

# 5. TOWN OF WINDSOR

## 5.1 LOCAL HAZARD MITIGATION PLANNING TEAM

**Primary Point of Contact**

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This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 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																																				
<p>Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan?</p> <p><i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i></p>	<p>Yes</p> <p>18 parcels totaling 112 acres</p>																																				
<p>Is your jurisdiction expected to annex any areas during the performance period of this plan?</p> <p><i>If yes, describe land areas and dominant uses.</i></p> <p><i>If yes, who currently has permitting authority over these areas?</i></p>	<p>Yes</p> <p>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.</p> <p>County of Sonoma</p>																																				
<p>Are any areas targeted for development or major redevelopment in the next five years?</p> <p><i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i></p>	<p>Yes</p> <p>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).</p>																																				
<p>How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?</p>	<table border="1"> <thead> <tr> <th></th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>Single Family</td> <td>1</td> <td>1</td> <td>0</td> <td>9</td> <td>14</td> </tr> <tr> <td>Accessory Dwelling Unit</td> <td>0</td> <td>2</td> <td>5</td> <td>9</td> <td>9</td> </tr> <tr> <td>Multi-Family</td> <td>54</td> <td>0</td> <td>0</td> <td>0</td> <td>60</td> </tr> <tr> <td>Other (commercial, mixed use, etc.)</td> <td>9</td> <td>2</td> <td>3</td> <td>2</td> <td>0</td> </tr> <tr> <td><b>Total</b></td> <td><b>64</b></td> <td><b>5</b></td> <td><b>8</b></td> <td><b>20</b></td> <td><b>83</b></td> </tr> </tbody> </table>		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	<b>Total</b>	<b>64</b>	<b>5</b>	<b>8</b>	<b>20</b>	<b>83</b>
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<p>Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.</p>	<ul style="list-style-type: none"> <li>• Special Flood Hazard Areas: 4 commercial projects partially in 100-year flood plain</li> <li>• Landslide: 0</li> <li>• High Liquefaction Areas: 0</li> <li>• Tsunami Inundation Area: N/A</li> <li>• Wildfire Risk Areas: 0</li> </ul>																																				
<p>Describe the level of buildout in the jurisdiction, based on your jurisdiction's buildable lands inventory. If no such inventory exists, provide a qualitative description.</p>	<p>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).</p>																																				

**Table 5-3. Planning and Regulatory Capability**

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
<b>Codes, Ordinances, &amp; Requirements</b>				
<b>Building Code</b> <i>Comment: Windsor Municipal Code</i>	Yes	No	Yes	Yes
<b>Zoning Code</b> <i>Comment: Windsor Zoning Ordinance</i>	Yes	No	Yes	Yes
<b>Subdivisions</b> <i>Comment: Windsor Subdivision Ordinance, Municipal Code Article XVI, Chapter 8</i>	Yes	No	No	Yes
<b>Stormwater Management</b> <i>Comment: Public Works Department oversees the Stormwater Resources Management Plan</i>	Yes	No	Yes	Yes
<b>Post-Disaster Recovery</b> <i>Comment:</i>	No	No	No	No
<b>Real Estate Disclosure</b> <i>Comment:</i>	No	No	No	No
<b>Growth Management</b> <i>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.</i>	Yes	No	No	Yes
<b>Site Plan Review</b> <i>Comment: Zoning Ordinance Article 4—Land Use and Development Permit requires Site Plan and Design Review approval for all development, except single-family homes.</i>	Yes	No	No	Yes
<b>Environmental Protection</b> <i>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 policies 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.</i>	Yes	No	No	Yes
<b>Flood Damage Prevention</b> <i>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.</i>	Yes	No	No	Yes
<b>Emergency Management</b> <i>Comment: The County of Sonoma oversees emergency management.</i>	Yes	Yes	Yes	Yes
<b>Climate Change</b> <i>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.</i>	Yes	No	No	Yes
<b>Other</b> <i>Comment:</i>	No	No	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
<b>Planning Documents</b>				
<b>General Plan</b> <i>Is the plan compliant with Assembly Bill 2140? Yes</i> <i>Comment: 2040 Windsor General Plan</i>	Yes	No	Yes	Yes
<b>Capital Improvement Plan</b> <i>How often is the plan updated? 2 years</i> <i>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.</i>	Yes	No	No	Yes
<b>Disaster Debris Management Plan</b> <i>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).</i>	No	No	No	No
<b>Floodplain or Watershed Plan</b> <i>Comment: (Sonoma Water) Flood Management design Manual, March 2020</i>	Yes	No	No	Yes
<b>Stormwater Plan</b> <i>Comment: River Stormwater Resource Management Plan (July 2018) and Storm Drain Mater Plan (Phase 1 Sept 2017) (Phase 2 Feb 2020)</i>	Yes	No	Yes	Yes
<b>Urban Water Management Plan</b> <i>Comment: 2015 UWMP, finalized June 2016 (State regulations require an updated UWMP every 5 years). The 2020 UWMP is being updated now.</i>	Yes	No	Yes	Yes
<b>Habitat Conservation Plan</b> <i>Comment: The Town does not have a Habitat Conservation Plan. Parts of the Town are located within the Santa Rosa Plain Habitat Conservation Plan.</i>	No	No	No	No
<b>Economic Development Plan</b> <i>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.</i>	No	No	No	Yes
<b>Shoreline Management Plan</b> <i>Comment: Not Applicable—No shoreline</i>	No	No	No	No
<b>Community Wildfire Protection Plan</b> <i>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.</i>	No	Yes	No	Yes
<b>Forest Management Plan</b> <i>Comment:</i>	No	No	No	No
<b>Climate Action Plan</b> <i>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.</i>	No	No	Yes	Yes

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

Table 5-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	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? <i>If yes, briefly describe.</i>	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? <i>If yes, briefly describe.</i>	Yes Facebook, Next Door
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe.</i>	No
Do you have any other programs already in place that could be used to communicate hazard-related information? <i>If yes, briefly describe.</i>	Yes Press Release, Town website, Town email list
Do you have any established warning systems for hazard events? <i>If yes, briefly describe.</i>	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? <i>If exceeds, in what ways?</i>	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? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed? It would be helpful to have a certified floodplain manager on staff,</i>	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> <i>If no, is your jurisdiction interested in joining the CRS program?</i>	No No Potentially
How many flood insurance policies are in force in your jurisdiction? <sup>a</sup> <i>What is the insurance in force?</i> <i>What is the premium in force?</i>	66 \$20,538,100 \$84,580
How many total loss claims have been filed in your jurisdiction? <sup>a</sup> <i>What were the total payments for losses?</i>	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 <sup>a</sup>
<b>Technical Capacity</b>	
<b>Jurisdiction-level understanding of potential climate change impacts</b> <i>Comment: Windsor is a small jurisdiction with limited resources that have been further constrained due to recent wildfires and the Covid-19 pandemic. T</i>	Medium
<b>Jurisdiction-level monitoring of climate change impacts</b> <i>Comment: Windsor is a small jurisdiction with limited resources. We lack staff and financial resources for jurisdiction-level monitoring.</i>	Low
<b>Technical resources to assess proposed strategies for feasibility and externalities</b> <i>Comment: The Town lacks the staff and financial resources and would need to rely on federal and State grant funding.</i>	Low
<b>Jurisdiction-level capacity for development of greenhouse gas emissions inventory</b> <i>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.</i>	Low
<b>Capital planning and land use decisions informed by potential climate impacts</b> <i>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.</i>	High
<b>Participation in regional groups addressing climate risks</b> <i>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.</i>	High
<b>Implementation Capacity</b>	
<b>Clear authority/mandate to consider climate change impacts during public decision-making processes</b> <i>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.</i>	High
<b>Identified strategies for greenhouse gas mitigation efforts</b> <i>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.</i>	Medium
<b>Identified strategies for adaptation to impacts</b> <i>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.</i>	Medium
<b>Champions for climate action in local government departments</b> <i>Comment: The Town has staff members in all departments and at all levels of the organization that support climate action initiatives.</i>	High
<b>Political support for implementing climate change adaptation strategies</b> <i>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.</i>	High
<b>Financial resources devoted to climate change adaptation</b> <i>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.</i>	Low
<b>Local authority over sectors likely to be negative impacted</b> <i>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.</i>	High

Criterion	Jurisdiction Rating <sup>a</sup>
<b>Public Capacity</b>	
Local residents knowledge of and understanding of climate risk <i>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.</i>	Medium
Local residents support of adaptation efforts <i>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.</i>	Medium
Local residents' capacity to adapt to climate impacts <i>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.</i>	Medium
Local economy current capacity to adapt to climate impacts <i>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.</i>	Low
Local ecosystems capacity to adapt to climate impacts <i>Comment:</i>	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.

## 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 (1<sup>st</sup> submittal due) and December 31, 2021 (2<sup>nd</sup> 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 <sup>a</sup>	35	High
3	Severe Weather	30	Medium
4	Flood	18	Medium
5	Drought <sup>a</sup>	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 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: <ul style="list-style-type: none"> <li>• Drought hazards and the ways to reduce water use and conserve in times of need.</li> <li>• Earthquake hazards and the activities that residents and businesses can do to reduce damage from shaking</li> <li>• Flood hazards and activities that residents and businesses can take to reduce impacts</li> <li>• Extreme Heat hazards and ways to prevent heat stroke and exhaustion</li> <li>• Wildfire impacts and ways to secure properties from wildfire threats.</li> </ul>			✓	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
<p>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.</p> <p><b>Comment:</b> Climate adaptation plan currently in progress that will address this measure. Included as Action WIN-52 in Table 1.14 below.</p>			✓	WIN-52
<p>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.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-39 and WIN-42
<p>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)</p> <p><b>Comment:</b> This has been implemented through the Town Manager's Office. Move to EOC team for continued implementation.</p>	✓			
<p>Measure 1.5 Encourage private employers in Windsor to develop continuity of operations plans and conduct regular employee training sessions.</p> <p><b>Comment:</b> Removing from the HMP and moving to EOC team for implementation. The Town wants to focus on other measures.</p>		✓		
<p>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.</p> <p><b>Comment:</b> Revised as Action WIN-2 in Table 1.14 below.</p>			✓	WIN-2
<p>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.</p> <p><b>Comment:</b> 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.</p>	✓			
<p>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.</p> <p><b>Comment:</b> An inventory of supplies is conducted by Facilities. This measure is partly covered by Action WIN-2 in Table 1.14 below.</p>	✓			WIN-2
<p>Measure 1.9 Construct new Town facilities to remain usable and operable following emergency conditions as feasible.</p> <p><b>Comment:</b> 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.</p>	✓			



Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		
<p>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.</p> <p><b>Comment:</b> Included as Action WIN-53 in Table 1.14 below.</p>			✓	WIN-53
<p>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).</p> <p><b>Comment:</b> 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.</p>			✓	WIN-56
<p>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.</p> <p><b>Comment:</b> This measure will be replaced with measure WIN 5 &amp; WIN 6 in Table 1.14 below.</p>		✓		
<p>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.</p> <p><b>Comment:</b> Remove. This can be shifted to EOC measures, since it does not prevent or mitigate hazards.</p>		✓		
<p>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</p> <p><b>Comment:</b> This measure will be replaced by measure WIN 5 &amp; WIN 6 in Table 1.14 below.</p>			✓	WIN-5 WIN-6
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Dam Failure 2.2 Support dam inundation map and dam emergency action plan updates in coordination with Sonoma County.</p> <p><b>Comment:</b> 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.</p>		✓		
<p>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.</p> <p><b>Comment:</b> Included as Action WIN-18 in Table 1.14 below.</p>			✓	WIN-18
<p>Drought 3.2 Increase redundancy in the Town's water distribution network through multiple backup connections, particularly across fault lines.</p> <p><b>Comment:</b> Included as Action WIN-19 in Table 1.14 below.</p>			✓	WIN-19
<p>Drought 3.3 Expand use of xeriscaping or drought-tolerant native plants in Town-maintained landscaped areas to the extent possible. (Continue Current Practice)</p> <p><b>Comment:</b> 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.</p>	✓			
<p>Drought 3.4 Encourage all new landscaping projects to exceed minimum state water efficiency requirements.</p> <p><b>Comment:</b> The Town's Water Efficiency Ordinance requires compliance with State requirements. The Town wants to focus on other actions that would better address drought.</p>		✓		
<p>Drought 3.5 Incorporate drought frequency (i.e., multiple-dry year hydrologic conditions) into Town's urban water management planning efforts.</p> <p><b>Comment:</b> 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.</p>	✓			
<p>Drought 3.6 Offer incentives for water efficiency retrofits to existing homes and businesses, and explore ways to expand incentive opportunities.</p> <p><b>Comment:</b> 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.</p>	✓			
<p>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)</p> <p><b>Comment:</b> 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.</p>	✓			

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Earthquake 4.2 Develop incentives or requirements for property owners to retrofit seismically vulnerable structures.</p> <p><b>Comment:</b> 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.</p>		✓		
<p>Earthquake 4.3 Identify incentives to encourage residential project applicants to build new residential structures so they remain safely habitable following a substantial earthquake.</p> <p><b>Comment:</b> Since the Town is in an area of seismic activity, the Building Code requires buildings to be constructed to meet specific seismic requirements.</p>	✓			
<p>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)</p> <p><b>Comment:</b> This item has been moved to the EOC team for ongoing implementation.</p>	✓			
<p>Extreme Heat 5.2 Encourage property owners to weatherize homes and businesses in Windsor, particularly older structures, including the planting of shade trees.</p> <p><b>Comment:</b> Since this action does not include a project or program, the Town has decided it would like to focus on other actions.</p>		✓		
<p>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)</p> <p><b>Comment:</b> This is done by the Human Resources, which also provides alerts Town employees on extreme heat/weather days and days with unhealthy air quality.</p>	✓			
<p>Extreme Heat 5.4 Provide shade structures at bus stops, and in public parks and other landscaped areas.</p> <p><b>Comment:</b> 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.</p>	✓			WIN-29
<p>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.</p> <p><b>Comment:</b> This action has been revised. See Actions WIN-24 and WIN-25 in Table 1.14 below.</p>				WIN-24 and WIN- 25

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>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)</p> <p><b>Comment:</b> 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.</p>			✓	WIN-25
<p>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)</p> <p><b>Comment:</b> 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.</p>		✓		
<p>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)</p> <p><b>Comment:</b> 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.</p>	✓			
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		
<p>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.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-26
<p>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.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-27
<p>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.</p> <p><b>Comment:</b></p>			✓	WIN-30
<p>Landslide 7.2 Work with Sonoma County and CAL FIRE to replant and stabilize recently burned slopes from wildfires.</p> <p><b>Comment:</b></p>			✓	WIN-49

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Landslide 7.3 Support the use of vegetation with strong root systems, natural drainage swales, and other “soft” solutions to improve slope stability.</p> <p><b>Comment:</b> This action has been determined to have a nominal effect on mitigating landslide hazards.</p>		✓		
<p>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.</p> <p><b>Comment:</b></p>			✓	WIN-47
<p>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.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-50
<p>Wildfire 9.2 Participate in mutual aid agreements to provide wildfire protection services in Foothill Regional Park. (Continue Current Practice)</p> <p><b>Comment:</b></p>			✓	WIN-49
<p>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)</p> <p><b>Comment:</b> 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.</p>	✓			
<p>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.</p> <p><b>Comment:</b> 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.</p>	✓			WIN-33
<p>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).</p> <p><b>Comment:</b> 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.</p>			✓	WIN-44
<p>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.</p> <p><b>Comment:</b> This action has been revised. See Action WIN-31 in the Table 1.14 below.</p>		✓		WIN-31

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		WIN-45
<p>Wildfire 5 added in 2019 Require the undergrounding of utilities as part of development projects. (Continue current practice)</p> <p><b>Comment:</b> Undergrounding utilities is required by the Town's Municipal Code. This action has been revised. See Action WIN-45 in Table 1.14 below.</p>			✓	WIN-45
<p>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.</p> <p><b>Comment:</b> 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.</p>		✓		WIN-9 and WIN-10
<p>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.</p> <p><b>Comment:</b></p>			✓	WIN-46
<p>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.</p> <p><b>Comment:</b> Based on the Town's experience with the Kincade Fire, which threatened the entire Town, the Town has decided to focus measures Town-wide.</p>		✓		
<p>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.</p> <p><b>Comment:</b></p>			✓	WIN-34
<p>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.</p> <p><b>Comment:</b> Revised this measure to a "general" community outreach and education action for all hazards. See Action WIN-43 in Table 1.14 below.</p>		✓		WIN-43

Action Item	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>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.</p> <p><b>Comment:</b> Included as Action WIN-48 in Table 1.14 below.</p>			✓	WIN-48
<p>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.</p> <p><b>Comment:</b> Action carried forward. See Action WIN-35 in Table 1.14 below.</p>			✓	WIN-35
<p>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.</p> <p><b>Comment:</b> Action carried forward. See Action WIN-36 in Table 1.14 below.</p>			✓	WIN-36
<p>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, <i>Citizens Organized to Prepare for Emergencies</i> [COPE], or other) in Windsor, and encourage participation among residents and employees.</p> <p><b>Comment:</b> 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.</p>		✓		WIN-39 and WIN-42
<p>Wildfire 15 added in 2019 Expand community education and outreach through community meetings, social media, website, etc.</p> <p><b>Comment:</b> This action has been completed. Since this will be an ongoing action, Action WIN-43 in Table 1.14 below.</p>	✓			WIN-43
<p>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.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-54
<p>Wildfire 17 Added in 2019 Identify communication methods for people with limited/no technology.</p> <p><b>Comment:</b> 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.</p>			✓	WIN-55

## 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 <sup>a</sup>
<p><b>Action WIN-1</b>—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.</p> <p><u>Hazards Mitigated:</u> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire</p>						
Existing	3, 4, 10	Windsor		High	HMGP, BRIC, FMA	Ongoing
<p><b>Action WIN-2</b>—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.</p> <p><u>Hazards Mitigated:</u> Earthquake, flooding, landslide, severe weather, wildfire</p>						
Existing	3, 4, 6	Windsor		High	HMGP, BRIC, FMA	Ongoing
<p><b>Action WIN-3</b>—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.</p> <p><u>Hazards Mitigated:</u> Dam failure, drought, earthquake, flooding, landslide, severe weather, wildfire</p>						
New & Existing	1, 3, 4, 5, 7, 8, 10	Windsor		Medium	Staff Time, General Fund, BRIC	Ongoing
<p><b>Action WIN-4</b>—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.</p> <p><u>Hazards Mitigated:</u> Dam failure, earthquake, flooding, landslide, severe weather, wildfire</p>						
New & Existing	1, 5, 8	Windsor		Low	Staff Time, General Fund, BRIC	Short-term
<p><b>Action WIN-5</b>—Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Dam failure, earthquake, flooding, landslide, severe weather, wildfire</p>						
New & Existing	all	Windsor	County of Sonoma	Low	Staff Time, General Fund	Ongoing
<p><b>Action WIN-6</b>—Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u></p>						
New & Existing	all	Windsor	County of Sonoma	Low	Staff Time, General Fund	Ongoing
<p><b>Action WIN-7</b>—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements: Enforcement of the flood damage prevention ordinance; Participate in floodplain identification and mapping updates; and Provide public assistance/information on floodplain requirements and impacts.</p> <p><u>Hazards Mitigated:</u> Severe weather, flooding</p>						
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 <sup>a</sup>
<b>Action WIN-8</b> —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.						
<i>Hazards Mitigated:</i> 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
<b>Action WIN-9</b> —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.						
<i>Hazards Mitigated:</i> Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
Existing	2, 6, 9	Windsor		High	HMGP, BRIC, Capital Improvement Program, General Fund	Short-term
<b>Action WIN-10</b> —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.						
<i>Hazards Mitigated:</i> Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
New	2, 6, 9	Windsor		High	HMGP, BRIC, Capital Improvement Program, General Fund	Short-term
<b>Action WIN-11</b> —Develop a post-disaster recovery plan, continuity of operations, and a debris management plan.						
<i>Hazards Mitigated:</i> Dam failure, earthquake, flooding, landslide, severe weather, wildfire						
Existing	1, 3, 6	Windsor		Medium	General Fund, BRIC	Short-term
<b>Action WIN-12</b> —Participate in programs such as the Community Rating System and the ISO's Building Code Effectiveness Grading Schedule and Public Protection.						
<i>Hazards Mitigated:</i> Earthquake, flooding, landslide, severe weather, wildfire						
	1, 6, 9, 11	Windsor		Low	General Fund, BRIC	Ongoing
<b>Action WIN-13</b> —Work with building officials to identify ways to improve the jurisdiction's Building Code Effectiveness Grading Schedule classification.						
<i>Hazards Mitigated:</i> 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
<b>Action WIN-14</b> —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.						
<i>Hazards Mitigated:</i> Dam failure						
Existing	5, 8, 10	Windsor		Medium	Staff Time, General Fund	Short-term
<b>Action WIN-15</b> —Create an emergency warning link between the dam's alerting system and the Town.						
<i>Hazards Mitigated:</i> Dam failure						
Existing	5, 8, 10	Windsor		Low	Staff Time, General Fund	Short-term
<b>Action WIN-16</b> —Develop a public outreach plan to educate residents on dam failure and response.						
<i>Hazards Mitigated:</i> Dam failure						
Existing	5, 8, 10	Windsor		Low	Staff Time, General Fund	Short-term
<b>Action WIN-17</b> —Incorporate a dam failure annex as part of the Town's emergency operations plan (EOP).						
<i>Hazards Mitigated:</i> 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 <sup>a</sup>
<b>Action WIN-18</b> —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.						
<i>Hazards Mitigated:</i> Drought						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program Funds, Grant Funding	Ongoing
<b>Action WIN-19</b> —Increase redundancy in the Town’s water distribution network through multiple backup connections, particularly across fault lines.						
<i>Hazards Mitigated:</i> Drought, earthquake, flooding, severe weather, wildfire						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program Funds, Grant Funding	Ongoing
<b>Action WIN-20</b> —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.						
<i>Hazards Mitigated:</i> Drought, Flooding						
New and Existing	1, 6	Windsor		High	HMGP, BRIC, FMA, General Fund, Capital Improvement Program	Long-term
<b>Action WIN-21</b> —Implement the Storm Drain Master Plan, including the construction of improvements that reduce flooding events.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New & Existing	1, 4, 6, 10, 11	Windsor		High	HMGP, BRIC, FMA, General Fund, Funds	Long-term
<b>Action WIN-22</b> —Construct improvements to the wastewater system to ensure adequate sizing to prevent overflow during severe weather or flooding.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New & Existing	1, 4, 6, 10, 11	Windsor		High	Capital Improvement Funds, Grant Funds	Long-term
<b>Action WIN-23</b> —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.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	Bonds, Capital Improvement Program Funds, HMGP, BRIC, FMA	Long-term
<b>Action WIN-24</b> —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.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	Bonds, Capital Improvement Program Funds, HMGP, BRIC, FMA	Long-term
<b>Action WIN-25</b> —Conduct storm drain maintenance regularly to ensure systems are operating at peak capacity, especially in advance of and during the rainy season.						
<i>Hazards Mitigated:</i> 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 <sup>a</sup>
<b>Action WIN-26</b> —Require that new development projects, including infrastructure, will not change local hydrology and cause an increase in flood risks for surrounding properties.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New	1, 4, 7, 9, 10, 11	Windsor	Sonoma Water	Low	Staff Time, General Fund	Ongoing
<b>Action WIN-27</b> —Develop passive detention basins to better collect and manage stormwater flows.						
<i>Hazards Mitigated:</i> Flooding, Severe Weather						
New & Existing	1, 4, 10	Windsor		High	HMGP, BRIC, FMA, Capital Improvement Program Funds	Long-term
<b>Action WIN-28</b> —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.						
<i>Hazards Mitigated:</i> Severe Weather						
Existing	1, 3	Windsor	Sonoma County Transit	Low	General Fund	Ongoing
<b>Action WIN-29</b> —Work with Sonoma County and CAL FIRE to replant and stabilize recently burned slopes from wildfires.						
<i>Hazards Mitigated:</i> Landslide						
Existing	1, 2, 4	Sonoma County, CAL FIRE	Windsor Sonoma County FPD	Low	Staff Time, General Fund	Ongoing
<b>Action WIN-30</b> —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.						
<i>Hazards Mitigated:</i> Landslide						
New	1, 7, 11	Windsor		Low	Staff Time, General Fund	Ongoing
<b>Action WIN-31</b> —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.						
<i>Hazards Mitigated:</i> 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
<b>Action WIN-32</b> —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.						
<i>Hazards Mitigated:</i> Dam Failure, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor	Cal Trans	High	HMGP, General Fund, Capital Improvement Program	
<b>Action WIN-33</b> —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.						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	1, 4, 7, 9, 11	Windsor	Sonoma County FPD	Low	Staff Time, General Fund, HMGP, BRIC	Short-term
<b>Action WIN-34</b> —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.						
<i>Hazards Mitigated:</i> 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 <sup>a</sup>
<b>Action WIN-35</b> —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.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund	Short-term
<b>Action WIN-36</b> —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.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor		Medium	Staff Time, General Fund	Short-term
<b>Action WIN-37</b> —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.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6, 8, 9, 10	Windsor		High	Staff Time, General Fund, BRIC	Short-term
<b>Action WIN-38</b> —Develop and implement a system to track permits issued in hazard areas.						
<i>Hazards Mitigated:</i> Dam Failure, Flooding, Landslide, Wildfire						
New	7, 8	Windsor		Medium	Staff Time, General Fund, BRIC	Short-term
<b>Action WIN-39</b> —Establish and provide training for a staff-based emergency response program (Community Emergency Response Team [CERT]).						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe weather, Wildfire						
New & Existing	5, 6	Windsor	Sonoma County FPD	Medium	Staff Time, General Fund	Short-term
<b>Action WIN-40</b> —Have the appropriate Building Division and Public Works staff obtain certification as floodplain managers.						
<i>Hazards Mitigated:</i> Flooding						
New & Existing	1, 7, 8, 10, 11	Windsor		Medium	Staff Time, General Fund, BRIC	Short-term
<b>Action WIN 41</b> —Train the appropriate staff in post disaster safety assessment.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
Existing	6, 11	Windsor		Low	Staff Time, General Fund, HMGP, BRIC	Short-term
<b>Action WIN-42</b> —Support and promote the expansion of Citizens Organized to Prepare for Emergencies (COPE) and work with COPE to educate and inform the community.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	5, 6	Windsor	Sonoma County FPD	Low	Staff Time, General Fund	Ongoing
<b>Action WIN-43</b> —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.						
<i>Hazards Mitigated:</i> 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
<b>Action WIN-44</b> —Develop and provide information on evacuation zones, evacuation routes, preparedness, and responding to hazard events.						
<i>Hazards Mitigated:</i> 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 <sup>a</sup>
<b>Action WIN-45</b> —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.						
<i>Hazards Mitigated:</i> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	1, 2, 4, 6, 7	Windsor		High	HMGP, General Fund	Long term
<b>Action WIN-46</b> —Work with other agencies, residents, and homeowner associations to reduce fuel loads, such as the removal of vegetation in Foothill and Shiloh Ridge parks.						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	1, 2, 11	Windsor	Sonoma County CAL FIRE Sonoma County FPD	Low	Staff Time, General Fund, HMGP, BRIC	Ongoing
<b>Action WIN-47</b> —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.						
<i>Hazards Mitigated:</i> Earthquake						
New	1, 7, 11	Windsor		Low	Staff Time, General Fund	Ongoing
<b>Action WIN-48</b> —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.						
<i>Hazards Mitigated:</i> Drought, Earthquake, Wildfire						
New & Existing	1, 4, 6	Windsor		High	Capital Improvement Program, General Fund, Staff Time	Ongoing
<b>Action WIN-49</b> —Participate in mutual aid agreements to provide wildfire protection services in Foothill Regional Park.						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	2	Sonoma County FPD	County of Sonoma Windsor	Low	Staff Time, General Fund	Ongoing
<b>Action WIN-50</b> —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.						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	1, 2, 11	Sonoma County FPD	County of Sonoma Windsor	Low	Staff Time, General Fund	Ongoing
<b>Action WIN-51</b> —Work with other agencies to develop and implement a rainwater catchment program, including a program to provide rainwater barrels for existing residential development.						
<i>Hazards Mitigated:</i> Drought						
Existing	2, 4	County of Sonoma	Sonoma Water Windsor City of Santa Rosa	Medium	Staff Time, BRIC	Short-term
<b>Action WIN-52</b> —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.						
<i>Hazards Mitigated:</i> 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 <sup>a</sup>
<b>Action WIN-53</b> —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.						
<u>Hazards Mitigated:</u> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor		High	General Fund, Bonds, Capital Improvement Program, HMGP, BRIC	Short-term
<b>Action WIN-54</b> —Identify transportation options and potential ways to provide the transportation identified for people who do not drive or have limited mobility.						
<u>Hazards Mitigated:</u> Dam Failure, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	4, 6	Windsor	Sonoma County Transit	Medium	Staff Time, General Fund	Short-term
<b>Action WIN-55</b> —Identify and implement communication methods for people with limited/no technology.						
<u>Hazards Mitigated:</u> Dam Failure, Drought, Earthquake, Flooding, Landslide, Severe Weather, Wildfire						
New & Existing	6	Windsor		Medium	Staff Time, General Fund	Short-term
<b>Action WIN-56</b> —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).						
<u>Hazards Mitigated:</u> 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 <sup>a</sup>	Grant Pursuit Priority <sup>a</sup>
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 <sup>a</sup>	Grant Pursuit Priority <sup>a</sup>
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 <sup>a</sup>							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
<b>High-Risk Hazards</b>								
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 <sup>a</sup>							
	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
<b>Medium-Risk Hazards</b>								
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
<b>Low-Risk Hazards</b>								
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.

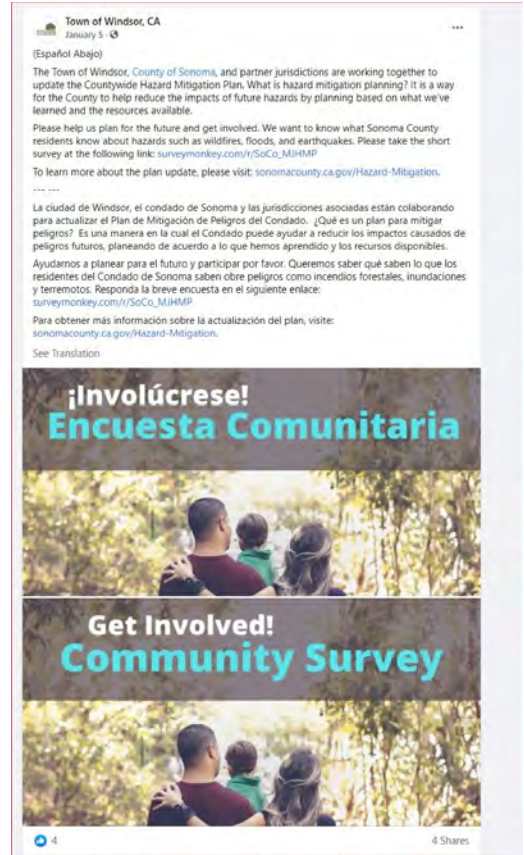
- Email to all Town employees
- Email to Town boards and commissions, including Town Council, Planning Commission, Parks and Recreation Commission, Public Art Advisory Commission, Senior Citizens Advisory Commission
- Posting to the Town's social media accounts, including Facebook and Next Door (example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

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

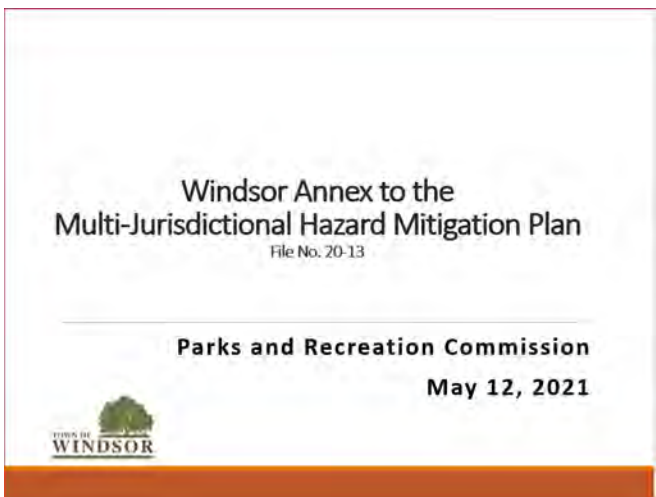
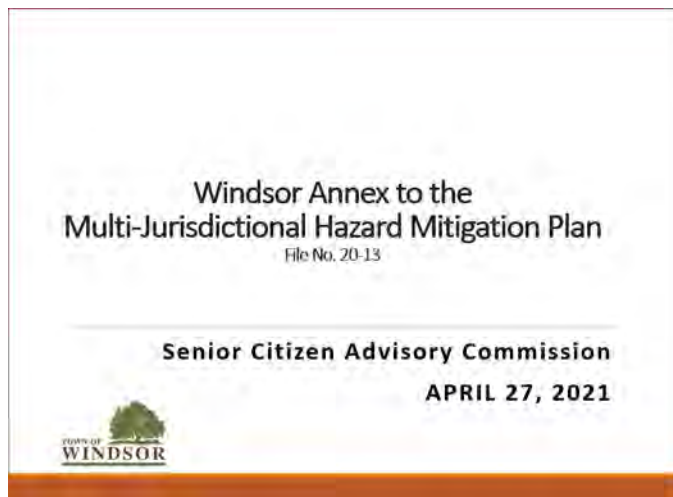
Sonoma County staff presented the Multi-Jurisdiction Hazard Mitigation Plan, Town staff presented Windsor’s Annex to the Plan, and Public Works staff presented the Windsor Climate Adaptation (Windsor Ready) Plan to the following Town Commissions (example presentation covers below).

- 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:

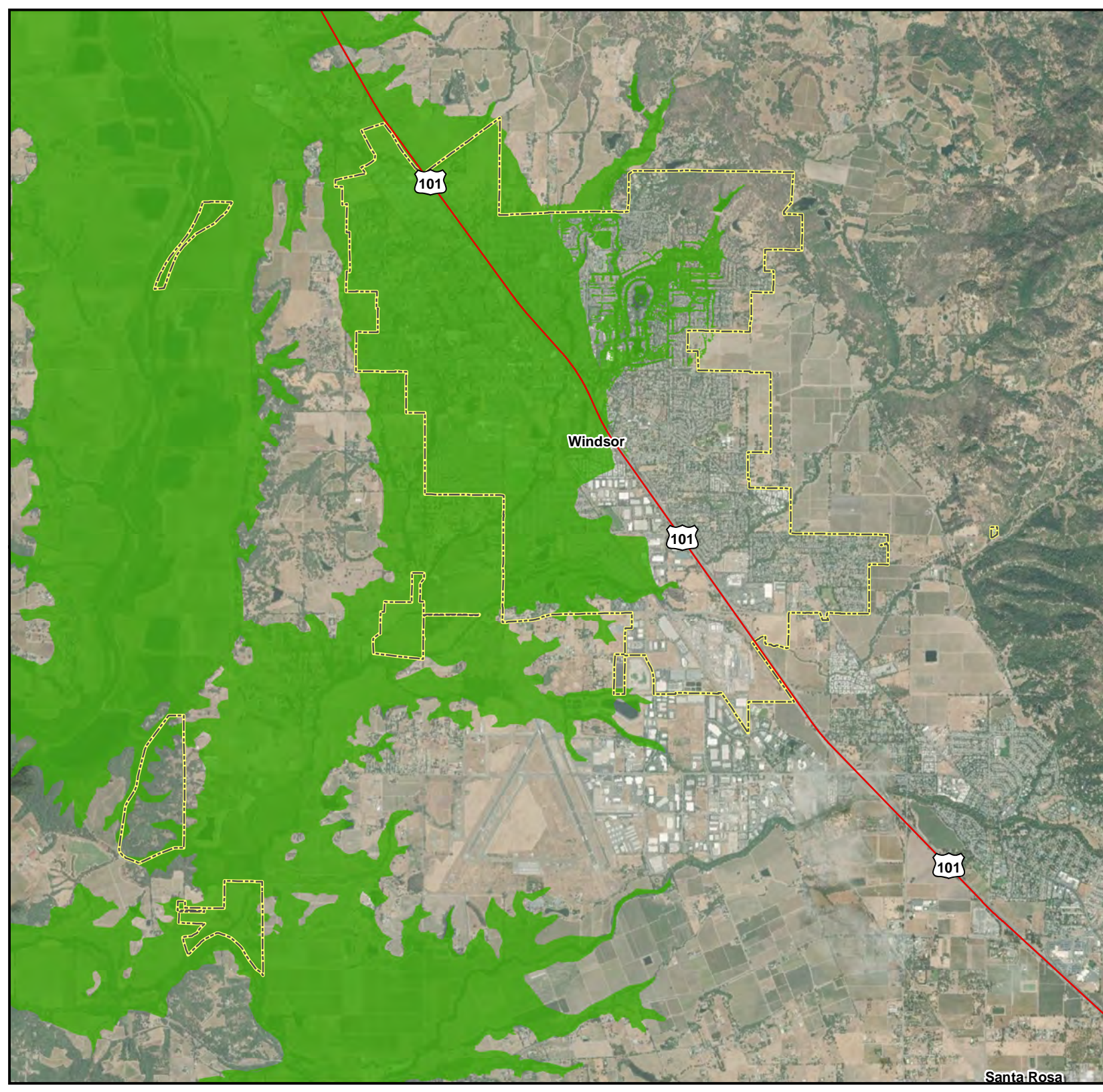
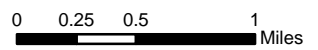
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

# Windsor

## Dam Failure Inundation Area

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







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



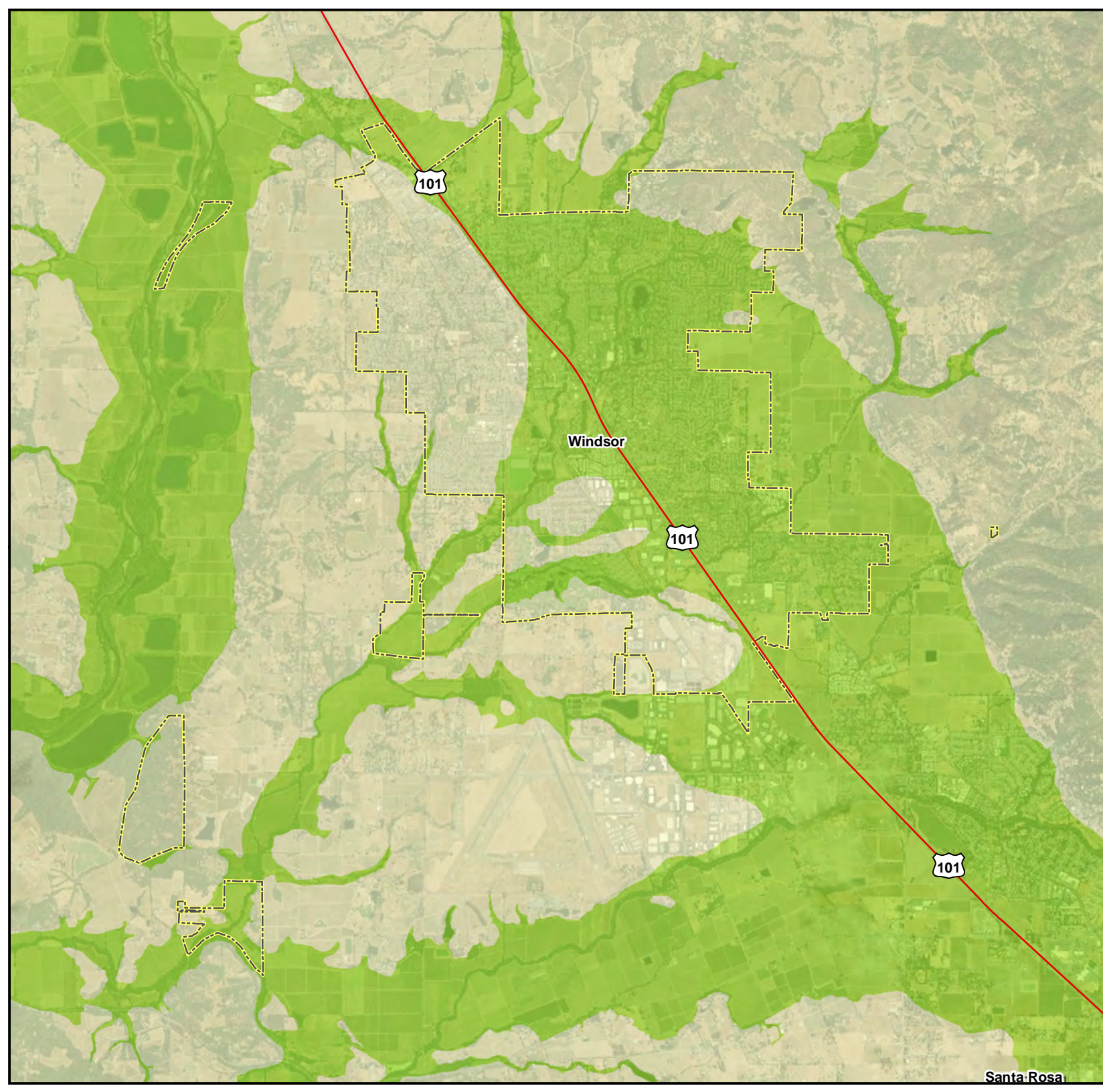
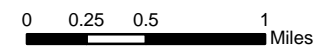
Santa Rosa

# 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



Santa Rosa

# Windsor

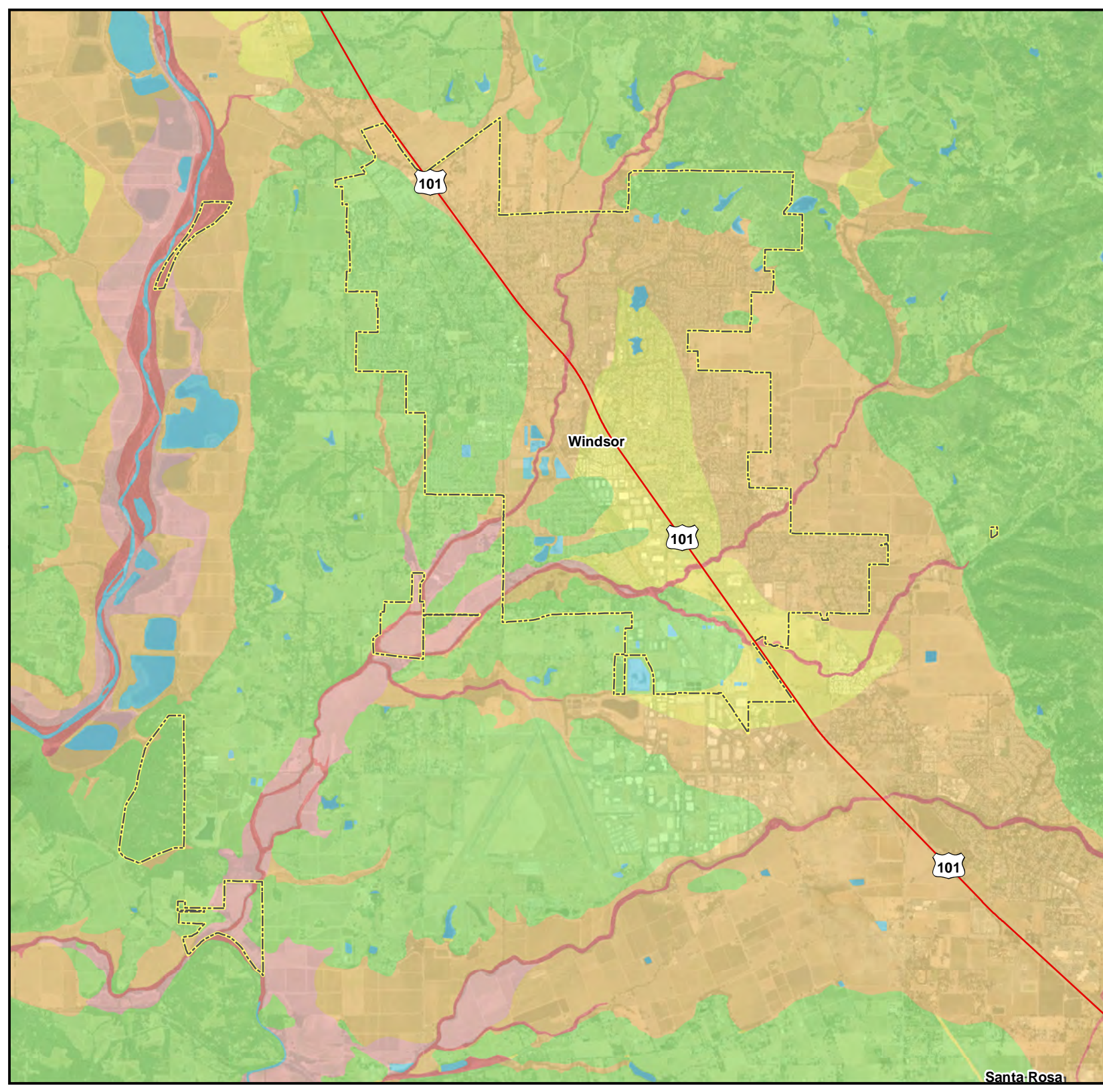
## Liquefaction Susceptibility

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

Data Source: ESRI Basemap, Sonoma Co., USGS



0 0.25 0.5 1 Miles



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# Windsor


## 100-year Probabilistic Earthquake Scenario


### Mercalli Intensity Scale

 VII (Very Strong/Moderate)

 Selected City

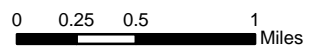
 Incorporated Cities

 Sonoma County

 Highways

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

Data Source: ESRI Basemap,  
Sonoma Co., USGS









Santa Rosa

# Windsor

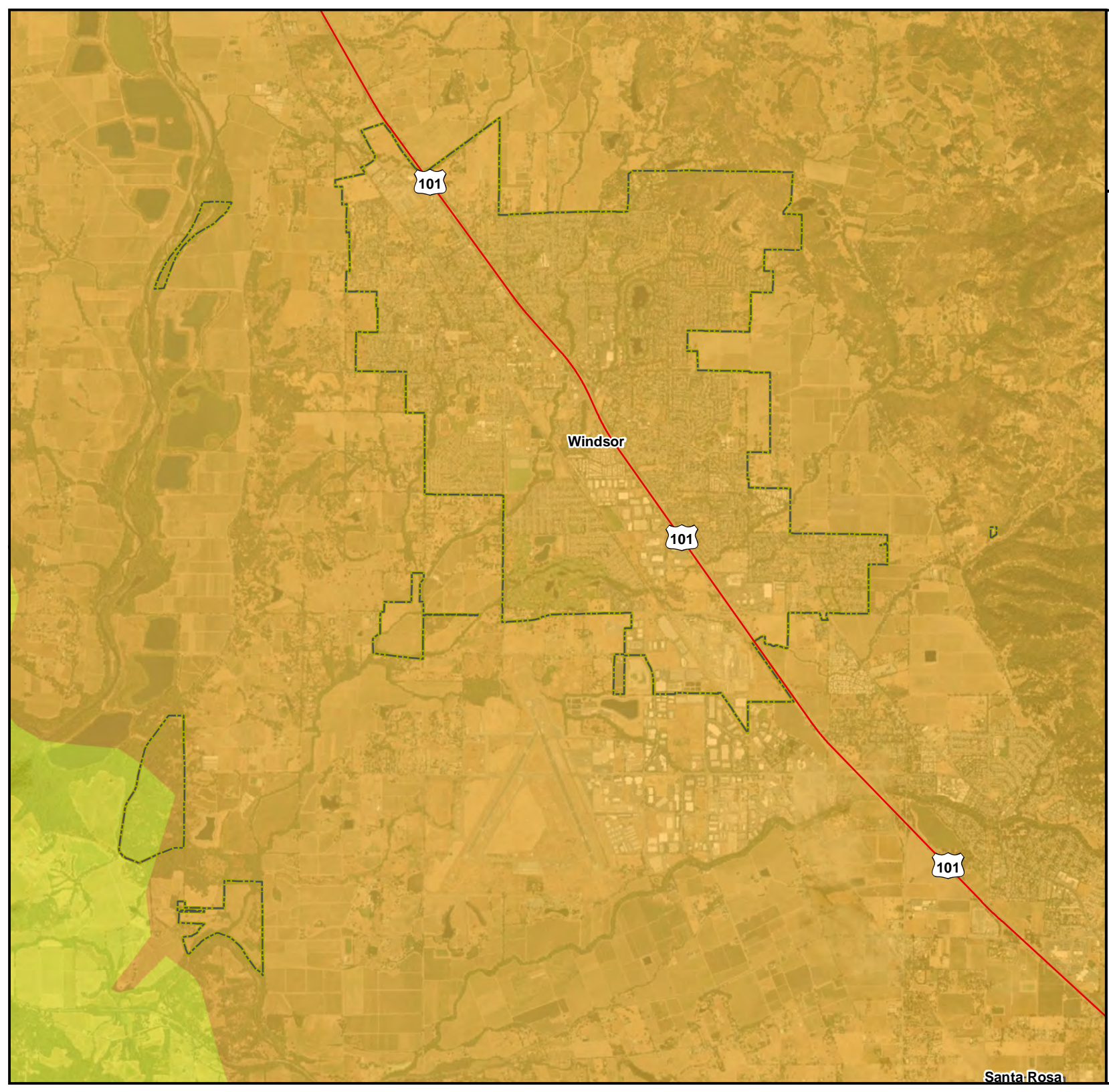
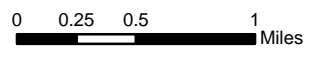
## Hayward M7.57 Earthquake Scenario

### 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









Santa Rosa



# Windsor

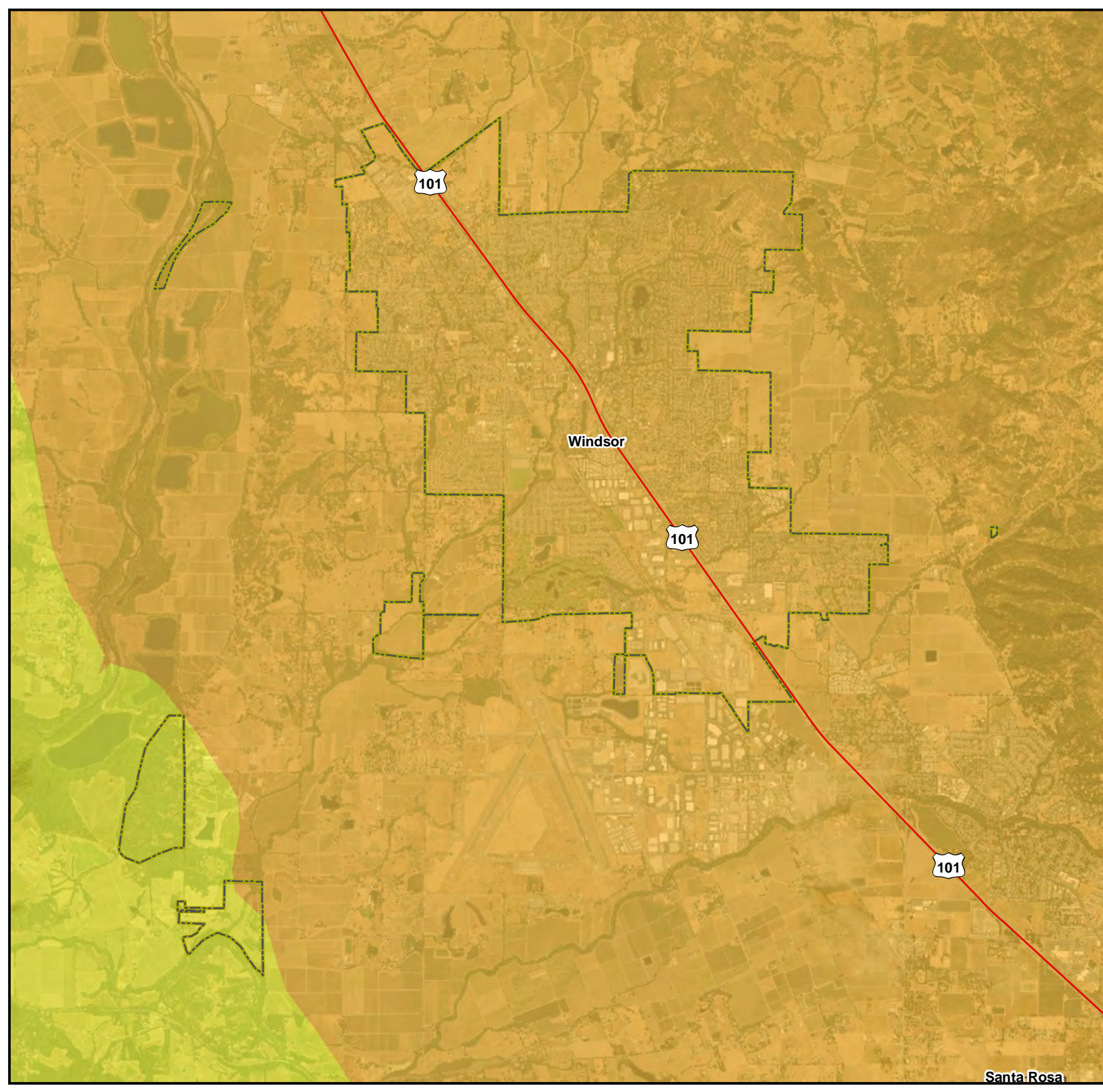
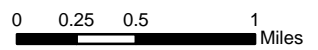
## Healdsburg M7.19 Earthquake Scenario

### 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









Santa Rosa

# Windsor

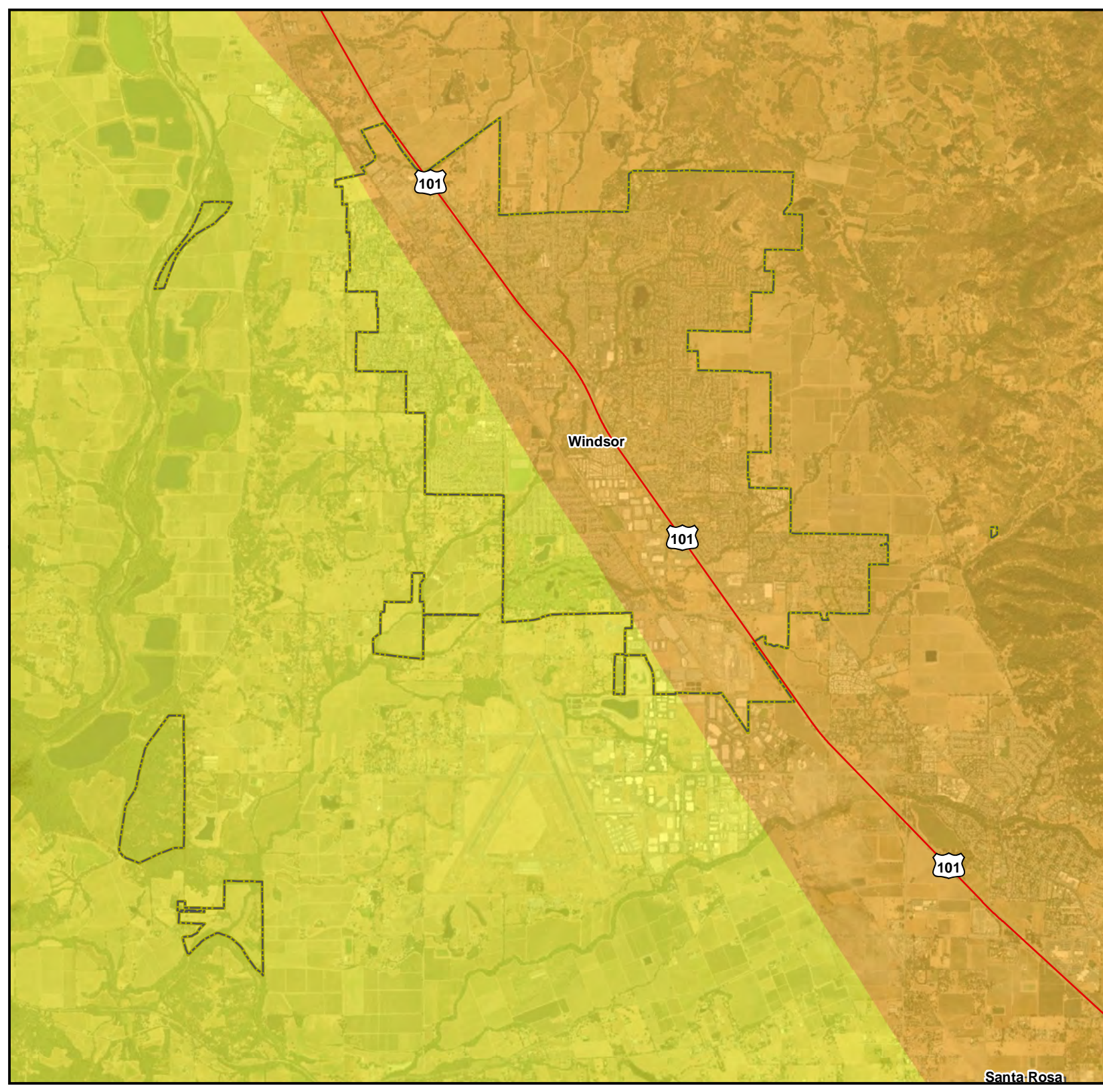
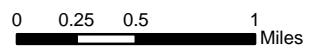
## Maacama M7.5 Earthquake Scenario

### 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









Santa Rosa

# Windsor

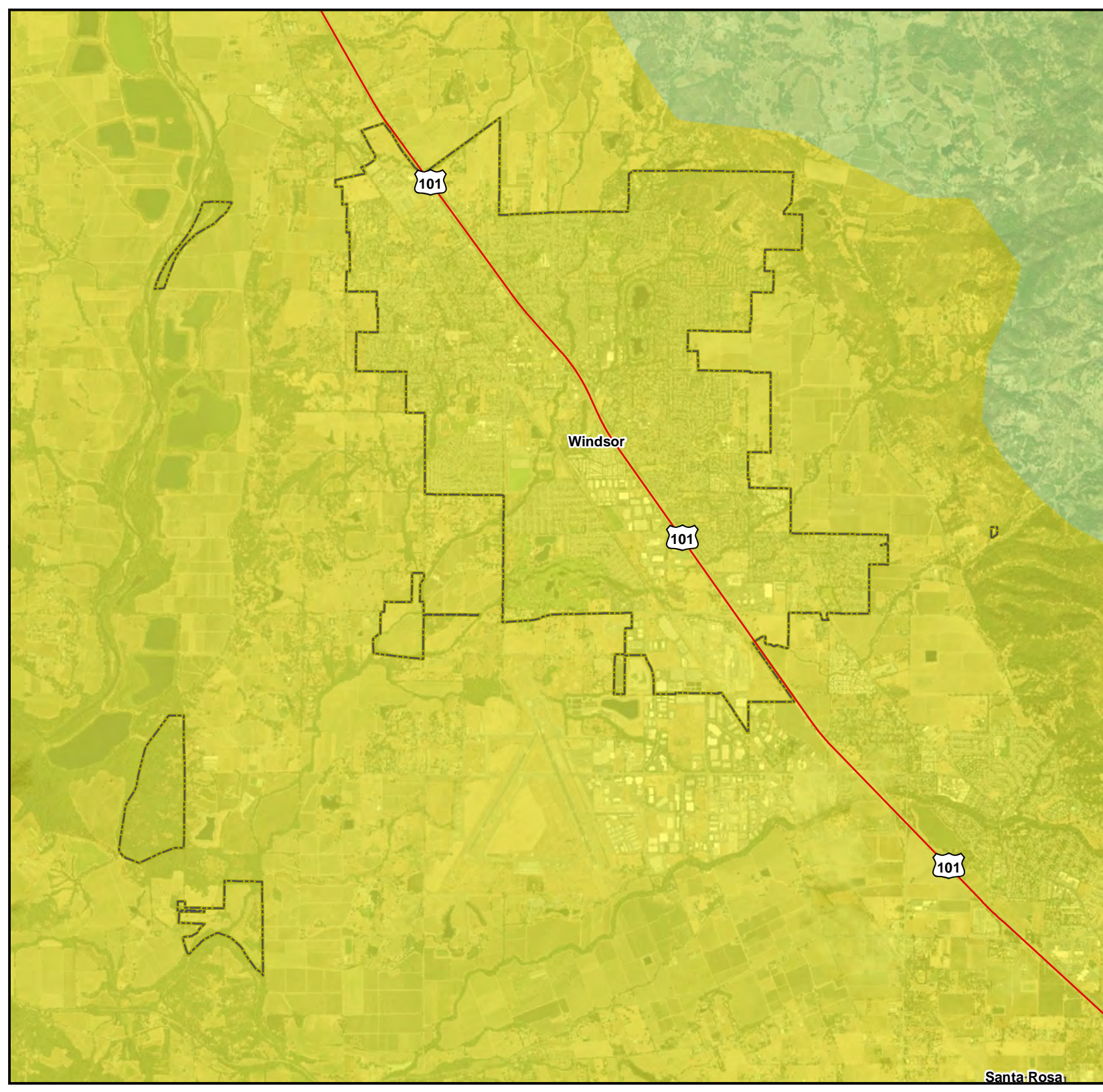
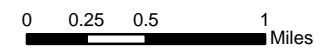
## San Andreas M8.04 Earthquake Scenario

### 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



Santa Rosa

# Windsor

## Flood Hazard Areas

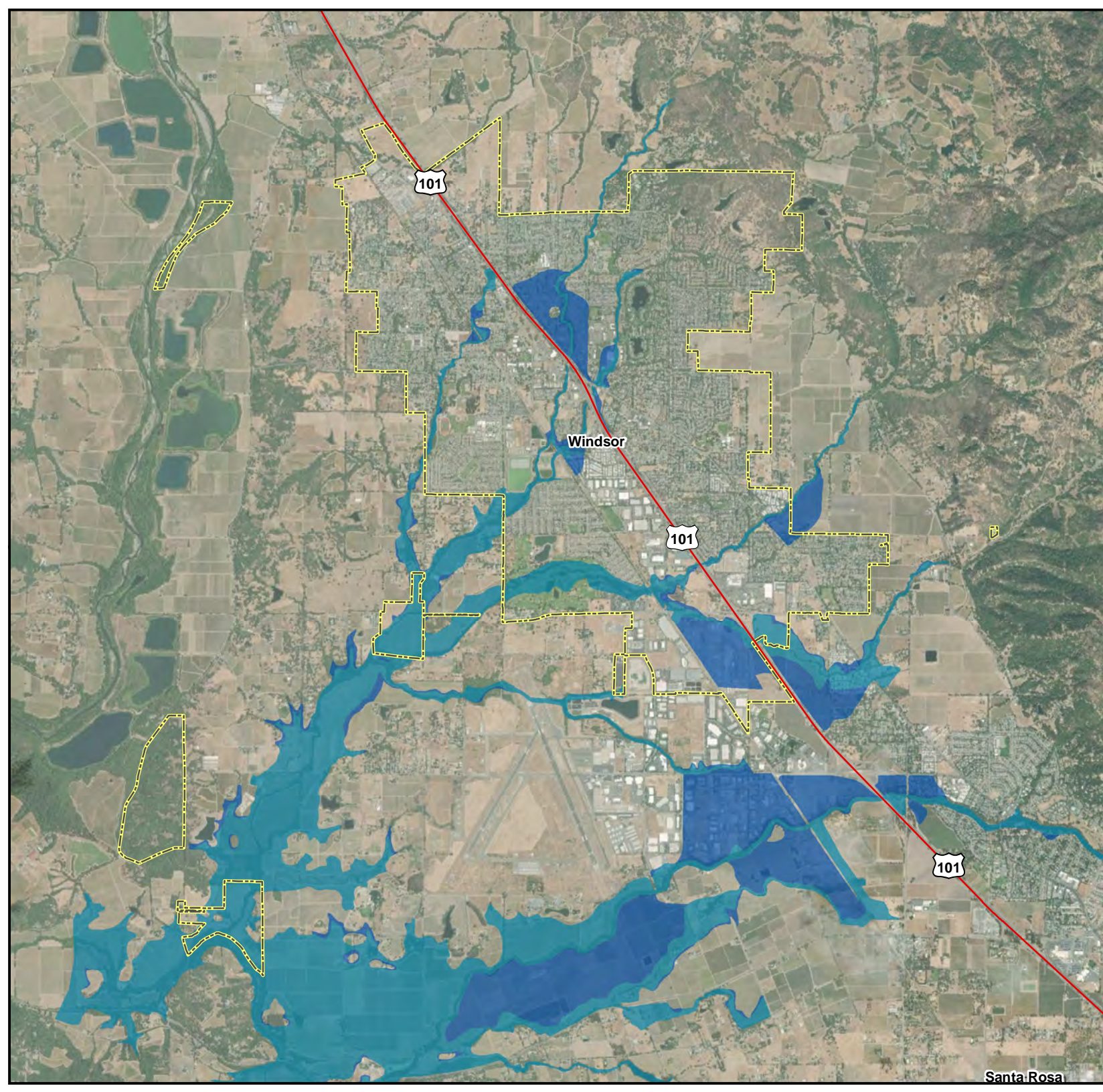
-  1% Annual Chance Flood (100-Year)
-  0.2% Annual Chance Flood (500-Year)
-  Selected City
-  Incorporated Cities
-  Sonoma County
-  Highways

Data Sources: Esri Basemap, Sonoma Co., FEMA








0 0.25 0.5 1 Miles

Santa Rosa

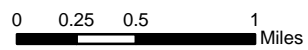


# Windsor

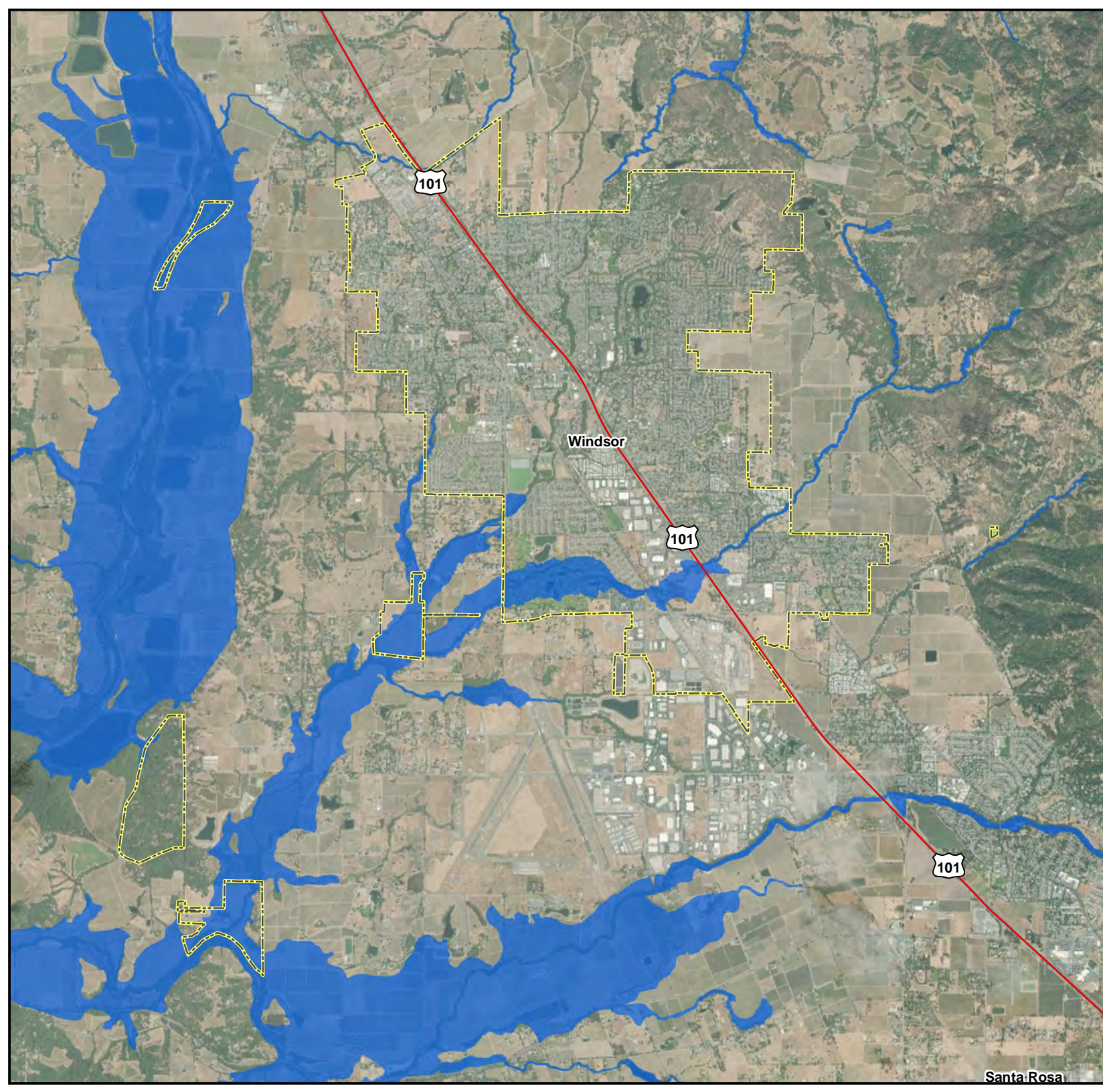
## Flood Awareness Areas

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

Data Sources: Esri Basemap, Sonoma Co.











Santa Rosa

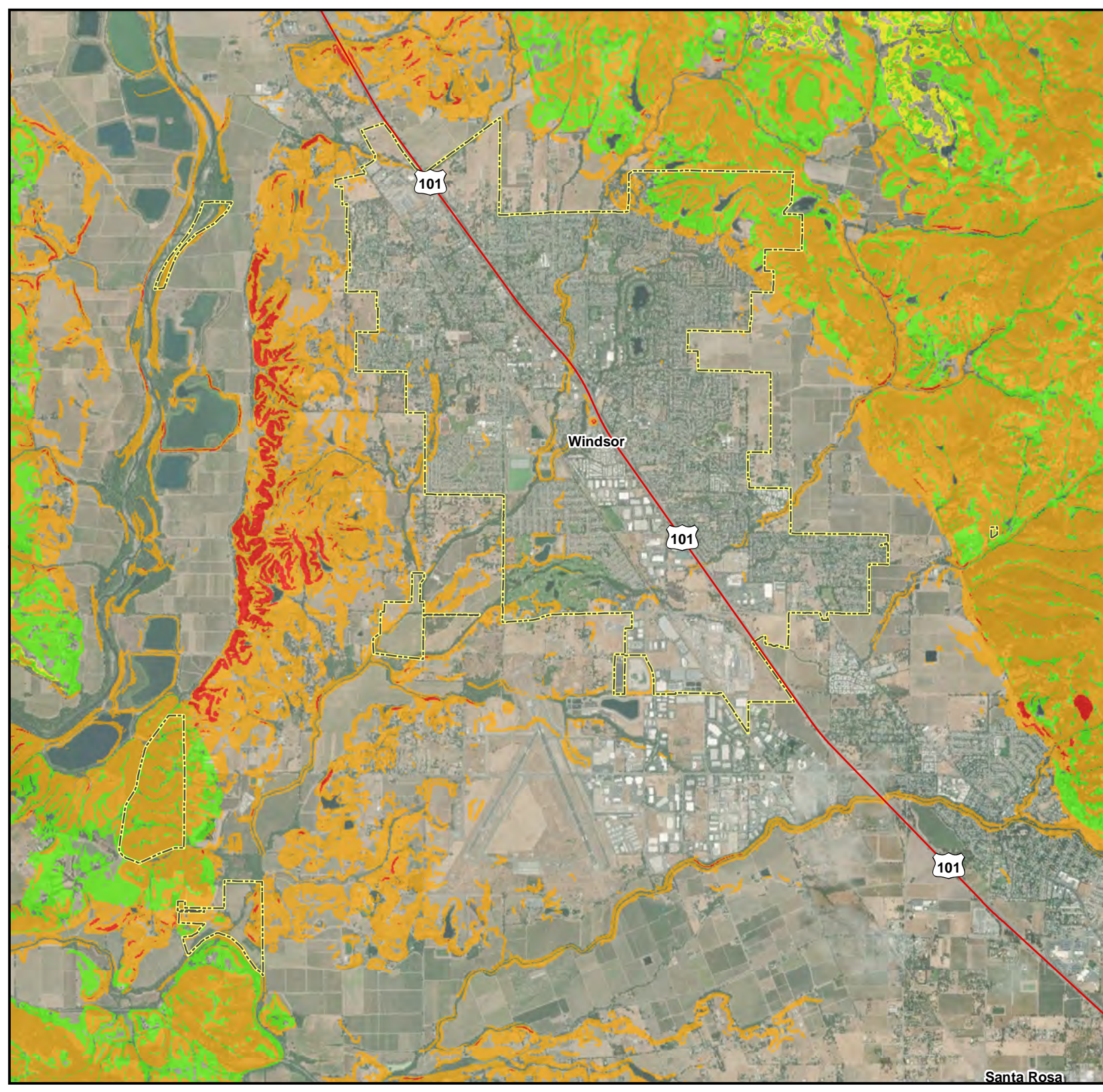
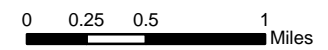


# Windsor

## Susceptibility to Deep-Seated Landslides

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










Data Sources: Esri Basemap, Sonoma Co., CGS



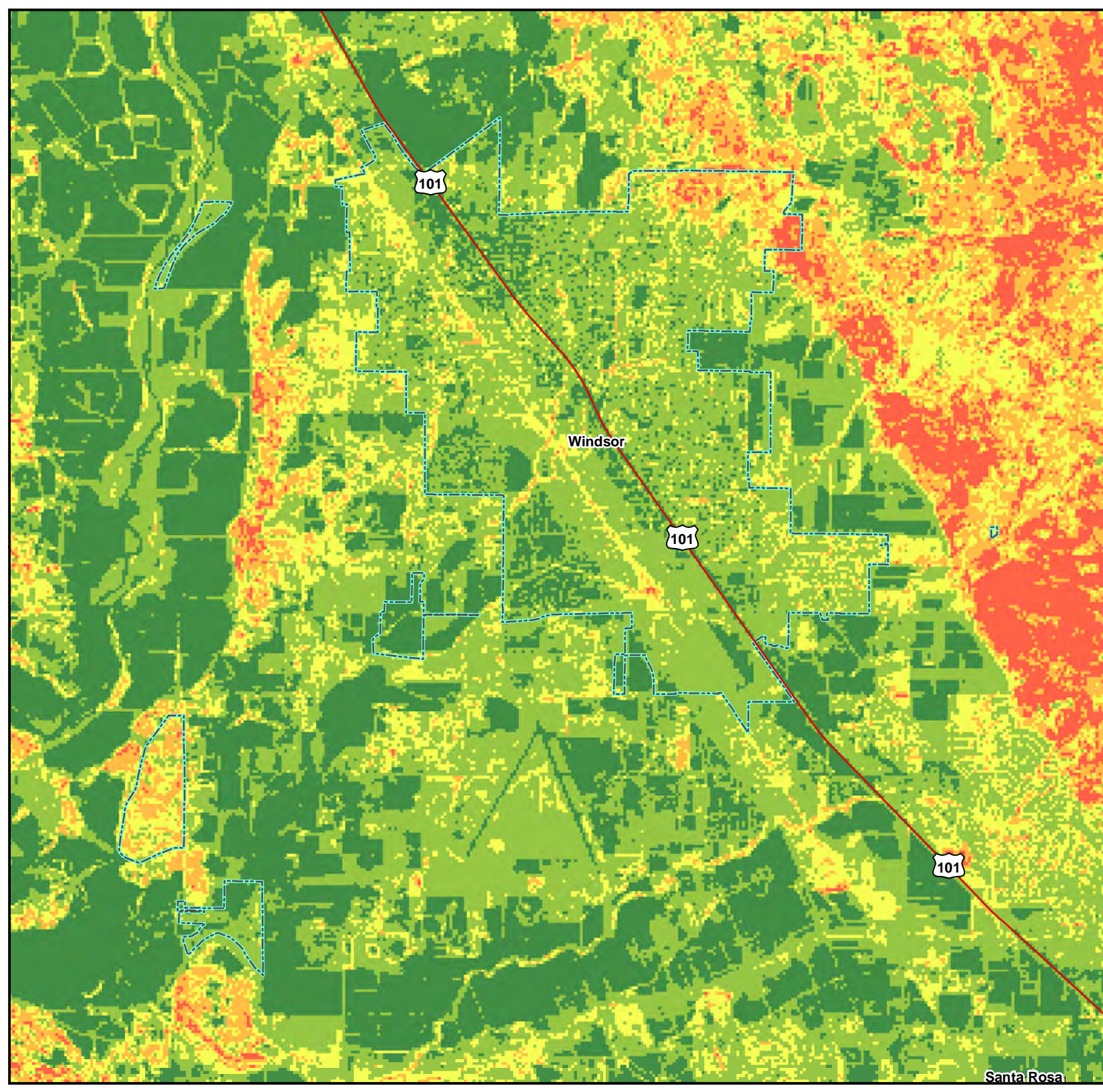
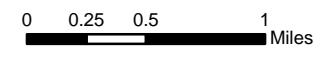
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# Windsor

## 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.



Santa Rosa

