City of Santa Clara

Emergency Operations

Plan

Annex L

Hazard Mitigation Plan
Volume 2

City of Santa Clara
The Center of What's Possible

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14. CITY OF SANTA CLARA

14.1 HAZARD MITIGATION PLAN POINT OF CONTACT

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14.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—July 5, 1852
- **Current Population**—123,752 as of January 1, 2016
- **Population Growth**—Based on the data tracked by the state Department of Finance, the City of Santa Clara has experienced a gradual rate of growth since the year 2000. The overall population has increased by 4.14 percent since 2010 and growth averaged 1.23 percent per year from 2000 to 2014. The City is an important employment center and houses approximately 122,000 jobs. The City is projected by the Association of Bay Area Governments (ABAG) in 2030 to have a resident population of 141,700 and to support 137,480 jobs.
- **Location and Description**—The City of Santa Clara encompasses 18.41 square miles, and is located 45 miles south of San Francisco and 382 miles north of Los Angeles. The City of Santa Clara is situated near to the south end of San Francisco Bay in Santa Clara County, also known as Silicon Valley in recognition of the region's leadership in worldwide technology innovations. The City boundaries are completely urbanized, and the City is bordered by other urbanized areas, including San Jose, Cupertino and Sunnyvale. The City is developed on relatively flat terrain and drained by three seasonal creeks, San Tomas Aquino, Saratoga and Calabazas creeks, all of which empty into the southern portion of San Francisco Bay. The Guadalupe River, which also drains into the Bay, defines part of the city's eastern boundary.
- **Brief History**—By 1850, when California became a state, Santa Clara was an established frontier settlement. In 1851, Santa Clara College, now Santa Clara University, was founded on the Mission site. The incorporation of Santa Clara as a City followed in 1852. In 1866, the City officially established a grid street system to accommodate anticipated growth. The City of Santa Clara, "The Mission City," has been transformed over the past century, from a small agricultural town to a major employment and community center in Silicon Valley. It is called the "Mission City" in reference to the Mission Santa Clara de Asis, which opened in 1777 as one of 21 Spanish missions established by Franciscan padres along El Camino Real in California. The central core of the City grew outward from the original downtown and the Old

Quad residential area around the University and Agnew Village - a satellite area that established a base for residential neighborhoods in north Santa Clara. Primarily an agricultural community through the mid-1900s, the City of Santa Clara evolved to become a family-oriented, suburban community of comfortable neighborhoods in the post-World War II era, and as the heart of Silicon Valley in the electronics industry boom of the 1970s. In 2014, Levi's Stadium opened in Santa Clara as the home of the San Francisco 49ers football team and a premier sports and entertainment venue that hosted Super Bowl 50.

- **Climate**—The City of Santa Clara's climate is Mediterranean in nature, with mild temperatures year-round. January is on average the coolest month with an average low temperature of 42°*F* and an average high temperature of 58°*F*. July is on average the warmest month with an average low temperature of 58°*F* and an average high temperature of 82°*F*. Average annual rainfall is 14 inches, with rain concentrated in the winter months (November through March).
- **Governing Body Format**—Santa Clara is a Charter City with a City Council - City Manager form of government, with the City Manager and City Attorney appointed by City Council. The City of Santa Clara is governed by a seven-member city council. The Police Chief and City Clerk are elected positions. The City Manager is responsible for hiring all other City staff, preparing an annual budget, and general oversight of City operations, including the City's utilities. The City consists of fourteen departments: Community Development, Electric Utilities (Silicon Valley Power), Finance, Fire, Human Resources, Information Technology, Library, Parks and Recreation, Public Works, Police, Water and Sewer Utilities, City Attorney's Office, City Clerk's Office and the City Manager's Office. The City also has a separate Stadium Authority and Housing Authority which are overseen by the City Council. The City has nine commissions which report to the City Council. The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.

14.3 DEVELOPMENT TRENDS

The City of Santa Clara has seen remarkable interest and activity in both commercial and residential development during 2015 and 2016, and economic forecasts anticipate this to continue at a steady level in the next few years. Building permit valuations projected for permit activities in 2015-16 show $1.4 billion in valuation attributed to 8,000 building permits, versus $890 million in valuation attributed to 7,180 building permits in the previous fiscal year. The strength of the economy has spurred a number of new developments, in addition to advancing a number of significant private development projects that were previously approved by the City prior to the last recession. These projects are providing construction jobs and tenant employment, leading to secondary jobs, new rental housing and home sales, and consumer and business spending. Table 14-1 summarizes development trends in the performance period since development of the previous hazard mitigation plan and expected future development trends.

14.4 CAPABILITY ASSESSMENT

14.4.1 Resources for the 2017 Planning Initiative

This sections lists the technical reports, plans, and regulatory mechanisms reviewed to provide information for inclusion in the 2017 Multi-Jurisdiction Hazard Mitigation Plan for both Volume 1 and Volume 2 (Santa Clara Annex).

Table 14-1. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the development of the previous hazard mitigation plan? • **If yes, give the estimated area annexed and estimated number of parcels or structures.**	No N/A
Is your jurisdiction expected to annex any areas during the performance period of this plan? • **If yes, please describe land areas and dominant uses.** • **If yes, who currently has permitting authority over these areas?**	Yes Small leftover areas, generally vacant and adjacent to creeks. All are infill parcels. County of Santa Clara.
Are any areas targeted for development or major redevelopment in the next five years? • **If yes, please briefly describe, including whether any of the areas are in known hazard risk areas**	Yes General Plan contains nine focus areas where significant development is anticipated, plus substantial redevelopment is expected in various employment areas, particularly in many areas north of the Caltrain tracks. The entire City is in an area of earthquake risk, and many of the areas expected to redevelop may be subject to flooding hazards, especially in North Santa Clara.
How many building permits were issued in your jurisdiction since the development of the previous hazard mitigation plan?	

	2011	2012	2013	2014	2015
Single Family	35	49	74	42	58
Multi-Family	15	7	2	23	11
Other (commercial, mixed use, etc.)	1704	1775	1895	1965	2388

Please provide the number of permits for each hazard area or provide a qualitative description of where development has occurred.	• Special Flood Hazard Areas: Yes, average 3-4 per year • Landslide: N/A • High Liquefaction Areas: No. According to the USGS map, the high liquefaction area is approximately 3 miles west of Guadalupe River along Northeast of City of Santa Clara boundary. The land uses are mostly open land with a small area of low and medium densities of residential, mixed use, and industrial. • Tsunami Inundation Area: N/A • Wildfire Risk Areas: N/A
Please 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.	Appendix 8.12-B of the Housing Element has an inventory of underutilized sites. Santa Clara is mostly built-out, and most development opportunity sites involve redevelopment and intensification of parcels that are currently developed.

All of the below items were additionally reviewed as part of the full capability assessment for Santa Clara.

- **City of Santa Clara 2010-2035 General Plan**—The General Plan, including the Land Use and Safety Elements, were reviewed for information regarding goals and policies consistent with hazard mitigation for carry over as goals and objectives. The General Plan provides a comprehensive set of goals and policies for the delivery of City services as well as a long term plan for land use (Land Use Element). The Land Use Element takes into consideration hazard avoidance, such as floodplains, when establishing allowed land uses. The Land Use Element is supported by policies which require avoidance of hazardous conditions for new land development. The General Plan includes policies which address safety within other topic areas (e.g., rail safety, bicycle and pedestrian safety, etc.), policies related to public safety through the delivery of Police and Fire services, and specific safety goals and policies related to environmental issues such as avoidance of safety impacts due to flooding, hazardous materials, airport operations, seismic, geologic and soil hazards and noise. The City's Climate Action Plan is one of the

General Plan Appendices. The Climate Action Plan identifies steps to reduce Citywide greenhouse gas emissions, which relate to avoidance of drought and severe weather events.

- **City of Santa Clara Municipal Code**—The Municipal Code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Flood Damage Prevention Ordinance**—The Flood Damage Prevention Ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Capital Improvements Plan**—The Capital Improvements Plan was reviewed to identify cross-planning initiatives for inclusion as mitigation projects.
- **The City of Santa Clara Emergency Operations Plan (EOP)**—This plan was reviewed to complete the Planning Documents portion of this Annex.
- **Technical Reports and Information** – Outside resources and references used to complete the City of Santa Clara Annex are identified in Section 1.10 of this Annex.

14.4.2 Full Capability Assessment

An assessment of legal and regulatory capabilities is presented in Table 14-2. An assessment of fiscal capabilities is presented in Table 14-3. An assessment of administrative and technical capabilities is presented in Table 14-4. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 14-5. An assessment of education and outreach capabilities is presented in Table 14-6. Classifications under various community mitigation programs are presented in Table 14-7. Development and permitting capabilities are presented in Table 14-8, and the community's adaptive capacity for the impacts of climate change is presented in Table 14-9.

Table 14-2. Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	Yes
Comment: *2016 Building Code Adopted; Santa Clara Muni Code Title 15: Buildings and Construction*				
Zoning Code	Yes	No	Yes	Yes
Comment: *Update underway; Santa Clara Muni Code Title 18: Zoning*				
Subdivisions	Yes	Yes	Yes	No
Comment: *Updated in 2003; Santa Clara Muni Code Chapter 17.05 Subdivisions*				
Stormwater Management	Yes	Yes	Yes	Yes
Comment: *Santa Clara Muni Code 13.20 Original in 1994, Updated in May 20, 2014 by Ordinance 1925 City of Santa Clara protects stormwater quality via Municipal Regional NPDES Permit compliance activities which include: municipal operations, new and redevelopment controls, commercial/industrial facility inspections, illegal discharge/illicit connection enforcement, active construction site inspections, public education, trash load reduction, mercury and PCB reduction, and pesticide toxicity reduction programs. The City has a Long term Trash load Reduction Plan in place and is working to prepare a Green Infrastructure Plan. Regionally, the Santa Clara Valley Urban Runoff Pollution Prevention Program is in progress of preparing a Basin Plan.*				
Post-Disaster Recovery	No	No	No	No
Comment: *None Located*				
Real Estate Disclosure	No	No	Yes	No
Comment: *Cal. Civ. Code §1102 et seq.*				
Growth Management	Yes	No	Yes	Yes
Comment: *General Plan policies; no separate ordinance; Cal. Gov. Code §65300 et seq.*				
Site Plan Review	Yes	Yes	Yes	Yes
Comment: *Conducted pursuant to the City's Zoning Code*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Environmental Protection	Yes	Yes	Yes	Yes
Comment: *Pursuant to General Plan, Zoning, and Building Code requirements; California Environmental Quality Act (Guideline: California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387)*				
Flood Damage Prevention	Yes	Yes	Yes	Yes
Comment: *Pursuant to Floodplain Ordinance; Santa Clara Muni Code Chapter 15.45: Prevention of Flood Damage Code*				
Emergency Management	Yes	No	Yes	Yes
Comment: *Pursuant to City Charter Chapter 2.140*				
Climate Change	Yes	Yes	Yes	Yes
Comment: *Climate Action Plan adopted; California SB-379*				
Other:	No	No	No	No
Comment: *None Located*				
Planning Documents				
General Plan	Yes	Yes	Yes	Yes
Is the plan compliant with Assembly Bill 2140? *Yes*				
City of Santa Clara General Plan, adopted in 2010 and updated regularly (most recently in November 2016) is compliant with AB 2140.				
Capital Improvement Plan	Yes	No	Yes	Yes
How often is the plan updated? *Annually*				
Comment: *State mandated: City Charter Sec 1312 Capital project funds, Charter Chapter 11 of State Statutes of 2000*				
Floodplain or Watershed Plan	Yes	Yes	Yes	Yes
Comment: *City adopted the FEMA flood damage prevention code in 1987. General Plan Safety Goals in Section 5.10.5 address floodplain and watershed protections.*				
Stormwater Plan	Yes	Yes (SCVWD)	Yes	Yes
Comment: *Storm Drain Maser Plan prepared in Dec. 2015*				
Urban Water Management Plan	Yes	No	Yes	Yes
Comment: *Adopted November 22, 2016*				
Habitat Conservation Plan	No	Yes	No	No
Comment: *Santa Clara Valley Habitat Plan*				
Economic Development Plan	Yes	No	No	Yes
Comment: *Pursuant to General Plan*				
Shoreline Management Plan	No	Yes	No	No
Comment: *Santa Clara does not have shoreline; however, the Bay Conservation and Development Commission has jurisdiction over San Francisco Bay shoreline modifications.*				
Community Wildfire Protection Plan	No	No	No	No
Comment: *N/A*				
Forest Management Plan	No	No	No	No
Comment: *N/A*				
Climate Action Plan	Yes	Yes	Yes	Yes
Comment: *Climate Action Plan was adopted in December 2013.*				
Comprehensive Emergency Management Plan	Yes	Yes	Yes	Yes
Comment: *Santa Clara County Emergency Operations Plan, City Emergency Operations Plan (EOP)*				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Yes	Yes	No
Comment: *UASI THIRA - 2016*				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Post-Disaster Recovery Plan ***Comment:*** *part of EOP*	Yes	Yes	Yes	Yes
Continuity of Operations Plan ***Comment:*** *N/A*	No	No	No	No
Public Health Plan ***Comment:*** *County Public Health has authority*	No	Yes	Yes	No
Other: ***Comment:*** *None Located*	No	No	No	No

Table 14-3. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes, though voter approval required
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	No, voter approval required
Incur Debt through Special Tax Bonds	No, voter approval required
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes, nexus study required
Other working capital reserves	Yes

Table 14-4. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Com Dev/Director
Engineers or professionals trained in building or infrastructure construction practices	Yes	DPW, Utilities/Directors
Planners or engineers with an understanding of natural hazards	No	Com Dev, DPW, Utilities/Directors
Staff with training in benefit/cost analysis	Yes	Finance/Director
Surveyors	Yes	Land Surveyor, DPW
Personnel skilled or trained in GIS applications	Yes	DPW, IT, Com Dev, Utilities
Scientist familiar with natural hazards in local area	No	NA
Emergency manager	Yes	Fire, ESC
Grant writers	Yes	Fire, Police, DPW, IT, Parks and Rec

Table 14-5. National Flood Insurance Program Compliance

Criteria	Response
What local department is responsible for floodplain management?	Community Development
Who is your floodplain administrator? (department/position)	Director of Community Development
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	1987, revision in process
Does your floodplain management program meet or exceed minimum requirements? • **If exceeds, in what ways?**	May not currently meet minimum NFIP requirements N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	5-year Cycle Visit in 2012
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • **If so, please state what they are.**	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • **If no, please state why.**	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? • **If so, what type of assistance/training is needed?**	Yes Training on the CRS Manual
Does your jurisdiction participate in the Community Rating System (CRS)? • **If yes, is your jurisdiction interested in improving CRS Classification?** • **Is your jurisdiction interested in joining the CRS program?**	Yes Yes (currently class 8) N/A
How many flood insurance policies are in force in your jurisdiction? • **What is the insurance in force?** • **What is the premium in force?**	955[a] $279,319,600 [a] $735,904 [a]
How many total loss claims have been filed in your jurisdiction? • **How many claims were closed without payment/are still open?** • **What were the total payments for losses?**	29 [a] CWOP = 15 Still open = 0 [a] $309,753.09 [a]

a. According to FEMA statistics as of October 31, 2016

Table 14-6. Education and Outreach

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • **If yes, please briefly describe.**	Yes The Fire Department has an emergency preparedness webpage that includes links to various resources.
Do you utilize social media for hazard mitigation education and outreach? • **If yes, please briefly describe.**	Yes Twitter, Facebook and NextDoor
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • **If yes, please briefly describe.**	Yes Web-based notification such as Enotify and Nixle
Do you have any established warning systems for hazard events? • **If yes, please briefly describe.**	Yes Countywide Alert SCC program

Table 14-7. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	Yes	8	5/1/2002
Building Code Effectiveness Grading Schedule	No	99	N/A
Public Protection	Yes	2	2015
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

Table 14-8. Development and Permitting Capability

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

Table 14-9. Adaptive Capacity for Climate Change

Adaptive Capacity Assessment Question	Jurisdiction Rating
Technical Capacity	
Jurisdiction-level understanding of potential climate change impacts	Medium
Comment: *None provided*	
Jurisdiction-level monitoring of climate change impacts	Medium
Comment: *Sea level rise is expected to have minimal impacts to Santa Clara properties*	
Technical resources to assess proposed strategies for feasibility and externalities	High
Comment: *None provided*	
Jurisdiction-level capacity for development of greenhouse gas emissions inventory	Medium
Comment: *Climate Action Plan contains a comprehensive inventory, and the update of the Climate Action Plan in the next 1-3 years will include an inventory update*	
Capital planning and land use decisions informed by potential climate impacts	High
Comment: *General Plan principles, including the Climate Action Plan criteria, consider climate implications*	
Participation in regional groups addressing climate risks	Medium
Comment: *Staff participates in regular regional climate change meetings as time permits*	
Implementation Capacity	
Clear authority/mandate to consider climate change impacts during public decision-making processes	High
Comment: *Climate Action Plan is incorporated into the General Plan and is considered as part of the decision-making process*	
Identified strategies for greenhouse gas mitigation efforts	High
Comment: *The Climate Action Plan (CAP) addresses statewide GHG reduction goals through 2020, and the City expects to update the CAP in the next 1 – 3 years to address the new statewide GHG reduction goals for 2030 and 2050.*	
Identified strategies for adaptation to impacts	Medium
Comment: *None provided*	
Champions for climate action in local government departments	Medium
Comment: *Hiring of new sustainability manager is expected in 1-2 months. Initial multi-departmental working group convening now.*	
Political support for implementing climate change adaptation strategies	Medium
Comment: *Sustainability is continually gaining additional support in the community and with the Council.*	

Adaptive Capacity Assessment Question	Jurisdiction Rating
Financial resources devoted to climate change adaptation	Medium
Comment: *None provided*	
Local authority over sectors likely to be negatively impacted	Medium
Comment: *None provided*	
Public Capacity	
Local residents knowledge of and understanding of climate risk	Medium
Comment: *Some members are highly educated. More City outreach could contribute to overall knowledge base.*	
Local residents support of adaptation efforts	Medium
Comment: *None provided*	
Local residents' capacity to adapt to climate impacts	High
Comment: *None provided*	
Local economy current capacity to adapt to climate impacts	High
Comment: *None provided*	
Local ecosystems capacity to adapt to climate impacts	Medium
Comment: *None provided*	

14.5 INTEGRATION WITH OTHER PLANNING INITIATIVES

The following describe the jurisdiction's process for integrating the hazard mitigation plan into local planning mechanisms.

14.5.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan:

- **General Plan**—Considers land use integration, environmental impacts of development, and long-term sustainability for new development and city operations. At the time of the next update, information obtained in the update of the hazard mitigation plan will be integrated into the General Plan as appropriate.
- **Climate Action Plan**—Integrated into the General Plan, the CAP identifies steps for the City to take in its own operations and in review/approval of new development to reduce greenhouse gas emissions. At the time of the next update, information obtained in the update of the hazard mitigation plan will be integrated into the Climate Action Plan as appropriate.

14.5.2 Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

As the City continues to update its policies and ordinances, including but not limited to updates to the Building Code (next scheduled for adoption in 2019), the General Plan (anticipated in the next 3-8 years), Zoning Ordinance (expected in the next 1-2 years) and Climate Action Plan (expected in next 1-3 years), the City will evaluate consistency with the hazard mitigation plan and incorporate recommendations as needed.

14.6 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 14-10 lists all past occurrences of natural hazards within the jurisdiction.

Table 14-10. Natural Hazard Events

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Weather	-	1-8-17	$65,000
Wildfire	2465	9-23-16	$34,199
Wildfire	2766	5-22-2008	$362,378
Hurricane Evacuation	3248	9-13-2005	$988,951
Severe Weather / High Wind	1203	6-21-2001	$80,757
Earthquake	845	10-17-1989	$100,000

14.7 JURISDICTION-SPECIFIC VULNERABILITIES

Repetitive loss records are as follows:

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

Other noted vulnerabilities include:

- There are a number of older structures built before modern building codes.

14.8 HAZARD RISK RANKING

Table 14-11 presents the ranking of the hazards of concern.

Table 14-11. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	54	High
2	Severe Weather	33	Medium
3	Flood	18	Medium
3	Dam and Levee Failure	18	Medium
4	Drought	9	Low
5	Landslide	0	Low
6	Wildfire	0	Low

14.9 STATUS OF PREVIOUS PLAN ACTIONS

The status of previous actions from the 2011 ABAG LHMP for the City of Santa Clara can be found in Appendix D of this volume.

14.10 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED ACTIONS

Table 14-12 lists the actions that make up the City of Santa Clara hazard mitigation action plan. Table 14-13 identifies the priority for each action. Table 14-14 summarizes the mitigation actions by hazard of concern and the six mitigation types.

Table 14-12. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
SC-1—Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses						
New and existing	All hazards	1-9	OES/Fire and Community Development	High	PDM, HMGP, Local Budget (local match)	Dependent on Funding (Short-term)
SC-2—Continue to support the Planning Area-wide actions identified in this plan.						
New and Existing	All hazards	1-9	OES/Fire	Low	Local Budget	Ongoing
SC-3—Actively participate in the plan maintenance strategy identified in this plan.						
New and Existing	All hazards	1-9	OES/Fire	Low	Local Budget	Ongoing
SC-4—Consider participation in incentive-base programs such as Tree City and Storm ready.						
New and Existing	All hazards	1-9	Community Development and Public Works	Low	Local Budget	Ongoing
SC-5—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an updated, adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts. Continue participating in the Santa Clara County Multi-jurisdictional Program for Public Information.						
New and Existing	Flood	1-9	Community Development and Public Works	Low	Local Budget	Ongoing
SC-6—Integrate the Hazard Mitigation Plan into other plans, programs, or resources that dictate land use or redevelopment, such as the General Plan, Climate Action Plan, Zoning Ordinance, Building Code, etc..						
New and Existing	All hazards	1-9	All City Departments	Low	Local Budget	Ongoing
SC-7—Based on EOC staffing capabilities assessment, ensure that mandated training is provided to all employees in SEMS, FEMA ICS-100, ICS-200, IS-700, and IS-800; and ensure that employee training records are securely maintained.						
Existing	All hazards	1,2,4,9	OES/Fire	Low	Local Budget	Ongoing
SC-8—Based on EOC staffing capabilities assessment, ensure that mandated training is provided to employees who require advanced knowledge and application of the ICS, such as primary and alternate EOC Section Chiefs and senior field personnel, to include at least ICS-300, ICS-400, and the FEMA Professional Development Series; and ensure that employee training records are securely maintained.						
Existing	All hazards	1,2,4,9	All City Departments	Medium	Local Budget	Ongoing
SC-9—Based on EOC staffing capabilities assessment, ensure that all Fire and Police Department staff who may be assigned the role of incident commander at an emergency/disaster scene have received Incident Commander training; and ensure that employee training records are securely maintained.						
Existing	All hazards	1,2,4,9	OES, Fire and Police	Medium	Local Budget	Ongoing
SC-10—Monitor local availability of upcoming training opportunities for city staff regarding incident staffing, disaster response, and recovery.						
Existing	All hazards	1,2,4,9	All City Departments	Medium	Local Budget	Ongoing
SC-11—Continue to conduct EOC tabletop exercise(s) to evaluate capabilities and train employees in their assigned EOC role(s).						
N/A	All hazards	1,2,4,9	OES/Fire	Medium	Local Budget, UASI, HSGP	Long-term
SC-12—Develop and exercise a Disaster Debris Management Plan.						
New	Dam failure, Earthquake, Flood, Severe weather	1,2,3,4,5,6,7,8	Public Works OES/Fire	Medium	Local Budget, HSGP, UASI	Long-term

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
SC-13—Enhance public education and awareness of natural and manmade hazards in the community and public understanding of disaster preparedness, including foreign language translations.						
New	All hazards	1,3,4,5,8,9	OES/Fire	Medium	Local Budget, UASI	Long-term
SC-14—Develop improved capabilities to incorporate GIS technology by all departments into services provided to the public and for use during emergency/disaster incidents.						
Existing	Dam Failure, Earthquake, Flood,	1,2,3,6,9	OES/Fire	Medium	Local Budget, PDM	Long-term
SC-15—Conduct a test of emergency communications and information systems interoperability, to establish baseline capabilities for employee call-back, communications between the EOC and incident command, and communications with the Operational Area and Mutual Aid resources.						
Existing	All hazards	1,5,6,9	OES/Fire	Medium	Local Budget, UASI, HSGP	Long-term
SC-16—Conduct a gap analysis of the Santa Clara City Emergency/Disaster preparedness and response program, to include a comprehensive review of employee training requirements and needs, plans and procedures, EOC equipment and staffing capabilities, and related analyses.						
New	All hazards	1-9	OES/Fire	Medium	Local Budget, HSGP	Long-term
SC-17 - Acquire a mobile Emergency Operations Center.						
New	All hazards	1,4,8,9	OES/Fire	High	Local Budget, UASI, HSGP	Long-term
SC-18—Develop unmanned aerial vehicle (UAV) capability for hazard mitigation surveys and post-disaster damage assessments; and develop policies, procedures and staff training guidelines for UAV use.						
New	Dam Failure, Flood, Earthquake, Severe Weather	2,4,6,8,9	OES, Fire, Police	High	Local Budget, PDM, HMGP	Long-term
SC-19—Enhance Fire Department field inspection system using portable computers for engine company inspections and Fire Prevention inspections, to integrate inspections, re-inspections, invoicing, permits, CUPA and business license data.						
Existing	All hazards	1,2,3,6,8	Fire	Low	Local Budget, UASI	Ongoing
SC-20—Conduct seismic and functional assessment of Emergency Operations Center.						
Existing	All hazards	1,2,4,8,9	OES/Fire	Medium	Local Budget, PDM, HMGP	Ongoing
SC-21—Acquire emergency generators for the City's critical facilities, specifically Fire Stations 5, 7, 8 and 9.						
Existing	All hazards	6,8,9	Public Works	Low	Local Budget, PDM, HMGP	Short-term
SC-22—Maintain and improve Water and Sewer Utilities as necessary to ensure systems are able to maintain their functionality in response to potential hazards such as drought, flood or earthquakes.						
Existing	Drought, Flood, Earthquake	1,2,3,4,5,6,7,8	Water and Sewer	High	Local Budget, PDM, HMGP	Long-term
SC-23—Integrate climate change and natural hazards planning in to current city plan revisions and future planning initiatives.						
New and Existing	All hazards	1-9	Community Development	Low	Local Budget, Grants	Ongoing
SC-24—Develop and maintain a landscape design manual to provide general guidance and education to the public on water efficiency in landscaping and to serve as a resource for water efficient landscape design and installation in compliance with the State Water Efficiency Landscape Ordinance (as amended), including lists of recommended site appropriate native and drought-tolerant plant species.						
New and Existing	Drought	1-9	Community Development	Low	Local Budget, Grants	Ongoing

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
SC-25—Continue to improve the City's bike network in coordination with partner agencies, such as the Valley Transportation Authority.						
New and Existing	All hazards	3, 5, 6	Public Works and Community Development	Medium	Local Budget, Grants	Ongoing
SC-26—Hire or assign a management-level staff member as the Sustainability Manager to coordinate sustainability efforts among different departments and outside agencies.						
New and Existing	All hazards	1-9	OES/Fire	Low	Local Budget, Grants	Ongoing
SC-27—Continue to implement and monitor the current 2014 Climate Action Plan (CAP) and prepare a comprehensive update to the CAP to comply with state greenhouse gas reduction targets. Include adaptation strategies within the updated CAP.						
New and Existing	All hazards	1-9	All City Departments	Medium	Local Budget, Grants	Ongoing
SC-28—Increase situational awareness capacity in the EOC by expanding GIS resources and providing air to ground communications.						
New and Existing	All hazards	1, 2, 5, 6, 7, 9	OES/Fire	Medium	Local Budget, PDM	Ongoing
SC-29—Secure all critical infrastructure in the EOC, the EOC perimeter, and immediate vicinity.						
New and Existing	All hazards	1, 2, 3, 6, 7, 8, 9	OES/Fire and Police	Medium	Local Budget, PDM	Long-term
SC-30— Restore the original storage capacity of the Westside Water Retention Basin to hold additional storm water and reduce flooding risk by desilting the basin.						
Existing	Flood	1, 2, 3, 6, 7, 8	Public Works	High	Local Budget	Short-term

Table 14-13. Mitigation Strategy Priority Schedule

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Pursuit Priority[a]
SC-1	9	High	High	Yes	Yes	No	Medium	High
SC-2	9	Medium	Low	Yes	No	Yes	High	Low
SC-3	9	Medium	Low	Yes	Yes	Yes	High	Medium
SC-4	9	Medium	Low	Yes	No	Yes	Medium	Low
SC-5	4	Medium	Low	Yes	No	Yes	High	Low
SC-6	9	Medium	Low	Yes	No	Yes	High	Low
SC-7	4	Medium	Low	Yes	No	Yes	Medium	Low
SC-8	4	Medium	Low	Yes	No	Yes	Medium	Low
SC-9	4	Medium	Low	Yes	No	Yes	Medium	Low
SC-10	4	Low	Low	Yes	No	Yes	Low	Low
SC-11	4	High	Medium	Yes	Yes	Yes	High	High
SC-12	8	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SC-13	6	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SC-14	5	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SC-15	4	High	Medium	Yes	Yes	Yes	High	High
SC-16	9	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SC-17	4	High	Medium	Yes	Yes	No	Medium	Medium
SC-18	5	Medium	Medium	Yes	Yes	Yes	Medium	Medium
SC-19	5	High	Low	Yes	Yes	Yes	High	High
SC-20	5	High	Medium	Yes	Yes	Yes	Medium	High
SC-21	3	Medium	Low	Yes	Yes	Yes	High	High
SC-22	9	High	High	Yes	No	Yes	High	Low
SC-23	9	High	Low	Yes	Possibly	Yes	High	Medium
SC-24	1	Medium	Low	Yes	Possibly	Yes	Medium	Medium
SC-25	8	Low	Medium	No	Possibly	Yes	Medium	Medium
SC-26	9	High	Low	Yes	Possibly	Yes	High	Medium
SC-27	9	High	Medium	Yes	Possibly	No	Medium	High
SC-28	6	Medium	Medium	Yes	Yes	No	Medium	Medium
SC-29	7	High	Medium	Yes	Yes	No	Medium	High
SC-30	6	High	High	Yes	Possibly	Yes	High	Low

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

Table 14-14. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]						
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects	7. Climate Resilient
Dam and Levee Failure	SC-2, SC-3, SC-4, SC-5, SC-6, SC-12, SC-14, SC-19, SC-23	SC-1, SC-5, SC-19, SC-21, SC-22, SC-29	SC-2, SC-3, SC-4, SC-5, SC-13, SC-19, SC-25, SC-28		SC-2, SC-4, SC-7, SC-8, SC-9, SC-10, SC-11, SC-15, SC-16, SC-17, SC-18, SC-28, SC-29	SC-29	SC-2, SC-3, SC-4, SC-5, SC-6, SC-12, SC-14, SC-19, SC-23
Drought	SC-2, SC-3, SC-6, SC-14, SC-23, SC-27	SC-1, SC-29	SC-2, SC-3, SC-13, SC-26, SC-27, SC-28	SC-24, SC-26, SC-27	SC-2, SC-7, SC-8, SC-9, SC-10, SC-11, SC-15, SC-16, SC-17, SC-28, SC-29	SC-29	SC-2, SC-3, SC-6, SC-14, SC-23, SC-27
Earthquake	SC-2, SC-3, SC-6, SC-12, SC-14, SC-19, SC-23	SC-1, SC-19, SC-20, SC-21, SC-22, SC-29	SC-2, SC-3, SC-13, SC-19, SC-25		SC-2, SC-7, SC-8, SC-9, SC-10, SC-11, SC-15, SC-16, SC-17, SC-18, SC-28, SC-29	SC-29	SC-2, SC-3, SC-6, SC-12, SC-14, SC-23
Flood	SC-2, SC-3, SC-4, SC-5, SC-6, SC-14, SC-19, SC-23	SC-1, SC-4, SC-5, SC-19, SC-21, SC-22, SC-29	SC-2, SC-3, SC-4, SC-5, SC-13, SC-19, SC-25, SC-28	SC-4, SC-5	SC-2, SC-4, SC-5, SC-7, SC-8, SC-9, SC-10, SC-11, SC-5, SC-16, SC-17, SC-18, SC-28, 2 SC-9	SC-29	SC-2, SC-3, SC-4, SC-5, SC-6, SC-14, SC-19, SC-23
Severe Weather	SC-2, SC-3, SC-4, SC-6, SC-12, SC-14, SC-19, SC-23, SC-27	SC-1, SC-19, SC-21, SC-22, SC-27, SC-29	SC-2, SC-3, SC-4, SC-13, SC-19, SC-25, SC-26, SC-27, SC-28	SC-4, SC-26, SC-27	SC-2, SC-4, SC-7, SC-8, SC-9, SC-10, SC-11, SC-15, SC-16, SC-17, SC-18, SC-28, SC-29	SC-29	SC-2, SC-3, SC-4, SC-6, SC-12, SC-14, SC-19, SC-23, SC-27

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

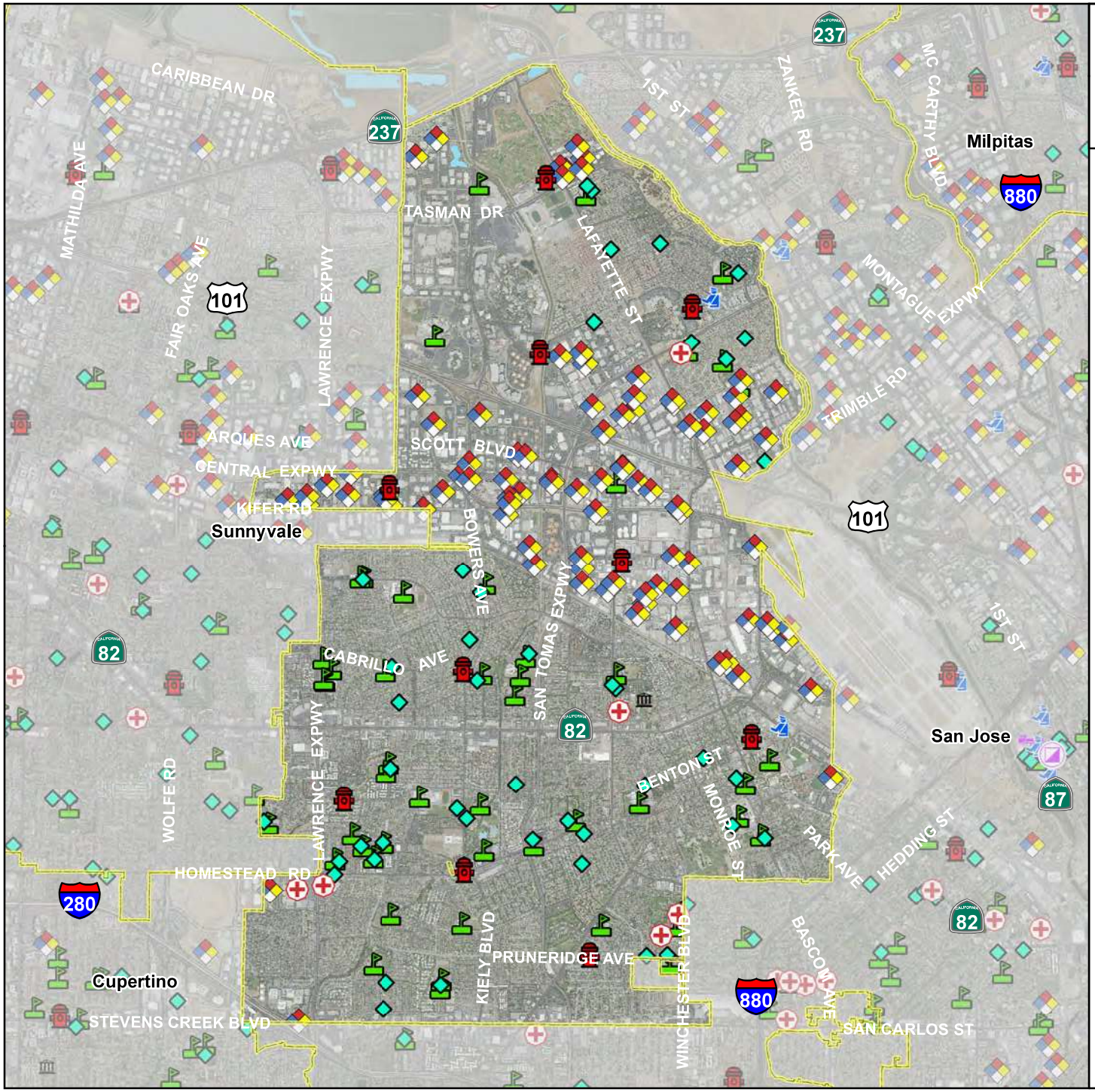
14.11 ADDITIONAL RESOURCES

2015 Urban Water Management Plan - http://santaclaraca.gov/home/showdocument?id=48088

1989 Loma Prieta Earthquake Damage - Seismic Study by G&E Engineering report

City's General Plan -http://www.santaclaraca.gov/government/departments/community-development/planning-division/general-plan

Climate Action Plan -http://www.santaclaraca.gov/home/showdocument?id=10170



The City of Santa Clara

Critical Facilities

- Emergency Response (Operation Centers)
- Emergency Response (Fire)
- Emergency Response (Police)
- Military Facilities
- Public Health & Safety (Medical Care)
- Public Health & Safety (Government)
- Hazardous Materials
- Recovery Facilities
- Socioeconomic Facilities (Childcare)
- Socioeconomic Facilities (Schools)
- Santa Clara County Boundary
- Jurisdictional Boundaries
- Water Bodies & Channels

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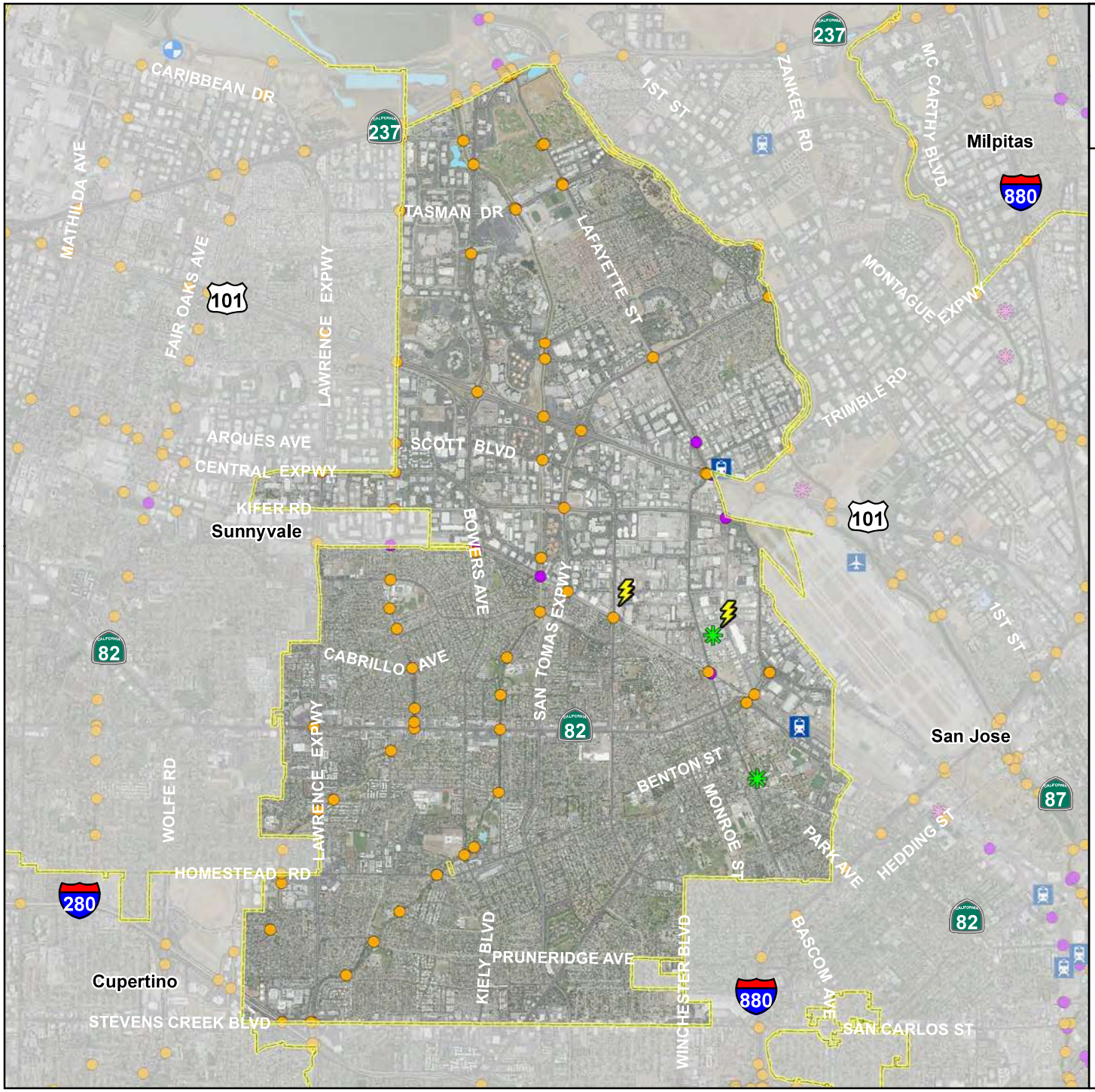
Miles

TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, Hazus 3.1, EPA, SCVWD, USDA



The City of Santa Clara

Critical Infrastructure

- Airport Facilities
- Bus Facilities
- Communication Facilities
- Dams
- Electric Power Facilities
- Highway Bridges
- Rail / Light Rail Facilities
- Rail / Light Rail Bridges
- Petroleum Facilities
- Potable Water Facilities
- Wastewater Facilities
- Santa Clara County Boundary
- Jurisdictional Boundaries
- Water Bodies & Channels

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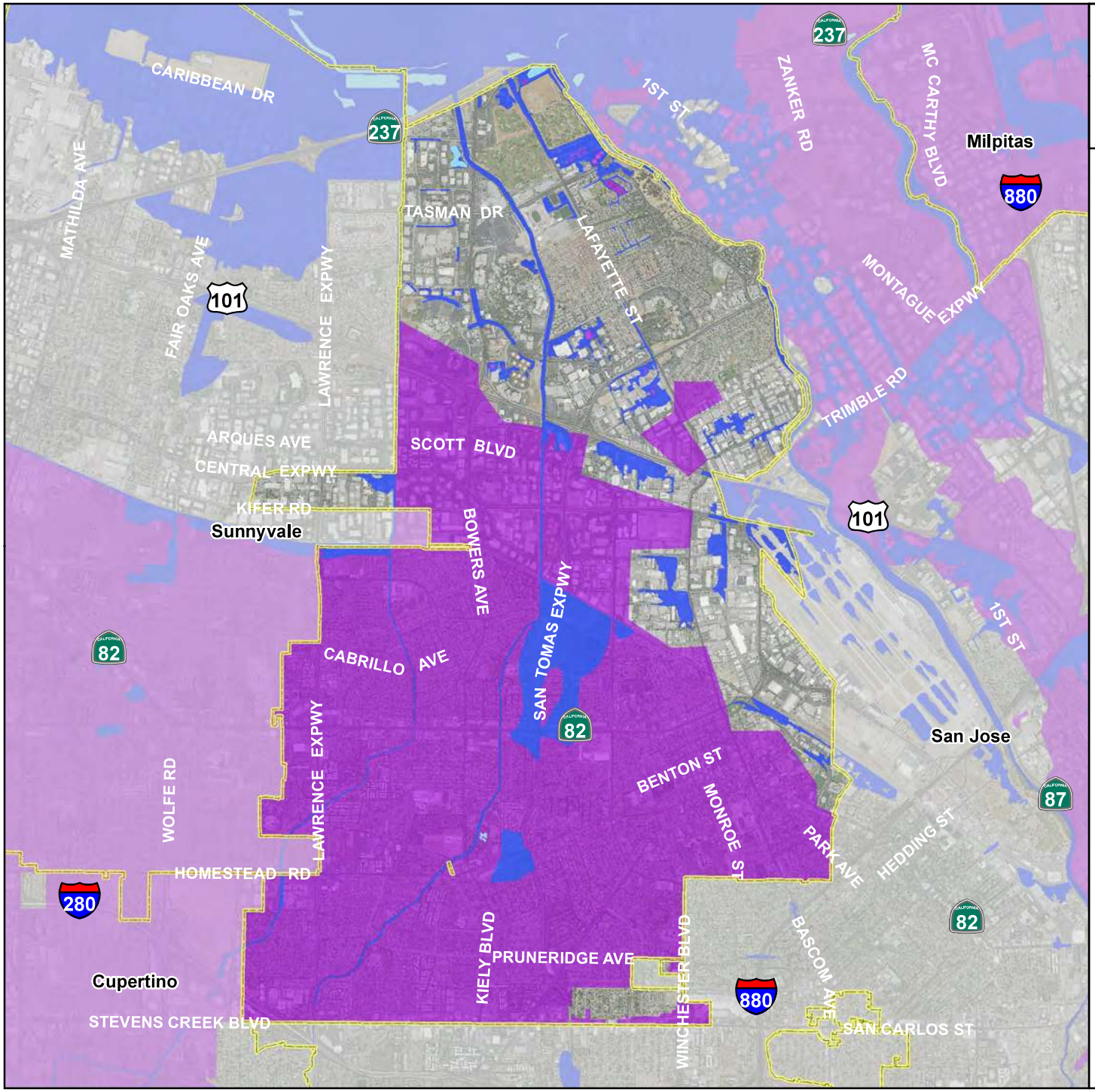
TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, Hazus 3.1, EPA, SCVWD, USDA



The City of Santa Clara

FEMA Effective DFIRM Flood Hazard Boundaries

- 1% Annual Chance (100-Year) Flood Zone
- 0.2% Annual Chance (500-Year) Flood Zone
- Santa Clara County Boundary
- Jurisdictional Boundaries
- Water Bodies & Channels

Flood hazard areas as depicted on Effective FEMA Digital Insurance Rate Maps (DFIRM)

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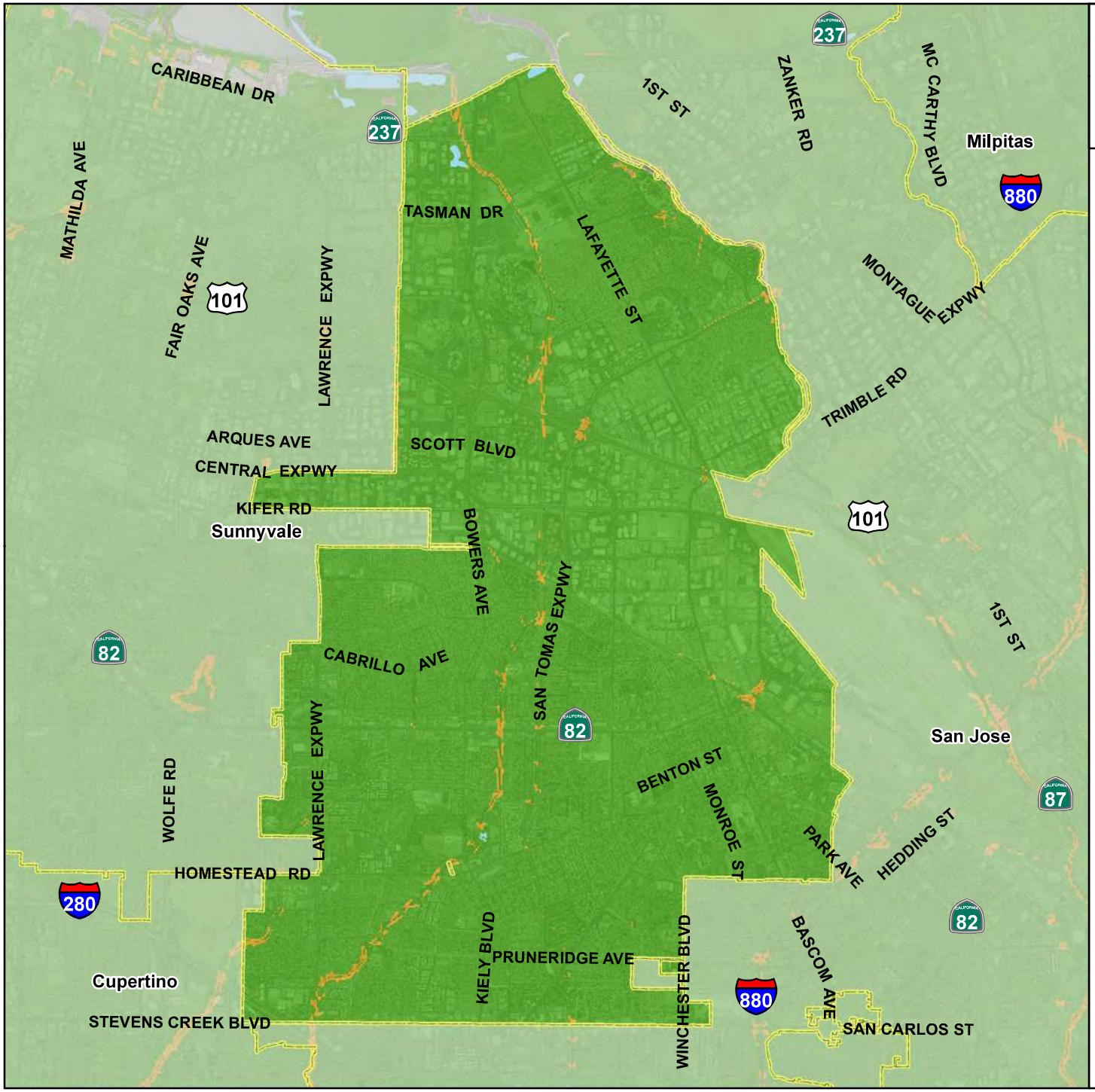
TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, FEMA, USDA



The City of Santa Clara

Landslide Susceptibility Zones

Santa Clara County Boundary

Jurisdictional Boundaries

Water Bodies & Channels

Type

- Low
- Moderate
- High
- Very High / Existing

Source dataset created by Wills C.J., Perez, F., Gutierrez, C., 2011, Susceptibility to deep-seated landslides in California: California Geological Survey Map Sheet 58

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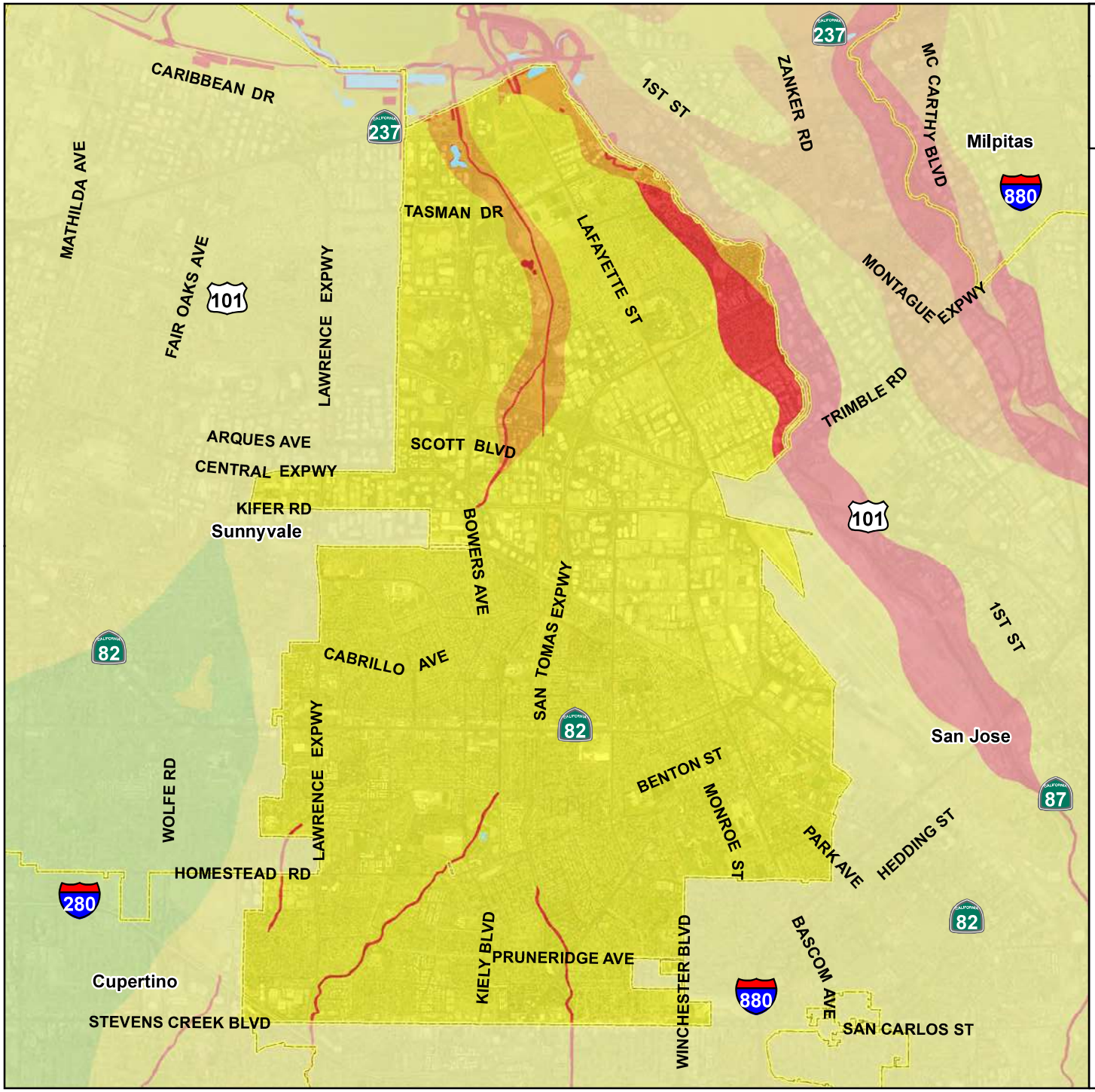
Miles

TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, California Geological Survey, USDA, USGS



The City of Santa Clara

Liquefaction Susceptibility

- Santa Clara County Boundary
- Jurisdictional Boundaries
- Water Bodies & Channels
- No Liquefaction Data Available

Susceptibility to Liquefaction

- Very Low
- Low
- Medium
- High
- Very High

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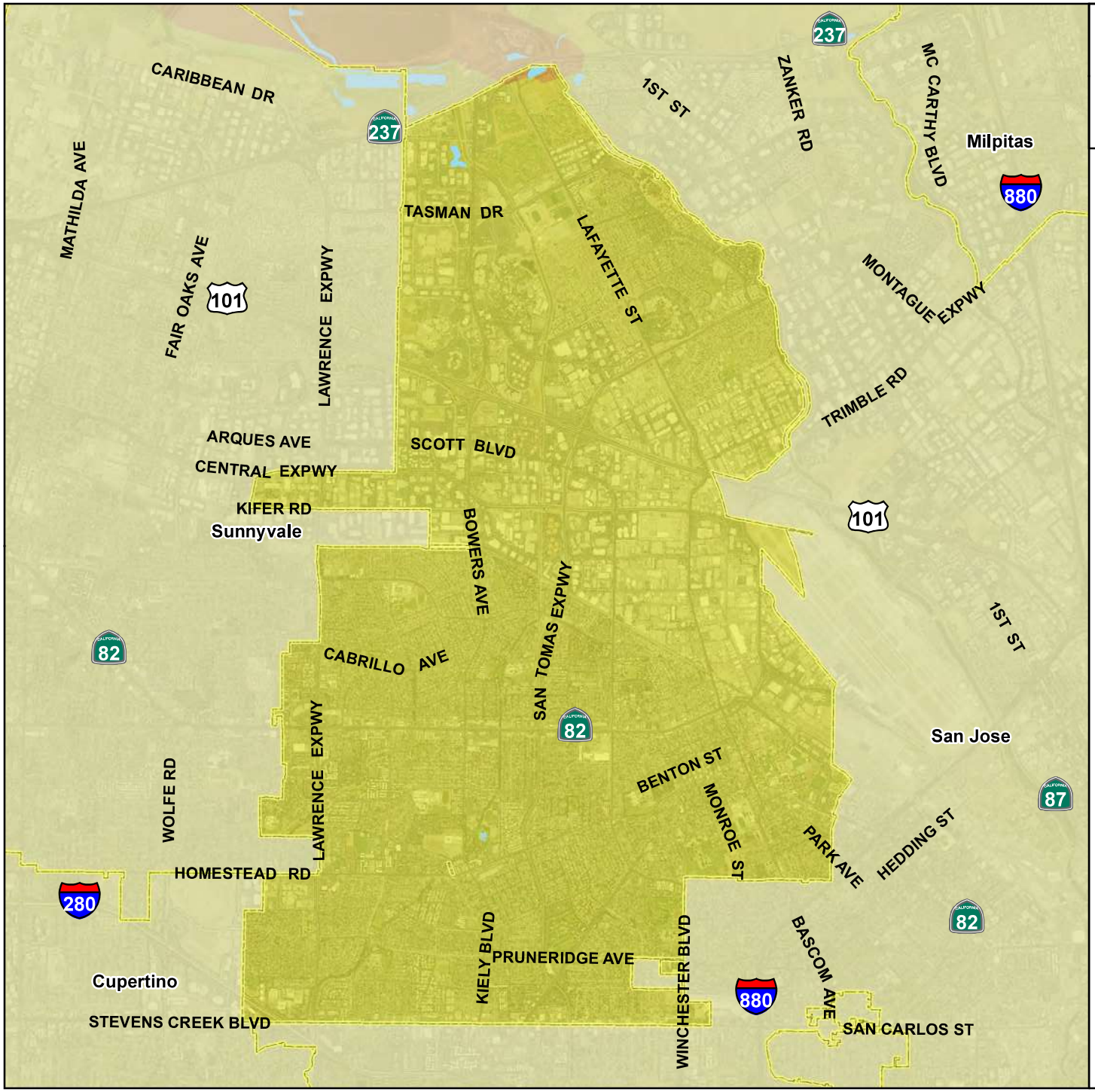
Miles

TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, California Geologic Survey, USDA, USGS



The City of Santa Clara

NEHRP (National Earthquake Hazard Reduction Program) Soils

Santa Clara County Boundary

Jurisdictional Boundaries

Water Bodies & Channels

NEHRP Site Class / Soil Profile

B / Rock

C / Very Dense Soil - Soft Rock

D / Stiff Soil

E / Soft Soil

N
W E
S

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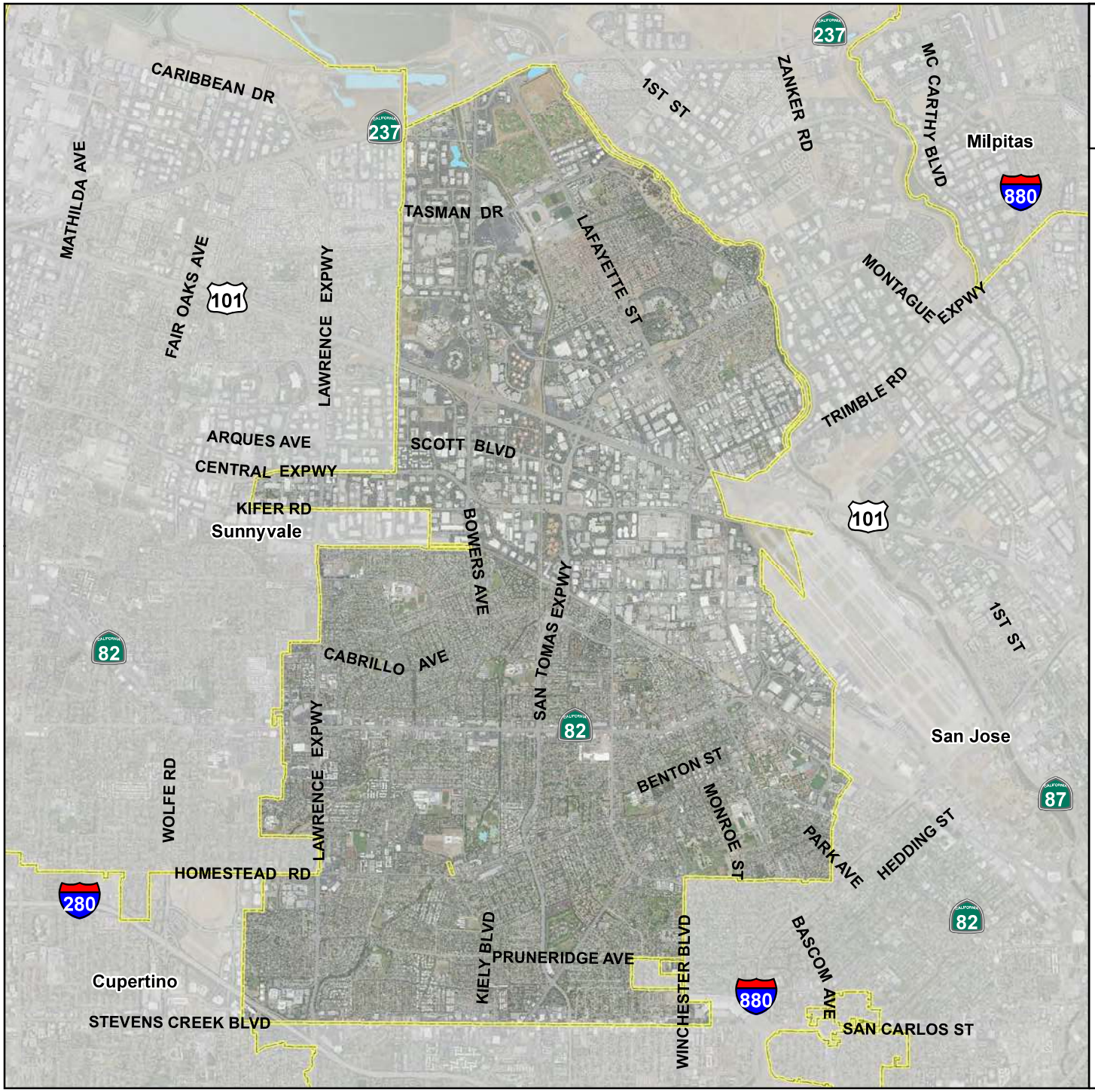
Miles

TETRA TECH

Map Data Sources: Santa Clara County, CalTrans, California Department of Conservation, USDA



The City of Santa Clara

Wildfire Severity Zones

Santa Clara County Boundary

Jurisdictional Boundaries

Water Bodies & Channels

Wildfire Severity Zone

Moderate

High

Very High

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W E
S

0 0.5 1 2

Miles

Map Data Sources: Santa Clara County, CalTrans, CalFIRE, USDA