

TABLE OF CONTENTS

<u>Content</u>	<u>Page Number</u>
 SECTION 1: Legal Requirements	
Letter of Promulgation.....	i
Resolutions.....	ii
 SECTION 2: Hazard Mitigation Planning Process	
Napa County Operational Area Disaster Committee Contact List	1
Planning Process	3
Major Threat: Flooding.....	3
Establishing Goals: Blending Engineering and Ecology	3
Examining Potential Strategies	4
Evaluating Alternative Strategies	4
Citizens For Napa River Flood Management	6
Napa County Flood Zone Map	7
Major Threat: Earthquake	9
Napa Disaster Education Task Force.....	10
Napa County Known Earthquake Faults Map	11
Napa County Alluvial Soils Map.....	13
Major Threat: Wildland Interface Fires	15
Firewise Conference	15
Firewise Conference Participants	17
Napa County Vegetation Fuels Map.....	19
Napa County Vegetation Fuels Hazards Map.....	21
Napa County Wildland Fires 1950 – 2002 Map.....	23
Major Threat: Terrorism and Technological Hazards	25
Napa Terrorism Working Group.....	25
Glassy-Winged Sharpshooter Action Team.....	26
Glassy-Winged Sharpshooter Action Team List	27
Public Meetings on Draft Plan.....	29
Plan Intent and Vision.....	29

TABLE OF CONTENTS (continued)

<u>Content</u>	<u>Page Number</u>
Community Profile.....	31
Napa County Operational Area Profile.....	31
Napa County Major Roads Map	33
City of American Canyon	35
City of Napa.....	39
Town of Yountville.....	45
City of St. Helena.....	49
City of Calistoga	53

SECTION 3: Risk Assessment

Hazard Identification	57
Napa Hazard Analysis Data	57
Napa Hazard Analysis Graph.....	58
Flood Hazard.....	59
Flood History	59
Napa County Flood Zone Map	61
Calistoga Flood Zone Map.....	63
St. Helena Flood Zone Map.....	65
Yountville Flood Zone Map.....	67
Napa Flood Zone Map	69
American Canyon Flood Zone Map	71
Napa River Flood Control Project	73
Napa County Small Stream Flood Threats	75
Earthquake Hazard.....	77
Soil Types on the Napa Valley Floor.....	77
Hazus Information	78
Hazus Modeling of Three Probable Events	79
Rodgers Creek Fault	79
Concord/Green Valley Fault.....	81
West Napa Fault.....	83
GIS Maps and Hazus	86
Napa County	
Soil Slopes and Fault Lines Map	87
Government Buildings and Fault Lines Map.....	89
Public Safety and Fault Lines Map.....	91
Medical Facilities and Fault Lines Map.....	93
Schools and Fault Lines Map.....	95
Childcare Facilities and Alluvial Soils	97

TABLE OF CONTENTS (continued)

<u>Content</u>	<u>Page Number</u>
American Canyon	
Soil Slopes and Fault Lines	99
Public Safety and Fault Lines Map.....	101
Medical Facilities and Fault Lines.....	103
Schools and Fault Lines Map.....	105
Childcare Facilities and Alluvial Soils	107
City of Napa	
Soil Slopes and Fault Lines Map	109
Government Buildings and Fault Lines Map.....	111
Public Safety and Fault Lines Map.....	113
Medical Facilities and Fault Lines Map.....	115
Schools and Fault Lines Map.....	117
Childcare Facilities and Alluvial Soils	119
Yountville	
Soil Slopes and Fault Lines Map	121
Public Safety and Fault Lines Map.....	123
Medical Facilities and Fault Lines Map.....	125
Schools and Fault Lines Map.....	127
Childcare Facilities and Alluvial Soils	129
St. Helena	
Soil Slopes and Fault Lines Map	131
Public Safety and Fault Lines Map.....	133
Medical Facilities and Fault Lines Map.....	135
Schools and Fault Lines Map.....	137
Childcare Facilities and Alluvial Soils	139
Calistoga	
Soil Slopes and Fault Lines Map	141
Public Safety and Fault Lines Map.....	144
Medical Facilities and Fault Lines Map.....	145
Schools and Fault Lines Map.....	147
Childcare Facilities and Alluvial Soils	149
Summary of Expected Damage	151

TABLE OF CONTENTS (continued)

<u>Content</u>	<u>Page Number</u>
Wildland Interface Fire Hazard	155
Fire Hazard Severity	156
Wildland Fire History	156
Vegetation Fuels Map	157
Vegetation Fuel Hazard Map	159
Napa County Lands Greater than 500 Feet From a Road Map.....	161
Napa County Slopes Greater than 30% Map	163
Napa County Housing Density Map	165
High Risk High Hazard Areas Map	167
Difficulty of Control Map	169
Napa County Fires 1950 – 1960 Map	171
Napa County Fires 1960 – 1970 Map	173
Napa County Fires 1970 – 1980 Map	175
Napa County Fires 1980 – 1990 Map	177
Napa County Fires 1950 – 2002 Map	179
Technological Hazards.....	181
Agricultural Pestilence.....	181
Hazardous Materials	183
Dam Failure	185
Waste Treatment Plants	187
Terrorism	189
 SECTION 4: Mitigation Strategies	
Local Hazard Mitigation Goals.....	189
Mitigation Objectives and Actions	189
Overview of Hazard Mitigation Proposals by Threat	191
Hazard Type: Flood	191
Hazard Type: Earthquake	192
Hazard Type: Wildland Interface Fire	193
Hazard Type: Technological.....	195
Mitigation Action Items.....	197
Flood Action Items	197
Earthquake Action Items.....	201
Wildland Interface Fire Action Items	205
Technological Action Items	212

TABLE OF CONTENTS (continued)

<u>Content</u>	<u>Page Number</u>
SECTION 5: Plan Maintenance Procedures	
Plan Maintenance	217
Monitoring, Evaluating and Updating the Plan	217
Implementation Through Existing Programs.....	218
Continued Public Involvement	218
 SECTION 6: Federal, State & Local Regulations & Policies219	
 SECTION 7: Appendices	
 Appendix A: Hazard Map Atlas.....221	
Flood Maps	223
Earthquake Maps	235
Wildland Fire Interface Maps	301
Technological Hazards Map	315
 Appendix B: Critical Facilities List317	
Napa County Government Buildings.....	319
Napa County Medical Facilities.....	321
Napa County Public Safety Facilities	323
Napa County Schools.....	325
 Appendix C: Napa County Capability Index.....329	
Appendix D: Disaster History, Assets at Risk	
And building Inventory.....	333

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Letter of Promulgation

Approval Date:

To: Officials, Employees, and Citizens of Napa County

The preservation of life, property and the environment is an inherent responsibility of local, state, and federal government. Napa County, in cooperation with the cities of Napa, American Canyon, Yountville, St Helena, Calistoga, and special districts, have prepared this Hazard Mitigation Plan to ensure the most effective and economical allocation of resources for protection of people and property prior to the onset of a natural or technological disaster.

While no plan can completely prevent death and destruction, good plans carried out by knowledgeable and well-trained personnel can and will minimize losses. This Plan establishes the priorities for future mitigation actions to begin the process of making the greater Napa County area a disaster resistant community.

The objective of this Plan is to incorporate and coordinate the best possible approaches to mitigation from our four major threats, flooding, wildfire, earthquakes and technological hazards so these approaches can be rapidly and effectively applied as resources become available to conduct these mitigation programs and measures. By implementing over time the process and programs outlined in this Plan it will greatly enhance the survivability of key facilities and ability of response personnel of the County and Operational Area member jurisdictions in responding effectively to any emergency.

This Mitigation Plan is an extension of the *State Hazard Mitigation Plan*. It will be reviewed and exercised periodically and revised as necessary to meet changing conditions.

The Napa County Board of Supervisors gives its full support to this Plan and urges all officials, employees and the citizens, individually and collectively, to do their share in the total disaster mitigation effort of Napa County.

This letter promulgates the *Napa Operational Area Hazard Mitigations Plan*, constitutes the adoption of the Plan as a standing annex to the Napa County Emergency Operations Plan, and the adoption of the philosophy that is reflected in State and Federal guidance that repetitive and avoidable disaster loss must be prevented to make all communities, disaster resistant communities. This Mitigation Plan becomes effective on approval by the Napa County Board of Supervisors.

Supervisor Mark Luce
Chairman
Napa County Board of Supervisors

RESOLUTION NO. _____

**RESOLUTION OF THE BOARD OF SUPERVISORS
OF THE COUNTY OF NAPA, STATE OF CALIFORNIA
APPROVING THE DMA 2000 OPERATIONAL AREA AND COUNTY
HAZARD MITIGATION PLAN.**

WHEREAS, the Operational Area Council has drafted a Hazard Mitigation Plan to advance better mitigation planning and projects for the entire county. and

WHEREAS, each city, special district member and public has contributed to this planning approach under the direction of the federal disaster mitigation act of 2000; and

WHEREAS, the Napa County Board of Supervisors has read and agrees to abide by the DMA 2000 guidance and grant guidelines and this plan represents the compliance with same.

NOW, THEREFORE, BE IT RESOLVED that the plan entitled “the Napa County Operational Hazard Mitigation Plan” is formally adopted as our plan and road map to a more disaster resistant community.

The foregoing resolution was duly and regularly adopted by the Board of Supervisors of the County of Napa, State of California, at a regular meeting of said Board held on the XX day of June 2004, by the following vote:

AYES:	SUPERVISORS	_____

NOES:	SUPERVISORS	_____

ABSENT:	SUPERVISORS	_____

ATTEST:

PAMELA MILLER
Clerk of the Board

By: _____

<p align="center">APPROVED BY THE NAPA COUNTY BOARD OF SUPERVISORS</p> <p>Date: _____</p> <p>Processed by: _____ Deputy Clerk of the Board</p>

<p align="center">APPROVED AS TO FORM OFFICE OF COUNTY COUNCIL</p> <p>By: _____</p> <p>Date: _____</p>

Insert Governing Board Resolutions

Resolution from the CITY OF AMERICAN CANYON

Resolution from the CITY OF CALISTOGA

Resolution from the CITY OF ST. HELENA

Resolution from the TOWN OF YOUNTVILLE

Section 2 Overview of the Planning Process

Operational Area Participation:

Although the City of Napa and the County of Napa each produced a separate plan, we developed each plans in tandem. We did this in order to maximize the Disaster Resistant California Planning grants we both received. We collaborated on many of the plan elements and even shared the same consultant Frank Lucier of North American Emergency Management, to build a congruence of approach, direction and complementary projects.

The Napa Operational Area Council With key representatives from the included jurisdictions met quarterly during the initial draft development in order to give input on the plan content and direction. Kathy Brady represented Calistoga, Tracy Stuart and Kevin Plett represented Yountville, Bert Johansen and Latter Robert Waddell represented St Helena, Keith Caldwell represented American Canyon. Dan Hall from Napa shared insights with from the City of Napa during this process. Ken Arnold from the Napa Community College District also contributed to these meetings and participated in the in progress reviews.

The Drafting Process:

Neal T. O'Haire, Napa County Emergency Manager was the lead staff in writing this plan. He worked closely with staff analyst Patti Deweese and consultant Frank Lucier to bring together the initial drafts. The operational area already had major preparedness and mitigation programs existing to meet the most serious challenges to Napa County. It was decided early on to capture this earlier work and fully integrate it into the planning process. Napa's flood control, Firewise, counter terrorism, glassy winged sharpshooter action team and post earthquake mitigation efforts had tremendous public support and participation. The plan is designed to capture that support and integrate that work into the planning product. The following sections detail this work.

When the initial draft was completed in early February of 2004 it was distributed to the council. Each participating jurisdiction completed an internal staff review and returned changes to the Operational Area OES manager. He and the consultant integrated those changes into the coordinating draft that was used for our series of public meetings and adoption agenda items for our councils and boards.

Public Involvement in the planning process:

The following section describes the foundation of public support for preparedness in Napa County. Instead of building a scratch process we built on the existing work of the Firewise Working group, the Glassy Winged Sharpshooter Action Team GWAT, the Terrorism Working Group TWG and the Nap[a County Flood Control authority. In March and April we conducted a series of Public Meeting to meet the guidance requirements and receive additional public input. On March 17 we co-hosted the first with the City of Napa, followed by meetings in Calistoga, St Helena and American Canyon. Each meeting was announced the week before on local radio as well as noticed in each local newspaper. Additionally, Dan Hall and Neal O'Haire appeared on the local cable access channel community issues program and described this process and plan in

detail to the community. As a result the meeting though noticed were sparsely attended, the participants demonstrated a high degree of awareness of the potential major threats to Napa County and were very supportive and even surprised at the scope of the plans and programs proposed to address them.

After these meeting the public had another significant opportunity to address the plan when the drafts went to council as an agenized item in each jurisdiction. During this process the comments were overwhelming positive from the public comments, staff reviews and the elected officials themselves. The Draft plan received unanimous approval of all four city or town councils involved and the County Board of Supervisors. Copies of their actions are included in eh previous section.

Neighboring Community Involvement.

Our plan was shared through the Mutual Aid Regional Advisory Committee. We provided this group representing the 16 coastal region operational areas with progress reports on our progress and our approach. We offered assistance to them on developing their plans. We had more detailed discussions with Sonoma and Marin Counties on approach and concepts. Marin County has integrated some of our approaches and concepts into their planning process. Additionally, Napa hosted the ABAG Mitigation Staff to a presentation and workshop with the operational area council. During this workshop we shared approaches to mitigation planning and agreed to partner with data sharing efforts with the ABAG members.

Incorporation of Earlier plans, and studies:

Even a casual reading of this plan will clearly demonstrate the integration of special studies and plans. This plan integrates the finding of the 2003 Firewise workshop in both the description of the interface fire threat and the mitigation actions. Firewise is a nationally recognized mitigation program, the input from over ninety public and private participants was invaluable in setting the foundation for the fire portion of this plan.

The Measure A flood control project is the foundation of all the detailed flood mitigation threat and mitigation actions, this ongoing project was recognized by both the Federal and State governments as a model project for creating a more disaster resistant community. The concept of a living river that naturally protecting the community from flooding versus the previously used engineered concrete ditch approach was the first in the nation.

Our Glassy winged Action Team is the model for numerous other councils involved with both crop protection and community involvement in vector control. The description of the GWSS threat and action comes form the work of this group.

During the Elected Officials Briefing following the Napa Earthquake, Napa Mayor Ed Henderson requested of the federal government a special earthquake study. The study was a collaboration of Napa County, the State Office of Mine and Geology, FEMA, OES and the USGS. The finding are the centerpiece of the earthquake section of this plan along with the previously published California Mines and Geology/USGS special studies.

The Planning Process By threat

Mitigation Planning in Napa has been an ongoing process that Disaster Mitigation Act 2000 only has brought into sharper focus. Napa County has, and will continue to have, public, private and governmental input into the County's treat assessment and mitigation strategies. This section describes this input process.

Major Threat: Flooding

Since the 1930's, Napa County residents have made several concerted efforts to address flooding. The most recent effort began in 1965, when Congress authorized the development of a detailed project proposal for flood protection. In 1975, the U.S. Army Corps of Engineers submitted the first project proposal under the 1965 Authorization. Napa County voters rejected the proposal in referendum elections in both 1976 and 1977, and it was subsequently shelved. When the floods of 1986 hit the Napa valley, the City of Napa requested that the project be reactivated. The Corps responded with a revised proposal in 1995. Again, it was deemed unacceptable.

As frustrating as the rejections were, not just for the Corps, but for all those who desperately wanted a solution, a new approach emerged which looked at flood control from a broader, more comprehensive perspective. Citizens for Napa River Flood Management was formed, bringing together a diverse group of local engineers, architects, aquatic ecologists, business and agricultural leaders, environmentalists, government officials, homeowners and renters, and numerous community organizations.

Through a series of public meetings and intensive debates over every aspect of Napa's flooding problems, the Citizens for Napa River Flood Management crafted a flood management plan offering a range of benefits for the entire Napa region. The U.S. Army Corps of Engineers served as a resource for the group, helping to evaluate their approach to flood management. The final plan produced by the Citizens for Napa River Flood Management was successfully evaluated through the research, experience, and state-of-the-art simulation tools developed by both the Army Corps of Engineers and numerous international experts in the field of hydrology and other related disciplines. The success of this collaboration serves as a model, not just for Napa, but also for the nation.

Establishing Goals: Blending Engineering and Ecology

Citizens for Napa River Flood Management established the following agreed-upon set of goals, initially for the City of Napa, but quickly expanded to include all of Napa County:

- 100-year flood protection;
- An environmentally-restored, "living" Napa River;
- Enhanced opportunities for economic development;
- A local financing plan that the community could support; and
- A plan that addresses the entire watershed countywide.

Examining Potential Strategies

Building on members' expertise, Citizens for Napa River Flood Management members examined the range of potential strategies that could achieve these goals. Some of the broad categories considered were:

- Existing Reservoir Strategies
 - Increasing the use of existing reservoirs for flood control purposes as well as water supply.
- Up-Valley Strategies
 - Holding more water upriver during potential flood events, reducing the flow through the City of Napa, then releasing the stored water as conditions permit.
- Down-River Strategies
 - Improving “drainage” at the mouth of the Napa River, thereby increasing the rate of flow through the City of Napa and preventing the accumulation of floodwaters.
- Watershed Protection Strategies
 - Improving the capacity of the entire watershed to control and direct flood flows by altering land-use practices.
- Risk Reduction Strategies
 - Elevating and/or relocating homes and businesses in the floodplain.

Evaluating Alternative Strategies

As each of these strategies were examined, both individually and in combinations, some conclusions emerged:

- Configuration of new or expanded-capacity dams and reservoirs upriver by itself could not adequately reduce flood flows into Napa;
- Increasing the rate of flow through the City of Napa by improving “drainage” at the mouth of the Napa River would create erosion and would not significantly reduce flood levels;
- Improving the capacity of the entire watershed to control and direct flood flows is a desirable goal, but by itself cannot prevent major flood events, which occur naturally; and
- Elevating and/or relocating homes and businesses in the floodplain would be extremely costly and, in many cases, infeasible.

The current design evolved from a series of analyses and informed discussions about which strategies, or combination of strategies, best met the Project's objectives.

The U.S. Army Corps of Engineers, lead federal agency for the Project, was required to submit a detailed proposal describing the project and the rationale behind the proposed design. In addition, the Corps prepared a Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) detailing the environmental analyses and mitigation measures contained in the Project. These environmental documents are available in their entirety for public review at various locations throughout the County (see back cover for additional information).

The approach of Citizens for Napa River Flood Management is based on the natural processes and characteristics of the Napa River itself, incorporating the following principles of geomorphology:

- Maintaining the natural slope of the river—the slope should not be altered significantly by dredging or straightening;
- Maintaining the natural width of the river;
- Maintaining the natural width/depth ratio of the river;
- Maintaining or restoring the connection of the river to the floodplain;
- Allowing the river to meander as much as possible;
- Maintaining channel features such as mud flats, shallows, sandbars, and a naturally uneven bottom; and
- Maintaining a continuous fish and riparian corridor along the river.

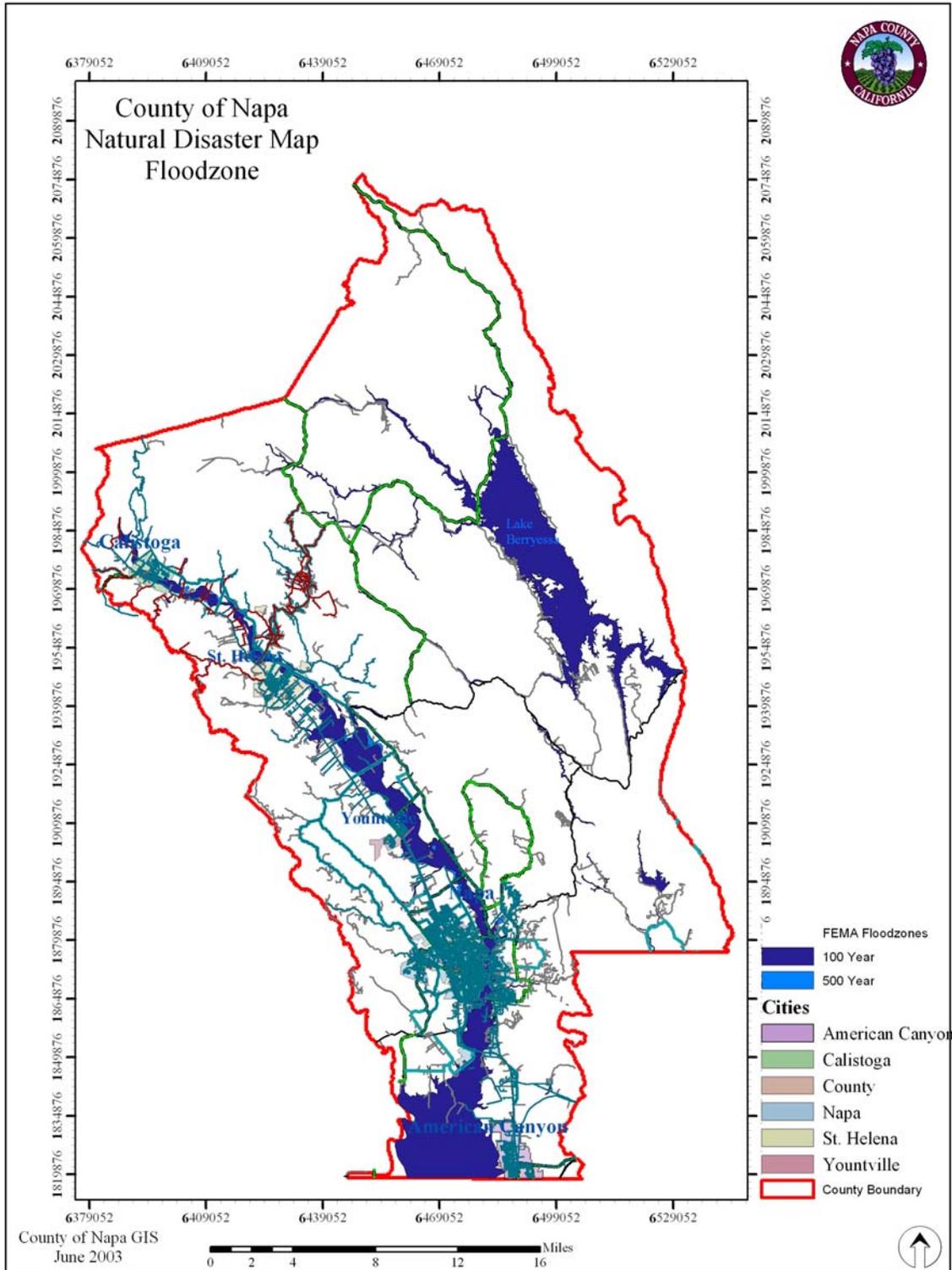
The goal is to once again make the Napa River a living river by:

- Conveying variable flows and restoring habitat in the floodplain;
- Balancing sediment input with sediment transport;
- Providing natural fish and wildlife habitat;
- Maintaining high water quality and supply;
- Offering improved recreation opportunities;
- Maintaining its aesthetic qualities; and
- Generally enhancing the human environment.

Citizens For Napa River Flood Management

- Friends of the Napa River
- Napa Valley Economic Development Corporation
- Napa County Resource Conservation District
- California Dept. of Fish & Game
- Napa Chamber of Commerce
- United Napa Valley Associates
- American Center for Wine, Food & Arts
- National Resource Conservation Service (NRCS)
- Homeowners: GSMOL & 1st St. Neighbors
- Napa County Landmarks
- Napa Valley Vintners Association
- Sierra Club
- Flood Plain Business Coalition
- Up Valley Chambers of Commerce
- Napa County Land Trust
- Napa-Solano Building Trades Council
- Napa Valley Fisherman's Associations
- Napa Valley Conference & Visitors Bureau
- Napa Downtown Merchants
- Napa Valley Expo
- Napa County Farm Bureau
- Napa Valley Grape Growers Association
- Suscol Council
- Agricultural Commission
- U.S. Army Corps of Engineers
- Napa County Flood Control & Water Conservation District
- Napa County
- City of American Canyon
- City of Calistoga
- City of Napa
- City of St. Helena
- Town of Yountville

Napa County Flood Zone Map



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Major Threat: Earthquake

Napa County faces a potential \$1 billion earthquake risk. This is an estimate for modeled losses due to building damages and business losses from a local earthquake caused by the West Napa Fault, running through Napa Valley. Two other nearby earthquake faults – the Rodgers Creek Fault and the Concord-Green Valley Fault – would cause estimated damages to Napa County in the one-half billion-dollar range.

In a first-of-its-kind meeting, scientists and emergency managers from the United States Geological Survey, California Division of Mines and Geology, Federal Emergency Management Agency, and California Governor's Office of Emergency Services gathered to present modeled building stock and business interruption loss-estimation figures for three potential earthquake threats to the 127,000 residents of Napa County.

On February 5, 2001 the three-earthquake scenario simulations affecting northern San Francisco Bay Area counties were presented to an audience over 75 Napa County public officials. Not only did the meeting address Napa County's risk to future earthquakes but the invited experts also emphasized mitigation and planning activities designed to reduce these estimated future earthquake losses.

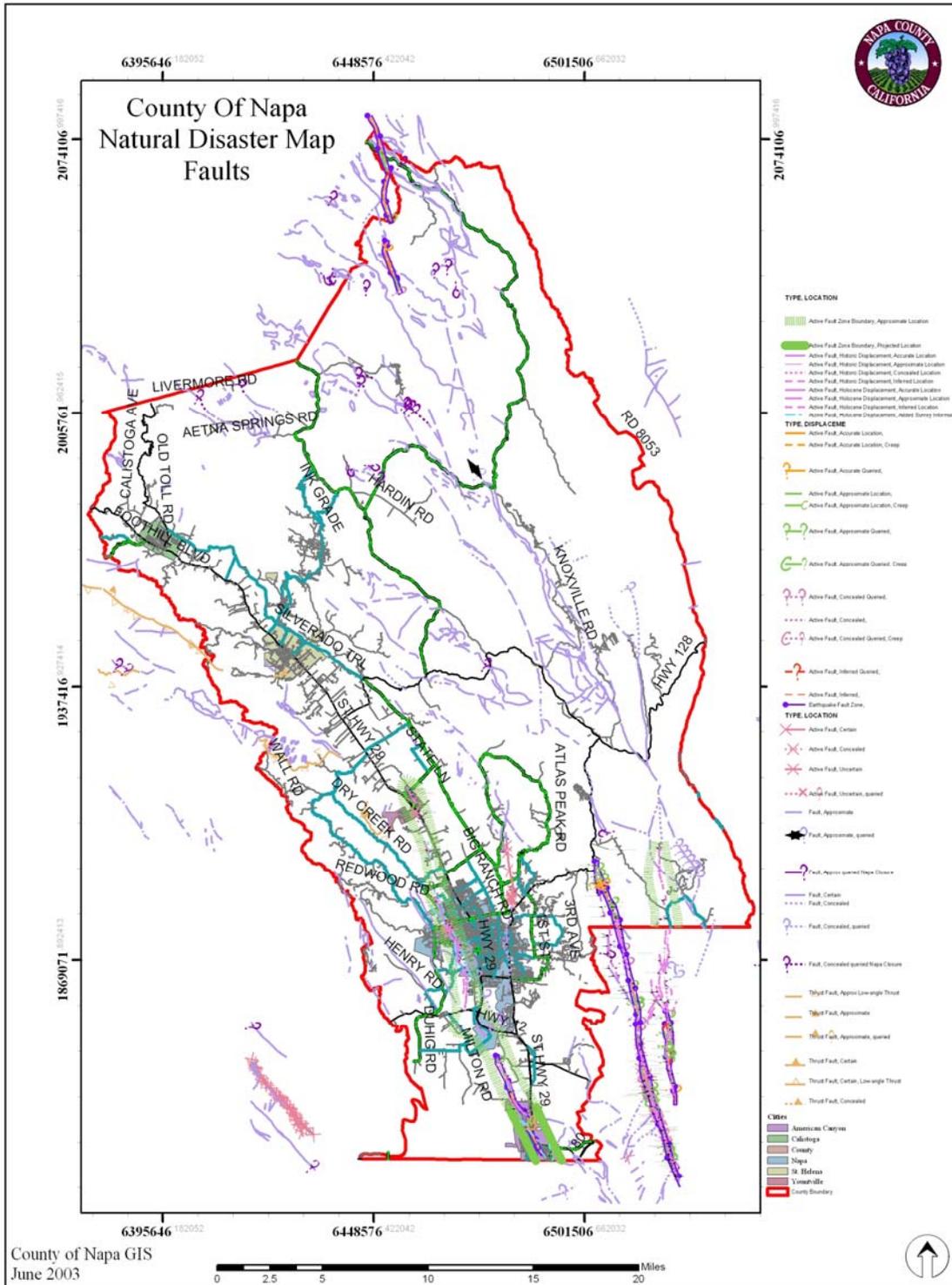
This public meeting, requested by the Mayor Edward Henderson, City of Napa, used the FEMA's National Risk Assessment System, called HAZUS. HAZUS is a sophisticated earthquake-loss estimation software tool based on a user-friendly geographic information system platform

To further its proactive mitigation posture, Napa County has joined FEMA's Disaster Resistant Communities initiative, which is based on establishing public-private partnerships in order to leverage resources necessary to create a disaster-resistant community. The U. S. Geological Survey, California Division of Mines and Geology, California Governor's Office of Emergency Services, and the Napa County Office of Emergency Services are all Disaster Resistant Communities program partners with FEMA.

Napa County residents and businesses experienced very strong shaking during the Napa Earthquake near Mt. Veeder, magnitude Richter 5.1, on September 3, 2000, with an epicenter near the town of Yountville, causing moderate damage throughout the southern Napa Valley. Total losses from this moderate earthquake range from \$50 to \$65 million. The process for the development of Earthquake related projects has used input from public meetings, the Local Assistance Center individual exit surveys and our public-private partnership started by the County Chamber of Commerce, the Disaster Education Task Force.

Napa County Disaster Education Task Force			
Name	Agency	Address	Phone
Arnold, Kenneth	Dept. of Public Safety	2277 Napa-Vallejo Hwy. Napa, CA 94558	253-3331
Borman, Tim	Napa City OES	PO Box 660 Napa, CA 94559	257-9282
Brady, Kathy	City of Calistoga	1232 Washington St. Calistoga, CA 94515	942-2821
Dixon, Marge	City of Napa Red Cross	575 Jefferson St. Napa CA 94559	257-2900
Eddleman, Dan	California Dept. of Forestry	1820 Monticello Rd. Napa, CA 94558	253-4941
City Editor	Napa Valley Register	1615 Second St. Napa, CA 94559	256-2216
Guijosa, Delia	City of St. Helena	1480 Main St. St. Helena, CA 94574	963-2741
Hall, Dan	Napa City Fire Dept.	PO Box 660 Napa, CA 94559	257-9589
Harper, Lisa	City of Napa	PO Box 660 Napa, CA 94559	257-9503
Howell, Darlene	Child Care Planning Council	2121 Imola Ave. Napa, CA 94559	259-5929
Jones, Sam	City of Napa PW	1600 First St. Napa, CA 94559	257-9520
Jorgensen, Patrik	St. Helena Star	Po Box 346 St. Helena, CA 94574	944-9020
King, Kate	Napa Chamber of Commerce	1556 First St. Napa, CA 94559	226-7455
Kough, Cathy	NVCVB	1310 Napa Town Ctr. Napa, CA 94559	226-5104
LaLiverte, Jennifer	City of Napa Redevelopment	PO Box 660 Napa, CA 94559	257-9502
Martin, Barry	Flood District/TMP	1001 Second St. Napa, CA 94559	738-2920
Martin, Harry	Napa Sentinel	1627 Lincoln Ave. Napa, CA 94558	257-6272
McArdle-Kulas, Olive	NVUSD	2425 Jefferson St. Napa, CA 94558	253-3561
McClure, Mike	American Canyon Fire Dist.	225 James Rd. American Canyon, CA 94503	642-2747
McLaughlin, Mary Jean	Napa County PIO	1195 Third St. Room 310 Napa, CA 94559	253-4580
Miller, Bryan	NPACT	2425 Jefferson St. #105 Napa, CA 94558	257-0574
Nigliazzo, Pamyla	Napa City PIO	PO Box 660 Napa, CA 94559	257-9503
O'Haire, Neal	County Emergency Services Mgr.	1195 Third Ave. Napa, CA 94559	253-4257
Perez, Lynn	County Health & Human Services	2261 Elm St. Napa, CA 94558	253-4616
Plett, Kevin	Town Administrator, Yountville	6500 Yount St. Yountville, CA 94599	944-8851
Richardson, Jeff	Pacific Gas & Electric	300 Burnell St. Napa, CA 94558	257-5902
Shew, Dave	California Dept. of Forestry	1701 Solano Ave. Yountville, CA 94599	944-8887
Smith, Craig	Napa Downtown Merchants	PO Box 5180 Napa, CA 94559	257-0322
Stapp, Nancy	KVON/KVYN Radio	1124 Foster Rd. Napa, CA 94559	252-1440
Streblow, Tim	California Division of Forestry	1199 Big Tree Rd. St. Helena, CA 94574	963-3601
Yountville Sun	Sun Newspaper	PO Box 2070 Yountville, CA 94599	944-5676
Tortolani, Trisha	Volunteer Center of Napa	1820 Jefferson St. Napa, CA 94559	252-6222
Tracy, Kelly	Animal Control	PO Box 851 Napa, CA 94558	253-4381
Wadsworth, Graham	Napa City Public Works	PO Box 660 Napa, CA 94559	257-9520

Napa County Known Earthquake Faults



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Major Threat: Wildland Interface Fires

A narrow valley floor surrounded and intermingled with steep, hilly, wooded terrain that contains areas that are very susceptible to wildland fires characterizes the County. Such fires expose residential and other development within the County to an increased risk of conflagration. The hilly/mountainous terrain on the east and west side of Napa Valley strongly influences both wildland fire behavior and the suppression capability of firefighters and their equipment.

Wind is a predominant factor in the spread of fire in that burning embers are carried with the wind to adjacent exposed areas. The Napa Valley has a characteristic southerly wind that originates from the San Francisco Bay and becomes a factor in fire suppression. Also, during the dry season the Valley experiences an occasional north wind of significant velocity that is recognized by fire fighters to be a significant factor in the spread of wildland fires.

Firewise Conference

The public participation for the wildland fire interface portions of this Plan was developed from the input of participants at the Napa County Firewise Conference that was held on June 4-6, 2003. There were 81 participants in the process from a mix of disciplines. In breakout session, groups were tasked with strategies to develop a Firewise Communities throughout the County. The results of this group brainstorming are as follows:

Group-Fire Safe Council, Environmental, Natural Resources, Fire, Emergency Services

- Homeowner education
- Chipping programs
- Fuel reduction
- Grant applications
- Counties – Title 3 funding
- City/County participation
- GIS mapping
- Co-generation
- Homeowner involvement
- Fire Department consultation
- Fire Department training with community
- Public outreach
- Media involvement
- Fire Safe Council interaction – Share ideas and learn from each other
- Elected officials education
- More Firewise seminars
- Goat farmers
- Mutual support groups

Group - Insurance, Fire, Landowners

- Continue vegetation management fire safe homes by owners
- Work with new residents on defensible space
- Educate insured and Insurance Company employees on information learned here
- Inform insurance agents with newsletters
- Continue education with programs like Firewise
- Blend this information with current legislation
- Landowners continue to work with California Department of Forestry and Fire Protection (CDF) and local fire agencies

Group – Planners, Fire

- Inform others within Agency department and in other departments
- Review proposed ordinances
- Incorporate new knowledge from others into current discipline
- Include in General Plan revision
- Continue to support existing Fire Safe Councils, foster new ones, & look for grants
- Increase public awareness through door-to-door and other outreach measures
- More intensive inspection and enforcement of defensible space
- Get governing bodies onboard
- Increase use and coordination of GIS
- Interlocal governmental partnerships and shared efforts

Group - Developers, Contractors, Builders, Architects, Landscapers, Fire

- Community contact and education
- Local cooperation/neighborhood mitigation
- DMA 2000 (fire portion) Develop near/mid/long term strategies
- Training staff for new fire regulations
- Public education/ school programs
- Become a volunteer firefighter
- Influence culture of Napa Land Trust
- Pilot program for Firewise training

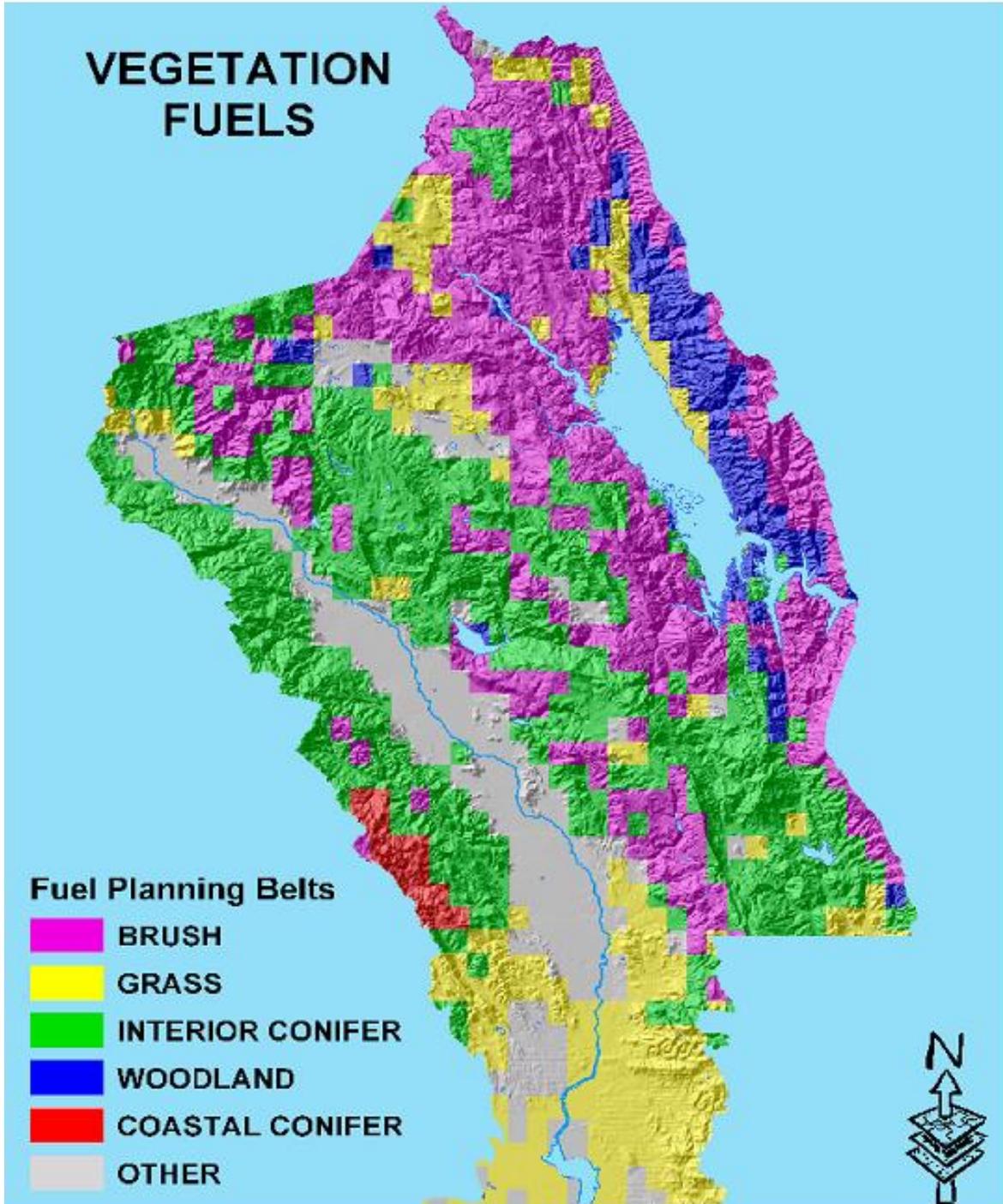
From these Firewise group strategies, the mitigation action items were developed for this Plan. This public process was facilitated by CDF and the United States Forestry Service and gave us a firm foundation for our fire hazard mitigation planning efforts.

Firewise Conference Participants

Area of Expertise	Number	Percentage
Insurance	11	13%
Fire	12	12%
Fire Safe Councils	5	5%
California Department of Forestry	16	17%
Homeowner Associations	1	1%
Code Enforcement	2	2%
County Planning	11	12%
Business/Industry	5	5%
Landscaping	3	3%
Local Government	10	11%
BIA – SCA	2	2%
Utilities	3	3%
Sierra Club	1	1%
Architecture	2	2%
Volunteer Associations	1	1%
USFS	1	1%
Emergency Services	5	5%
Volunteer Fire Departments	3	3%
Fish & Game	1	1%

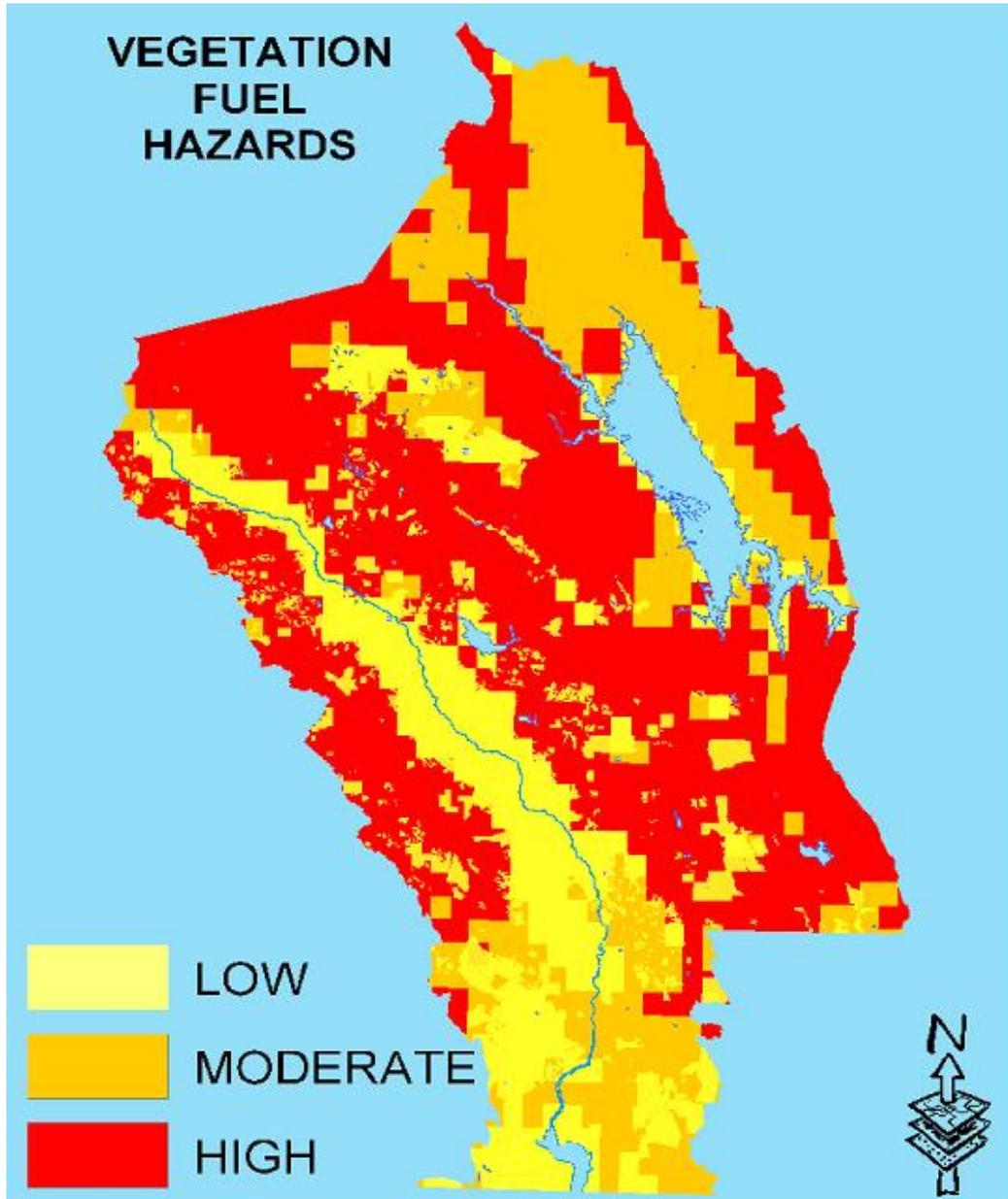
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Napa County Vegetation Fuels



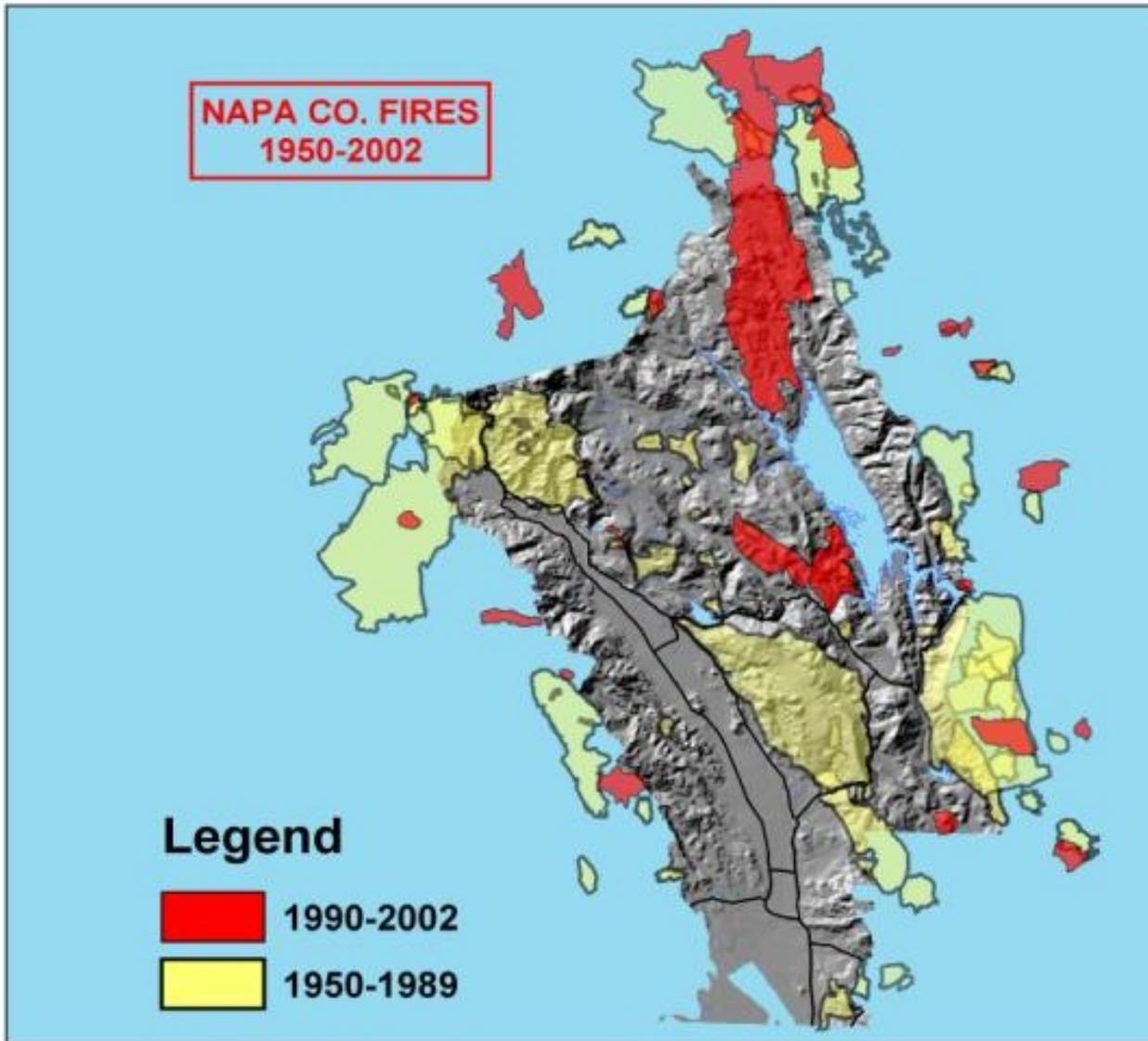
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Napa County Vegetation Fuel Hazards



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Napa County Wildland Fires 1950 – 2002



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Major Threat: Terrorism and Technological Hazards

Napa Terrorism Working Group

The Napa Terrorism Working Group (TWG) was formed in 2001 in response to 9/11 and the anthrax mailings. All emergency response agencies collaborated on a countywide protocol for response to terrorist incidents

When Homeland Defense grants became available, the same agencies decided that the TWG was best positioned to do needs assessments related to terrorism and determine allocations of any monies received for homeland defense issues. It was agreed by the members that such monies would be pooled and used based on needs assessments conducted by the group. The group was instrumental in completing two countywide threat and vulnerability assessments that maintained our eligibility for these grant programs. The TWG group agreed that the money is to be shared as equitably as possible. The main concept of the TWG was to form a cooperative, interagency group to deal with a host of issues related to terrorism and funding. Pooling the monies received and dispensing them according to the agreed upon needs of the group was one of the goals.

At the beginning of F/Y 03-04, in order to meet the state requirements for the Homeland Defense grants, an executive committee was formed within the group. This executive committee consisted of the County Sheriff, the County Fire Chief (or their representatives), a representative from the city's Fire Chiefs, from the city's Police Chiefs, and the County Public Health Officer.

Glassy-Winged Sharpshooter Action Team

The glassy-winged sharpshooter (GWSS) is a serious threat to the County's economy and ecology because it is a vector for the incurable Pierce's disease. This pest has the potential to seriously disrupt the County's agricultural economy and the 5,000 jobs that are related to agriculture. But it also is a threat to the quality of life of all residents of Napa County and could imperil the County's native habitat.

The threat of the glassy-winged sharpshooter and Pierce's disease is widely known in the state's grape industry. Pierce's disease causes an estimated \$8-11 million dollars a year crop loss annually. What would make the disease truly catastrophic to our \$3 billion dollar grape industry would be the inadvertent introduction of this effective vector to the Napa Valley.

The GWSS is an effective vector for Pierce's disease because it is more mobile than other leafhoppers that can transmit the bacteria. The insect uses its needle-like mouth to tap into the water-conducting tissues of a plant. In addition to its mobility and its varied food sources, it is dangerous because of its ability to move a large quantity of water (equivalent to a 150-pound human drinking 4,300 gallons of water a day) through its

system in a day. In feeding on plants, the pest can infect them with lethal diseases, such as Pierce's disease in grapevines.

The Napa County Glassy-Winged Sharpshooter Action Team (GWAT) is an advisory working group that meets throughout the year, receiving updates on the GWSS and assisting the Agricultural Commissioner develop and implement various components of the workplan. The GWAT is composed of representatives from various stakeholder groups, including growers, nurseries, environmental groups, and governmental agencies. There are several subcommittees that also meet periodically to assist the Agricultural Commissioner.

The Detection and Survey Subcommittee has been instrumental in grower outreach by providing information on the need, proper placement of traps and reporting of insect trapping information. The Regulatory Subcommittee has worked to determine how changes in state law and GWSS program protocols affect our local GWSS program. The Education and Outreach Subcommittee has assisted in the development of informational materials and training programs. The Alternative Treatment Subcommittee has been tasked with developing a list of alternative treatment materials and methods in the event GWSS is found and eradication efforts are commenced. This is of special importance if such activities occur on or near environmentally sensitive sites, such as schools, care facilities or residential areas.

GLASSY-WINGED SHARPSHOOTER ACTION TEAM	
Name	Affiliation
Allen Tenschler	ATV&WC
Andy Bledsoe	Robert Mondavi
Andy Hoxsey	Winegrower's Farming Co.
Annie Favia-Erikson	Abreu Vineyard Management
Debra Blodgett	Winegrowers of Napa County
Ben Chambers	Jack Neal & Son
Bob Steinhauer	Beringer Blass
Brian Banducci	Napa County Sheriff's Office
Chris Malan	Concerned Citizens for Napa Hillside
Dave Whitmer	Napa Agricultural Commissioner
Drew Johnson	Beringer Blass
Ed Weber	U.C. Viticulture Farm Advisor
Frank Cabral	Sutter Home Winery
Frank Leeds	Frog's Leap Vineyards
Fred Negri	Winegrowers Napa Co
Greg Clark	Napa Agric. Comm. Office
Carrie Gallagher	Napa County Counsel
Hal Huffsmith	Sutter Home
Ian Becker	Napa Valley Register
Jack Stuart	Silverado Vineyards
James Frisinger	Beringer Blass
Jason Kesner	Kuleto Villa Vineyards
Mark Caro	Napa County Safety Officer
Jim Barbour...Contact: Nate George	Barbour Vineyard Management
Jim Lincoln	Vineyard Manager/NCFB

GLASSY-WINGED SHARPSHOOTER ACTION TEAM (continued)	
Name	Affiliation
Katey Taylor	Domaine Chandon
Kevin Twohey	Whittings Nursery
Kristin Belair	Honig Vineyard & Winery
Linda Reiff	Napa Valley Vintner's Assoc.
Lowell Downey	P.O.I.S.O.N.
Mary-Jean McLaughlin	Napa County P.I.O.
Martin Mochizuki	Walsh Vineyard Mgmt
Mike Wolf	Michael Wolf Vyd Srvc
Neal O'Haire	Napa County O.E.S.
Paul Wagner	Balzac Communications
Randle Johnson	Hess Collection
Ray Tonella	Tonella Vineyards
Max Duley	Peju Province
Rich Salvestrin	California Grape Vines/NCFB
Richard Camera	Hess Collection
Richards Lyon	Wine Author/Physician, Ret.
Ross Hall	Swanson Vineyards
Wes Chesbro Contact: Laurie Puzo	California Senator
Sandy Elles	Napa County Farm Bureau
Stephen Smith	Rodgers Land Co.
Tony Norris	Napa County Sierra Club
Tyler York	Napa County Sierra Club
Rob Paul	Napa County Counsel
Becky Peterson	Napa Valley Vintner's Assoc.

Public Meeting on the Draft Plan

As described earlier a series of public workshops were conducted from March through April 2004. These workshops were conducted to inform the public on this mitigation planning effort and to solicit additional input for this Plan. We held three workshops one in the northern section, one in the central section and one in the southern section of the County and a joint workshop with the City of Napa.

Plan Intent and Vision

This Plan is intended to be a roadmap towards a more disaster resistant community. It will not be a regulatory document like our General Plan, but a living document that provides a background on the threats that are faced in Napa County, identifies the critical paths to mitigate these threats and provides a list of action items that, when funding becomes available, will move Napa County closer to becoming a disaster resistant community.

The list of action items is categorized by major threat, by time horizon from funding of the requirement to completion, and by the complexity of coordination (especially in regards to environmental coordination under the California Environmental Quality Act, CEQA and the need for a detailed environmental impact report under federal statutes).

By building this modular approach to hazard mitigation, public policy officials can focus future limited mitigation dollars on where they can have the most impact in light of the threats that are faced. As mitigation funding increases there will be an list of action items from which to rapidly develop public policy.

The action item lists will be revised bi-annually and as technology and approaches to mitigation change or improve so will the lists. This Plan is intended to be a living mitigation document. As hazards are largely mitigated (i.e. the 2007 completion of the living river project that will substantially reduce the flood threat), secondary hazards will increase in importance and require revision in the Plan and action item lists to address them.

The Plan's vision therefore is process and project oriented. Practical result-oriented action items with clear cost/risk benefit analysis are the building blocks of this Plan, laying the foundation for rapid action in the advent that mitigation resource funding becomes available from whatever source, be it public funding, like Napa County's Measure A Flood Control Project or a public-private partnership, such as a glassy-winged sharpshooter prevention and mitigation programs. This Plan therefore is a mitigation toolkit that identifies hazards and risks, finds and defines prescriptive mitigation actions, and develops a framework for their implementation as public policy. This Plan is a call to action for hazard mitigation and the moving towards disaster resistant communities for the County of Napa.

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SECTION 3 RISK ASSESSMENT

Community Profiles

Napa County Operational Area Profile

Napa County was established in 1850 and is one of the original 27 counties and is named after the Napa Indians who once inhabited the area. Napa County is the center of the state's wine industry.

Napa County is located in the North Bay Area, 50 miles north of San Francisco. Contiguous counties include Solano, Sonoma, Lake and Yolo. The land area of the County is approximately 756 square miles. It is located in the Governor's Office of Emergency Services Coastal Region and Mutual Aid Region II. It extends from the Napa River Delta on the south and west to the Mayacmas Mountain range in the north.

Napa County has a long, rich history in grape growing, with the first vines planted in the 1840's. The Valley currently has 232 wineries, producing more than 6 million cases of wines totaling over \$1 billion dollars in sales. The wine industry in Napa accounts for \$4 billion of California's annual \$33 billion economic impact from winemaking and related industries. Wine is California's number one finished agricultural product and the third highest valued agricultural commodity exported from California.

While the County's economy is primarily agricultural in nature, it is interspersed with some light manufacturing, service industries and a strong tourist trade. Agriculture includes a wide diversity of varietal grapes, specialty crops and limited livestock operations. The wine industry fuels tourism. The State Hospital and the State of California Veterans Home are also major employers.

State Route 29 is the largest capacity road running north and south through the Napa Valley, becoming a four-lane limited-access expressway in the City of Napa. State Route 29 connects the five incorporated cities in Napa County: American Canyon; Napa; Yountville; St. Helena; and Calistoga. In the north it connects Napa to Lake County and in the south to Solano County.

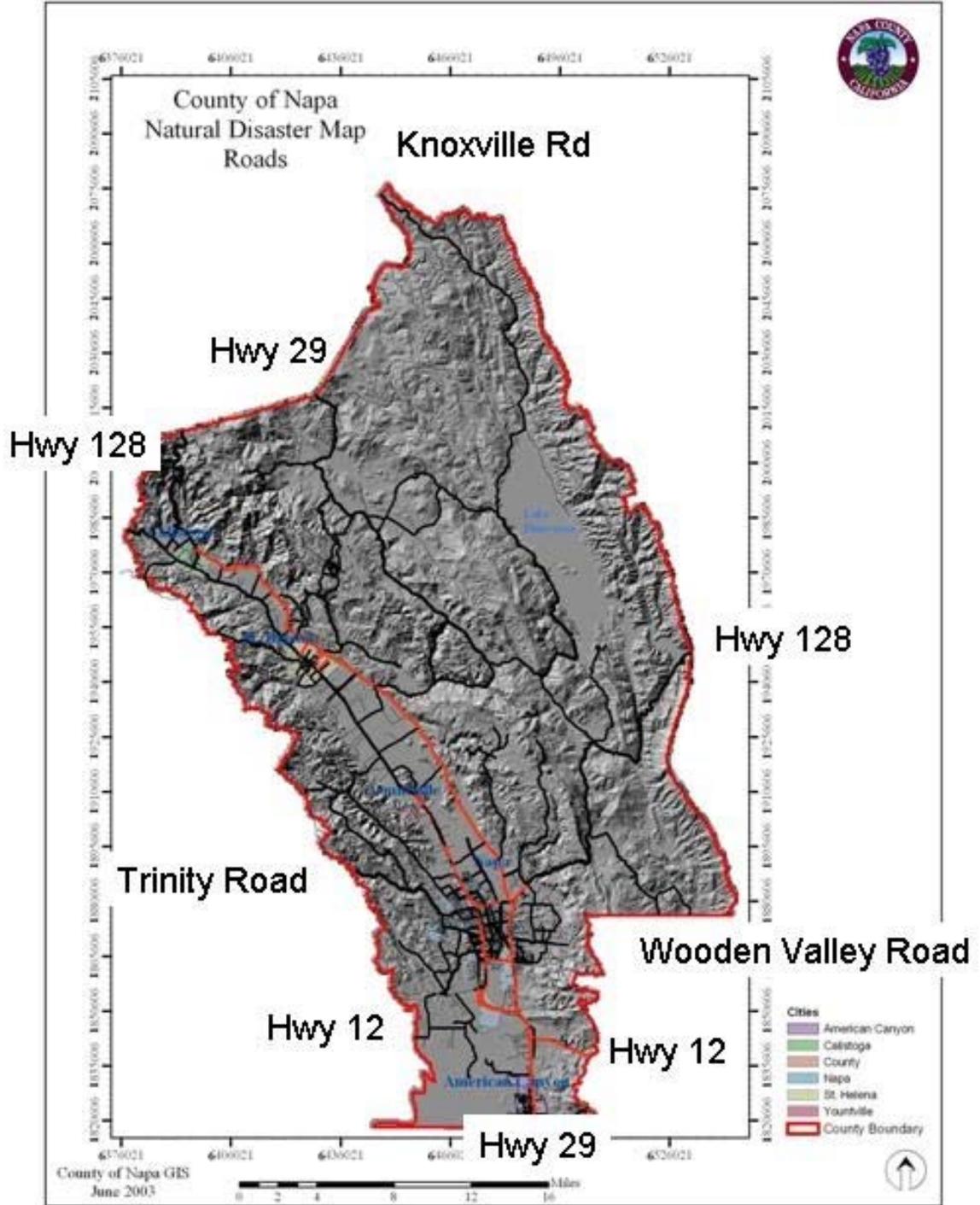
Routes 121, 128, and a local road, the Silverado Trail, provide some redundancy. State Highway 128 (east and west) cuts through the County in the east through the Berryessa Lake Resort areas and to the northwest connecting the Napa Valley to the Knights, Alexander and Anderson's Valleys in Sonoma County. State Route 12 goes across the valley and connects Interstate 80 to 101. Because the Napa Valley is surrounded by steep mountains, all of the two-lane state routes become steep and winding as they climb out of the Valley (map on page 33).

The Napa Valley Wine Train maintains a tourist rail line from Napa to St Helena along the old S&P right-of-way. The California Northern Railroad crosses the southern third of the County connecting to the Union Pacific main line at the city of Cordelia. The

Napa County Airport, between the cities of Napa and American Canyon, serves as a multi-engine airline transition training site for Japan Airlines, and an executive style airport with limited charter capability for both passengers and freight. Angwin airport is a small airport located on Howell Mountain.

Napa County, with its varying topography, mix of urban and rural areas, rapidly growing permanent, transient and recreational population is subject to a wide variety of negative impacts from various hazards and threats. In recent years, it has experienced several disastrous events such as earthquakes, floods, fires and storms. The increased use, storage and transportation of numerous hazardous materials further complicate the threat picture.

NAPA COUNTY MAJOR ROADS



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City of American Canyon

Community Profile

Population and Locale

The City of American Canyon was incorporated in 1992. The current population is approximately 10,000 residents with a "build-out" population estimated at 18,000. Located at the southern end of Napa County, the City is roughly 3.6 square miles in size. American Canyon is bounded geographically by the Napa River to the west, the foothills of the Sulphur Springs Mountain Range to the east, the City of Vallejo to the south and vineyards to the north.

Climate

The climate is generally mild with northeasterly winds from the San Francisco Bay. Summer temperatures range from 50° to 80°; winter temperatures range from 40° to 60°. Average rainfall is 18 inches per year.

Economic Trends

	1990	1995	2000	2005	2010
City Population	7,700	8,900	10,400	14,000	18,000
Average Income/Household*	\$57,174	\$58,800	\$62,400	\$68,100	\$74,000
Population within 3 mile radius	40,328	45,028	50,122	55,790	62,100
<i>* In constant 1995 dollars</i>					

Transportation

Highways:

Hwy. 29 (Napa Valley) runs through American Canyon.
 Hwy. 12 (to Fairfield or Santa Rosa) intersects at the north end.
 Hwy. 37 (to Interstate 80 or Hwy. 101) is one mile to the south.
 Direct access to Interstate 80 is three miles east of town.

Rail:

The California Northern and the Union Pacific Railroads provide freight service. American Canyon has rail lines extending in all four directions, making it a natural warehouse and distribution center.

Air:

The Napa Airport is within 4 miles of City Hall.

On-call charter service is available 24 hours a day. Major airports (Sacramento, Oakland, San Francisco) are within one hour's drive. Evans Transportation provides shuttle service to and from San Francisco and Oakland Airports from the city of Napa.

Bus:

Napa Valley Transit supplies service as far north as Calistoga, and south to Vallejo. Napa Valley Transit includes a bus-link to BART and the Vallejo Ferry. The City also operates its own local bus service, American Canyon Transit (ACT).

Truck:

Several trucking companies are based in American Canyon. Overnight service throughout California is available.

Water Supply

The City of American Canyon's water comes from the North Bay (State Water Project). Water pressure is maintained at 65 to 100 psi with flows sufficient to meet the needs of most commercial and industrial projects. The City also receives both raw and treated water through agreements with the City of Vallejo to serve new development.

Sewer Service

The sewer service area extends from the Napa/Solano County line north to Fagan Creek. American Canyon has its own 2.57 million gallon per day wastewater treatment facility, utilizing a micro filtration/membrane process.

Storm Drainage

A Storm Drainage Master Plan was completed in 1996. The City participates in the National Flood Insurance Program. Given its proximity to the Napa River, development in American Canyon must comply with the Regional Water Quality Control Board regulations, as well as other State and Federal regulatory agencies.

Solid Waste Disposal

Under a franchise agreement with the City, the American Canyon Disposal Service provides garbage pick-up for all residents and businesses. Roll-off service is also available. Additional services include curbside recycling and a new Household Hazardous Waste Collection Center.

Electricity and Natural Gas

Pacific Gas and Electric (PG&E) supplies electricity and natural gas to American Canyon.

Telephone

SBC provides a variety of services to American Canyon, including ISDN lines.

Local Newspapers

Two newspapers, the *Times-Herald* and the *Napa Register*, serve the area. A local newspaper, the *American Canyon Citizen's Echo*, is delivered free to all households each month. Regional and national newspapers are available for delivery.

City Government

The City of American Canyon operates under the council-manager form of government. Policy making authority is vested in a five member City Council. Day-to-day administration is provided by the City Manager, serving under the direction of the City Council. Operating departments include Planning, Public Works, Parks and Community Services, and Finance.

Police

The Napa County Sheriff's Department provides law enforcement services under contract with the City. Current staffing includes a Police Chief, two Sergeants, nine sworn Officers, and one Police Technician. The community is very safe, with few major crimes reported. A local police station was opened in 2001.

Fire

The American Canyon Fire Protection District offers fire suppression and medical assistance, with a paid force of 13 firefighters and 20 volunteers. A fire station with 6 engines is centrally located, with a second station planned. Response time is within 3 minutes for 85% of calls.

Community Facilities

Health:

Medical offices are located in town. A regional Kaiser Permanente hospital is four miles south in Vallejo and the Queen of the Valley Hospital is 15 miles north in Napa.

Education:

The City is part of the Napa Valley Unified School District. There are two elementary schools and one middle school in American Canyon. Bus service is provided to Napa High Schools. Napa Valley College is approximately 6 miles north and Solano Community College is 15 miles away in Fairfield.

Culture and Recreation:

A new Community Center and Aquatics facility opened in late 1998. A new library

branch was built in 2001. The City has over 50 acres of developed parkland, ranging from tot lots to a 20-acre community park. There is an extensive hiking trail system, and the City now owns a large open space on its western edge that is to be restored to wetlands. The 640-acre Newell Wilderness Park is on the eastern side of American Canyon.

Housing Availability, Prices and Rentals

The housing stock in American Canyon is predominantly single-family homes. Neighborhoods range from older to higher-end new subdivisions. Housing prices remain moderate in spite of the City's close proximity (about 40 miles) to San Francisco and its location in Napa County. The sales price of homes range from \$225,000 to \$500,000. There are four mobile home parks with over 700 spaces, subject to rent control. Apartments rent from \$900 to \$1,000 per month. Home rentals range from \$1,400 per month.

Industrial Sites

The Green Island Industrial Park consists of 265 acres of industrially zoned land, with approximately 100 acres still available for development. The City recently modified its zoning ordinance to allow greater flexibility in approving new projects. An additional 200-300 acres is being considered for annexation in order to expand the industrial area.

Residential Sites

Much of the land designated for residential has been sub-divided, resulting in over 2,400 new home sites. Given the City's location and price range, sales have been brisk. The goal was to upgrade the housing stock, larger homes with more amenities, in order to provide "trade-up" opportunities for current residents. Housing prices have reflected this goal, with new homes increasing from \$225,000 to \$500,000. The City is now shifting to focus towards affordable "workforce" housing, particularly multi-family housing.

Economic Outlook

American Canyon is primarily a middle-income residential community with limited retail-commercial activity along the Highway 29 corridor and one master-planned industrial park. The potential for attracting additional office and professional buildings, retail/commercial, office/business parks, and light-manufacturing investment into the community is excellent.

The City's intent is to promote long-term economic development. Council and City staffs are willing to act creatively and expeditiously to make worthwhile projects happen. The City wants to expand its industrial base and increase retail services, both for its citizens and the five million tourists that travel through the Napa Valley each year. A major component of this strategy is the development of a 100 acre, master-planned Town Center, which will provide a full array of services for both visitors and local residents.

City of Napa

Community Profile

Population and Location

The City of Napa, incorporated in 1872, is located at the base of the world-famous Napa Valley wine-producing region, approximately 50 miles northeast of San Francisco. It has a land area of 18.34 square miles and a population of 68,000. A Citizens Initiative established a Rural Urban Line around the City that should ultimately limit the City's growth to around 85,000 residents.

Economic Trends

	1990	1995	2000	2005	2010
Population	59,523	62,776	72,585	76,824	81,525
Average Income/Household*	\$16,247	\$23,200	\$25,655	\$27,711	\$31,973
<i>* In constant 1995 dollars</i>					

Climate

Strongly influenced by the built-in air conditioning of San Francisco Bay, Napa enjoys a smog-free climate of moderation. Representative temperatures for the City of Napa in January are 37.4° minimum and 57.7° maximum. For July, they are 52.2° and 82.1°, respectively. Average rainfall is 23.88" per year, with the majority occurring from November to March.

Transportation

Highways:

Highway 29 runs north-south through the City.

Highway 12 (east-west) intersects at the southern part of Napa County and Interstate 80 is three miles east of this point.

Rail:

California Northern and Union Pacific Railroads provide freight service.

Air:

The Napa Airport is located south of the city limits. On-call charter service is available 24 hours a day. Major airports (Sacramento, Oakland, San Francisco) are within one hour's drive. Evans Transportation provides shuttle service to and from San Francisco and Oakland airports.

Bus:

Napa Valley Transit & the VINE provide service north to Calistoga and south to Vallejo; there is connecting ferry service from Vallejo to San Francisco.

Truck:

Several companies serve Napa with overnight service throughout California; a UPS depot is in the Napa Valley Corporate Park.

Water Supply

The City of Napa is committed to providing a safe and reliable supply of quality drinking water. Water is provided by three city-owned and operated state-of-the-art treatment plants: Hennessey, Jamieson Canyon terminal of the State Water Project and Milliken.

Sewer Service

The Napa Sanitation District serves the City of Napa and adjacent unincorporated areas. Existing users pay an annual sewer service charge that is based on flow and strength. New connectors pay a connection fee, also based on flow and strength.

Solid Waste Disposal

The Napa-Vallejo Waste Management Authority, a joint powers agency between Napa City, Napa County and Vallejo City, provides garbage pick-up service for all residents and business, economical waste disposal facilities and activities including the Hazardous Waste Collection Facility for households and small quantity business generators.

Storm Drainage

The City of Napa is developing a Storm Drainage Master Plan and a base map for the system. Some parts of the system date back to the early 1900s and are in the process of being updated, using the revenue collected from the storm drainage service fee. The service fee has a cap of \$240/year for all commercial and industrial property and \$12/year for residential property.

Electricity and Natural Gas

Pacific Gas and Electric (PG&E) supplies electricity and natural gas to the City of Napa.

Telephone

Pacific Bell provides a variety of services to the City of Napa.

Local Newspapers

The *Napa Valley Register* is a daily newspaper and reports on countywide issues as well as national and international news.

Recent Major Projects

Recently completed projects include: COPIA, American Center for Wine, Food and the Arts, Napa Mill Historic Preservation Reuse Project, Napa Valley Opera House Theatre Restoration, Oxbow School for the Arts, and replacement of the Third Street Bridge. Other ongoing significant projects include: and the Hwy 29/Trancas St. Interchange and the Soscol Ave./Oxbow Bypass Bridge, part of the \$200 million Flood Improvement Initiative, which will significantly enhance the entire City of Napa and surrounding areas.

City Government

Napa operates under the council-manager form of government. Policy-making and legislative authority are vested in the governing council, which consists of a mayor and four council members. Council members are elected to four-year staggered terms with two council members elected every two years, and they also hire the City Manager, City Attorney and City Clerk. The City Manager is responsible for carrying out the policies of the City Council, overseeing the day-to-day operations of the City and for appointing the heads of the City departments.

Police

The Napa Police Department is committed to maintaining a safe and secure community environment and to promote a sense of trust and confidence in the police by members of the public. They provide law enforcement and crime prevention services including criminal investigations, traffic enforcement, police patrol and emergency response, juvenile services and communications services. The department administers a variety of community based policing programs, such as D.A.R.E. (Drug Abuse Resistance Education), G.R.E.A.T. (Gang Resistance Education And Training), Graffiti Control, Neighborhood Watch, and Traffic Patrol.

Fire

The Fire Department serves the community from four fire stations covering 18 square miles within the City limits of Napa. Each station provides an Advanced Life Support (Paramedic) Engine company staffed with a minimum of 3 personnel. In addition, Fire Station One provides a Ladder Truck Company capable of specialized operations and heavy rescue. The department staffing consists of 59 suppression, seven fire prevention and four administration personnel. The department participates in a multi-agency Hazardous Materials Response Team and maintains a Swift Water Rescue Team with two inflatable rescue boats.

Community Facilities

Health:

The City of Napa has excellent medical facilities: Queen of the Valley Hospital, Kaiser Permanente Clinic and Napa State Hospital. Nearby are also the St. Helena Hospital and Health Care Center and the Veterans Home of California. Paramedic service and the REACH emergency rescue program are in place as well.

Education:

Napa Valley Unified School District has 21 elementary schools, two middle schools, and three high schools including the New Technology High School in the city of Napa. Napa is also served by private and parochial schools including Justin Siena High School and the new Blue Oak School, an independent elementary school. Eighty percent of public and ninety percent of private high school students go on to college. Local higher education facilities include: Napa Valley College, 180 acre campus serving 11,000 students and Pacific Union College, 2,000 acre campus serving 1,600 students. University of California Berkeley, University of California Davis and Sonoma State University are all within 40 minutes.

Culture and Recreation:

Napa's mild climate encourages year-round outdoor activity. The City of Napa offers numerous neighborhood, community, and regional parks, wetlands and natural open areas; also hiking and river trails. Recreation and leisure facilities include three community swimming pools, a public golf course and public tennis courts. There are weekly Farmers' and Chefs' Markets from April through October. The preservation of historic neighborhoods and buildings is balanced with a dynamic mix of retail, fine dining and professional offices. The new COPIA, American Center for Wine, and the Arts recently opened. The arts further enrich downtown with studios, theaters and galleries.

Housing Availability, Pricing and Rentals:

Napa is a city known for its quality lifestyle. There are many neighborhoods, each with its own distinct character. Rentals for apartments and duplexes range from \$850 to \$2,100 per month; rentals for two and three bedroom houses range from \$1,000 to \$2,800 per month. The sales price of homes range from \$190,000 to over \$1,000,000. There are 13 mobile home parks with approximately 1,500 spaces located in the community area.

Industrial Sites:

Within the City of Napa and south to American Canyon, there are several business/industrial parks that offer sites for purchase, space in existing buildings for lease, and build-to-suit arrangements. The types of uses allowed cover the spectrum from office to R&D, from light to general manufacturing, and from warehouse to distribution. Examples are the Napa Valley Corporate Park, which comprises 246 acres and is located just south of the city limits. The Napa Valley Gateway Business Park, a 386-acre master planned development, and the Napa Airport Center, are also within close proximity to the City of Napa.

Economic Outlook

The City of Napa has a strong balanced economy, diversified labor force, and competitive land values, all good reasons to do business in the City of Napa. With access to transportation routes and its convenient location at the base of the Napa Valley, the City of Napa is the economic hub for the region. Private investment is on the rise. The business climate is expanding from its agriculture and tourism base to include a growing high-tech market. Retail and service industries are also experiencing growth.

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Town of Yountville

Community Profile

Population and Location

The Town of Yountville incorporated in 1965 is the heart of the Napa Valley. It has a full time residential population of 3200, and also is the host community of the California Veteran’s home with its 1100 members and over 600 staff. The Town is located approximately 60 miles North of San Francisco and 60 miles west of Sacramento.

Economic Trends

	1990	1995	2000	2005	2010
Population	2,098	2,507	2,916	3,250	3,390
Average Income/Household*	\$27,863	\$37,403	\$46,944	\$49,291	\$50,464
<i>*In constant 1995 dollars</i>					

Climate

The Town’s climate is characterized by long, dry warm summers and mild, somewhat wet, winters. The average maximum temperature during the months of July and August is about 90 degrees. During the winter months, temperatures drop to 30 to 40 degrees. The annual precipitation is about 33 inches.

Transportation

Highways:

State Highway 29 runs north/south west of the center of Town. The Silverado Trail runs north/south east of Town. The Yountville crossroad is the major east/west arterial that connects these two highways.

Rail:

The old SP freight right of way runs along the west side of Town. These tracks are now owned and operated by the Napa Valley Wine Train, which maintains the line, and operates limited passenger and major tourist excursions daily.

Air:

There are no private or commercial airports in Yountville. Major airports (San Francisco, Oakland and San Francisco) are an hour's drive away. The Yountville Shuttle provides fixed-rate and door-to-door service within the Town.

Bus:

Napa Valley Transit supplies service in Yountville to neighboring cities.

Water Supply

The Town is linked with the State Water system that supplies the Veteran's Home. This system includes Rector Dam, a modern water treatment plant east of town and major transmission lines to the town and the home. The Town also receives water from the State Water Project through the North Bay Aqueduct. This water is treated and delivered by the City of Napa.

Sewer Service

The Town maintains a wastewater plant to handle the needs of its businesses and residents. Immediately outside of its service areas rural service is by owner maintained septic systems.

Solid Waste

Upper Valley Waste Management provides garbage service, yard waste and recycling services.

Storm Drainage

A series of creeks cross through or near the Town providing drainage into the main channel, which is the Napa River. The River is the major transport of surface water runoff from the entire Valley area.

Electricity and Natural Gas

Pacific Gas and Electric (PG&E) supplies electricity and natural gas to the town.

Telephone

SBC is the major provider of phone services for Yountville.

Local Newspapers

The Yountville Sun is the locally owned and operated home town paper, the *Napa Register*, the *Santa Rosa Courier Journal* and the *San Francisco Chronicle* often feature news of the community.

Recent Major Projects

The Town is in the process of constructing a large flood control project to protect the Southeast side of Town from flooding. This flood wall project is and will be funded by a partnership with the Napa County Flood Control district, FEMA and local bond measures. The Wall will protect over 300 residences from up to a 100-year flood event. Total project cost is estimated between \$5-6 million.

Town Government

The Town of Yountville operates under the council administrator form of government. The Town Council consists of five members including the Mayor. The Town Administrator serves under the direction of the Town Council. Operating departments include Planning and Building, Public Works, and Administrative Services

Police

The Napa County Sheriff's Department provides law enforcement services under contract with the Town. Current staffing includes a Sergeant and two sworn Deputies. The community is very safe, with very major crimes reported. A county local combined fire station and sheriff's sub-station was opened in 1998.

Fire

Fire protection is provided under contract with the Napa County Fire Department and CDF.

Community Facilities

Health:

Aside from the State run Holderman Hospital on the grounds of the Veteran's Home there is one small clinic in Town. Yountville however is mid-way between and within 10-12 miles of the two major full service hospitals in Napa county.

Education:

Yountville is covered by the NVUSD, which provides K-12 education for children of the community in the district schools. Yountville Elementary School provides K-5 education at their campus.

Culture and Recreation:

Yountville is renowned for world class dining and lodging. Art galleries, fine shops, and restaurants all combine to make Yountville a premier travel destination. Hiking, cycling, ballooning, picnicking and multiple special events, races and recreational opportunities abound. Yountville has many parks and open space for the enjoyment of residents and visitors.

Housing Availability, Pricing and Rentals:

The median price of a home in Yountville is very near \$500,000. The official 7.5% vacancy rate, is distorted by the fact that many properties in Yountville are weekend residences of many of the bay area elite. The operational vacancy rate for the housing market is much closer to 2-2 ½% that makes for a very tight housing market. While this makes Yountville a difficulty community to find housing it does help maintain the value of the existing properties.

Industrial Sites:

After the Suburban Propane incident of the early 19990's there are no significant industrial sites in Yountville.

Residential Sites:

There is very little remaining developable space within the Town Boundary for future growth. Residential infill, subdividing large parcels and remodel of existing properties are the areas where opportunities for growth remain.

Economic Outlook

Yountville's overall economic outlook is solid, due the combination of location, value to the visitor and quality of services.

City of St. Helena

Community Profile

Population and Location

The City of St. Helen was incorporated as a City on March 24, 1876 and reincorporated on May 14, 1889. The current population is approximately 6050. The city is located 65 miles north of San Francisco in center of the world famous wine growing Napa Valley.

Economic Trends

	1990	1995	2000	2005	2010
Population	4990	5470	5950	6248	6396
Average Income/Household*	\$35,047	\$46,975	\$58,904	\$61,849	\$63,322
<i>* In constant 1995 dollars</i>					

Climate

The City’s climate is characterized by long, dry warm summers and mild, somewhat wet, winters. The average maximum temperature during the months of July and August is about 90 degrees. During the winter months, temperatures drop to 30 to 40 degrees. The annual precipitation is about 33 inches.

Transportation

Highways:

State Highway 29: The St. Helena Highway runs north/south through the center of town. In town, this highway is called Main Street.

The Silverado Trail runs north/south on the eastern side of town.

Rail:

There is no rail service in St. Helena. The Napa Valley Wine train’s northern terminus is in St. Helena. However there are no passenger facilities or drop offs in town.

Air:

There are no private or commercial airports in St. Helena. Major airports (San Francisco, Oakland and San Francisco are an 90 minute drive away.

Bus:

Napa Valley Transit supplies service in St. Helena to neighboring cities.

Water Supply

The water supply for the City of St. Helena comes from the Bell Canyon reservoir and from the deep groundwater sources of Stonebridge Well #1 and #2. The drinking water supply meets all federal and state drinking water standards.

Sewer Service

The City of St. Helena operates its own wastewater treatment plant. The capacity of the plant is 500,000 gallons per day.

Solid Waste

Upper Valley Disposal provides garbage pick-up service for all residential and business.

Storm Drainage

A series of creeks cross through or near the town providing drainage into the main channel is the Napa River. The River is the major transport of surface water runoff from the entire Valley area.

Electricity and Natural Gas

Pacific Gas and Electric (PG&E) supplies electricity and natural gas to the city of St. Helena.

Telephone

SBC provides a variety of services to the city of St. Helena.

Local Newspapers

The *St. Helena Star* has been publishing a weekly newspaper since 1874. The Star reports on local issues. The *Napa Valley Register* is a daily newspaper and reports on countywide issues as well as national and international news.

City Government

The City of St. Helena is a General Law City and operates under the Council-City Administrator form of government. The City of St. Helena provides a full range of governmental services including a Police Department, Fire Department, Parks and Recreation Department, Library Services, Public Works, and Finance Department

Police

The City of St Helena Police Department located at the civic center on Main Street and provides police services within the city limits. The Napa County Sheriff's office serves the unincorporated areas of the county surrounding St Helena. The Police Department has eleven sworn officers including one chief, two sergeants, six patrol officers, one investigator, and three dispatch personnel.

Fire

St Helena is served by the City of St Helena volunteer Fire Department, which maintains a new station, training center and emergency operations center in the Civic Center complex.. The Department maintains two Type 1 engines with a pump capacity in excess of 1,000 gallons per minute, one aerial truck with an 85-foot ladder, one Type 1 water tender and Type 3 engine (brush truck) for use in wildland fires, and one command vehicle. The Department has one Fire Chief, one full time administrative person and 28 paid on call firefighters.

Community Facilities

Health:

Aside from in town clinics and offices, St Helena is served by St Helena Hospital and medical center. St Helena Hospital is a private not for profit hospital of the Adventist health care network.

Education:

K-12 Education is provided by the St Helena School District. A new satellite campus of the Napa Valley College provides numerous general education and specialized programs including a culinary institute. St Helena is the closest incorporated area to Pacific Union College a major private four-year college.

Culture and Recreation:

St Helena has a reputation as a wonderful destination for fine dining, lodging and shopping. Its turn of the last century look to the old town with its many historic buildings and residences make it one of the most desirable places to visit or live in the country. Local theatre companies, symphony and annual events add enticement to the city's daily attractions. City parks are renown for their recreational opportunities including youth sports, bocce ball and an eclectic and vibrant farmers market.

Housing Availability, Pricing and Rentals:

A less than 5% official vacancy rate and a median cost per dwelling in excess of \$480,000 make St Helena's housing market one of the tightest in the Bay area. The small geographic size of St Helena and that only infill areas remain for future development will limit opportunities for housing growth.

Industrial Sites:

If one discounts in town wineries and a turn of the century Olive Oil factory St Helena has no major industrial areas.

Residential Sites:

Modern semi-custom housing has been built over the last 25 years to expand the city to the Rural Urban interface line.

Economic Outlook

With its strong tourism base, the outlook for St Helena is comparable to the other small communities in the Valley.

City of Calistoga

Community Profile

Population and Location

The City of Calistoga is located at the North end of the Napa Valley, approximately 80 miles North of San Francisco. Calistoga is well known for its many spas and hot springs. Calistoga is a tourist oriented community. The City population is approximately 5,190, with the visitors pushing that number up to 10,000 on weekends. Calistoga is also home to the Napa County Fairgrounds, which hosts the fair during the Fourth of July weekend.

The area within city limits covers approximately 2.5 square miles. Most of the land within city limits is located on the Napa Valley floor, which is punctuated by small hills, including Mount Washington and Mount Lincoln. In addition to the dramatic visual setting provided by nearby hills and mountain ridges, local geology provides Calistoga with unique geothermal resources including its famed hot springs. The Napa River passes through the City.

Economic Trends

	1990	1995	2000	2005	2010
Population	4,468	4,829	5,190	5,450	5,579
Average Income/Household*	\$25,196	\$32,3225	\$39,454	\$41,427	\$42,413
<i>* In constant 1995 dollars</i>					

Climate

The climate in Calistoga is warmer than that in the rest of the Bay Area. Nevertheless, in summer, Calistoga is protected from the hot weather of the Central Valley of California by the coastal mountain ranges. The Pacific Ocean provides a source of cool, moist air in the summer. Average high summer temperatures are in the upper 80's and winters are generally mild with occasional cold spells. Average high winter temperatures are in the high 50's to low 60's with minimum temperatures in the low 30's. Calistoga receives about 50 percent of the total possible sunshine in winter and about 80 percent in summer.

Transportation

Highways:

Hwy 29 (Lincoln Avenue) runs through the main downtown area

Hwy 128 borders the City on the west

Silverado Trail borders the City on the east

Air:

Calistoga is located approximately 40 minutes north of the Napa Airport, one and a half hours north of Oakland International Airport and two hours north of San Francisco International Airport.

Bus:

Napa Valley Transit supplies service to the Napa Valley.

Water Supply

Kimble Reservoir and Water Treatment Plant are City facilities and are the primary source for municipal water in Calistoga. The City has a low-pressure connection to the City of Napa Water Treatment Facility through which it receives treated water from the State Water Project allotments to augment the local source.

Sewer Services

Calistoga Public Works maintains over 50 miles of transmission lines and a state-of-the-art sewage treatment plant.

Solid Waste Disposal

Upper Valley Disposal provides garbage pick-up service for all residential and business.

Storm Drainage

A series of creeks cross through or near the town providing drainage into the main channel is the Napa River. The River is the major transport of surface water runoff from the entire Valley area.

Electricity and Natural Gas

Pacific Gas and Electric (PG&E) supplies electricity and natural gas to the city of Calistoga.

Telephone

SBC provides a variety of services to the city of Calistoga.

Local Newspapers

Two newspapers, the *Calistoga Tribune* and the *Weekly Calistogan*, serve the area. Regional and national newspapers are also available for delivery to local residents.

City Government

The City of Calistoga operates under the council-manager form of government. The City Council consists of five members including the Mayor. The City Manager serves under the direction of the City Council. Operating departments include Planning and Building, Public Works, Police, Fire, and Administrative Services.

Police

The City of Calistoga Police Department located at 1235 Washington Street, provides police services within the city limits. The Napa County Sheriff's Office serves the unincorporated areas of the County surrounding Calistoga. The Police Department has eleven sworn officers including one chief, two sergeants, eight patrol officers, one investigator, and one Emergency Program Coordinator.

Fire

Calistoga is served by the City of Calistoga Fire Department, which maintains a station at 1113 Washington Street. The Department maintains three Type 1 engines with a pump capacity in excess of 1,000 gallons per minute, one Type 2 water tender that can also be used as a Type 2 engine, two Type 3 engines for use in wildland fires, and one rescue vehicle. The Department has one full time fire chief, two full time firefighters and up to 30 paid on-call firefighters.

Community Facilities

Health:

The Vermeil Clinic is the main general medicine clinic in town. It is part of the Adventist Health Care Systems that runs the two closest hospitals, St Helena Hospital, to the Southeast, and Adventist Hospital in Clear Lake. Additionally Sun Bridge and Cedars are convalescing hospitals caring for the aged and infirm.

Education:

The Calistoga Unified School District is made up of one elementary school and a combined junior and senior high school facility. There is also a small continuation high school complex called Palisades high School. Bus service is provided to all three schools. Napa Valley College is located approximately 30 miles to the South and Santa Rosa Junior College is approximately 15 miles to the West.

Culture and Recreation:

Calistoga has three art galleries, a local museum, world class hiking at the Palisades, Boothe and Robert Louis Stevenson state parks, cycling and full service health spas featuring natural hot mineral waters and volcanic mud. Calistoga is the crossroads between the great wine growing regions of the Napa, Knights, Anderson and Sonoma Valleys.

Housing Availability, Pricing and Rentals:

Housing stock in Calistoga is limited. Housing prices have risen in the last few years with sales of homes ranging from \$300,000 to over \$700,000. There are three age restricted mobile home parks located within the city limits.

Industrial Sites:

Calistoga is home to natural volcanic hot springs. What industrial sites are within the city limits are two major spring water companies, Crystal Geyser and Calistoga Water. Other than these sites the economy is based on service industries including many world famous spas, tourisms and agriculture.

Residential Sites:

Old town consist of houses and cottages built between 1890 and 1945. In the post war years small residential and tract development has expanded the residential base the city limits.

Economic Outlook

Calistoga has a robust local economy that due to its many attractions and proximity to the Bay Area is a visitor destination for visitors seeking Health Spas, fine dining and great wines. Tourism, service and light industry give Calistoga an economic diversity admirable for a city of its size.

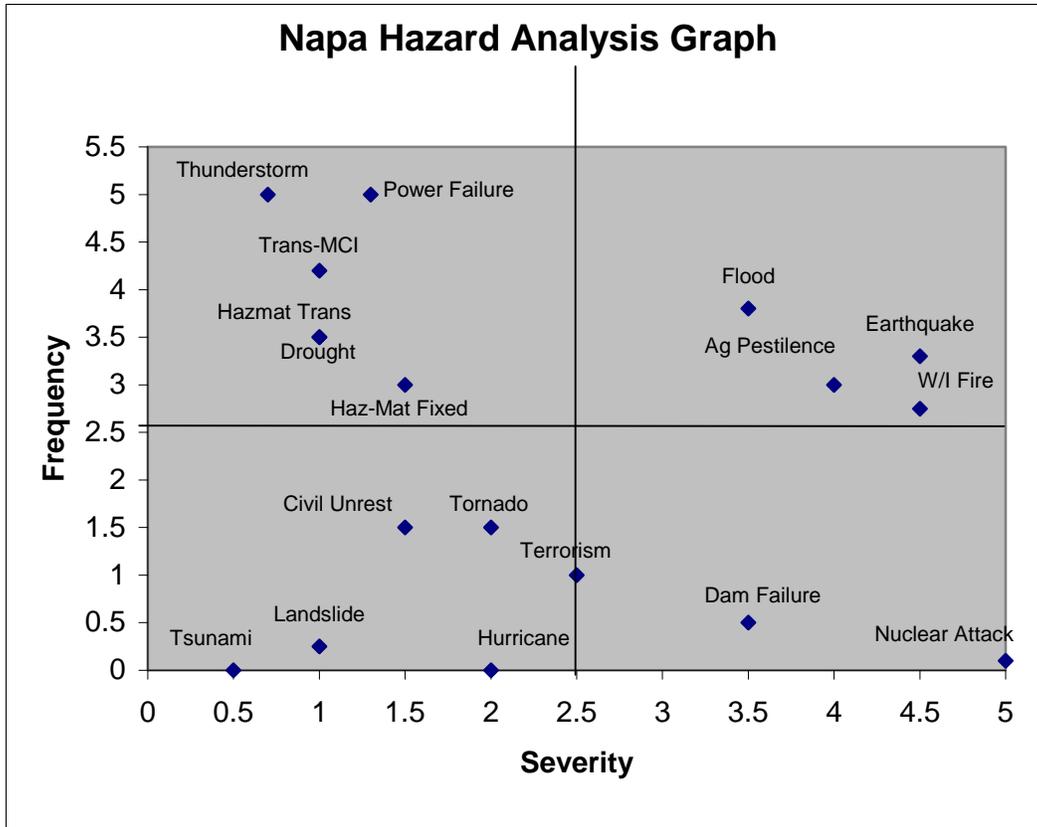
HAZARD IDENTIFICATION

The planning process used the FEMA tools to evaluate all the possible threats faced. Through the threat analysis process the most probable threats, the most devastating threats and the most significant threats to Napa County were identified. Appendix D details the historical and future potential of the most significant hazards. The four most significant hazards faced are: floods, earthquakes, wildland interface fires, and terrorism and technological hazards.

Mitigation of these significant hazards has the side benefit of appreciably enhancing the overall disaster resistance in the community from related threats. For example, the clearing of roads of intrusive vegetation eliminating a wildfire hazard will also speed the restoration of the road after an earthquake. The effect of mitigation actions carried out is recognized as a synergistic effect. The following figure shows the hazard evaluation conducted using data from the last 20 years.

NAPA HAZARD ANALYSIS DATA						
Hazard	Frequency			Severity		
	History	Probability	Rating	Vulnerability	Worst Case	Rating
Civil Unrest	1	2	1.5	1	2	1.5
Dam Failure	0	1	0.5	3	4	3.5
Drought	3	4	3.5	1	1	1
Earthquake	3	3.5	3.3	4	5	4.5
Fire-W/I Interface	2	2	1	2.5	3.5	3
Flood	4	3.5	3.8	4	3	3.5
Hazmat-Fixed Facility	3	3	3	1	2	1.5
Hazmat-Transportation	4	3	3.5	1	1	1
Hurricane	0	0	0	2	2	2
Landslide	0	0.5	0.25	1	1	1
Nuclear Attack	0	0.1	0.1	5	5	5
Power Failure	5	5	5	0.5	2	1.3
Terrorism	0	2	1	2	3	2.5
Tornado	2	1	1.5	2	2	2
Transportation-MCI	4	4.3	4.2	1	1	1
Tsunami	0	0	0	0	1	0.5
Thunderstorm	5	5	5	1	0.5	0.7
Volcano	0	0	0	0.5	2	1.3

By plotting the treats on a Cartesian plane one can get a better view of the true magnitude, potential, probability and significance of the threats. The following figure demonstrates this analysis.



In the raw data, as displayed using the federal systems, nuclear attack is as it has been historically the greatest potential threat. However planning for this national security threat involves every level of government and any planning that is being conducted will not appear in public documents.

The following Section will explore the major hazards that Napa County currently faces.

FLOOD HAZARD

The Napa River drainage basin is located just north of San Pablo Bay between the eastern Howell Mountains and the western Mayacmas Mountains. The drainage basin is about 50 miles long on a north-south axis, ranges from five to ten miles in width and covers approximately 426 square miles.

The Napa River originates near Mount St. Helena, traverses the center of the basin, and empties into the Mare Island Strait, which flows into the tidal marshlands and sloughs of San Pablo Bay. The relatively flat lands of the basin are centered about the river and consist of farm valley areas north of the City of Napa and tidal marshlands, reclaimed tidal lands and industrial areas south of the City.

The Napa River is navigable from San Pablo Bay to Third Street in downtown Napa. Tidal waters extend through downtown Napa to Trancas Street, which is the upstream limit of the flood protection project. The river is sinuous throughout its course and has a large oxbow area within the city of Napa. Many residential, business and industrial buildings are located along the Napa River within the city limits.

Napa Creek is a tributary to Napa River in the City of Napa. Its headwaters rise in the Mayacmas Mountains on the west side of the valley and flow southeasterly to discharge through a narrow, meandering channel into the Napa River in downtown Napa. The Napa Creek drainage area is 14.9 square miles.

Flood History

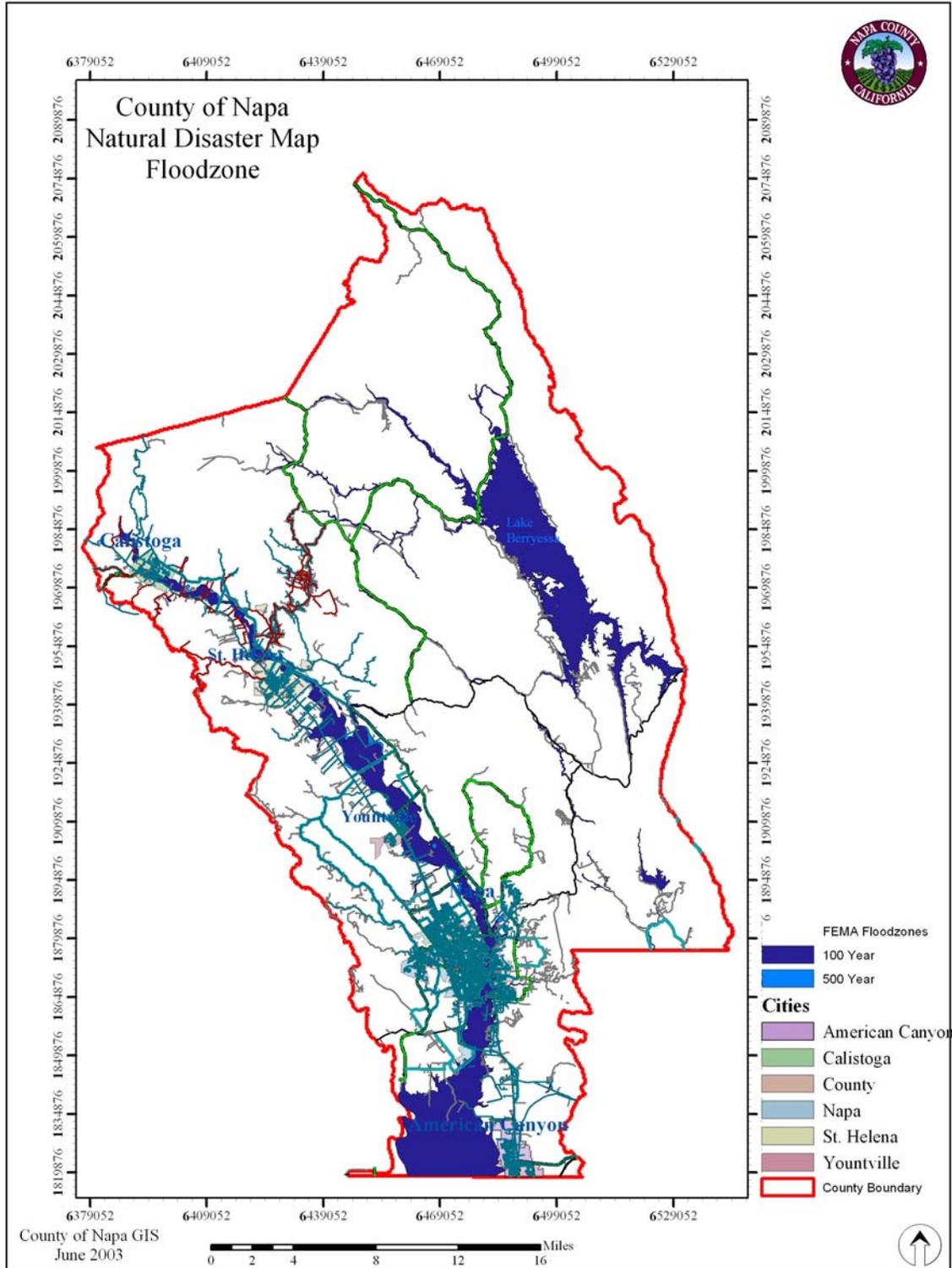
Almost all of the land adjacent to the Napa River is subject to flooding. Numerous damaging floods have been recorded since 1862 on the Napa River. Seven major floods occurred between 1862 and 1900. The 14 most recent serious floods occurred in 1942, 1943, 1955, 1962, 1963, 1965, 1967, 1973, 1978, 1982, 1983, 1986, 1995, 1997 and 1998.

The February 1986 flood was estimated to have been a 35-year event. The flood resulted in three people dead, 27 injured, 5,000 evacuations, 250 homes destroyed, and another 2,500 residences damaged countywide, totaling \$100 million in damages. The most recent flooding occurred in January 1997.

The flood threat to each of our communities is illustrated by the following series of maps. Since flooding routinely develops from north to south, the maps are presented in that order.

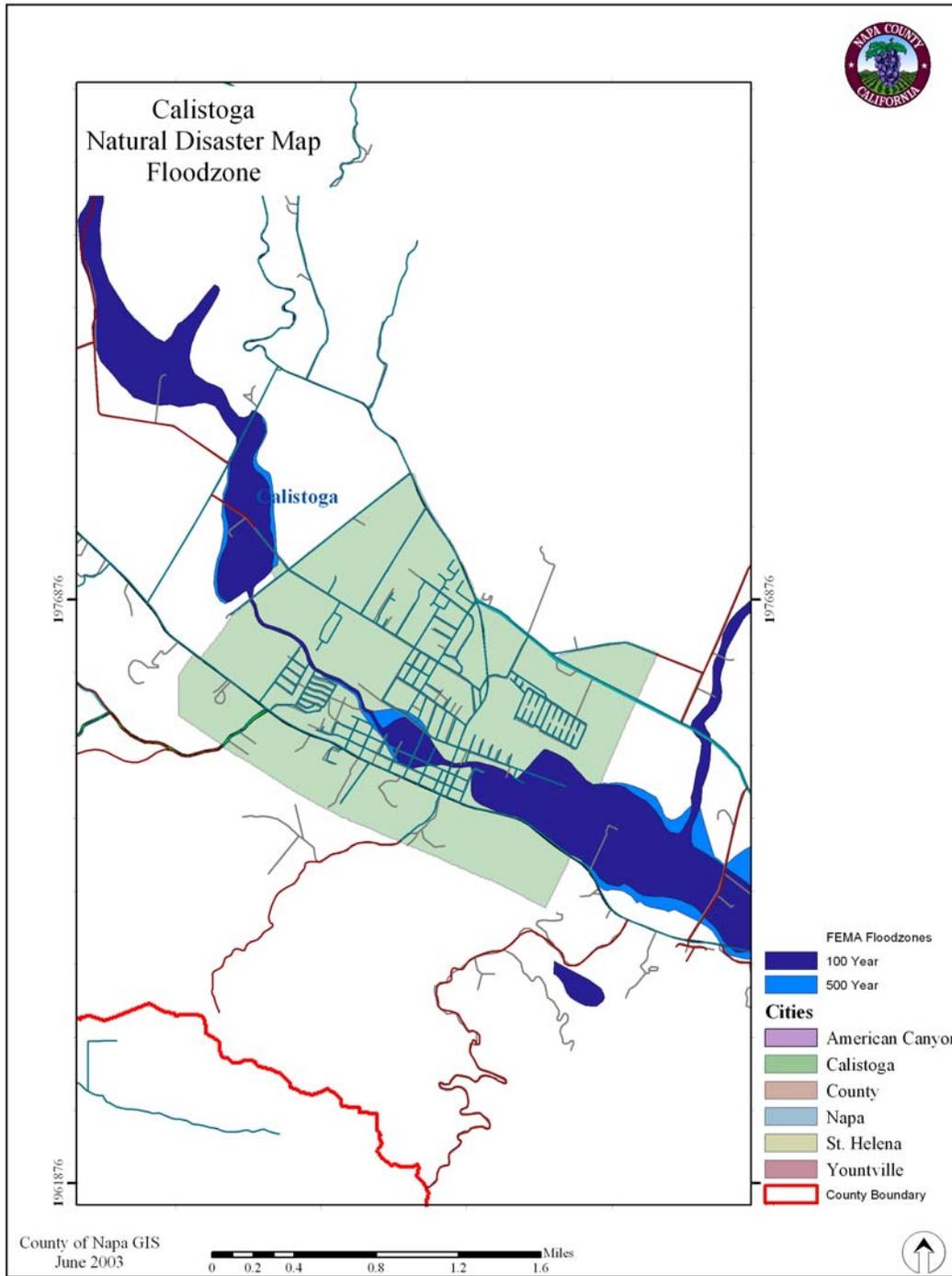
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Napa County Flood Zone Map



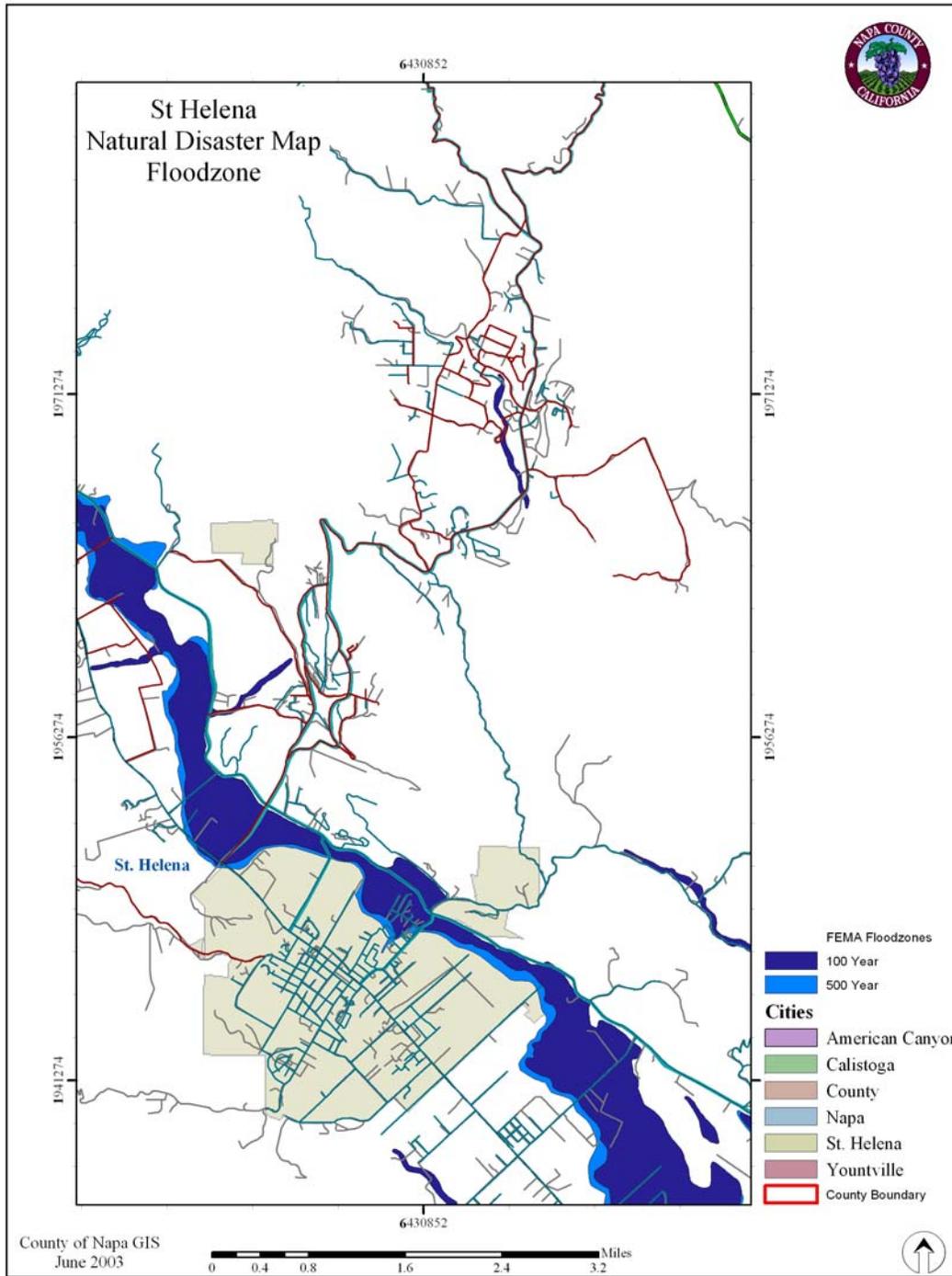
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Calistoga Flood Zone Map



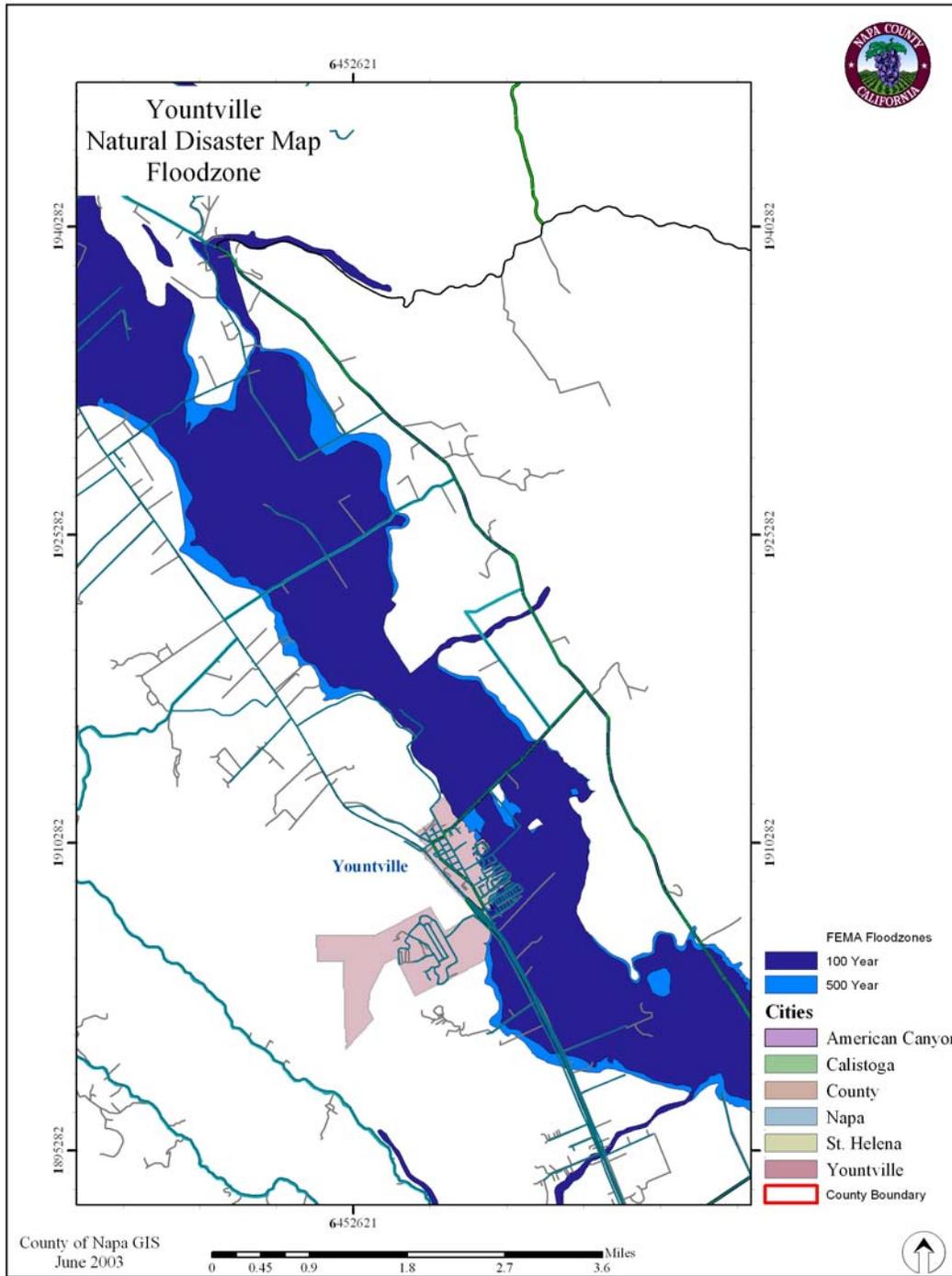
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St. Helena Flood Zone Map



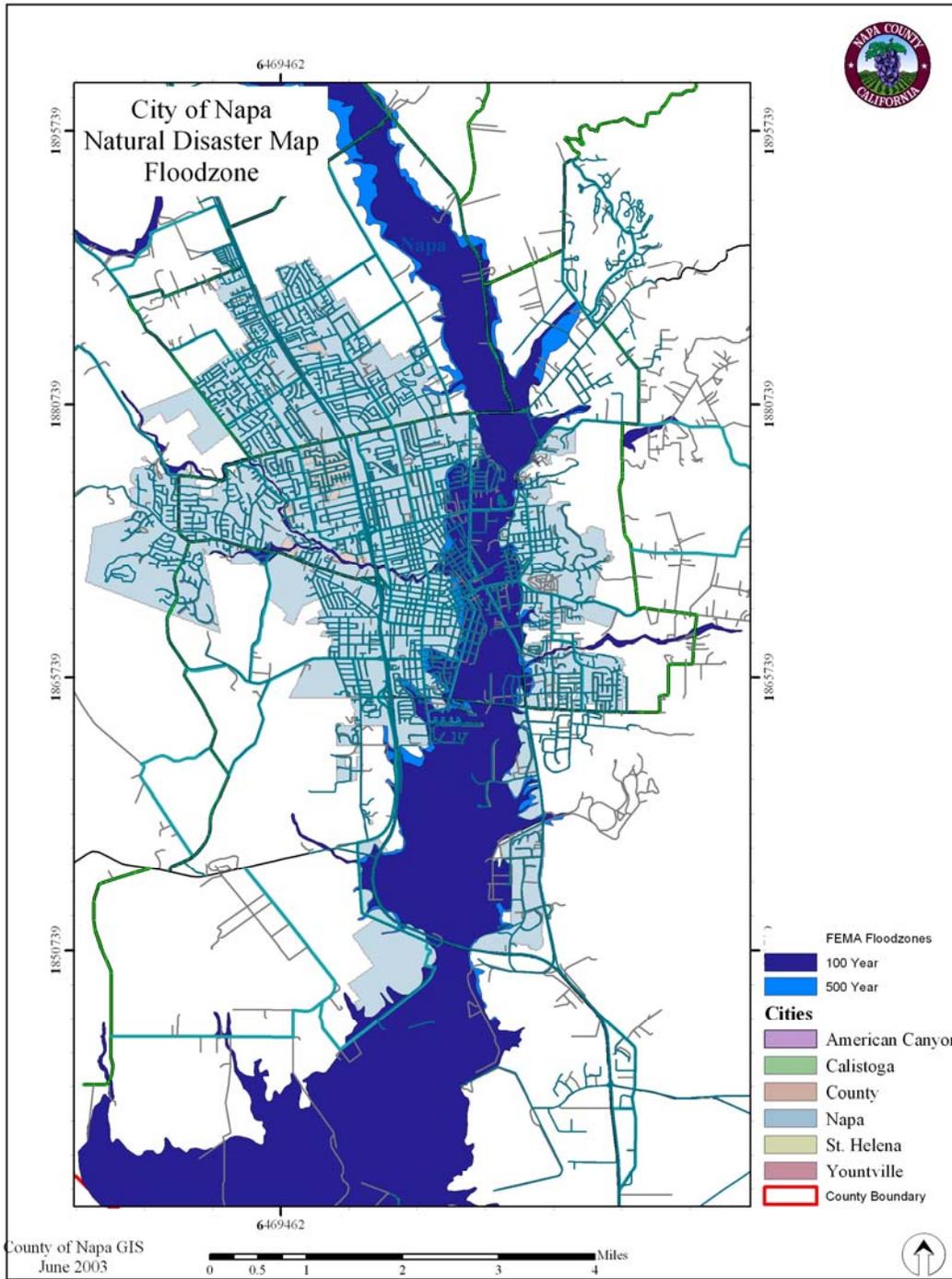
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Yountville Flood Zone Map



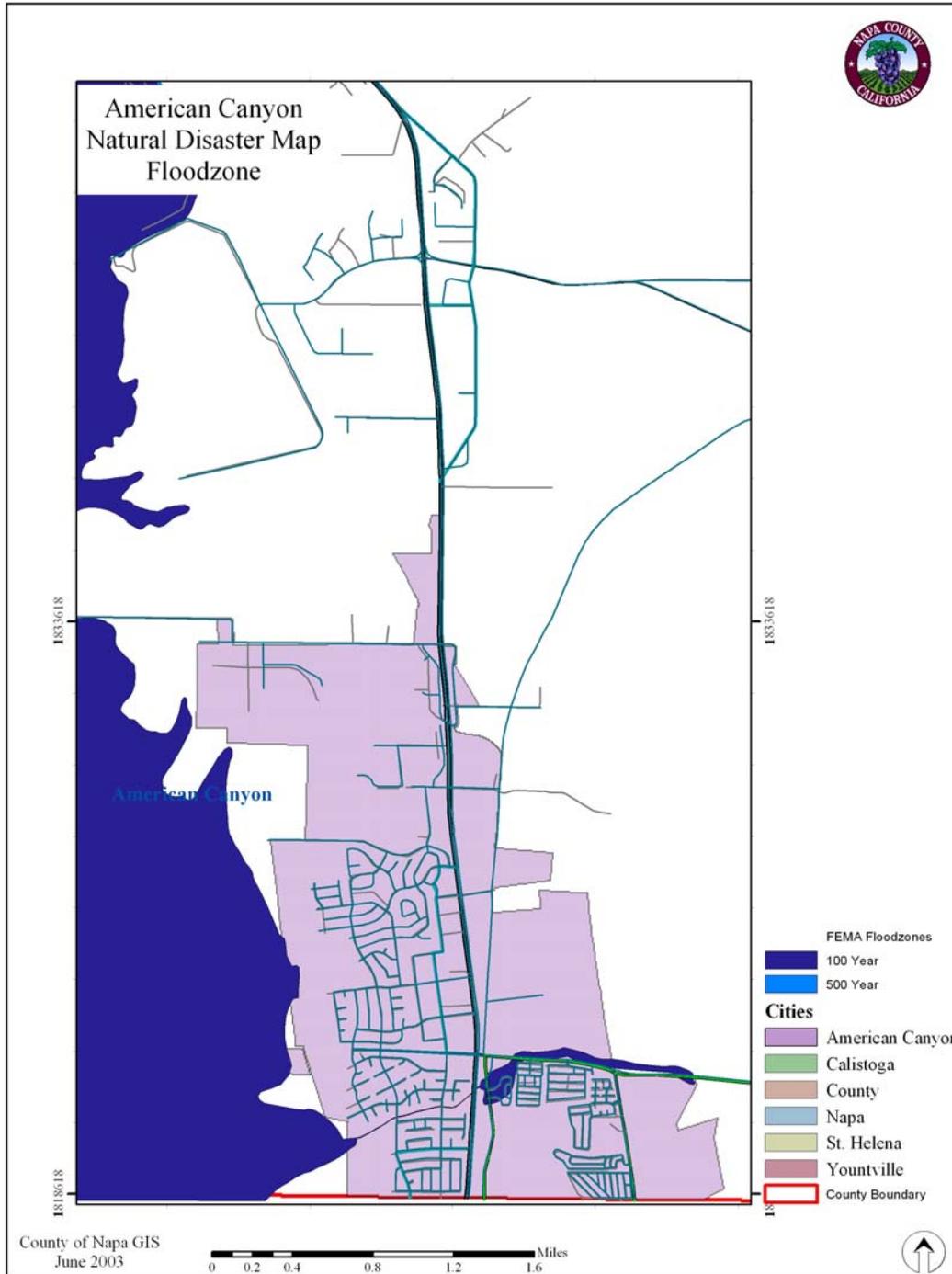
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Napa City Flood Zone Map



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American Canyon Flood Zone Map



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Napa River Flood Control Project

The Federal Government first became involved with the Napa River in 1938 when "preliminary examinations and surveys" were authorized by the Secretary of War. Six years later, House Document 626 of the 78th Congress was released. The report recommended channel improvements for reaches of the Napa River and Conn Creek, and construction of a dam to create a 37,000 acre-foot flood damage reduction and water conservation reservoir on Conn Creek. Although these features were authorized by the Flood Control Act of 1944, Congress never appropriated construction funds. So, during 1948, the City of Napa built a dam on Conn Creek to establish a 31,000 acre-foot water conservation reservoir.

The flood of 1955 compelled the Committee on Public Works of the House of Representatives to request the Board of Rivers and Harbors "to review reports on Napa River and its tributaries" and "determine the need for modification of the recommendations in such reports and the advisability of adopting further improvements for flood control and allied purposes in view of the heavy damages caused by recent floods." The committee's request was fulfilled in 1963 by the "Review Report for Flood Control and Allied Purposes" which recommends that previously authorized flood control improvements above Soscol Street be rescinded and that the Federal Government should "adopt a project in the basin below Trancas Street for flood control and recreation purposes."

Three years passed before funding for "Advanced Engineering and Design (1967) was provided and in September of 1975 a General Design Memorandum (GDM) and Environmental Impact Statement (EIS) was completed. The 1975 Plan included recreation features that were requested by the local sponsor, the Napa County Flood Control and Water Conservation District (NCFCWCD). Voters opposed the 1975 Plan by referendum election in 1976 and again in 1977. After its second defeat, the project was placed in inactive status at the request of NCFCWCD.

The 1986 flood revived public interest in flood damage reduction. Subsequently, in 1987, the NCFCWCD requested the project be reactivated. The project was reactivated in Oct. 1988 and Preconstruction, Engineering and Design (PED) activities were initiated. In April 1995 the Sacramento District submitted a plan to provide 100-year flood protection for the City of Napa, CA for public review.

This Plan followed a more traditional approach of enlarging the existing channel and constraining the river to its main channel. The proposed Plan received numerous adverse comments. Major concerns were salinity intrusion due to channel deepening, degradation of water quality in the river, disposal of contaminated dredge material, and the general environmentally insensitive nature of the project. Because of these concerns, many local and environmental groups requested modifications to the Plan. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), which must provide a Section 401 Water Quality Certification, stated, "Without major improvements in the project and the Draft Supplemental Environmental Impact Statement/Environmental Impact Report

(SEIS/EIR) as currently submitted, approval of this project will be difficult." With this reaction, the local sponsor did not believe they could get sufficient community support to provide the local financing. It appeared as if the Napa River Project could not be implemented.

To foster community consensus and support for a flood protection plan, NCFWCWD initiated a community-wide coalition process. Its purpose was to consider various ways to modify the plan initially proposed so it would be more acceptable to the community and resource agencies. The Community Coalition, with the assistance of outside consultants, resource agency personnel, and the Corps of Engineers Napa Project Delivery Team (PDT) held numerous meetings from January 1996 to May 1997 to develop modifications to the Plan that would bring broader acceptance.

During this collaborative process, many meetings were held and much information was prepared and presented for consideration by community stakeholders. These meetings addressed the engineering, environmental and economic aspects of the Napa River Project. The process started with distrust of the Corps of Engineers; however, through open and honest communication with all stakeholders this distrust was alleviated. The PDT was open to all suggestions and the mission became to better understand what the stakeholders wanted in this project. A "living river" concept was developed. This would be a river system with structure, function, and diversity. It would have physical, chemical, and biological components that function together to produce complex, diverse communities of plants, and animals.

To support such a concept, some environmental restoration would need to be integrated into the project. However the Corps was working with an old authorization (1964) that did not include environmental restoration as a purpose and it became our job to design a project that stayed within the original authorization yet could still meet this additional requirement. Working with other professionals both within and outside the Corps, the PDT successfully developed such a design. River conveyance was increased by excavating in the overbank and leaving the existing river intact. This channel modification design was guided by an understanding of the geomorphic fluvial and estuarine processes forming the channel in this tidal reach. This approach also provided a structure for the restoration of tidal wetlands, previously destroyed in this estuary system. All stakeholders were in support of this design.

The result of this collaborative process was a modified Plan that provided the desired flood protection, eliminated the environmental concerns associated with the previously developed Plan, and also provided significant associated environmental quality outputs. The revised Plan underwent public and policy review in 1998. The Plan has received much media attention and has been touted as the new approach to flood protection. NCFWCWD held a local election in 1998 to increase the County sales tax to provide their portion of the financing. The PDT assisted in providing informational material about the project and meeting with interested groups during the election campaign. This vote was successful in March 1998 and another major hurdle was overcome. The PCA for the

Napa Project was signed in February 2000 with the first construction contract awarded in July 2000.

This collaborative process continues as the final plans and specifications are being prepared for future construction contracts. The Napa Project runs through the heart of downtown Napa. Land acquisition is complicated and many utility relocations are required. There are several petroleum-contaminated sites, which are being remediated. The Corps continues to work closely with the local sponsor to continue assistance in their real estate acquisitions and to coordinate construction to minimize impacts to utility and city operations. A requirement of the Local County election was the establishment of a Technical Advisory Panel (TAP). The PDT coordinates closely with this group to answer their questions and keep them apprised of the final design and any construction changes. The PDT continues close coordination with the Resource Agencies as the Operation and Maintenance Manuals are prepared and monitoring plans developed to ensure that impacted environmental resources are replaced and enhanced.

Collaboration does not make the design process simpler or faster. Design choices that in the past were the sole discretion of the Corps must now be discussed and joint agreement reached with all stakeholders. Today, communities see these types of endeavors as their projects and not just Corps projects. The Napa River Project is seen as a community success, not just as a Corps of Engineers success, as it and all flood protection projects should be. Current PDT efforts are to ensure that this complicated project stays on schedule and it remains a broad Team effort that includes not only the Corps of Engineers PDT but also all the other stakeholders who have contributed so much in making the Napa Project a reality.

Napa County Small Stream Flood Threat

Although the Napa River is the main drainage for the surrounding watershed, and the Measure A Flood Control Project when (and if) completed will prevent catastrophic flooding along the river's banks, there remains a significant threat of flooding along the many feeder streams in the Napa River watershed.

Garnett Creek is the uncontrolled headwaters of the Napa River in the northwest end of the valley, numerous low-lying properties and two bridges are subject to damage along its length. On the west side of the watershed, Sulphur Creek, Dry Creek, Hopper Creek, Redwood Creek, Napa Creek and Browns Valley Creek all contribute substantial runoff to the Napa River drainage during the wet season. All these creeks bisect developed area and are crossed by late 19th and early 20th century bridges with low approaches and low stream clearance.

On the east side Conn Creek, which is fed by the spillway at Conn Dam when Lake Hennessey is at full capacity, Rector Creek, and Milliken Creek all have the same characteristics. The desirability of creek side real estate as a residential location has moved residents into the high water zones of all these creeks. Land use polices over the last 170 years of development in Napa County have done little to preclude development

in these areas, and control of the riparian corridors by government is still very controversial, as witnessed by the recent extreme public opposition exhibited against our proposed Stream Setback Ordinance.

Mitigation can lessen the threat to these residents and local infrastructure. The areas of greatest efficacy would be in improving bridge approaches, vegetation and streambed management and land use practices.

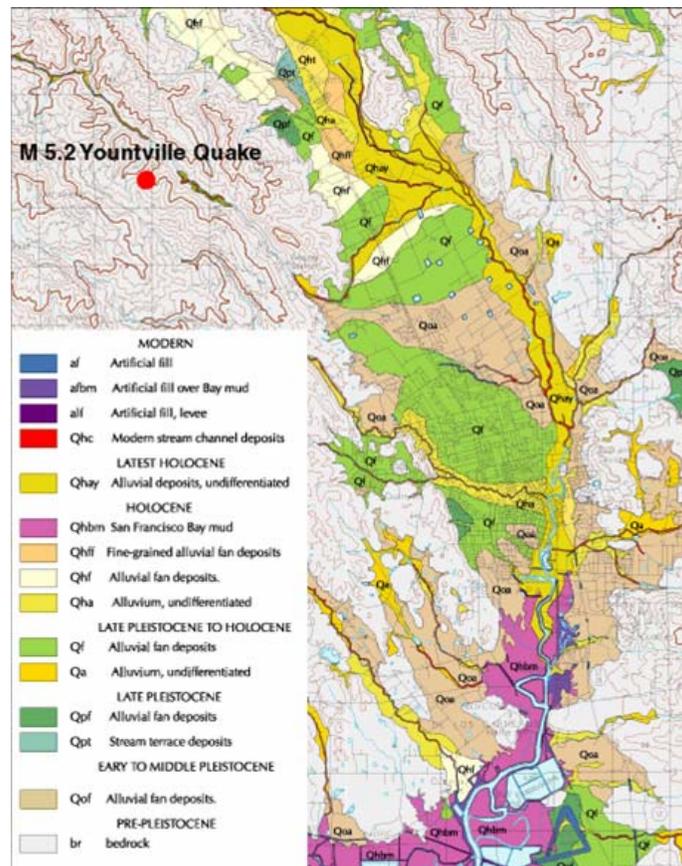
EARTHQUAKE HAZARD

Earthquakes are considered to be one of the most potentially destructive threats to life and property in Napa County. A moderate to severe seismic incident on any of several fault zones in relative close proximity to the County is expected to cause:

- Extensive property damage, particularly to pre-1930’s unreinforced masonry structures
- Significant numbers of fatalities and injuries
- Damage to water and sewage systems
- Disruption of communications systems
- Broken gas mains and petroleum pipelines, resulting in numerous fires
- Disruption of transportation arteries
- Competing requests for scarce mutual aid response resources

Major faults that directly affect Napa County include the Northern San Andreas, the Rodgers Creek, the Northern Hayward, the Concord Green Valley and the West Napa Fault. Additionally most of Napa County’s resources and population are on the Napa Valley floor. The valley floor consist of alluvial soils that enhance and amplify the shaking from earthquakes, the following figure clearly illustrates this shaky ground.

Soil Types on the Napa Valley Floor

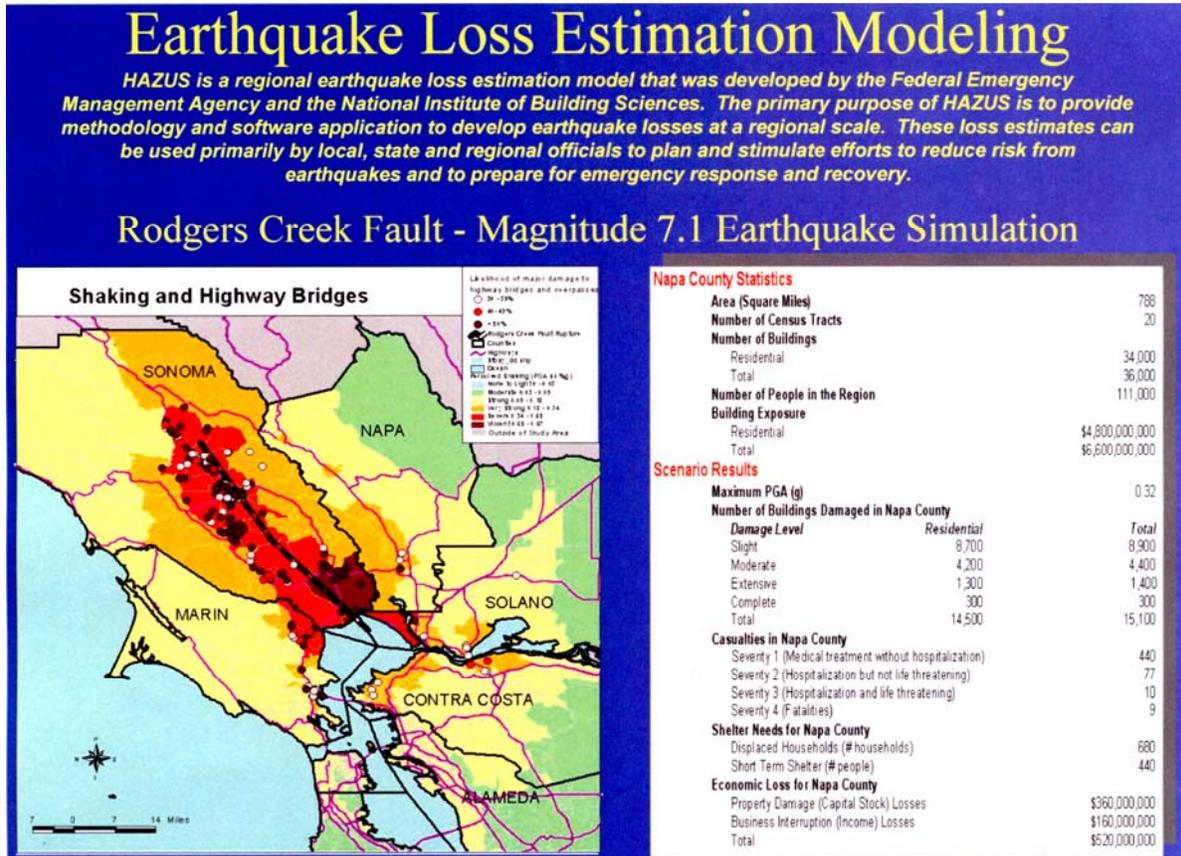


Hazus Information

As part of its efforts to mitigate hazards and protect lives and property from the devastating effects of natural disasters, FEMA provides individuals, businesses, and communities with information and tools to work proactively to mitigate hazards and prevent losses resulting from disasters. One of these tools is HAZUS or Hazards U.S., a natural hazard loss estimation methodology developed by FEMA under contract with the National Institute of Building Sciences.

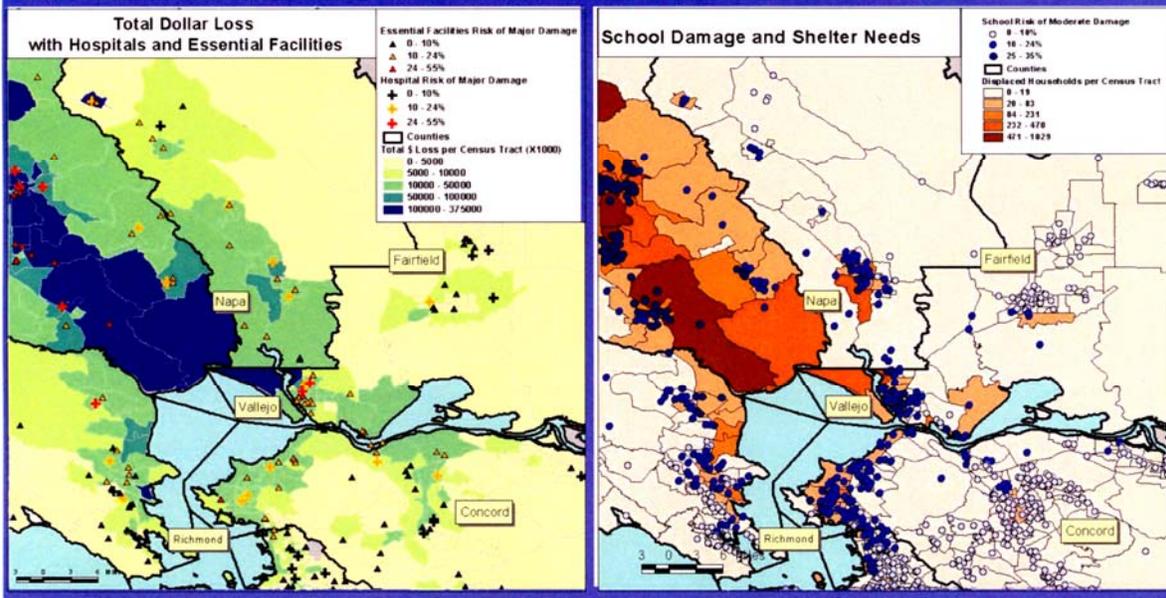
Using Geographic Information Systems (GIS) technology, HAZUS allows users to compute estimates of damage and losses that could result from an earthquake. To support FEMA's mitigation and emergency preparedness efforts, HAZUS is being expanded into HAZUS-MH , a multi-hazard methodology with new modules for estimating potential losses from wind and flood (riverine and coastal) hazards.

HAZUS Modeling Rodgers Creek Fault



Bay Area Loss: \$12 Billion

Napa County Loss: \$520 Million

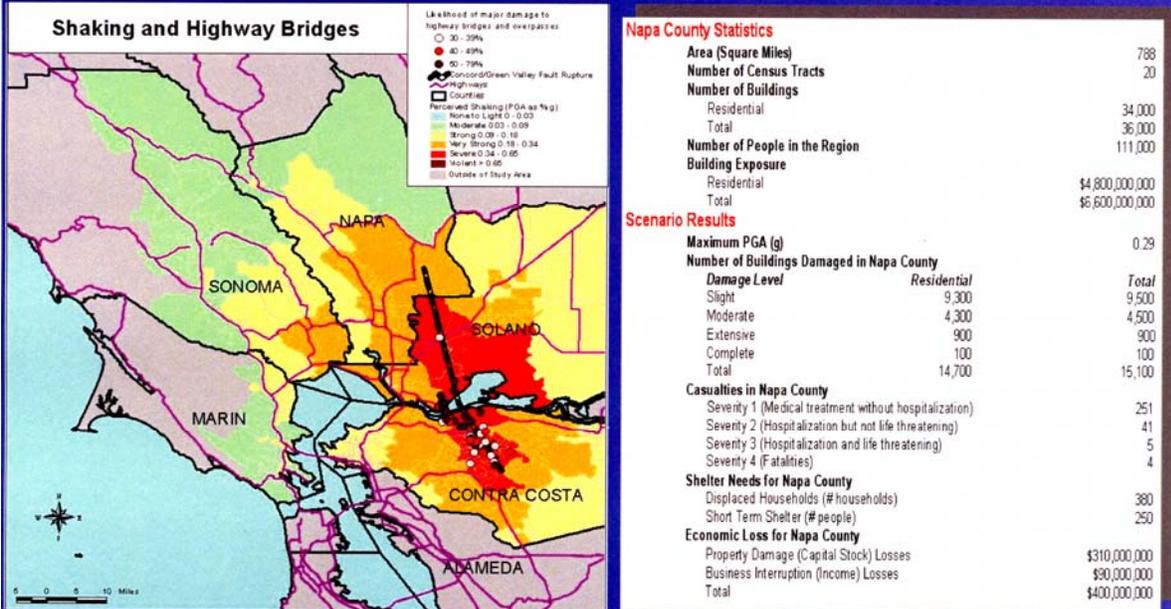


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HAZUS Modeling Concord/Green Valley Fault

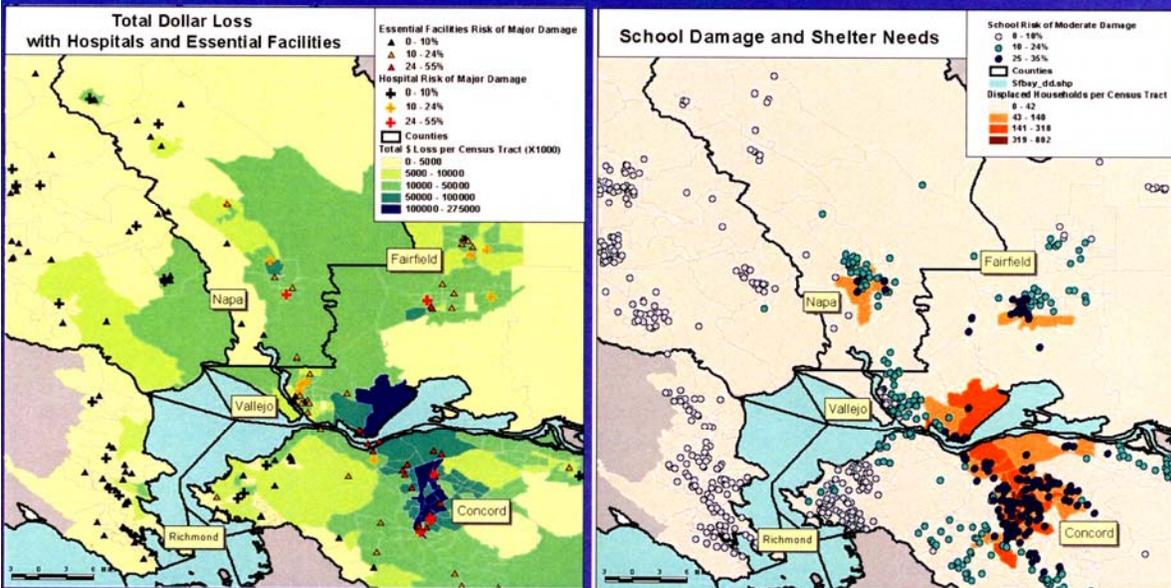
Disclaimer: The estimates of social and economic impacts contained in this report were produced using current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geo-technical, and observed ground motion data.

Concord/Green Valley Fault- Magnitude 6.8 Earthquake Simulation



Bay Area Loss : \$7 Billion

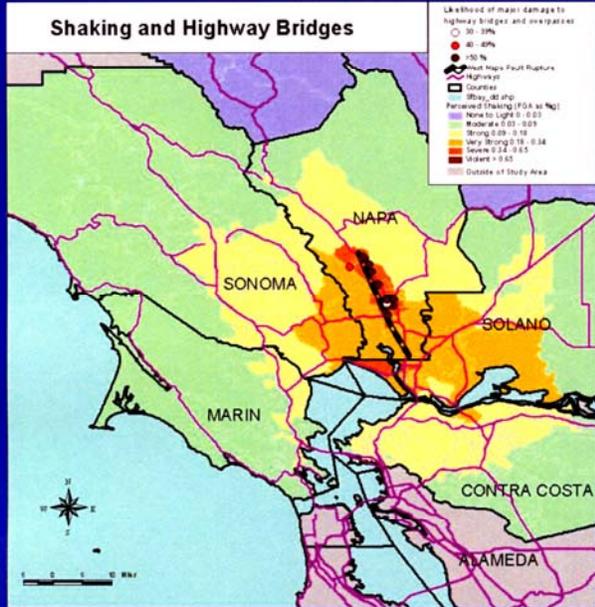
Napa County Loss: \$400 Million



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HAZUS Modeling West Napa Fault

West Napa Fault Magnitude 6.5 Earthquake Simulation



Napa County Statistics

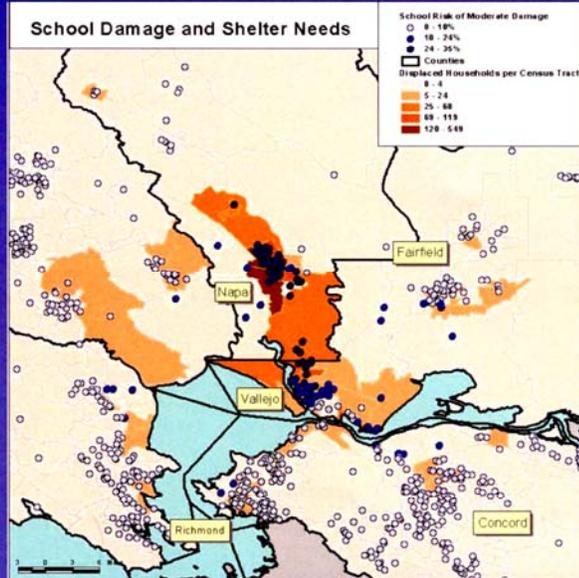
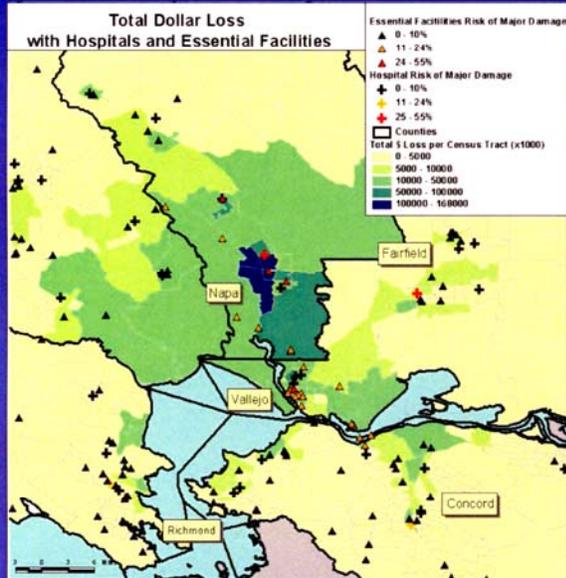
Area (Square Miles)	788
Number of Census Tracts	20
Number of Buildings	
Residential	34,000
Total	36,000
Number of People in the Region	111,000
Building Exposure	
Residential	\$4,800,000,000
Total	\$6,600,000,000

Scenario Results

Maximum PGA (g)	0.54	
Number of Buildings Damaged in Napa County		
Damage Level	Residential	Total
Slight	9,800	10,000
Moderate	8,100	8,300
Extensive	2,600	2,700
Complete	1,200	1,200
Total	21,700	22,300
Casualties in Napa County		
Severity 1 (Medical treatment without hospitalization)	1,059	
Severity 2 (Hospitalization but not life threatening)	198	
Severity 3 (Hospitalization and life threatening)	30	
Severity 4 (Fatalities)	25	
Shelter Needs for Napa County		
Displaced Households (#households)	1,900	
Short Term Shelter (#people)	1,240	
Economic Loss for Napa County		
Property Damage (Capital Stock) Losses	\$780,000,000	
Business Interruption (Income) Losses	\$230,000,000	
Total	\$1,010,000,000	

Bay Area Loss: \$2.6 Billion

Napa County Loss: \$1 Billion



Data Sources: 1990 Census, Building Inventory 1995 Dunne & Bradstreet
 Shakemap Data Analysis: Calif. Division of Mines & Geology
 HAZUS Analysis and Maps – California Office of Emergency Services

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As the preceding studies demonstrate even a “ moderate” earthquake occurring in or near this area could result in deaths, casualties, property and environmental damage, and disruption of normal government and community services and activities. The effects could be aggravated by collateral emergencies such as fires, flooding, hazardous material spills, utility disruptions, landslides, transportation emergencies and the possible failure of the Napa County dams.

In this type of disaster, the community needs would exceed the response capability of the County's emergency management organization, requiring mutual assistance from volunteer and private agencies, the Governor's Office of Emergency Services, and the Federal Emergency Support Functions.

In any earthquake, the primary consideration is saving lives. Time and effort must also be given to providing for people's mental health by reuniting families, providing shelter to the displaced persons and restoring basic needs and services. A major effort will be needed to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities and provide continuing care and temporary housing for affected citizens.

The West Napa Fault is the most serious know fault that threatens Napa County. Up to a Richter scale 7.0 magnitude quake is possible on this fault with the most likely large event being in the range of Richter magnitude 6.7.

This scenario earthquake is for a magnitude 6.7 earthquake on the West Napa fault in Napa County. An event along the West Napa fault would cause the most severe damage in Napa County. Out of the total Bay Area uninhabitable units of 9,652, almost half (43%) would be in Napa County. San Francisco, Alameda, and Solano counties would share the majority of the rest of the damage. As is the case with previous events, the older housing stock in Alameda and San Francisco counties would experience the most damage. In the more recently urbanized counties of Napa and Solano, on the other hand, most of the damage would be experienced by mobile homes and one-to-three story wood-frame buildings.

Napa County is clearly the hardest hit county in both gross numbers and percentages. Over twice as many people from Napa County are expected to be displaced than from San Francisco, and over three times than from Alameda County. Similarly, Napa County's peak shelter population is larger than Alameda and San Francisco counties combined. Over 40% of this event's displaced and peak shelter populations are expected to be from Napa County.

Within Napa County, 79% of the projected shelter population is a result of red-tagged dwelling units, and most (over 80% of the uninhabitable dwelling units) are either mobile homes or 1-3 story post-1939 multi-family buildings. These relationships alone are not enough to prove a correlation between uninhabitable mobile homes, multi-family dwelling units and the generation of shelter populations. However they do seem to

suggest an association between certain housing types and the probability of going to a shelter in the event of a major earthquake."

After any earthquake there will be a loss of income. Individuals can lose wages due to businesses inability to function because of damaged goods or facilities. Due to business losses, the County of Napa and the cities in the Napa Operational Area will lose revenue. Economic recovery from even a minor earthquake is critical to these communities.

The Rodgers Creek fault is believed to be a northern continuation of the Hayward Fault. It begins under San Pablo Bay directly south of Napa County, travels toward Sears Point, under the hills to Sonoma Mountain then North to the vicinity of Windsor. The West Napa Fault begins under San Pablo Bay and travels north up the West Side of the Napa Valley to the vicinity of Yountville. The Green Valley Fault is a northern extension of the Concord fault and cuts through the southeast side of Napa County. We are in near proximity of several other major faults including the San Andreas, Hayward, Mayacamas and Mt Diablo Fault. The combined probability of a major quake on one of these major faults exceeds 70% over the next thirty years.

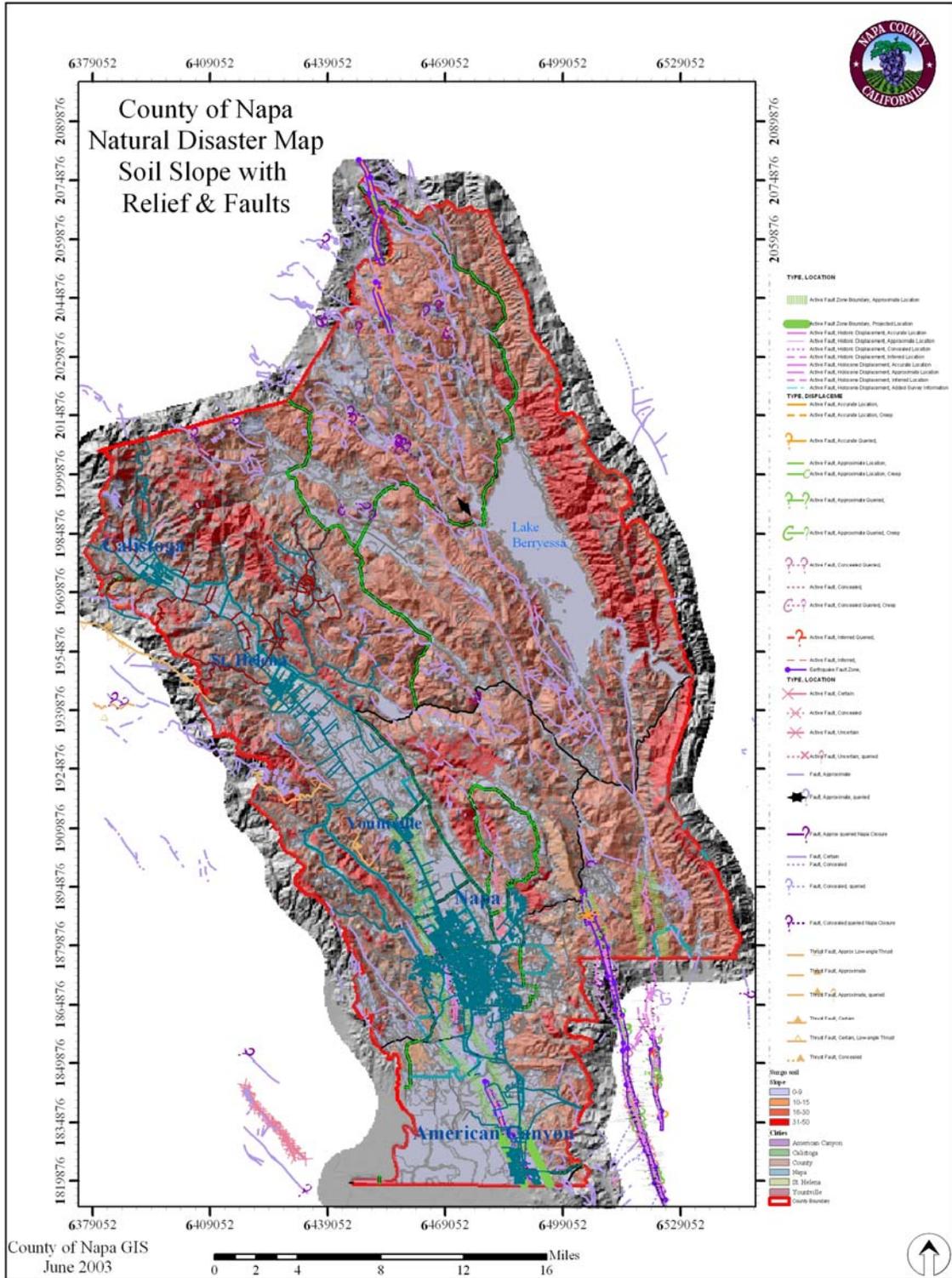
The County's Office of Emergency Services has identified the potential hazard areas within Napa County if a major earthquake should occur. These potential hazard areas are identified on the Napa County Major Hazards Maps. For the modeled future earthquake hazards, HAZUS results show potential losses from damage to building stock and business interruption alone range from approximately \$400 million dollars for the Concord-Green Valley Fault, magnitude 6.8, running just east of Napa County and \$500 million for the Rodgers Creek magnitude 7.1 earthquake, running 10 miles west of Napa County. The West Napa Fault earthquake, magnitude 6.5, running along the floor of the Napa Valley, would cause the most damaging earthquake. The West Napa Fault has never moved in historic times but does show evidence of active movement sometime during the last 11,000 years.

It is important to note that these same earthquakes will have an economic impact well beyond the boundaries of Napa County. For example, the Rodgers Creek earthquake HAZUS simulation estimated a total damage picture of \$12 billion. The Concord-Green Valley earthquake totals \$7 billion, while the West Napa earthquake totals \$2.6 billion

GIS Maps and Hazards

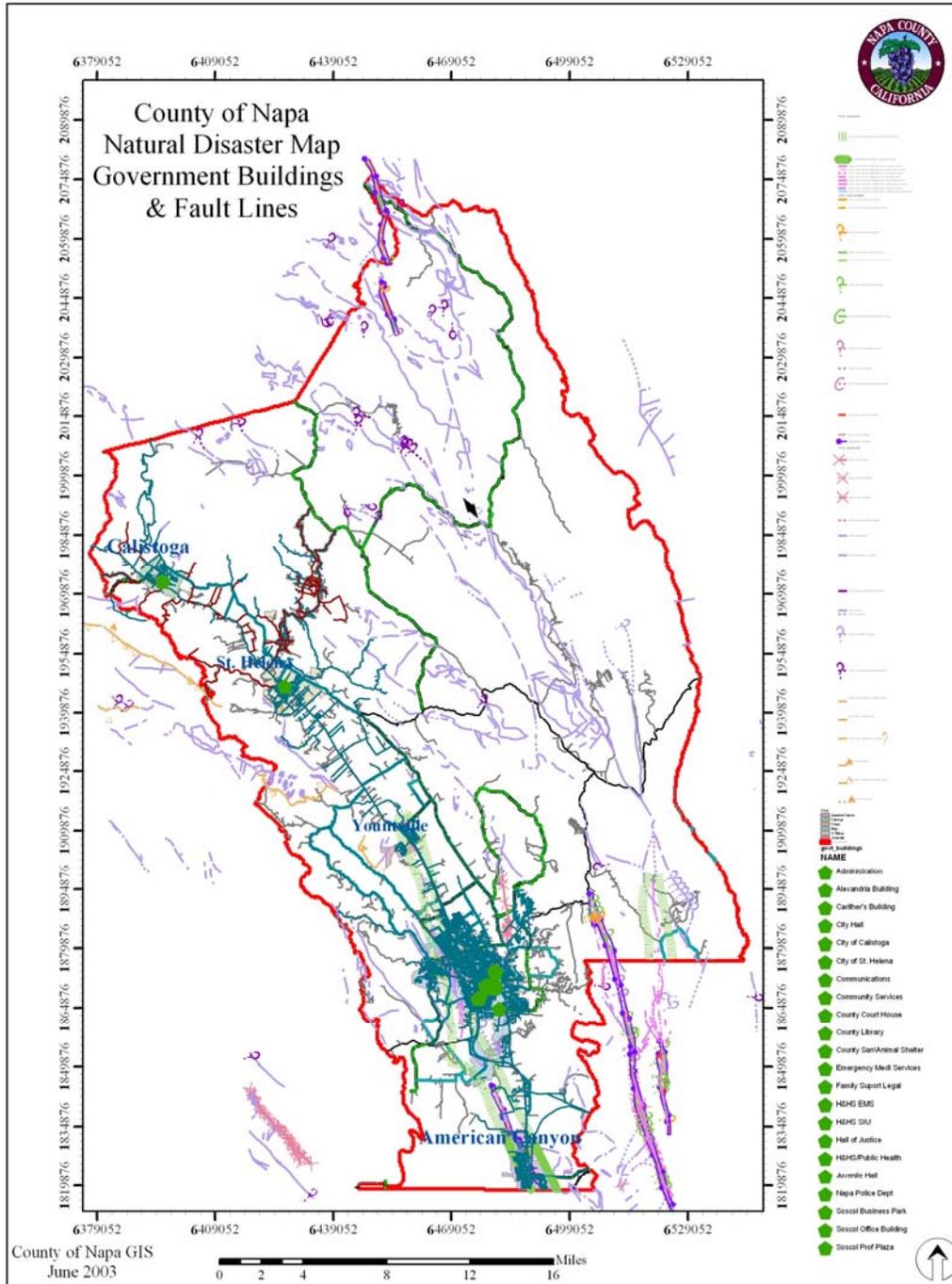
In addition to using HAZUS for the descriptive earthquake scenarios in this Plan, the Napa County GIS Department has developed a series of data maps demonstrating hazards and the location critical facilities in relationship to these hazards. This graphically illustrates the concentration of assets versus the various included threats. Since useable flat and buildable land in Napa County is primarily on the valley floor, the threat of flooding and loss from ground shaking is exasperated.

Napa County Soil Slopes and Fault Lines



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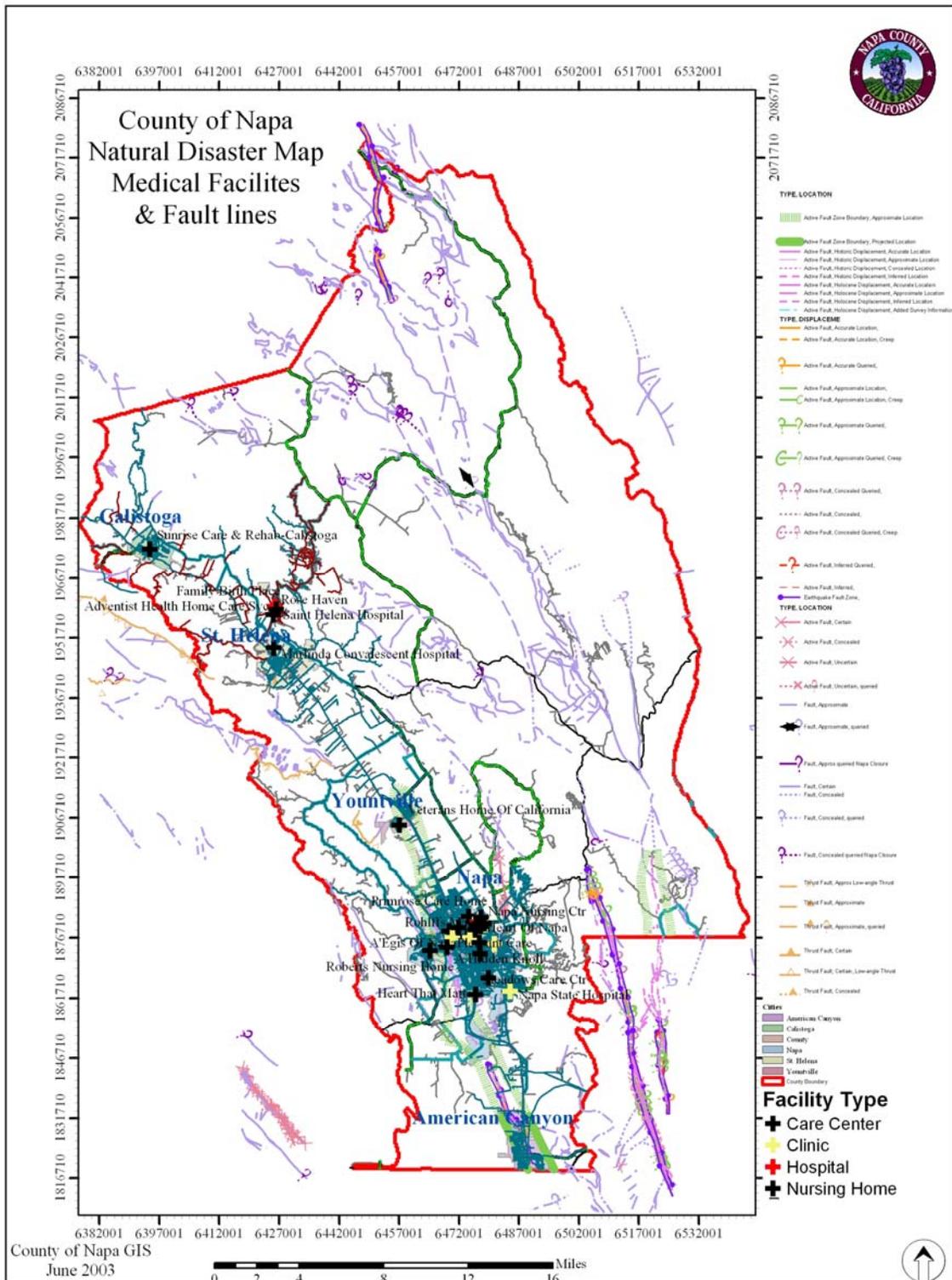
Napa County Government Buildings and Fault Lines



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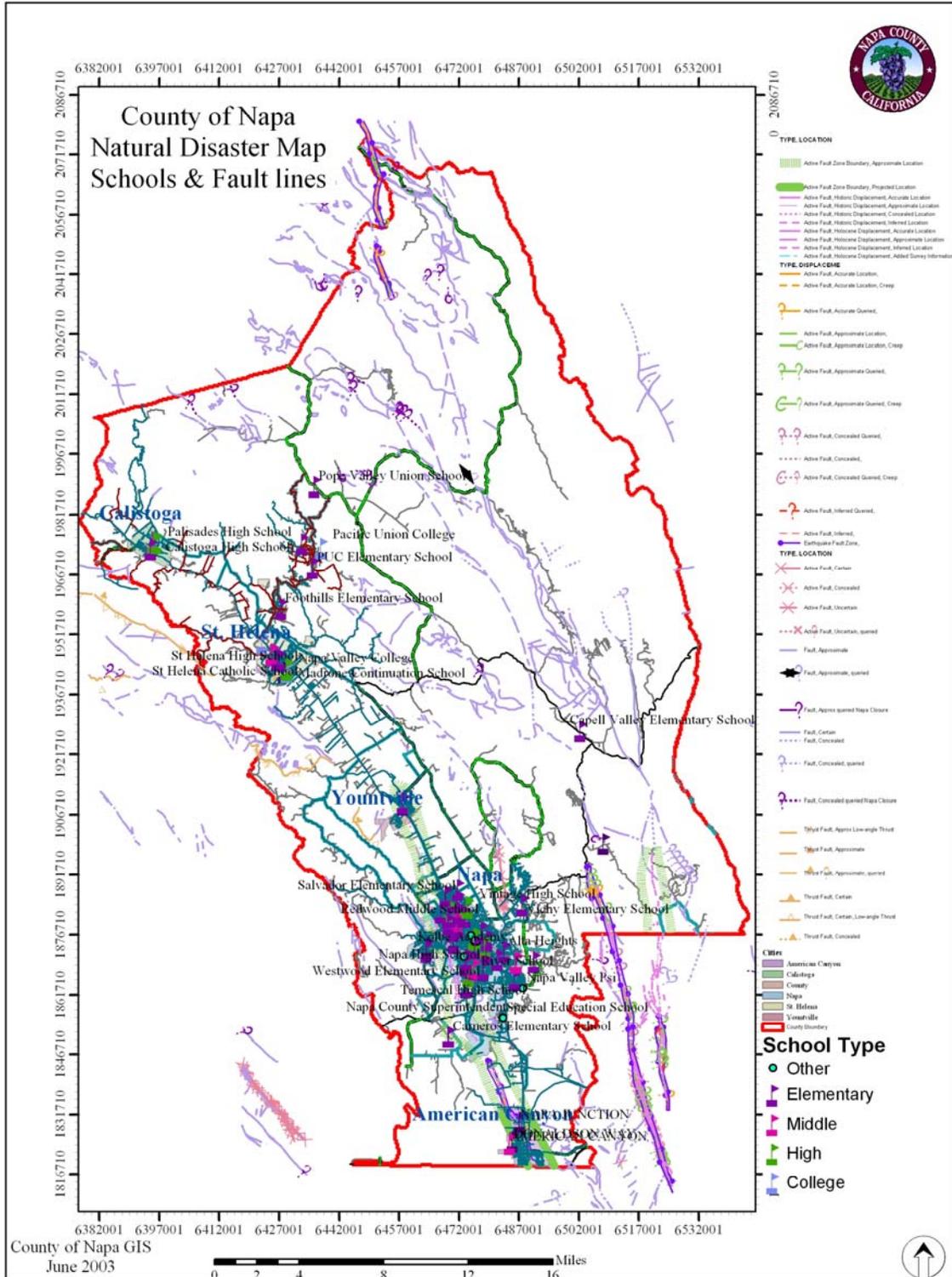
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Napa County Medical Facilities and Fault Lines



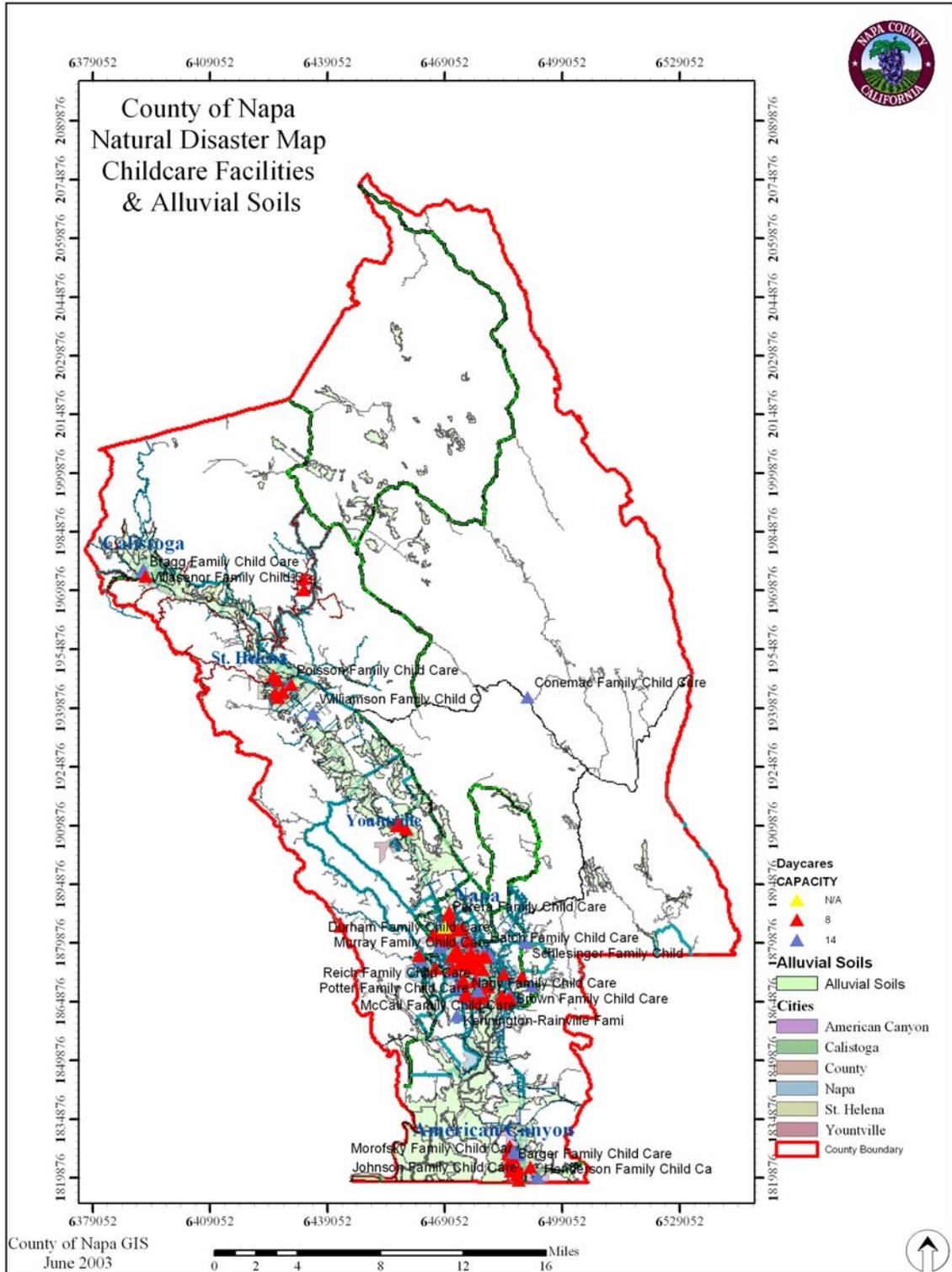
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Napa County Schools and Fault Lines



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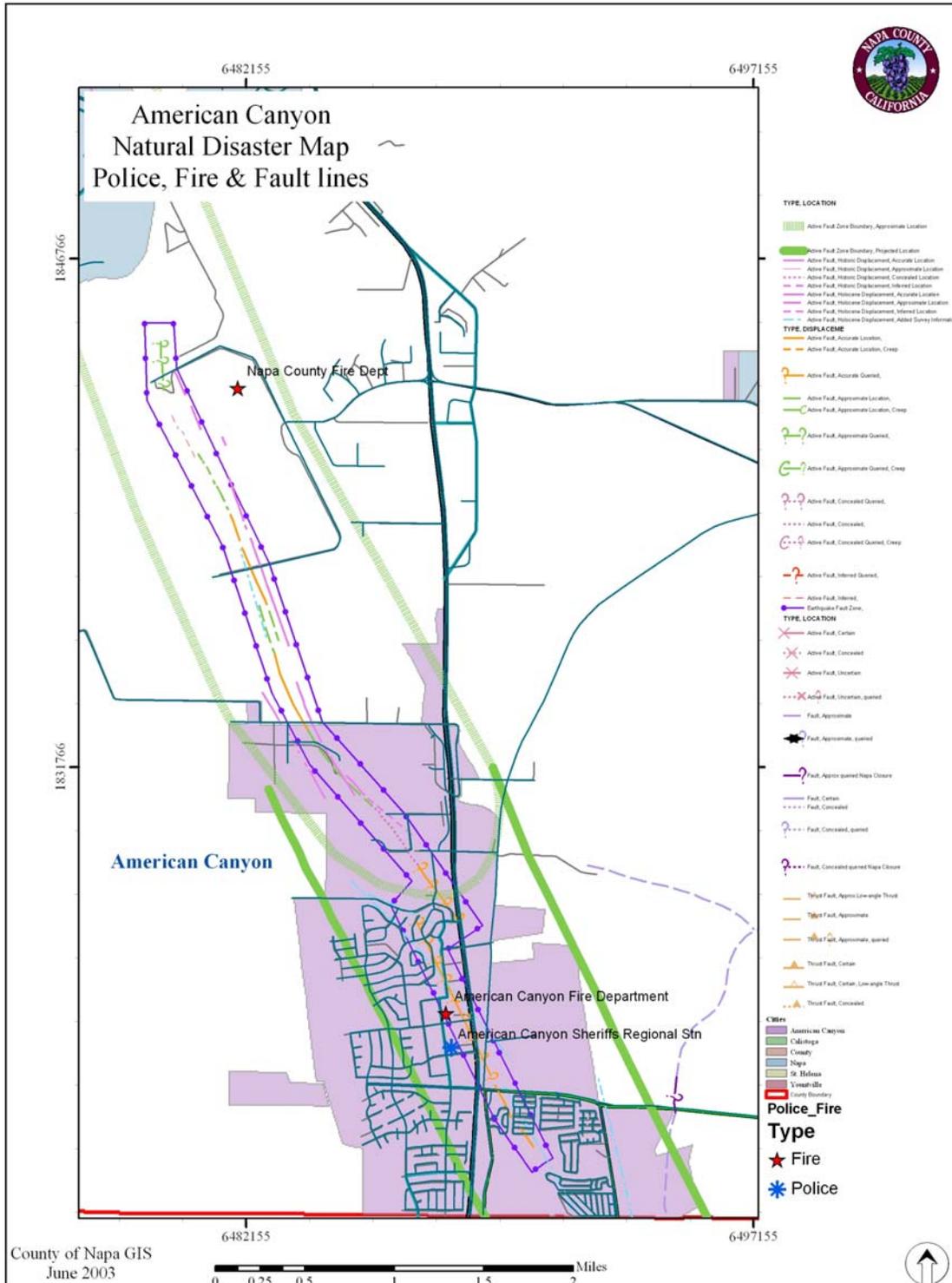
Napa County Childcare Facilities and Alluvial Soils



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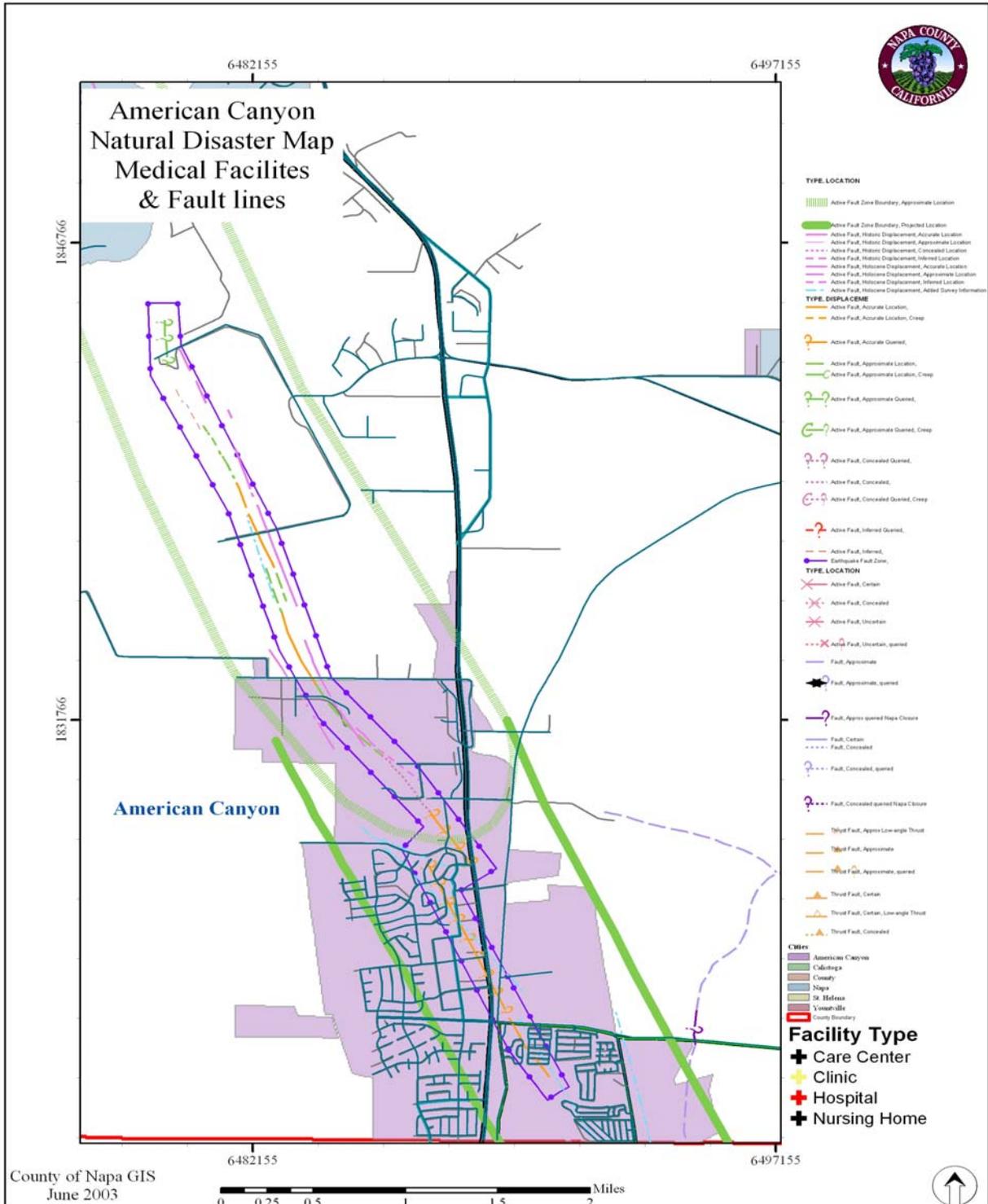
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City of American Canyon Public Safety Facilities and Fault Lines



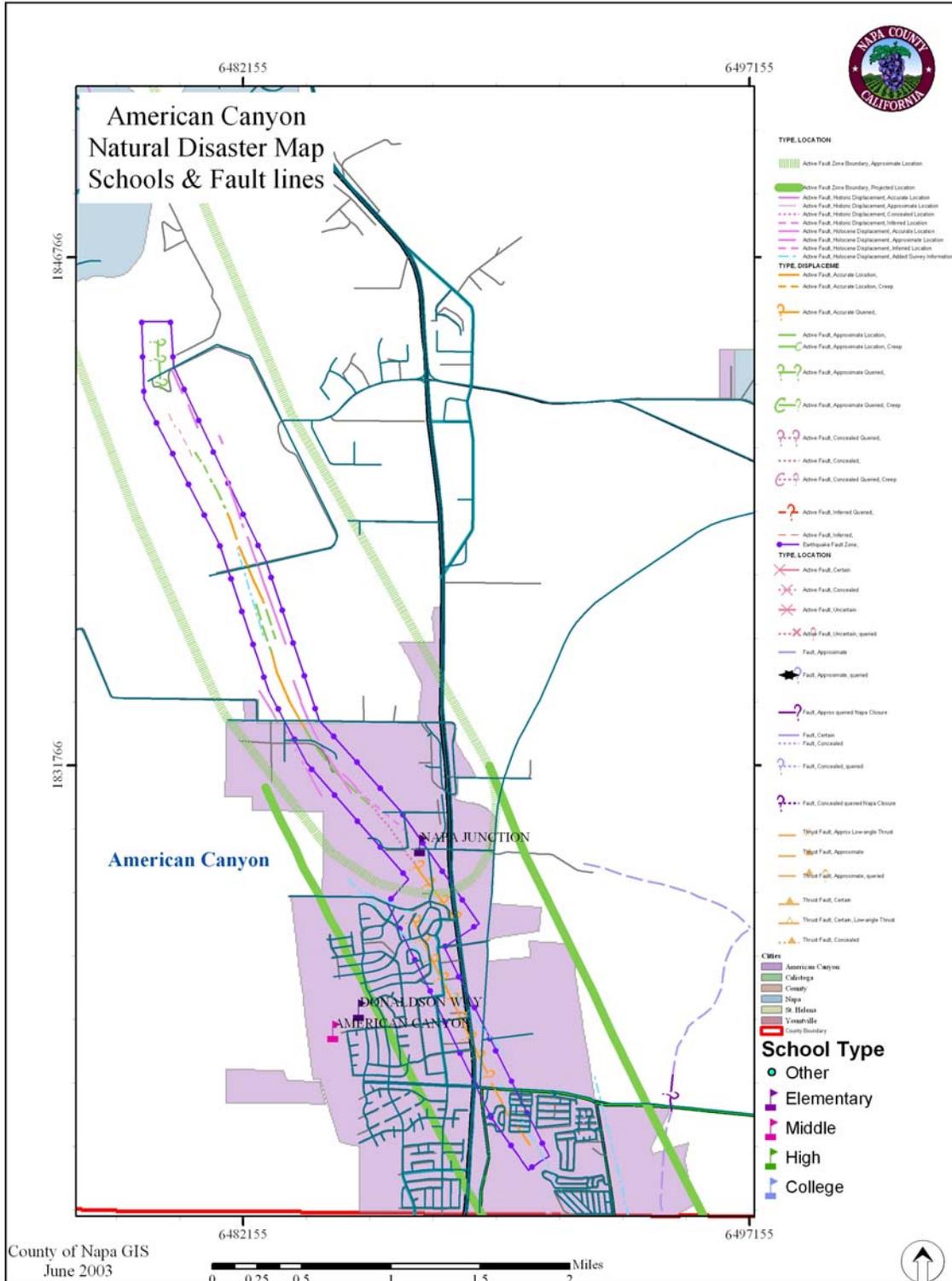
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City of American Canyon Medical Facilities and Fault Lines



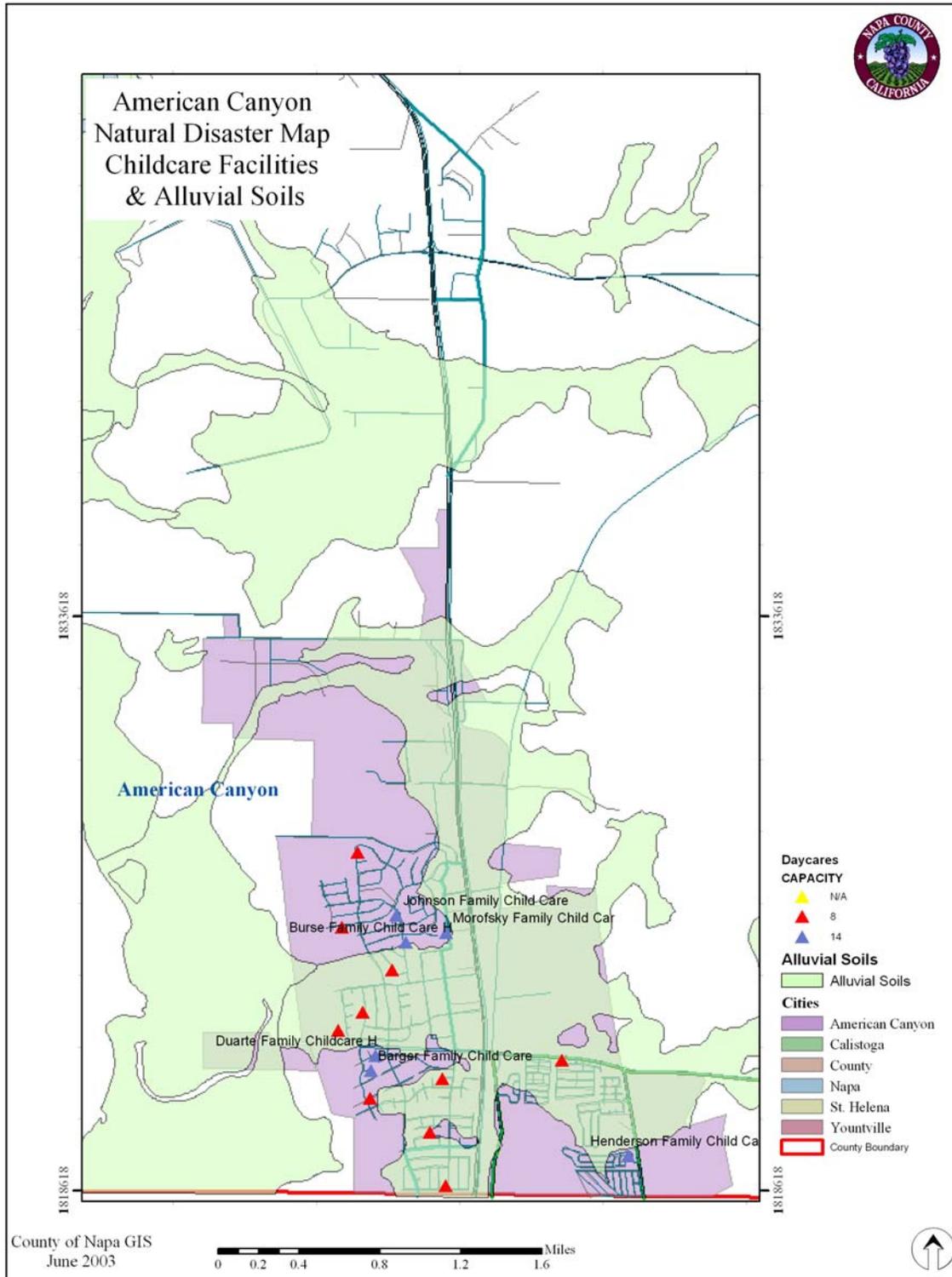
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City of American Canyon Schools and Fault Lines



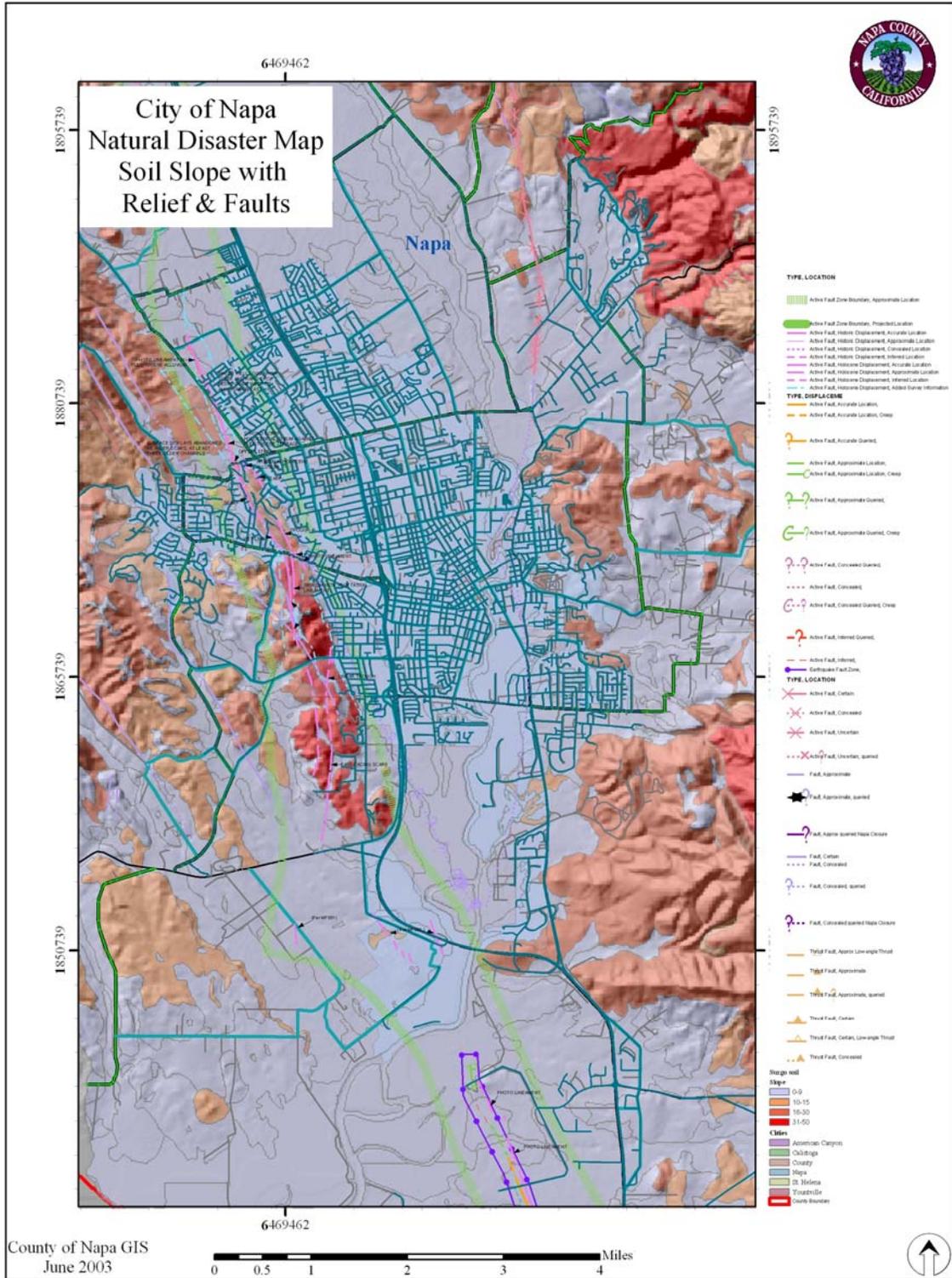
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City of American Canyon Childcare Facilities and Alluvial Soils



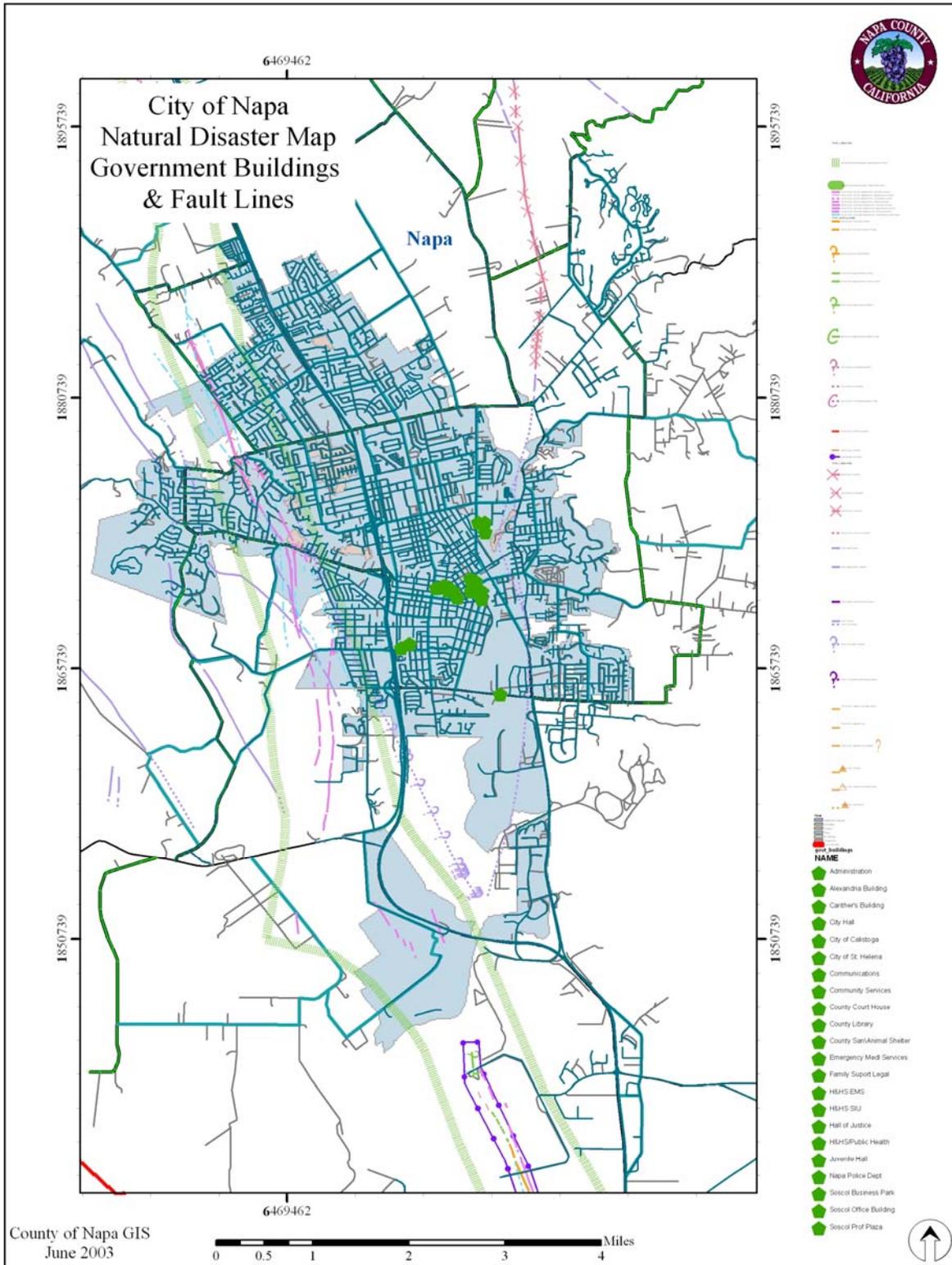
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City of Napa Soil Slopes and Fault Lines



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City of Napa Government Buildings and Fault Lines



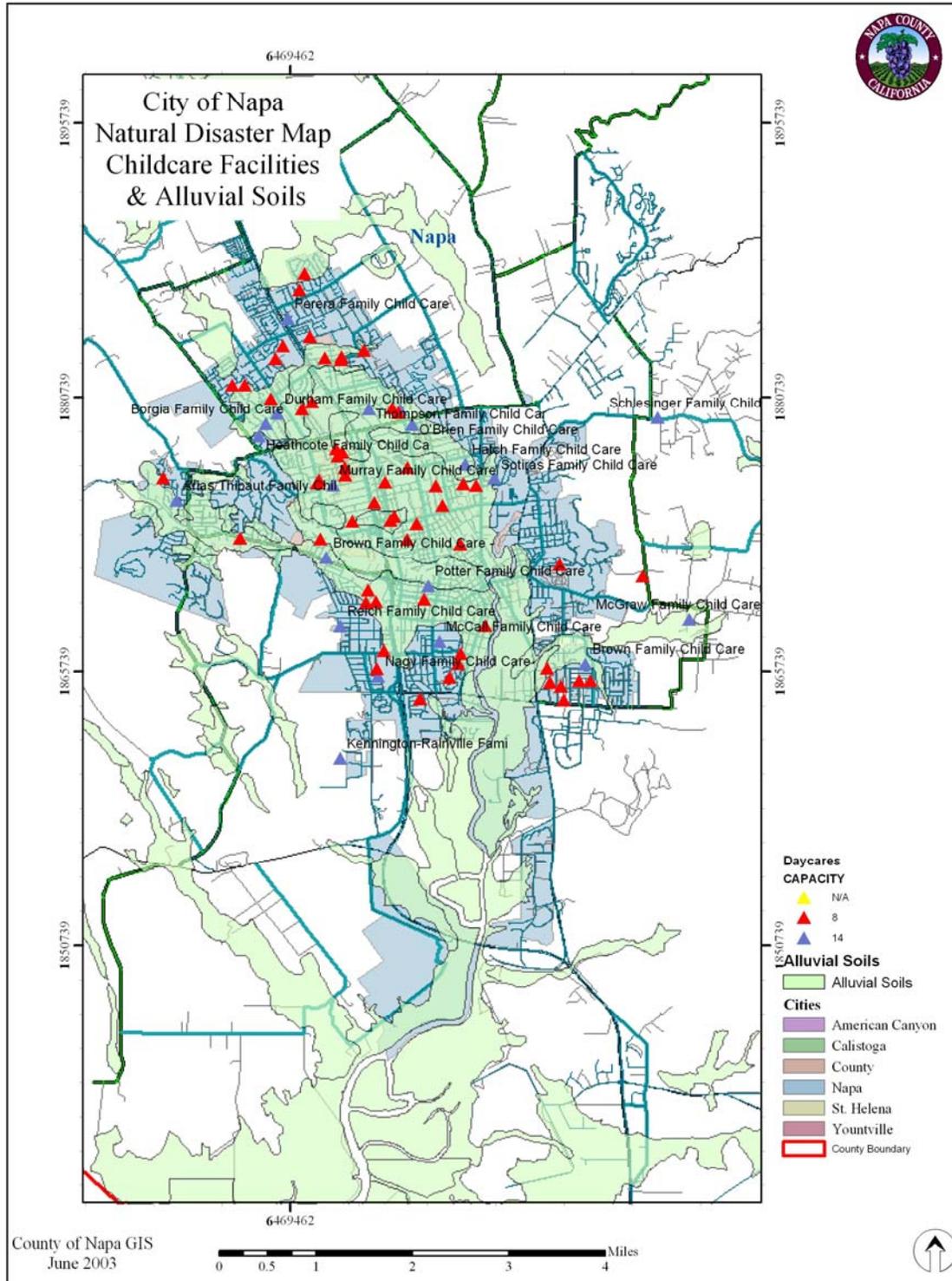
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City of Napa Childcare Facilities and Alluvial Soils

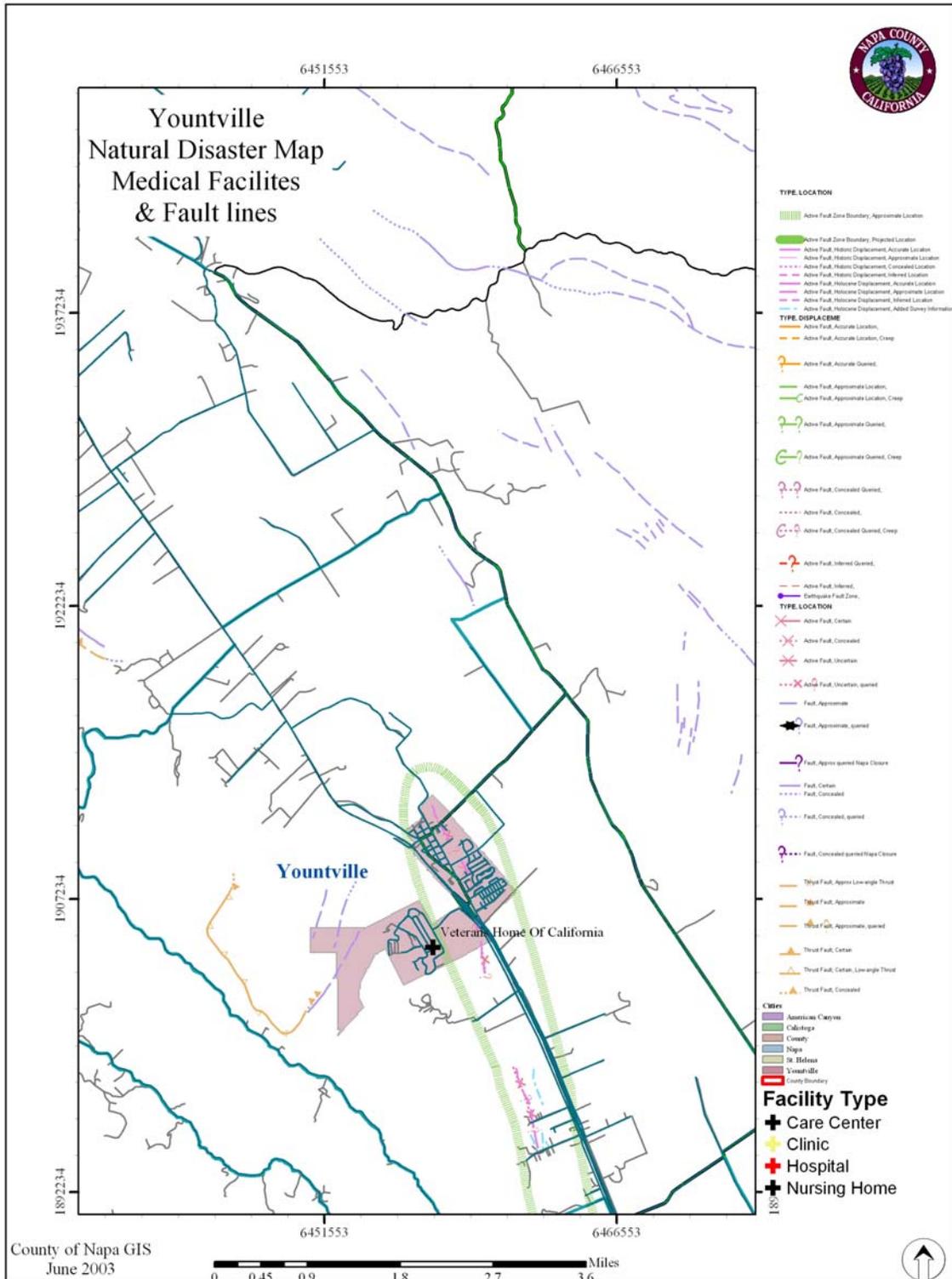


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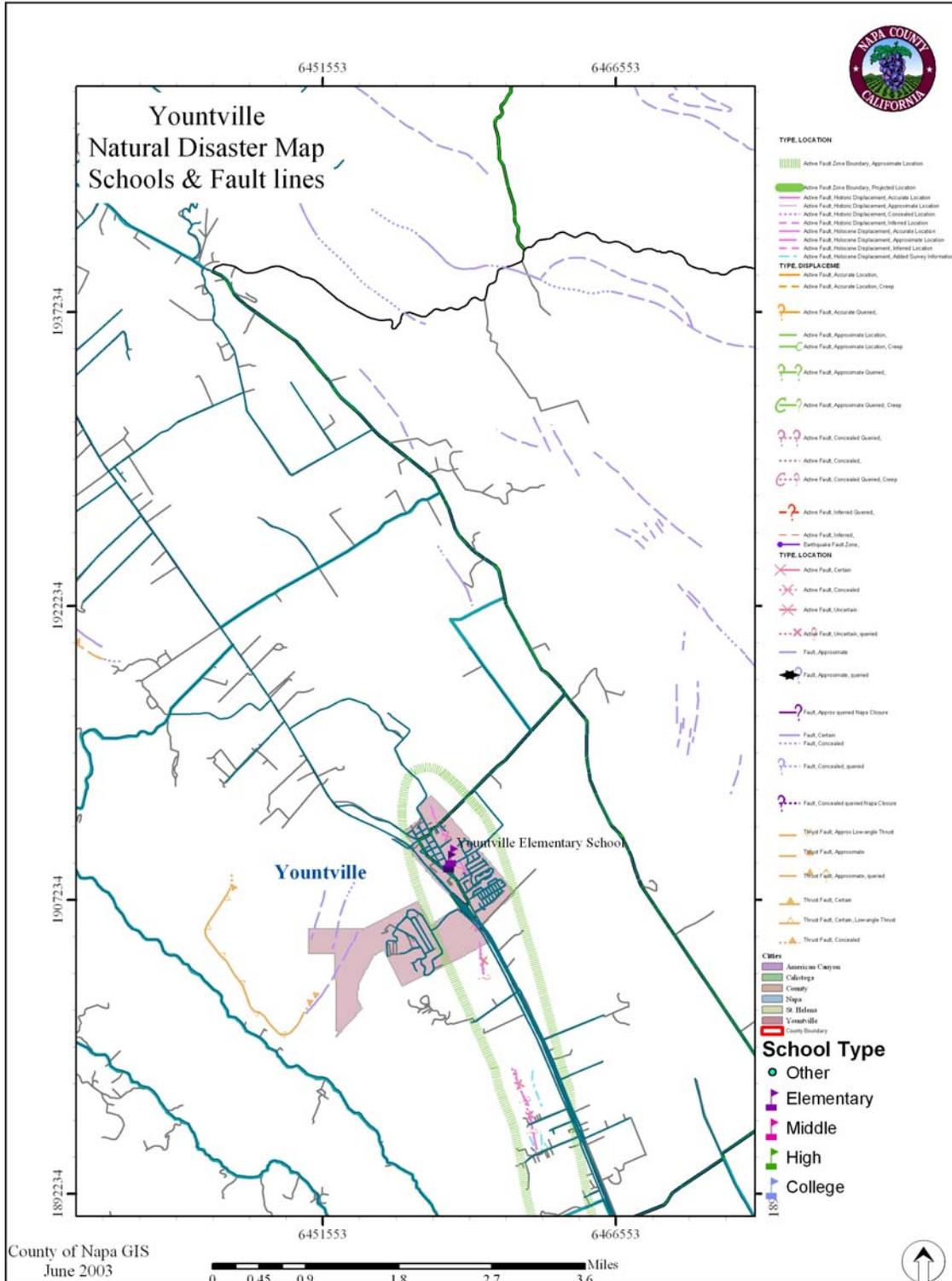
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Town of Yountville Medical Facilities and Fault Lines



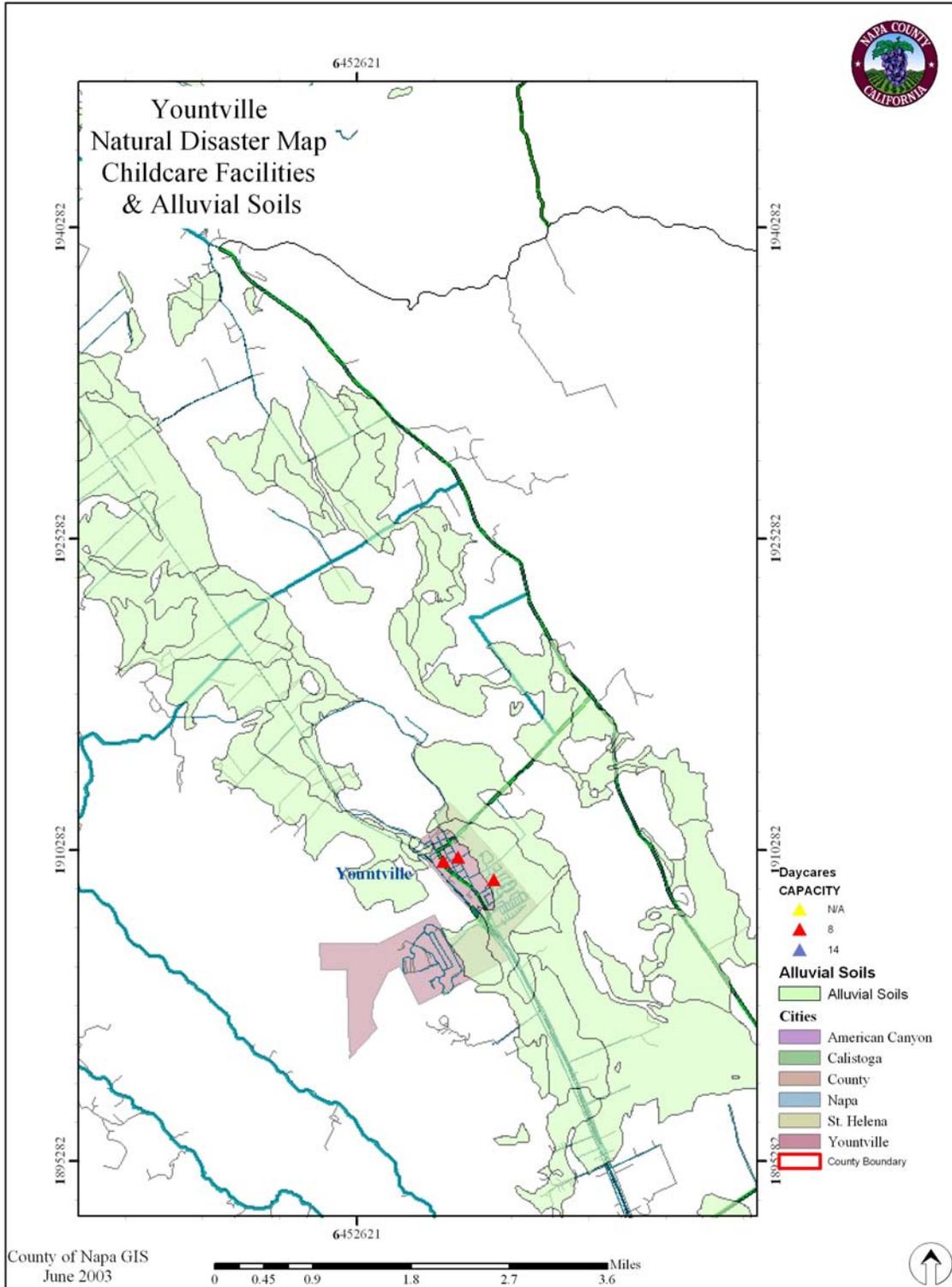
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Town of Yountville Schools and Fault Lines



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Town of Yountville Childcare Facilities and Alluvial Soils



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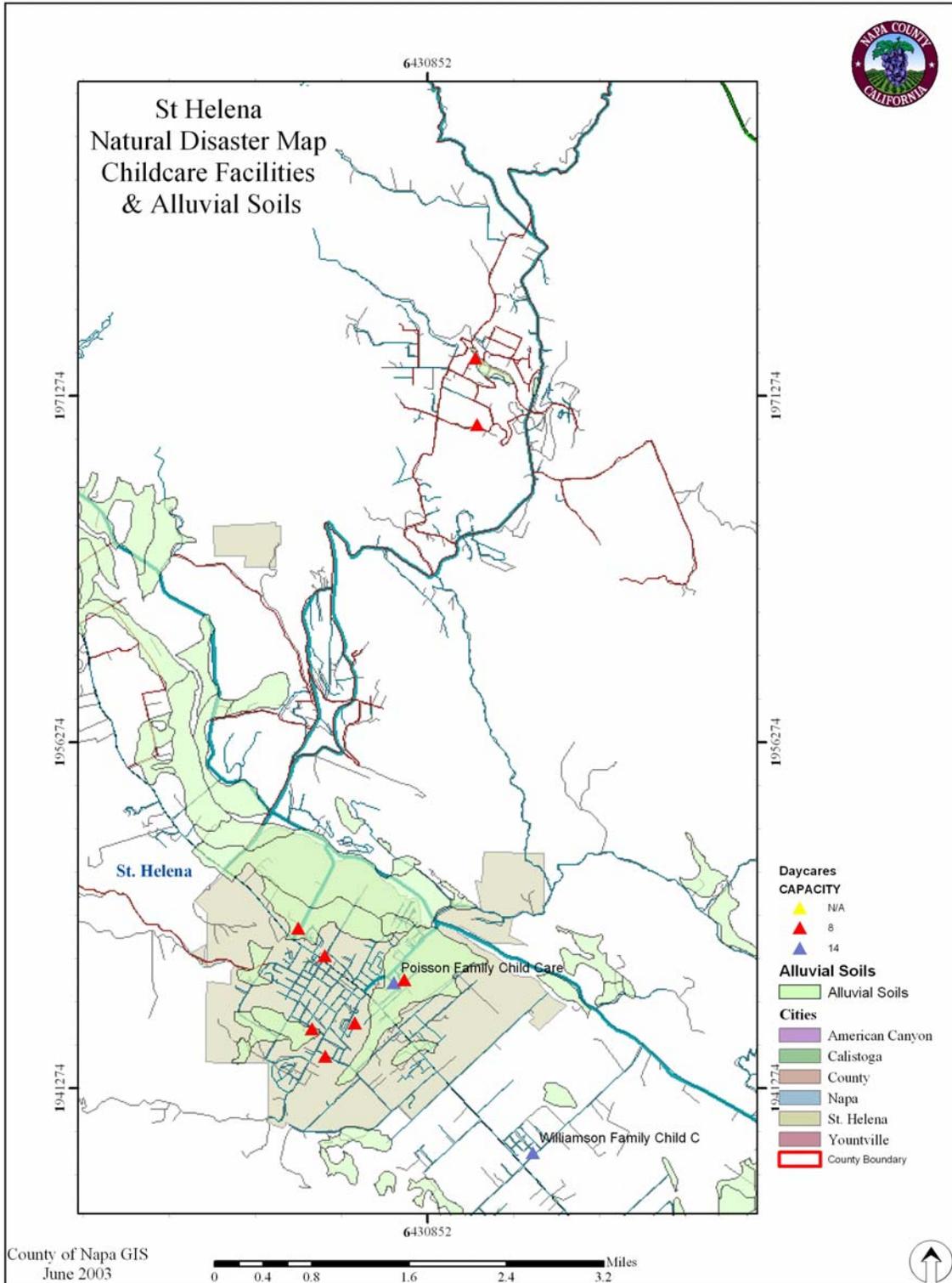
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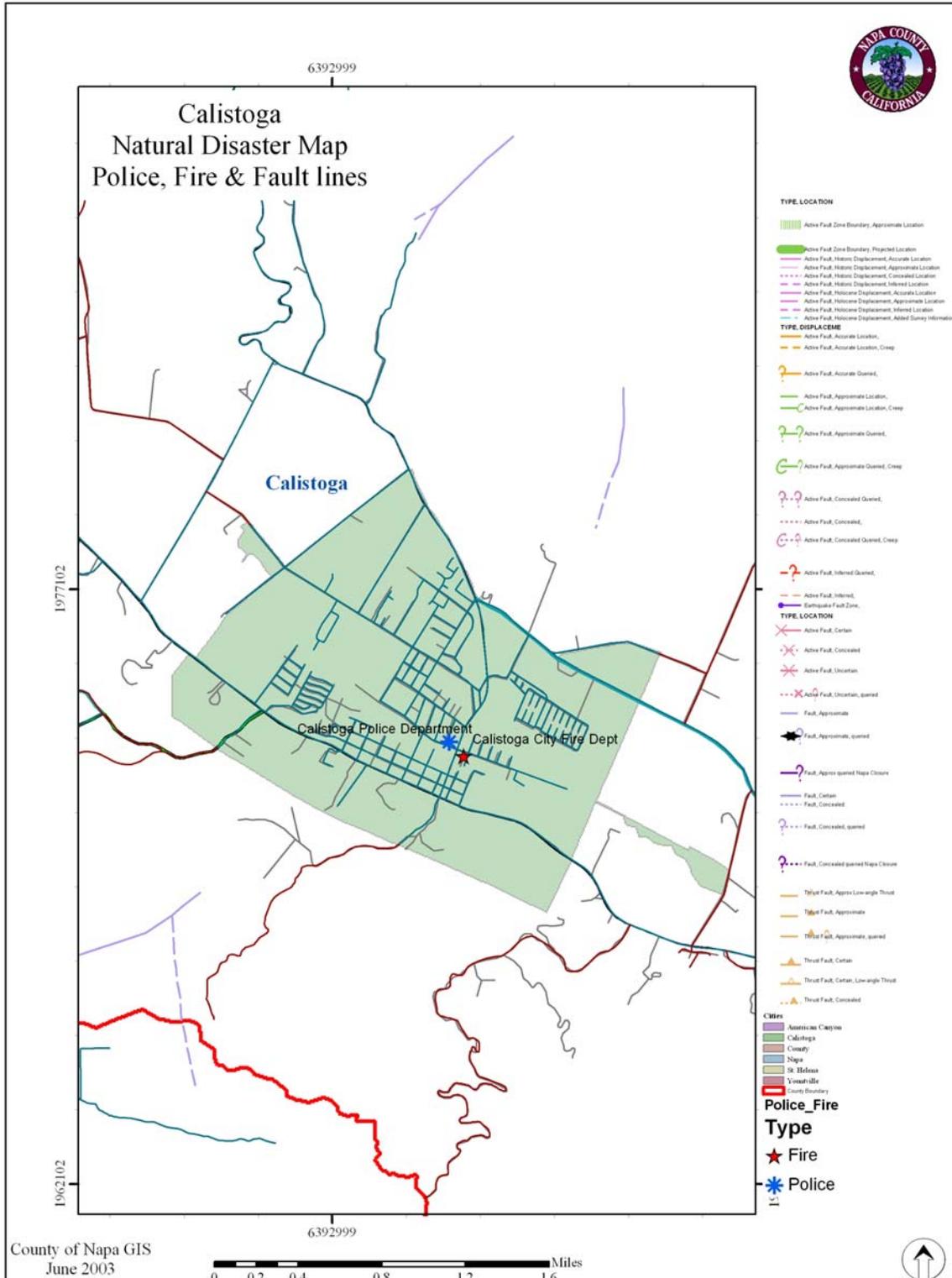
City of St. Helena Child Care Facilities and Alluvial Soils



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City of Calistoga Public Safety Facilities and Fault Lines

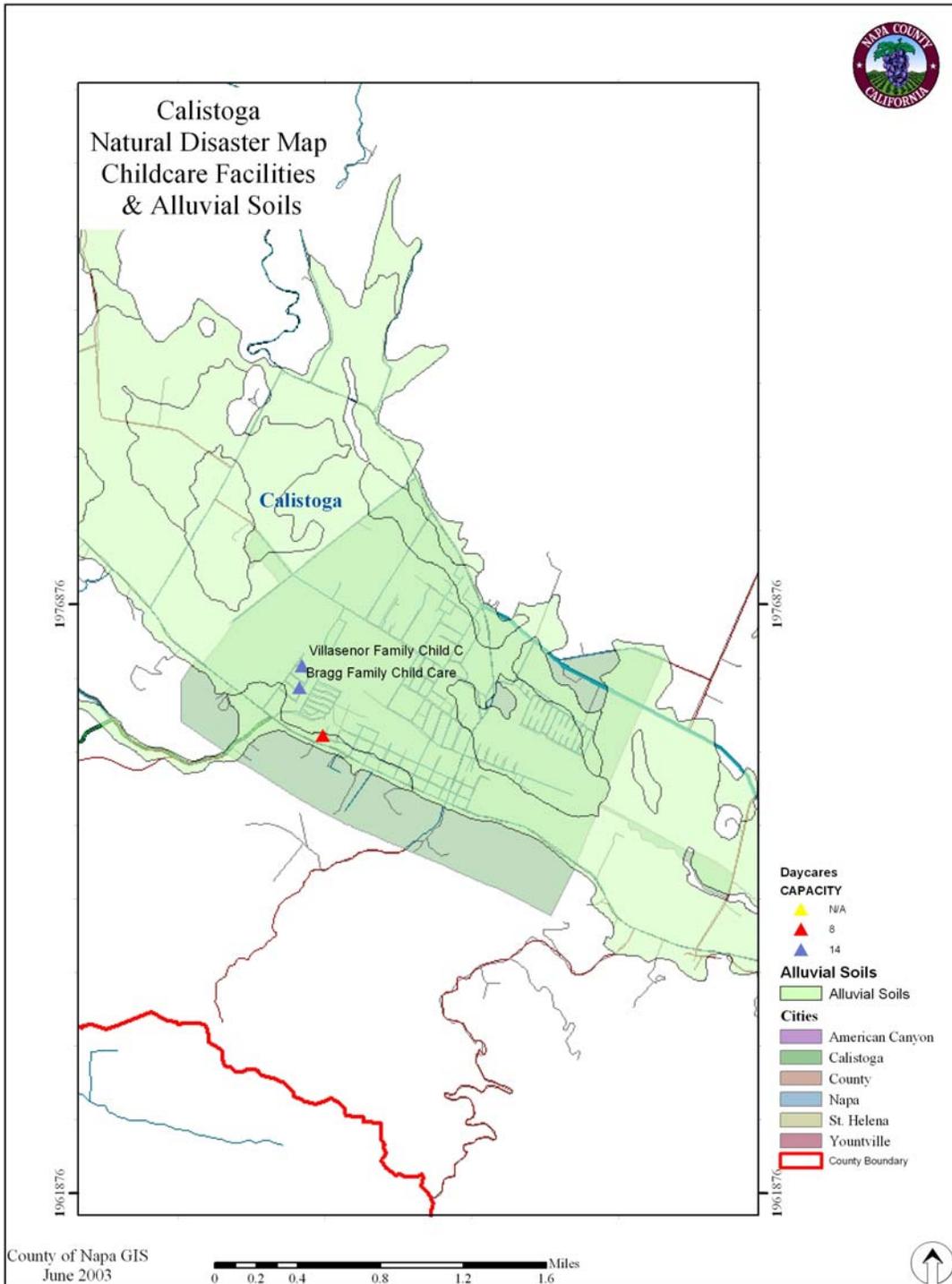


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City of Calistoga Childcare Facilities and Alluvial Soils



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Summary of Expected Damage

There are four hospitals located within Napa County: Queen of the Valley is located the City of Napa; St Helena Hospital is located in the unincorporated town of Angwin; Napa State Hospital (including a facility for the criminally insane) is located within the city of Napa; and the State Veterans Home's Holderman Hospital is located in town of Yountville. Approximately half of the beds could be lost during a major earthquake due to the age and construction type of each of the hospitals. Smaller private medical facilities such as the Kaiser Clinic serve the public and augment the ability of our hospitals to care for their client populations.

Telephone systems will be affected by system failure, overloads, loss of electrical power and possible failure of some alternate power systems. Immediately following an event, numerous failures will occur, compounded by system use overloads. This will likely disable up to 80% of the telephone system for one day. County UHF/VHF and microwave radio systems are expected to operate at 40% effectiveness the first 12 hours following an earthquake increase to 50% for the second 12 hours then begin to slowly decline to approximately 40% within 36 hours. Microwaves systems will likely be 30% or less effective following a major earthquake.

Electrical transmission lines are vulnerable to many hazards, due to their length and, in many areas, the remoteness of the lines. Damage to generation plants or substations may cause outages. Damage to generation plants will affect electrical production. Damage to substations will affect delivery. Repairs to electrical equipment may require the physically clearing roadways, and movement of special equipment. Restoration of local electrical power will be coordinated with regional and local utility representatives. Up to 60% of the system load may be interrupted immediately following the initial earthquake shock wave. Much of the affected area may have service restored in days; however; a severely damaged area's with underground distribution system may create longer service delays.

Damage to natural gas facilities serving the Napa communities will consist primarily of isolated breaks in major transmission lines. Breaks in mains and individual service connections within the distribution system will be significant, particularly near the fault zones, especially in the cities of American Canyon and Napa. These many leaks pose a fire threat in these susceptible areas of intense ground shaking and/or poor ground near the shoreline. Breaks in the system will affect large portions of the County and restoration of natural gas service could be significantly delayed.

Water availability and distribution for supporting life, and treating the sick and the injured are of major concern to the County of Napa. It is expected that the primary water source, Lake Hennessey, may be inaccessible due to damage to the pipelines that distribute potable water. However, Napa is also connected to the State Water project at Jameson Canyon and has a tertiary source in Milliken Dam Water treatment facility. Any one of these three facilities remaining in operation is able to supply the emergency

potable water needs to the City of Napa and its immediately contiguous County areas, if the distribution system can be repaired.

There are three water reservoirs within the City of Napa that have all been recently retrograded and covered, and one reservoir in the City of St Helena. If the reservoirs and water tanks remain intact, they will likely provide ample potable water to meet demands during the time the water treatment stations are being repaired.

The three reservoirs in Napa are on solid ground and are expected to be usable after a major earthquake. However, the other cities' water tank survivability is low. Therefore, potable water will most likely have to be supplied in these area communities.

Significant damage is expected on the road system. State Highway 12 is expected to be impassable from Cordelia to the Highway 29 Intersection. Interstate 80 could suffer severe surface distortion in the Fairfield and Vacaville areas, as well as damage to its numerous bridges and viaducts in the greater Bay Area. Highway 128 is subject to landslides both up valley toward Geyserville and in the hills around Lake Berryessa. Highway 29 leaving the County to the north is subject to landslides and debris flows to the south it crosses over old bay mud and fill areas and is subject to liquefaction and surface distortion. Any combination of failures of these main highways could isolate the County for up to 72 hours with complete road restoration taking perhaps several weeks. Vehicular traffic will be limited on the foothill roads due to potential and actual landslides.

Soil liquefaction problems could cause the closure of several roads in American Canyon and areas of other cities built on unconsolidated river soils. The tourist rail system in Napa is expected to be severely damaged, restricting travel on the system for several weeks to months. The California Northern railway system, which transverses the south County from Interstate 80 at Cordelia to Shellville along Highway 12 and crossing the Napa River Delta area south of the 12/29 Intersection through Napa Junction, will likely be severely damaged and unusable. The freight yard, repair shops and rail yard that are located at Napa Junction are expected to be severely damaged. Railroad commercial and passenger service will be restricted for at least 72 hours and possibly several weeks.

The liquid chlorine stations at Napa County water facilities, have largely been replaced by the use of sodium hypochlorate in solid form (similar to what is used in home pools). This has greatly reduced the risk of major chlorine leaks in the Napa Valley. The Lake Hennessey chlorine station is a concrete basalt brick one-story building with numerous windows and is now converted to insert fairly benign filtering chemicals into the water. The hazardous materials handling and storage sites located within Napa County are depicted on page 183, in the Technological Hazards Section of this Plan.

There are ten dams in Napa County, which have completed inundation studies and maps. These dams each have mapping completed in sufficient detail to Plan evacuation, mass care and emergency medical care for populations displaced by failure or threat of dam

failure. Maintenance programs and activities of the Conn Dam are regularly performed, and the potential catastrophic failure of the 70-year old dam is considered to be improbable during most scenario earthquakes.

Sewage collection systems throughout the County are expected to sustain widespread damage. In the City of Napa a sanitation plant is located in a highly probable liquefaction area near the Maxwell Bridge. The Napa Sanitation District plant will also experience liquefaction and commercial electrical power losses. If backup generating systems fail, the result could be the discharge of raw sewage into the river. The sanitation plant could be out of service from one to four months, depending on damage.

Within the County of Napa three sewage treatment plants, one near American Canyon and the two up valley plants near St Helena and Calistoga are also on poor soils near the Napa River. These are expected to sustain significant damage, caused primarily by significant ground motion and displacement. There are two small plants located within the Lake Berryessa and Napa Berryessa resort improvement districts. Additionally, residential sewer connections throughout the County will break and plug, especially in the potential liquefaction zones.

Based on this modeling it is clear that any numbers of mitigation techniques are applicable to this threat. California already has the strictest building codes in the country, the highest construction standards for schools and the most dynamic design and construction standards for highways, bridges and other transportation infrastructure. One only has to look at the experience of the 2003/2004 earthquakes to see this illustrated. Paso Robles in California suffered from the effects of being in near proximity of a moderate 6.5 Richter scale event. Paso Robles suffered significant damage of about \$150 million but with very little loss of life, injuries or damage to modern structures.

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Wildland Interface Fire Hazard

The term "wildland/urban interface" was coined in 1976 by California Department of Forestry and Fire Protection (CDF) to identify the condition where highly flammable native vegetation meets high value structures, primarily residences. In most cases, there is not a clearly defined boundary or interface between the structures and vegetation that present the hazard. Historically, residences in these ill-defined wildland/urban intermix boundary areas were particularly vulnerable to wildfires because they were constructed with a reliance on fire department response for protection rather than fire resistance, survivability and self-protection. However, in the recent past, there has developed a greater appreciation for the need to regulate development in these hazardous areas as a result of a number of serious statewide wildland fire conflagrations.

When a wildfire ignites in a high-risk wildland interface area, the priority is life and property protection. Historically, CDF forces began their attack from the most advantageous topographical or physical location, and surrounded the fire perimeter. Now, with hundreds or even thousand of structures inside the fire perimeter, the CDF's initial and extended resources are forced to divert to individual structure protection. This causes wildfire control to become secondary to protecting lives and property, thus allowing wildfires to spread unchecked, threatening and destroying more houses and natural resources.

The major wildland fire hazard risks for residential development are in the County's hilly areas characterized by steep slopes, poor fire suppression delivery access, inadequate water supply and highly flammable vegetation.

The severity of the wildland fire hazard is determined by the relationship between three factors: fuel classification, topographic slope, and critical fire weather frequency. The box at right lists fuel classifications; Napa's Fire Hazard Areas generally fall into the Medium Fuel category. Critical fire weather conditions occur in periods of relative low humidity, high heat and high winds. The Napa area typically has critical fire weather from two to seven days annually. Fuel, slope, and weather conditions combine to give Napa urban wildland interface areas and overall "High" hazard rating based on the Federal Emergency Management Agency's *Urban Wildland Interface Code: 2000*.

Fire Hazard Severity

Critical Fire Weather Frequency									
Fuel Classification	< 1 Day/Year			2 to 7 Days/Year			> 8 Days/Year		
	Slope (%)			Slope (%)			Slope (%)		
	< 40	41 – 60	> 61	< 40	41 – 60	> 61	< 40	41 – 60	> 61
Light Fuel	M	M	M	M	M	M	M	M	H
Medium Fuel	M	M	H	H	H	H	E	E	E
Heavy Fuel	H	H	H	H	E	E	E	E	E

Fuel Classifications

Heavy fuel – vegetation consisting of round wood 3 to 8 inches in diameter

Medium fuel – vegetation consisting of round wood 1/3 to 3 inches in diameter

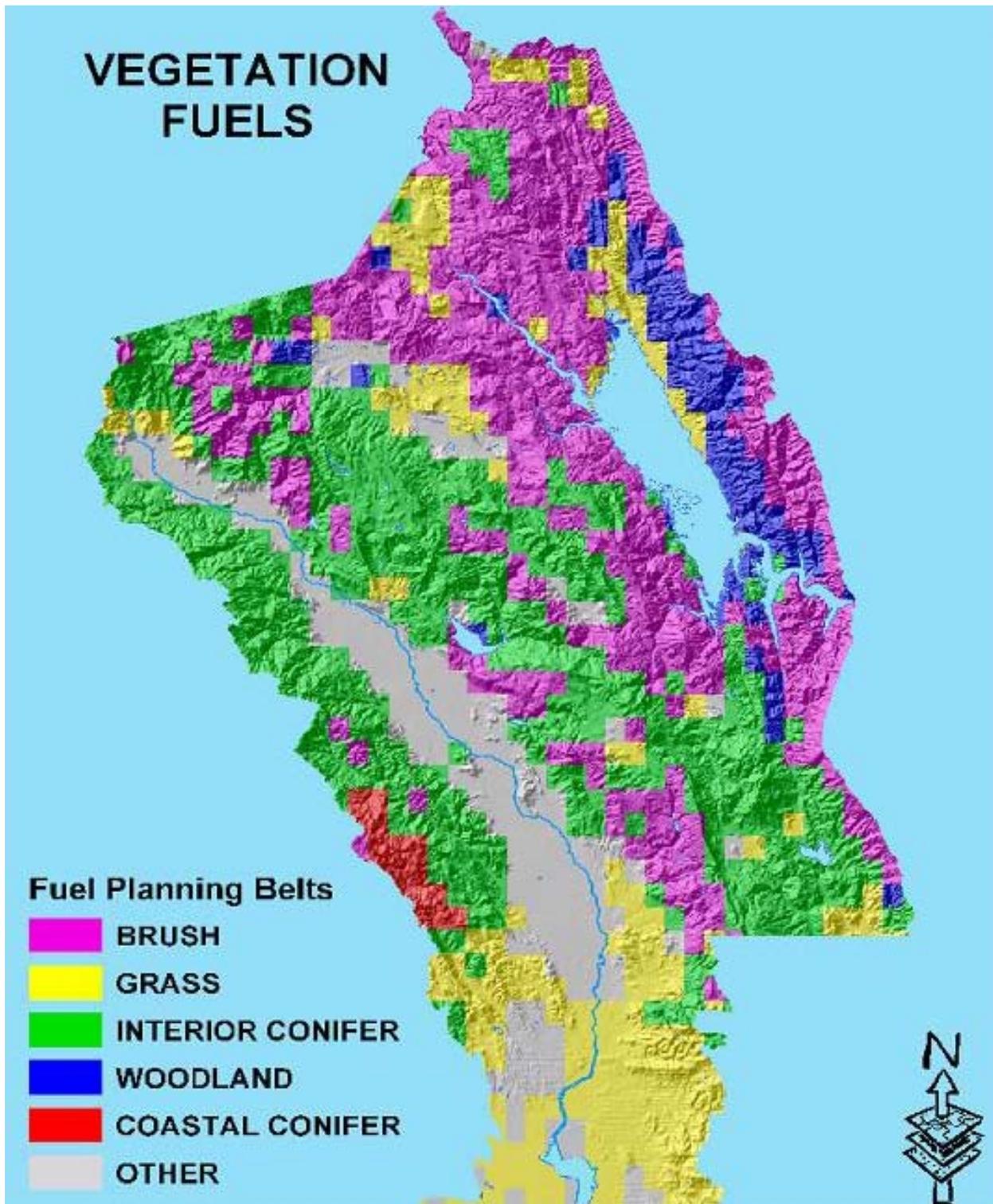
Light Fuel – vegetation consisting of herbaceous plants and round wood less than ¼ inch in diameter.

Wildland Interface Fire History

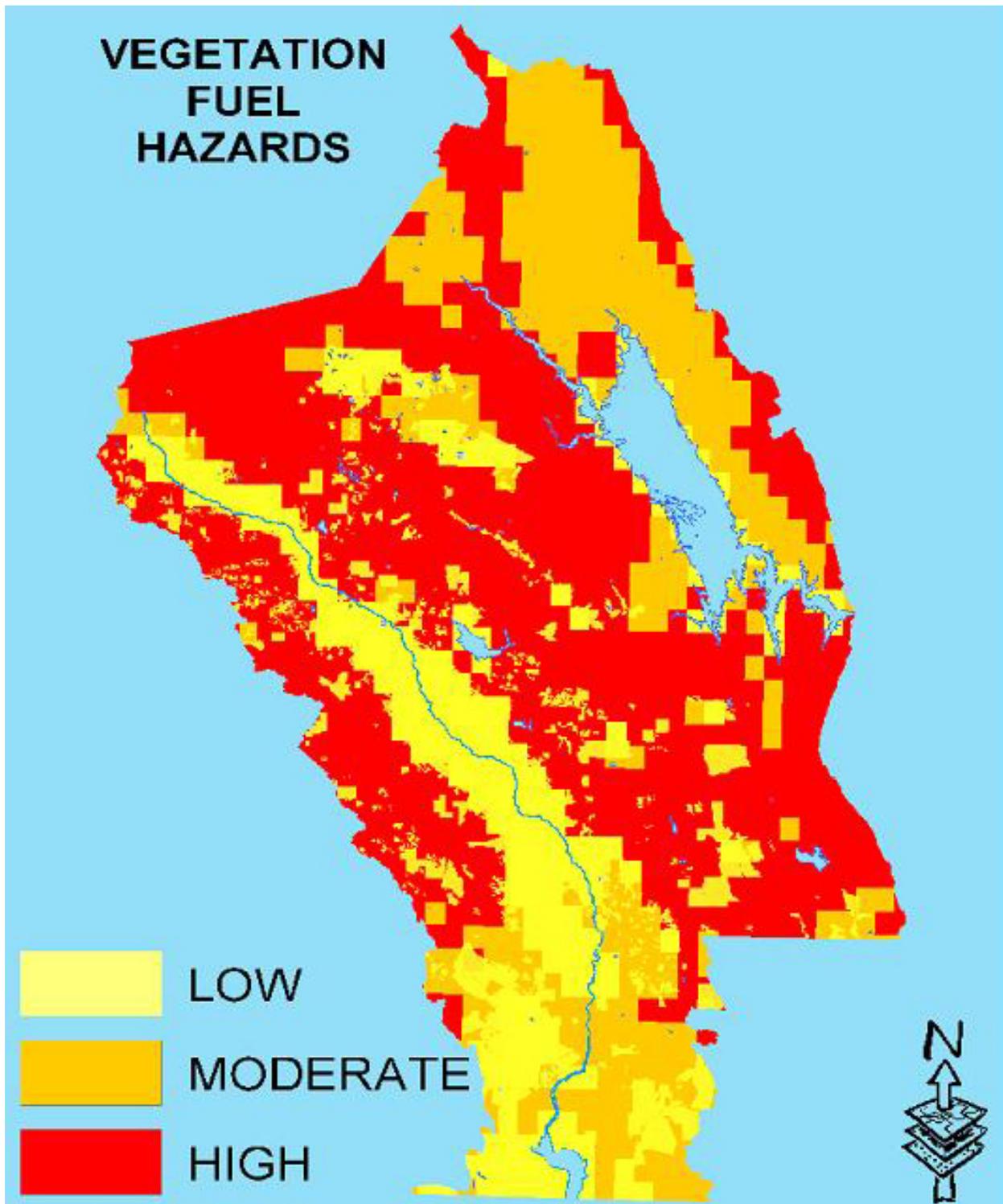
Napa County has a rich wildfire history; in the last thirty years the combination of firefighting technology and tactics, environmental restraints and developmental trends has led to increasing fuel loads, greater occupancy of high threat areas and greater potential for catastrophic wildfire. In the last thirty years Napa County wildfires have burnt 232,000 acres of land in Napa County a county of approximately 482,000 acres! There are four major factors that contribute to this history:

1. Extreme vegetation diversity
2. Diverse fire weather and fire behavior
3. Dynamic fire History
4. Complex land use patterns

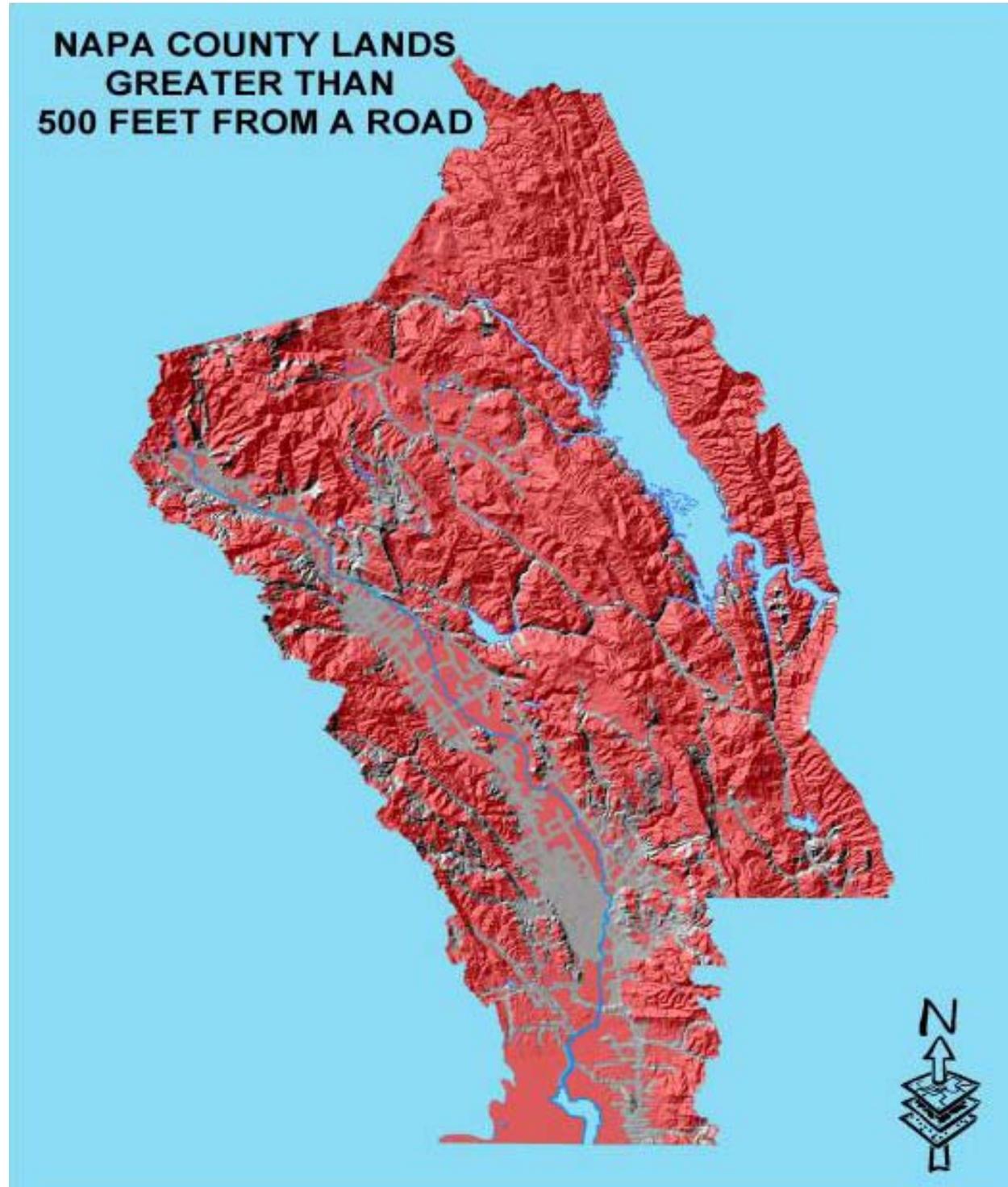
To a greater or lesser degree all the proposed mitigation actions in this Plan in the wildfire portion attempt to address strategies for dealing with these interrelated factors. The following Maps summarize our historical fire experience.



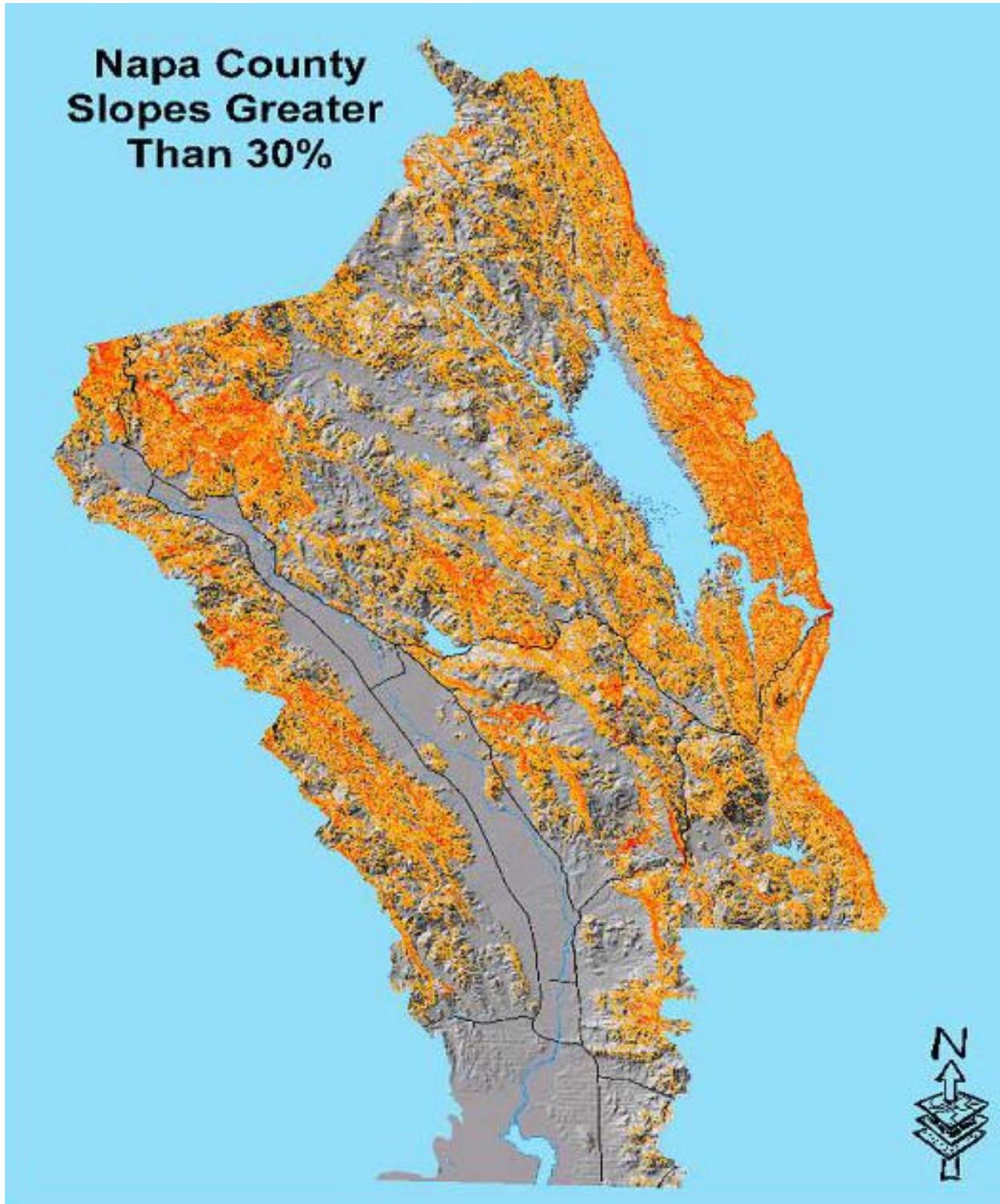
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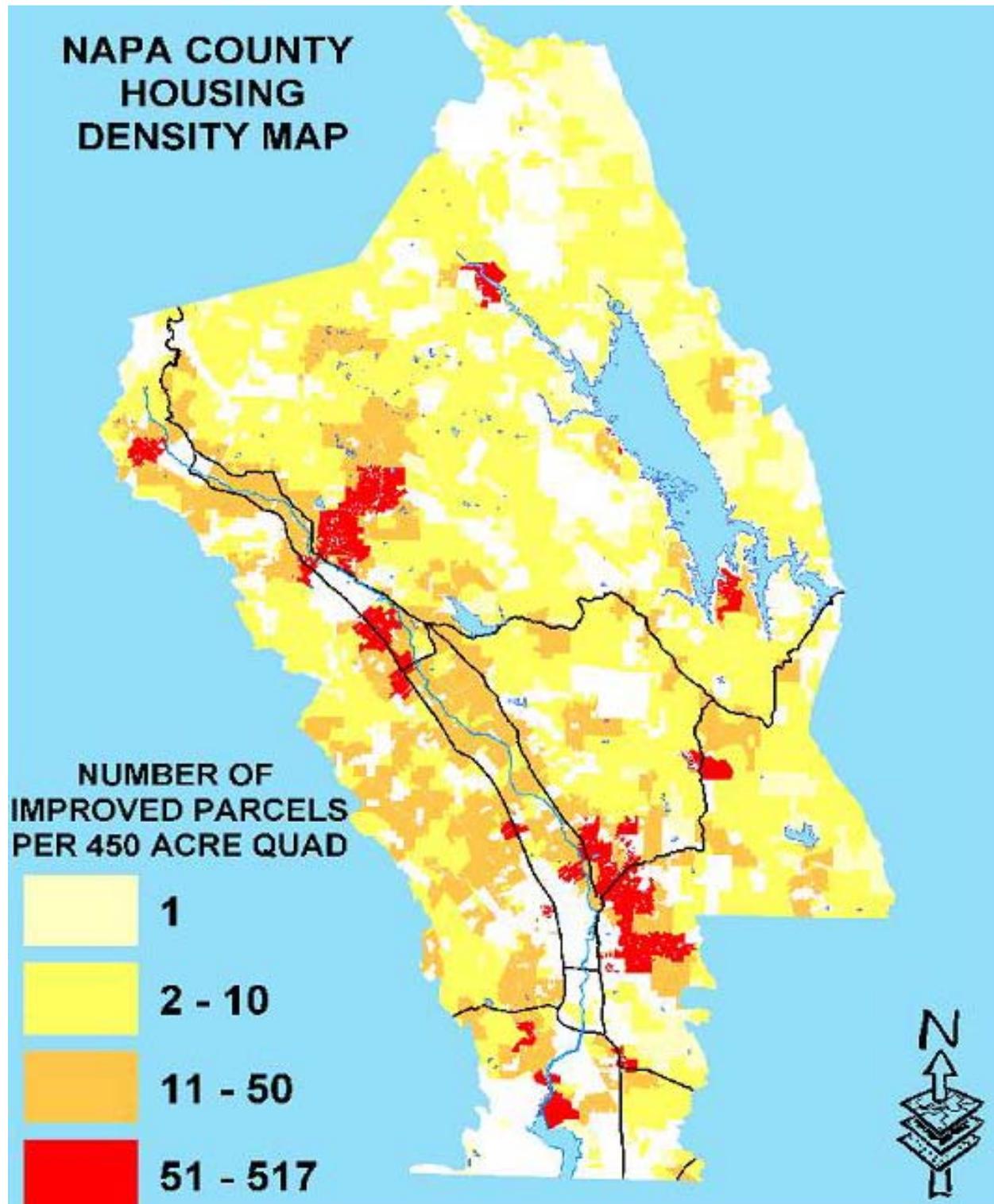
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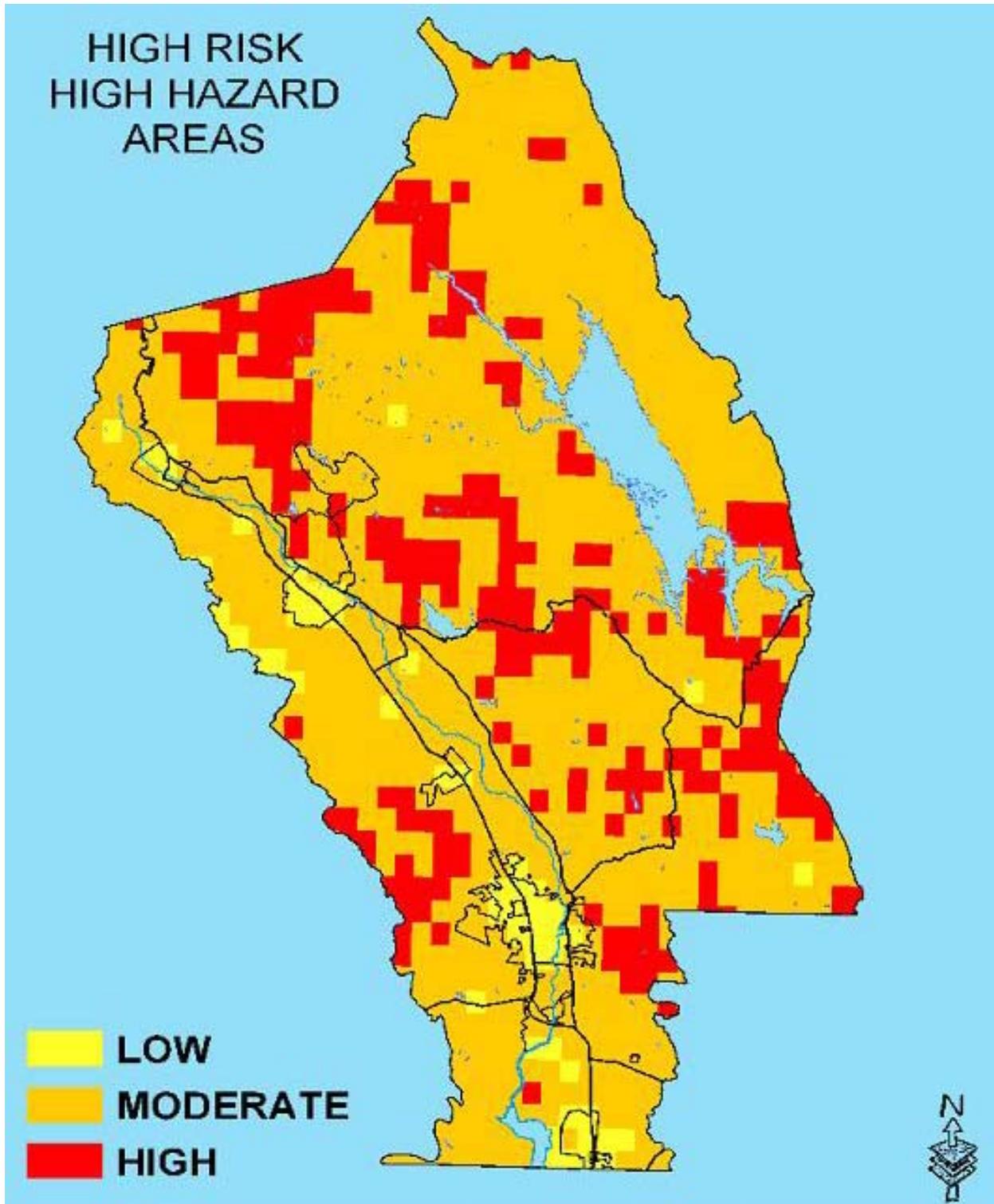
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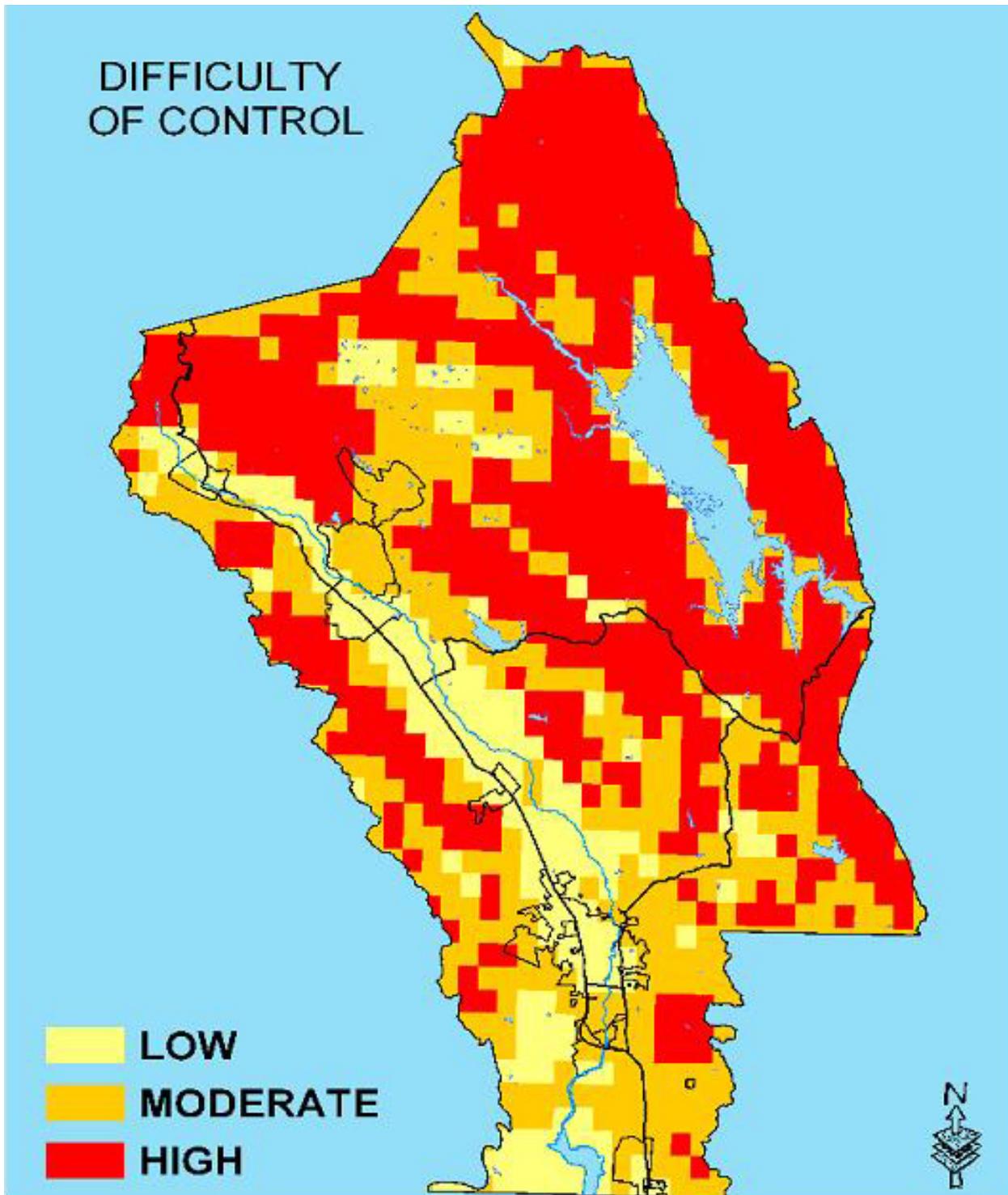
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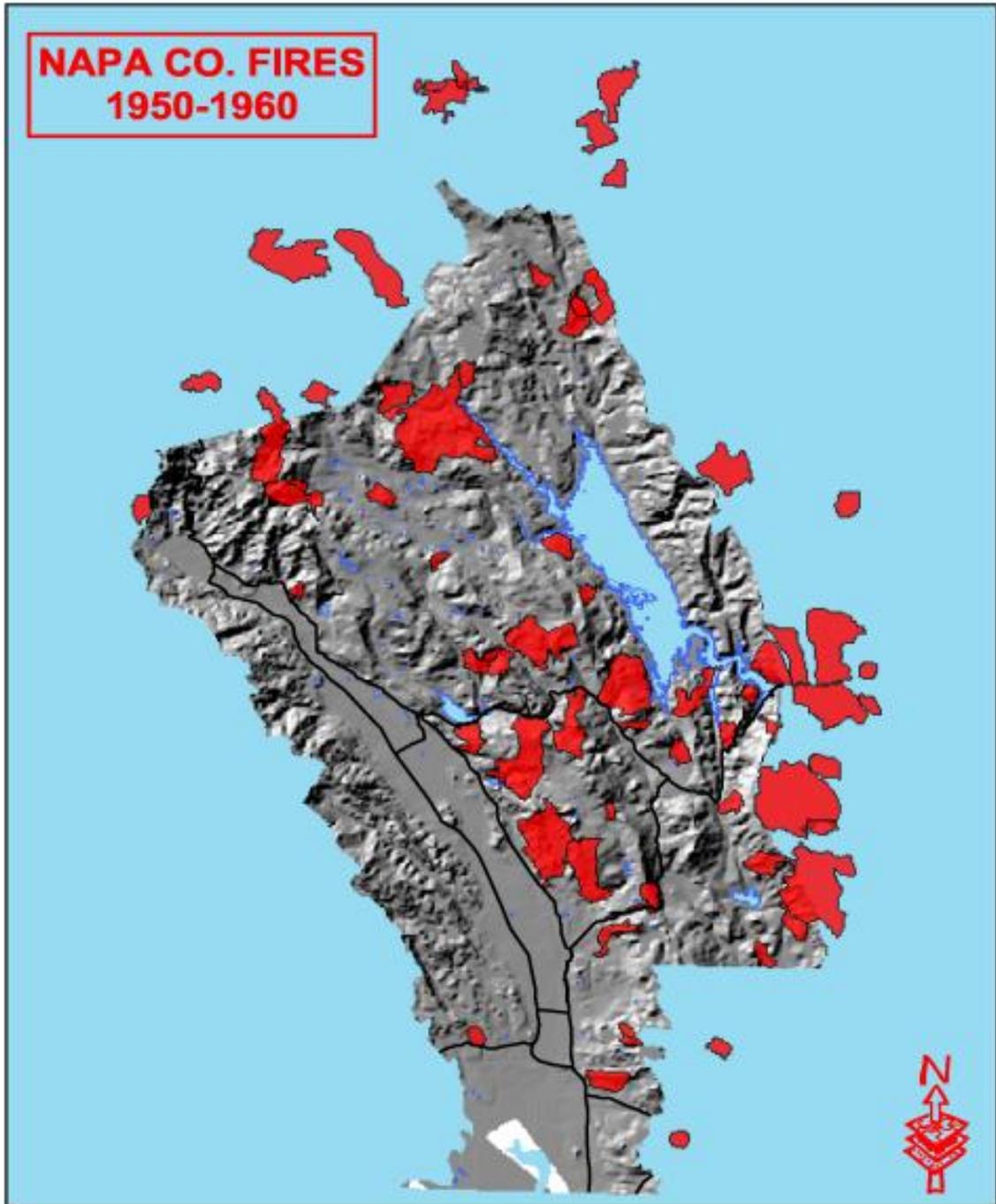
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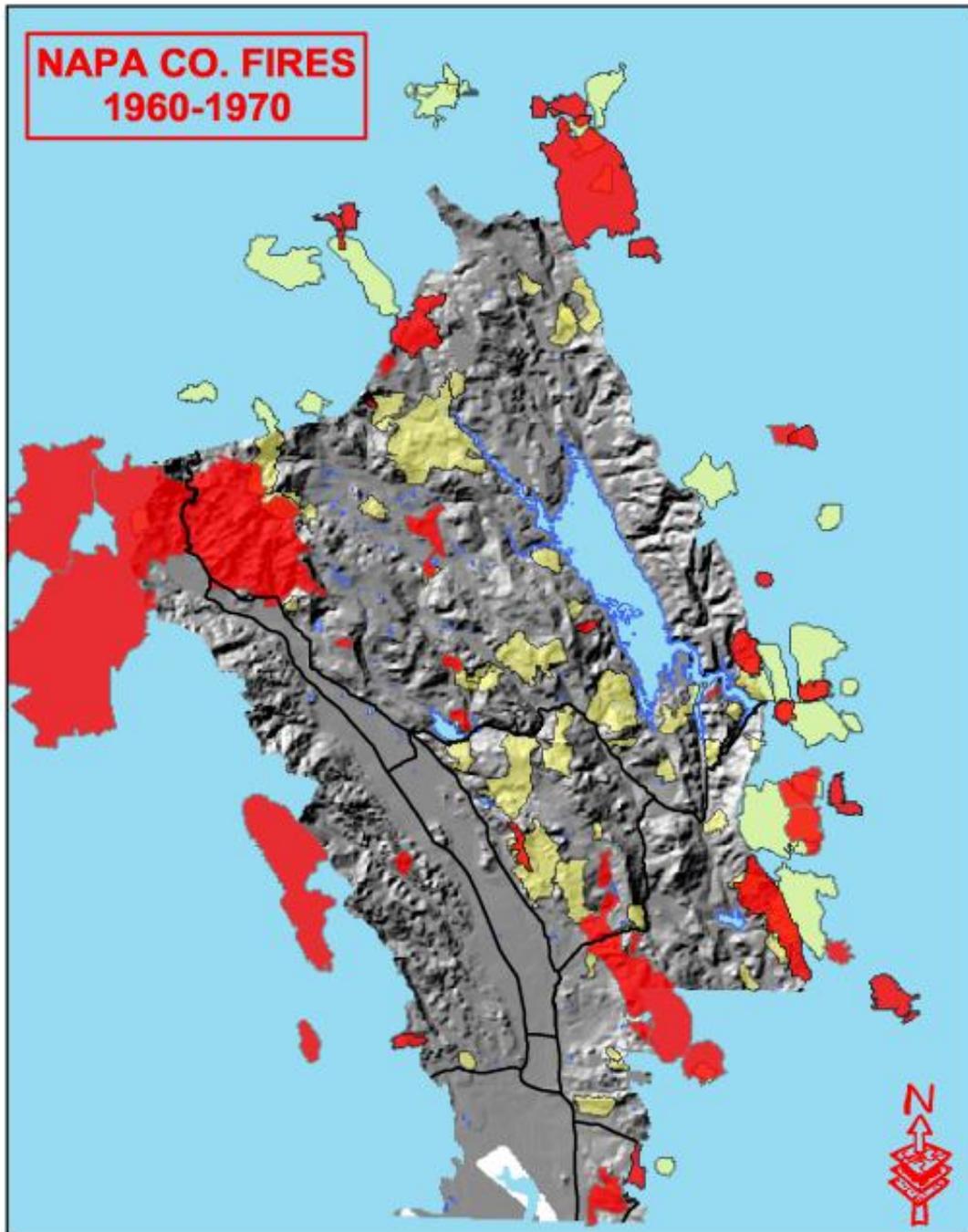
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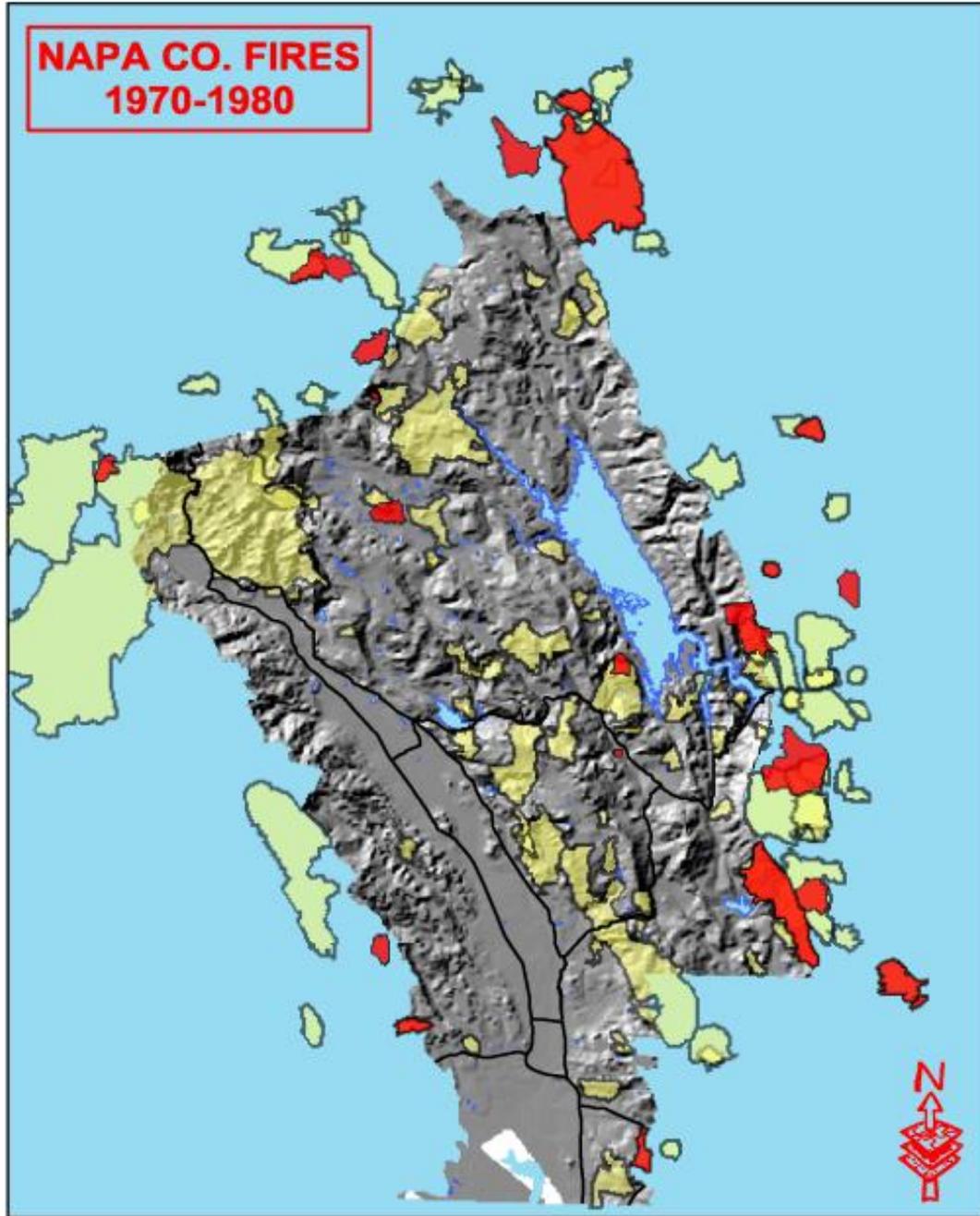
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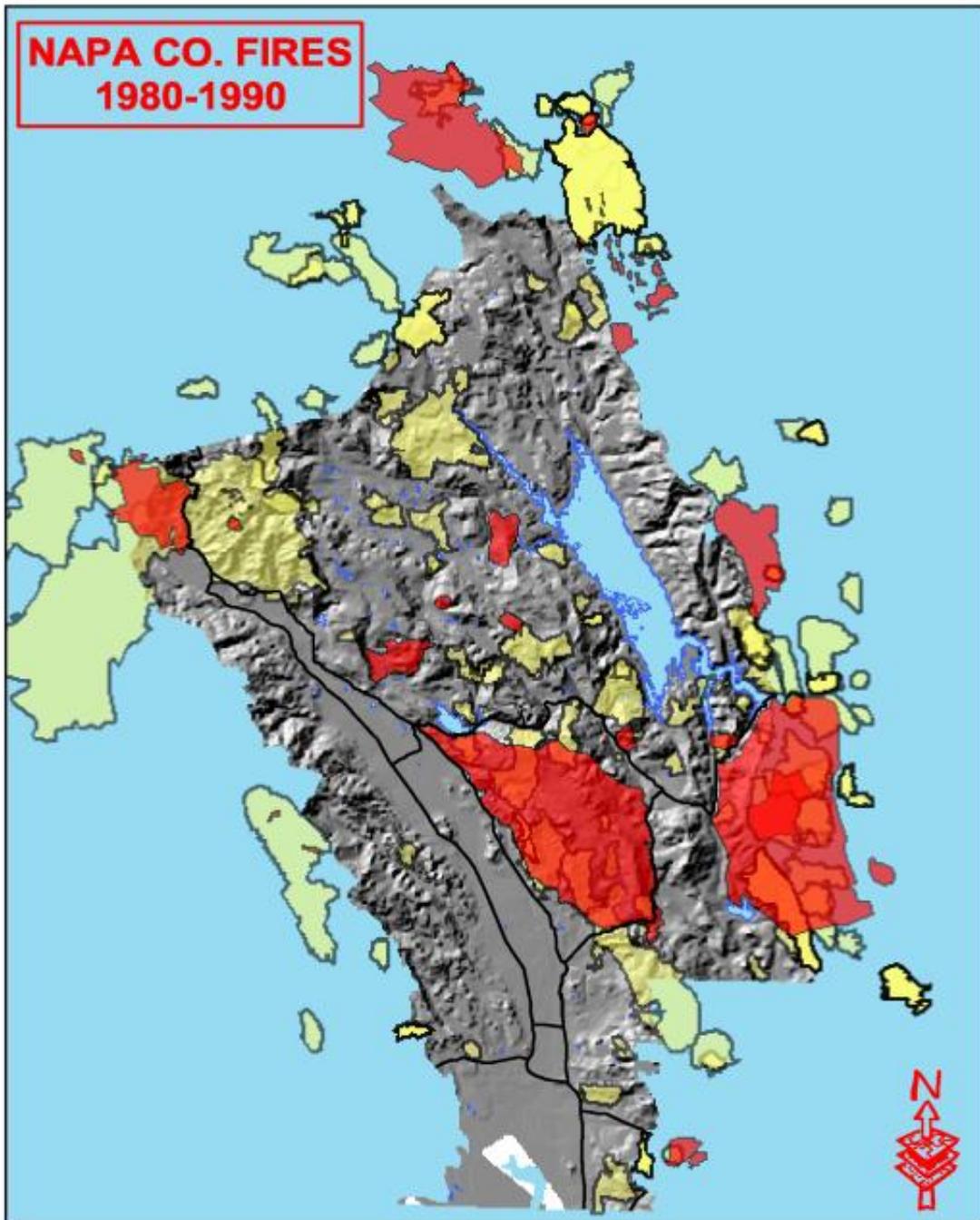
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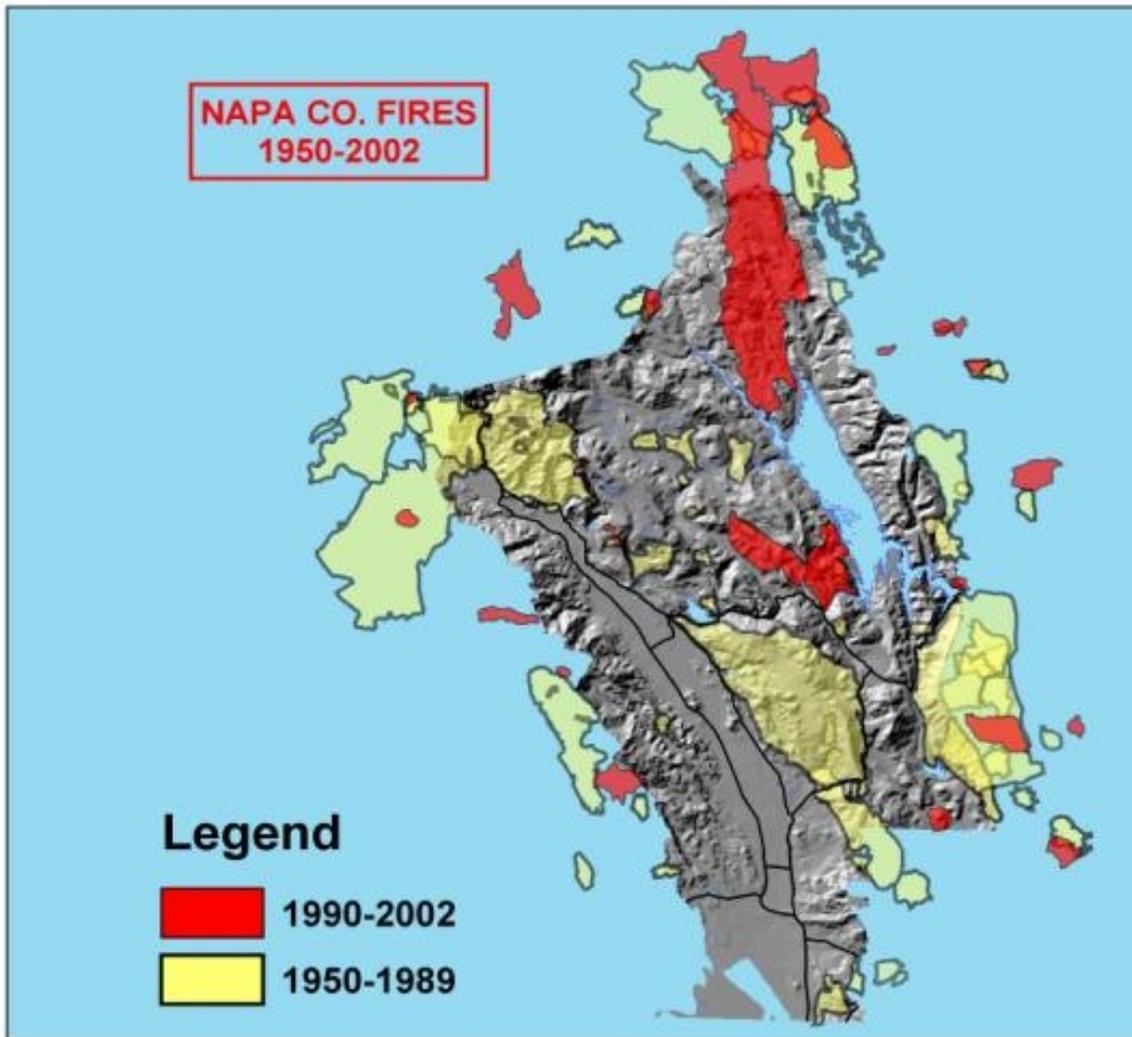
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Wildland fires are considered a significant and recurrent threat in Napa County, particularly in those areas of densest population.

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Technological Hazards

Agricultural Pestilence

Every citizen of California plays a vital role in helping to prevent the introduction of new agricultural pests. These pests, if established, result in the loss of international markets for farm products, increased costs for food production and the potential for increased chemical pest controls. These additional costs are ultimately shared with the consumer in the form of higher food prices. Pierce's disease and agricultural pestilence is considered a technological hazard because the inadvertent importation and introduction of the glassy-winged sharpshooter, an efficient Pierce's disease vector, to the Valley will have a severely adverse impact on the agricultural economy of the Napa Valley.

The glassy-winged sharpshooter (GWSS) is a serious threat to the County's economy and ecology. This pest has the potential to seriously disrupt the County's agricultural economy and the over 5000 jobs that are related to agriculture. But it also is a threat to the quality of life of all Californians and could imperil the County's native habitat.

The threat of the glassy-winged sharpshooter and Pierce's disease is widely known in the County's grape industry. The County's 40,000-plus acres of wine grapes are at risk of potential infection by Pierce's disease.

The GWSS is an effective vector for Pierce's disease because it is more mobile than other leafhoppers that can transmit the bacteria. The insect uses its needle-like mouth to tap into the water-conducting tissues of a plant. In addition to its mobility and its varied food sources, it is dangerous because of its ability to move a large quantity of water (equivalent to a 150-pound human drinking 4,300 gallons of water a day) through its system in a day. In feeding on plants, the pest can infect them with lethal diseases, such as Pierce's disease in grapevines.

Pierce's disease is not a new problem. It has existed in the state for more than a century and was responsible for the destruction of a fledgling wine grape industry in southern California in the late 19th century. Because of the sharpshooter's mobility and voracious feeding habits, the threat is not only to vineyards but also to other crops. The bacterium *Xylella fastidiosa* that causes Pierce's disease also causes terminal diseases in other plants that host the sharpshooter.

The GWSS host list includes more than 100 species of plants. These include commercial crops such as almonds, citrus, peaches, plums, alfalfa and many ornamental plants produced by the County's commercial nursery industry. The supply, availability and price of popular plants, shrubs and trees for landscaping and back yard use are threatened, from both the pest and the measures that we take to prevent the spread of GWSS life stages, which increases the costs of landscaping products. The combination of Pierce's disease with a highly mobile vector creates a dynamic and dangerous situation for Californians.

Agricultural crops are the most visible and quantifiable targets, but decorative plants, landscaping, highway medians and other non-agricultural plantings are also at risk. The threat to the urban environment is real. Heavy infestations of the sharpshooter produce copious amounts of "leafhopper rain," rendering backyard barbecues and other outdoor activities much less enjoyable. A shady spot in the backyard is a nice retreat on a hot summer day but it could be a nuisance because of the sharpshooter. Sharpshooters excrete water droplets when they feed on plants. These droplets eventually wet people, cars, backyard play equipment, pools, cars and sidewalks. Sharpshooters filter out minerals and amino acids from the liquid sucked from plants. They filter so much water to get adequate nutrition that it excretes a sizeable droplet of water about every three seconds. When dry, the watery excrement leaves trees and shrubs with a whitewashed appearance. Favorite residential host plants for the sharpshooter include ash, bougainvillea, camellia, citrus, crape myrtle, eucalyptus, loquat, magnolia, mulberry, oak, privet, umbrella tree, apple, most stone fruits, blackberry, Chinese elm, oleander, philodendron, pine, sycamore, trumpet flower, wisteria, willow and yucca.

The combination of an efficient vector and an untreatable and terminal plant disease is a direct threat to the economic underpinning of the County economy. The wine industry and its related tourist industry are responsible for an estimated \$3 Billion of economic activity in the County. The loss or significant damage to the wine grape crop could be catastrophic for the local economy and population.

Hazardous Materials

A wide variety of hazardous materials are present in Napa County. These materials are stored, used in manufacturing and agriculture, and moved by truck, train and pipeline. The materials may be poisonous, corrosive, explosive or flammable. The poison effect may be due to chemical, radioactive or biological properties of the materials. The physical state may be as a solid, fine powder, liquid or gas, perhaps under great pressure. Quantities range from a few grams in a test tube to large storage tanks. The Napa County Department of Environmental Management is the designated administering agency for the County Area Hazardous Material Monitoring Program. In the event of a spill or release, this agency should be notified immediately.

The table below demonstrates the known level fixed threats that exist within the County. Numerous other sources are also found in smaller quantities throughout the County especially in agricultural facilities.

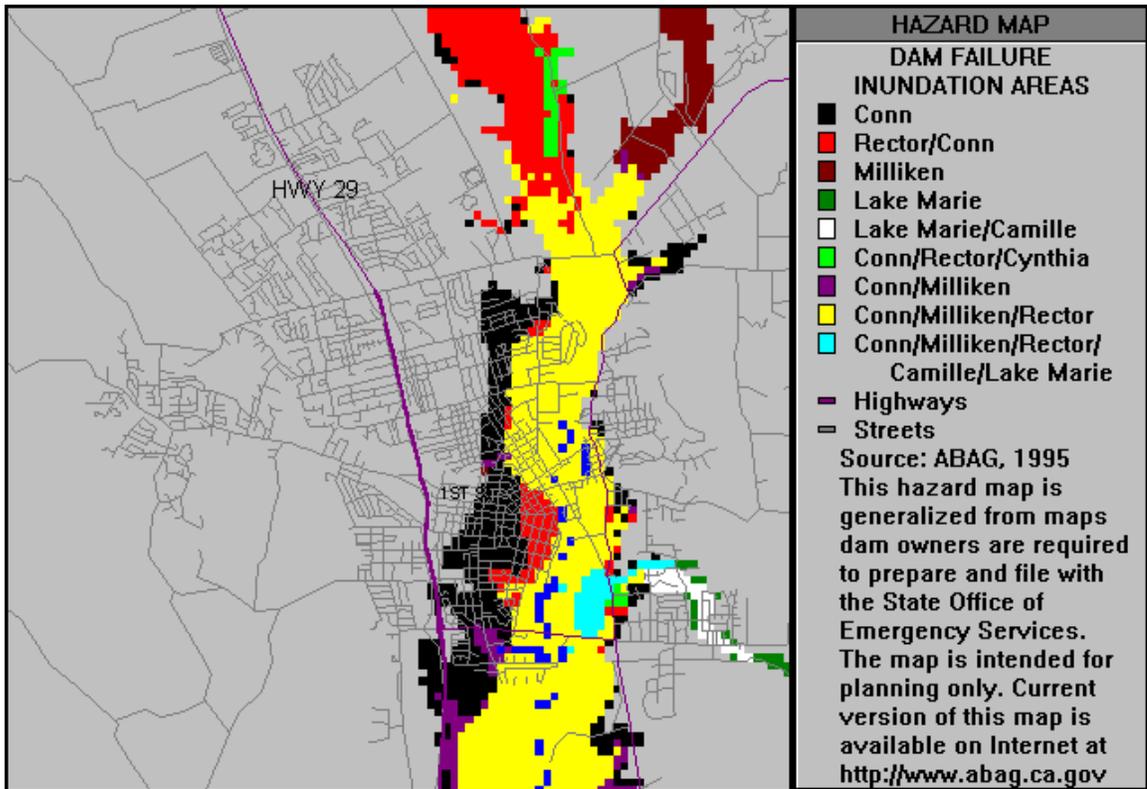
FACILITY	ADDRESS	CalARP SUBSTANCE	QUANTITY
Complete Welder's Supply	101 Camino Dorado, Napa	Anhydrous Ammonia	1200 lbs
Complete Welder's Supply	101 Camino Dorado, Napa	Chlorine (gas)	1200 lbs.
Complete Welder's Supply	101 Camino Dorado, Napa	Sulfur Dioxide (gas)	9000lbs.
Beringer Blass	1000 Pratt Ave, St. Helena	Anhydrous Ammonia	9644 lbs.
Sutter Home - Main Street	100 St. Helena Hwy. St. Helena	Anhydrous Ammonia	8000 lbs.
Diamond Oaks	1595 Oakville Grade, Oakville	Anhydrous Ammonia	950 lbs.
Charles Krug Winery	2800 St. Helena Hwy, St. Helena	Anhydrous Ammonia	9440 lbs.
Sutter Home - Zinfandel Facility	105 Zinfandale Lane, St. Helena	Anhydrous Ammonia	9559 lbs
Raymond Vineyard and Cellar	849 Zinfandale Lane, St. Helena	Anhydrous Ammonia	9500 lbs.
Markham Vineyards	2812 St. Helena Hwy. St. Helena	Anhydrous Ammonia	3200 lbs.
Calistoga Mineral Water	865 Silverado Trail, Calistoga	Anhydrous Ammonia	3000 lbs.

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Dam Failure

A dam failure will cause loss of life, damage to property and other ensuing hazards, as well as the displacement of persons residing in the inundation path. There could be loss of communications, damage to transportation routes and the disruption of utilities and other essential services. Public health would be a major concern. There are several dams in Napa County. The two that would cause the most inundation and damage if they were breached, while at full capacity, are the Hennessey Dam and Rector Dam.

The following map shows the potential dam inundation areas in the City of Napa.



Waste Treatment Plants

Waste treatment plants are vulnerable to three major threats. Since they are gravity fed they are routinely built in low-lying areas, these areas are subject to flooding. Since they are remote and contain hazardous materials they can be considered a terrorist target, with high impact and relatively low risk to attack. And since they tend to be on porous alluvial soils and have miles of fixed plumbing and transmission lines they are vulnerable to shaking and earth movement during earthquakes.

The County of Napa controls two special district sewage treatment plants. These plants are also obsolete, built during the early 60's they are nearing the end of the useful life. However the fiscal and population base to upgrade these plants is currently unavailable.

Calistoga, St. Helena and Yountville all maintain their own plants. Although these plants are more modern, the Calistoga and St. Helena Plants lie along the river drainage and are subject to the aforementioned threats. The City of Napa is served by the Napa Sanitation District, which has greatly updated its plant. However the complex lies within the flood zone and within the West Napa Fault Zone. American Canyon has a modern plant but it also lies in the West Napa Fault Zone, on liquefaction soils and within the 50-year flood plane.

Mitigation opportunities that could be exploited for all these plants would include hardening, updating, structural hazard mitigation, and flood protection.

Terrorism

Although generally geographically isolated by significant ranges of hills and being off the main interstate highways Napa County remains in close proximity to many of the bay area military, a governmental, and financial institution. Additionally there are some very high value technological, cultural and social targets within Napa County, as well as world wide name recognition that make it impossible to ignore that a measurable risk exist for the County.

The County as mentioned earlier is working in partnership with a well established Terrorism Working Group that represents the major stakeholders in the deterrence, prevention and response to potential terrorism. The County is actively making preparations to respond to acts of terrorism. Despite recent advances in equipment and training, our ability to deal with problems within the County or provide mutual aid to the surrounding counties is still limited. Due to the county's agricultural base, Napa may seem like an unlikely target of transnational terrorism, however, it enhances its appeal to domestic terrorist who have an extreme view of appropriate practices within their extreme environmentalism. Additionally, prevailing weather patterns also suggest we could be the recipient of the effects of a major chemical or radiological plume from the western parts of the greater Bay Area.

It is clear that the Federal government can and will provide many of the specialized resources to combat terrorism, however, the true effectiveness of any response to an act of terrorism will depend on what happens at the local public safety level.

Accordingly, the County of Napa has taken a number of positive steps in preparing the public safety response to acts of terrorism. Using funds from the 1999, 2000, 2001-20002 and 2003 Homeland Security Grants have been used to update our capability, especially for our law enforcement and fire first responders

All County Police Departments has recently received full-face respirators, which will be issued to all sworn and specialized personnel. In addition, members of the police department's Special Weapons and Tactics (SWAT) team will each be issued a Self Contained Breathing Apparatus (SCBA) in order to effectively respond to a WMD/Hazmat situation.

Napa County has a well established and highly equipped and trained interagency hazardous materials team. We are in the process of converting a state certified medium rescue team into a type standardized multi-agency heavy rescue team.

The Napa Police Departments are actively coordinating terrorism response strategies with other local law enforcement agencies, fire and medical personnel. These strategies included full-scale, county wide, training scenarios involving responses to chemical and biological attacks on local targets.

The aforementioned problems with our current capability are being addressed over time by planning, training exercising and equipping. Improvements in interoperability, communications, protective equipment and training are ongoing. The biggest unfunded need is structural mitigation of security concerns such as the hardening of critical facilities, communications and critical infrastructure. The most affordable cost effective preparedness and mitigation activities remain those outlined above. We recognize the key role of citizen preparedness in combating terrorism.

We will never have enough tools, responders or time to deal with a catastrophic terrorist event. It is essential that we move our residents from passive to proactive. Our CERT program includes a terrorism component and we use sustainment training opportunities to enhance their ability to recognize and avoid the consequences of a terrorist attack.

SECTION 4 MITIGATION STRATEGY

Specific mitigation objectives and action items were developed for Napa County in conjunction with the public meetings held in the three locations, as cited in Section 1. The list of action item identifies mitigation projects and includes a project ranking based upon time horizon, cost, risk, benefit and input from local stakeholders. The action items were developed to provide public policy makers with a list for potential implementation as mitigation resources, time, equipment and funding become available for the selected projects. Following is a description of goals and objectives used to generate this mitigation strategy. In general terms, these are building blocks in our efforts to mitigate potential natural and potential human-caused hazards and they build on the community's existing capabilities. Project implementation and legal framework are discussed at the conclusion of this section.

Local Hazard Mitigation Goals

The mitigation goals describe the overall direction that Napa County agencies, organizations, and citizens propose to take toward mitigating risk from natural and man-caused hazards. Goals and objectives of the Plan were developed during interviews and meetings with public officials and at public meetings. Napa County hazard mitigation goals are identified below.

- Promote a flood safer community
- Promote an earthquake safer community
- Promote a fire safer community
- Promote a technological and biological safer community

Mitigation Objectives and Actions

The broad range of potential mitigation activities were considered, and below is a list of mitigation objectives and the actions identified by the County. Although some of these projects may not be eligible for FEMA funding, Counties may secure alternate funding sources to implement these projects in the future.

In General these project area fall in four general categories:

- Reduce impacts from flooding
- Reduce impacts of earthquakes
- Minimize risk of wildfire at urban interface
- Improve ability to mitigate technological hazards and agricultural threats

Tables were developed to rank the mitigation projects using the following criteria; each project was assigned a priority rank, an approximate cost, a time horizon, whether the project requires Board of Supervisors regulatory action, and an assumption as to whether or not the project would be subject to CEQA or federal EIR requirements.

The OES Coordinator, consulting with the Napa County Operational Area Disaster Committee, ranked each mitigation project as Priority 1, Priority 2 and Priority 3 based on community needs and concerns. Projects identified by Napa County as top priorities are outlined in the following tables by threat and a more detailed explanation follows the tables.

OVERVIEW OF HAZARD MITIGATION PROPOSALS BY THREAT					
Hazard Type: FLOOD					
Description of Project	Priority	Time Horizon	Approximate Project Cost	Requires Board of Supervisors Regulatory Action?	Subject to CEQA/EIR
Storm Watch early warning system	1	Near	\$100,000	No	No
Completion of Measure A Project (to be completed in 2005)	1	Near	\$18,000,000	Yes <i>Completed</i>	Yes <i>Completed</i>
Community Flood Fighting education	1	Near	\$5,000	No	No
Small Stream Warning Systems	3	Long	\$250,000	Yes	Yes
NOAA Weather Radio distribution	2	Long	\$10,000	Yes	No
Elevation of Houses (100)	2	Long	\$5,000,000	Yes	Yes
Stream Bank Management	2	Mid	\$500,000	Yes	Yes
Stream Bed Vegetation Management Plan	2	Long	\$1,000,000	Yes	No
Elevation of secondary bridges	3	Long	\$10,000,000	Yes	Yes
Reservoir capacity improvement program	3	Long	\$15,000,000	Yes	Yes

OVERVIEW OF HAZARD MITIGATION PROPOSALS BY THREAT					
Hazard Type: EARTHQUAKE					
Description of Project	Priority	Time Horizon	Approximate Project Cost	Requires Board of Supervisors Regulatory Action?	Subject to CEQA/EIR
CERT Training	1	Near	\$25,000 per annum	No	No
Non –Structural Hazmat Model Home (20)	1	Mid	\$250,000	Yes	No
Earthquake Month Education Program	1	Near	\$10,000 per annum	Yes	No
Manual Transfer Switches for all public buildings	2	Mid	\$1,000,000	Yes	No
Mobile Home tie-down program (250)	1	Mid	\$6,250,000	Yes	Yes
Earthquake Insurance Campaign	2	Near	\$15,000	Yes	No
Rebuilding Microwave system	1	Mid	\$5,000,000	Yes	No
Hardening PSAPs and Retrofitting fire and police stations	1	Mid	\$11,000,000	Yes	No
Surface fire water system with pumps	3	Long	\$2,500,000	Yes	No
Mobile EOC/CMD Vehicle	3	Long	\$1,500,000	Yes	No
Pre plumb all critical facilities for Amateur Radio Base Stations	2	Mid	\$50,000	No	No

OVERVIEW OF HAZARD MITIGATION PROPOSALS BY THREAT					
Hazard Type: WILDLAND INTERFACE FIRE					
Description of Project	Priority	Time Horizon	Approximate Project Cost	Requires Board of Supervisors Regulatory Action?	Subject to CEQA/EIR
Community Education Program on Defensible Space	1	Near	\$10,000	No	No
Voluntary Defensible Space Inspection Program	1	Near	\$40,000	No	No
Foster and Form Firewise Councils (neighborhood based)	1	Near	\$40,000	No	No
GIS Vegetation Management Layer	1	<i>Completed</i>	\$15,000	No	No
Elected Official Education Program	1	Near	\$10,000	No	No
Defensible Space Grant Application Program	1	Near	\$5,000 per annum	Yes	Yes
Draft and Promulgate new Defensible Space Regulations	1	Near	\$50,000	Yes	Yes
Revise General Plan with Firewise Data	1	Mid	\$50,000	Yes	No
Develop Defensible Space Enforcement and Compliance Programs	2	Mid	\$100,000	Yes	No

OVERVIEW OF HAZARD MITIGATION PROPOSALS BY THREAT					
Hazard Type: WILDLAND INTERFACE FIRE (continued)					
Description of Project	Priority	Time Horizon	Approximate Project Cost	Requires Board of Supervisors Regulatory Action?	Subject to CEQA/EIR
Develop Fuel Reduction Programs	1	Mid		Yes	Yes
a. Roadside collection and chipping			\$100,000		
b. Mechanical fuel reduction			\$500,000		
c. Vegetative management/harvesting			\$500,000		
d. Organic fuel reduction (Goats etc.)			\$250,000		
e. Controlled burn program			\$250,000		
Conduct Fuel Reduction Program Annually	2	Mid	\$1,250,000 per annum	Yes	Yes
Implement Public Road Clearance and Improvement Program	2	Long	\$600,000	Yes	Yes
Implement Defensible space into all IZ building permit processing	2	Long	\$40,000	Yes	No
Develop insurance incentive program with insurance agencies	3	Long	\$50,000	No	No
Watershed Evaluation and Maintenance Program	1	Mid	\$250,000	Yes	Yes
Institute Watershed Maintenance Program	1	Long	\$1,000,000 per annum	Yes	Yes
Fire Fuels Imaging and Residential Evolution Project	2	Mid	\$1,600,000	No	No
Forester Tec Spec Advisory Program	2	Long	\$600,000	No	No

OVERVIEW OF HAZARD MITIGATION PROPOSALS BY THREAT					
Hazard Type: TECHNOLOGICAL					
Description of Project	Priority	Time Horizon	Approximate Project Cost	Requires Board of Supervisors Regulatory Action?	Subject to CEQA/EIR
Vulnerability survey	1	<i>Completed</i>	\$10,000	No	No
Public building remote surveillance system	3	Long	\$1,000,000	Yes	No
Secure digital radio countywide	2	Long	\$2,000,000	Yes	No
Citizens Corps Neighborhood Watch	1	Near	\$50,000 per annum	Yes	No
Shelter-in-place training	1	Near	\$50,000	Yes	No
Shelter-in-place kits (2,000)	2	Mid	\$100,000	Yes	No
Reverse 9-1-1 System	3	Long	\$500,000 per annum	Yes	No
Community alert 2-1-1 system	3	Long	\$500,000 per year	Yes	No
School CERT training	2	Mid	\$100,000 per annum	Yes	No
Remote area detection WMD/Hazmat	2	Long	\$2,500,000	Yes	Yes
Maintain GWSS Program	1	Near <i>(Ongoing)</i>	\$1,000,000 per annum	Yes	No
Maintain GWAT Program	1	Near <i>(Ongoing)</i>	\$10,000 per annum	No	No
Sewage Treatment Plant Berm perimeters	3	Mid	\$4,500,000	Yes	Yes

Mitigation Action Items

Goal 1: Promote a Flood Safer Community

Objective 1.1: Develop and improve the countywide flood surveillance and early warning system.

Action 1.1.1: Maintain City County Storm Watch Program

Program Description: The City of Napa and County of Napa have created an automated system of rain and flood gauges on the major tributaries and storm approach path to the greater Napa River Drainage system. The system is web enabled and accessible from both the flood operation centers and the City web site. The tool is constantly used for surveillance during the rainy season.

Funding Required: \$100,000 per annum
Timeframe: 1 – 3 years
Staff: City and County Public Works Staffs
Jurisdictions Involved: County, Calistoga, St. Helena, American Canyon, with City of Napa

Action 1.1.2: Small Stream Warning System

Program Description: Increase coverage of Storm Watch sensors to include ten more small streams that due to land use changes have demonstrated impact on small stream and urban flooding.

Funding Required: \$250,000
Timeframe: 5 – 10 years
Staff: City and County Public Works Staffs
Jurisdictions Involved: County with City of Napa

Action 1.1.3: Storm early warning enhancements

Program description: Distribution of NOAA weather Radios to high risk, limited income families living in flood zones. Developing program of at cost NOAA radios for families in the various flood zones in Napa County.

Funding Required: \$25,000
Timeframe: 5 – 10 years
Staff: County Disaster Education Task Force

Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 1.1.4: Community education flood fighting techniques

Program description: Work with California Department of Water Resources to offer three sessions annually on flood fighting techniques for the general public. This would build on the success of these classes as a CERT sustainment training exercise and increase citizens’ exposure to self-help protection and mitigation actions.

Funding required: \$5,000 per annum
Timeframe: 1-3 years
Staff: CERT Teams and Dept. of Water Resources
Jurisdictions Involved: Countywide

Objective 1.2: Support the completion of the Measure A Flood Control Project

Action 1.2.1: Completion of the Measure A Flood Control Project as budgeted

Program Description: Completion of the project as contracted with the stakeholders and the US Army Corps of Engineers by 2007. The project will provide the communities along the Napa River flood corridor with “100 Year” flood protection and a living river.

Funding required: App. \$18,000,000
Timeframe: 1 – 3 years
Staff: Napa County Flood Control District
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 1.2.2: Streambed Vegetation Management Plan

Program Description: To balance the need for the smooth out flow of storm waters versus the need to maintain wildlife habitat a comprehensive Streambed Vegetation Management Plan needs to be developed to ensure the efficacy of the flood control efforts and maintain the viability of the living river vision.

Funding required: \$1,000,000
Timeframe: 3 - 5 years
Staff: County Planning Department
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 1.2.3: Streambed and Bank Management Plan

Program description: Develop an approved approach and locations for bank protection using rip rap and stream bed depth management using dredging and removal of 19th century coffer dam structures in the river and subsidiary streams.

Funding required: \$500,000
Timeframe: 3-5 years
Staff: County and City Planning Staffs
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville

Action 1.2.4: Housing elevation project

Program Description: Apply for pre-disaster mitigation grant to elevate 100 most flood prone houses along areas not receiving direct protection from the Measure A Flood Control Project. This program would reduce reoccurring losses due to repetitive flooding and minimize the expense for the property owner.

Funding required: \$5,000,000
Timeframe: 3 - 5 years
Staff: City/County Planning Departments
Jurisdictions Involved: County, St. Helena, Yountville, with City of Napa

Action 1.2.5: Increasing Reservoir capacity

Program Description: Program would involve increasing capacity by dredging several small water reservoirs within the County that would increase storage for both flood control as well as water for household, industrial and agricultural use. While this increased capacity will not eliminate flooding by itself, it is part of a systems approach to making Napa County more flood resistant.

Funding required: \$15,000,000
Timeframe: 5 - 10 years
Staff: City/County Planning & Public Works Departments
Jurisdictions Involved: Calistoga with City of Napa

Action 1.2.6: Elevation of Secondary Bridges Plan and program

Program Description: Measure A elevates 13 primary bridges affected by flooding. This program would elevate or replace critical second tier bridges on secondary and feeder streams to increase stream flow and maintain critical access and egress routes.

Funding required: \$10,000,000

Timeframe: 5 - 10 years

Staff: City/County Planning & Public Works
Departments

Jurisdictions Involved: Countywide

Goal 2: Promote an Earthquake Safer Community

Objective 2.1: Train Communities to be earthquake ready

Action 2.1.1: Continue CERT Training Program

Program Description: CERT is a 20-hour free program that trains citizens in basic skills to mitigate, prepare and respond to local disasters whether natural or technological. The county at large has trained about 500 citizens, with a five-year goal of training 1200 and a ten-year goal of training 2500 citizens of the County.

Funding required: \$25,000 per annum
Timeframe: 1 - 3 years
Staff: City/County CERT Cadre
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 2.1.2: Earthquake insurance education campaign

Program Description: Develop a public education campaign on the cost, risk and benefits of the earthquake insurance.

Funding required: \$15,000
Timeframe: 1 - 3 years
Staff: City/County Disaster Education Task Force
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 2.1.3: Earthquake month public education program

Program description: In accordance with the state, annually conduct an earthquake month multi-media/medium education campaign to educate the general public on approaches to non-structural, structural mitigation and general quake preparedness actions.

Funding required: \$10,000 per annum
Timeframe: 1 - 3 years
Staff: City/County Disaster Education Task Force

Jurisdictions Involved: County, Calistoga, St. Helena,
Yountville, American Canyon, with City of Napa

Objective 2.2: Ensure the ability of emergency response units to communicate in the post quake environment.

Action 2.2.1: Hardening and building redundant capability into Public Safety Alerting Points

Program description: Build comprehensive CAD/RMS capabilities in all four PSAPs in the County to maintain continuity of operations.

Funding required: \$10,000,000
Timeframe: 3 - 5 years
Staff: City/County Public Safety Communications
Jurisdictions Involved: County fire, Napa Central dispatch

Action 2.2.2: Replacing and hardening county microwave and simulcast system

Program Description: Replace a 25 year old system with state of the art web controlled microwave and simulcast equipment, new repeaters and uninterruptible and sustainable power supplies to provide a secure and survivable backbone for all public safety post earthquake communications

Funding required: \$5,000,000
Timeframe: 1 - 3 years
Staff: City/County Public Safety Communications
Jurisdictions Involved: County

Action 2.2.3: Type standardizes and purchase mobile command/EOC vehicles

Program Description: Plan for and purchase compatible command vehicles in order to maintain command and control capabilities including disaster intelligence, resource management and dispatch in the event of loss of fixed facilities.

Funding required: \$1,500,000
Timeframe: 3 – 5 Year
Staff: City/County Disaster Council and Public Safety Agencies
Jurisdictions Involved: County, Calistoga, St. Helena,
Yountville, American Canyon, with City of Napa

Action 2.2.4: Emergency power and automatic transfer switches for all public buildings

Program description: Pre-position emergency power generation capability in all public building for use in the post earthquake or energy crises in environment to maintain continuity of government and services for the public.

Funding required: \$1,000,000
Timeframe: 1 - 3 years
Staff: City and County Public Works Departments
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon, with City of Napa

Action 2.2.5: Pre plumb all EOC/DOC primary and alternate locations and critical facilities for Amateur radio base stations

Program Description: Ensure a plug and play capability for amateur radio as a post disaster communications system for administration and logistics in all key facilities in the county.

Funding required: \$50,000
Timeframe: 1 – 3 years
Staff: County Communications
Jurisdictions Involved: Napa County with City of Napa

Objective 2.3: Improve post earthquake survivability of public and private assets.

Action 2.3.1: Ensure a viable fire fighting water supply

Program Description: Purchase and maintain for each fire district an emergency water pumping, surface lines and hydrant system to pump water form existing sources, transport and provide pressurized portable surface lines to temporality replace damaged water mains and hydrants.

Funding required: \$2,500,000
Timeframe: 5 – 10 years
Staff: City and County Fire and Public Works Departments
Jurisdictions Involved: County, Calistoga, St. Helena, Yountville, American Canyon

Action 2.3.2: Hazard Mitigation Model Home Project

Program Description: Conduct 20 demonstration projects on existing housing types (5) in four general locations (Up valley, Napa, south county and East County) demonstrating structural and non-structural mitigation techniques, as community open house models of earthquake mitigation.

Funding required: \$250,000
Timeframe: 3 - 5 years
Staff: City/County Disaster Education Task Force/Building Departments
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 2.3.3: Conduct a mobile home tie down program

Program description: Identify, contract and tie down 250-500 mobile homes used as year round permanent residences using a cost sharing basis, 75% grant 25% mobile home owner cost sharing basis.

Funding required: \$6,250,000
Timeframe: 3 – 5 years
Staff: City and County Public Works Departments
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon

Action 2.3.4: Retrofit Critical Public Safety Infrastructure

Program description: Identify, contract and retrofit two 1950’s vintage firestations and the St Helena Police Headquarters and civic Center.

Funding required: \$9,250,000
Timeframe: 3 – 5 years
Staff: City and County Public Works Departments
Jurisdictions Involved: Calistoga, St Helena, American Canyon

Goal 3: Promote a Fire Safer Community

Objective 3.1: Develop a defensible space program to minimize impact of wildland-Urban interface fires.

Action 3.1.1: Develop & conduct a Defensible Space community education program

Project Description: Based upon the San Mateo Op Area model, produce a jurisdiction specific workbook for homeowners on how to apply defensible space, publish and distribute to homeowners.

Funding required: \$10,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Staff
Jurisdictions Involved: Napa County

Action 3.1.2: Draft and Promulgate Defensible Space Ordinance

Project Description: Develop a comprehensive defensive space ordinance to minimize risk in the interface zone. Ordinance will include homeowner incentives, regulatory requirements and best practices.

Funding required: \$50,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Stakeholders Committee
Jurisdictions Involved: County with City of Napa

Action 3.1.3: Develop Defensible Space enforcement and compliance program

Project description: Project would tie the public education and ordinance pieces into a field program of enforcement, modeled on County weed abatement and building code enforcement programs. Funding would fund a FTE position to assist the Fire Marshall in enforcing the program by educating the *BBI* Staff and also doing field enforcement and arbitration.

Funding required: \$100,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Staff
Jurisdictions Involved: County with City of Napa

Action 3.1.4: Develop voluntary Defensible Space inspection program

Program Description: As an augmentation/alternative to an enforcement program this program would create an incentive program for Defensible Space in our community, emphasizing enlightened self interest in creating defensible space for homeowners in the Interface zone.

Funding required: \$40,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Staff
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 3.1.5 Develop GIS Vegetation Layer Maps

Program description: Develop comprehensive Ortho/Topo map layers, which demonstrates both natural and agricultural vegetation countywide.

Funding required: \$10,000
Timeframe: *Completed*
Staff: County Fire, Agricultural and GIS

Objective 3.2: Create a sustainable public private partnership on building a safer community in the interface zone

Action 3.2.1: Foster and form neighborhood based Firewise Councils

Program Description: Community action at the neighborhood level has proven to be one of the most effective ways to go beyond the individual property owner and develop a neighborhood stakeholder group for fire mitigation. The ability of neighbors to help neighbors to integrate Defensible Space and Firewise strategies on the neighborhood increases the viability of firewise programs.

Funding required: \$40,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall, County OES
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 3.2.2: Develop elected official Firewise education program

Program Description: Conduct a Firewise workshop for all elected officials with constituents that live in the Interface zone. The workshop goal would be to educate the officials on the critical need for these programs in mitigating the Wild Land Urban Interface Fire threat.

Funding required: \$10,000
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Staff
Jurisdictions Involved: County with City of Napa

Action 3.2.3: Develop Defensible Space Grant application program for homeowners (Model Defensible Space landscaping projects)

Program Description: An incentive program to defer some of the burden on homeowners for the creation of Defensible Space. Homeowners would apply for the grant to be a model home in a given area. Five \$1,000 annual awards would be awarded as incentive to be a model property for their neighborhood.

Funding required: \$5,000 per annum
Timeframe: 1 – 3 years
Staff: County Fire Marshall and Staff
Jurisdictions Involved: Napa County

Action 3.2.4: Revise General Plan with lessons learned from Firewise programs and analysis

Program Description: Napa County is rewriting its General Plan. The safety element will be greatly enhanced by the recognition of the Interface Fire threat, and the inclusion of the scientific state of the art fire mitigation strategies included in the Firewise approach to fire mitigation planning.

Funding required: \$10,000
Timeframe: 3 – 5 years
Staff: County Planning Staff
Jurisdictions Involved: Napa County

Objective 3.3: Develop a program to reduce shared threat in the Interface zone

Action 3.3.1: Develop Fuel Reduction Program

Program Description: Program will include 5 approaches to managing the fuel load in Napa County. To assist homeowners in developing Defensible Space this program would include roadside collection and chipping. Mechanical fuel reduction equipment will be integrated into the program where terrain is compatible for its use. Vegetation management and harvesting programs would be reviewed, adopted and applied. Use of organic methods of fuel reduction, i.e. the use of goats, and the use of controlled burning to reduce the threat of fuel overload and maintain forest health.

Funding required: \$1,600,000 to fully initiate
Timeframe: 3 - 5 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: County with City of Napa

Action 3.3.2: Conduct Fuel Reduction Program annually

Program Description: With the annualized loss from fire, approximately 20-30 properties valued at approximately \$11,000,000 would produce a cost benefit ratio of conducting a Fuel Reduction Program would be 1 to 5.

Funding required: \$1,250,000 per annum
Timeframe: 3 - 5 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 3.3.3: Enforce Interface Zone road ordinances

Program description: Enforce minimum road width of 20 feet with an additional ten foot clearance on each shoulder on all driveways and roads segment greater than 50 feet in length.

Funding required: \$100,000 per annum
Timeframe: 3 - 5 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: Napa County

Action 3.3.4: Implement Public Road Clearance and Improvement program

Program description: Ensure all publicly maintained roads have a minimum of ten feet fire clearance on each shoulder, all dead end segments have at least a “T” intersection turn around sufficient for typical wild land fire equipment.

Funding required: \$600,000 to fully initiate
Timeframe: 5 – 10 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: Napa County

Action 3.3.5: Implement Defensible Space measures into all Interface Zone building permit processes

Program Description: Add a Defensible Space overlay and plan requirement for all new construction in the I Zone. Require measurable Defensible Space improvements in accordance with current practices for the issuance of improvement permits on any property in the I Zone. This program is designed to institutionalize best practices for construction and defensible space on all new construction and improvement/remodeling of existing construction.

Funding required: \$40,000 to fully initiate
Timeframe: 5 – 10 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: Napa County with City of Napa

Action 3.3.6: Develop an Insurance Incentive Program with Insurance Agencies

Program description: Create a public/private partnership with insurance companies to give a discount on fire insurance premiums to “Forester Certified” Firewise landscaping and fire resistant building materials.

Funding required: \$50,000
Timeframe: 5 – 10 years
Staff: County Fire Marshal and Insurance Companies
Jurisdictions Involved: Napa County with City of Napa

Objective 3.4: Maintain quality of watershed by managing fuel and fire as part of the water quality environment

Action 3.4.1: Develop a comprehensive watershed evaluation and maintenance plan

Program Description: Develop a five-year plan on watershed maintenance, optimizing forest health with water yield to maximize the ability of the Napa River Watershed to support the general population and agriculture of Napa County.

Funding required: \$250,000
Timeframe: 3 - 5 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 3.4.2: Institute the watershed maintenance program

Program Description: Implement the above-mentioned plan

Funding required: \$1,000,000 per annum
Timeframe: 5 – 10 years
Staff: County Fire and contractors
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 3.4.3: Fire and Fuel Imaging and Residential Evolution Program Project

Program Description: An integrated GIS based planning approach for Fire and Fuel Imaging and Residential Evolution Program. County Fire, GIS and ESRI as partners will develop a planning tool for constant evaluation of status of fire fuel surveillance and Defensible Space progress countywide.

Funding required: \$1,600,000 to fully initiate
Timeframe: 3 - 5 years
Staff: County Fire and Planning Department Staff
Jurisdictions Involved: County with City of Napa

Action 3.4.4: Forester Technical Specialist Advisory Program

Program Description: Due to the decrease in the logging industry and the state budget crises, the career field of forester is finding it very difficult to maintain employment. Defensible Space planning and consulting, and watershed management are two areas statewide where the re-training of foresters would meet the needs of the clients as well as the needs to utilize their existing skills in their chosen career field. Napa County would serve as a local government advocate for a statewide program to revitalize the forester career field as a principle planner and consultants for forest fire mitigation and watershed management issues.

Funding required: \$600,000
Timeframe: 5 - 10 years
Staff: *CDF OSFM*

Goal 4: Promote a Technological & Biological Safe Community

Objective 4.1: Mitigate threats to the agriculture sector.

Action 4.1.1: Maintain the Glassy Winged Sharpshooter Action Team (GWAT)

Program Description: The GWAT is a private public partnership dedicated to preventing the introduction of the GWSS into the Valley ecosystem, and in the event of introduction controlling and eradicating the pest to safe guard our \$3,000,000,000 annual grape/wine industry.

Funding required: \$10,000 per annum
Timeframe: Ongoing
Staff: County GWAT
Jurisdictions Involved: Napa County

Action 4.1.2: Maintain the Glassy Winged Sharpshooter Program

Program Description: The inspection, trapping, mapping and education program maintained in partnership with the California Department of Agriculture. The goal of the program is to minimize the spread of pierces disease by stopping the spread of the most efficient host/vector the GWSS.

Funding required: \$1,000,000 per annum
Time Frame: Ongoing
Staff: County Agricultural Commissioner
Jurisdictions Involved: Napa County

Objective 4.2: Increase survivability from technological hazards including terrorism

Action 4.2.1 Conduct a Vulnerability Study

Program description: Conduct a countywide study in partnership with the State Department of Homeland Security, Twelve subject-matter experts examined the County, identifying resources, targets and capability shortfalls.

Funding required: \$10,000
Timeframe: *Completed*
Staff: County Terrorism Working Group

Action 4.2.2 Community alert and services network, 2-1-1 system

Program description: Develop a 24/7/365 staffed services information system using the national 2-1-1 system model, integrating all service call numbers for non-emergency services into one system.

Funding required: \$500,000 per annum
Timeframe: 5 – 10 years
Staff: County NGO's
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.2.3 Secure, digital radio countywide

Program description: Add on to the new microwave system, digitally encrypted programmable radios to ensure secure disaster and counter terrorist communications.

Funding required: \$2,000,000
Timeframe: 5 – 10 years
Staff: County Communications
Jurisdictions Involved: Napa County

Action 4.2.4 Public building Remote Surveillance System

Program Description: Using micro cameras and web-based software, place micro cameras around critical public assets and develop a surveillance protocol to monitor these cameras. Program would increase effectiveness of patrol assets and allow the monitoring of remote sites as needed.

Funding required: \$1,000,000
Timeframe: 5 - 10 years
Staff: County/City Communications and PSAPs
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.2.5 Remote area detectors for WMD/Hazmat

Program Description: Placing of remote sensors countywide for early warning of Hazmat/WMD Events

Funding required: \$2,500,000
Timeframe: 3 - 5 years
Staff: County PSAPs, Fire and Law Enforcement
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.2.6 Reverse 9-1-1 Warning system

Program description: A GIS, Database and phone based warning system where threat messages can be delivered to selected phone groups anywhere in the county for any threats automatically. Several competing vendors and systems would be evaluated for the best fit for Napa County, the Terrorism working group would plan the group identification and distribution, and County communications would be staffed to maintain with the vendor the dbase system.

Funding required: \$500,000 per annum
Timeframe: 5 - 10 years
Staff: County TWG and Communications
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.2.7 Perimeter Berms around up-valley Sewage Treatment Plants

Program Description: Build flood control berms around the three up-valley sewage treatment plants to prevent inundation, damage and overflow from 100 year flood events. These berms could also increase plant security by limiting access and could be planted with decorative ground cover increasing plant esthetics and lowering the profile of the facility.

Funding required: \$4,500,000
Timeframe: 3 - 5 years
Staff: Environmental Planning and Public Works
Jurisdictions Involved: County, Calistoga, St Helena, Yountville

Objective 4.3 Train and educate the public to increase individual and household readiness vis a vis technological threats

Action 4.3.1 Develop Citizen Corps Neighborhood watch program

Program Description: Institute the neighborhood watch block captain and team programs outlined in the Citizen Corps guidance.

Funding required: \$50,000 per annum
Time Frame: 1 - 3 years
Staff: County Citizen Corp Council
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.3.2 Institute School CERT Training

Program Description: Train all middle school or High School students in Napa County in the basic 20-hour CERT Course. This would build a cadre of disaster savvy youth, who could assist their school, family and neighborhood in disaster preparedness and response. Adding CERT to the basic science or civics curriculum would provide a captive audience for training and help empower youth with a sense of volunteerism and civic responsibility.

Funding required: \$100,000 per annum
Time Frame: 3 - 5 years
Staff: County CERT Cadre and School District staff
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.3.3 Conduct Shelter in Place community workshops

Program Description: Conduct countywide workshops on how to shelter in place at home, school or business, using simple supplies, techniques and equipment.

Funding required: \$150,000 per annum for 15 workshops
Time Frame: 1 - 3 years
Staff: County OES and Citizen Corps
Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Action 4.3.4 Procure and distribute shelter in place kits to low income families

Program Description: Develop 2000 kits including visquine, duct tape, shears, and survival supplies to assist 2000 low income households who attend training with free supplies to protect their home or apartment

Funding required: \$100,000

Time Frame: 3 - 5 years

Staff: County NGO council

Jurisdictions Involved: County, Calistoga, St Helena, Yountville, American Canyon, with City of Napa

Project Implementation: Some projects are currently budgeted or completed by the local governments with out recourse to the grant process. Future projects will be conducted as time, staff and funding allow. Projects will be prioritized based on community priorities in conjunction with the STAPLE+E process to ensure that they are socially, technologically, administratively, politically, legally, environmentally and economically viable and generate the greatest benefits to the community. The Napa operational area has sought mitigation funding from numerous sources with the pre-Disaster hazard Mitigation Grant program being recognized as only one of several potential sources.

The plan allows for an umbrella of integrated approaches to mitigation to the threats all the signatory jurisdictions face. The hazards faced by the participating jurisdiction are the same due to the cohesiveness of the area, its small size and the proximity of all jurisdiction to the Napa River, The Wild-land Urban interface, the Northern California fault complexes and the their shared major transportation routes; therefore, the projects and work done on the projects potentially beneficial to all.

The Napa Operational Area Council will be the coordination body for the day to day tracking of projects in the county. The Napa Valley association of governments will represent the opportunity to address the political issues of project prioritization and implementation in a forum that represents all the governmental stakeholders.

The Napa county Office of Emergency Services will be the central coordination point for maintaining this plan and will serve as the lead staff for grant project applications on the countywide projects selected for application under the PDM grant program.

Legal Framework: The legal protections for the selection, administration and financing these projects is provided by the local government governing board or council. For the county the Board of Supervisors (and for the Cities/Town their Councils) provide guaranteed public access and scrutiny through the open public meetings and agenda, budget authority, accountability, and inclusion of any granted funds into the federal annual single audit. All grant efforts are approved by these bodies prior to application and accepted formally by these bodies upon their award. As elected public officials, they are the stewards of the public trust.

Local ordinance in all signatory agencies all reflect the state model ordinance. The County CEO and/or City/Town manager are by ordinance the director's of emergency services, as such they will have day to day oversight of any of these mitigation programs. Since all involved staff are within their chain of supervision, this provides an additional legal safeguard for the management and implementation of these projects.

SECTION 5: PLAN MAINTENANCE PROCEDURES

Napa County Operational Area Hazard Mitigation Plan will be used to focus project prioritization. Mitigation projects will be considered for funding through federal and state grant programs, and when other funds are made available through the County. The Napa County Operational Area Disaster Committee will be the coordinating agency for project implementation. Individual jurisdictions have the capacity to organize resources, prepare grant applications, and oversee project implementation, monitoring, and evaluation. Coordinating organizations may include local, county, or regional agencies that are capable of, or responsible for, implementing activities and programs. The Napa County OES Operational Area Coordinator (County OES Manager) will be responsible for mitigation project administration.

A number of state and local regulations and policies form the legal framework to implement Napa County's hazard mitigation goals and projects. A list of these regulations and plans is presented in the references list at the end of this section.

Plan Maintenance

The Plan maintenance section of this document details the formal process that will ensure that the Napa County Operational Area Hazard Mitigation Plan remains an active and relevant document. The Plan maintenance process includes a schedule for monitoring and evaluating the Plan and producing a Plan revision every five years. This section describes how the County will integrate public participation throughout the Plan maintenance process. Also included in this section is an explanation of how Napa County government intends to incorporate the mitigation strategies outlined in this Plan into existing planning mechanisms.

Monitoring, Evaluating And Updating The Plan

The Napa County Operational Area Hazard Mitigation Plan will be reviewed every two years, or as deemed necessary by knowledge of new hazards, vulnerabilities, or other pertinent reasons. The review will determine whether a Plan update is needed prior to the required five-year update. The Plan review will identify new mitigation projects and evaluate the effectiveness of mitigation priorities and existing programs.

The County OES Operational Area Coordinator will be responsible for scheduling a meeting of the Napa County Operational Area Disaster Committee to review and update the Plan. The meeting will be open to the public and advertised in the local newspaper to solicit public input. The public will have the opportunity to review the goals and mitigation projects in light of changing situations in the county and changes in state or

federal policy to ensure that this Plan is addressing current and expected needs. Consistent with current technology the approved existing plan will be available both in hard copy at each office of emergency services throughout the county and posted on the official jurisdiction website. This will ensure public access to the plan. The plan will also be made available as an adobe acrobat file on CD for a nominal fee.

The Disaster Council with this public input will also review the risk assessment portion of the plan to determine if this information should be updated or modified, given any newly available data and completion of major mitigation programs such as the Napa County Flood Control project. The list of critical facilities will also be reviewed and enhanced with additional details.

The Disaster Council will give a status report detailing the success of various mitigation projects, difficulties encountered, success of coordination efforts and which strategies should be revised. The status report will be published on the Napa County web sites and an executive summary will be published in the local newspaper to update the citizens of Napa County at the conclusion of each plan review.

The Napa County OES Operational Area Coordinator will be responsible for the five-year update of the Plan, and will have six months to make appropriate changes to the Plan before submitting it to the Board, Councils and public for review and approval. At the end of the five-year period, the updated Plan will be submitted to the State Hazard Mitigation Officer and the FEMA for acceptance. The OES Coordinator will notify all holders of the County Plan when changes have been made.

Implementation Through Existing Programs

Within six months of formal adoption of the Napa County Operational Area Hazard Mitigation Plan, mitigation goals will be incorporated into future development of the Napa County General Plan. Meetings of the Board of Supervisors and public hearings will provide an opportunity for local officials to report back on the progress made on the integration of mitigation planning elements into county planning documents and procedures.

Continued Public Involvement

Napa County is dedicated to involving the public directly in review and updates of the Napa County Operational Area Hazard Mitigation Plan. Copies of the Plan will be catalogued and kept at all appropriate agencies in the County as well as at the Main Public Library, posted on official websites and be available on read only files on CD ROM.

Public meetings will be held as part of each two-year review and the required five-year update of the Plan. The meetings will provide a forum for public input to the Plan

SECTION 6: FEDERAL, STATE & LOCAL REGULATIONS & POLICIES

FEMA, 1997. *Multi Hazard Identification and Risk Assessment. A Corner Stone of the National Mitigation Strategy*. Federal Emergency Management Agency.

U.S. Bureau of the Census, 2001. *Profile of General Demographic Characteristics for 2000*.

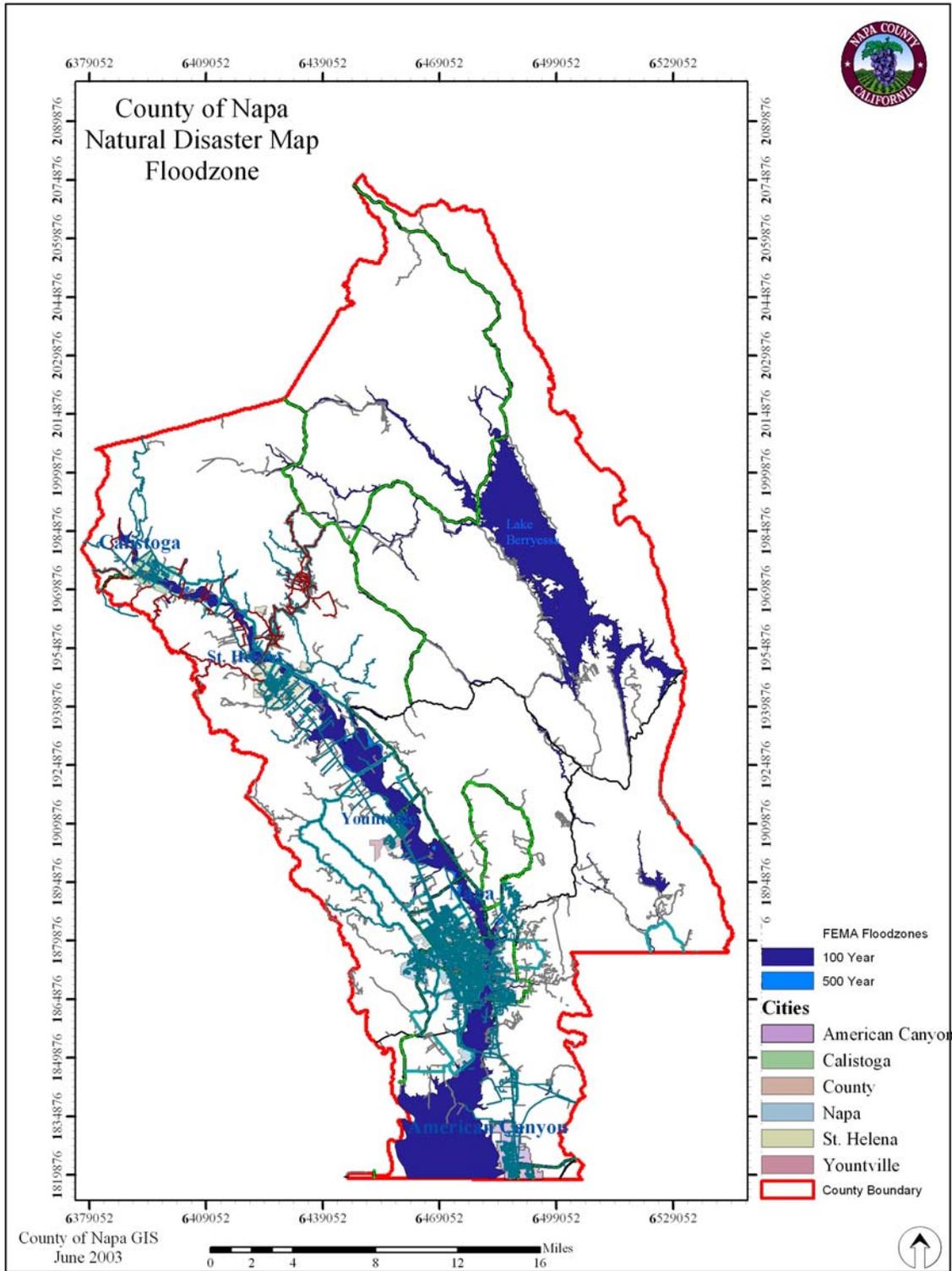
U.S. Bureau of the Census, 2001 b. *Table A98‑30 (Estimated Number and Percent People of All Ages in Poverty by County: California)*.

Appendix A

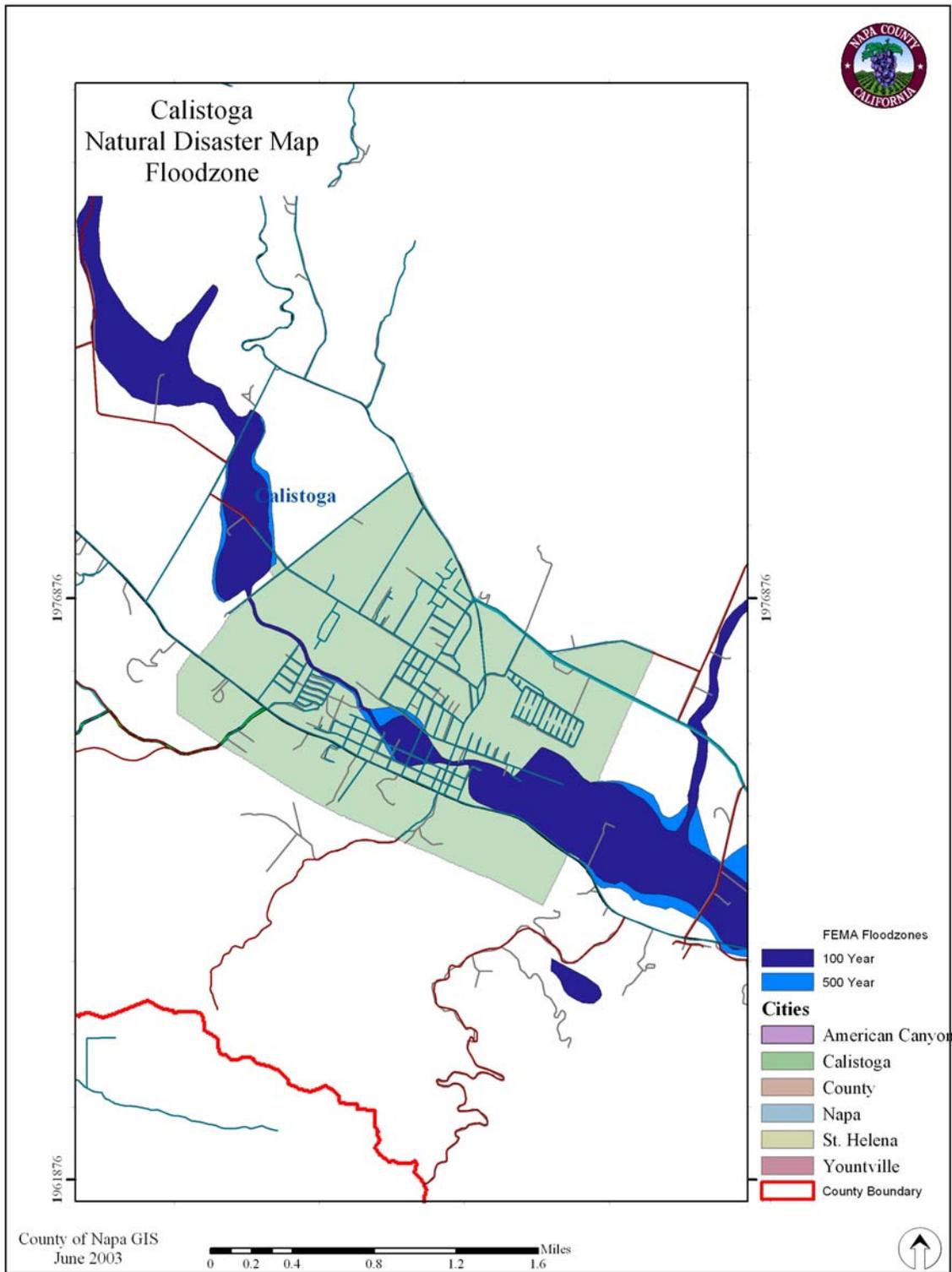
**Napa County
Operational Area**

Hazard Map Atlas

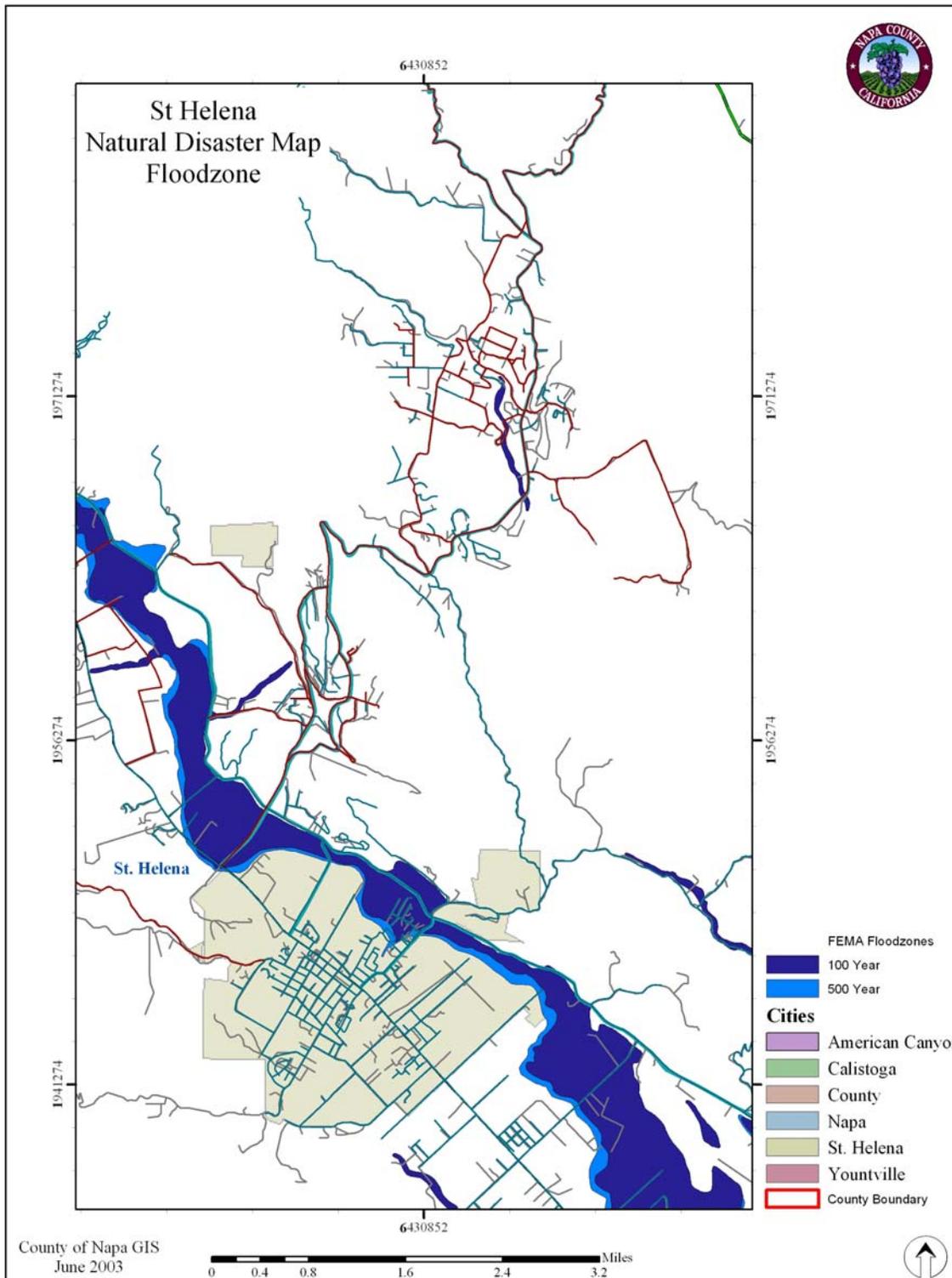
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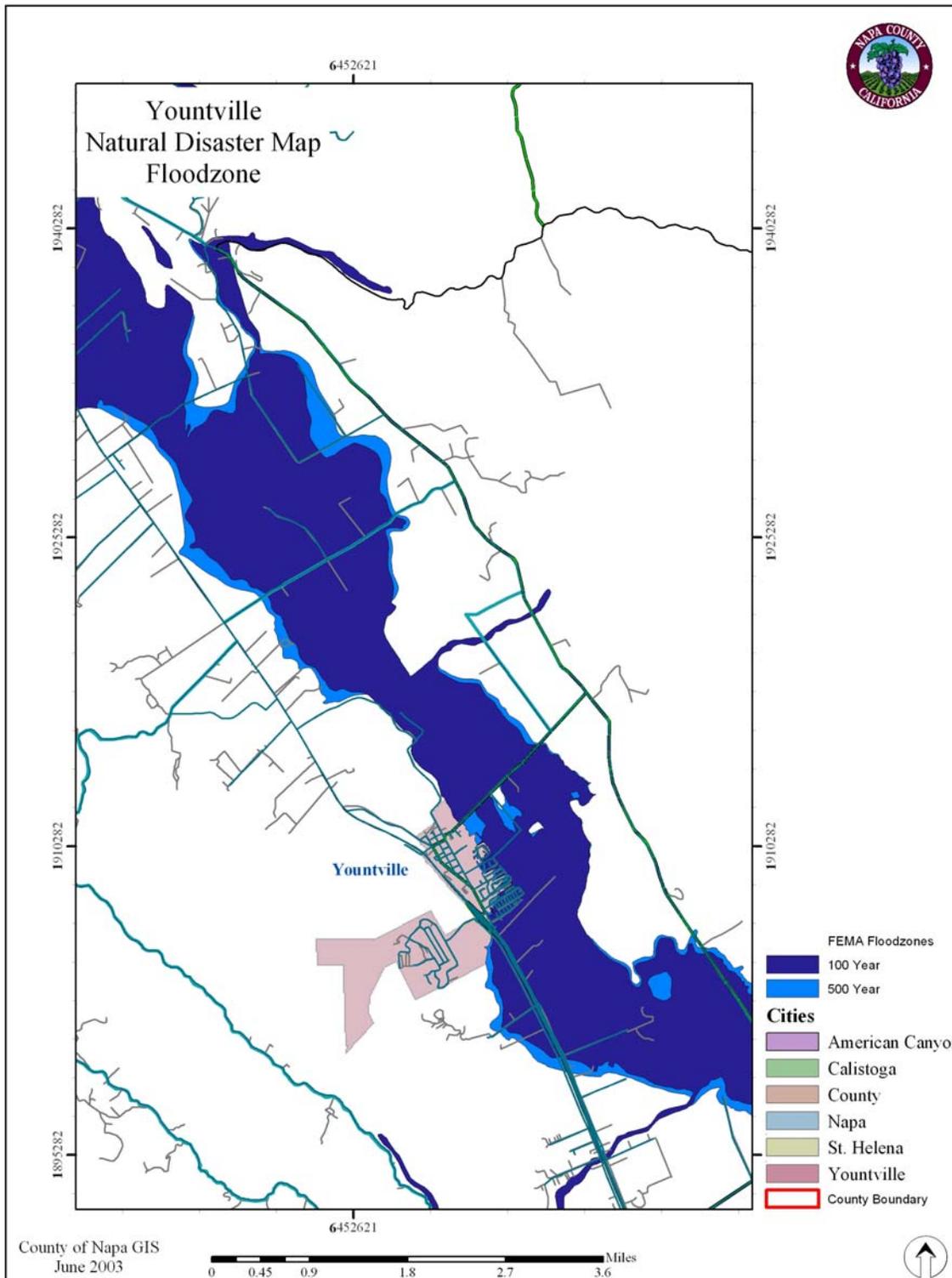
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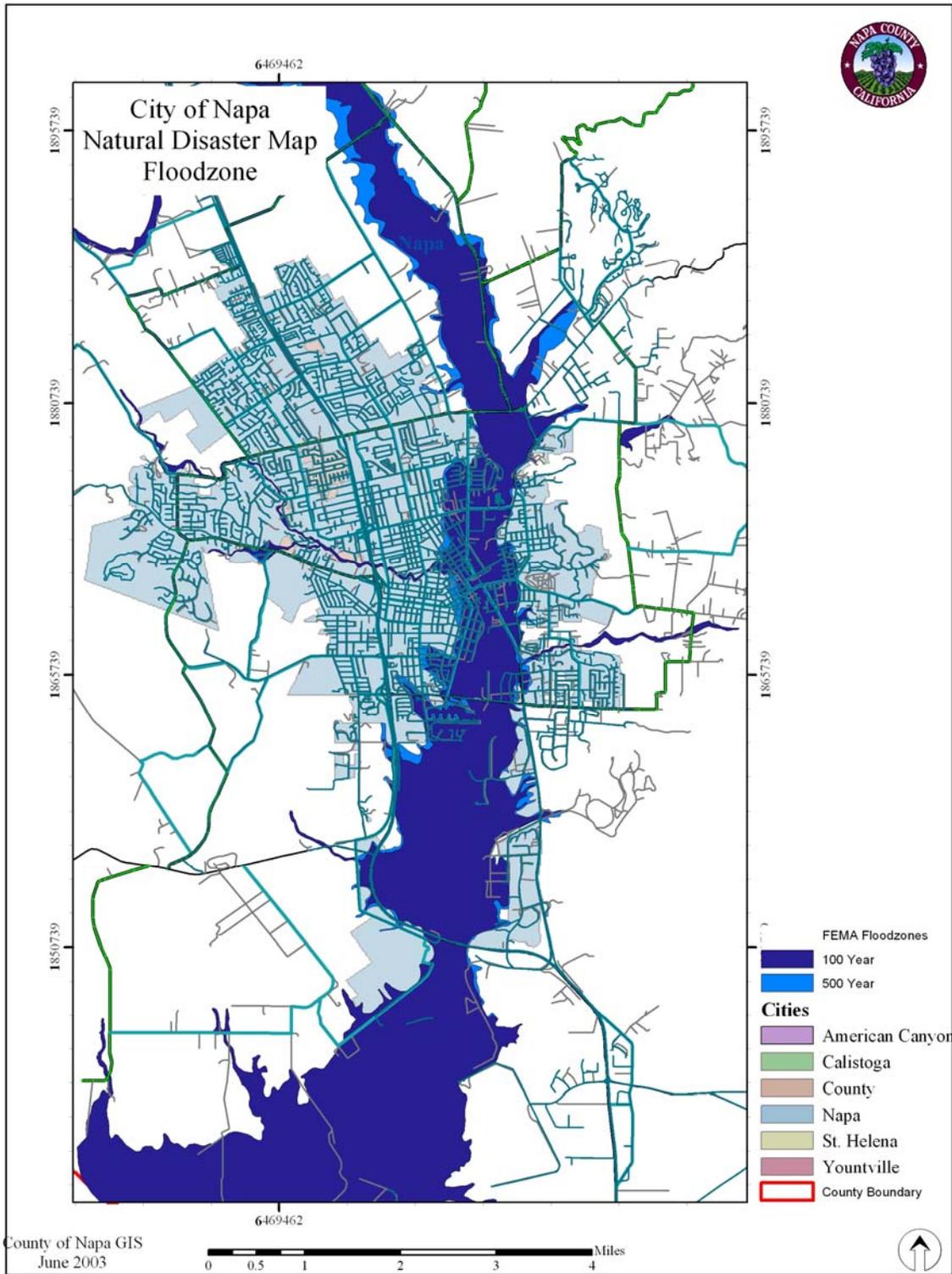
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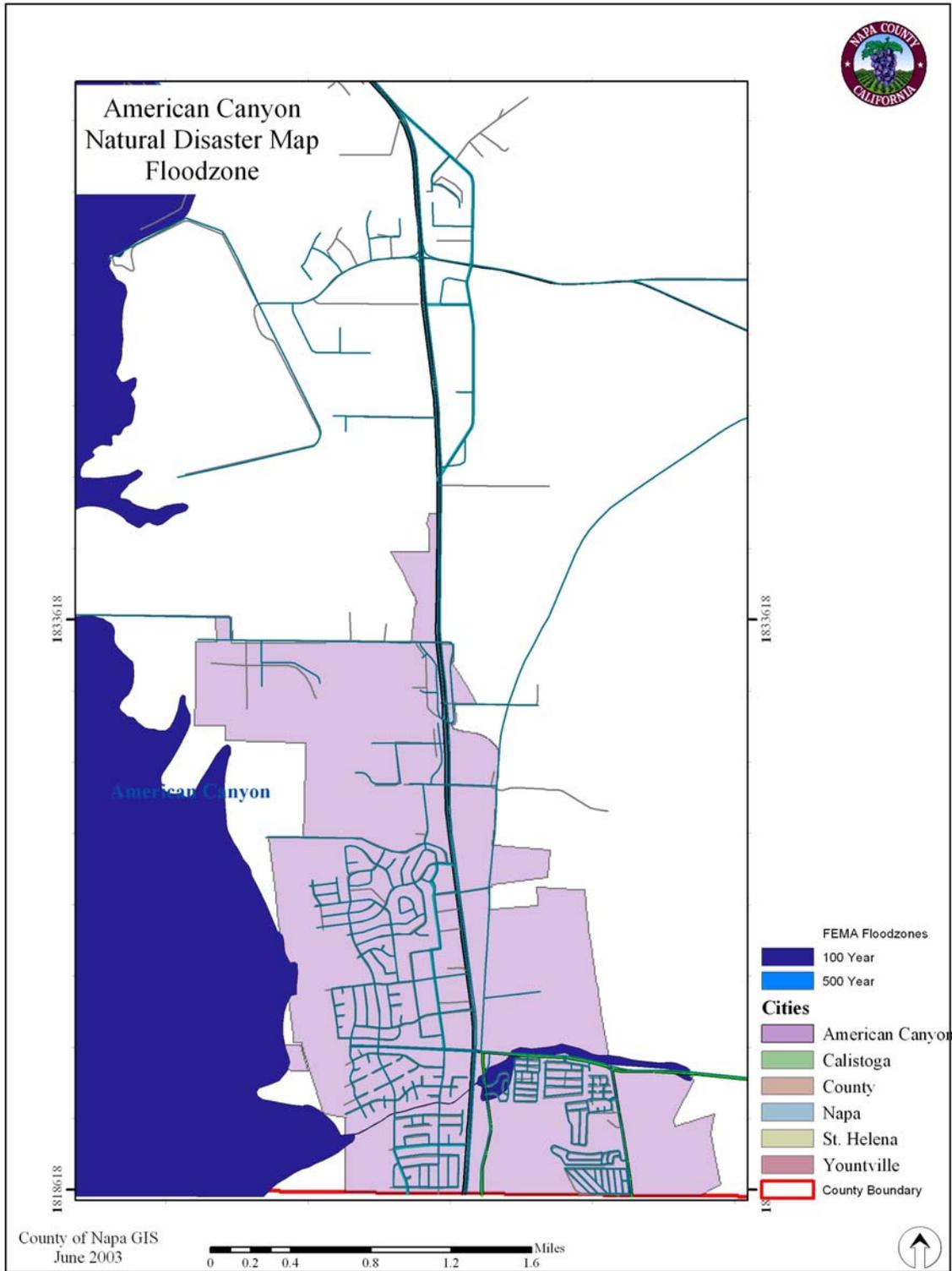
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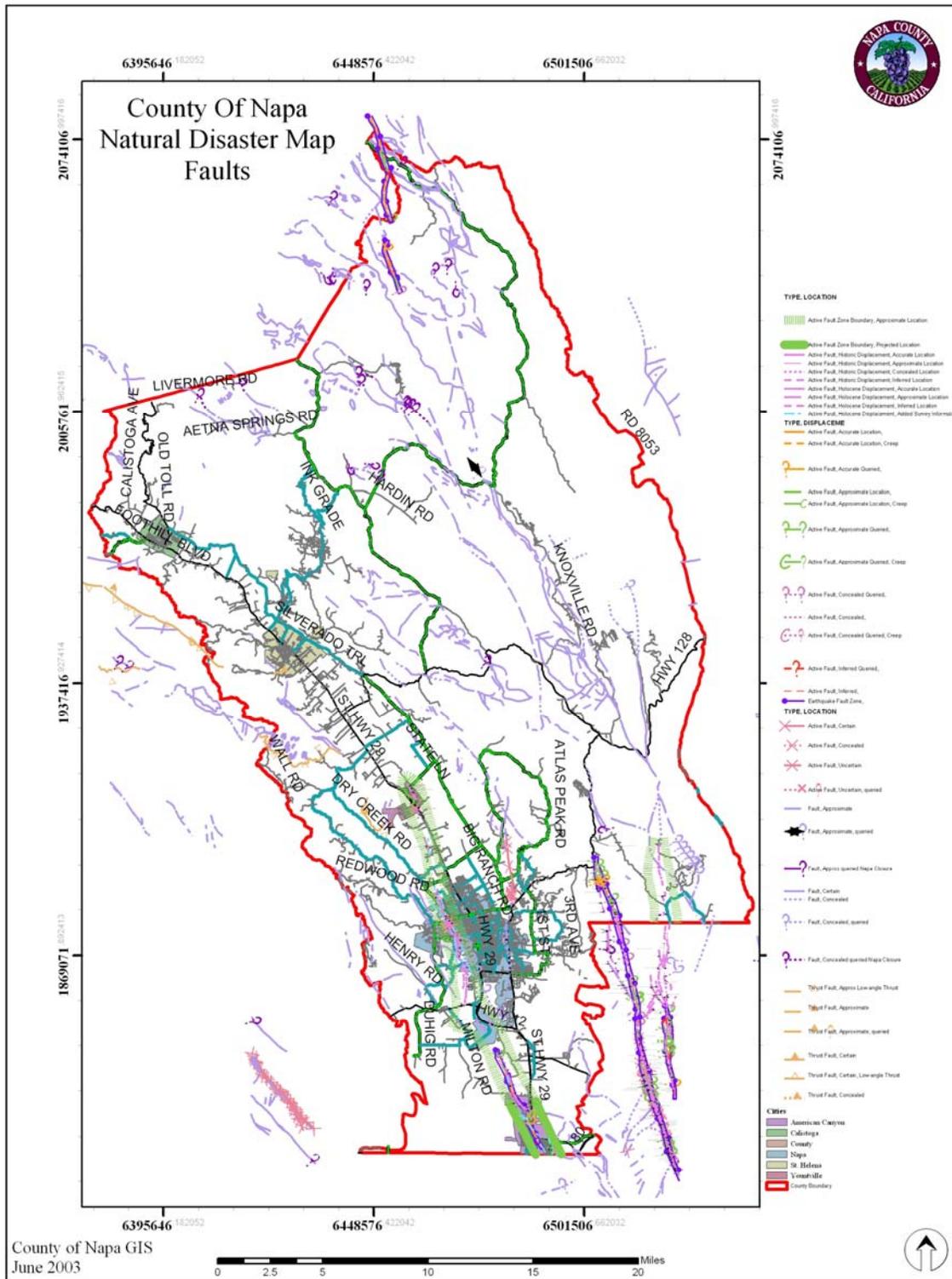
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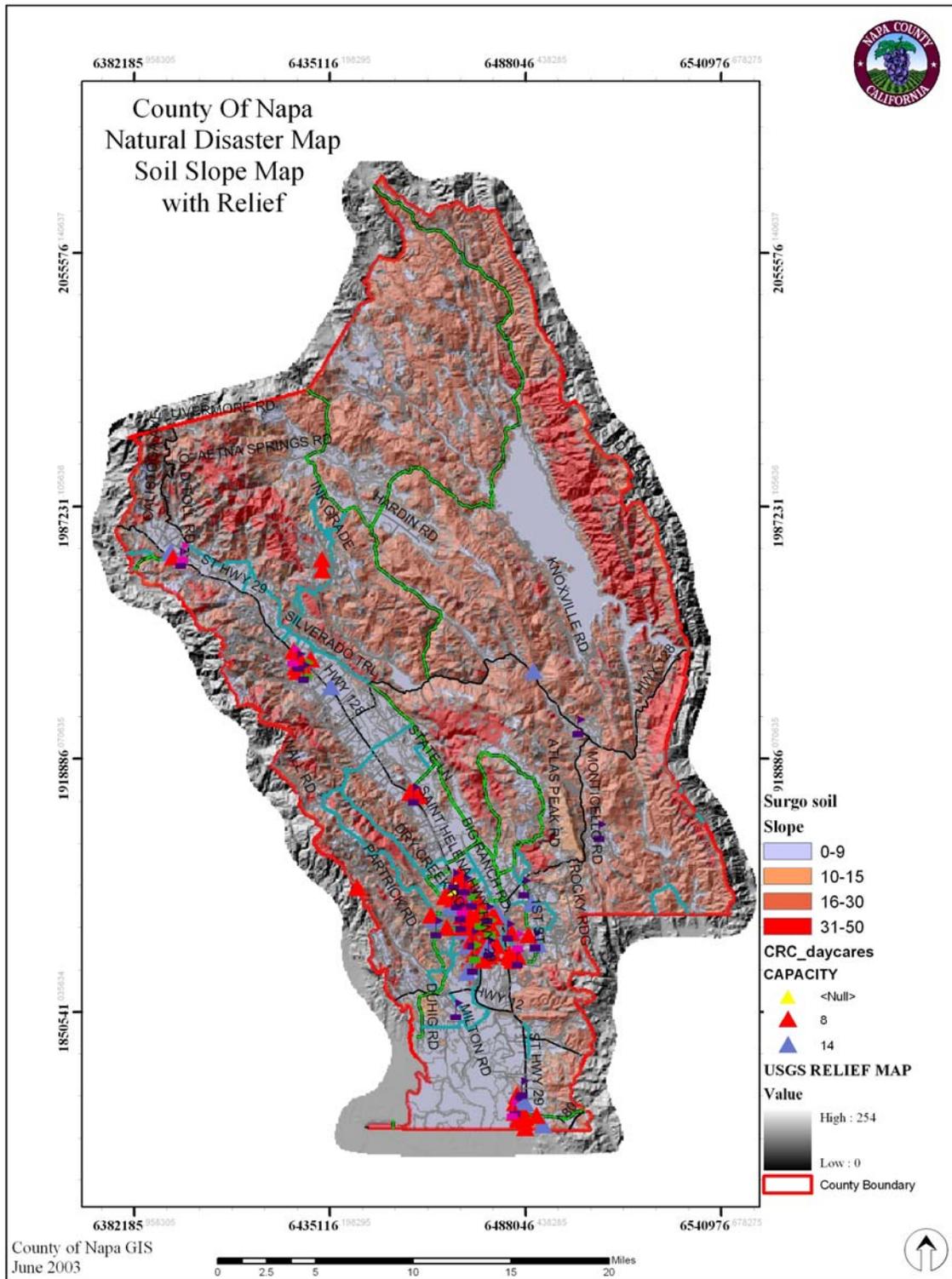


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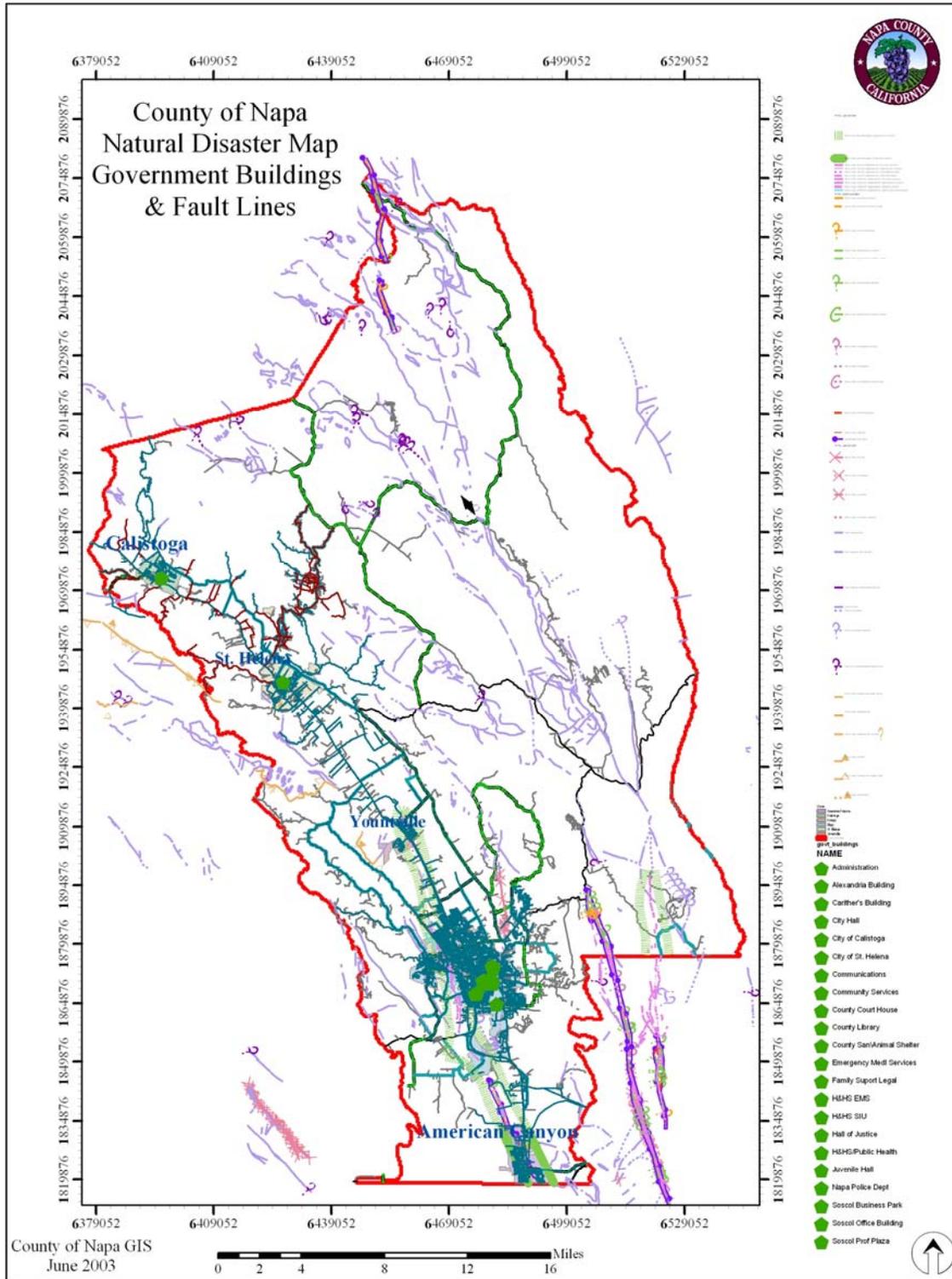


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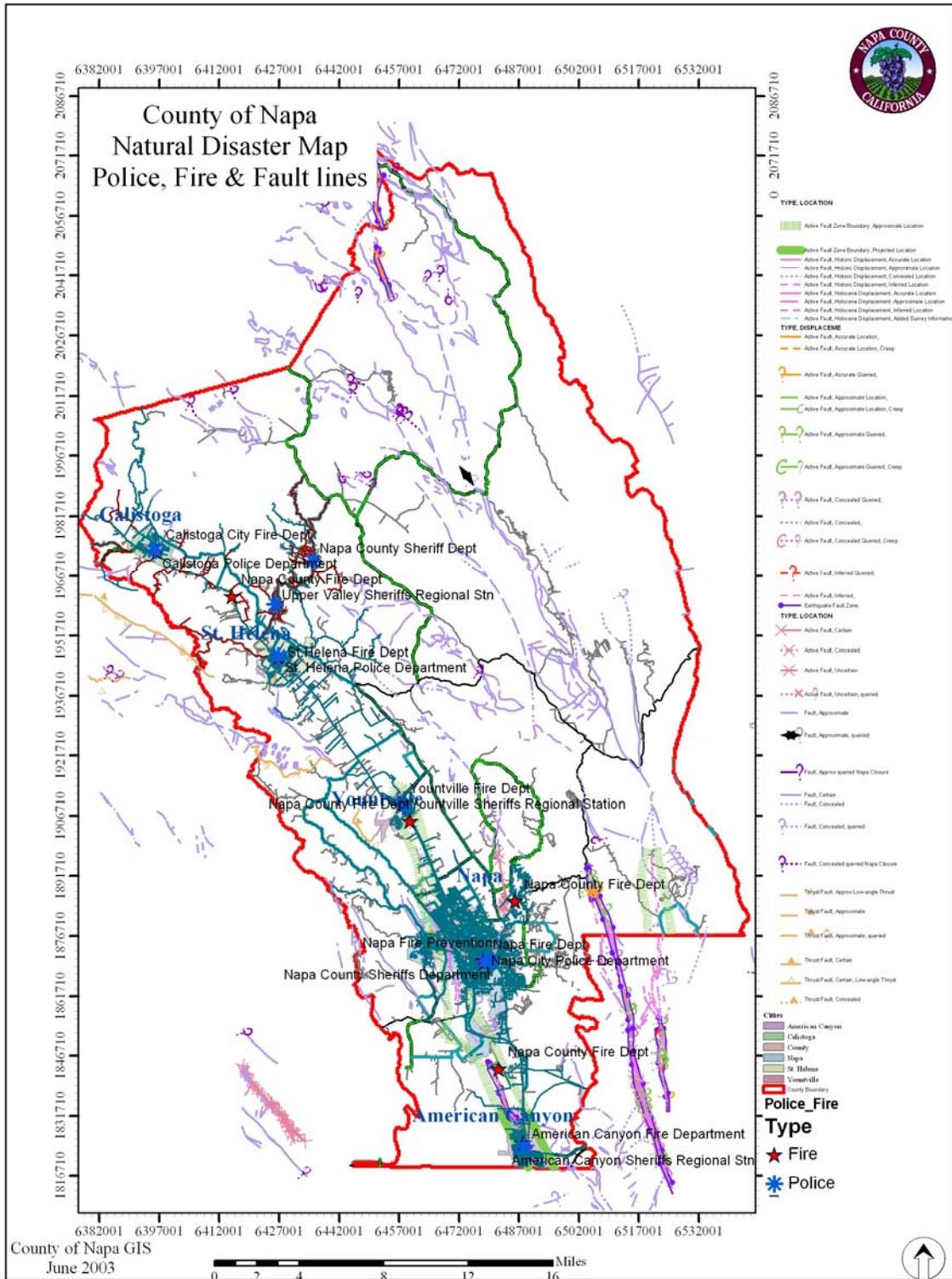
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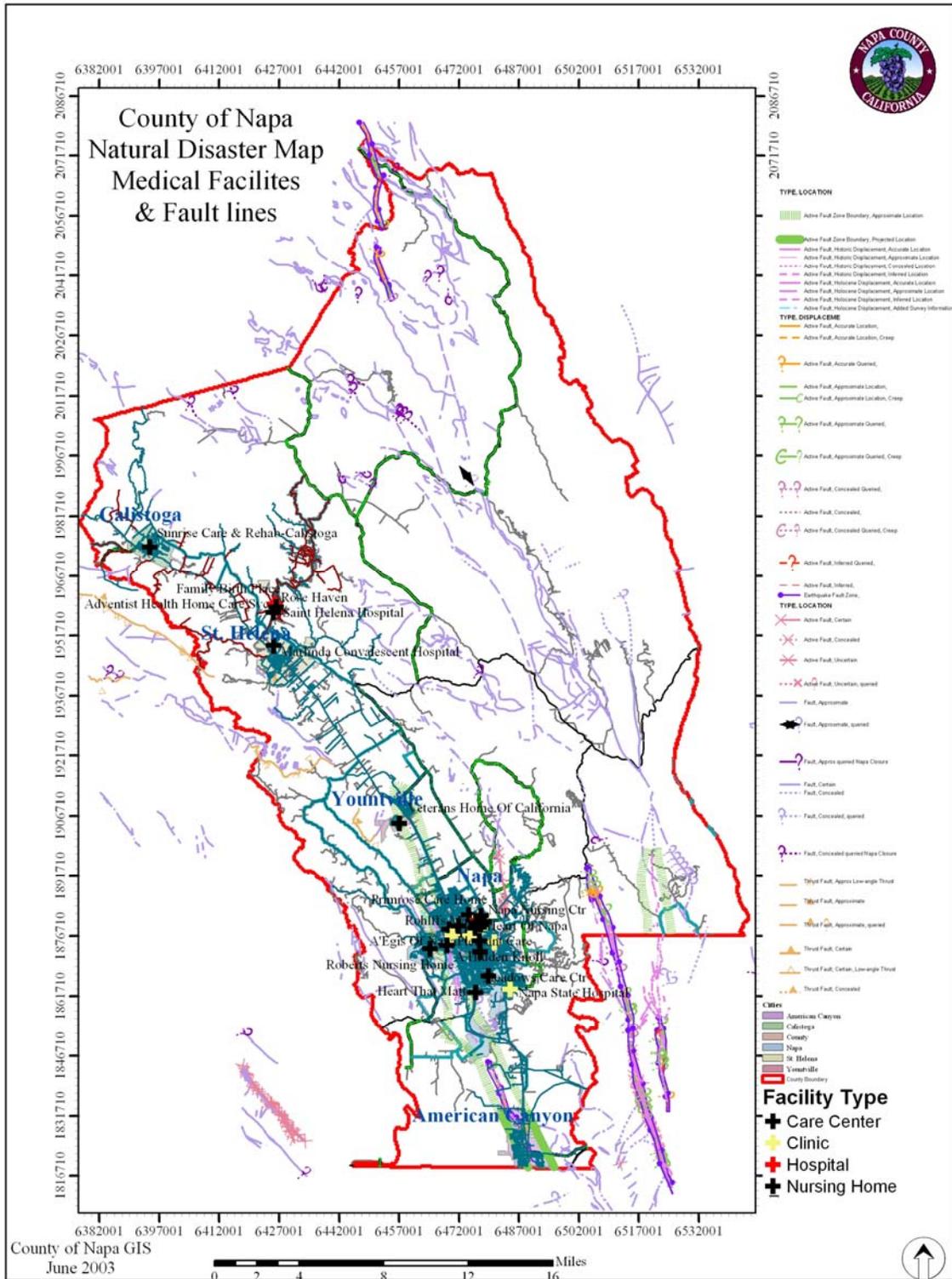
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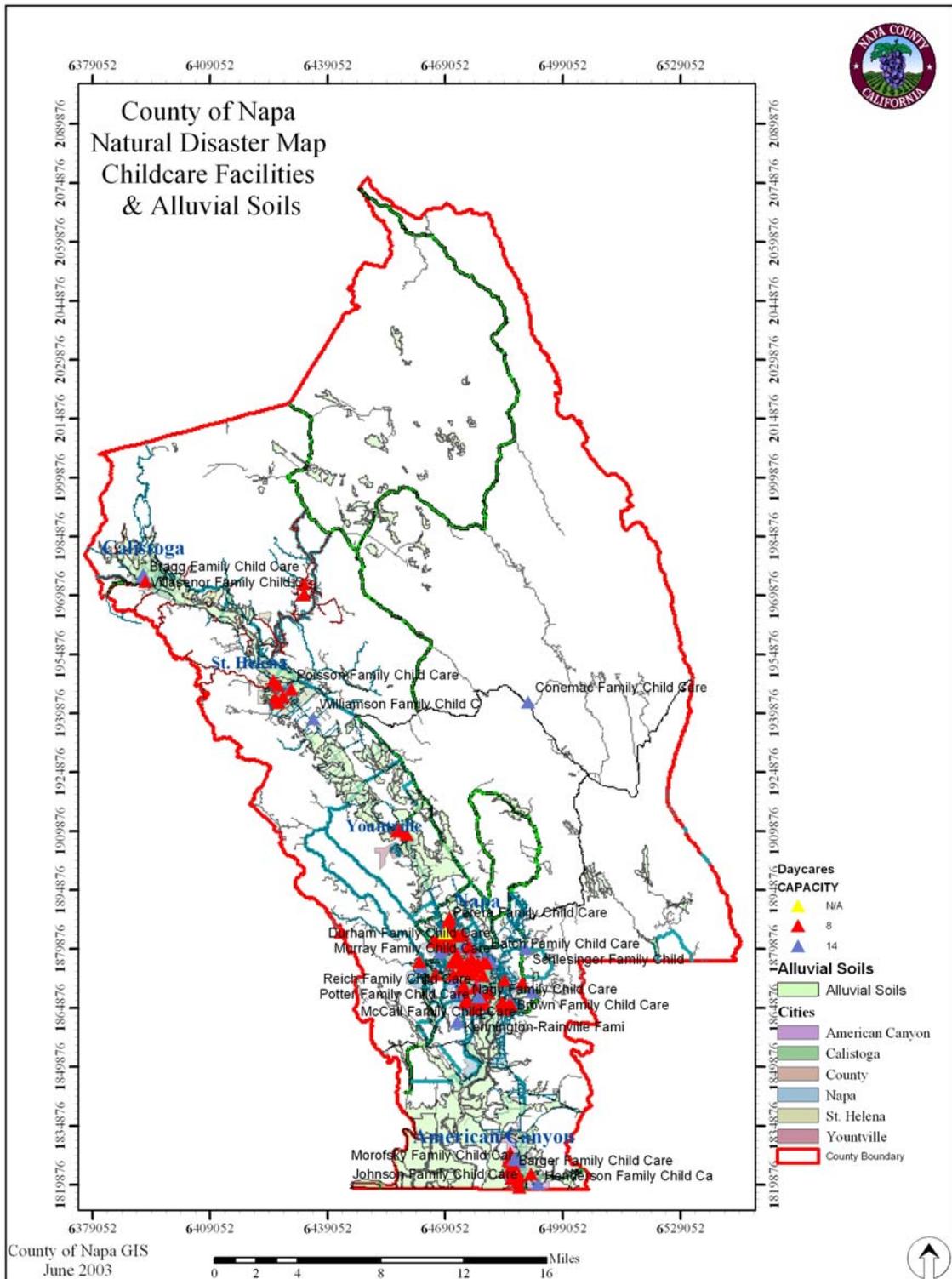
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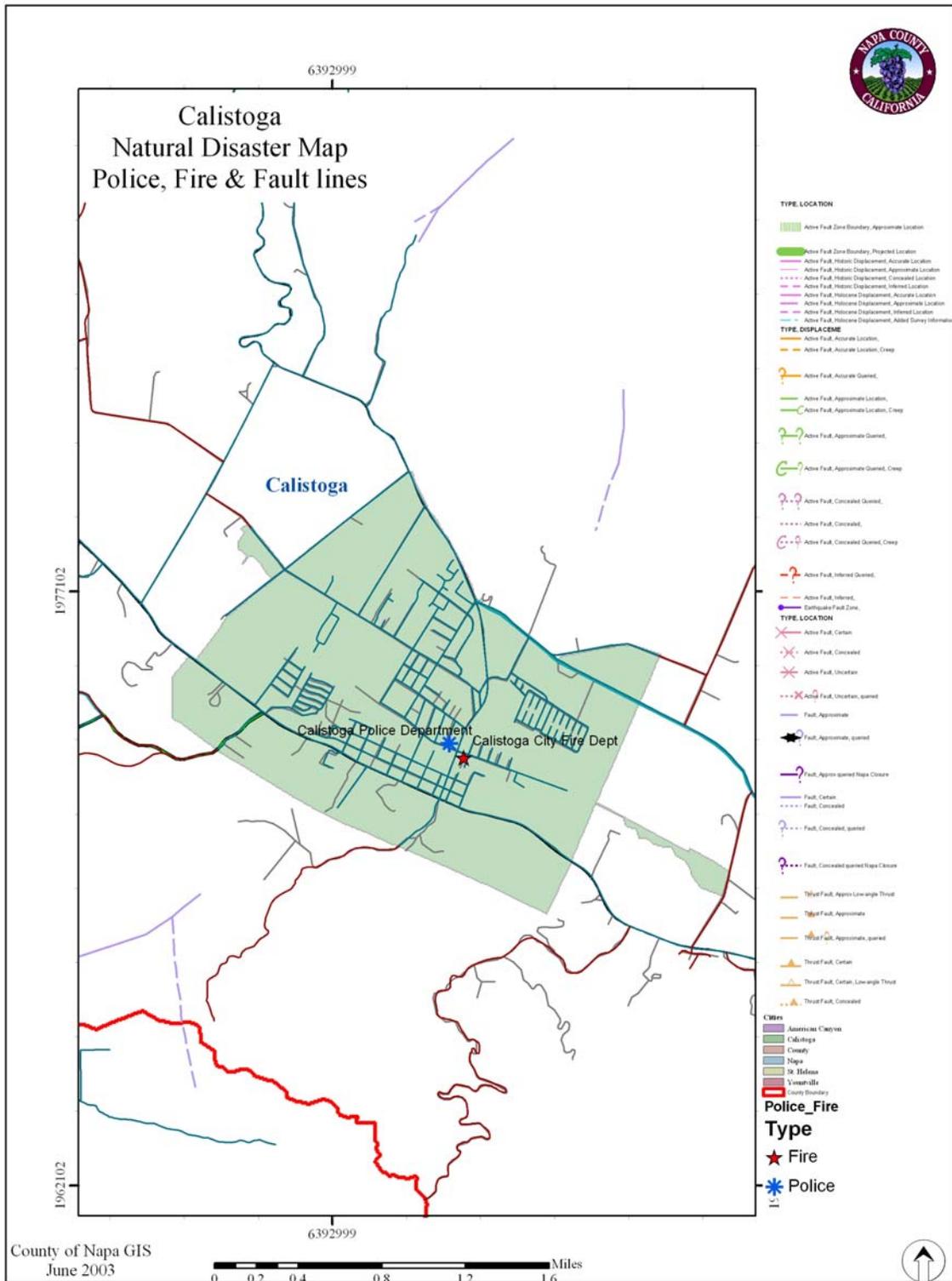
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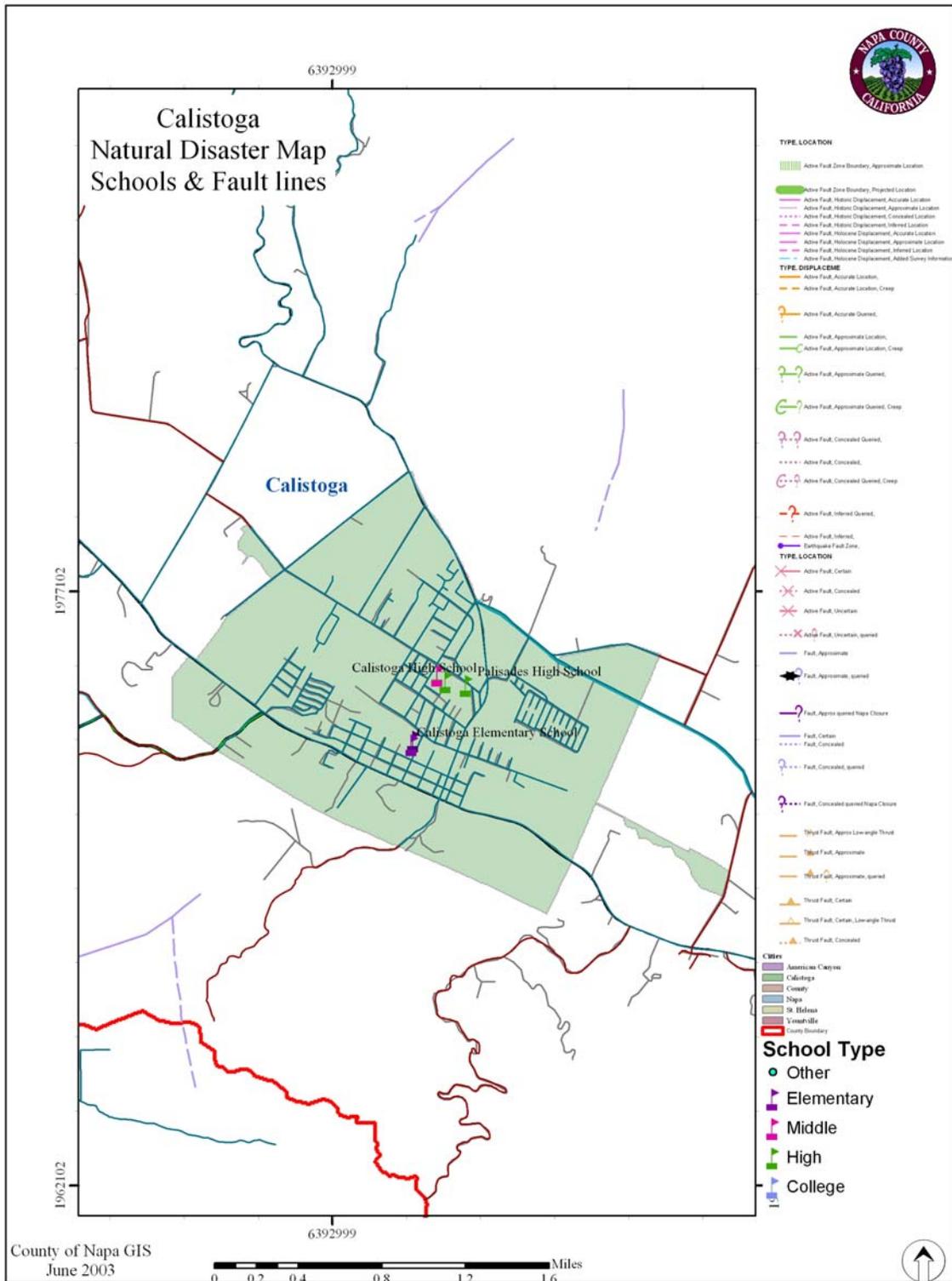
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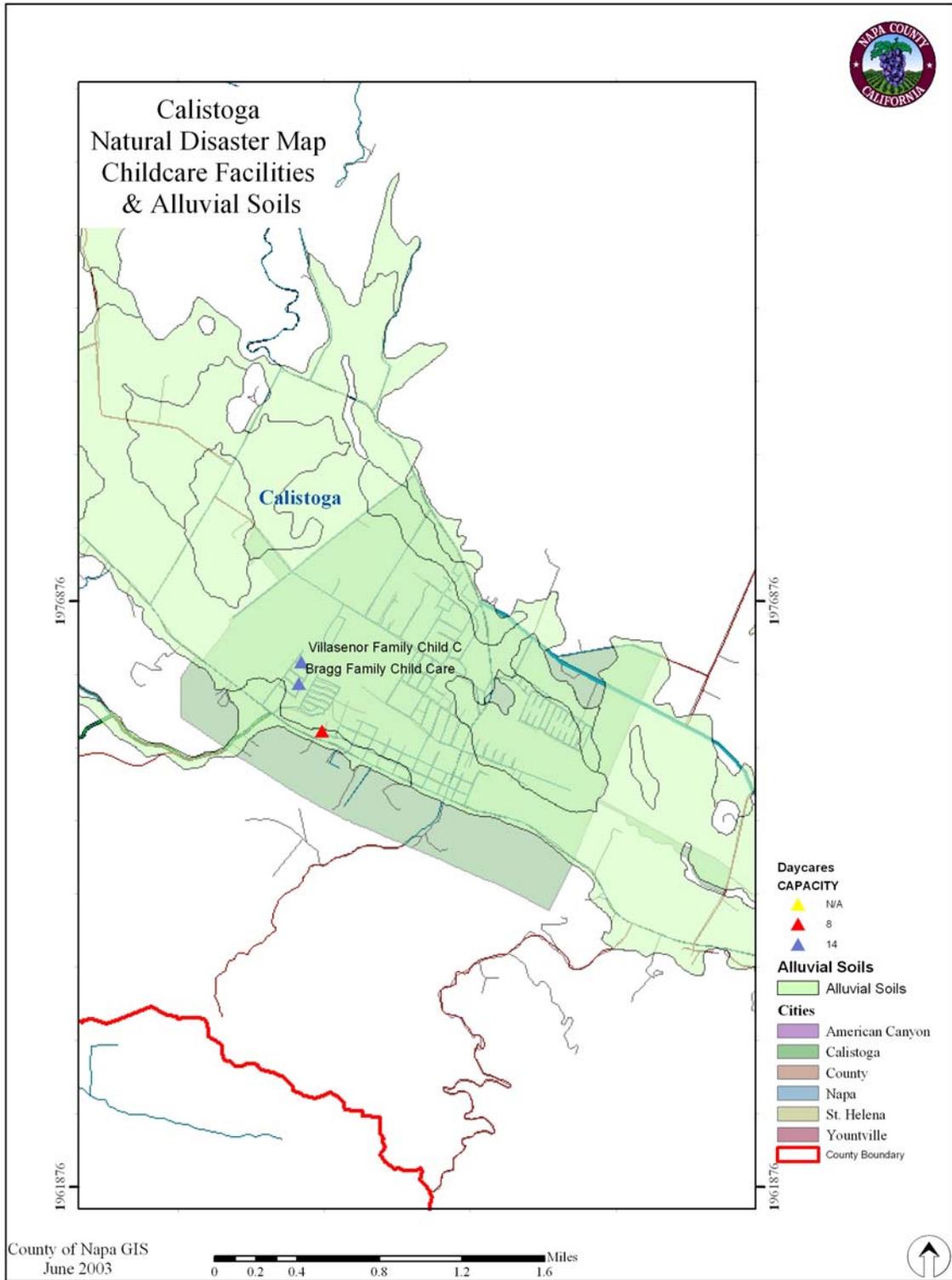
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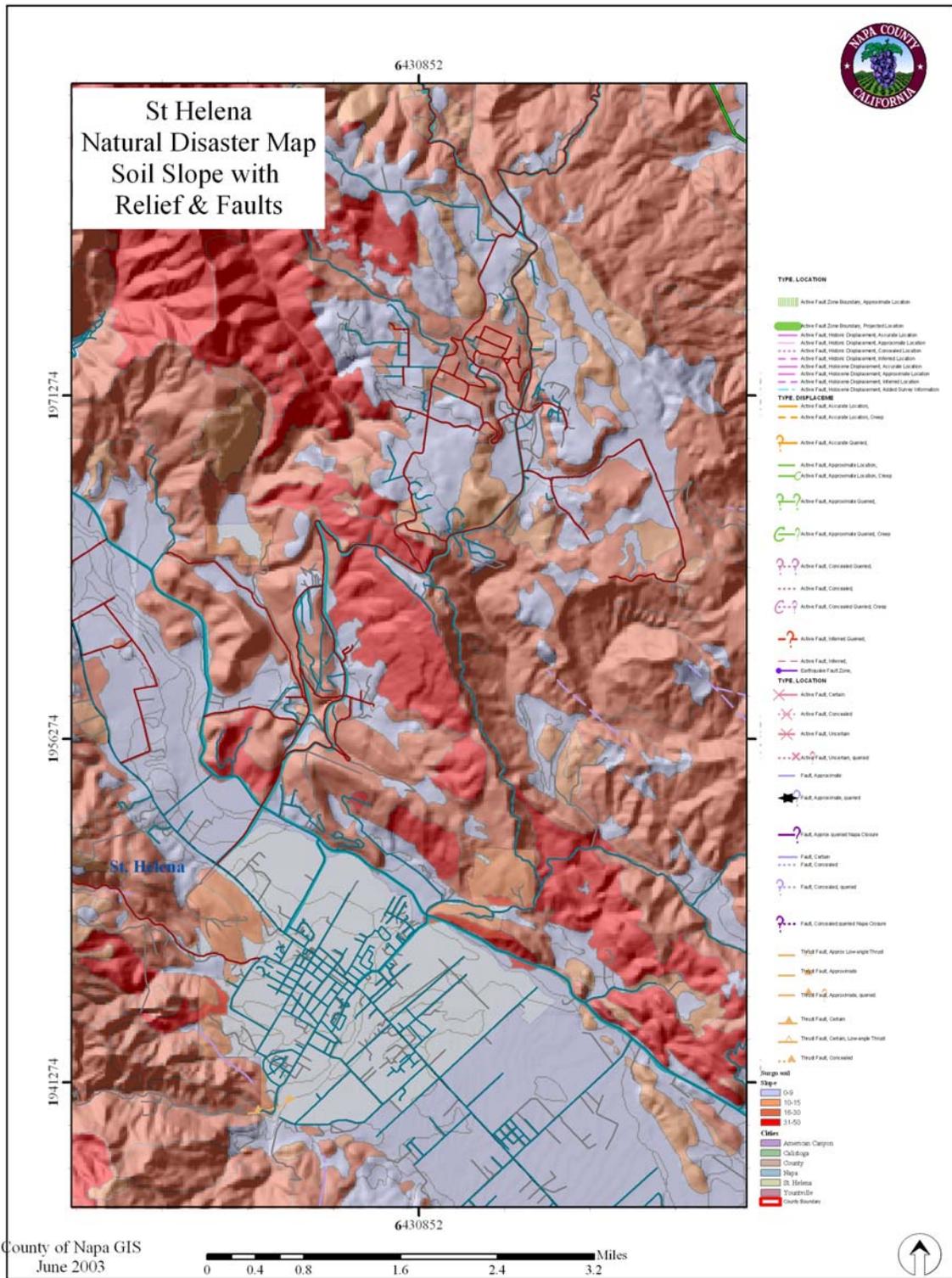
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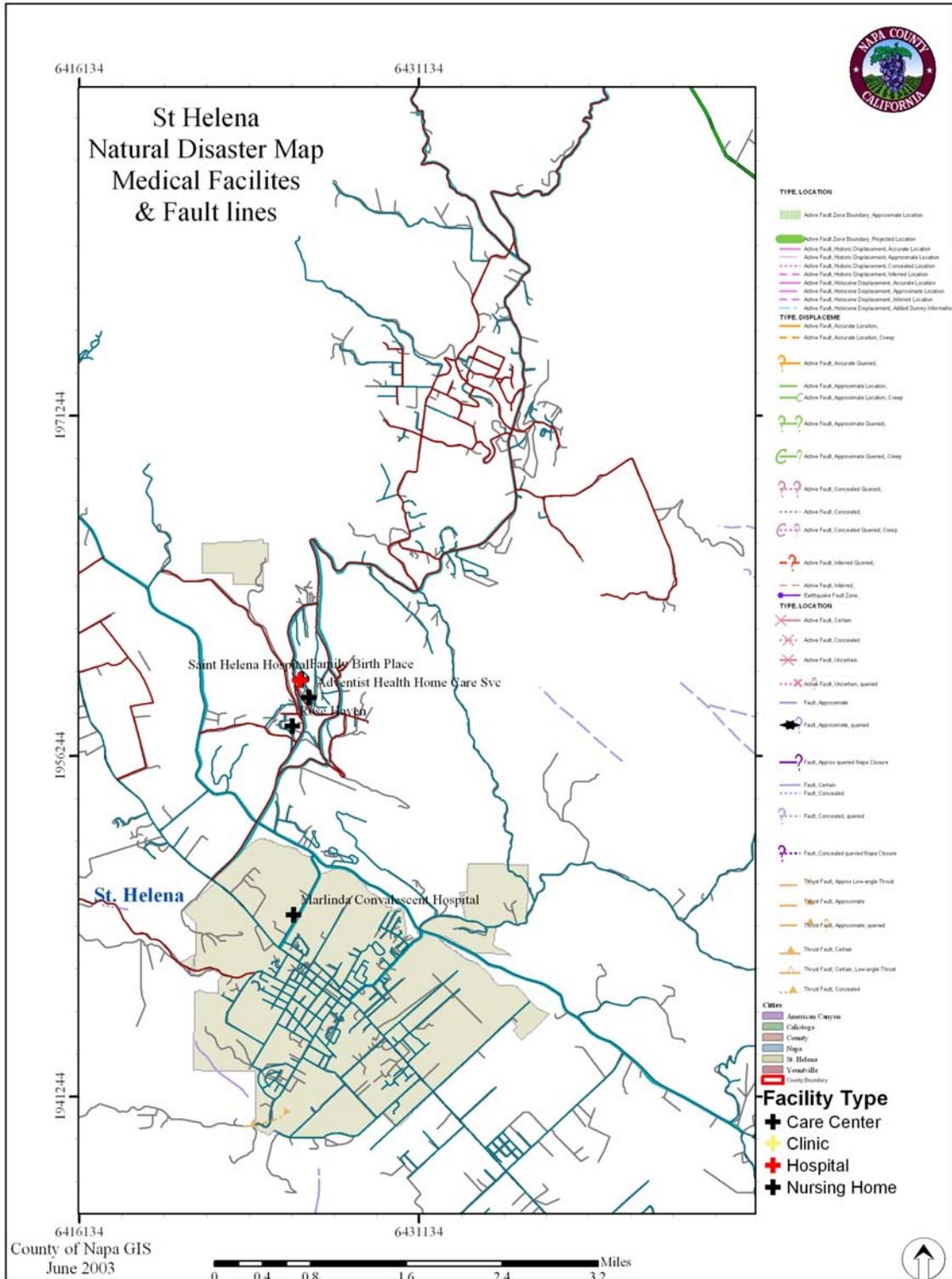


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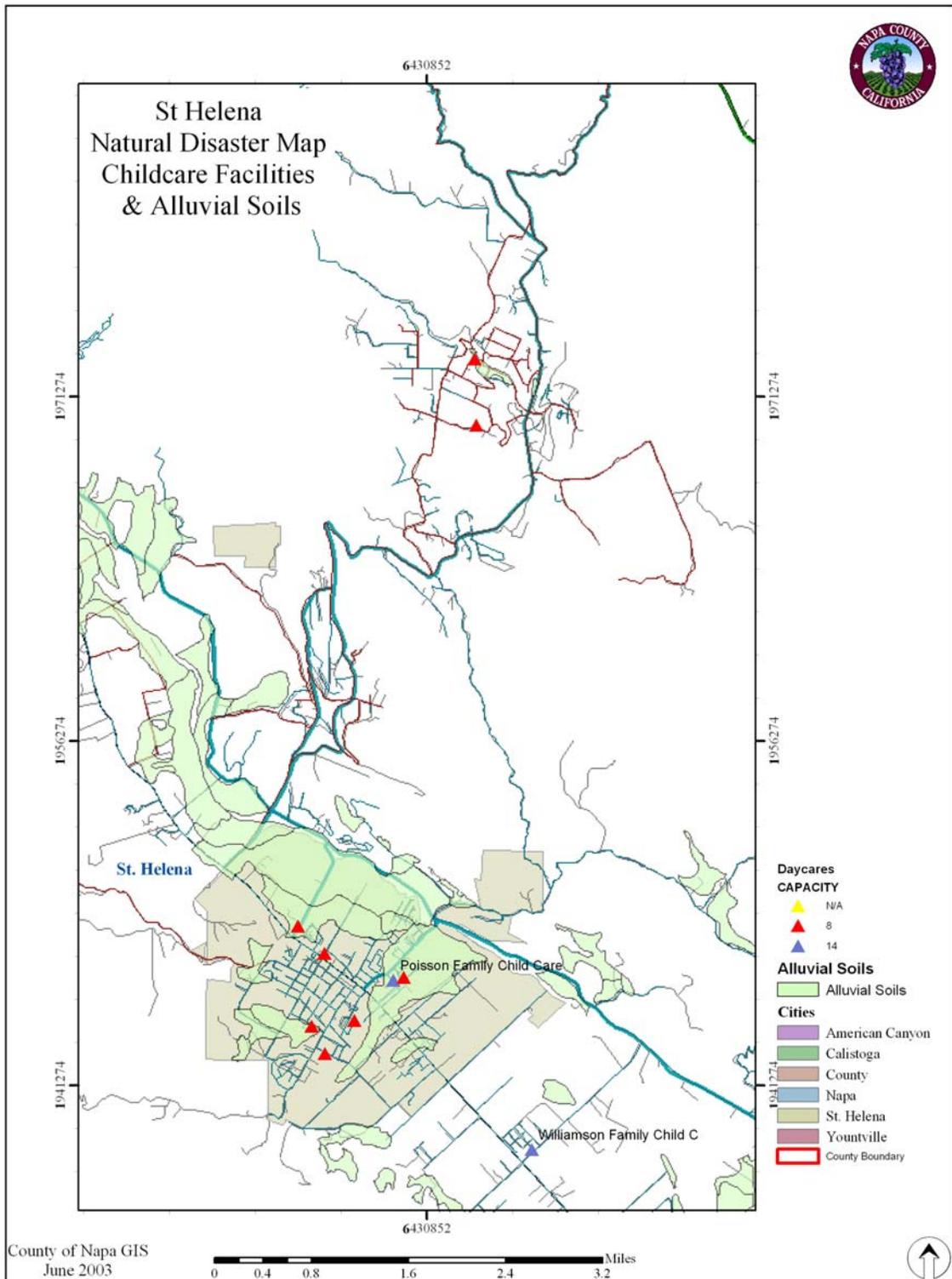
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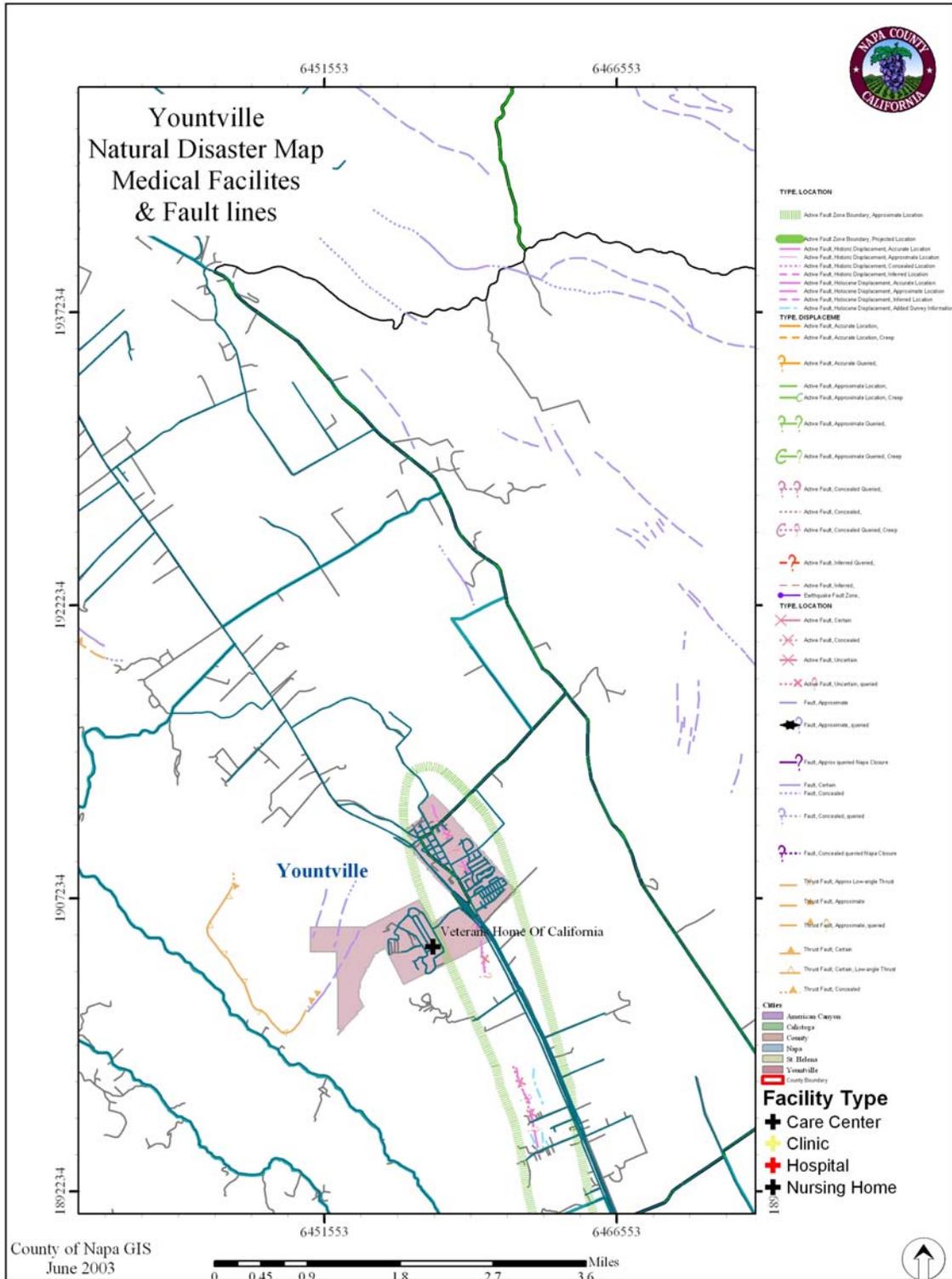
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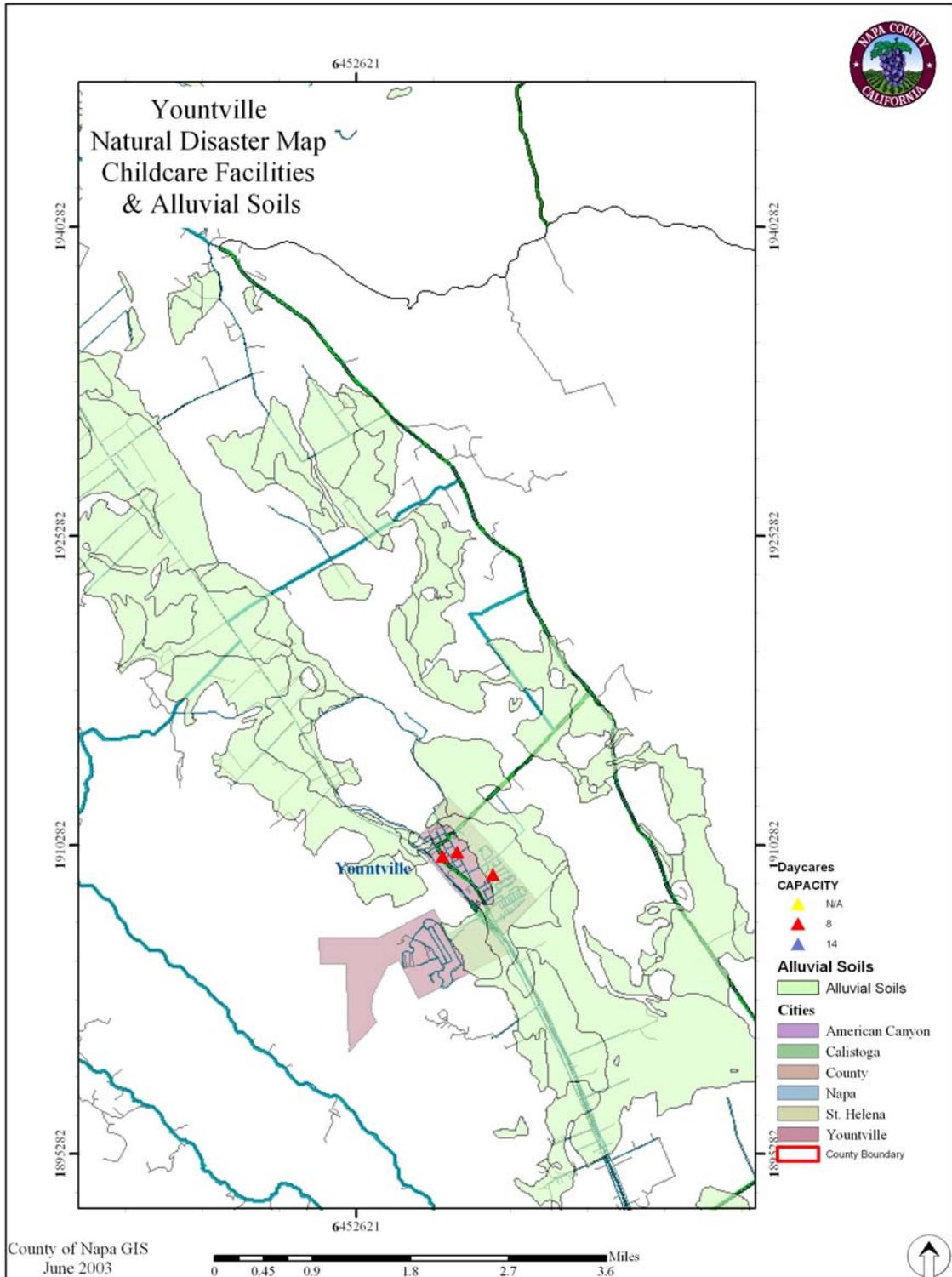
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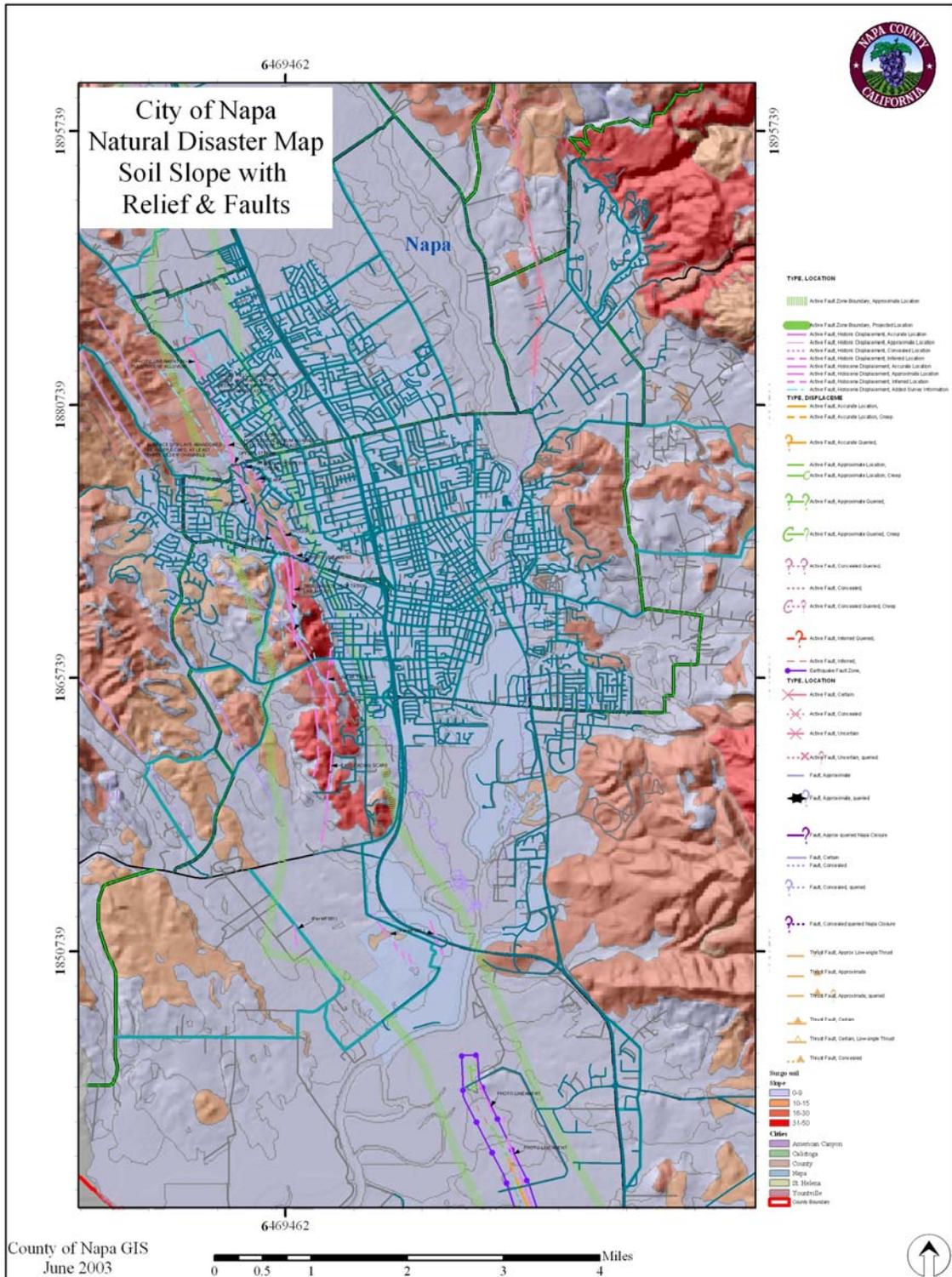


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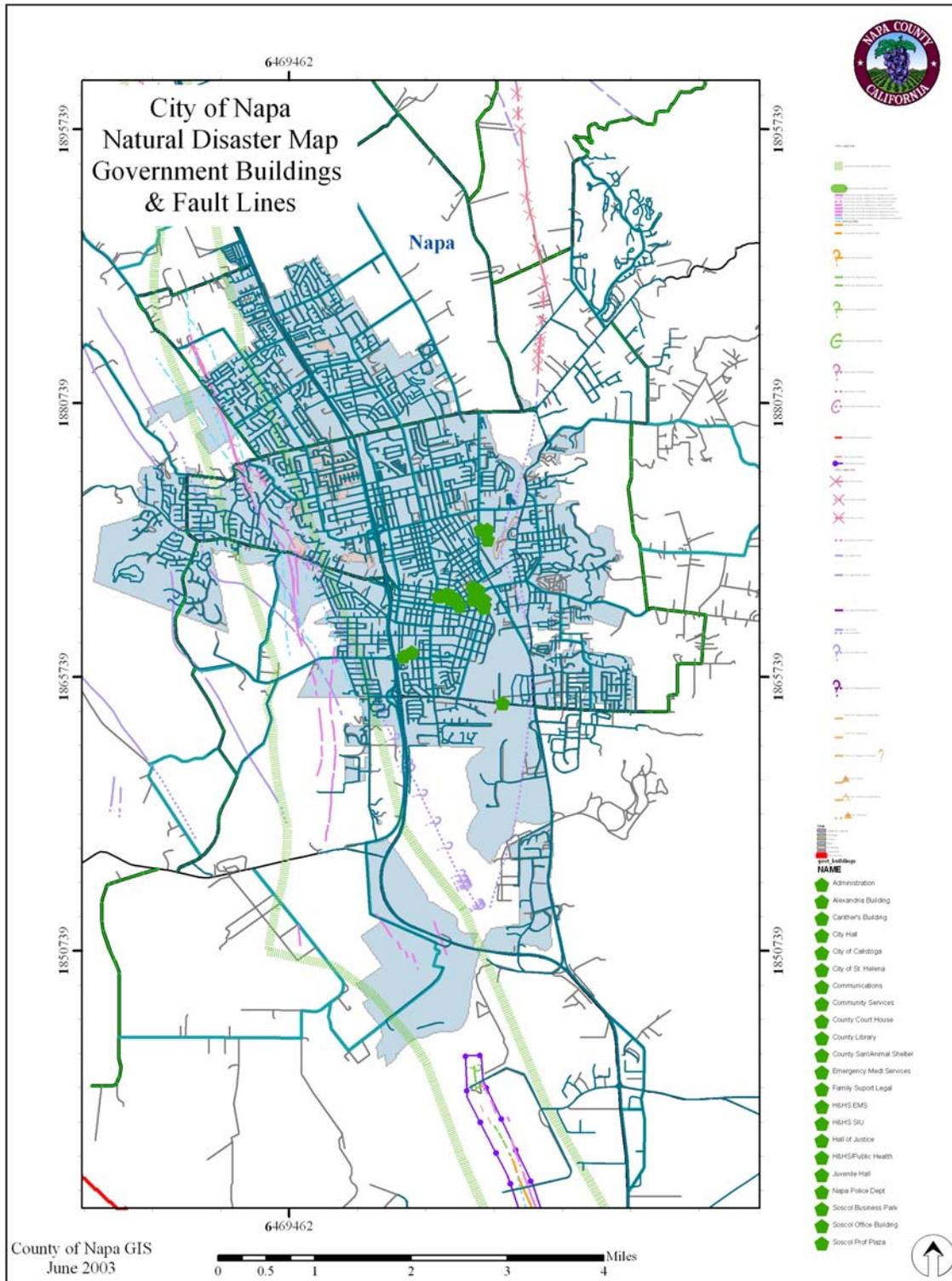
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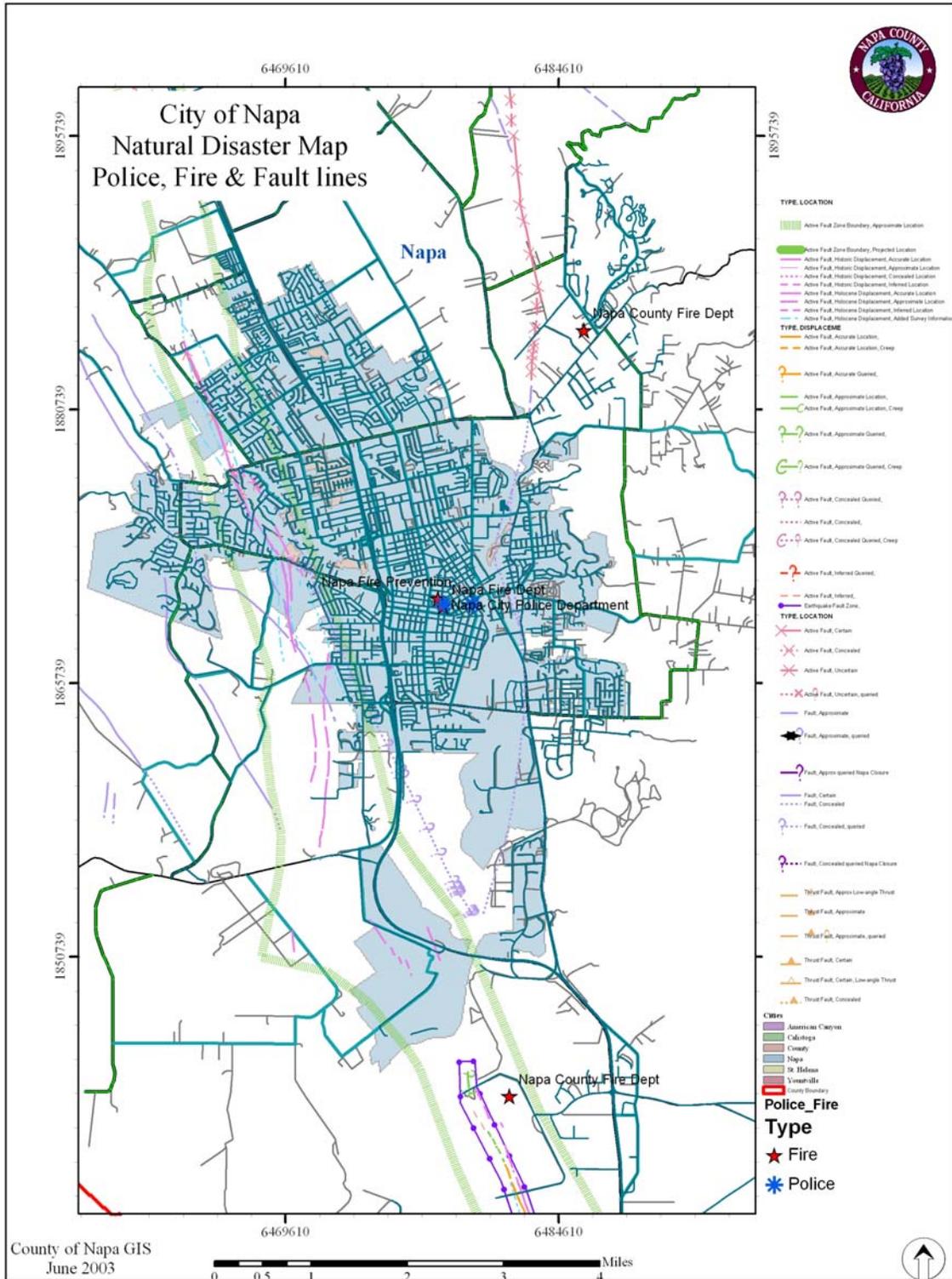
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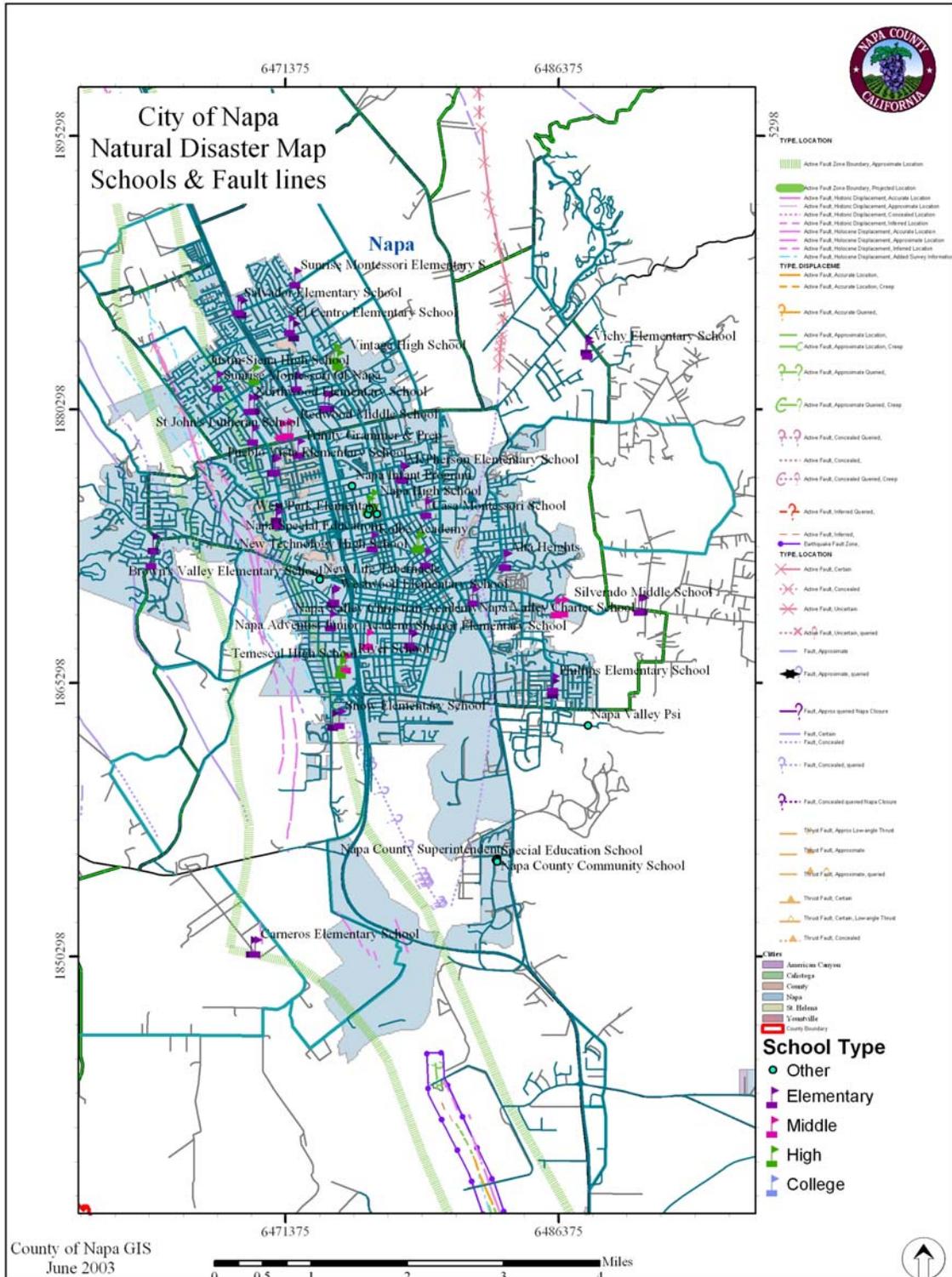


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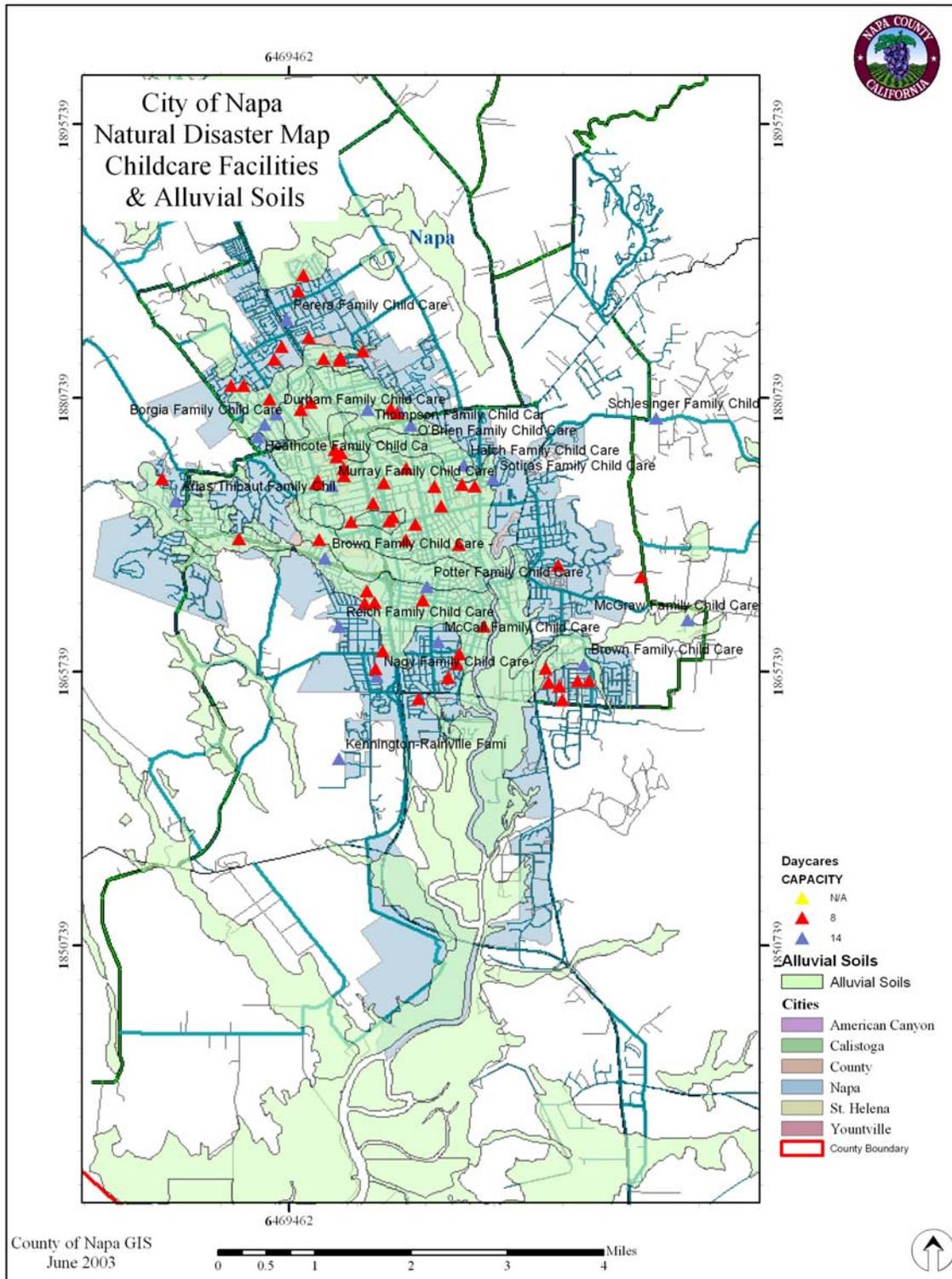


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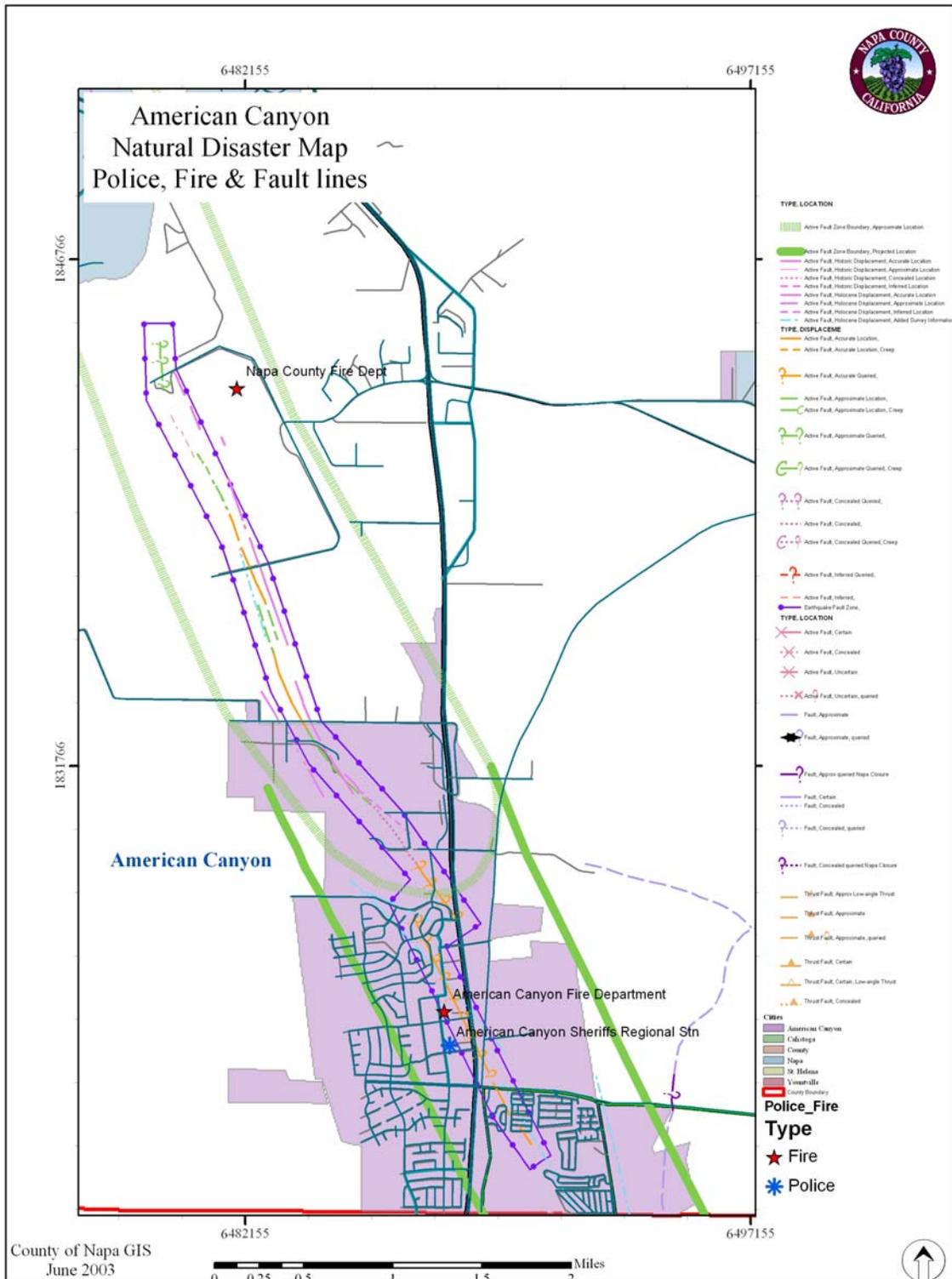


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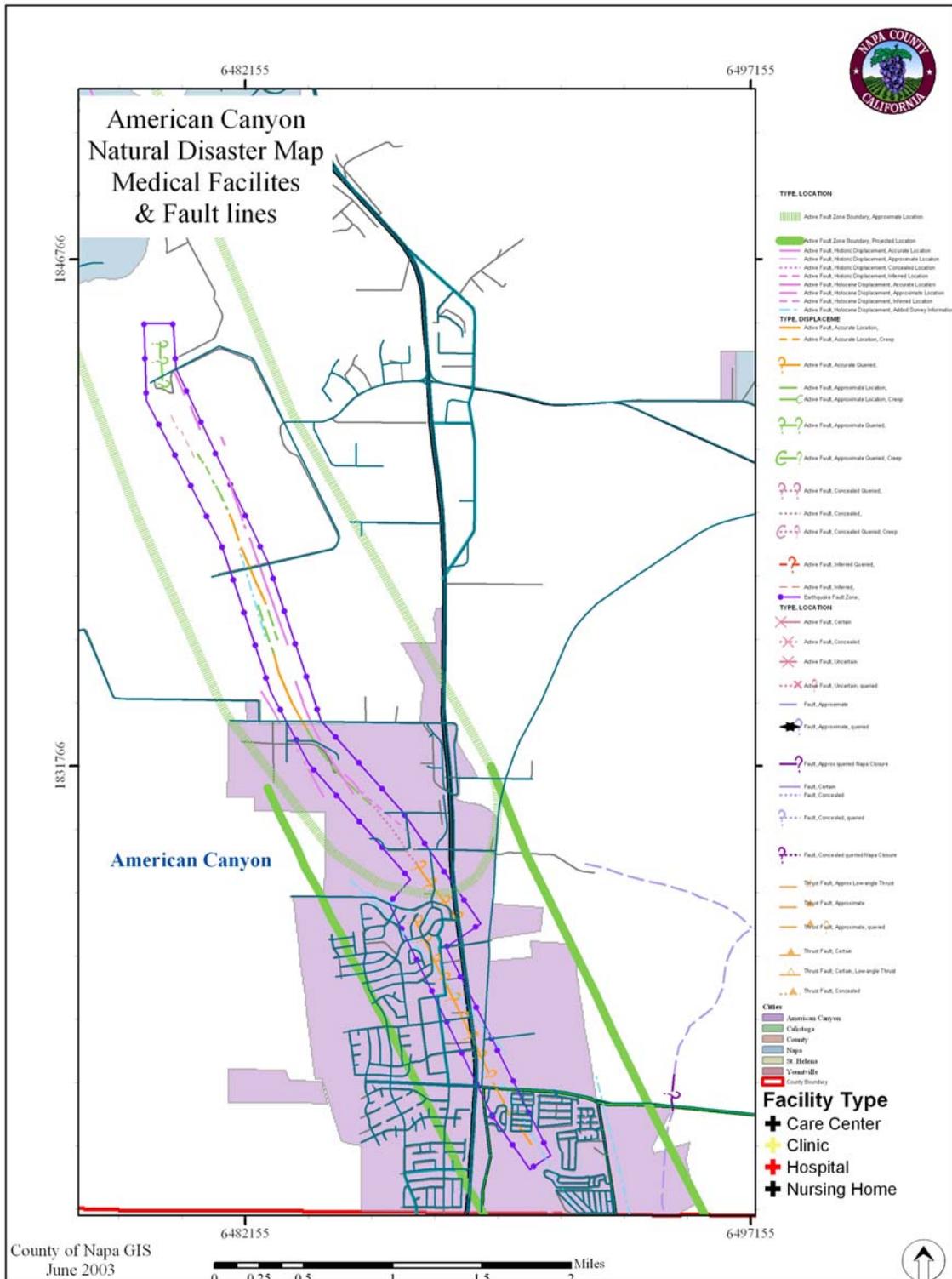


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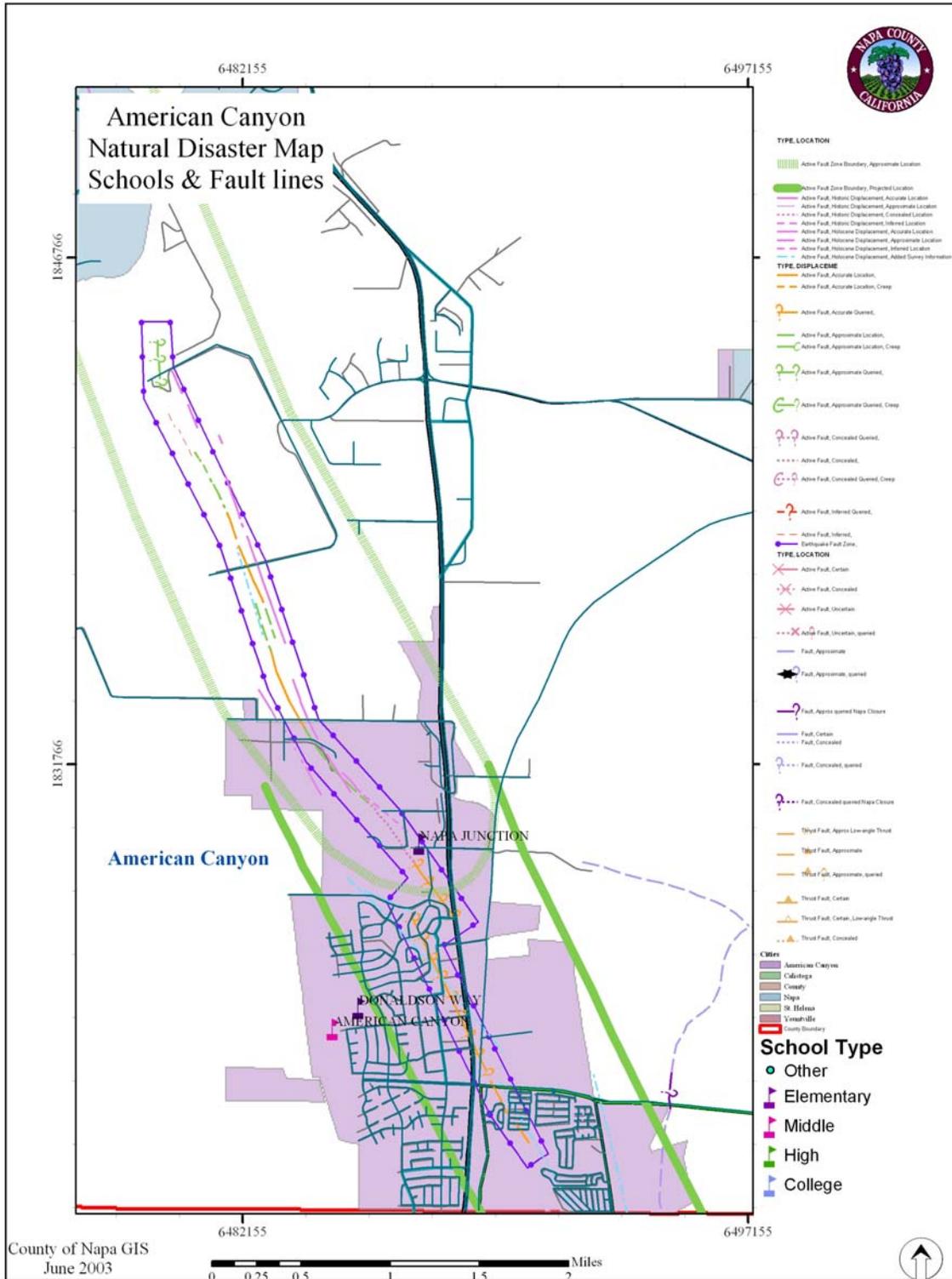
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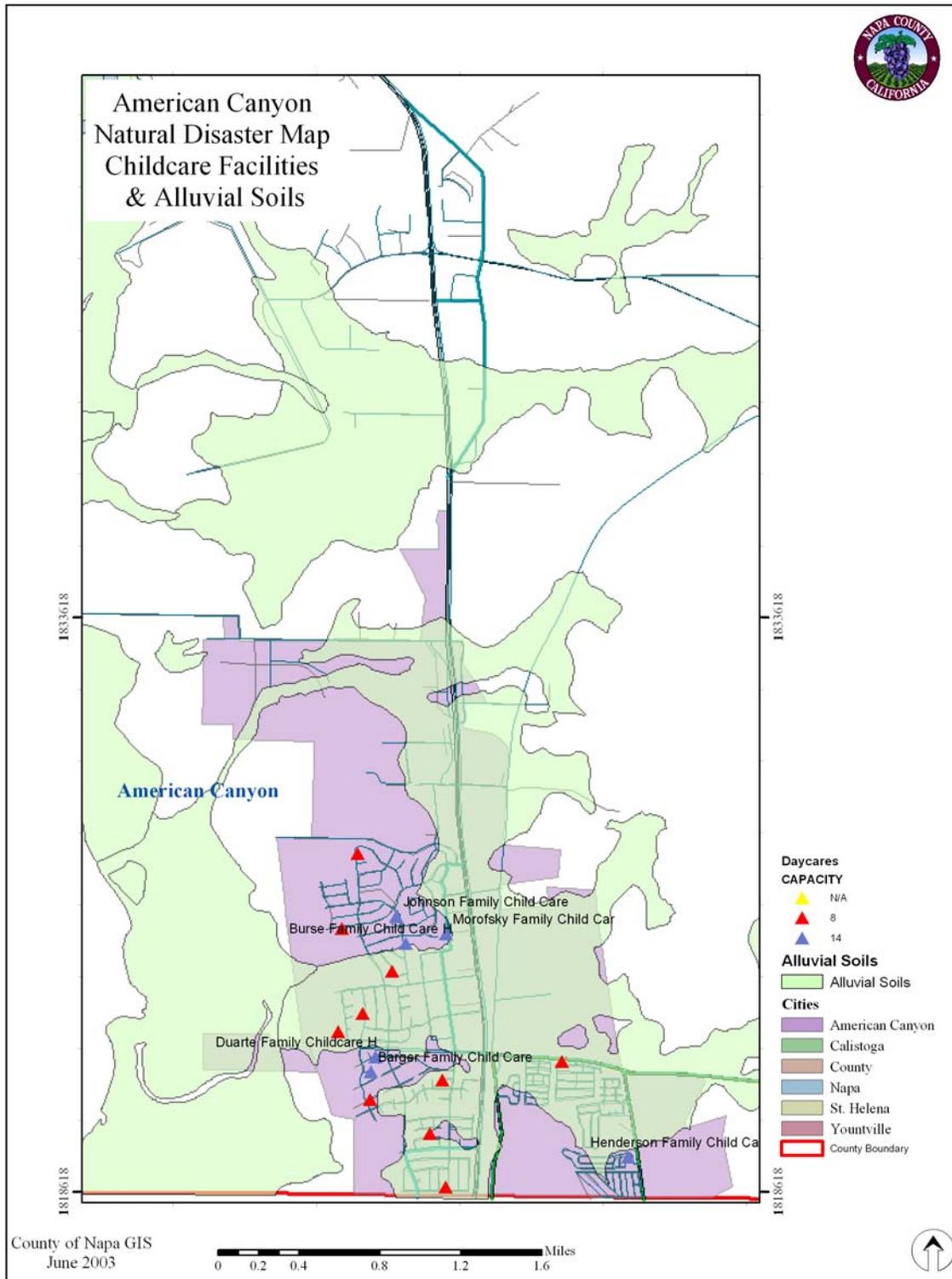
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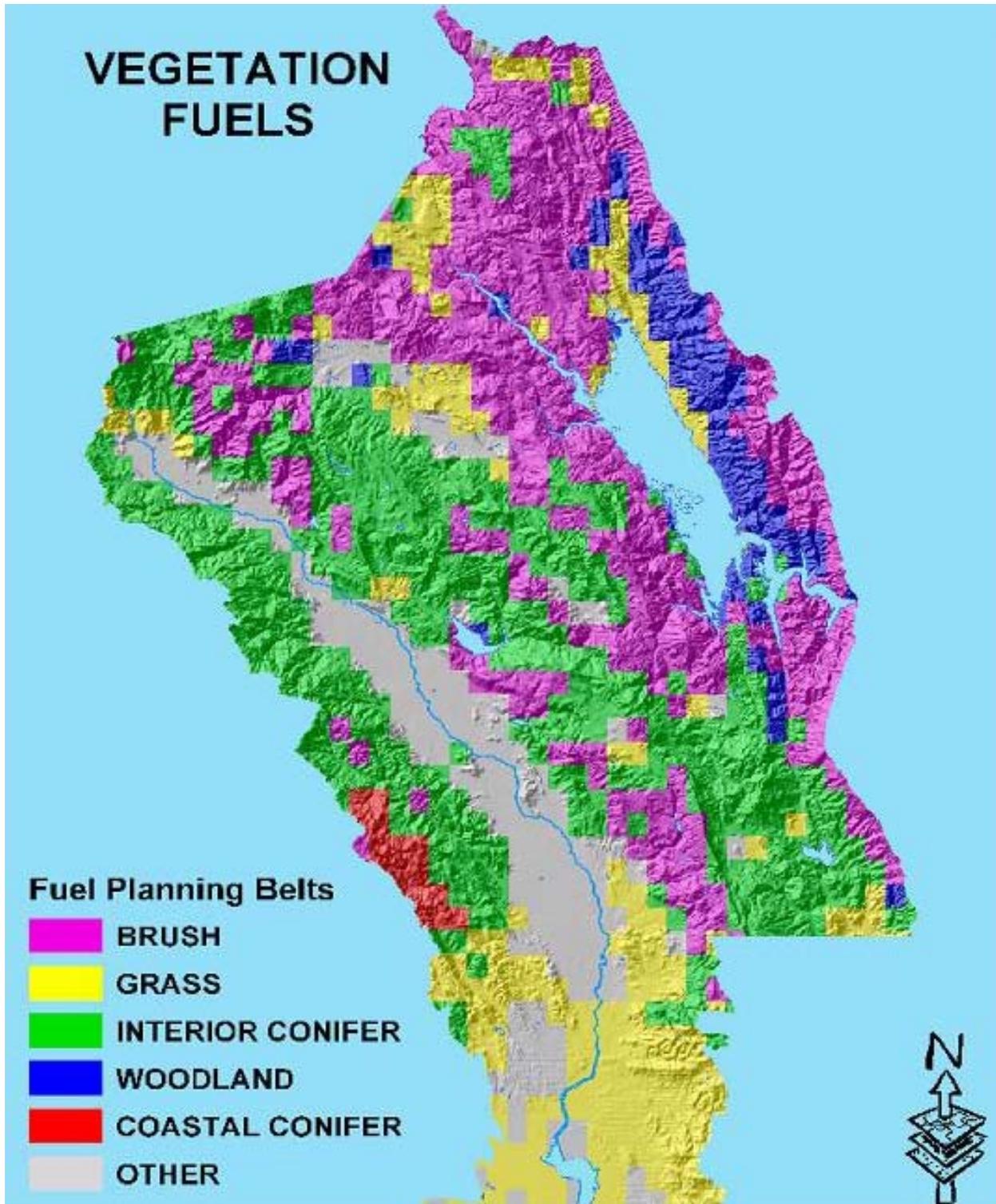
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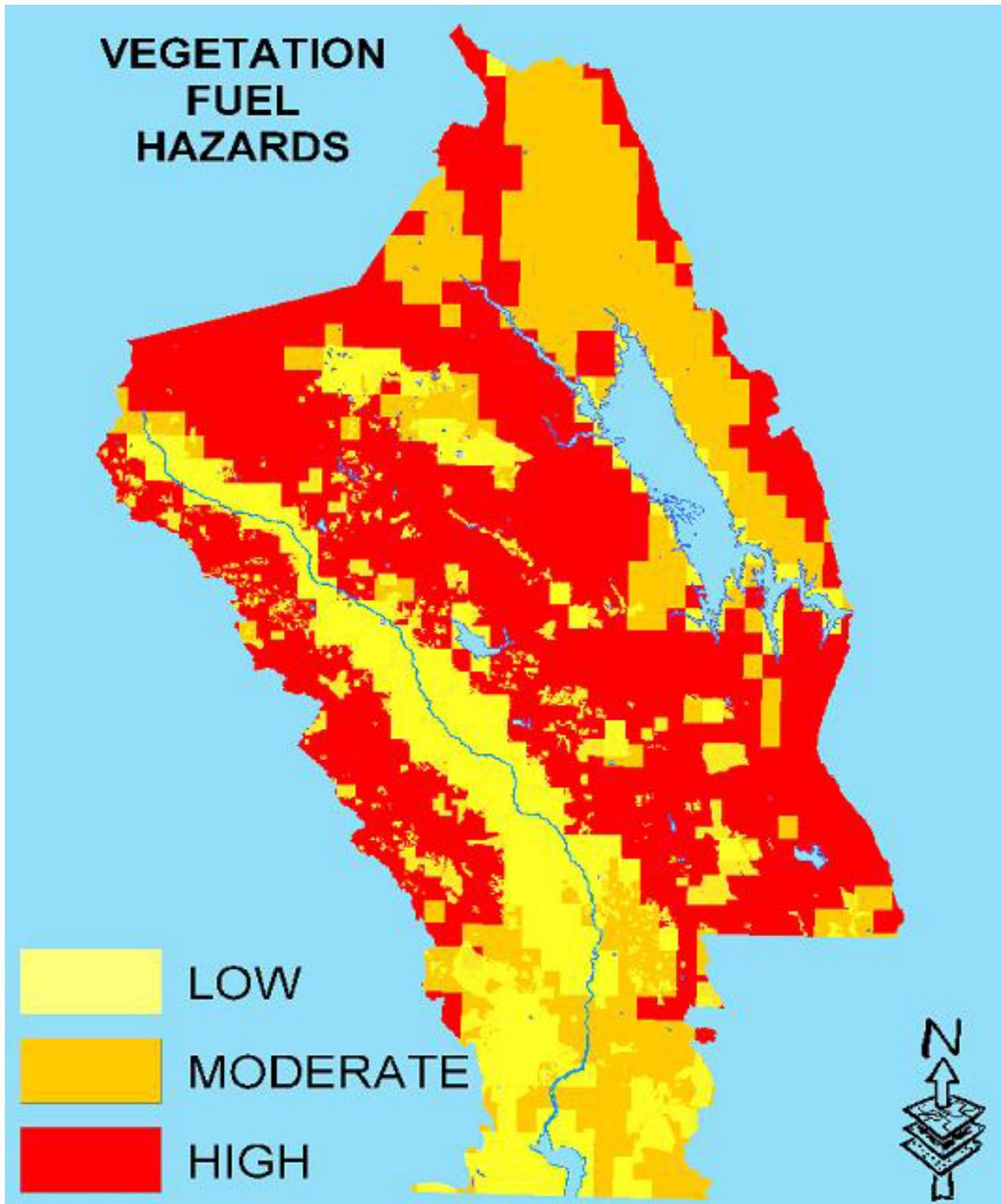
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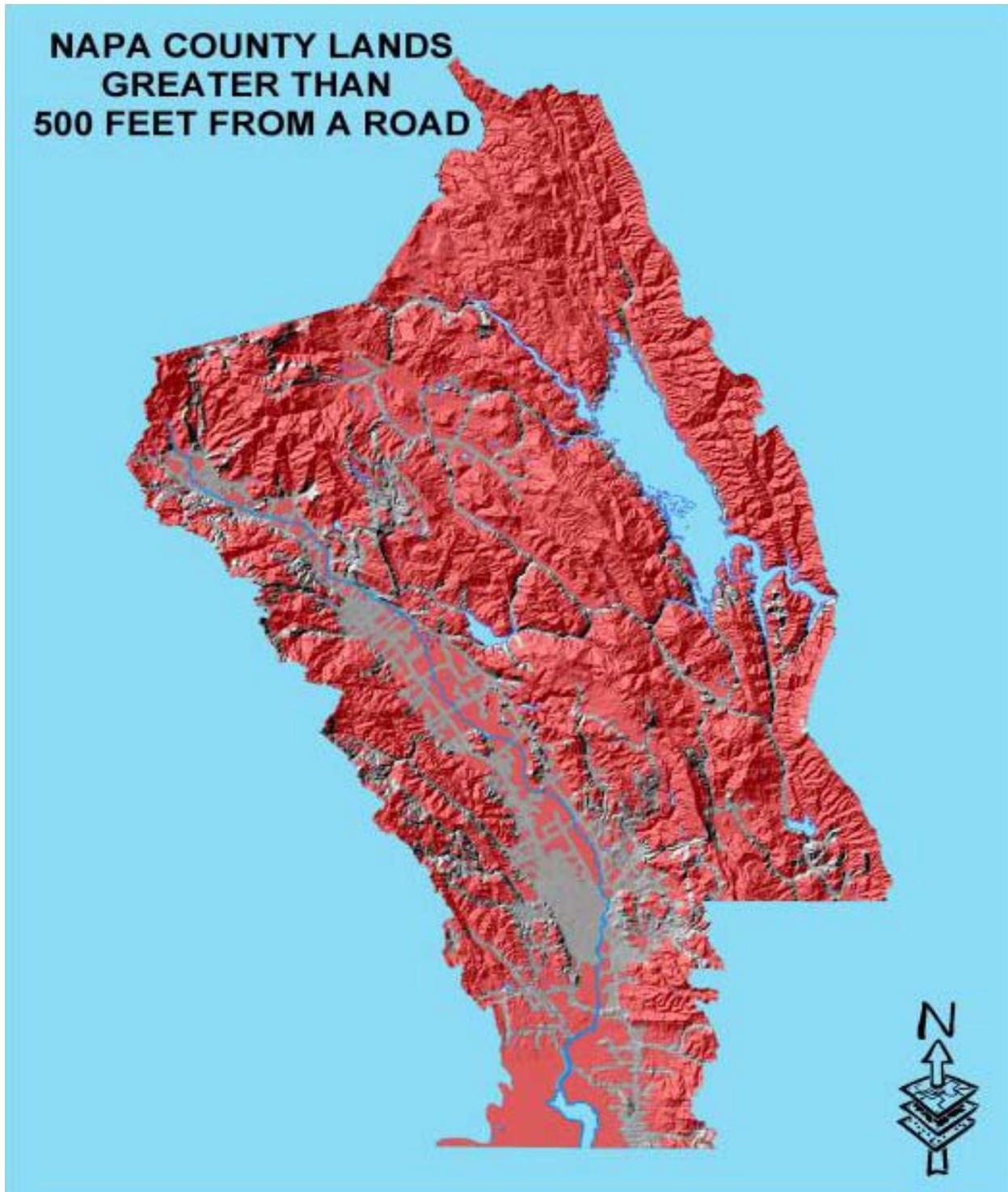
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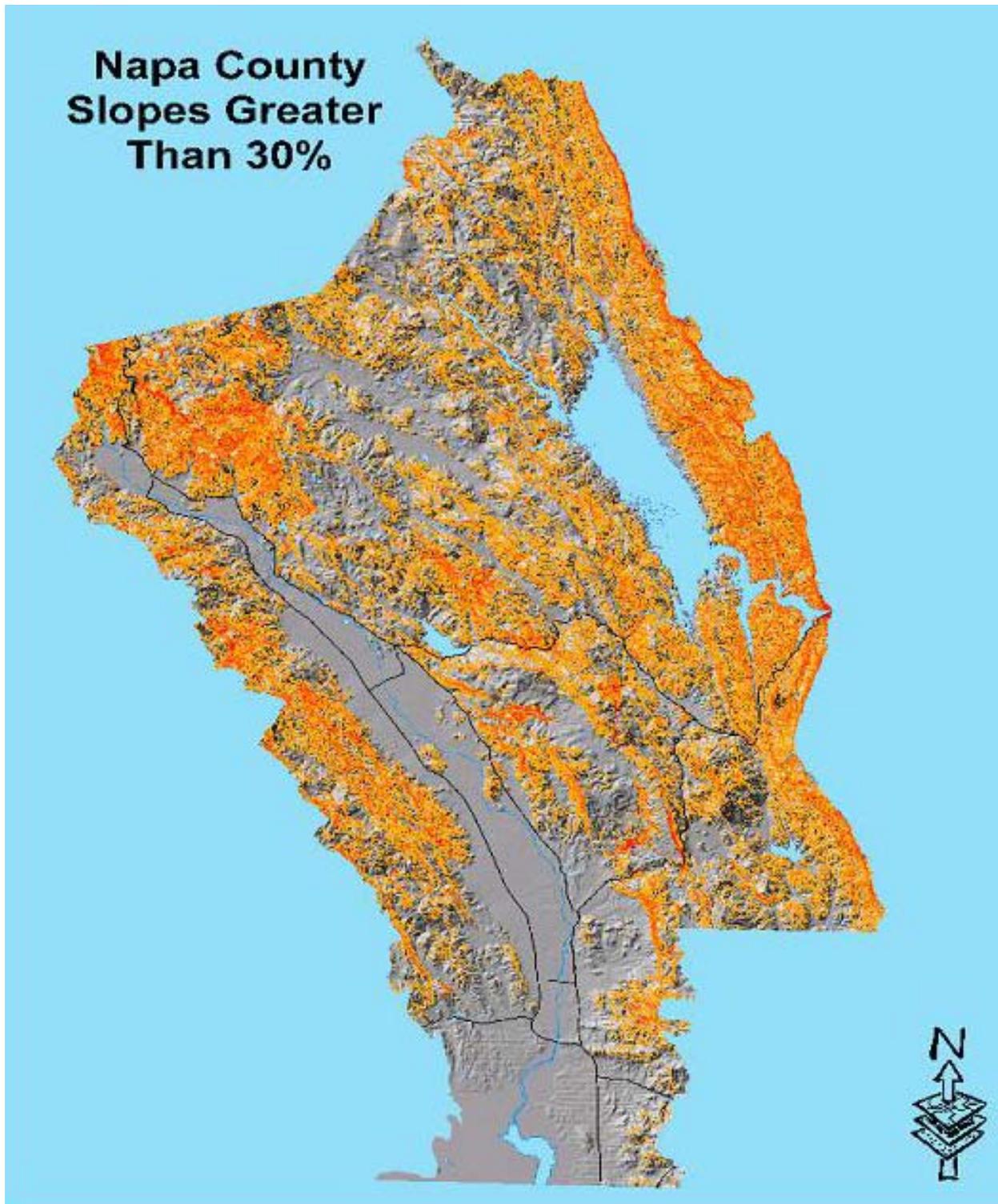
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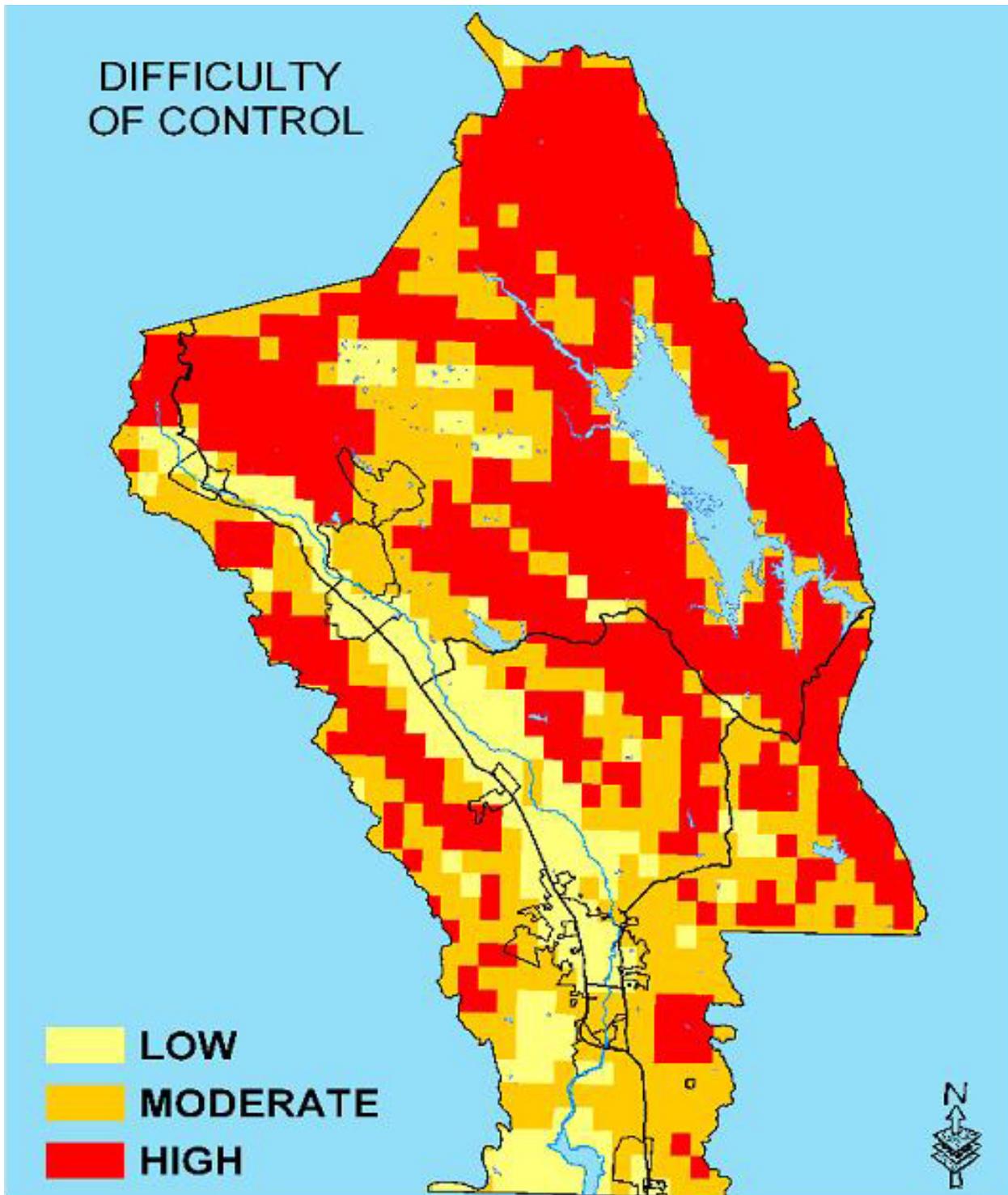
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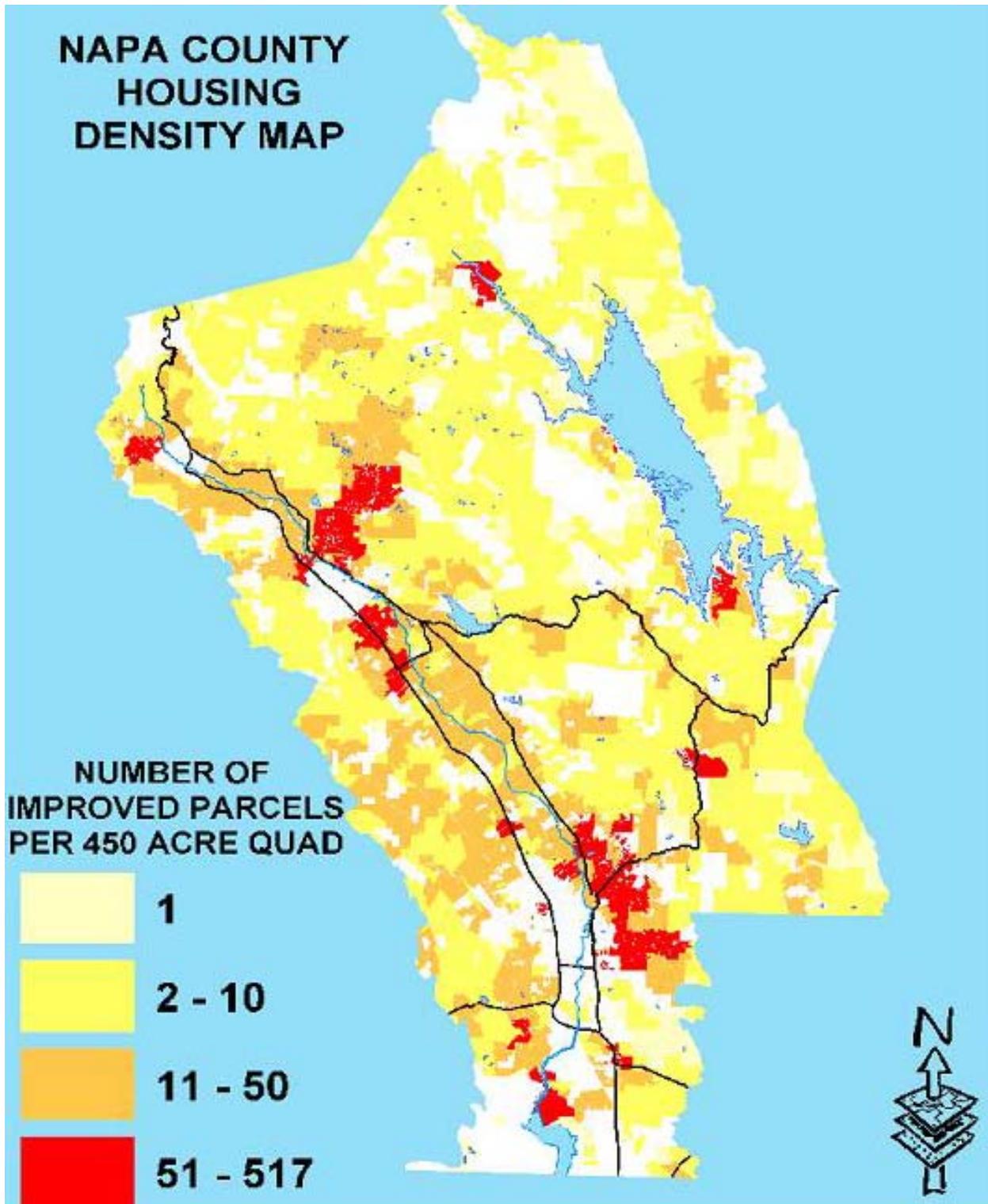
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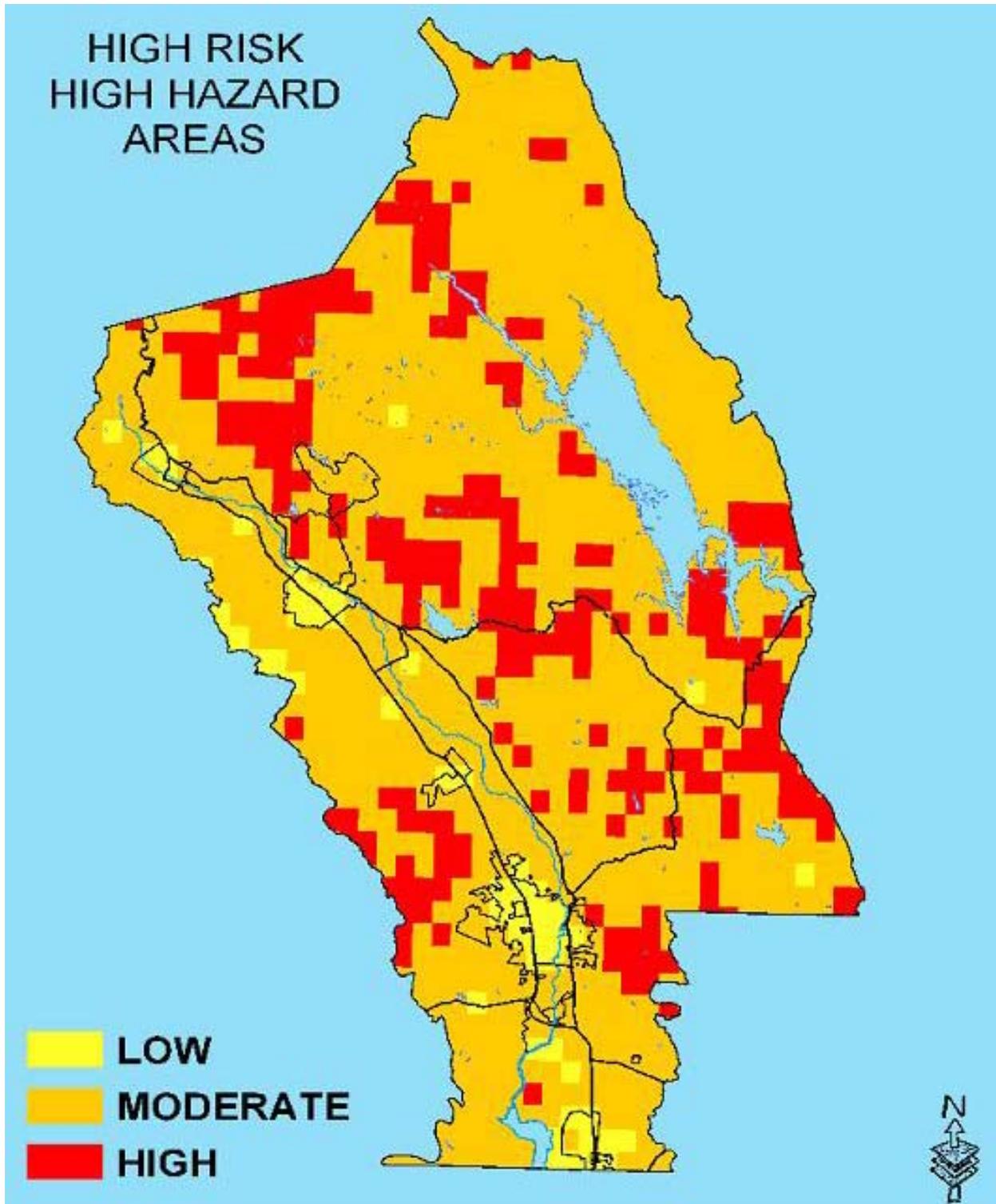
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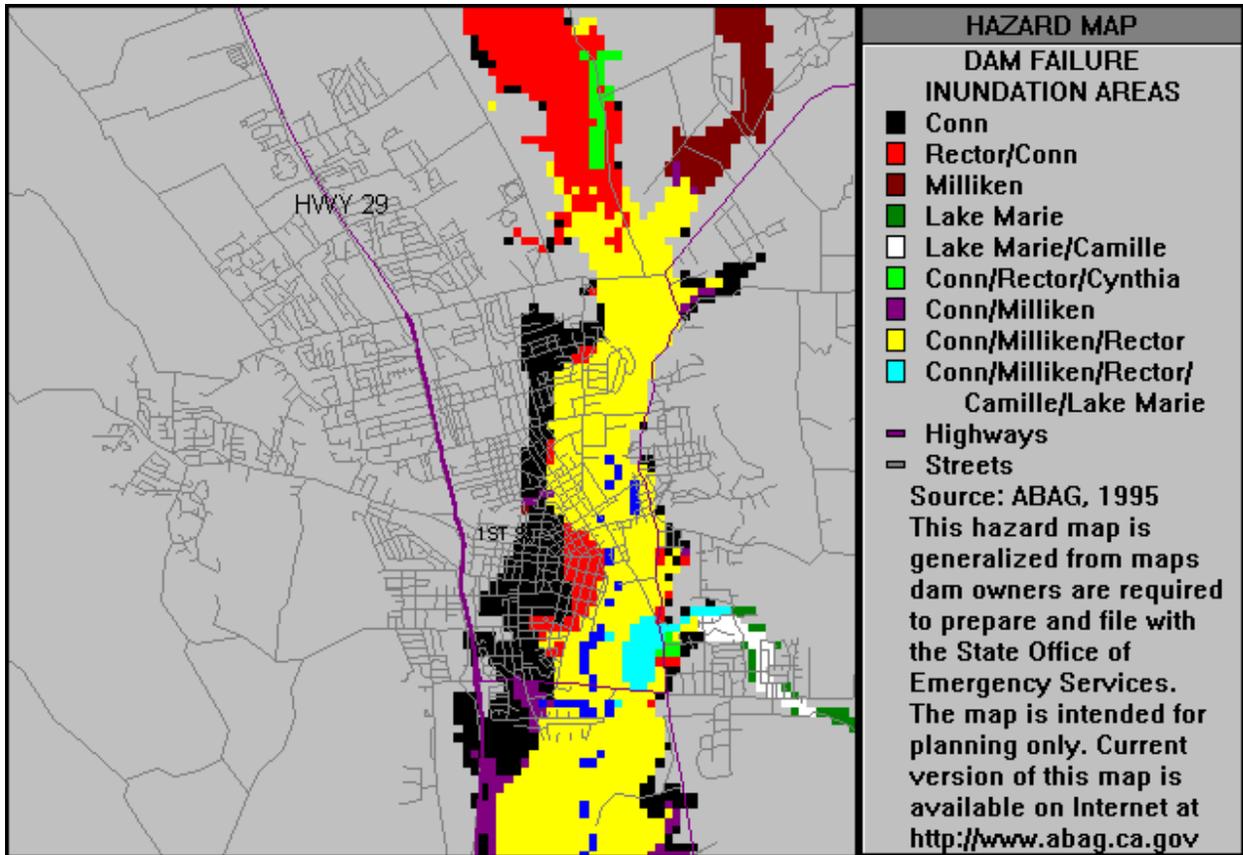
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Appendix B

**Napa County
Operational Area**

Critical Facilities

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NAPA COUNTY GOVERNMENT BUILDINGS				
ID	Name	Address	City	Zip
1	Administration	1195 Third Street	Napa	94559
2	Hall of Justice	1125 Third Street	Napa	94559
3	Communications	1220 Fourth Street	Napa	94559
4	County Library	580 Coombs Street	Napa	94559
5	Juvenile Hall	2350 Old Sonoma Road	Napa	94558
6	Emergency Medical Services	1500 Third Street	Napa	94559
7	Soscol Professional Plaza	1710 Soscol Avenue	Napa	94558
8	Soscol Business Park	650 Imperial Way	Napa	94559
9	Soscol Office Building	1804 Soscol Avenue	Napa	94559
10	Carither's Building	1127 First Street	Napa	94559
11	Alexandria Building	1001 Second Street	Napa	94559
12	County Court House	825 Brown Street	Napa	94559
13	Family Suport Legal	1546 First Street	Napa	94559
14	H&HS EMS	1721 First Street	Napa	94559
15	County Sanitation\Animal Shelter	942 Imola Avenue	Napa	94559
16	Health & Human Service/Public Health	2344 Old Sonoma Road	Napa	94559
17	H&HS SIU	1500 Third Street	Napa	94559
18	Napa Police Department	1539 First Street	Napa	94559
19	City Hall	955 School Street	Napa	94559
20	Community Services	1600 First Street	Napa	94559
21	City of St. Helena	1480 Main Street	St Helena	94574
22	City of Calistoga	1232 Washington Street	Calistoga	94515

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NAPA COUNTY MEDICAL FACILITES						
ID	Facility	Address	City	Zip Code	Phone Number	Type
1	Napa Valley Dialysis	1100 Trancas Street #267	Napa	94558	224-6533	Care Center
2	Piner's Care Center	1800 Pueblo Avenue	Napa	94558	224-7925	Care Center
3	Pleasant Care	2465 Redwood Road	Napa	94558	255-3012	Care Center
4	Roberts Nursing Home	3415 Browns Valley Road	Napa	94558	257-3515	Care Center
5	Urgent Care Ctr Of Napa	3230 Beard Road	Napa	94558	254-7778	Care Center
6	Napa Valley Dialysis	1100 Trancas Street #267	Napa	94558	224-6533	Care Center
7	Veterans Home Of California	100 California Drive	Yountville	94599	944-4600	Care Center
8	Family Birth Place	650 Sanitarium Road	Deer Park	94576	963-6505	Care Center
9	Primrose Care Home	3698 Jefferson Street	Napa	94558	255-8594	Care Center
10	Adapt Day Treatment Program	1600 Myrtle Avenue	Napa	94558	253-9136	Clinic
11	Community Health Clinic Ole	935 Trancas Street # 4c	Napa	94558	254-1770	Clinic
12	Excel Quality Care	575 Lincoln Avenue #240	Napa	94558	426-6522	Clinic
13	Napa State Hospital	2100 Napa Vallejo Highway	Napa	94558	253-5260	Clinic
14	Rohlffs Manor	2400 Fair Drive	Napa	94558	255-9555	Clinic
15	Senior Life Care Inc	3460 Villa Lane	Napa	94558	224-2285	Clinic
16	Transitions-St Helena Hospital	1000 Professional Drive	Napa	94558	259-2840	Clinic
17	Queen Of The Valley Hospital	1000 Trancas Street	Napa	94558	252-4411	Hospital
18	Saint Helena Hospital	650 Sanitarium Road	Deer Park	94576	963-3611	Hospital
19	Sunrise Care & Rehab-Calistoga	1715 Washington Street	Calistoga	94515	942-6253	Nursing Home
20	Adventist Health Home Care Svc	3 Woodland Lane	Deer Park	94576	963-3691	Nursing Home
21	A Hidden Knoll	3158 Browns Valley Road	Napa	94558	258-1873	Nursing Home
22	A'Egis Of Napa	2100 Redwood Road	Napa	94558	251-1409	Nursing Home

NAPA COUNTY MEDICAL FACILITIES (continued)						
ID	Facility	Address	City	Zip Code	Phone Number	Type
23	Heart of Napa	2300 Brown Street	Napa	94558	226-1821	Nursing Home
24	Heart That Matters	68 Coombs Street #9	Napa	94559	252-7569	Nursing Home
25	Home Care Nurses Registry	1712 Jefferson Street	Napa	94558	255-8719	Nursing Home
26	Home Care Svc-Queen-Valley	1100 Trancas Street # 300	Napa	94558	257-4124	Nursing Home
27	Meadows Care Center	1900 Atrium Parkway	Napa	94558	257-4990	Nursing Home
28	Napa Nursing Center	3275 Villa Lane	Napa	94558	257-0931	Nursing Home
29	Sierra Vista Nursing & Rehab	705 Trancas Street	Napa	94558	255-6060	Nursing Home
30	Sunrise Assisted Living-Napa	3700 Valle Verde Drive	Napa	94558	255-1100	Nursing Home
31	Your Home Nursing Svc	3188 Jefferson Street	Napa	94558	224-7780	Nursing Home
32	Marlinda Convalescent Hospital	830 Pratt Avenue	St Helena	94574	963-2791	Nursing Home
33	Rose Haven	520 Sanitarium Road	St Helena	94574	963-3748	Nursing Home

NAPA COUNTY PUBLIC SAFETY FACILITIES						
ID	Facility	Address	City	Zip	Phone	Type
1	Napa County Fire Department	1555 Airport Blvd	Napa	94589	253-6196	Fire
2	Napa County Fire Department	1820 Monticello Road	Napa	94559	253-4940	Fire
3	Napa Fire Prevention	1600 First Street	Napa	94559	257-9590	Fire
4	Napa Fire Department	1539 First Street	Napa	94559	257-9593	Fire
5	Napa County Fire Department	7401 Solano Avenue	Yountville	94599	944-8887	Fire
6	Yountville Fire Department	6587 Jefferson Street	Yountville	94599	963-3601	Fire
7	American Canyon Fire Department	225 James Road	American Canyon	94589	642-2747	Fire
8	St Helena Fire Department	1480 Main Street	St Helena	94574	967-2880	Fire
9	Napa County Fire Department	1199 Big Tree Road	St Helena	94574	963-3601	Fire
10	Calistoga City Fire Department	1113 Washington Street	Calistoga	94515	942-2821	Fire
11	Mountain Volunteer Fire Department	5198 Sharp Road	Calistoga	94515	942-2222	Fire
12	American Canyon Sheriffs Regional Station	300 Crawford Way	American Canyon	94589	648-0171	Police
13	Napa County Sheriff Department	100 Howell Mountain Road	Angwin	94508	965-1158	Police
14	Upper Valley Sheriffs Regional Station	100 Howell Mountain Road	Angwin	94508	965-1158	Police
15	Calistoga Police Department	1234 Washington Street	Calistoga	94515	942-2810	Police
16	Upper Valley Sheriffs Regional Station	650 Sanitarium Road	Deer Park	94576	963-5944	Police
17	Napa City Police Department	1539 First Street	Napa	94559	257-9223	Police
18	Napa County Sheriffs Department	1195 Third Street	Napa	94559	253-4415	Police
19	St. Helena Police Department	1480 Main Street	St Helena	94574	963-3636	Police
20	Yountville Sheriffs Regional Station	6550 Yount Street	Yountville	94599	944-9228	Police

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NAPA COUNTY SCHOOLS					
ID	Name	Address	City	Zip	Phone
1	Alta Heights Elementary School	15 Montecito Boulevard	Napa	94558	253-3671
2	Bel Aire Park Elementary School	3580 Beckworth Drive	Napa	94558	253-3775
3	Browns Valley Elementary School	1001 Buhman Avenue	Napa	94558	253-3761
4	Calistoga Junior-Senior High School	1608 Lake Street	Calistoga	94515	942-6278
5	Capell Valley Elementary School	1192 Capell Valley Road	Napa	94558	259-8434
6	Carneros Elementary School	1680 Los Carneros Avenue	Napa	94559	253-3466
7	Casa Montessori School	780 Lincoln Avenue	Napa	94558	224-1944
8	Culinary Institute of America	2555 Main Street	St Helena	94574	967-0600
9	El Centro Elementary School	1480 El Centro Avenue	Napa	94558	253-3771
10	Foothills Elementary School	711 Sunnyside Road	St Helena	94574	963-3546
11	Howell Mountain Elementary	525 White Cottage Road	Angwin	94508	965-2423
12	Justin-Siena High School	4026 Maher Street	Napa	94558	255-3615
13	Madrone Continuation School	465 Main Street	St Helena	94574	963-2739
14	McPherson Elementary School	2670 Yajome Street	Napa	94558	253-3488
15	Mount George Elementary School	1019 2nd Avenue	Napa	94559	253-3766
16	Napa Adventist Junior Academy	2201 Pine Street	Napa	94559	255-5233
19	Napa High School	2475 Jefferson Street	Napa	94558	253-3711
22	Napa Valley Christian Academy	2645 Laurel Street	Napa	94558	252-2191
23	Napa Valley College - St Helena	1088 College Avenue	St Helena	94574	967-2930
28	New Technology High School	920 Yount Street	Napa	94558	259-8557
29	Northwood Elementary School	2214 Berks Street	Napa	94558	253-3471
30	Pacific Union College	100 Howell Mountain Road	Angwin	94508	965-7272
31	Palisades High School	1507 Grant Street	Calistoga	94515	942-5255

NAPA COUNTY SCHOOLS (continued)					
32	Phillips Elementary School	1210 Shetler Avenue	Napa	94558	253-3481
33	Pope Valley Union School	6200 Pope Valley Road	Pope Valley	94567	965-2402
34	PUC Elementary School	135 Neilson Court	Angwin	94508	965-2459
35	Pueblo Vista Elementary School	1600 Barbara Road	Napa	94558	253-3491
36	Redwood Middle School	3600 Oxford Street	Napa	94558	253-3415
37	River School	2447 Old Sonoma Road	Napa	94558	253-6813
38	Robert Louis Stevenson Middle School	1316 Hillview Place	St Helena	94574	963-2725
39	Salvador Elementary School	1850 Salvador Avenue	Napa	94558	253-3476
40	Shearer Elementary School	1590 Elm Street	Napa	94559	253-3508
41	Silverado Middle School	1133 Coombsville Road	Napa	94559	253-3688
42	Snow Elementary School	1130 Foster Road	Napa	94558	253-3666
44	St Apollinaris Catholic School	3700 Lassen Street	Napa	94558	224-6525
45	St Helena Catholic School	1255 Oak Place	St Helena	94574	963-4677
46	St Helena Elementary School	1325 Adams Street	St Helena	94574	963-2712
47	St Helena High School	1401 Grayson Street	St Helena	94574	963-2740
48	St Helena Montessori School	1328 Spring Street	St Helena	94574	963-1527
49	St Johns Lutheran School	3521 Linda Vista Avenue	Napa	94558	226-7970
50	St Johns the Baptist School	983 Napa Street	Napa	94558	224-8388
51	Sunrise Montessori Elementary School	1226 Salvador Avenue	Napa	94558	257-2392
52	Sunrise Montessori Of Napa	4149 Linda Vista Avenue	Napa	94558	253-1105
53	<i>Temescal High School</i>	<i>2447 Old Sonoma Road</i>	<i>Napa</i>	<i>94558</i>	<i>253-3791</i>
54	Trinity Grammer & Prep	2055 Redwood Road	Napa	94558	258-9030
55	Vichy Elementary School	3261 Vichy Avenue	Napa	94558	253-3544
56	Vintage High School	1375 Trower Avenue	Napa	94558	253-3601

NAPA COUNTY SCHOOLS (continued)					
57	Westwood Elementary School	2700 Kilburn Avenue	Napa	94558	253-3678
58	Yountville Elementary School	6554 Yount Street	Yountville	94599	253-3485
59	Napa Valley Charter School	575 Third Street	Napa	94559	252-5522
60	West Park Elementary	2315 W Park Avenue	Napa	94558	253-3516
61	Kolbe Academy	1600 F Street	Napa	94559	256-4306
62	Calistoga Elementary School	1327 Berry Street	Calistoga	94515	942-4398
63	Wooden Valley Elementary School	1340 Wooden Valley Road	Napa	0	253-3703
64	Donaldson Way Elementary School	430 Donaldson Way	Am Canyon	0	253-3524
65	American Canyon Middle School	300 Benton Way	Am Canyon	0	259-8592
66	Napa Junction Elementary School	300 Napa Junction Road	Am Canyon	0	253-3461
67	St Helena Primary School	1701 Grayson Avenue	St Helena	0	967-2772
68	Napa Valley College	2277 Napa-Vallejo Highway	Napa	0	253-3000

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Appendix C

**Napa County
Operational Area**

Capability Index

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Capability Index

Description **AmCan** **Napa** **Yount** **St Helena** **Calistoga** **County** **Totals**
General Resources

EOC	1	1	1	1	1	1	6
Alt EOC		1				2	3
Dispatch		1			1	1	3
Corp Yard	1	1	1	1	1	3	8
PD/SO	1	1	1	1	1	1	6
Firestations	1	4	1	1	1	11	19
Hospitals		2	1			1	4
Clinics	1	4	1	1	1	1	9
IC Veh/Trilaers	2	3		1	1	2	9

Fire Resources

Engines Type I Ladder		1		1		0	2
Engines Type I	6	7	2	2	3	15	35
Engines Type II	1	1		1		3	6
Engines Type III		1		1		8	10
Engines Type IV	1	3			2		6
Water Tenders	2			1	1	3	7
Med/HVY Rescue Tm	1	1			1	1	4
Hazmat Tm	1	1				1	3
Utility	2	4	1	2	2	6	17
Personnel	40	60	12	33	33	100	278

Police Resources

Sworn Officers	13	30	5	11	11	75	145
Admin Personnel		6				11	17
SWAT Teams		1				1	2
EOD Teams						1	1
Sp Teams	1	2		1		1	5
Patrol Vehicles	3						3
SAR						1	1
Dive						1	1

Public Works Resources

Personnel	26	52	8	15	8	125	234
Backhoes	2	4	0	1	1	4	12
Dozers	0	0	0	0	0	2	2
Dump Trucks	2	14	0	1	2	14	33
Utility Vehicles	21	26	6	6	6	42	107
Water Tenders	0	2	0	0	0	2	4
Generators Portable	1	4	1	2	1	3	12
Loaders	1	2	0	0	1	4	8
Spill Trailers	0	0	0	0	0	1	1
Shelter Trailers	0	1	0	1	1	4	7

Description AmCan Napa Yount St Helena Calistoga County Totals

Emergency Medical

BLS Caches	1			1			2
ALS Caches		1					1
Ambulances PVT		9					9
Ambulances Fire	1	4				3	8
EMT Trained Personnel	30	60	12	30	30	150	312
Paramedics	2	5		2		50	59
Hospital Ers		1				1	2
Trauma Center		1					1

Communications

Microwave	y	y	y	y	y	y
RIMS	y	y	y	y	y	y
High speed Internet	y	y	y	y	y	y
Telephone	y	y	y	y	y	y
Sat Phones	y	y	n	n	y	y
OASIS	n	y	n	n	n	y

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NAPA COUNTY MEDICAL FACILITES

Facility	Address	City	Zip Code	Phone Number	Type
Napa Valley Dialysis	1100 Trancas Street #267	Napa	94558	224-6533	Care Cent
Piner's Care Center	1800 Pueblo Avenue	Napa	94558	224-7925	Care Cent
Pleasant Care	2465 Redwood Road	Napa	94558	255-3012	Care Cent
Roberts Nursing Home	3415 Browns Valley Road	Napa	94558	257-3515	Care Cent
Urgent Care Ctr Of Napa	3230 Beard Road	Napa	94558	254-7778	Care Cent
Napa Valley Dialysis	1100 Trancas Street #267	Napa	94558	224-6533	Care Cent
Veterans Home Of California	100 California Drive	Yountville	94599	944-4600	Care Cent
Family Birth Place	650 Sanitarium Road	Deer Park	94576	963-6505	Care Cent
Primrose Care Home	3698 Jefferson Street	Napa	94558	255-8594	Care Cent
Adapt Day Treatment Program	1600 Myrtle Avenue	Napa	94558	253-9136	Clinic
Community Health Clinic Ole	935 Trancas Street # 4c	Napa	94558	254-1770	Clinic
Excel Quality Care	575 Lincoln Avenue #240	Napa	94558	426-6522	Clinic
Napa State Hospital	2100 Napa Vallejo Highway	Napa	94558	253-5260	Clinic
Rohlffs Manor	2400 Fair Drive	Napa	94558	255-9555	Clinic
Senior Life Care Inc	3460 Villa Lane	Napa	94558	224-2285	Clinic
Transitions-St Helena Hospital	1000 Professional Drive	Napa	94558	259-2840	Clinic
Queen Of The Valley Hospital	1000 Trancas Street	Napa	94558	252-4411	Hospital
Saint Helena Hospital	650 Sanitarium Road	Deer Park	94576	963-3611	Hospital
Sunrise Care & Rehab-Calistoga	1715 Washington Street	Calistoga	94515	942-6253	Nursing Ho
Adventist Health Home Care Svc	3 Woodland Lane	Deer Park	94576	963-3691	Nursing Ho
A Hidden Knoll	3158 Browns Valley Road	Napa	94558	258-1873	Nursing Ho
A'Egis Of Napa	2100 Redwood Road	Napa	94558	251-1409	Nursing Ho

NAPA COUNTY MEDICAL FACILITES (continued)

ID	Facility	Address	City	Zip Code	Phone Number
23	Heart of Napa	2300 Brown Street	Napa	94558	226-1821
24	Heart That Matters	68 Coombs Street #9	Napa	94559	252-7569
25	Home Care Nurses Registry	1712 Jefferson Street	Napa	94558	255-8719
26	Home Care Svc-Queen-Valley	1100 Trancas Street # 300	Napa	94558	257-4124

27	Meadows Care Center	1900 Atrium Parkway	Napa	94558	257-4990
28	Napa Nursing Center	3275 Villa Lane	Napa	94558	257-0931
29	Sierra Vista Nursing & Rehab	705 Trancas Street	Napa	94558	255-6060
30	Sunrise Assisted Living-Napa	3700 Valle Verde Drive	Napa	94558	255-1100
31	Your Home Nursing Svc	3188 Jefferson Street	Napa	94558	224-7780
32	Marlinda Convalescent Hospital	830 Pratt Avenue	St Helena	94574	963-2791
33	Rose Haven	520 Sanitarium Road	St Helena	94574	963-3748

NAPA COUNTY PUBLIC SAFETY FACILITIES

Facility	Address	City	Zip	Phone	Type
Napa County Fire Department	1555 Airport Blvd	Napa	94589	253-6196	Fire
Napa County Fire Department	1820 Monticello Road	Napa	94559	253-4940	Fire
Napa Fire Prevention	1600 First Street	Napa	94559	257-9590	Fire
Napa Fire Department	1539 First Street	Napa	94559	257-9593	Fire
Napa County Fire Department	7401 Solano Avenue	Yountville	94599	944-8887	Fire
Yountville Fire Department	6587 Jefferson Street	Yountville	94599	963-3601	Fire
American Canyon Fire Department	225 James Road	American Canyon	94589	642-2747	Fire
St Helena Fire Department	1480 Main Street	St Helena	94574	967-2880	Fire
Napa County Fire Department	1199 Big Tree Road	St Helena	94574	963-3601	Fire
Calistoga City Fire Department	1113 Washington Street	Calistoga	94515	942-2821	Fire
Mountain Volunteer Fire Department	5198 Sharp Road	Calistoga	94515	942-2222	Fire
American Canyon Sheriffs Regional Station	300 Crawford Way	American Canyon	94589	648-0171	Police
Napa County Sheriff Department	100 Howell Mountain Road	Angwin	94508	965-1158	Police
Upper Valley Sheriffs Regional Station	100 Howell Mountain Road	Angwin	94508	965-1158	Police
Calistoga Police Department	1234 Washington Street	Calistoga	94515	942-2810	Police
Upper Valley Sheriffs Regional Station	650 Sanitarium Road	Deer Park	94576	963-5944	Police
Napa City Police Department	1539 First Street	Napa	94559	257-9223	Police
Napa County Sheriffs Department	1195 Third Street	Napa	94559	253-4415	Police
St. Helena Police Department	1480 Main Street	St Helena	94574	963-3636	Police
Yountville Sheriffs Regional Station	6550 Yount Street	Yountville	94599	944-9228	Police

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NAPA COUNTY SCHOOLS				
ID	Name	Address	City	Zip
1	Alta Heights Elementary School	15 Montecito Boulevard	Napa	94558
2	Bel Aire Park Elementary School	3580 Beckworth Drive	Napa	94558
3	Browns Valley Elementary School	1001 Buhman Avenue	Napa	94558
4	Calistoga Junior-Senior High School	1608 Lake Street	Calistoga	94515
5	Capell Valley Elementary School	1192 Capell Valley Road	Napa	94558
6	Carneros Elementary School	1680 Los Carneros Avenue	Napa	94559
7	Casa Montessori School	780 Lincoln Avenue	Napa	94558
8	Culinary Institute of America	2555 Main Street	St Helena	94574
9	El Centro Elementary School	1480 El Centro Avenue	Napa	94558
10	Foothills Elementary School	711 Sunnyside Road	St Helena	94574
11	Howell Mountain Elementary	525 White Cottage Road	Angwin	94508
12	Justin-Siena High School	4026 Maher Street	Napa	94558
13	Madrone Continuation School	465 Main Street	St Helena	94574
14	McPherson Elementary School	2670 Yajome Street	Napa	94558
15	Mount George Elementary School	1019 2nd Avenue	Napa	94559
16	Napa Adventist Junior Academy	2201 Pine Street	Napa	94559
19	Napa High School	2475 Jefferson Street	Napa	94558
22	Napa Valley Christian Academy	2645 Laurel Street	Napa	94558
23	Napa Valley College - St Helena	1088 College Avenue	St Helena	94574
28	New Technology High School	920 Yount Street	Napa	94558
29	Northwood Elementary School	2214 Berks Street	Napa	94558
30	Pacific Union College	100 Howell Mountain Road	Angwin	94508
31	Palisades High School	1507 Grant Street	Calistoga	94515

NAPA COUNTY SCHOOLS (continued)				
32	Phillips Elementary School	1210 Shetler Avenue	Napa	94558
33	Pope Valley Union School	6200 Pope Valley Road	Pope Valley	94567
34	PUC Elementary School	135 Neilson Court	Angwin	94508
35	Pueblo Vista Elementary School	1600 Barbara Road	Napa	94558
36	Redwood Middle School	3600 Oxford Street	Napa	94558
37	River School	2447 Old Sonoma Road	Napa	94558

38	Robert Louis Stevenson Middle School	1316 Hillview Place	St Helena	94574
39	Salvador Elementary School	1850 Salvador Avenue	Napa	94558
40	Shearer Elementary School	1590 Elm Street	Napa	94559
41	Silverado Middle School	1133 Coombsville Road	Napa	94559
42	Snow Elementary School	1130 Foster Road	Napa	94558
44	St Apollinaris Catholic School	3700 Lassen Street	Napa	94558
45	St Helena Catholic School	1255 Oak Place	St Helena	94574
46	St Helena Elementary School	1325 Adams Street	St Helena	94574
47	St Helena High School	1401 Grayson Street	St Helena	94574
48	St Helena Montessorri School	1328 Spring Street	St Helena	94574
49	St Johns Lutheran School	3521 Linda Vista Avenue	Napa	94558
50	St Johns the Baptist School	983 Napa Street	Napa	94558
51	Sunrise Montessori Elementary School	1226 Salvador Avenue	Napa	94558
52	Sunrise Montessori Of Napa	4149 Linda Vista Avenue	Napa	94558
53	Temescal High School	2447 Old Sonoma Road	Napa	94558
54	Trinity Grammer & Prep	2055 Redwood Road	Napa	94558
55	Vichy Elementary School	3261 Vichy Avenue	Napa	94558
56	Vintage High School	1375 Trower Avenue	Napa	94558

NAPA COUNTY SCHOOLS (continued)

57	Westwood Elementary School	2700 Kilburn Avenue	Napa	94558
58	Yountville Elementary School	6554 Yount Street	Yountville	94599
59	Napa Valley Charter School	575 Third Street	Napa	94559
60	West Park Elementary	2315 W Park Avenue	Napa	94558
61	Kolbe Academy	1600 F Street	Napa	94559
62	Calistoga Elementary School	1327 Berry Street	Calistoga	94515
63	Wooden Valley Elementary School	1340 Wooden Valley Road	Napa	0
64	Donaldson Way Elementary School	430 Donaldson Way	Am Canyon	0
65	American Canyon Middle School	300 Benton Way	Am Canyon	0
66	Napa Junction Elementary School	300 Napa Junction Road	Am Canyon	0
67	St Helena Primary School	1701 Grayson Avenue	St Helena	0
68	Napa Valley College	2277 Napa-Vallejo Highway	Napa	0

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Appendix D

Napa County Operational Area

Disaster History and Assets at Risk

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Flood Background Data

# of Parcels / Zone	Total Parcels	in thousands \$	in millions \$
Single Family	1977	\$525.00	\$1,037.93
Multiple Family	361	\$1,900.00	\$685.90
Industrial	1029	\$2,500.00	\$2,572.50
Agricultural	1733	\$680.00	\$1,178.44
Assets at risk	5100	\$1,401.25	\$5,474.77

Approximately \$5.5 Billion in assets at risk

Historical Floods Since 1960

Month	Year	Peak Flow CFS	Year Flood	Est Damage in Millions \$ Adj for Inflation
Jan	1963	25000	10	5.5
Jan	1967	22000	10	5.2
Jan	1977	5000	2	1
Mar	1983	17100	2	3.5
Feb	1986	37100	50	320
Jan	1993	19300	5	4.2
Jan	1995	22000	10	80
Mar	1995	32600	20	170
Jan	1997	26700	10	120

Estimated Total 709.4

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Earthquake Background Data

Napa County Earthquake Threat

Type of Parcel	Number parcels on Soft Soils	Average Value in thousands \$	Value at risk in millions \$
Single Family	2598	\$525.00	\$1,363.95
Multiple Family	452	\$1,900.00	\$858.80
Industrial	1425	\$2,500.00	\$3,562.50
Agricultural	2022	\$680.00	\$1,374.96
Assets at risk	6497	\$1,401.25	\$7,160.21

Approximately \$7.2 Billion in private assets at risk

Napa County Earthquake Experience

Name/Year	Magnitude	Max Shaking Intensity in County	Est Damage
Santa Rosa 1968	5.6	V-VI	< \$2 million
Loma Prieta 1989	6.9	V-VI	< \$5 Million
Yountville 2000	5.3	VI-VII+	\$ 64 Million

Future Earthquake Potential

West Napa	6.5	VIII-IX+	\$1 Billion
Green Valley	6.5	VII-VIII+	\$ 500 Million
Rodgers Creek	7.1	VII-VIII+	\$ 500 Million
Berryessa Hedding	7.1	VII-VIII	\$ 250 Million

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Fire Background Data

Assets at risks in the Wild land Urban Interface

- Estimated 5264 residential units with a median value of \$850,000 each for a potential loss of approximately \$4.5 Billion at risk
- Estimated 10,500 outbuildings with a median value of \$25,000 each for a potential loss of approximately \$26.5 Million
- Estimated \$1.5 Billion in public infrastructure, roads, utilities, facilities and open space
- Estimated 25,000 full and part time residents living in the environment

Fire History 1960-2002

Name	Acres	Year	Month	Day
C. FOSBERG #2	3796	1960	10	15
MORRISON	537	1960	10	15
NAPA SODA SPRINGS	2244	1960	6	20
ROADSIDE #20	576	1960	8	21
DE LA BRIANDAIS	387	1961	11	16
E. PROCTOR	876	1961	7	8
LEOMA LAKES	245	1961	9	3
M. WATSON	1831	1961	9	2
POPE VALLEY SERIES	1702	1961	9	2
R. COOMBA	194	1961	9	3
ROADSIDE #32	568	1961	9	4
ROADSIDE #19	490	1962	8	14
FOLEY FARM RI ESCAPE	382	1963	9	27
C. HANLY	55960	1964	9	19
NUNS CANYON	9807	1964	9	19
P.G.&E. #6	452	1964	9	21
ROADSIDE #14	230	1964	6	25
ROADSIDE #22	538	1964	7	11
ROADSIDE #42	8956	1964	9	21
JERICO	2677	1966	8	6
PORTUGUESE CANYON	1321	1968	8	29
STAGS LAKE	562	1968	6	27
CEDAR RIDGE	255	1969	8	9

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Fire History Continued:

Name	Acres	Year	Month	Day
ARROWHEAD	484	1972	7	14
POCKET GULCH	10431	1972	7	14
AZEVEDO #2	615	1973	9	8
SIGNAL HILL	4393	1973	9	8
HARRINGTON	81	1978	7	9
PLUNKETT	391	1979	7	16
ROCKWELL GAP	2012	1979	9	11
TURKEY	817	1980	9	13
ATLAS PEAK	33606	1981	6	22
SILVERADO	6218	1982	9	11
STEELE CANYON	523	1982	9	11
MARCH #2	712	1983	9	11
POPE	226	1983	8	28
POPE CANYON	1682	1983	7	10
HOWELL MTN. FIRE	2353	1983	0	0
MILLER	3622	1985	8	31
MILLER	34564	1988	9	17
RESORT	483	1988	9	18
BLUE FIRE	5964	1988	9	21
WOODEN FIRE	836	1992	0	0
PRIEST FIRE	5112	1995	0	0
GUENOC	649	1996	0	0
PG&E #8	2106	1996	8	2
MARKLEY	333	1997	8	3
SIXTEEN	37893	1999	10	16
BERRYESSA	4859	2000	6	13
POPE	753	2002	8	9
SILVERADO	69	2003	10	29

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Agricultural Hazards

Phylloxera

The cost of replanting an acre of vineyard hit by phylloxera is between \$12,000 and \$15,000, according to Napa farm advisor Ed Weber. But Weber is just calculating the mechanical costs. According to Agustin Huneus, president and part owner of Franciscan Vineyards in Napa, the real dollar cost could be as high as \$70,000 an acre. That includes the cost of lost wine sales and lost crop."

"Weber calculates that out of Napa's total of 30,000 acres of vineyards, about 21,000 or 22,000 are planted on AXR rootstocks. It is his belief that sooner or later, all of that vineyard will need to be replanted." The estimated impact of this replanting would be approximately \$1.2 Billion Dollars.

Pierces Disease

Currently destroys about \$10-12 million of vines and crops annually, the impact of PD if an efficient non-native species vector, i.e, the Glassy winged sharpshooter is introduced could rise to almost \$1 Billion per annum in Napa county in the Wine Industry and related industries.

Building Inventory

Preliminary Building Inventory Representative Types

Building Type	County	City of Napa	Am. Can.	Calistoga	St Helena	Yountville	Total
Pre 1945 Wood Frame Single Family Home	3000	5000		800	800	200	9800
Post 1945 Wood Frame Single Family Home	7000	12500	2400	1000	1000	600	24500
Wood Frame Multi-Family Under 3 stories	50	200	10	10	10	5	285
Pre 1945 Wood Frame Commercial	25	150		5	5	5	190
URM non retrofitted	42	25	5	5	5		82
URM Retrofitted	5	150	5	15	25		200
Pre 1973 Tilt Up	5	10	0	2	5		22
Post 1973 Tilt Up	35	15	5	3	10		68
Non Ductile concrete commercial	5	25	10	5	5		50
Multi Unit Apartments	5	30	5	5	5		50
Light Commercial	120	650	55	25	25	10	885

This data is preliminary and is being vetted by the Napa County Planning Department. It is sufficiently accurate to define the scope of the potential impact on the Operational Area.