

# 2015-16 Local Hazard Mitigation Plan Update

City of Vacaville  
Planning Committee Meeting #1  
August 20<sup>th</sup>, 2015



**CITY OF VACAVILLE**  
**LHMP**



# Agenda

- Part I

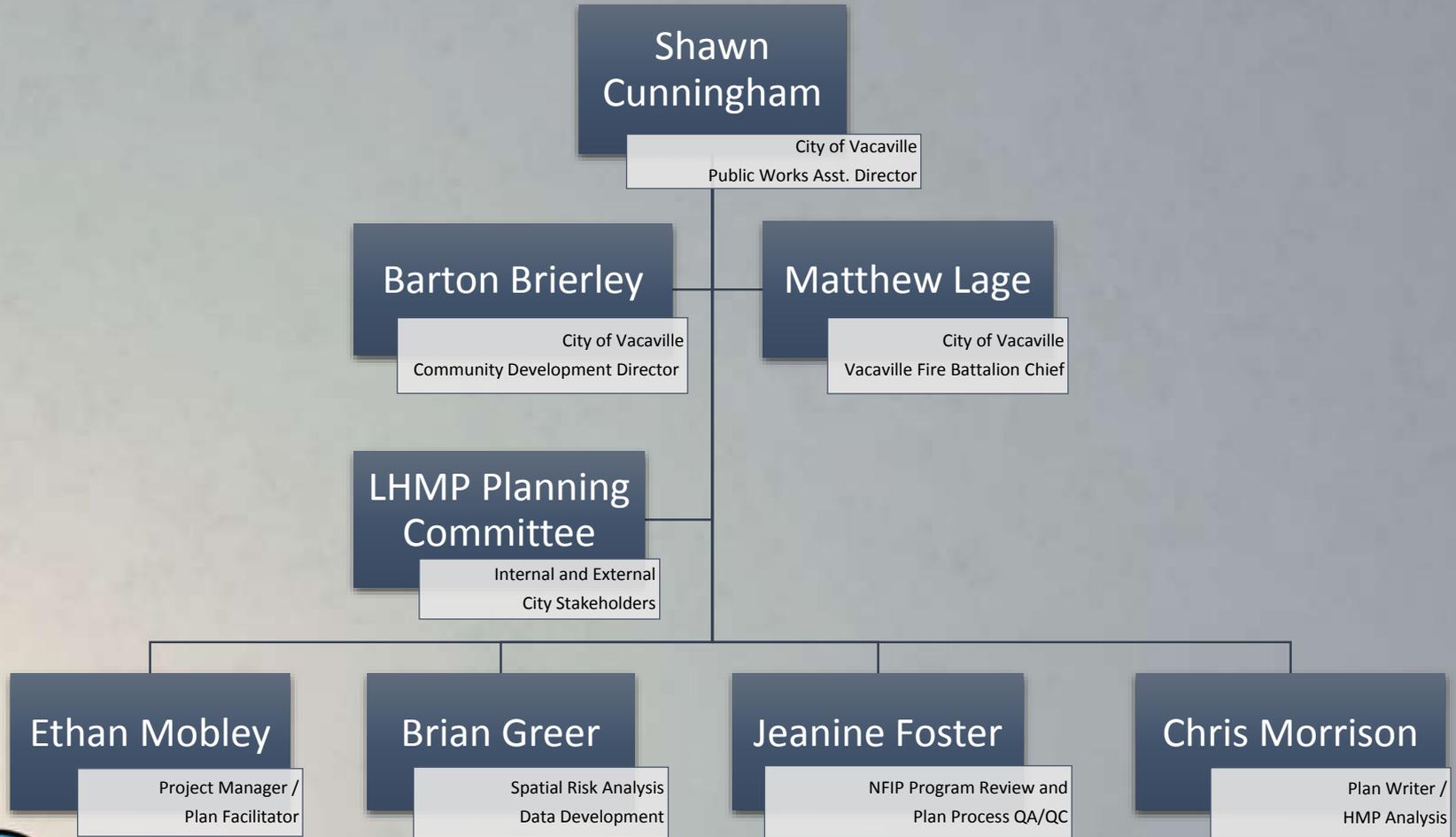
- Welcome and Introductions
- Mitigation Planning Defined
- Background
- Local Hazard Mitigation Planning Process
- Overall Objectives
- Project Schedule

- Part II

- Hazard Identification and Risk Assessment (HIRA) process
- Local Hazard Initial Review
- Critical Infrastructure / Essential Facility Review
- Hazus Earthquake Scenario Development
- Next Steps



# Team Org Chart



# The know how!

- **National and Regional Hazard mitigation know how!**
- **Our team members have managed and authored:**
  - Local mitigation planning process updates
  - State mitigation planning process updates
  - Assisted with FEMA's "Integrating Hazard Mitigation Into Local Planning"
  - **Solano County's 2010 Multi-Hazard Mitigation Plan Update**



## Integrating Hazard Mitigation Into Local Planning

Case Studies and Tools for Community Officials

March 1, 2013



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# PART I

- Mitigation Planning Defined
- Background
- Local Hazard Mitigation Planning Process
- Overall Objectives
- Project Schedule



# Hazard Mitigation Defined

- **What is Hazard Mitigation?**

- Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to life and property resulting from natural hazards. What is a Mitigation Plan?
- Recognition of potential hazards and actions to curb possible effects
- Includes Hazard Identification and Risk Assessment (HIRA)
- Solidifies Mitigation Strategy
- Provides Planning Process Documentation for State and Feds

- **Why have a Mitigation Plan?**

- Results in saved lives, reduced injuries, reduced property damages, and protection for the environment
- Ensures staff and public consensus toward common goal
- Focuses efforts and limited resources
- Must have “approved plan” for Hazard Mitigation Program Grant access.
- Augment local capital improvement funding!
- California is disaster prone!



# Background

- Disaster Mitigation Act (DMA) 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance.
- FEMA requires an update every 5 years!
- City of Vacaville's "Third" hazard mitigation plan update.
  - 2005 Conducted by Association of Bay Area Governments (ABAG)
  - 2010 Conducted by ABAG (Adopted June 2011)
  - 84 Current Mitigation Actions
- Current Planning Effort backed by Hazard Mitigation Grant Program (HMGP), through the California Governor's Office of Emergency Services (OES)



# MHP Process and Components

## Planning Process

The planning process is predefined by federal regulations. The requirements and procedures for State, Tribal and Local Mitigation Plans are found in the Code of Federal Regulations (CFR) at:

Title 44, Chapter 1, Part 201 (44 CFR Part 201)

DMA (44 CFR 201.6)	Common Name
<b>(1) Organize Resources</b>	
201.6(c)(1)	Organize to prepare the plan
201.6(b)(1)	Involve the public
201.6(b)(2) and (3)	Coordinate with other agencies
<b>(2) Assess Risks</b>	
201.6(c)(2)(i)	Assess the hazard
201.6(c)(2)(ii) and (iii)	Assess the problem
<b>(3) Develop the Mitigation Plan</b>	
201.6(c)(3)(i)	Set goals
201.6(c)(3)(ii)	Review possible activities (actions)
201.6(c)(3)(iii)	Draft an action plan
<b>(4) Plan Maintenance</b>	
201.6(c)(5)	Adopt the plan
201.6(c)(4)	Implement, evaluate, and revise



# FEMA How to Components Planning Process

## Organize Resources

- Build Planning Team
- Develop Public Outreach Strategy
- Review and Incorporate Existing Plans, Studies, Reports, and other technical data/information



## Assess Risks

- Identify/Profile Hazards
- Assess Vulnerabilities



## Develop Mitigation Plan

- Identify Goals
- Develop Capabilities Assessment
- Review past/current mitigation measures
- Identify new mitigation measures



## Draft Plan

- Background Information
- Plan Maintenance
- Document Authority and References



## Plan Review/Revision

- Review Final Draft with Planning Committee and Public



## Plan Adoption/Submittal

- Prepare Crosswalk for Submittal to FEMA Region IX and Cal EMA



# Scope of Work

## Planning process

- **TASK 1: PROJECT MANAGEMENT**

- Maintain a critical path method schedule
- Monthly progress reports
- Meeting Documentation and Support

- **TASK 2: PLANNING, RESOURCE ASSESSMENT & OUTREACH**

- Stakeholder Organization
- Meeting Facilitation
- Develop & Implement Public Outreach Strategy
- Present at two Council Study Sessions at initial outreach and prior to OES submittal

- **TASK 3: COMMUNITY CAPABILITIES & RISK ASSESSMENT**

- **Community Capabilities**
  - Resource Inventory
  - Infrastructure Inventory
  - NFIP Program Review

- **TASK 3 CONT.:**

- **Risk Assessment & Vulnerability Analysis**

- Develop Hazard Profiles
- Repetitive Loss Structure Review
- Hazus Level 2 Risk Assessment
- City Parcel Based Exposure
- Population Exposure Analysis
- Data Visualization and Mapping

- **TASK 4: DEVELOP MITIGATION ACTIONS & STRATEGY**

- Mitigation Goals and Policy Review
- Develop Overall Implementation Strategy
- Develop Mitigation Implementation Plans

- **TASK 5: PREPARE DRAFT HAZARD MITIGATION PLAN**

- Develop Admin Draft / Planning Process Documentation
- Socialize and Circulate Plan to Public
- Finalize and submit update plan to Cal OES and FEMA
- Plan Adoption Support



# Beyond Compliance!

## *Planning Process*

- Detailed implementation guidance
- Competitive edge for Pre-Disaster and Post-Disaster Hazard Mitigation Grant Funding
- Community-driven, transparent, and collaborative planning process that is fully documented
- Legitimacy for City decision-making!
- Integrated with other City and Regional planning mechanisms
- Public education and awareness tools (5 year period)
- Communicate risks to your residence



# Planning Process Highlights!

## COMMUNITY CAPABILITIES & RISK ASSESSMENT

- Detailed hazard profiles specifically aimed at risk and actual vulnerability within the city.
- NFIP program review.
- Repetitive loss structure review with field work to identify problem!
- Hazus level 2 risk assessment.
- City parcel based exposure analysis.
- City critical facility exposure analysis.
- Population exposure analysis.

## MITIGATION ACTIONS & STRATEGY

- Completely revamped from 2010 Plan.
- Implementation Strategy based upon public input, planning committee consensus and actual risk!
- Develop Mitigation Implementation Plans based upon available resources and grant opportunities.



# Primary Objectives

- Setting the expectations and define mitigation planning and actions.
- Mitigate the identified risk.
- This is not a response document!
- Create umbrella document with a set prescribed mitigation actions.
- Remain Flexible; Implementation will change over time based upon resources, grants and other leveraging.
- Develop something useful for the public and the City!



# Setting the Expectation!



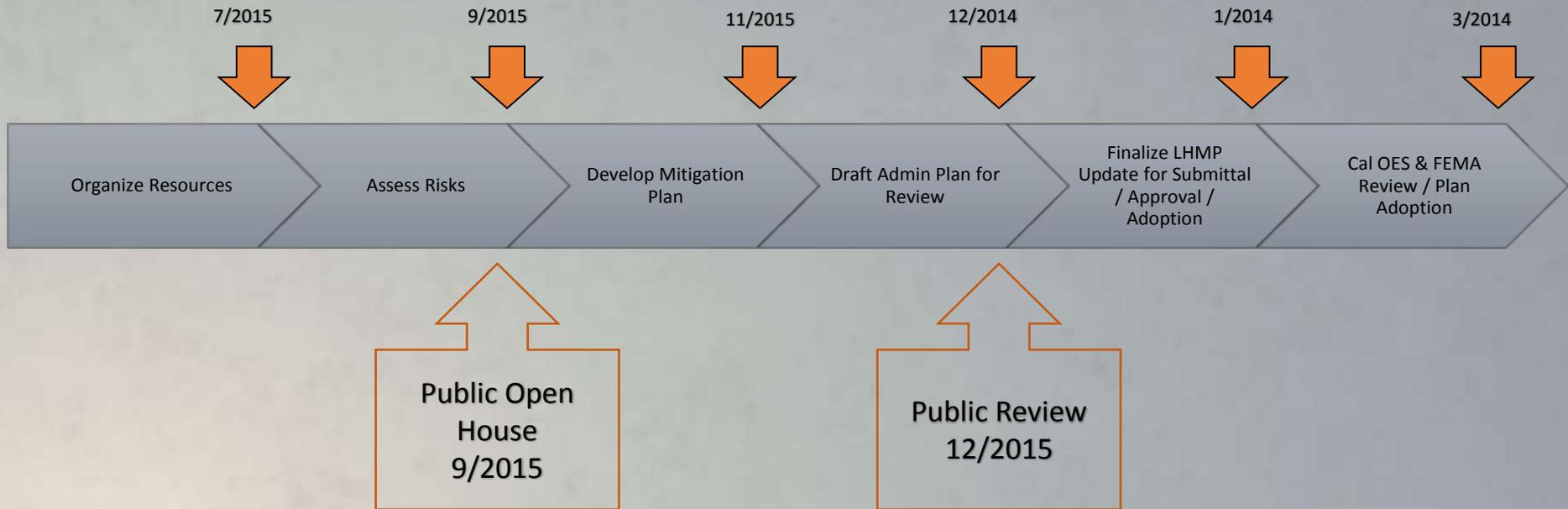
# List of Planning Committee Meetings

- 2-3 HRS in Length.
- Facilitated and Structured
- Information from meetings used to curtail and customize plan
- Required component in the update / planning process

<p><b>Planning Committee Meeting #1</b></p>	<p><b>Part 1:</b>            Welcome and Introductions            Project Overview            LHMP Process and Components            Project Timeline            Questions and Answer Session</p> <p><b>Part 2:</b>            Resources            Public Outreach Strategy            Next Steps</p>
<p><b>Planning Committee Meeting #2</b></p>	<p><b>Part 1:</b>            Hazard Overview and Draft Risk Assessment Outcomes            Community Asset Inventory Review</p> <p><b>Part 2:</b>            Review of Vulnerability Assessment            Group Analysis, Risk Factor Development</p>
<p><b>Planning Committee Meeting #3</b></p>	<p><b>Part 1:</b>            Identify Draft Problem Statements            Goals and Objectives Exercise (introduction)</p> <p><b>Part 2:</b>            Finalize Goals and Objectives            Develop Capabilities</p>
<p><b>Planning Committee Meeting #4</b></p>	<p><b>Part 1:</b>            Review and Prioritize Draft Mitigation Actions</p> <p><b>Part 2:</b>            Develop Implementation Plans</p>



# Schedule



# Next Steps (4 Week Window)

- Outreach
  - Final Prep for Public Open House
    - Hazard Stations
    - Confirm Piggy Back Stations
  - Prepare for Planning Committee Meeting #2
    - Possible Field Trip to Hazard Mitigation Project
  - Finalize and post content for website
  - Finalize Outreach Printed Material
    - Post Cards / Door Hangers / Utility Stuffer
    - 11x17 Poster Hanger



# Next Steps (4 Week Window)

- Risk Assessment
  - Finalize information on local hazards based upon passed profiles and Solano County Plan
  - Develop building / Parcel inventory
  - Finalize Critical Infrastructure Inventory
  - Run Hazus Risk Modeling
  - Define Repetitive Loss Areas



# PART II

- Hazard Identification and Risk Assessment (HIRA) process
- Local Hazard Initial Review
- Critical Infrastructure / Essential Facility Review
- Hazus Earthquake Scenario Development
- Next Steps



# Today's Goals and Accomplishments

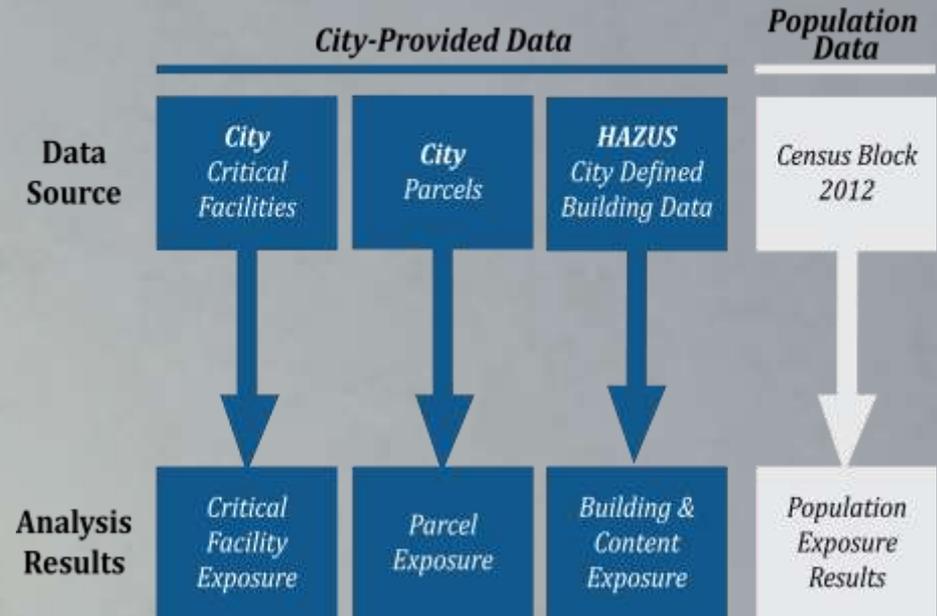
- Validate Critical Facilities / Essential Facilities
- Choose Earthquake Modeling Scenario
- Gather intel on data required for HIRA



# Risk Assessment

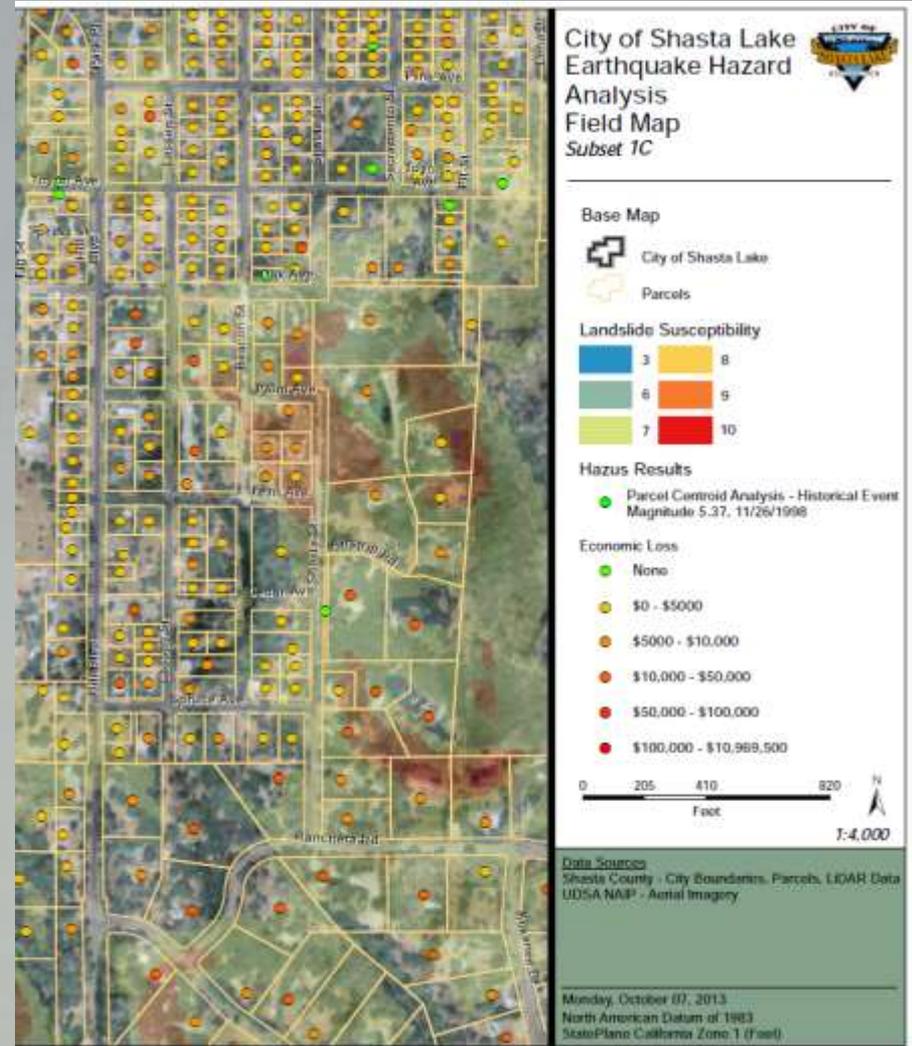
## Planning Process

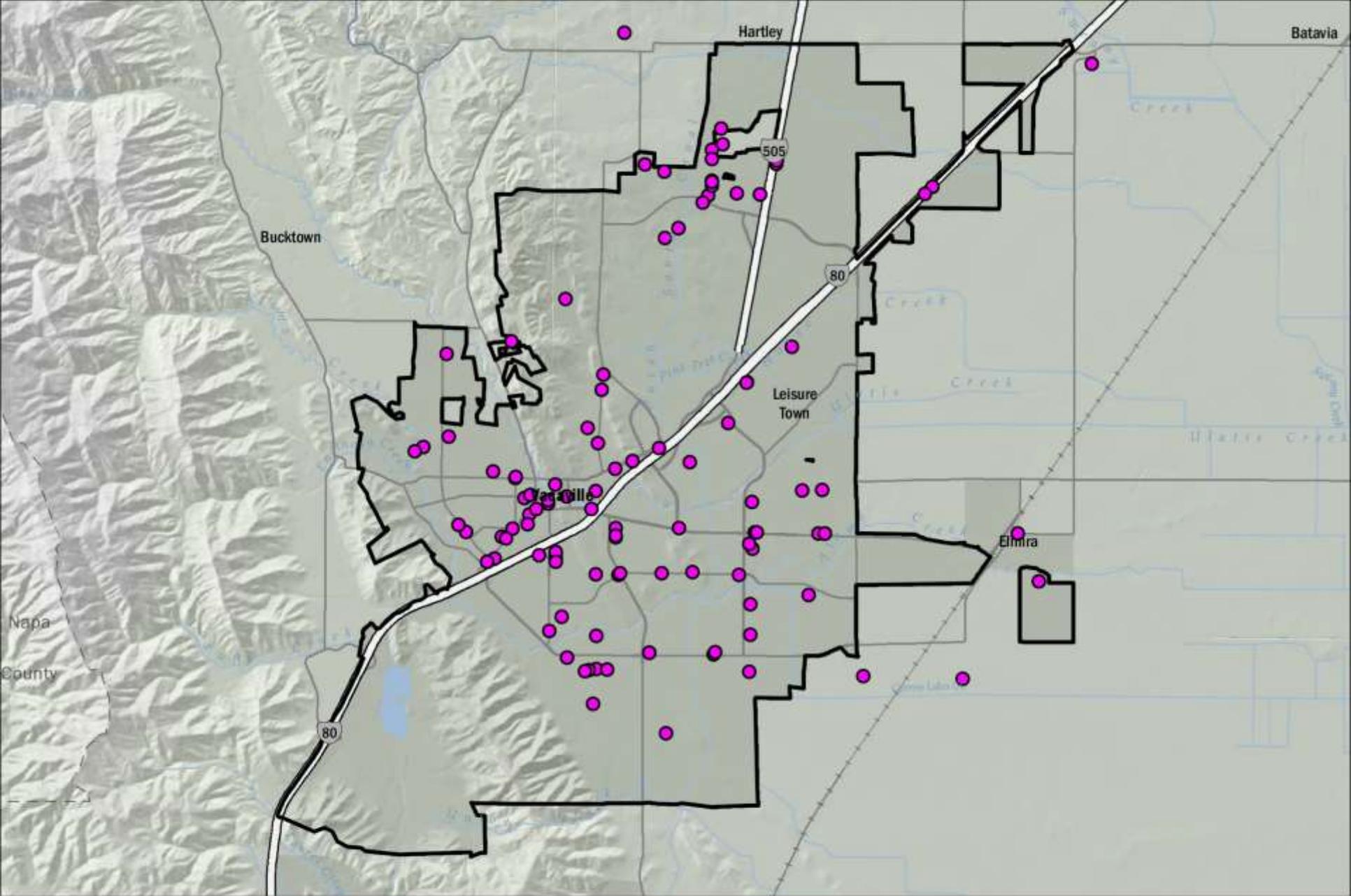
- Develop Population Profiles
- Develop Critical Infrastructure Inventory
- Summarize Vulnerable Assets (Life and Property)
- Estimate Losses
  - Hazus Analysis
  - GIS layering technique for other hazards
- Develop Risk Factor for Profiled Hazards



# Risk Assessment Planning Process

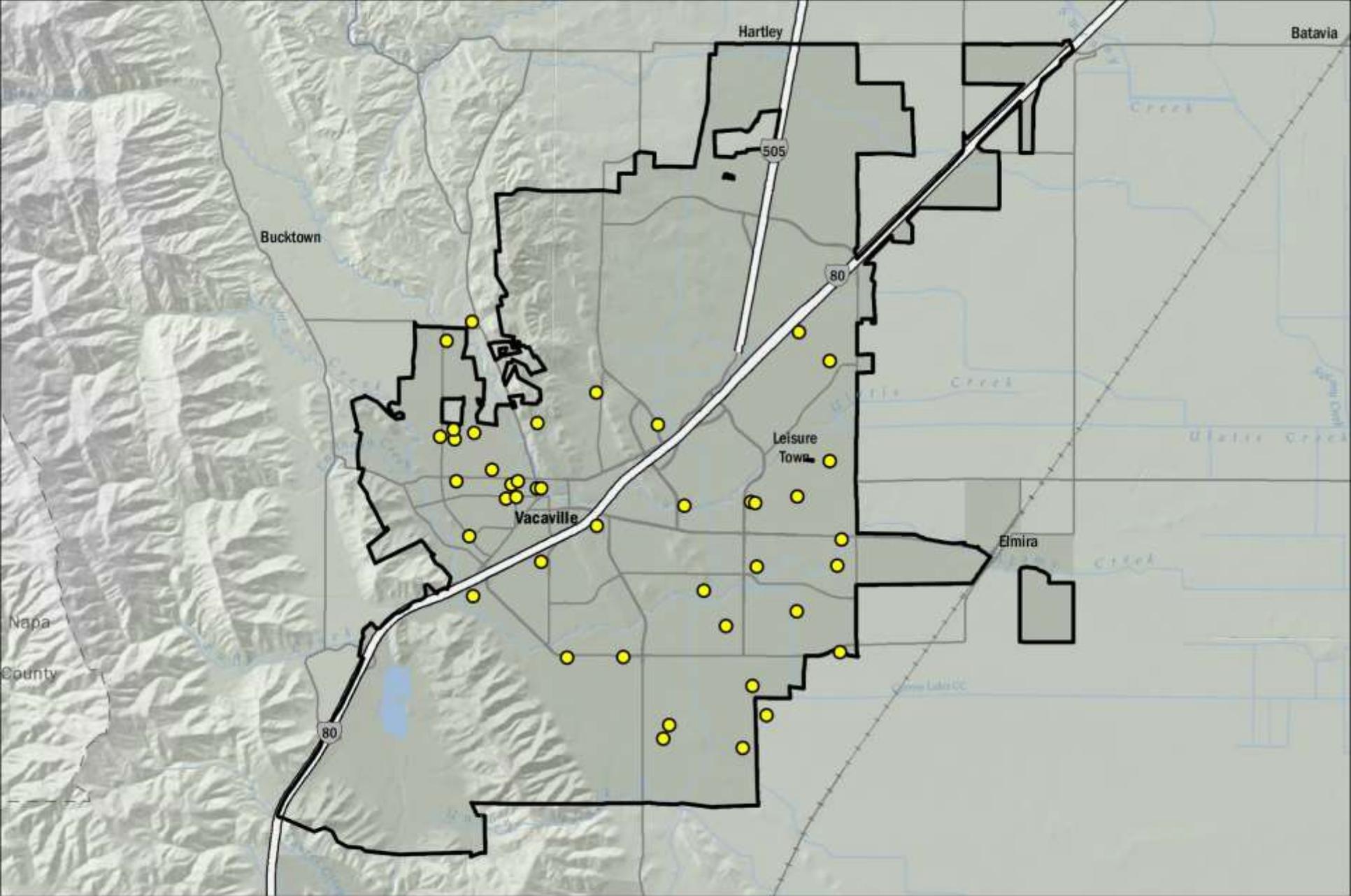
- Define severity zones and map.
- Develop earthquake scenario(s).
- Risk Assessment with loss estimation at the parcel level.
- Target High Loss Areas and field verify with rapid screening.
- Define the problem.





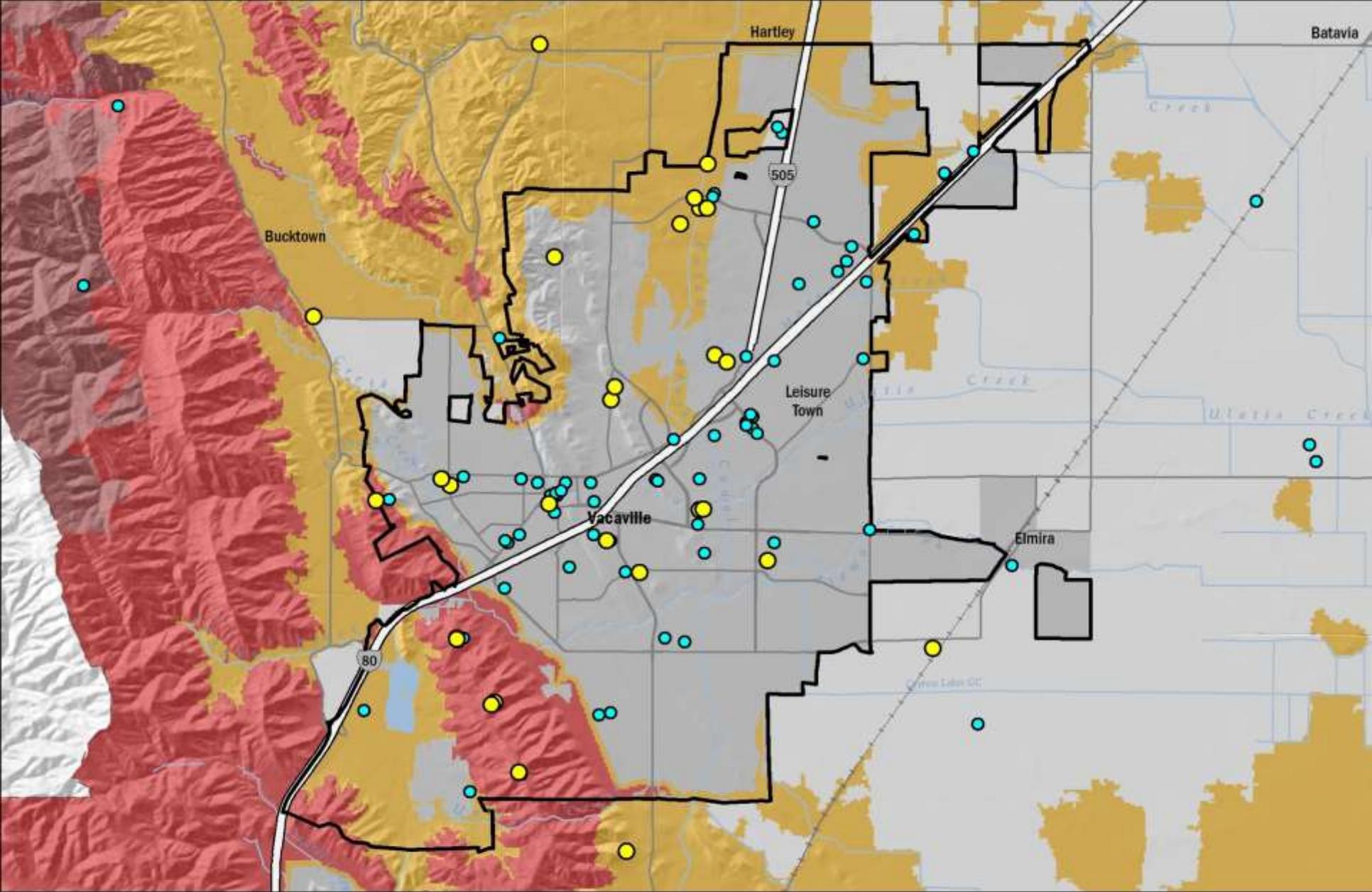
## FACILITIES/INFRASTRUCTURE

● Critical Facilities



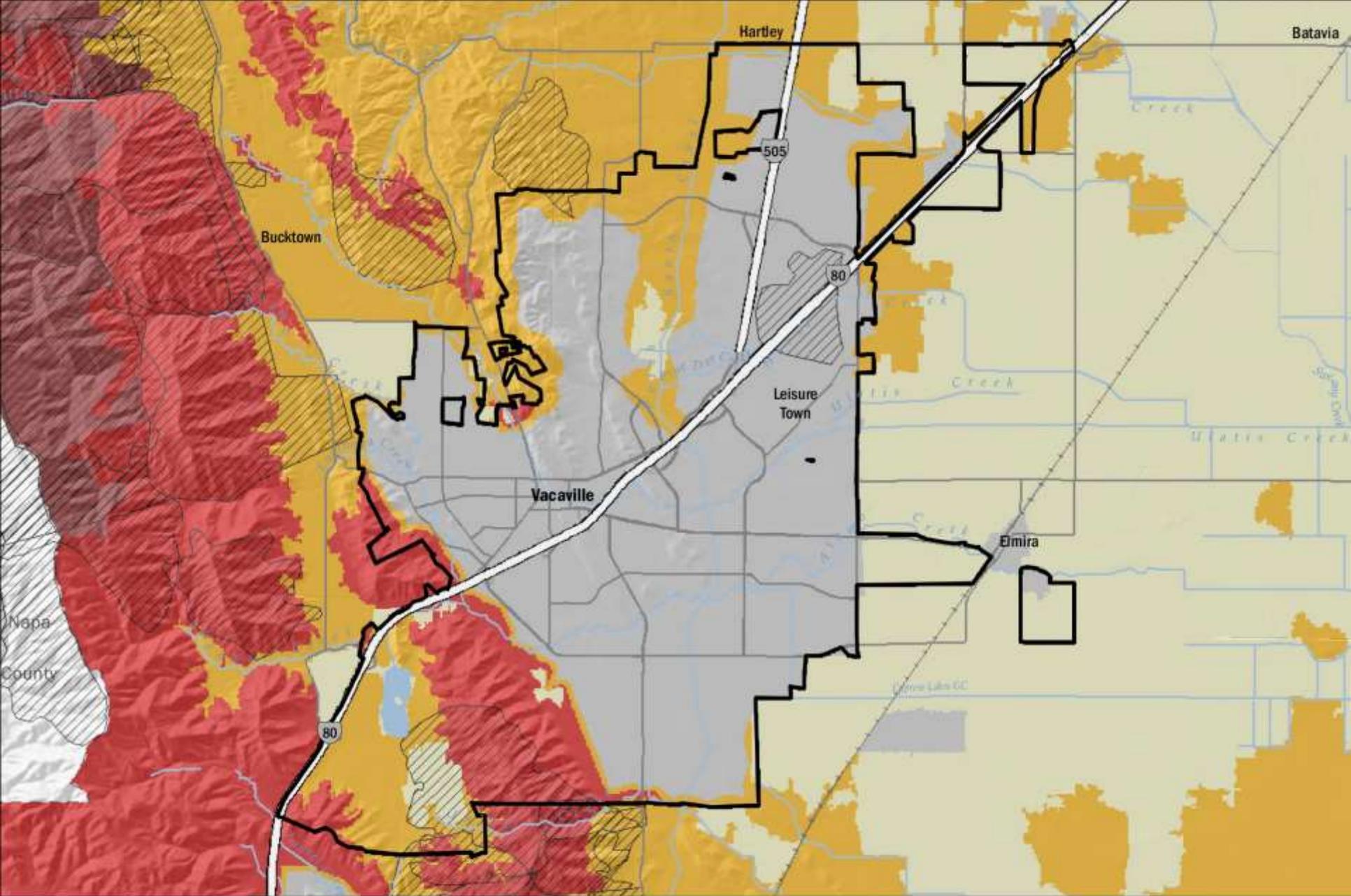
## FACILITIES / INFRASTRUCTURE

● Gathering Facilities



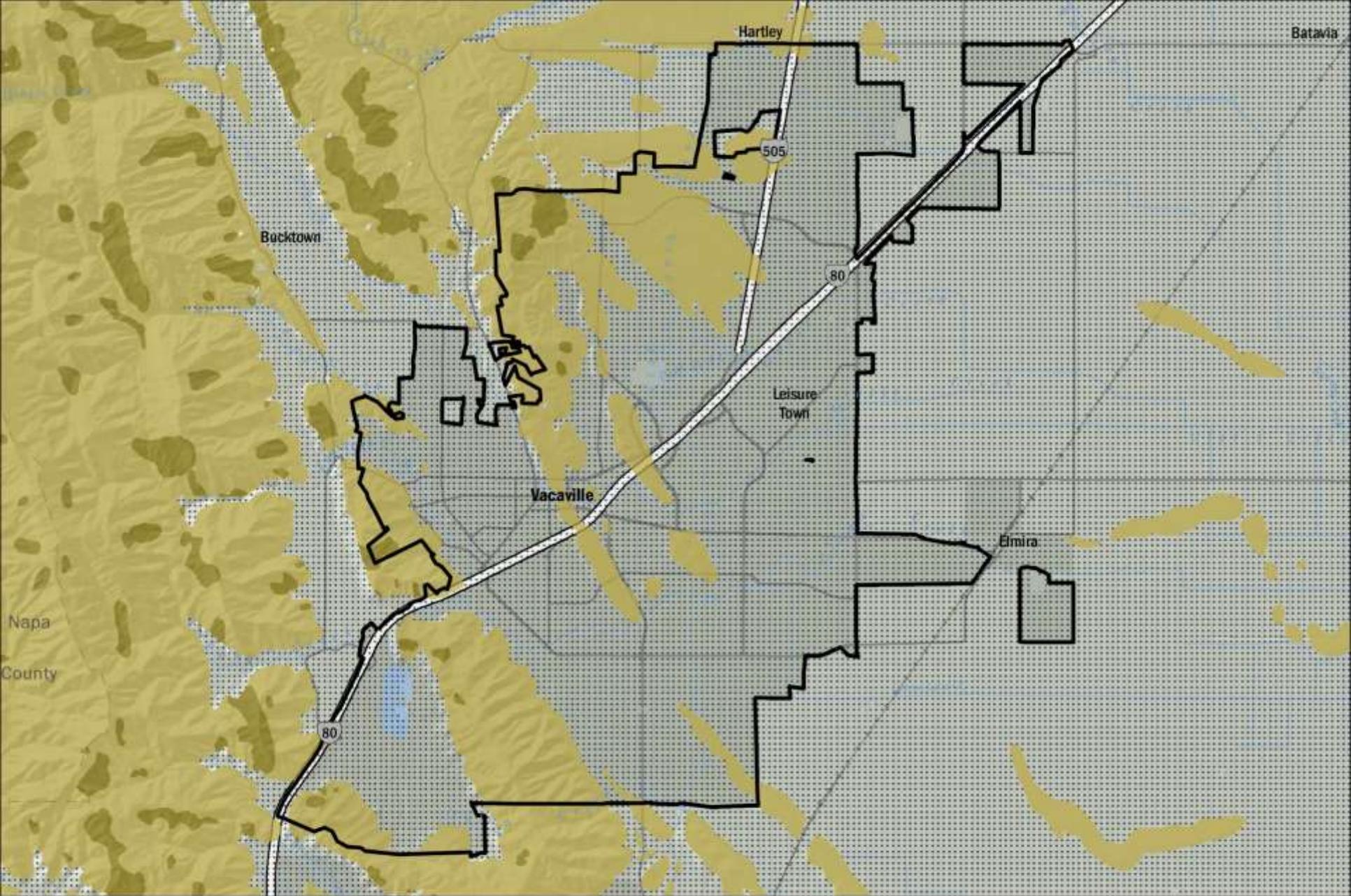
### COMM POINTS + FIRE SEVERITY

- Antenna Structure Registration
- Permitted Transmission Points
- Very High
- High
- Moderate



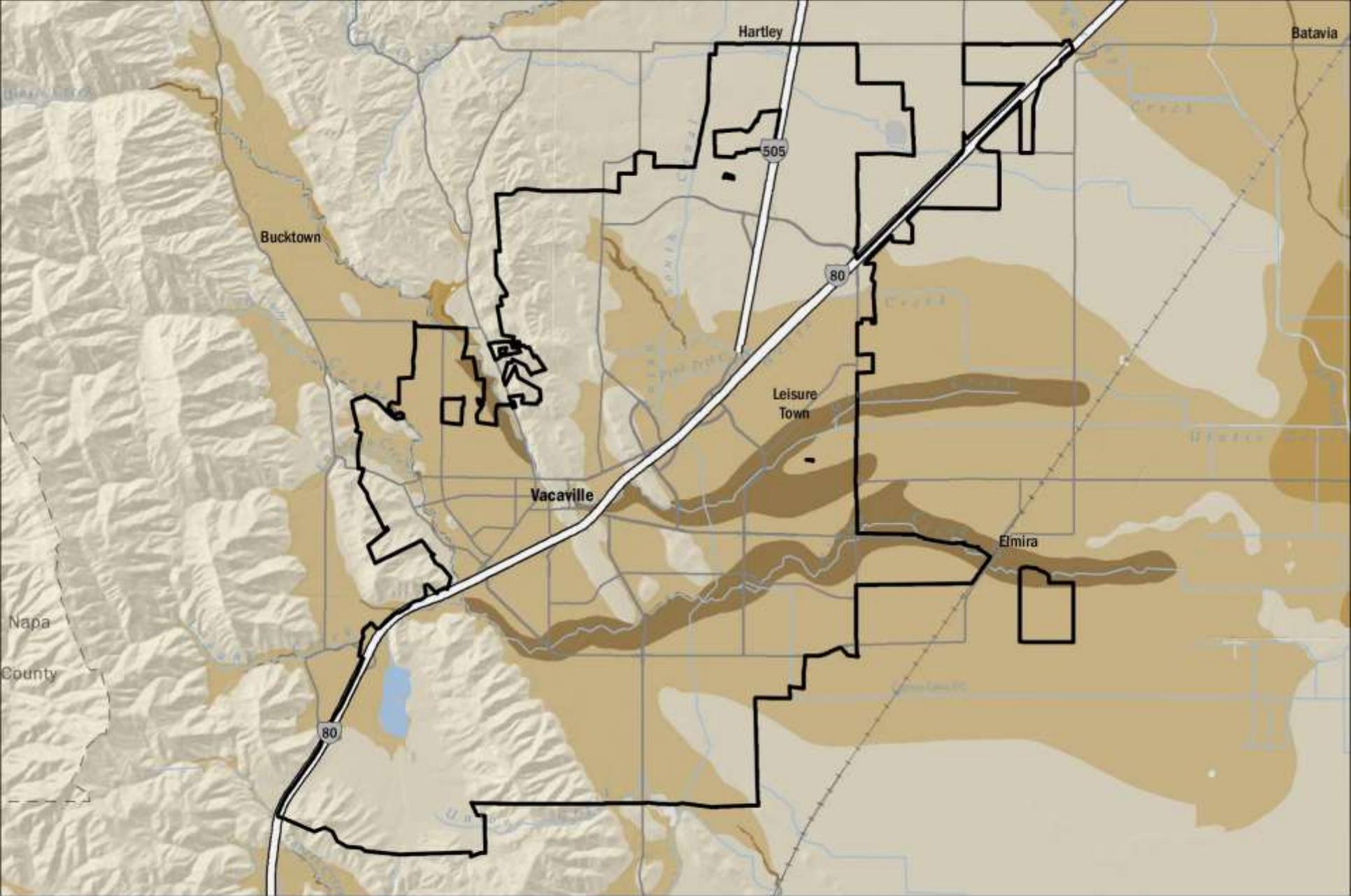
## FIRE SEVERITY | FIRE PERIMETERS





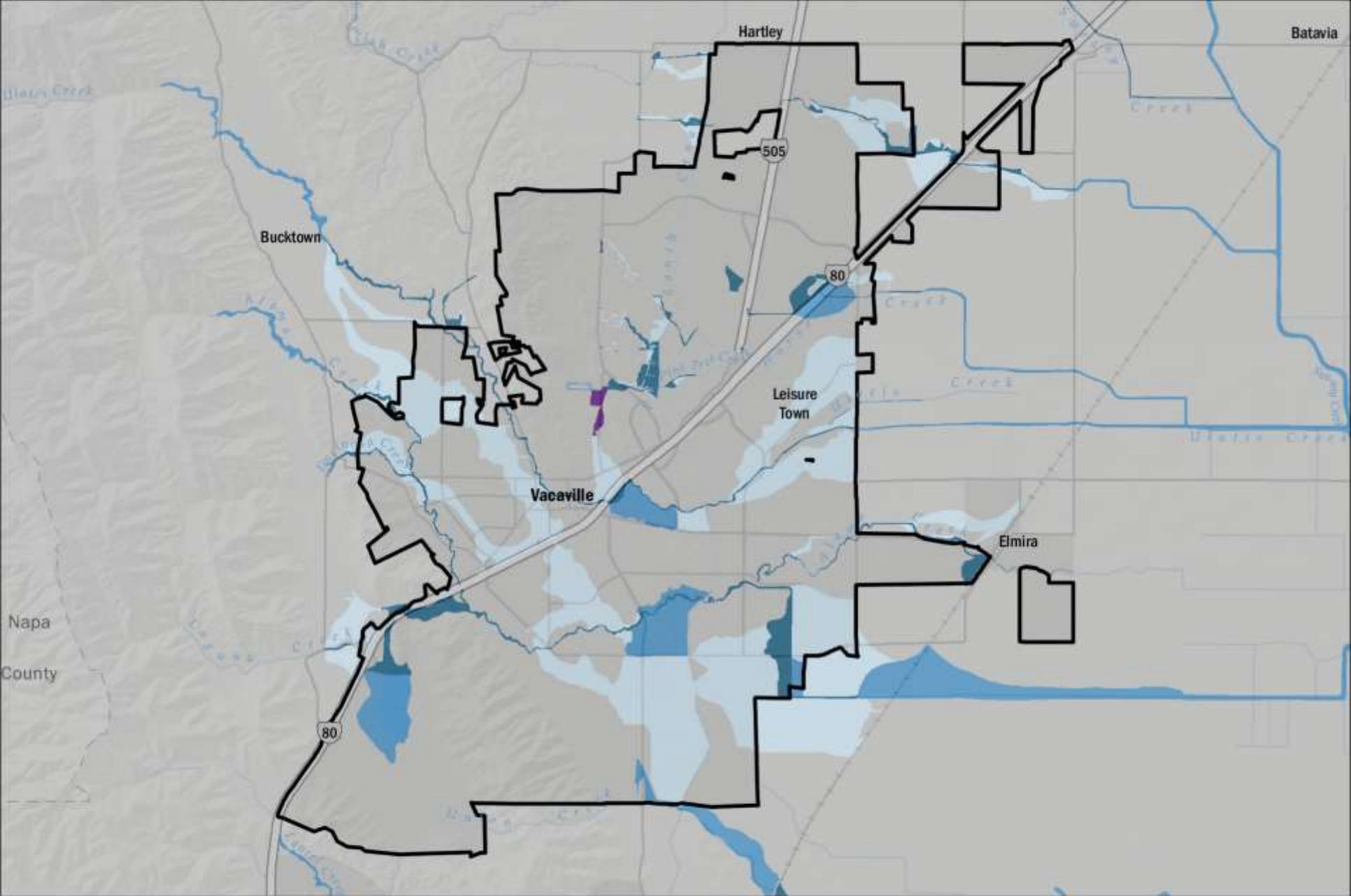
### LANDSLIDE SUSCEPTIBILITY

- mostly landslide
- few landslides
- surficial deposits



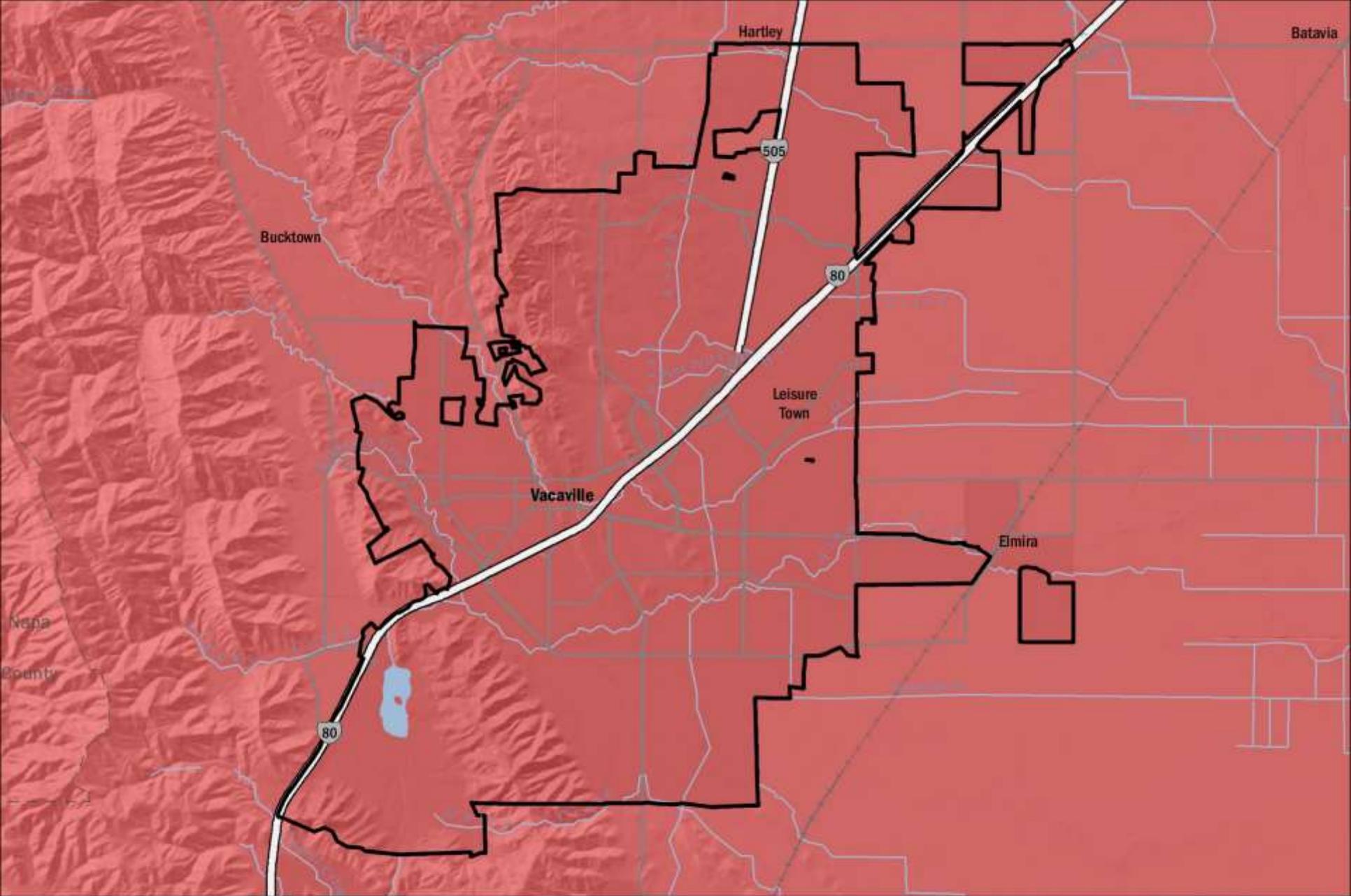
### LIQUEFACTION SUSCEPTIBILITY





### FEMA FLOOD ZONES

- A
- AE
- AO
- X500
- X



## DROUGHT INTENSITY

 Extreme Drought

# EXERCISE

Hazard Prioritization



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# EXERCISE

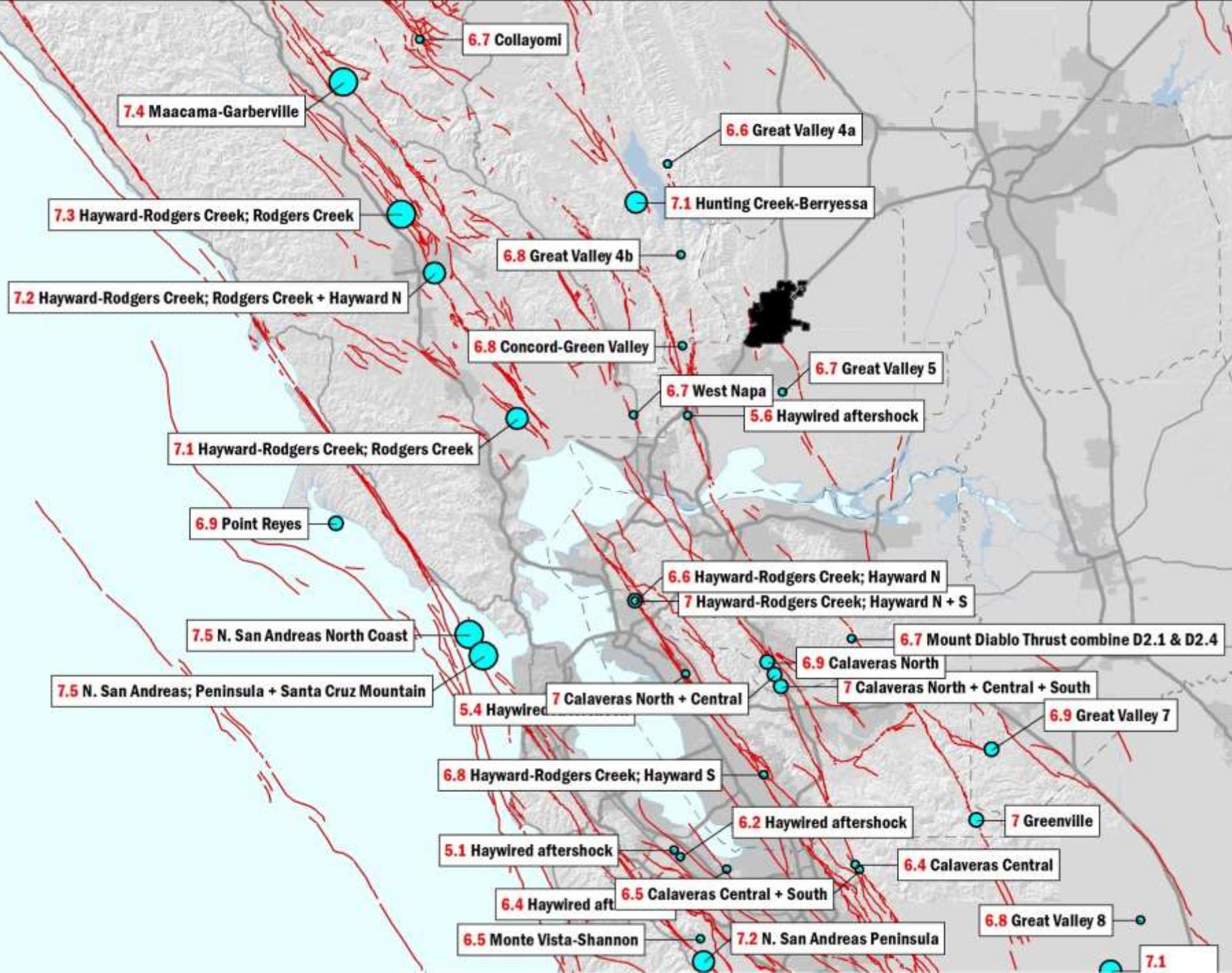
## EQ SCENARIOS DEVELOPMENT

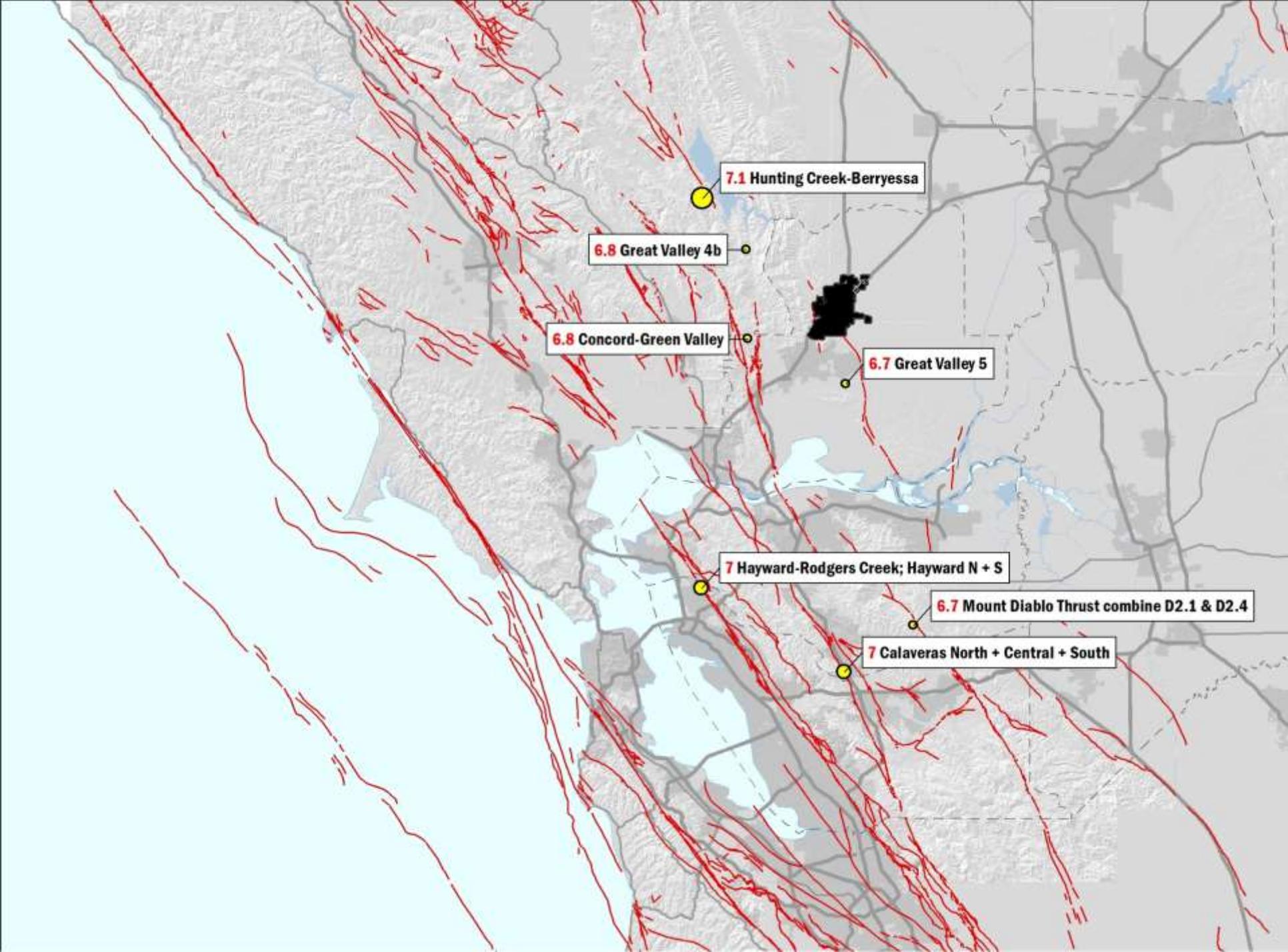


The following is an abbreviated description of the levels of Modified Mercalli intensity.

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.







7.1 Hunting Creek-Berryessa

6.8 Great Valley 4b

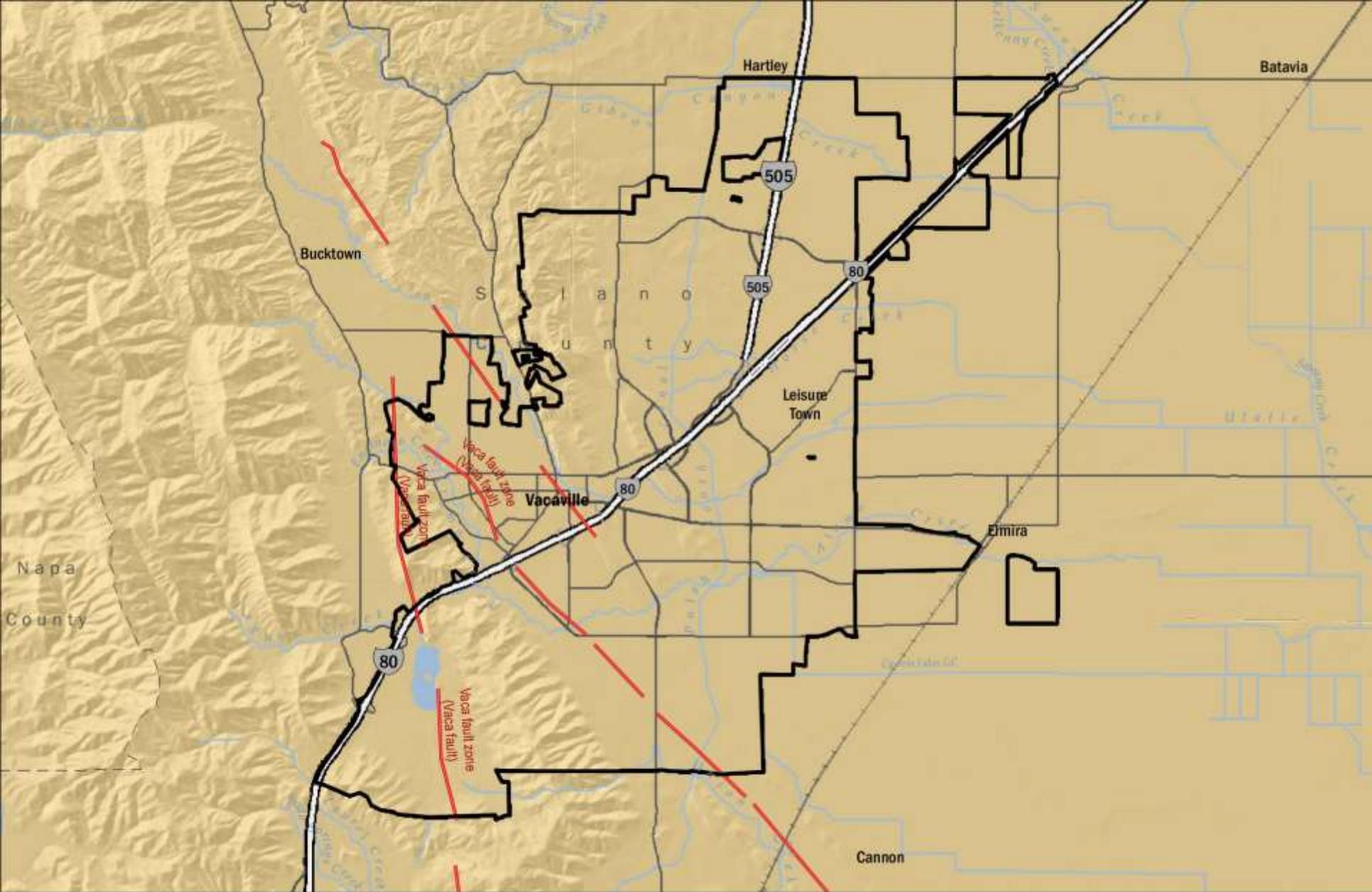
6.8 Concord-Green Valley

6.7 Great Valley 5

7 Hayward-Rodgers Creek; Hayward N + S

6.7 Mount Diablo Thrust combine D2.1 & D2.4

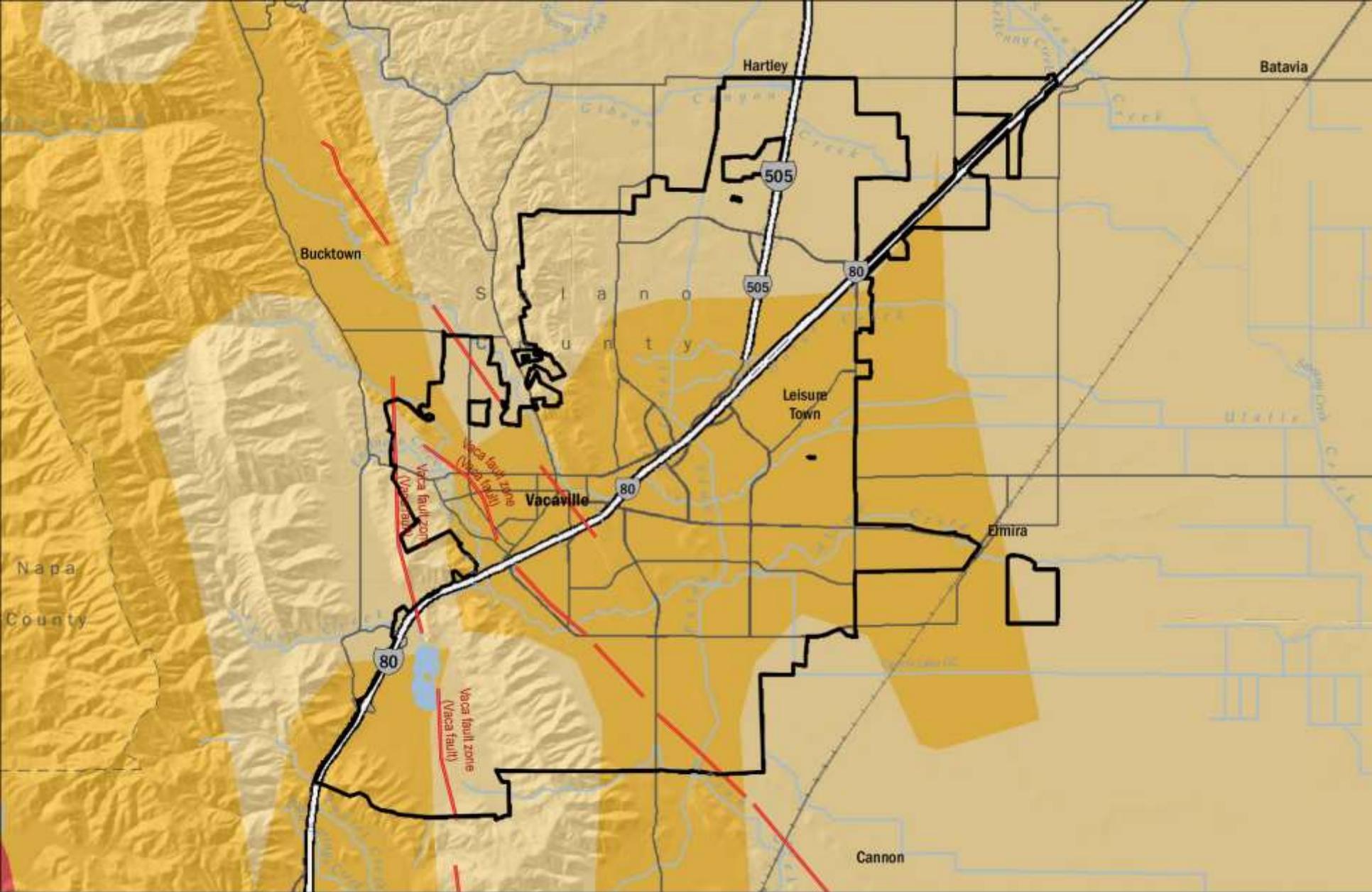
7 Calaveras North + Central + South



**Scenario: Calaveras North + Central + South**

**PROJECTED GROUND SHAKING**

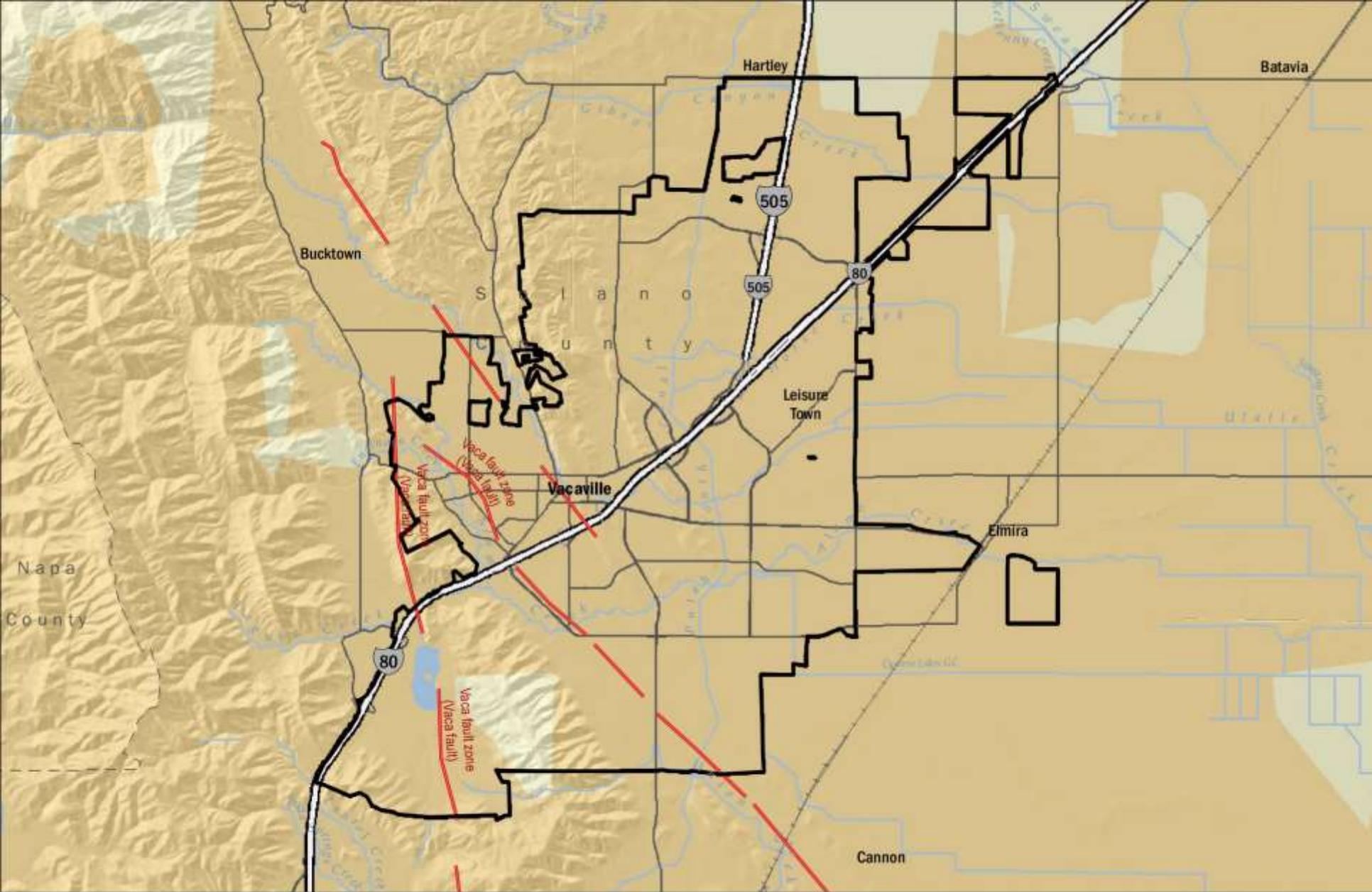
- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent



### Scenario: Concord-Green Valley

#### PROJECTED GROUND SHAKING

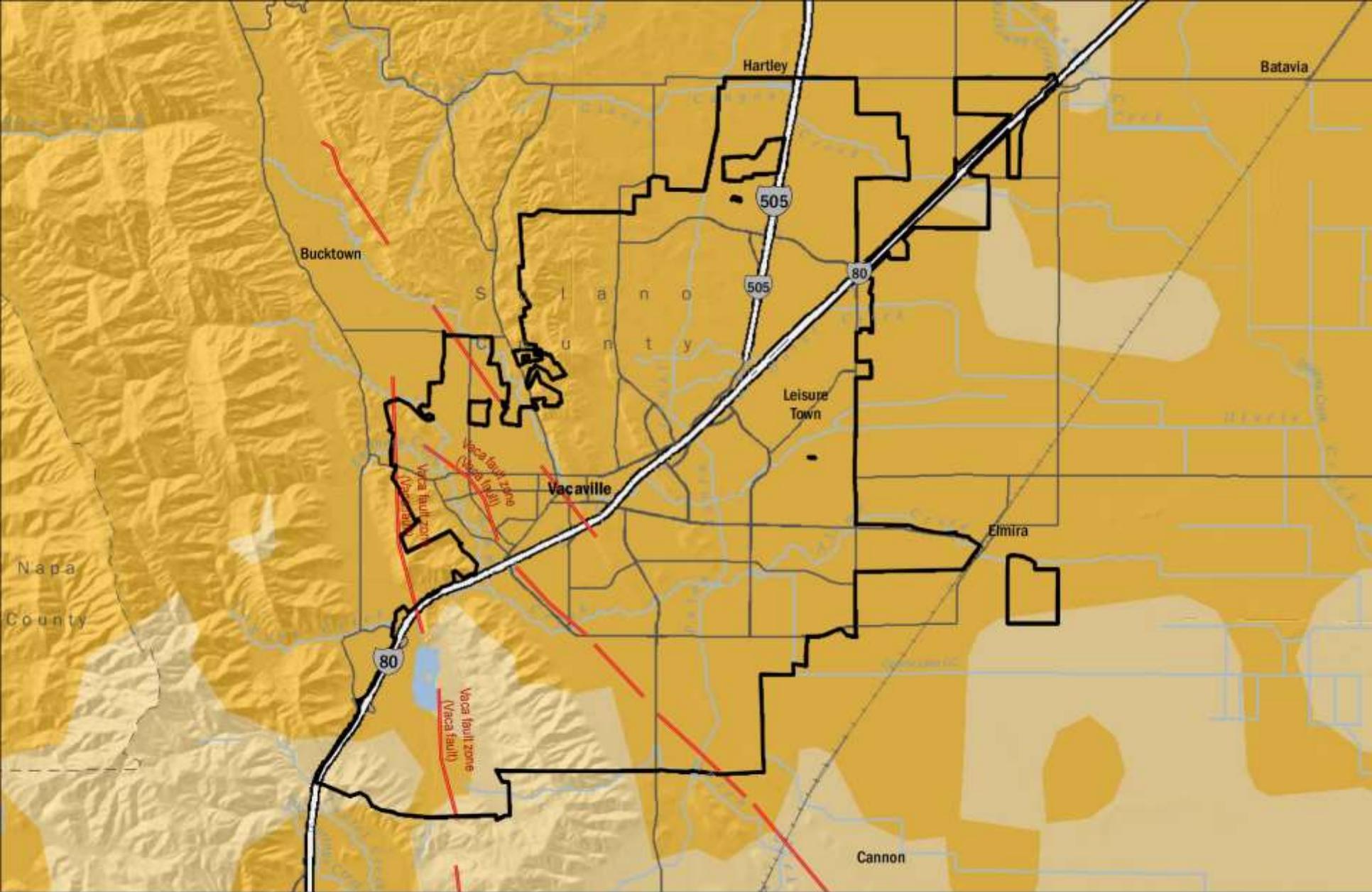
- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent



**Scenario: Hayward-Rodgers Creek; Hayward N + S**

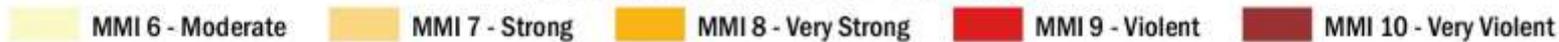
**PROJECTED GROUND SHAKING**

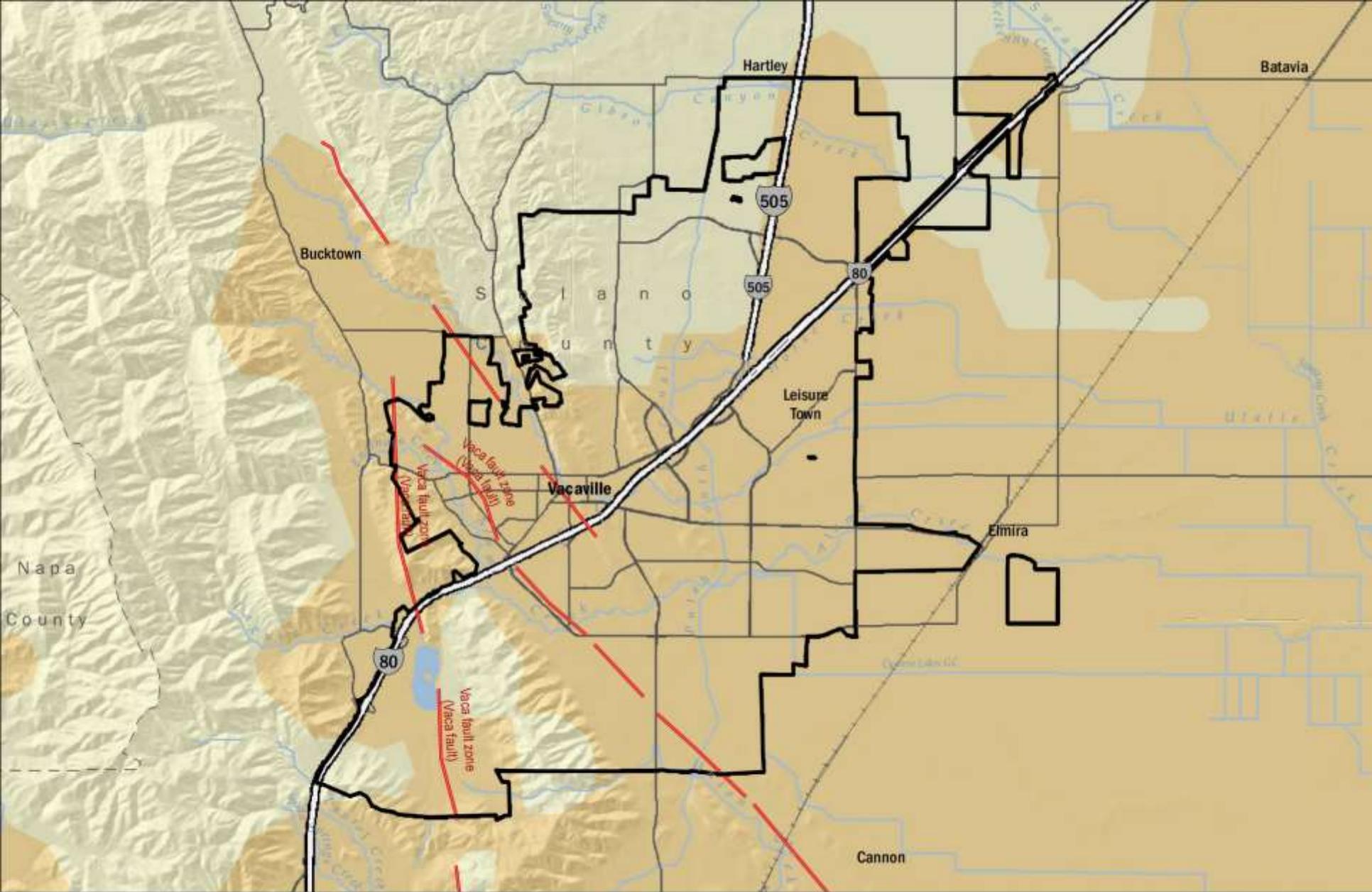
- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent



### Scenario: Hunting Creek-Berryessa

#### PROJECTED GROUND SHAKING

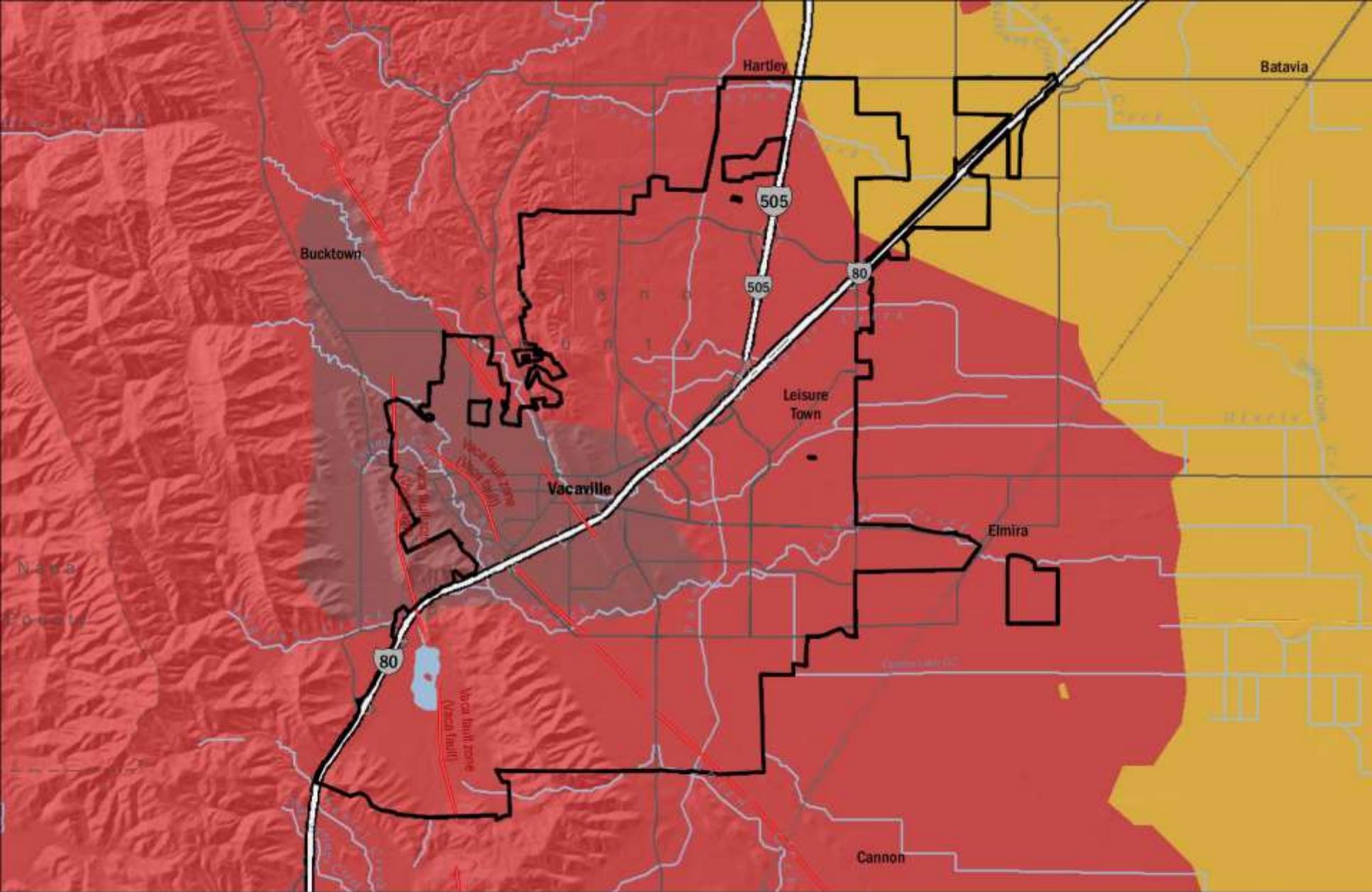




**Scenario: Mount Diablo Thrust combine D2.1 & D2.4**

**PROJECTED GROUND SHAKING**

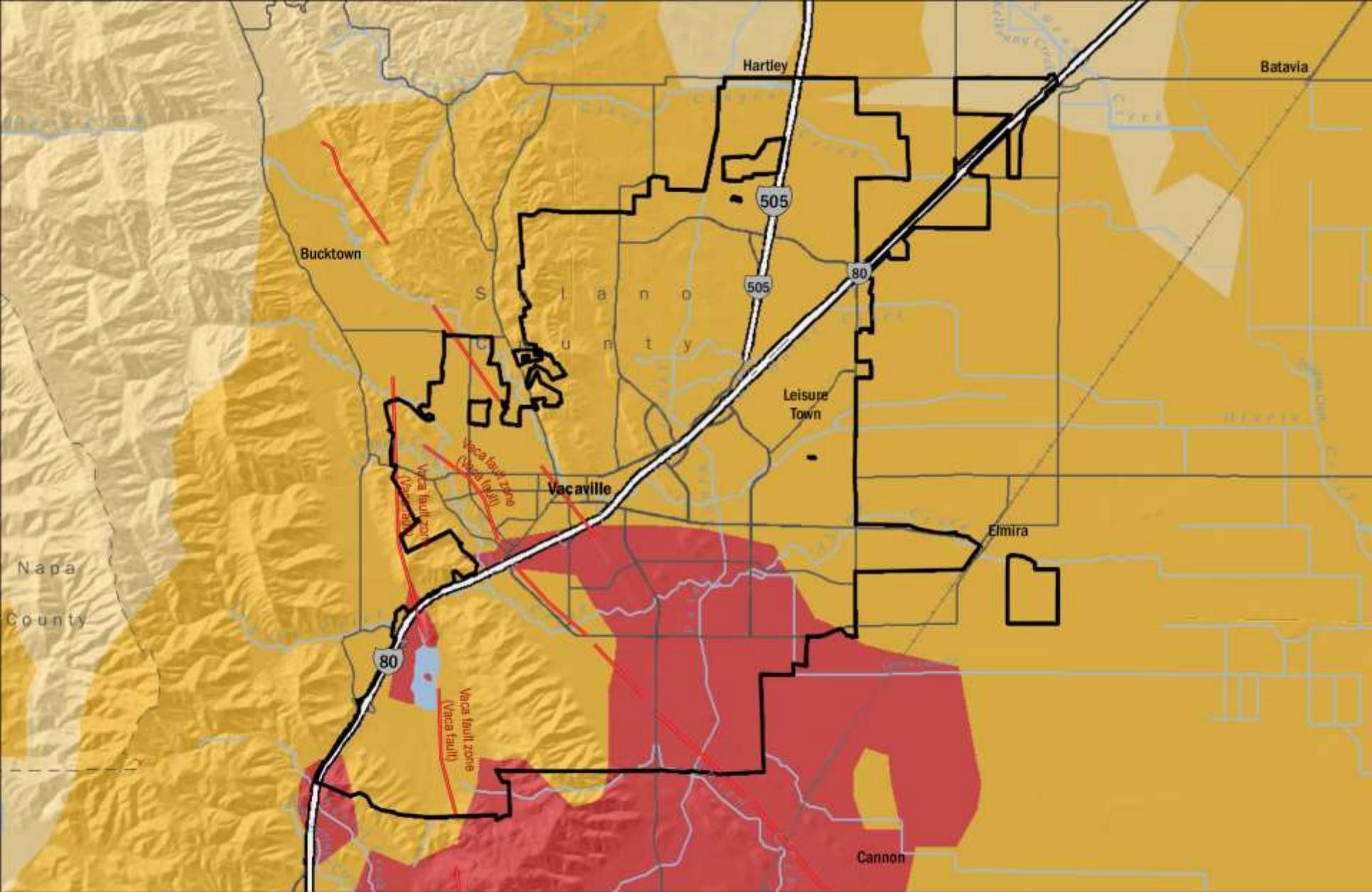
- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent



**Scenario: Great Valley 4b**

**PROJECTED GROUND SHAKING**

- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent



### Scenario: Great Valley 5

#### PROJECTED GROUND SHAKING

- MMI 6 - Moderate
- MMI 7 - Strong
- MMI 8 - Very Strong
- MMI 9 - Violent
- MMI 10 - Very Violent