on burned lands to prioritize and implement remedial efforts as needed to minimize hazards.						
Hazards Mitigated: Wildfire, flood, severe weather, soil hazards						
New & Existing	4, 8, 9, 10	County of Sonoma	Ag + Open Space, Sonoma Water, CA State Parks, Regional Water Board, USGS, USFS, NGOs	Medium	Staff Time, General Funds, Private Foundations	Ongoing
Action SAO-14—Partner with RCDs and other organizations on technical assistance and outreach efforts to landowners regarding best practices and mitigation measures for wildfire, flood, and drought hazards.						
Hazards Mitigated: Wildfire, flood, drought						
New & Existing	2, 4, 6, 8, 10	RCDs	Ag + Open Space, Sonoma Water, UC Cooperative Extension, County of Sonoma, NGOs, Fire Safe Sonoma, local fire districts	Medium	HMGP, PDM, FMA, BRIC, USDA-NRCS, State Coastal Conservancy, CA Department of Food & Agriculture, CA Wildlife Conservation Board, CAL FIRE	Ongoing
Action SAO-15—Partner with RCDs and other organizations to implement habitat restoration projects to reduce flood risk and/or risk of post-fire landslide or debris flows.						
Hazards Mitigated: Flood, soil hazards						
New & Existing	2, 4, 6, 10	RCDs	Ag + Open Space, Sonoma Water, UC Cooperative Extension, NGOs	Medium	HMGP, PDM, FMA, BRIC, USDA-NRCS, State Coastal Conservancy, State Water Resources Control Board	Ongoing
Action SAO-16—Partner with RCDs and other organizations to improve soil health, including organic matter content, aggregate stability, water holding capacity, and carbon sequestration						
Hazards Mitigated: Drought, severe weather, soil hazards						
Existing	2, 4, 6, 10	RCDs	Ag + Open Space, Regional Climate Protection Authority, Zero Waste Sonoma, Carbon Cycle Institute, North Coast Soil Heath Hub, NGOs	Medium	CA Department of Food & Agriculture, USDA-NRCS, Restore CA, CA Wildlife Conservation Board	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 14-13. 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]
SAO-1	7	Low	Low	Yes	No	Yes	High	Low
SAO-2	4	Low	Low	Yes	No	Yes	High	Low
SAO-3	3	High	Low	Yes	No	Yes	High	Low
SAO-4	3	Low	High	No	No	No	Low	Low
SAO-5	2	Low	Low	Yes	No	Yes	Medium	Low
SAO-6	3	Low	Low	Yes	No	Yes	Medium	Low
SAO-7	4	Medium	Medium	Yes	Yes	Yes	High	High
SAO-8	3	Medium	Medium	Yes	Yes	Yes	High	High
SAO-9	4	Medium	Medium	Yes	Yes	Yes	High	High
SAO-10	4	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SAO-11	3	High	Medium	Yes	Yes	Yes	High	High
SAO-12	2	High	Medium	Yes	Yes	Yes	High	High
SAO-13	4	Medium	Medium	Yes	No	Yes	Medium	Low
SAO-14	5	High	Medium	Yes	Yes	Yes	High	High
SAO-15	4	High	Medium	Yes	Yes	Yes	High	High
SAO-16	4	High	Medium	Yes	No	Yes	Medium	Low

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

Table 14-14. 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								
Wildfire	SAO-3, 7, 8, 9, 10	SAO-14	SAO-1, 5, 14	SAO-3, 6, 7, 8, 9, 10, 11, 14	SAO-1	SAO-14	SAO-5, 6, 8, 9, 10, 11, 14	SAO-1, 2, 4, 6, 13
Flood	SAO-7, 9, 10	SAO-14	SAO-1, 5, 14	SAO-6, 7, 9, 10, 14, 15	SAO-1	SAO-14	SAO-5, 6, 9, 10, 14, 15	SAO-1, 2, 4, 6, 13
Drought	SAO-7, 9	SAO-14	SAO-1, 5, 14	SAO-6, 7, 9, 11, 14, 16	SAO-1	SAO-14	SAO-5, 6, 9, 11, 14, 16	SAO-1, 2, 4, 6,
Earthquake	SAO-7		SAO-1	SAO-7	SAO-1			SAO-1, 2, 4
Medium-Risk Hazards								
Severe Weather	SAO-3, 8, 9, 10		SAO-1, 5	SAO-3, 8, 9, 10, 12, 16	SAO-1		SAO-5, 8, 9, 10, 16	SAO-1, 2, 4, 13
Low-Risk Hazards								
Soil Hazards	SAO-3, 7, 8, 9, 10		SAO-1, 5	SAO-3, 7, 8, 9, 10, 11, 12, 15, 16	SAO-1		SAO-5, 8, 9, 10, 11, 15, 16	SAO-1, 2, 4, 13
Sea Level Rise	SAO-7, 9		SAO-1, 5	SAO-7, 9	SAO-1		SAO-5, 9	SAO-1, 2, 4
Dam Failure	SAO-7		SAO-1	SAO-7	SAO-1			SAO-1, 2, 4
Tsunami	SAO-7, 9		SAO-1	SAO-7, 9	SAO-1		SAO-9	SAO-1, 2, 4

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

14.8 INFORMATION SOURCES USED FOR THIS ANNEX

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

- FY 2019-2020 Schedule of Interests in Land for valuation of assets held by Ag + Open Space
- Ag + Open Space Expenditure Plan—2006. https://www.sonomaopenspace.org/wp-content/uploads/Measure-F_Expenditure-Plan-2006_Exhibit-A.pdf
- Ag + Open Space Vital Lands Initiative—2021. https://www.sonomaopenspace.org/wp-content/uploads/FINAL-VLI-FULL-REPORT-01.26.2021_-ADA.pdf
- Ag + Open Space Fee Lands Strategy—2021. https://www.sonomaopenspace.org/wp-content/uploads/Fee-Lands-Strategy_FINAL_20210301-REMEDIATED.pdf
- Abt Associates (2015). The Economic Value of Natural Capital on the Sonoma Coast Prepared for: Sonoma County Agricultural Preservation and Open Space District https://www.sonomaopenspace.org/wp-content/uploads/HLHE-Case-Study-Ag-Open-Space-Technical-Report-Sonoma-Coast.pdf
- Sonoma County Ag + Open Space. (2018). Healthy Lands & Healthy Economies: The Multiple Benefits of Sonoma County Working and Natural Lands. Santa Rosa, CA https://www.sonomaopenspace.org/projects/healthy-lands-healthy-economies/
- Sonoma County Ag + Open Space and The Nature Conservancy. (2016). The Climate Action Through Conservation Project. https://www.sonomaopenspace.org/wp-content/uploads/CATC_Final_lowres.pdf

The following **o**utside 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.
- Sonoma County Regional Climate Protection Authority. 2016. Climate Action 2020 and Beyond
- Climate Ready North Bay: Key Vulnerability Assessment Findings for the North Bay Region

14.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Sonoma County acquired LiDAR data in 2013, which has been applied in support of public safety, climate change action, open space conservation, wildfire risk mitigation, flood planning, and wetland protection, among others. Since 2013, Sonoma County has experienced numerous fire and flood events and so updated LiDAR data are needed that reflect current conditions. These data may be used to update land use/land cover maps for the evaluation of ecosystems services, hazard exposure and risk mapping, and to identify areas where green infrastructure/nature-based solutions (including open space conservation) could have the most impact for the least amount of money. This information may also support the design and implementation of built infrastructure.

In relation, Ag + Open Space could benefit from additional studies about the value of ecosystem services provided by working and natural lands and the value of ecosystem services lost due to fire, flood, drought, and other impacts from climate change. Green infrastructure provides important benefits to human communities, including the reduction of risks and exposure to hazards like fires and floods. Having a better understanding of the ecosystem services provided by these landscapes may support the prioritization and implementation of this type of hazard mitigation solution.

Appendix A. Planning Partner Expectations

A. PLANNING PARTNER EXPECTATIONS

ACHIEVING DMA COMPLIANCE FOR ALL PLANNING PARTNERS

The federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390), commonly known as the 2000 Stafford Act amendments, was approved by Congress on October 10, 2000. This act required state and local governments to develop hazard mitigation plans as a condition for federal grant assistance. Among other things, this legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide. DMA 2000 is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Prior to 2000, federal legislation provided funding for disaster relief, recovery, and some hazard mitigation planning. The DMA improves upon the planning process by emphasizing the importance of communities planning for disasters before they occur.

The Disaster Mitigation Act defines a "local government" as:

> Any county, municipality, city, town, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity

Any local government wishing to pursue funding afforded under FEMA Hazard Mitigation Grant Programs must have an approved hazard mitigation plan in order to be eligible to apply for these funds.

One of the goals of the multi-jurisdictional approach to hazard mitigation planning is to achieve compliance with the Disaster Mitigation Act (DMA) for all participating members in the planning effort. DMA compliance must be certified for each member in order to maintain eligibility for the benefits under the DMA. Whether our planning process generates ten individual plans or one large plan that has a chapter for each partner jurisdiction, the following items must be addressed by each planning partner to achieve DMA compliance:

- Participate in the process. It must be documented in the plan that each planning partner "participated" in the process that generated the plan. There is flexibility in defining "participation." Participation can vary based on the type of planning partner (i.e.: City vs. a Special Purpose District). However, the level of participation must be defined and the extent for which this level of participation has been met for each partner must be contained in the plan context.
- Consistency Review. Review of existing documents pertinent to each jurisdiction to identify policies or recommendations that are not consistent with those documents reviewed in producing the "parent" plan or have policies and recommendations that complement the hazard mitigation initiatives selected (i.e.: comp plans, basin plans or hazard specific plans).

- Action Review. For plan updates, a review of the strategies from your prior action plan to determine those that have been accomplished and how they were accomplished; and why those that have not been accomplished were not completed.
- Update Localized Risk Assessment. Personalize the Risk Assessment for each jurisdiction by removing hazards not associated with the defined jurisdictional area or redefining vulnerability based on a hazard's impact to a jurisdiction. This phase will include:
  - A ranking of the risk
  - A description of the number and type of structures at risk
  - An estimate of the potential dollar losses to vulnerable structures
  - A general description of land uses and development trends within the community, so that mitigation options can be considered in future land use decisions.
- Capability assessment. Each planning partner must identify and review their individual regulatory, technical, and financial capabilities with regards to the implementation of hazard mitigation actions.
- Personalize mitigation recommendations. Identify and prioritize mitigation recommendations specific to each jurisdiction's defined area.
- Create an Action Plan.
- Incorporate Public Participation. Each jurisdiction must present the Plan to the public for comment at least once, within two weeks prior to adoption.
- Plan must be adopted by each jurisdiction.

One of the benefits to multi-jurisdictional planning is the ability to pool resources. This means more than monetary resources. Resources such as staff time, meeting locations, media resources, technical expertise will all need to be utilized to generate a successful plan. In addition, these resources can be pooled such that decisions can be made by a peer group applying to the whole and thus reducing the individual level of effort of each planning partner. This will be accomplished by the formation of a steering committee made up of planning partners and other "stakeholders" within the planning area. The size and makeup of this steering committee will be determined by the planning partnership. This body will assume the decision-making responsibilities on behalf of the entire partnership. This will streamline the planning process by reducing the number of meetings that will need to be attended by each planning partner. The assembled Steering Committee for this effort will meet monthly on an as needed basis as determined by the planning team, and will provide guidance and decision making during all phases of the plan's development.

With the above participation requirements in mind, each partner is expected to aid this process by being prepared to develop its section of the plan. To be an eligible planning partner in this effort, each planning partner shall provide the following:

A. A "Letter of Commitment" or resolution to participate to the Planning Team (see exhibit A).

B. Designate a lead point of contact for this effort. This designee will be listed as the hazard mitigation point of contact for your jurisdiction in the plan.

C. Support and participate in the selection and function of the Steering Committee selected to oversee the development of this plan.

D. Provide support in the form of mailing list, possible meeting space, and public information materials, such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy developed by the Steering Committee.

E. Participate in the process. There will be many opportunities as this plan evolves to participate. Opportunities such as:

   i) Steering Committee meetings

   ii) Public meetings or open houses

   iii) Workshops/ planning partner specific training sessions

   iv) Public review and comment periods prior to adoption

At each and every one of these opportunities, attendance will be recorded. Attendance records will be used to document participation for each planning partner. No thresholds will be established as minimum levels of participation. However, each planning partner should attempt to attend all possible meetings and events.

F. There will be one mandatory workshop that all planning partners will be required to attend. This workshop will cover the proper completion of the jurisdictional annex template which is the basis for each partner's jurisdictional chapter in the plan. Failure to have a representative at this workshop will disqualify the planning partner from participation in this effort. The schedule for this workshop will be such that all committed planning partners will be able to attend.

G. After participation in the mandatory template workshop, each partner will be required to complete their template and provide it to the planning team in the time frame established by the Steering Committee. Failure to complete your template in the required time frame may lead to disqualification from the partnership.

H. Each partner will be expected to perform a "consistency review" of all technical studies, plans, ordinances specific to hazards to determine the existence of any not consistent with the same such documents reviewed in the preparation of the parent plan.

I. Each partner will be expected to review the Risk Assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide the jurisdiction specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.

J. Each partner will be expected to review and determine if the mitigation recommendations chosen in the parent plan will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the parent plan recommendations will need to be identified and prioritized, and reviewed to determine their benefits vs. costs.

K. Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.

L. Each partner will be required to formally adopt the plan.

Templates and instructions to aid in the compilation of this information will be provided to all committed planning partners. Each partner will be expected to complete their templates in a timely manner and according to the timeline specified by the Steering Committee.

NOTE: Once this plan is completed, and DMA compliance has been determined for each partner, maintaining that eligibility will be dependent upon each partner implementing the plan implementation-maintenance protocol identified in the plan. At a minimum, this means completing the ongoing plan maintenance protocol identified in the plan. Partners that do not participate in this plan maintenance strategy may be deemed ineligible by the partnership, and thus lose their DMA eligibility.

Eligible entities that do not wish to participate in the multi-jurisdictional planning process or fail to meet the requirements contained in this document may choose to link to the plan in pursuit of future adoption after the completion of the current effort.

Exhibit A
Example Letter of Commitment

Lisa Hulette
Permit Sonoma | County of Sonoma
2550 Ventura Ave
Santa Rosa, CA 95403

Re: Letter of Commitment as a Participating Jurisdiction in the Sonoma County Multijurisdictional Hazard Mitigation Plan Update Plan 2021

Dear Permit Sonoma | Sonoma County,

As the Federal Emergency Management Agency's (FEMA) local hazard mitigation plan requirements under 44 CFR §201.6 identify criteria for multi-jurisdictional mitigation plans including the participation and collaboration of regional planning and mitigation partners, this letter of commitment is submitted to confirm the participation of <insert agency name> as a Planning Partner in the *Sonoma County Multijurisdictional Hazard Mitigation Plan Update Plan 2021*.

As a condition of participation, <insert agency name> agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6, and to provide timely cooperation and participation to produce a FEMA-approved hazard mitigation plan with the County of Sonoma.

<insert agency name> understands that it must engage in the following planning processes, as detailed in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated March 1, 2013. Planning processes include, but are not limited to the following:

- Review of existing 2016 Sonoma County Operational Area Hazard Mitigation Plan
- Identification of local hazards, risk assessment, and vulnerability analysis
- Participation in the formulation of mitigation goals and actions
- Participation in community engagement and public outreach in the development of the plan
- Timely response to requests for information by the coordinating agency and consultants, and adherence to established deadlines
- Formal adoption of the hazard mitigation plan by the planning partner jurisdiction's governing body
- Tracking and monthly submission of personnel hours spent on the hazard mitigation planning effort

Sincerely,

Name _____

Title _____

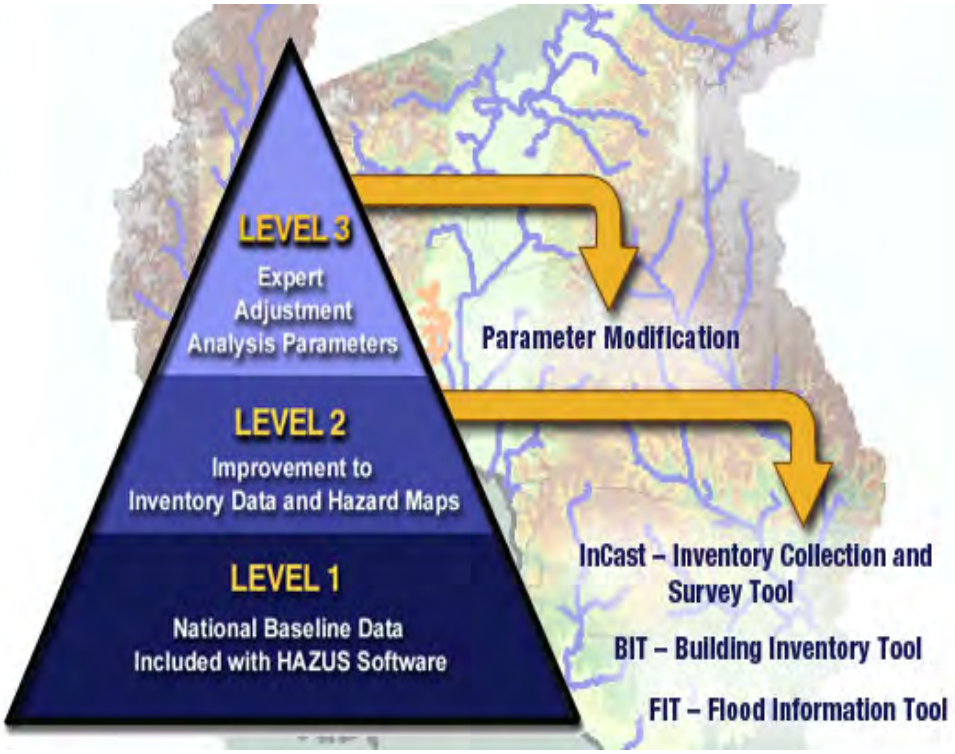
Exhibit B
Planning Team Contact information

Name	Representing	Address	e-mail
Lisa Hulette	Permit Sonoma | Sonoma County	2550 Ventura Ave Santa Rosa, CA 95403	Lisa.hewletter@sonoma-county.org
Rob Flaner	Tetra Tech, Inc.	90 S. Blackwood Ave Eagle, ID 83616	rob.flaner@tetratech.com
Bart Spencer	Tetra Tech, Inc.	1999 Harrison St., Ste 500 Oakland, CA 946122	bart.spencer@tetratech.com

Exhibit C.
Overview of HAZUS

Overview of HAZUS-MH (Multi-Hazard)

http://www.fema.gov/hazus/dl_mhpres.shtmHAZUS-MH, is a nationally applicable standardized methodology and software program that contains models for estimating potential losses from earthquakes, floods, tsunamis, and hurricane winds. HAZUS-MH was developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS). NIBS maintains committees of wind, flood, earthquake and software experts to provide technical oversight and guidance to HAZUS-MH development. Loss estimates produced by HAZUS-MH are based on current scientific and engineering knowledge of the effects of hurricane winds, floods, and earthquakes. Estimating losses is essential to decision-making at all levels of government, providing a basis for developing mitigation plans and policies, emergency preparedness, and response and recovery planning.



HAZUS-MH uses state-of-the-art geographic information system (GIS) software to map and display hazard data and the results of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of hurricane winds, floods, tsunamis, and earthquakes on populations. The latest release, HAZUS-MH 4.0, is an updated version of HAZUS-MH that incorporates many new features which improve both the speed and functionality of the models. For information on software and hardware requirements to run HAZUS-MH 4.0, see HAZUS-MH Hardware and Software Requirements.

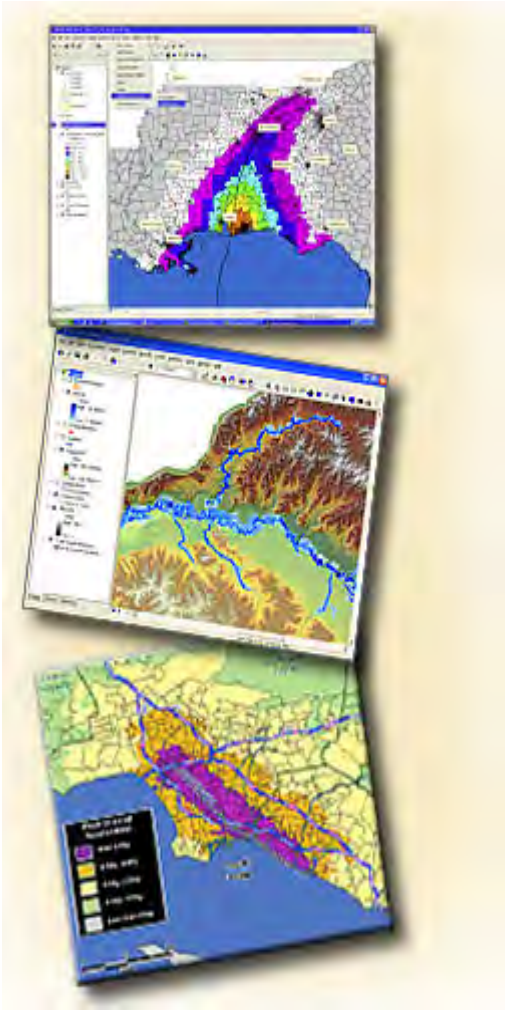
HAZUS-MH Analysis Levels

HAZUS-MH provides for three levels of analysis:

- A Level 1 analysis yields a rough estimate based on the nationwide database and is a great way to begin the risk assessment process and prioritize high-risk communities.
- A Level 2 analysis requires the input of additional or refined data and hazard maps that will produce more accurate risk and loss estimates. Assistance from local emergency management personnel, city planners, GIS professionals, and others may be necessary for this level of analysis.
- A Level 3 analysis yields the most accurate estimate of loss and typically requires the involvement of technical experts such as structural and geotechnical engineers who can modify loss parameters based on to the specific conditions of a community. This level analysis will allow users to supply their own techniques to study special conditions such as dam breaks and tsunamis. Engineering and other expertise is needed at this level.

Three data input tools have been developed to support data collection. The Comprehensive Data Management System helps users collect and manage local building data for more refined analyses than are possible with the national level data sets that come with HAZUS. The system has expanded capabilities for multi-hazard data collection. HAZUS-MH includes an enhanced Building Inventory Tool allows users to import building data and is most useful when handling large datasets, such as tax assessor records. The Flood Information Tool helps users manipulate flood data into the format required by the HAZUS flood model. All Three tools are included in the HAZUS-MH MR1 Application DVD.

HAZUS-MH Models



The HAZUS-MH Hurricane Wind Model gives users in the Atlantic and Gulf Coast regions and Hawaii the ability to estimate potential damage and loss to residential, commercial, and industrial buildings. It also allows users to estimate direct economic loss, post-storm shelter needs and building debris. In the future, the model will include the capability to estimate wind effects in island territories, storm surge, indirect economic losses, casualties, and impacts to utility and transportation lifelines and agriculture. Loss models for other severe wind hazards will be included in the future. Details about the Hurricane Wind Model.

The HAZUS-MH Flood Model is capable of assessing riverine and coastal flooding. It estimates potential damage to all classes of buildings, essential facilities, transportation and utility lifelines, vehicles, and agricultural crops. The model addresses building debris generation and shelter requirements. Direct losses are estimated based on physical damage to structures, contents, and building interiors. The effects of flood warning are taken into account, as are flow velocity effects. Details about the Flood Model.

The HAZUS-MH Earthquake Model, The HAZUS earthquake model provides loss estimates of damage and loss to buildings, essential facilities, transportation and utility lifelines, and population based on scenario or probabilistic earthquakes. The model addresses debris generation, fire-following, casualties, and shelter requirements. Direct losses are estimated based on physical damage to structures, contents,

inventory, and building interiors. The earthquake model also includes the Advanced Engineering Building Module for single- and group-building mitigation analysis. Details about the Earthquake Model.

The HAZUS-MH Tsunami Model represents the first new disaster module for the Hazus software in almost 15 years and is the culmination of work completed on the Hazus Tsunami Methodology Development (FEMA, 2013) by a team of tsunami experts, engineers, modelers, emergency planners, economists, social scientists, geographic information system (GIS) analysts, and software developers. A Tsunami Oversight Committee provided technical direction and review of the methodology development. New features with the model include:

- Territory Analysis: This release represents the first time that analysis will be available for U.S. territories (Guam, American Samoa, Commonwealth of Northern Mariana Islands and U.S. Virgin Islands).
- New Point Format: The Hazus General Building Stock for the Tsunami release will use a new National Structure Inventory point format (details in User Release Notes available with download).
- Case Studies: The Tsunami Module will require user-provided data, so the Hazus Team has provided five case study datasets for users, which will be available on the MSC download site.
- Two Types of Damage Analysis: Users will be able to run both near-source (Earthquake + Tsunami) and distant-source (Tsunami only) damage analysis.

Additionally, HAZUS-MH can perform multi-hazard analysis by providing access to the average annualized loss and probabilistic results from the hurricane wind, flood, and earthquake models and combining them to provide integrated multi-hazard reports and graphs. HAZUS-MH also contains a third-party model integration capability that provides access and operational capability to a wide range of natural, man-made, and technological hazard models (nuclear and conventional blast, radiological, chemical, and biological) that will supplement the natural hazard loss estimation capability (hurricane wind, flood, tsunami and earthquake) in HAZUS-MH.

Appendix B. Procedures for Linking to Hazard Mitigation Plan

B. PROCEDURES FOR LINKING TO HAZARD MITIGATION PLAN

Not all eligible local governments are included in the Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021. Some or all of these non-participating local governments may choose to "link" to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act (DMA). The following "linkage" procedures define the requirements established by the planning team for dealing with an increase in the number of planning partners linked to this plan. No currently non-participating jurisdiction within the defined planning area is obligated to link to this plan. These jurisdictions can choose to do their own "complete" plan that addresses all required elements of Section 201.6 or Section 201.7 of Chapter 44 of the Code of Federal Regulations (44 CFR).

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligibility

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period (5 years after final approval). Eligibility will be determined by the following factors:

- The linking jurisdiction is a local or tribal government as defined by the Disaster Mitigation Act.
- The boundaries or service area of the linking jurisdiction is completely contained within the boundaries of the planning area established during the 2020-2021 hazard mitigation planning process.
- The linking jurisdiction's critical facilities were included in the critical facility and infrastructure risk assessment completed during the 2020 – 2021 plan development process..

Requirements

It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the lead agency Permit Sonoma | Sonoma County for review within six months of beginning the linkage process:

- The eligible jurisdiction requests a "Linkage Package" by contacting the Point of Contact (POC) for the plan:

  Lisa Hulette
  Permit Sonoma
  2550 Ventura Ave
  Santa Rosa, CA 95403

- The POC will provide a linkage procedure package that includes linkage information and a linkage tool-kit:

- Linkage Information
  - Procedures for linking to the multi-jurisdictional hazard mitigation plan
  - Planning partner's expectations for linking jurisdictions
  - A sample "letter of intent" to link to the multi-jurisdictional hazard mitigation plan
  - A copy of Section 201.6 and Section 201.7 of 44 CFR, which defines the federal requirements for a local and tribal hazard mitigation plans.
- Linkage Tool-Kit
  - Copy of Volume 1 and 2 of the plan
  - A special purpose district or tribe template and instructions
  - A catalog of hazard mitigation alternatives
  - A sample resolution for plan adoption

- The new jurisdiction will be required to review both volumes of the Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021, which include the following key components for the planning area:
  - Goals and objectives
  - The planning area risk assessment
  - Comprehensive review of alternatives
  - Countywide actions
  - Plan implementation and maintenance procedures.

  Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided by the POC.
- The development of the new jurisdiction's annex must not be completed by one individual in isolation. The jurisdiction must develop, implement and describe a public involvement strategy and a methodology to identify and vet jurisdiction-specific actions. The original partnership was covered under a uniform public involvement strategy and a process to identify actions that covered the planning area described in Volume 1 and Volume 2 of this plan. Since new partners were not addressed by these strategies, they will have to initiate new strategies and describe them in their annex. For consistency, new partners are encouraged to develop and implement strategies similar to those described in this plan.
- The public involvement strategy must ensure the public's ability to participate in the plan development process. At a minimum, the new jurisdiction must solicit public opinion on hazard mitigation at the onset of the linkage process and hold one or more public meetings to present the draft jurisdiction-specific annex for comment at least two weeks prior to adoption by the governing body. The POC will have resources available to aid in the public involvement strategy, including:
  - The questionnaire utilized in the plan development
  - Presentations from public meeting workshops and the public comment period
  - Press releases used throughout the planning process
  - The plan website.
- The methodology to identify actions should include a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard and a description of the process by which chosen actions were identified. As part of this process, linking jurisdictions should coordinate the selection of actions amongst the jurisdiction's various departments.
- Once their public involvement strategy and template are completed, the new jurisdiction will submit the completed package to the POC for a pre-adoption review to ensure conformance with the multi-jurisdictional plan format and linkage procedure requirements.
- The POC will review for the following:

  - Documentation of public involvement and action plan development strategies
  - Conformance of template entries with guidelines outlined in instructions
  - Chosen actions are consistent with goals, objectives, and mitigation catalog of the Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021
  - A designated point of contact
  - A completed FEMA plan review crosswalk.
- Plans will be reviewed by the POC and submitted to California Governor's Office of Emergency Services (Cal OES) for review and approval.
- Cal OES will review plans for state compliance. Non-compliant plans are returned to the lead agency for correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.
- FEMA reviews the linking jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies the new jurisdiction of the results of review with copies to Cal OES and the approved plan lead agency.
- Linking jurisdiction corrects plan shortfalls (if necessary) and resubmits to Cal OES through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan and forwards adoption resolution to FEMA with copies to lead agency and Cal OES.
- FEMA regional director notifies the new jurisdiction's governing authority of the plan's approval.

The new jurisdiction plan is then included with the multi-jurisdiction hazard mitigation plan and the linking jurisdiction is committed to participate in the ongoing plan maintenance strategy identified in Chapter 21, Volume 1 of the hazard mitigation plan.

DECREASING THE PARTNERSHIP

The eligibility afforded under this process to the planning partnership can be rescinded in two ways. First, a participating planning partner can ask to be removed from the partnership. This may be done because the partner has decided to develop its own plan or has identified a different planning process for which it can gain eligibility. A partner that wishes to voluntarily leave the partnership shall inform the POC of this desire in writing. This notification can occur any time during the calendar year. A jurisdiction wishing to pursue this avenue is advised to make sure that it is eligible under the new planning effort, to avoid any period of being out of compliance with the Disaster Mitigation Act.

After receiving this notification, the POC shall immediately notify both Cal OES and FEMA in writing that the partner in question is no longer covered by the Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the "Planning Partner Expectations" package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified in Volume 1 of the plan. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by the POC. The determination of whether a partner is meeting its participation requirements will be based on the following parameters:

- Are partners notifying the POC of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?
- Are the partners continuing to be supportive as specified in the planning partners expectations package provided to them at the beginning of the process?

Participation in the plan does not end with plan approval. This partnership was formed on the premise that a group of planning partners would pool resources and work together to strive to reduce risk within the planning area. Failure to support this premise lessens the effectiveness of this effort. The following procedures will be followed to remove a partner due to the lack of participation:

- The POC will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: failure to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of five attempts.
- The Steering Committee will review information provided by POC, and determine action by a vote. The Steering Committee will invoke the voting process established in the ground rules established during the formation of this body.
- Once the Steering Committee has approved an action, the POC will notify the planning partner of the pending action in writing via certified mail. This notification will outline the grounds for the action, and ask the partner if it is their desire to remain as a partner. This notification shall also clearly identify the ramifications of removal from the partnership. The partner will be given 30 days to respond to the notification.
- Confirmation by the partner that they no longer wish to participate or failure to respond to the notification shall trigger the procedures for voluntary removal discussed above.
- Should the partner respond that they would like to continue participation in the partnership, they must clearly articulate an action plan to address the deficiencies identified by the POC. This action plan shall be reviewed by the Steering Committee to determine whether the actions are appropriate to rescind the action. Those partners that satisfy the Steering Committee's review will remain in the partnership, and no further action is required.
- Automatic removal from the partnership will be implemented for partners where these actions have to be initiated more than once in a 5-year planning cycle.

Appendix C. Annex Instructions and Templates

Annex Templates and Instructions for Municipalities

1. JURISDICTION NAME

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Development of this annex was carried out by the members of the local mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Mitigation Planning Team Members

Name	Title

1.2 JURISDICTION PROFILE

1.2.1 Location

___[jurisdiction name]___ is in ___[general location description]___

The current boundaries generally extend from ___[describe]___, encompassing an area of ___[area in square miles]___.

1.2.2 History

___[jurisdiction name]___ was incorporated in ___[date]___. ___[brief historical summary]___

1.2.3 Climate

The climate of ___[jurisdiction name]___ is ___[general description]___.

1.2.4 Governing Body Format

___[general description]___.

The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

1.3 CURRENT TRENDS

1.3.1 Population

According to ___[identify data source]___, the population of ___[jurisdiction name]___ as of ___[month year]___ was ___[population]___ Since ___[year]___, the population has grown at an average annual rate of ___[number]___ percent.

1.3.2 Development

_DESCRIBE TRENDS IN GENERAL__.

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					
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? • If yes, give the estimated area annexed and estimated number of parcels or structures.	Yes/No _____					
Is your jurisdiction expected to annex any areas during the performance period of this plan? • If yes, describe land areas and dominant uses. • If yes, who currently has permitting authority over these areas?	Yes/No _____ _____					
Are any areas targeted for development or major redevelopment in the next five years? • If yes, briefly describe, including whether any of the areas are in known hazard risk areas	Yes/No _____					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?		2015	2016	2017	2018	2019
	Single Family	__	__	__	__	__
	Multi-Family	__	__	__	__	__
	Other (commercial, mixed use, etc.)	__	__	__	__	__
	Total	__	__	__	__	__

Criterion	Response
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: # • Landslide: # • High Liquefaction Areas: # • Tsunami Inundation Area: # • Wildfire Risk Areas: #
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.	

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 legal 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. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Zoning Code *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Subdivisions *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Real Estate Disclosure *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Growth Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Site Plan Review *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Environmental Protection *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Flood Damage Prevention *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Emergency Management *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Climate Change *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Other *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Planning Documents				
General Plan *Is the plan compliant with Assembly Bill 2140?* *Comment:*	Yes/No *Yes/No*	Yes/No	Yes/No	Yes/No
Capital Improvement Plan *How often is the plan updated?* _____ *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Disaster Debris Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Floodplain or Watershed Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Urban Water Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Habitat Conservation Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Economic Development Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Shoreline Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Community Wildfire Protection Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Forest Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Climate Action Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Comprehensive Emergency Management Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Threat & Hazard Identification & Risk Assessment (THIRA) *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Continuity of Operations Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Public Health Plan *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No
Other *Comment:*	Yes/No	Yes/No	Yes/No	Yes/No

Table 1-4. Development and Permitting Capability

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

Table 1-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No (If yes, specify)
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other	Yes/No (if yes, specify)

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/No	Insert appropriate information
Engineers or professionals trained in building or infrastructure construction practices	Yes/No	Insert appropriate information
Planners or engineers with an understanding of natural hazards	Yes/No	Insert appropriate information
Staff with training in benefit/cost analysis	Yes/No	Insert appropriate information
Surveyors	Yes/No	Insert appropriate information
Personnel skilled or trained in GIS applications	Yes/No	Insert appropriate information
Scientist familiar with natural hazards in local area	Yes/No	Insert appropriate information
Emergency manager	Yes/No	Insert appropriate information
Grant writers	Yes/No	Insert appropriate information
Other	Yes/No	Insert appropriate information

Table 1-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes/No Insert appropriate information
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes/No Insert appropriate information
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes/No Insert appropriate information
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes/No Insert appropriate information
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes/No Insert appropriate information

Table 1-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Insert appropriate information
Who is your floodplain administrator? (department/position)	Insert appropriate information
Are any certified floodplain managers on staff in your jurisdiction?	Yes/No
What is the date that your flood damage prevention ordinance was last amended?	Insert appropriate information
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets/Exceeds Insert appropriate information
When was the most recent Community Assistance Visit or Community Assistance Contact?	Insert appropriate information
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	Yes/No Insert appropriate information
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes/No Insert appropriate information
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes/No Insert appropriate information
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	Yes/No Insert appropriate information
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	Yes/No Yes/No Yes/No
How many flood insurance policies are in force in your jurisdiction?[a] • What is the insurance in force? • What is the premium in force?	Insert appropriate information $_____ $_____

Criterion	Response
How many total loss claims have been filed in your jurisdiction?[a] • How many claims are still open or were closed without payment? • What were the total payments for losses?	Insert appropriate information Insert appropriate information $_____

a. According to FEMA statistics as of MONTH XX, 20XX

Table 1-9. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	Yes/No	_____	Date
Building Code Effectiveness Grading Schedule	Yes/No	_____	Date
Public Protection	Yes/No	_____	Date
Storm Ready	Yes/No	_____	Date
Firewise	Yes/No	_____	Date

Table 1-10. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	High/Medium/Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	High/Medium/Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	High/Medium/Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	High/Medium/Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	High/Medium/Low
Participation in regional groups addressing climate risks *Comment:*	High/Medium/Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	High/Medium/Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	High/Medium/Low
Identified strategies for adaptation to impacts *Comment:*	High/Medium/Low
Champions for climate action in local government departments *Comment:*	High/Medium/Low
Political support for implementing climate change adaptation strategies *Comment:*	High/Medium/Low
Financial resources devoted to climate change adaptation *Comment:*	High/Medium/Low

Criterion	Jurisdiction Rating[a]
Local authority over sectors likely to be negative impacted	High/Medium/Low
Comment:	
Public Capacity	
Local residents knowledge of and understanding of climate risk	High/Medium/Low
Comment:	
Local residents support of adaptation efforts	High/Medium/Low
Comment:	
Local residents' capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local economy current capacity to adapt to climate impacts	High/Medium/Low
Comment:	
Local ecosystems capacity to adapt to climate impacts	High/Medium/Low
Comment:	

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 WITH OTHER PLANNING INITIATIVES

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:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

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:

- **Plan or Program Name**—Description

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.6 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

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

Table 1-11. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.7 HAZARD RISK RANKING

Table 1-12 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 1-12. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1			High/Medium/Low
2			High/Medium/Low
3			High/Medium/Low
4			High/Medium/Low
5			High/Medium/Low
6			High/Medium/Low
7			High/Medium/Low
8			High/Medium/Low
9			High/Medium/Low

1.8 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.

1.8.1 Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: XX
- Number of FEMA-identified Severe-Repetitive-Loss Properties: XX
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: XX

1.8.2 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:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

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

1.9 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.

Table 1-13. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				

1.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

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 xxx-1—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.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildfire						
Existing	3, 4, 10	TBD	TBD	High	HMGP, PDM, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-2— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____						
Hazards Mitigated: Dam failure, drought, earthquake, flooding, landslide, tsunami, wildfire						
New & Existing	1, 3, 4, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action xxx-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: All hazards						
New & Existing	1, 5, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action xxx-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts.						
Hazards Mitigated: Dam failure, flooding, severe weather, tsunami, sea level rise						
New & Existing	1, 3, 5, 7, 8, 10	TBD	TBD	Low	Staff Time, General Funds	Ongoing
Action xxx-5—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following: • _____.						
Hazards Mitigated: TBD						
New & Existing	1, 3, 4, 5, 6, 7, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action xxx-6— Purchase generators for critical facilities and infrastructure that lack adequate backup power, including _____.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire						
Existing	2, 6, 9					
Action xxx-7—Description						
Hazards Mitigated: TBD						
Action xxx-8—Description						
Hazards Mitigated:						
Action xxx-9—Description						
Hazards Mitigated: TBD						
Action xxx-10—Description						
Hazards Mitigated: TBD						
Action xxx-11—Description						
Hazards Mitigated: TBD						

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]
TBD	3	High	High	Yes	Yes	No	Medium	High
TBD	7	Medium	Low	Yes	No	Yes	High	Low
TBD	3	Low	Low	Yes	No	Yes	High	Low
TBD	6	Medium	Low	Yes	No	Yes	High	Low
TBD	7	Medium	Low	Yes	No	Yes	High	Medium
TBD	3	High	Medium	Yes	Yes	No	Medium	High

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								
_____								
_____								
_____								
_____								
Medium-Risk Hazards								
_____								
_____								
_____								
_____								
Low-Risk Hazards								
_____								
_____								
_____								

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

1.11 REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

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

- **___[jurisdiction name]___ Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **___[jurisdiction name]___ Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>

The following **o**utside 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.
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.12 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.13 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

INSTRUCTIONS FOR COMPLETING CITY/COUNTY ANNEX TEMPLATE

The jurisdictional annex templates for the *2020 Sonoma County Hazard Mitigation Plan* update will be completed in three phases. **This document provides instructions for completing all three phases of the template for municipalities.**

The target timeline for phase completion is as follows:

- **Phase 1**—Profile, Trends and Previous Plan Status
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx
- **Phase 2**—Capability Assessment and Information Sources
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx
- **Phase 3**—Risk Ranking, Action Plan, and Information Sources
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx

Please direct any questions and return your completed Phase 3 template by April __, 2021 to:

Bart Spencer
Tetra Tech, Inc.
(650) 324-1810
E-mail:bart.spencer@tetratech.com

A Note About Formatting:

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Pasting text from another source may alter the style and formatting of the document.

The numbering of sections and tables in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

IMPORTANT! READ THIS FIRST

Phase 1 and Phase 2 templates were previously provided to your jurisdiction for completion.

If your jurisdiction returned the completed Phase 1 & 2 templates:

- The Phase 1 & 2 content you provided is already incorporated into your Phase 3 template.
- Please review the template to see if we have inserted any comments requesting further work to be done on Phase 1 or 2
  - ***If any comments are included, please address them.*** Then, begin your work on Phase 3 following the Phase 3 instructions beginning on page 12.
  - If no comments are included, then you **DO NOT** need to do any further work on the Phase 1 or Phase 2 content. ***Go directly to the instructions for Phase 3, beginning on page 12.***

If your jurisdiction has **NOT** yet done any work on the Phase 1 or Phase 2 template:

- Follow the instructions below for providing the Phase 1 and Phase 2 information.
- Then proceed with the Phase 3 instructions.

If your jurisdiction started work on the Phase 1 or 2 template but never completed and submitted it, please copy the work you had completed so far into the new template. Then complete Phases 1, 2, and 3 following the instructions provided here.

PHASE 1 INSTRUCTIONS

CHAPTER TITLE

You jurisdiction's name has already been entered as the title of the chapter. Please review and correct if needed.

HAZARD MITIGATION PLAN POINT OF CONTACT

Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, please let the planning team know by inserting a comment into the document.

Complete the table providing the names and titles of members of the local mitigation planning team responsible for completing this annex. Team membership should consist of agencies with authority to regulate development and enforce local ordinances or regulatory standards, such as building/fire code enforcement, emergency management, emergency services, floodplain management, parks and recreation, planning/community development, public information, public works/engineering, stormwater management, transportation, or infrastructure.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the examples provided below. This should be information that will not be provided in the overall mitigation plan document.

Location

Describe the community's location, size and prominent features, similarly to the example below

> The City of Jones is in the northwest portion of Smith County, along the Pacific Coast in northern California. It is almost 300 miles of San Francisco. The city's total area is 4.2 square miles, with boundaries generally extending north-south from State Highway 111 to the Johnson River and east-west from Coast Road to East Frank Avenue. The City of Allen is to the north, unincorporated county is to the west, the City of Bethany is to the south, and the Pacific Ocean is to the west.
>
> Jones is home to the University of Arbor, Bickerson Manufacturing, and the western portion of Soosoo National Park.

History

Describe the community's history, focusing on economy and development, and note its year of incorporation, similarly to the example below

The City of Jones was incorporated in 1858. The area was settled during the gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resources. By 1913, the Jones Teachers College, a predecessor to today's University of Arbor, was founded. Recently, the presence of the college has come to shape Jones' population into a young and educated demographic. In 1981 the City developed the Jones Marsh and Wildlife sanctuary, an environmentally friendly sewage treatment enhancement system.

With numerous annexations since its original incorporation, the city's area has almost doubled. Today it features a commercial core in the center of the city, with mostly residential areas to the north and south, the university to the west and the national park on the east.

Climate

Describe the community's key climate characteristics, similarly to the example below

Jones' weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80 percent of that falling from November through April. The average year-round temperature is 59ºF. Humidity averages 72 to 87 percent. Prevailing winds are from the north, and average 5 mph.

Governing Body Format

Describe the community's key governance elements, similarly to the example below

The City of Jones is governed by a five-member city council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 commissions and task forces, which report to the City Council.

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

CURRENT TRENDS

Population

For population data, use the most current population figure for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state office of financial management).

According to California Department of Finance, the population of Jones as of July 2018 was 17,280. Since 2010, the population has grown at an average annual rate of 1.2 percent, though that rate is declining, with an annual average of only 0.8 percent since 2015.

Development

In the yellow-highlighted text that says "Describe trends in general," provide a brief description of your jurisdiction's recent development trends similar to the following example:

Anticipated development levels for Jones are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties.

The City of Jones adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with the plan. Future growth and development in the city will be managed as identified in the general plan.

Complete the table titled "Recent and Expected Future Development Trends." Please note:

- The portion of the table requesting the number of permits by year is specifically looking for development permits for new construction. If your jurisdiction does not have the ability to differentiate between permit types, please list the total number of permits and indicate "N/A" (not applicable) for the permit sub-types.
- If your jurisdiction does not have the ability to track permits for each hazard area, please delete the bullet list of hazard areas and insert a qualitative description of where development has occurred.

STATUS OF PREVIOUS PLAN ACTIONS

Please note that this section only applies to jurisdictions that are conducting updates to previously approved hazard mitigation plans. If your jurisdiction has not previously participated in an approved plan, please enter a note stating this, and we will remove this section in your final annex.

Also note that this section is further back in the annex than the rest of the Phase 1 content. Some Phase 2 sections are included before it.

All action items identified in prior mitigation plans must be reconciled in this update. Action items must all be marked as **ONE** of the following; check the appropriate box (place an X) and provide the following information:

- **Completed—**If an action has been completed since the prior plan was prepared, please check the appropriate box and provide a date of completion in the comment section. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed and **note that it is ongoing in the comments**. If an action addresses an ongoing program you would like to continue to include in your action plan, please see the Carried Over to Plan Update bullet below.
- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. **Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support.").** If the wording and/or intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.
- **Carried Over to Plan Update—**If an action is in progress, is ongoing, or has not been initiated and you would like to carry it over to the plan update, please check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for this update. If you are carrying over an action to the update, please include a comment describing any action that has been taken or why the action was not taken (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress). Leave the last column, "Action # in Update," blank at this point. This will be filled in after completing the updated action plan in Phase 3.

Please ensure that you have provided a status and a comment for each action.

THIS COMPLETES PHASE 1

PHASE 2 INSTRUCTIONS

CAPABILITY ASSESSMENT

Please note that it is unlikely that you will be able to complete all sections of the capability assessment on your own. You will likely need to reach out to other departments within your local government, such as planning, finance, public works, etc. It may be beneficial to provide these individuals with background information about this planning process, as you will want input from them again during Phase 3 of your annex development.

Legal and Regulatory Capability

In the table titled "Legal and Regulatory Capability," indicate "Yes" or "No" for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter "Yes" if your jurisdiction has prepared or adopted the identified item; otherwise, enter "No." If yes, then enter the code, ordinance number, or plan name and its date of adoption in the comments column. ***Note: If you are entering yes, please be sure that you are providing a comment with the appropriate code, ordinance or plan.***
- **Other Jurisdiction Authority**—Enter "Yes" if there are any regulations that may impact your jurisdiction that are enforced or administered by another agency (e.g., a state agency or special purpose district) or if you know that there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter "No." ***Note: If you answer yes, please indicate the other agency in the comments.***
- **State Mandated**—Enter "Yes" if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter "No." ***Note: If you are entering yes, please be sure that you are providing a comment.***
- **Integration Opportunity**—Enter "Yes" if your jurisdiction has opportunities for integrating the code, ordinance or plan with the hazard mitigation plan. Consider entering "Yes" in the Integration Opportunity column based on your responses to the following:
  - If you answered "Yes" in the Local Authority column for this code, ordinance or plan:
    - Does the code, ordinance or plan already address hazards and their potential impacts?
      - If so, should it be updated or revised to reflect new information about risk?
      - If not, will (or should) the code, ordinance or plan be updated over the performance period of the hazard mitigation plan (5 years)?
    - Does the code, ordinance or plan include specific projects that should be reviewed to incorporate hazard mitigation goals?
    - Does the code, ordinance or plan include specific projects that should be included as action items in the hazard mitigation action plan?
  - If you answered "No" in the Local Authority column for this code, ordinance or plan:
    - Will your jurisdiction develop the code, ordinance or plan during the performance period of the hazard mitigation plan?

  Note: Each capability with a "Yes" answer to Integration Opportunity will be discussed in more detail later in the annex. You may wish to keep notes when assessing the Integration Opportunity or review the "Integration with Other Planning Initiatives" section below.

- **Comments**—Enter the code number and adoption date for any local code indicated as being in place; provide other comments as appropriate to describe capabilities for each entry. **PLEASE DO NOT OVERLOOK THIS STEP**

For the categories "General Plan" and "Capital Improvement Plan," answer the specific questions shown, in addition to completing the four columns indicating level of capability.

Development and Permit Capabilities

Complete the table titled "Development and Permitting Capabilities."

Fiscal Capability

Complete the table titled "Fiscal Capability" by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter "Yes" if the resource is fully accessible to your jurisdiction. Enter "No" if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability

Complete the table titled "Administrative and Technical Capability" by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter "Yes" or "No" in the column labeled "Available?". If yes, then enter the department and position title in the right-hand column. If you have contract support staff with these capabilities, you can still answer "Yes." Indicate in the department column that this resource is provided through contract support.

Education and Outreach Capabilities

Complete the table titled "Education and Outreach" to indicate your jurisdiction's capabilities and existing efforts regarding hazard mitigation education and outreach.

National Flood Insurance Program Compliance

Complete the table titled "National Flood Insurance Program Compliance" by indicating your jurisdiction's capabilities related to each question in the table.

Classification in Hazard Mitigation Programs

Complete the table titled "Community Classifications" to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in the third and fourth columns if your jurisdiction is not participating. If you do not know your current classification, information is available at the following websites:

- **Community Rating System**— https://www.fema.gov/floodplain-management/community-rating-system
- **Storm Ready**— https://www.weather.gov/stormready/communities
- **Firewise**— http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx

- **Building Code Effectiveness Grading Schedule (BCEGS)**— https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html
- **Public Protection Classification**— https://www.isomitigation.com/ppc/

Adaptive Capacity for Climate Change

Consider the climate change impact concerns identified for the planning area:

- Reduced snowpack
- Increased wildfires
- Sea level rise and inland flooding
- Threats to sensitive species (e.g. coho salmon)
- Loss in agricultural productivity (e.g. forestry, wine grapes, nursery products, dairy)
- Public health and safety.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating your jurisdiction's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.
- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team after reviewing the results of the other capability assessment tables.

INTEGRATION WITH OTHER PLANNING INITIATIVES

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. The goal of integration is to ensure that the potential impact of hazards is considered in planning for future development. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the hazard mitigation plan, and those that offer opportunities for future integration. The simplest way to do this is to review the Legal and Regulatory Capabilities table to see which items were marked as "Yes" under the Integration Opportunity column.

Existing Integration

In the highlighted bullet list, list items for which you entered "Yes" under the Integration Opportunity column of the "Legal and Regulatory Capability" table because the plan or ordinance already addresses potential impacts or includes specific projects that should be included as action items in the mitigation action plan. Consider listing items marked as Completed in the "Status of Previous Plan Actions" table if they were indicated as being ongoing actions. Provide a brief description of how the plan or ordinance is integrated. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects can help mitigate potential hazards. The City will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code and Fire Code**—The City's adoption of the 2016 California building and fire codes incorporated local modifications to account for the climatic, topographic and geographic conditions that exist in the City.
- **General Plan**—The general plan includes a "Safety, Services, and Infrastructure" element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:
  - Geologic and seismic hazards
  - Fire hazards
  - Hazardous materials
  - Flood control
  - Impacts from climate change.
- **Climate Action Plan**—The City's Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change. These projects were reviewed to identify cross-planning initiates that serve both adaptation and mitigation objectives.

Note: Any plans that fall into this category should be reviewed during the development of the mitigation strategy in Phase 3 and included as appropriate.

Opportunities for Future Integration

List any remaining items that say "Yes" in the Integration Opportunity column in the Legal and Regulatory Capabilities and explain the process by which integration will occur. Examples follow:

- **Zoning Code**—The City is conducting a comprehensive update to its zoning code. The opportunity to incorporate additional mitigation and abatement measures will be considered for inclusion into the code.
- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.

- **Post-Disaster Recovery Plan**—The City does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the goals and objectives identified in the hazard mitigation plan.

After you have accounted for all items marked as "Yes" under the Integration Opportunity column, consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Please add any such programs to the integration discussion and provide a brief description of how these programs manage (or could be adapted to manage) risk from hazards.

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

Please note that this section will ultimately describe all information sources used to develop this annex, but that only the sources used for Phases 1 and 2 will be listed at this point. Additional sources will be added with the preparation of the Phase 3 annex.

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but please be sure to update and enhance any descriptions. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

THIS COMPLETES PHASE 2

PHASE 3 INSTRUCTIONS

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Please refer to the table below that lists hazard events in Sonoma County as recognized by the County, the state, and the federal government.

Presidential Disaster Declarations for Sonoma County

Year	Dates	Event Name	County EOC Activated	Gubernatorial Declaration	Presidential Declaration
2020	Sept. 4 – Nov. 17	Wildfires			X
2020	Aug. 14 – Sept. 26	Wildfires			X
2020	Jan. 20 – present	COVID-19 Pandemic	X	X	X
2019	October	PG&E Power Shutoff	X		
2019	Oct. 23 – Nov. 7	Kincade Fire	X	X	
2019	Feb. 24 – Mar. 1	Severe Winter Storms, Flooding, Landslides, Mudslides	X		X
2018	October	PG&E Power Shutoff	X		
2017	October	LNU Complex Fires	X		
2017	Oct. 8-31	Wildfires			X
2017	Feb. 1-23	Severe Winter Storms, Flooding, Mudslides	X		X
2017	Jan. 3-12	Severe Winter Storms, Flooding, Mudslides	X		X
2014-2016	Feb. 25	Drought		X	
2015	Sep. 12-25	Valley Fire	X	X	X
2014	Dec. 11-12	December Winter Storm	X		
2014	Aug. 24	South Napa Earthquake	X	X	X
2013	Oct. 29 and Nov. 5	Lopez Protests	X		
2012	Dec. 2	Holiday Decoration Flood	X		
2011	Mar. 11	Great Tohoku Tsunami	X	X	X
2009	Apr.-May	H1N1 Influenza Pandemic			
2007	Nov. 7	SF Oil Spill		X	
2006	Mar. 29-Apr. 16	Late Spring Storms		X	X
2005-2006	Dec. 31, 05–Jan. 3, 06	New Year's Floods	X	X	X
2004	Sept. 3-8	Geysers Fire	X		
2002-2003	Dec. 17, 02–Apr. 8, 03	December Winter Storms			
1998-2000	Feb. 2, 1998–Jan. 4, 2000	Flood of '98/ Rio Nido Debris Flow	X	X	X
1999	Feb. 8-10	February Winter Storm		X	
1997	Jan. 25	Superbowl Flood	X		
1996-1997	Dec. 30, 96–Jan. 4, 97	New Year's Flood	X	X	X
1996	Oct. 27-28	Porter Creek Fire	X		
1996	Jul. 31–Aug. 20	Cavedale Fire	X		

Year	Dates	Event Name	County EOC Activated	Gubernatorial Declaration	Presidential Declaration
1996	Jul. 31–Aug. 20	Jenner Sandbarrier			
1996	Feb. 4-5	February Winter Storm	X		
1995	Dec. 11-12	December Winter Storm	X		
1995	Mar. 7-15	Flood of '95, Part II	X	X	X
1995	Jan. 8-31	Flood of '95, Part 1	X	X	X
1994	May–Sep.	Fishing Emergency		X	X
1993	Jan. 20-25	Flood of '93	X	X	X
1990-1991	Dec. 90–Feb. 91	Freeze of '91		X	X
1986	Feb. 12 – Mar. 10	Severe Storms, Flooding			X
1983	Jan. 21 – Mar. 30	Coastal Storms, Floods, Slides, Tornadoes			X
1981-1982	Dec. 19 – Jan. 8	Severe Storms, Flood, Mudslides, High Tide			X
1969	Jan. 26	Severe Storms, Flooding			X
1964	Dec. 24	Heavy Rains and Flooding			X

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, please refer to the NOAA storm events database included in the tool kit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Resident input.

If you do not have estimates for dollars of damage caused, please list "Not Available" in the appropriate column or simply list a brief description of the damages (e.g. Main Street closed as a result of flooding, downed trees and residential damages). Please note that tracking such damages is a valid and useful mitigation action if your jurisdiction does not currently track such information.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

The risk ranking for each jurisdiction is included in the Risk Ranking Summary tab in the Loss Matrix included in the toolkit. Tetra Tech has filled in the results for each jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in your template and include what you believe the rank should be and why. For example, drought was ranked as low; however, the jurisdiction's economy is heavily reliant on water using industries, such as agriculture or manufacturing, so you believe it should be ranked as medium.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

The risk ranking for each jurisdiction is included in the Risk Ranking Summary tab in the Loss Matrix included in the toolkit. Tetra Tech has filled in the results for each jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in your template and include what you believe the rank should be and why. For example, drought was ranked as low; however, the jurisdiction's economy is heavily reliant on water using industries, such as agriculture or manufacturing, so you believe it should be ranked as medium.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

Risk Ranking Methodology

Review Risk Ranking in Template

Review the hazard risk ranking information that Tetra Tech has provided. The hazard with the highest risk rating is listed at the top of table titled "Hazard Risk Ranking" in your template and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ratings were given the same rank. "High," Medium," and "Low" assignments were given for each hazard of concern based on the total score (probability x impact). It is important to note, that this is determined by the scores rather than assigning a certain number of hazards to each category.

When reviewing the risk ranking results, it is important to remember that this exercise is about categorizing hazards into broad levels of risk (e.g. high, medium, low). It is not an exercise in precision.

Review Risk Ranking in Loss Matrix

The following sections discuss the methodology used to develop the results included in your template. Please refer to the Loss Matrix provided in your tool kit in order to follow along.

Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:
  - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the population is exposed to a hazard (Impact Factor = 0)
- **Property**—Values are assigned based on the percentage of the total ***property value exposed*** to the hazard event:
  - High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)
- **Economy**—Values were assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire

and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.

- High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)
- Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
- Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
- No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People

The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column.** For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property

The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column.** For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy

The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **purple highlighted column.** For those hazards that have a defined extent and location, but do not have modelled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a "high" rating, score between 15 and 30 receive a "medium" rating, and score of less than 15 receives a "low" rating.

JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. In the space provided, Tetra Tech has inserted the following information based on data provided by FEMA:

- The number of any FEMA-identified repetitive-loss properties in your jurisdiction.
- The number of any FEMA-identified severe-repetitive-loss properties in your jurisdiction.
- The number (if any) of repetitive-loss or severe-repetitive-loss properties in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure.

Please note that if your jurisdiction has any repetitive loss properties, we would strongly encourage you to include a mitigation action that addresses mitigating these properties.

Other Vulnerabilities

We would strongly encourage you to review the results of the risk assessment included in the tool kit, your jurisdiction's natural events history, and any relevant public comments/input and develop a few sentences that discuss specific risks. You do not need to develop a sentence for every single parameter, but review the results and identify a few issues you would like to highlight. For example:

- Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault may produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than $6 million in estimated damages from severe storm events.
- More than 50 buildings are located in areas that will be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.

In addition, please list any noted vulnerabilities in your jurisdiction related to hazard mitigation that may not be apparent from the risk assessment and other information provided. This may include things such as the following:

- An urban drainage issue that results in localized flooding every time it rains.
- An area of the community that frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, that is not equipped with a generator.
- A neighborhood that has the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake (e.g. bridge only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.
- A large visitor population that may not be aware of tsunami risk.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your mitigation strategy. Tetra Tech has inserted a few items in this section to get you started. In addition, two examples are shown in the table below.

Noted Vulnerability	Example Mitigation Action
Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Develop and implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of relatively low cost flood insurance policies.
An urban drainage issue that results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: • The corner of Main Street and 1st Street • Old Oak subdivision.

HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

This section is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan. All of the work that you have done thus far should provide you with a plethora of ideas for actions. With this in mind, we recommend that you review the following and develop a list of potential actions:

- **Capability Assessment Section of Annex—**Review the Legal and Regulatory Capability table, the Fiscal Capability table, the Administrative and Technical Capability table, the Education and Outreach table, and the Community Classification table.

  - For any capability that you indicated that you did not have, ask yourself – should we have this capability? If yes, consider including an action to develop/acquire the capability.
  - Example: Ensure a staff person from public works and planning are trained in the use of FEMA's benefit-cost analysis software.
  - Review the Legal and Regulatory capabilities. If any have not been reviewed and updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment (Note: actions such as this should also be identified in the opportunities for future integration section). Also, consider including projects or actions that have been identified in other plans and programs such as Capital Improvement Plans, Strategic Plans, etc. as actions in this plan.
  - For any capability that you indicated you do have, consider how this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.

- **National Flood Insurance Program Compliance Table of this Annex**—Review the table and consider the following:

  - If you have no certified floodplain managers and you have flood risk, consider adding an action to provide key staff members with training appropriate to obtain certification.
  - If your flood damage prevention was last updated in or before 2004, you should identify an action to update your ordinance to ensure it is compliant with NFIP requirements.
  - If you have any outstanding NFIP compliance issues, be sure to add an action to address them.
  - If flood hazard maps do not adequately address the flood risk within your jurisdiction, consider actions to request new mapping or conduct studies.

- If you don't participate in CRS or you would like to improve your classification, consider this as an action.
- If the number of flood insurance polices in your jurisdiction is low relative to the number of structures in the floodplain, consider an action that will promote flood insurance in your jurisdiction.

- **Adaptive Capacity for Climate Change Section of this Annex**—Consider your responses to this section. For those criterion that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog). For those criterion you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity. For those criterion that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).
- **Opportunities for Future Integration Section in this Annex**—Review the items you identified in this section. For those items that address land use include them in the prepopulated Action in your template that reads as follows: Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____. For other items listed in this section, consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.
- **Jurisdiction-Specific Vulnerabilities Section in this Annex—**Review the items that you have identified in this section and consider actions that will help reduce these vulnerabilities (see mitigation best practices catalog).
- **Mitigation Best Practices Catalog**—A catalog that includes FEMA and other agency identified best practices, steering committee and other stakeholder recommendations was developed as part of the plan development process and included in your tool kit. Review the catalog and identify those actions that your jurisdiction should consider including in its action plan.
- **Public Input**—Review input received during the process, specifically the public survey results included in your toolkit.
- **Prior Mitigation Planning Efforts**—If your jurisdiction participated in a previous hazard mitigation plan, please be sure to remember to include any actions that were identified as "carry over" actions. Once you have carried them over, return to the Status of Previous Actions table and record the new action number (see discussion below).

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grants (see fact sheet provided in toolkit). If you have actions that are not HMGP, PDM or FMA grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- **You must identify at least one true mitigation action (i.e. not a preparedness or response action) that is clearly defined and actionable for hazards ranked as "high" or "medium."**

Recommended Actions

We recommend that every planning partner strongly consider the following actions. **The specifics of these actions should be adjusted as needed for the particulars of each community.** You will note that six of these actions have been prepopulated in your annex template. These six actions should be included in every annex and should not be removed.

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.
- Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.
- Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.
- Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:

  - Enforce the flood damage prevention ordinance.
  - Participate in floodplain identification and mapping updates.
  - Provide public assistance/information on floodplain requirements and impacts.

- Identify and pursue strategies to increase adaptive capacity to climate change.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

Complete the Table

Complete the table titled “Hazard Mitigation Action Plan Matrix” for all the actions you have identified and would like to include in the plan:

- Enter the action number and description. If the action is carried over from your previous hazard mitigation plan, return to the “Status of Previous Plan Actions” table you completed in Phase 1 and enter the new action number in the column labeled Action # in Update.
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list the hazards, simply indicating all hazards is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).

Action Item Numbering:

Please use the following action item numbering conventions:

- Sonoma County—SCO-1
- Cotati City—COT-1
- Santa Rosa City—SRO-1
- Sonoma City—SCI-1
- Windsor Town—WIN-1
- Cloverdale Fire—CLO-1
- Gold Ridge RCD—GOL-1
- N. Sonoma Coast FPD—NSC-1
- N. Sonoma County Fire—NFR-1
- Rancho Adobe Fire—RAF-1
- Sonoma Co. Ag. & Open Space—SAO-1
- Sonoma RCD—SCR-1
- Sonoma Valley Fire—SVF-1
- Timber Cover Fire—TIM-1

- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department, please ensure that it is clear who the lead agency will be and list supporting agencies in the appropriate column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium" or "Low" as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table below for project eligibility for FEMA's hazard mitigation assistance grant program.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or "ongoing" (a continual program)

Eligible Activities	HMGP	PDM	FMA
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

Notes: HMGP = Hazard Mitigation Grant Program; PDM = Pre-Disaster Mitigation; FMA = Flood Mitigation Assistance

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

**Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.
Source: https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart

Please see the table below for examples of some of the recommended actions above:

Example Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	3, 4, 10	Planning		High	HMGP, PDM, FMA	Short-term
EX-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community including _____.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 7, 8, 10	Planning		Low	Staff Time, General Funds	Ongoing
EX-3—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.							
Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	4, 8	Emergency Management		Medium	Staff Time, General Funds	Short-term
EX-4—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.							

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 5, 8	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-6—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: Enforcement of the flood damage prevention ordinance Participate in floodplain identification and mapping updates Provide public assistance/information on floodplain requirements and impacts.							
New and Existing	Flood, Dam Failure	1, 3, 5, 7, 8, 10	Floodplain Administration Department		Low	Staff Time, General Funds	Ongoing
EX-7—Work with building officials to identify ways to improve the jurisdictions' BCEGS classification.							
New	Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 4, 7	Building and Development Services		Low	Staff Time, General Funds	Short-term
EX-8—Develop a post-disaster recovery plan and a debris management plan.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	9	Emergency Management		Medium	EMPG	Long-term
EX-9—Participate in programs such as Firewise, StormReady and the Community Rating System.							
New and Existing	Dam Failure, Flooding, Severe weather, Wildland fire	3, 4	Emergency Management	Public Works	Low	Staff Time, General Funds	Short-term
EX-10—Identify and pursue strategies to increase adaptive capacity to climate change including _____.							
New and Existing	Dam failure, Drought, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 6, 7, 8	Planning		Low	Staff Time, General Funds	Short-term
EX-11—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
New and Existing	Dam failure, Flooding, Landslide, Severe weather, Wildland fire	2, 6, 9	Planning		Low	Staff Time, General Funds	Short-term

Prioritization of Mitigation Actions

Complete the information in the table titled "Mitigation Strategy Priority Schedule" as follows:

- **Action #**—Indicate the action number from the previous annex table (Hazard Mitigation Action Plan Matrix).
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:

  - High: Action will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the action are difficult to quantify in the short term.

- **Costs**—Enter "High," "Medium" or "Low" as follows:

  - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
  - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
  - Low: Possible to fund under existing budget. Action is or can be part of an existing ongoing program.
  - If you know the estimated cost of an action because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on HMGP, PDM and FMA and the table above.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:

- **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

This prioritization is a simple way to determine that your identified actions meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM /FMA action grants. The prioritization will identify any actions whose probable benefits will not exceed the probable costs. Those actions identified as high-priority grant funding actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities. A note indicating so should be inserted and a rationale should be provided.

Please see the example below based off the recommended actions:

Table 0-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-1	3	High	High	Yes	Yes	No	Medium	High
EX-2	7	Medium	Low	Yes	No	Yes	High	Low
EX-3	2	Low	Medium	No	No	Maybe	Low	Low
EX-4	10	Low	Low	Yes	No	Yes	High	Low
EX-5	3	Low	Low	Yes	No	Yes	High	Low
EX-6	6	Medium	Low	Yes	No	Yes	High	Low
EX-7	3	Medium	Low	Yes	No	Yes	High	Low
EX-8	1	Medium	Medium	Yes	Yes	No	Medium	High
EX-9	2	Medium	Low	Yes	No	Yes	High	Low
EX-10	7	Medium	Low	Yes	No	Yes	High	Medium
EX-11	3	High	Medium	Yes	Yes	No	Medium	High

Analysis of Mitigation Actions

Complete the table titled "Analysis of Mitigation Actions" summarizing the mitigation actions by hazard of concern and the following eight mitigation types. Please note that an action can be more than one mitigation type:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.

- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

Please see the example below based off the recommended actions, but please note that these recommendations are heavy on generalized actions on the prevention spectrum and light in other areas and specificity. Planning partners should aim to identify at least one action in each category (although this is not required) and should make sure there is at least one action to address "high" and "medium" ranked hazards:

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
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Severe weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11			EX-3, 4, 8, 9, 10
Wildland fire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

This section should describe what resources you used to complete the annex and how you used them. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

This section will ultimately describe all information sources used to develop this annex. The sources used for Phases 1 and 2 should have been entered previously. Additional sources are be added with the preparation of the Phase 3 annex. At this point, review to ensure that all relevant materials are identified.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. Please note that this section is optional.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. Please note that this section is optional.

THIS COMPLETES PHASE 3

Annex Templates and Instructions for Special-Purpose Districts

1. DISTRICT NAME

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact
Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Development of this annex was carried out by the members of the local mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Mitigation Planning Team Members

Name	Title

1.2 JURISDICTION PROFILE

1.2.1 Overview

Insert Narrative Profile Information, per Instructions.

The __[name of adopting body]___ assumes responsibility for the adoption of this plan; __[name of oversight agency]__ will oversee its implementation.

All fire districts should include the following sentence (non-fire special purpose districts may delete the sentence):

The District participates/does not participate in the Public Protection Class Rating System and currently has a rating of #.

1.2.2 Service Area and Trends

The district service area covers ___[area in square miles]___, serving a population of _ population_.

Insert summary description of service trends.

1.2.3 Assets

Table 1-2 summarizes the critical assets of the district and their value.

Table 1-2. Special Purpose District Assets

Asset	Value
Property	
number acres of land	$_value_
Equipment	
description	$_value_
description	$_value_
description	$_value_
description	$_value_
description	$_value_
Total:	*$_value_*
Critical Facilities and Infrastructure	
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
description – Include Address	$_value_
Total:	*$_value_*

1.3 CAPABILITY ASSESSMENT

An assessment of the district's current capabilities was conducted to identify opportunities to expand, initiate or integrate capabilities in order 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.

1.3.1 Planning and Regulatory Capabilities

Jurisdictions develop plans and programs and implement rules and regulations to protect and serve residents. When effectively prepared and administered, these plans, programs and regulations can support the implementation of mitigation actions. Table 1-3 summarizes existing codes, ordinances, policies, programs or plans that are applicable to this hazard mitigation plan.

Table 1-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____

Name of code, ordinance, policy, program or plan	____	____
Name of code, ordinance, policy, program or plan	____	____

1.3.2 Fiscal, Administrative and Technical Capabilities

Fiscal capability is an indicator of a jurisdiction's ability to fulfill the financial needs associated with hazard mitigation projects. An assessment of fiscal capabilities is presented in Table 1-4. Administrative and technical capabilities represent a jurisdiction's staffing resources for carrying out the mitigation strategy. An assessment of administrative and technical capabilities is presented in Table 1-5.

Table 1-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Federal Grant Programs	Yes/No
Other	Yes/No (if yes, please specify)

Table 1-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes/No	Insert appropriate information
Engineers or professionals trained in building or infrastructure construction practices	Yes/No	Insert appropriate information
Planners or engineers with an understanding of natural hazards	Yes/No	Insert appropriate information
Staff with training in benefit/cost analysis	Yes/No	Insert appropriate information
Surveyors	Yes/No	Insert appropriate information
Personnel skilled or trained in GIS applications	Yes/No	Insert appropriate information
Scientist familiar with natural hazards in local area	Yes/No	Insert appropriate information
Emergency manager	Yes/No	Insert appropriate information
Grant writers	Yes/No	Insert appropriate information
Other	Yes/No	Insert appropriate information

1.3.3 Education and Outreach Capabilities

Outreach and education capability identifies the connection between government and community members, which opens a dialogue needed for a more resilient community. An assessment of education and outreach capabilities is presented in Table 1-6.

Table 1-6. Education and Outreach

Criterion	Response
Do you have a public information officer or communications office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? • If yes, please briefly describe	Yes/No Insert appropriate information
Do you use social media for hazard mitigation education and outreach? • If yes, please briefly describe	Yes/No Insert appropriate information
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, please briefly specify	Yes/No Insert appropriate information
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, please briefly describe	Yes/No Insert appropriate information
Do you have any established warning systems for hazard events? • If yes, please briefly describe	Yes/No Insert appropriate information

1.3.4 Adaptive Capacity for Climate Change

Given the uncertainties associated with how hazard risk may change with a changing climate, a jurisdiction's ability to track such changes and adapt as needed is an important component of the mitigation strategy. Table 1-7 summarizes the jurisdiction's adaptive capacity for climate change.

Table 1-7. Adaptive Capacity for Climate Change

Criterion	Jurisdiction Rating[a]
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts *Comment:*	High/Medium/Low
Jurisdiction-level monitoring of climate change impacts *Comment:*	High/Medium/Low
Technical resources to assess proposed strategies for feasibility and externalities *Comment:*	High/Medium/Low
Jurisdiction-level capacity for development of greenhouse gas emissions inventory *Comment:*	High/Medium/Low
Capital planning and land use decisions informed by potential climate impacts *Comment:*	High/Medium/Low
Participation in regional groups addressing climate risks *Comment:*	High/Medium/Low
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes *Comment:*	High/Medium/Low
Identified strategies for greenhouse gas mitigation efforts *Comment:*	High/Medium/Low

Criterion	Jurisdiction Rating[a]
Identified strategies for adaptation to impacts *Comment:*	High/Medium/Low
Champions for climate action in local government departments *Comment:*	High/Medium/Low
Political support for implementing climate change adaptation strategies *Comment:*	High/Medium/Low
Financial resources devoted to climate change adaptation *Comment:*	High/Medium/Low
Local authority over sectors likely to be negative impacted *Comment:*	High/Medium/Low
Public Capacity	
Local residents knowledge of and understanding of climate risk *Comment:*	High/Medium/Low
Local residents support of adaptation efforts *Comment:*	High/Medium/Low
Local residents' capacity to adapt to climate impacts *Comment:*	High/Medium/Low
Local economy current capacity to adapt to climate impacts *Comment:*	High/Medium/Low
Local ecosystems capacity to adapt to climate impacts *Comment:*	High/Medium/Low

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.

1.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as 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.

1.4.1 Existing Integration

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

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.4.2 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:

- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description
- **Plan or Program Name**—Description

1.5 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-8 lists past occurrences of natural hazards for which specific damage was recorded in ___[jurisdiction name]___. Other hazard events that broadly affected the entire planning area, including ___[jurisdiction name]___, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____
Insert event type	_____	Date	$_____

1.6 HAZARD RISK RANKING

Table 1-9 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 1-9. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1			High/Medium/Low
2			High/Medium/Low
3			High/Medium/Low
4			High/Medium/Low
5			High/Medium/Low
6			High/Medium/Low
7			High/Medium/Low
8			High/Medium/Low
9			High/Medium/Low

1.7 JURISDICTION-SPECIFIC VULNERABILITIES

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. 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:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

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

1.8 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-10 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 1-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				
Insert Action Number & Text *Comment:*				

1.9 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 1-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 1-12 identifies the priority for each action. Table 1-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-1—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.						
Hazards Mitigated: Earthquake, flooding, landslide, tsunami, wildfire						
Existing	3, 4, 10	TBD	TBD	High	HMGP, PDM, FMA	Short-term
Action xxx-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
Hazards Mitigated: All hazards						
New & Existing	1, 5, 8	TBD	TBD	Low	Staff Time, General Funds	Short-term
Action xxx-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power, including _____.						
Hazards Mitigated: Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire						
Existing	2, 6, 9					
Action xxx-4—Description						
Hazards Mitigated: TBD						
Action xxx-5—Description						
Hazards Mitigated: TBD						

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline[a]
Action xxx-6—Description *Hazards Mitigated:* TBD						
Action xxx-7—Description *Hazards Mitigated:* TBD						
Action xxx-8—Description *Hazards Mitigated:* TBD						
Action xxx-9—Description *Hazards Mitigated:* TBD						

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 1-12. 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]
TBD	3	High	High	Yes	Yes	No	Medium	High
TBD	3	Low	Low	Yes	No	Yes	High	Low
TBD	3	High	Medium	Yes	Yes	No	Medium	High

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

Table 1-13. 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								
_____								
_____								
_____								
_____								
Medium-Risk Hazards								
_____								
_____								
_____								
_____								
Low-Risk Hazards								
_____								
_____								
_____								

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

1.10 REVIEW AND INCORPORATION OF RESOURCES FOR THIS ANNEX

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

- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>

The following **o**utside 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.
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.12 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

INSTRUCTIONS FOR COMPLETING SPECIAL PURPOSE DISTRICT ANNEX TEMPLATE

- The jurisdictional annex templates for the *2020 Sonoma County Hazard Mitigation Plan* update will be completed in three phases. **This document provides instructions for completing all three phases of the template for special purpose districts.**

The target timeline for phase completion is as follows:

- **Phase 1**—Profile, Trends and Previous Plan Status
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx
- **Phase 2**—Capability Assessment and Information Sources
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx
- **Phase 3**—Risk Ranking, Action Plan, and Information Sources
  - Deployed: Month xx, xxxx
  - Due: Month xx, xxxx

Please direct any questions and return your completed Phase 3 template by April __, 2021 to:

Bart Spencer
Tetra Tech, Inc.
(650) 324-1810
E-mail:bart.spencer@tetratech.com

A Note About Formatting:

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering of sections and tables in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

IMPORTANT! READ THIS FIRST

Phase 1 and Phase 2 templates were previously provided to your jurisdiction for completion.

If your jurisdiction returned the completed Phase 1 & 2 templates:

- The Phase 1 & 2 content you provided is already incorporated into your Phase 3 template.
- Please review the template to see if we have inserted any comments requesting further work to be done on Phase 1 or 2
  - ***If any comments are included, please address them.*** Then, begin your work on Phase 3 following the Phase 3 instructions beginning on page 12.
  - If no comments are included, then you **DO NOT** need to do any further work on the Phase 1 or Phase 2 content. ***Go directly to the instructions for Phase 3, beginning on page 12.***

If your jurisdiction has **NOT** yet done any work on the Phase 1 or Phase 2 template:

- Follow the instructions below for providing the Phase 1 and Phase 2 information.
- Then proceed with the Phase 3 instructions.

If your jurisdiction started work on the Phase 1 or 2 template but never completed and submitted it, please copy the work you had completed so far into the new template. Then complete Phases 1, 2, and 3 following the instructions provided here.

PHASE 1 INSTRUCTIONS

1.1 CHAPTER TITLE

You jurisdiction's name has already been entered as the title of the chapter. Please review and correct if needed.

1.2 HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, please let the planning team know by inserting a comment into the document.

1.3 JURISDICTION PROFILE

1.3.1 Overview

Please provide a brief summary description of the following:

- The purpose of the jurisdiction
- The date of inception
- The type of organization
- The number of employees
- The mode of operation (i.e., how operations are funded)
- The type of governing body, and who has adoptive authority.

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide information similar to the following example:

> The Johnsonville Community Services District is a special district created in 1952 to provide water and sewer service. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. The District currently employs a staff of 21. Funding comes primarily through rates and revenue bonds.

Complete the table providing the names and titles of members of the local mitigation planning team responsible for completion of this annex. Team membership should consist of agencies with authority to regulate development and enforce local ordinances or regulatory standards, such as building/fire code enforcement, emergency management, emergency services, floodplain management, parks and recreation, planning/community

development, public information, public works/engineering, stormwater management, transportation, or infrastructure.

Service Area and Trends

Please provide a brief summary description of the following:

- A description of who the district's customers are
- An approximation of area served in square miles
- A geographical decription of the service area
- An overview of current service area trends, including an approximation of current users/subscribers,
- A summary description of previous growth trends in the service area and anticipated future increase/decrease in services (if applicable)

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide information similar to the following example:

> The Johnsonville Community Services District originally was formed to serve the unincorporated area east of the City of Smithburg known as Johnsonville. The District's designated service area expanded throughout the years to include other unincorporated areas of Jones County: Creeks Corner, Jones Hill, Fields Landing, King Salmon, and Freshwater. As of April 30, 2016, the District serves 7,305 water connections and 6,108 sewer connections, with a total service area of 3.3 square miles.

1.4 STATUS OF PREVIOUS PLAN ACTIONS

Please note that this section only applies to jurisdictions that are conducting updates to previously approved hazard mitigation plans. If your jurisdiction has not previously participated in an approved plan, please enter a note stating this, and we will remove this section in your final annex.

Also note that this section is further back in the annex than the rest of the Phase 1 content. Some Phase 2 sections are included before it.

All action items identified in prior mitigation planning efforts must be reconciled in this plan update. Action items must all be marked as **ONE** of the following; check the appropriate box (place an X) and provide the following information:

- **Completed—**If an action has been completed since the prior plan was prepared, please check the appropriate box and provide a date of completion in the comment section. If an action has been initiated and is an ongoing program (e.g. annual outreach event), you may mark it as completed **and note that it is ongoing in the comments**. If an action addresses an ongoing program you would like to continue to include in your action plan, please see the Carried Over to Plan Update bullet below.
- **Removed—**If action items are to be removed because they are no longer feasible, a reason must be given. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. **Place a comment in the comment section explaining why the action is no longer feasible or barriers that prevented the action from being implemented (e.g., "Action no longer considered feasible due to lack of political support.").** If the wording and/or

intent of a previously identified action is unclear, this can be a reason for removal. A change in community priorities may also be a reason for removal and should be discussed in the comments.

- **Carried Over to Plan Update—**If an action is in progress, is ongoing, or has not been initiated and you would like to carry it over to the plan update, please check the "Check if Yes" column under "Carried Over to Plan Update." Selecting this option indicates that the action will be included in the mitigation action plan for this update. **If you are carrying over an action to the update, please include a comment describing any action that has been taken or why the action was not taken (specifically, any barriers or obstacles that prevented the action from moving forward or slowed progress).** Leave the last column, "Action # in Update," blank at this point. This will be filled in after completing the updated action plan in Phase 3.

Please ensure that you have provided a status and a comment for each action.

THIS COMPLETES PHASE 1!

PHASE 2 INSTRUCTIONS

DISTRICT CRITICAL ASSETS

Please provide an approximate value for the noted areas within the table. Include the sum total value for identified assets for each section in the "Total" line for the section.

Property

Provide an approximate value for the land owned by the District.

Equipment

List categories of equipment **owned by the District** that are used in times of emergency or that, if incapacitated, have the potential to severely impact the service area. Provide an approximate **aggregate replacement value** for each. For water and sewer, include mileage of pipeline under this category.

Critical Facilities and Infrastructure

List District facilities and infrastructure vital to maintain services to the designated service area. Include the address of each facility. Provide an approximate **aggregate replacement value** for each line. The Steering Committee has decided upon the following definition of critical facilities for this planning process:

- A local (not state or federal) facility in either the public or private sector that is critical to the health and welfare of the population and that is especially important following hazard events, including but not limited to the following:
  - Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water-reactive materials
  - Hospitals, nursing homes, and housing facilities likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a natural hazard event
  - Mass gathering facilities that may be utilized as evacuation shelters
  - Infrastructure such as roads, bridges and airports that provide sources for evacuation before, during and after natural hazard events
  - Police stations, fire stations, government facilities, vehicle equipment and storage facilities, hardware stores and emergency operation centers that are needed for response activities before, during and after a natural hazard event
  - Public and private utility facilities that are vital to maintaining and restoring normal services to damaged areas before, during and after natural hazard events.

Please use this definition as a guideline when selecting critical facilities the District owns.

NOTE:

Placeholders in the table of assets request **ADDRESSES** for critical facilities. These addresses will not be included in the final published annex, but are needed in order to perform risk mapping and risk analysis for the hazard mitigation plan. Include the addresses in the table if convenient. If not, then provide a separate document listing all critical facilities and addresses for use in development of the hazard mitigation plan.

Sample Completed Table – Special District Assets	
Asset	Value
Property	
11.5 Acres	$5,750,000
Equipment	
Total length of pipe 40 miles ($1.32 million per mile X 40 miles)	$52,800,000
4 Emergency Generators	$250,000
Total:	*$53,050,000*
Critical Facilities and Infrastructure	
Administrative Buildings – 357 S. Jones Street	$2,750,000
Philips Pump Station – 111 Fifth Avenue N.	$377,000
Total:	*$3,127,000*

1.5 CAPABILITY ASSESSMENT

1.5.1 Planning and Regulatory Capability

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements related to hazard mitigation. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction. Please provide the date of last update and any comments as appropriate. A few examples follow:

Plan, Study or Program	Date of Most Recent Update	Comment
District Design Standards	2010	
Capital Improvement Program	Updated and approved annually	covers 5 year timeframe
Emergency Operations Plan	2000	
Facility Maintenance Manual	1990	
State Building Code	2016	
Division of State Architects		Review and approval of all building and site design features is required prior to construction
Habitat Conservation Plan		All development impacting critical habitat must meet federal and state requirements pertaining to the protection of endangered species

1.5.1 Fiscal, Administrative and Technical Capabilities

Fiscal Capability

Complete the table titled “Fiscal Capability” by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability

Complete the table titled “Administrative and Technical Capability” by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?”. If yes, then enter the department and position title in the right-hand column. If you have contract support staff with these

capabilities, you can still answer "Yes." Indicate in the department column that this resource is provided through contract support.

1.5.2 Education and Outreach Capabilities

Complete the table titled "Education and Outreach" to indicate your jurisdiction's capabilities and existing efforts regarding hazard mitigation education and outreach.

Adaptive Capacity for Climate Change

Consider the climate change impact concerns identified for the planning area:

- Reduced snowpack
- Increased wildfires
- Sea level rise and inland flooding
- Threats to sensitive species (e.g. coho salmon)
- Loss in agricultural productivity (e.g. forestry, wine grapes, nursery products, dairy)
- Public health and safety.

With those impacts in mind, complete the table titled "Adaptive Capacity for Climate Change" by indicating that your jurisdiction's capacity for each listed criterion as follows:

- **High**—The capacity exists and is in use.
- **Medium**—The capacity may exist, but is not used or could use some improvement.
- **Low**—The capacity does not exist or could use substantial improvement.
- **Unsure**—Not enough information is known to assign a rating.

This is a subjective assessment, but providing a few words of explanation is useful. It is highly recommended that you complete this table with an internal planning team after reviewing the results of the other capability assessment tables.

1.6 INTEGRATION WITH OTHER PLANNING INITIATIVES

For hazard mitigation planning, "integration" means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. The goal of integration is to ensure that the potential impact of hazards is considered in planning for future development. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).

- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment, identify all plans and programs that have already been integrated with the goals and recommendations of the hazard mitigation plan, and those that offer opportunities for future integration.

1.6.1 Existing Integration

Provide a brief description of integrated plans or ordinances and how each is integrated. Consider listing items marked as Completed in the "Status of Previous Plan Actions" table if they were indicated as being ongoing actions. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects can help mitigate potential hazards. The District will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Emergency Operations Plan**—The results of the risk assessment were used in the development of the emergency operations plan.
- **Facilities Plan**—The results of the risk assessment and mapped hazard areas are used in facility planning for the district. Potential sites are reviewed for hazard risks and appropriate mitigation measures are considered in building and site design.

1.6.2 Opportunities for Future Integration

List any plans or program that offer the potential for future integration and describe the process by which integration will occur. Examples follow:

- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The District does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

Consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Please add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

Please note that this section will ultimately describe all information sources used to develop this annex, but that only the sources used for Phases 1 and 2 will be listed at this point. Additional sources will be added with the preparation of the Phase 3 annex.

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but please be sure to update and enhance any descriptions. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

THIS COMPLETES PHASE 2!

PHASE 3 INSTRUCTIONS

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In the table titled "Past Natural Hazard Events," list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Please refer to the table below that lists hazard events in Sonoma County as recognized by the County, the state, and the federal government.

Presidential Disaster Declarations for Sonoma County

Year	Dates	Event Name	County EOC Activated	Gubernatorial Declaration	Presidential Declaration
2020	Sept. 4 – Nov. 17	Wildfires			X
2020	Aug. 14 – Sept. 26	Wildfires			X
2020	Jan. 20 – present	COVID-19 Pandemic	X	X	X
2019	October	PG&E Power Shutoff	X		
2019	Oct. 23 – Nov. 7	Kincade Fire	X	X	
2019	Feb. 24 – Mar. 1	Severe Winter Storms, Flooding, Landslides, Mudslides	X		X
2018	October	PG&E Power Shutoff	X		
2017	October	LNU Complex Fires	X		
2017	Oct. 8-31	Wildfires			X
2017	Feb. 1-23	Severe Winter Storms, Flooding, Mudslides	X		X
2017	Jan. 3-12	Severe Winter Storms, Flooding, Mudslides	X		X
2014-2016	Feb. 25	Drought		X	
2015	Sep. 12-25	Valley Fire	X	X	X
2014	Dec. 11-12	December Winter Storm	X		
2014	Aug. 24	South Napa Earthquake	X	X	X
2013	Oct. 29 and Nov. 5	Lopez Protests	X		
2012	Dec. 2	Holiday Decoration Flood	X		
2011	Mar. 11	Great Tohoku Tsunami	X	X	X
2009	Apr.-May	H1N1 Influenza Pandemic			
2007	Nov. 7	SF Oil Spill		X	
2006	Mar. 29-Apr. 16	Late Spring Storms		X	X
2005-2006	Dec. 31, 05–Jan. 3, 06	New Year's Floods	X	X	X
2004	Sept. 3-8	Geysers Fire	X		
2002-2003	Dec. 17, 02–Apr. 8, 03	December Winter Storms			
1998-2000	Feb. 2, 1998–Jan. 4, 2000	Flood of '98/ Rio Nido Debris Flow	X	X	X
1999	Feb. 8-10	February Winter Storm		X	
1997	Jan. 25	Superbowl Flood	X		
1996-1997	Dec. 30, 96–Jan. 4, 97	New Year's Flood	X	X	X
1996	Oct. 27-28	Porter Creek Fire	X		
1996	Jul. 31–Aug. 20	Cavedale Fire	X		
1996	Jul. 31–Aug. 20	Jenner Sandbarrier			
1996	Feb. 4-5	February Winter Storm	X		

Year	Dates	Event Name	County EOC Activated	Gubernatorial Declaration	Presidential Declaration
1995	Dec. 11-12	December Winter Storm	X		
1995	Mar. 7-15	Flood of '95, Part II	X	X	X
1995	Jan. 8-31	Flood of '95, Part 1	X	X	X
1994	May–Sep.	Fishing Emergency		X	X
1993	Jan. 20-25	Flood of '93	X	X	X
1990-1991	Dec. 90–Feb. 91	Freeze of '91		X	X
1986	Feb. 12 – Mar. 10	Severe Storms, Flooding			X
1983	Jan. 21 – Mar. 30	Coastal Storms, Floods, Slides, Tornadoes			X
1981-1982	Dec. 19 – Jan. 8	Severe Storms, Flood, Mudslides, High Tide			X
1969	Jan. 26	Severe Storms, Flooding			X
1964	Dec. 24	Heavy Rains and Flooding			X

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, please refer to the NOAA storm events database included in the tool kit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Resident input.

If you do not have estimates for dollars of damage caused, please list "Not Available" in the appropriate column or simply list a brief description of the damages (e.g. Main Street closed as a result of flooding, downed trees and residential damages). Please note that tracking such damages is a valid and useful mitigation action if your jurisdiction does not currently track such information.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy.

The risk ranking for each jurisdiction is included in the Risk Ranking Summary tab in the Loss Matrix included in the toolkit. Tetra Tech has filled in the results for each jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in your template and include what you believe the rank should

be and why. For example, drought was ranked as low; however, the jurisdiction's economy is heavily reliant on water using industries, such as agriculture or manufacturing, so you believe it should be ranked as medium.

Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

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Also keep in mind that one of the purposes of this exercise is to support the selection and prioritization of actions in your plan. **You will need to have at least one true mitigation action for each hazard ranked as "high" or "medium."** This is discussed in more detail in the Hazard Mitigation Action Plan section of these instructions.

The instructions below describe the methodology for how these rankings were derived. Please review before providing any comments.

Risk Ranking Methodology

Review Risk Ranking in Template

Review the hazard risk ranking information that Tetra Tech has provided. The hazard with the highest risk rating is listed at the top of table titled "Hazard Risk Ranking" in your template and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ratings were given the same rank. "High," Medium," and "Low" assignments were given for each hazard of concern based on the total score (probability x impact). It is important to note, that this is determined by the scores rather than assigning a certain number of hazards to each category.

When reviewing the risk ranking results, it is important to remember that this exercise is about categorizing hazards into broad levels of risk (e.g. high, medium, low). It is not an exercise in precision.

Review Risk Ranking in Loss Matrix

The following sections discuss the methodology used to develop the results included in your template. Please refer to the Loss Matrix provided in your tool kit in order to follow along.

Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:
  - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the population is exposed to a hazard (Impact Factor = 0)
- **Property**—Values are assigned based on the percentage of the total ***property value exposed*** to the hazard event:
  - High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
  - Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
  - Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)
  - No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)
- **Economy**—Values were assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.
  - High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)

- Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
- Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
- No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People

The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column.** For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property

The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column.** For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list "low" or "none," because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy

The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **purple highlighted column.** For those hazards that have a defined extent and location, but do not have modelled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a "high" rating, score between 15 and 30 receive a "medium" rating, and score of less than 15 receives a "low" rating.

JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. In the space provided, Tetra Tech has inserted the following information based on data provided by FEMA:

- The number of any FEMA-identified repetitive-loss properties in your jurisdiction.

- The number of any FEMA-identified severe-repetitive-loss properties in your jurisdiction.
- The number (if any) of repetitive-loss or severe-repetitive-loss properties in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure.

Please note that if your jurisdiction has any repetitive loss properties, we would strongly encourage you to include a mitigation action that addresses mitigating these properties.

Other Vulnerabilities

We would strongly encourage you to review the results of the risk assessment included in the tool kit, your jurisdiction's natural events history, and any relevant public comments/input and develop a few sentences that discuss specific risks. You do not need to develop a sentence for every single parameter, but review the results and identify a few issues you would like to highlight. For example:

- Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault may produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than $6 million in estimated damages from severe storm events.
- More than 50 buildings are located in areas that will be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.

In addition, please list any noted vulnerabilities in your jurisdiction related to hazard mitigation that may not be apparent from the risk assessment and other information provided. This may include things such as the following:

- An urban drainage issue that results in localized flooding every time it rains.
- An area of the community that frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, that is not equipped with a generator.
- A neighborhood that has the potential to have ingress and egress cut off as the result of a hazard event, such as a flood or earthquake (e.g. bridge only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.
- A large visitor population that may not be aware of tsunami risk.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your mitigation strategy. Tetra Tech has inserted a few items in this section to get you started. In addition, two examples are shown in the table below.

Noted Vulnerability	Example Mitigation Action
Only about 2 percent of the jurisdiction's population is estimated to reside in the 1 percent annual chance flood hazard area; however, 45 percent of the population is estimated to reside in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Develop and implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of relatively low cost flood insurance policies.
An urban drainage issue that results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: • The corner of Main Street and 1st Street • Old Oak subdivision.

HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

This section is where you will identify the actions your jurisdiction would like to pursue with this plan. All of the work that you have done thus far should provide you with a plethora of ideas for actions. With this in mind, we recommend that you review the following and develop a list of potential actions:

- **Capability Assessment Section of Annex—**Review the Legal and Regulatory Capability table, the Fiscal Capability table, the Administrative and Technical Capability table, the Education and Outreach table, and the Community Classification table.
  - For any capability that you indicated that you did not have, ask yourself – should we have this capability? If yes, consider including an action to develop/acquire the capability. Example: Ensure a staff person from public works and planning are trained in the use of FEMA's benefit-cost analysis software.
  - Review the Legal and Regulatory capabilities. If any have not been reviewed and updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment (Note: actions such as this should also be identified in the opportunities for future integration section). Also, consider including projects or actions that have been identified in other plans and programs such as Capital Improvement Plans, Strategic Plans, etc. as actions in this plan.
  - For any capability that you indicated you do have, consider how this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- **Adaptive Capacity for Climate Change Section of this Annex**—Consider your responses to this section. For those criterion that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog). For those criterion you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity. For those criterion that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).
- **Opportunities for Future Integration Section in this Annex**—Review the items you identified in this section. For those items that address land use include them in the prepopulated Action in your template that reads as follows: Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____. For other items listed in this section, consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.

- **Jurisdiction-Specific Vulnerabilities Section in this Annex—**Review the items that you have identified in this section and consider actions that will help reduce these vulnerabilities (see mitigation best practices catalog).
- **Mitigation Best Practices Catalog**—A catalog that includes FEMA and other agency identified best practices, steering committee and other stakeholder recommendations was developed as part of the plan development process and included in your tool kit. Review the catalog and identify those actions that your jurisdiction should consider including in its action plan.
- **Public Input**—Review input received during the process, specifically the public survey results included in your toolkit.
- **Prior Mitigation Planning Efforts**—If your jurisdiction participated in a previous hazard mitigation plan, please be sure to remember to include any actions that were identified as "carry over" actions. Once you have carried them over, return to the Status of Previous Actions table and record the new action number (see discussion below).

We strongly recommend that every planning partner include specific actions that are common to all. These have already been included in the action plan table provided with the annex template. These actions should be included in every annex and should not be removed.

Action Item Numbering:

Please use the following action item numbering conventions:

- Sonoma County—SCO-1
- Cotati City—COT-1
- Santa Rosa City—SRO-1
- Sonoma City—SCI-1
- Windsor Town—WIN-1
- Cloverdale Fire—CLO-1
- Gold Ridge RCD—GOL-1
- N. Sonoma Coast FPD—NSC-1
- N. Sonoma County Fire—NFR-1
- Rancho Adobe Fire—RAF-1
- Sonoma Co. Ag. & Open Space—SAO-1
- Sonoma RCD—SCR-1
- Sonoma Valley Fire—SVF-1
- Timber Cover Fire—TIM-1

Recommended Actions

Complete the table titled "Hazard Mitigation Action Plan Matrix" for all the actions you have identified and would like to include in the plan:

- Enter the action number and description. If the action is carried over from your previous hazard mitigation plan, return to the "Status of Previous Plan Actions" table you completed in Phase 1 and enter the new action number in the column labeled Action # in Update.
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list the hazards, simply indicating all hazards is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department, please ensure that it is clear who the lead agency will be and list supporting agencies in the appropriate column.
- Enter an estimated cost in dollars if known; otherwise, enter "High," "Medium" or "Low" as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table below for project eligibility for FEMA's hazard mitigation assistance grant program.
- Indicate the time line as "short-term" (1 to 5 years) or "long-term" (5 years or greater) or "ongoing" (a continual program)

Eligible Activities	HMGP	PDM	FMA
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

Notes: HMGP = Hazard Mitigation Grant Program; PDM = Pre-Disaster Mitigation; FMA = Flood Mitigation Assistance

* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

**Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Source: https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart

Please see the table below for examples of some the recommended actions.

Example Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-1—Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard areas.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	3, 4, 10	Planning		High	HMGP, PDM, FMA	Short-term
EX-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community including _____.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 7, 8, 10	Planning		Low	Staff Time, General Funds	Ongoing
EX-3—Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.							
Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	4, 8	Emergency Management		Medium	Staff Time, General Funds	Short-term
EX-4—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-5—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.							
New and Existing	Dam failure, Drought, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 5, 8	Lead Contact Department for Plan	Any Supporting Departments	Low	Staff Time, General Funds	Short-term
EX-6—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: Enforcement of the flood damage prevention ordinance Participate in floodplain identification and mapping updates Provide public assistance/information on floodplain requirements and impacts.							
New and Existing	Flood, Dam Failure	1, 3, 5, 7, 8, 10	Floodplain Administration Department		Low	Staff Time, General Funds	Ongoing

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
EX-7—Work with building officials to identify ways to improve the jurisdictions' BCEGS classification.							
New	Earthquake, Flooding, Landslide, Severe weather, Wildland fire	1, 4, 7	Building and Development Services		Low	Staff Time, General Funds	Short-term
EX-8—Develop a post-disaster recovery plan and a debris management plan.							
Existing	Dam failure, Earthquake, Flooding, Landslide, Severe weather, Wildland fire	9	Emergency Management		Medium	EMPG	Long-term
EX-9—Participate in programs such as Firewise, StormReady and the Community Rating System.							
New and Existing	Dam Failure, Flooding, Severe weather, Wildland fire	3, 4	Emergency Management	Public Works	Low	Staff Time, General Funds	Short-term
EX-10—Identify and pursue strategies to increase adaptive capacity to climate change including _____.							
New and Existing	Dam failure, Drought, Flooding, Landslide, Severe weather, Wildland fire	1, 3, 4, 5, 6, 7, 8	Planning		Low	Staff Time, General Funds	Short-term
EX-11—Purchase generators for critical facilities and infrastructure that lack adequate back-up power including _____.							
New and Existing	Dam failure, Flooding, Landslide, Severe weather, Wildland fire	2, 6, 9	Planning		Low	Staff Time, General Funds	Short-term

Prioritization of Mitigation Actions

Complete the information in the table titled "Mitigation Strategy Priority Schedule" as follows:

- **Action #**—Indicate the action number from the previous annex table (Hazard Mitigation Action Plan Matrix).
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter "High," "Medium" or "Low" as follows:

  - High: Action will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the action are difficult to quantify in the short term.

- **Costs**—Enter "High," "Medium" or "Low" as follows:

- High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed action.
- Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- Low: Possible to fund under existing budget. Action is or can be part of an existing ongoing program.
- If you know the estimated cost of an action because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter "Yes" or "No." Refer to the fact sheet on HMGP, PDM and FMA and the table above.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter "Yes" or "No." In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
  - **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
  - **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally "wish-list" actions. They may be eligible for grant funding from programs that have not yet been identified.

- **Grant Pursuit Priority**— Enter "High," "Medium" or "Low" as follows:

  - **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
  - **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
  - **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

This prioritization is a simple way to determine that your identified actions meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM /FMA action grants. The prioritization will identify any actions whose probable benefits will not exceed the probable costs. Those actions identified as high-priority grant funding actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities. A note indicating so should be inserted and a rationale should be provided.

Please see the example below based off the recommended actions:

Table 0-9. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Action Grant-Eligible?	Can Action Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
EX-1	3	High	High	Yes	Yes	No	Medium	High
EX-2	7	Medium	Low	Yes	No	Yes	High	Low
EX-3	2	Low	Medium	No	No	Maybe	Low	Low
EX-4	10	Low	Low	Yes	No	Yes	High	Low
EX-5	3	Low	Low	Yes	No	Yes	High	Low
EX-6	6	Medium	Low	Yes	No	Yes	High	Low
EX-7	3	Medium	Low	Yes	No	Yes	High	Low
EX-8	1	Medium	Medium	Yes	Yes	No	Medium	High
EX-9	2	Medium	Low	Yes	No	Yes	High	Low
EX-10	7	Medium	Low	Yes	No	Yes	High	Medium
EX-11	3	High	Medium	Yes	Yes	No	Medium	High

Analysis of Mitigation Actions

Complete the table titled "Analysis of Mitigation Actions" summarizing the mitigation actions by hazard of concern and the following eight mitigation types. Please note that an action can be more than one mitigation type:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

- **Climate Resilient**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

Please see the example below based off the recommended actions, but please note that these recommendations are heavy on generalized actions on the prevention spectrum and light in other areas and specificity. Planning partners should aim to identify at least one action in each category (although this is not required) and should make sure there is at least one action to address "high" and "medium" ranked hazards:

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
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Severe weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11			EX-3, 4, 8, 9, 10
Wildland fire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

REVIEW AND INCORPORATION OF INFORMATION FOR THIS ANNEX

This section should describe what resources you used to complete the annex and how you used them. This may seem trivial or unimportant, but it is a requirement to pass the state and FEMA review process.

This section will ultimately describe all information sources used to develop this annex. The sources used for Phases 1 and 2 should have been entered previously. Additional sources are be added with the preparation of the Phase 3 annex. At this point, review to ensure that all relevant materials are identified.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. Please note that this section is optional.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. Please note that this section is optional.

THIS COMPLETES PHASE 3