

**RESOLUTION NO. 12-124**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CUPERTINO  
APPROVING THE JOINT STEVENS CREEK DAM FAILURE PLAN**

WHEREAS, the Bay Area is subject to various earthquake-related hazards such as ground shaking, liquefaction, landslides, fault surface rupture, and tsunamis; and

WHEREAS, the Bay Area is subject to various weather-related hazards including wildfires, floods and landslides; and

WHEREAS, the City of Cupertino recognizes that disasters do not recognize city, county, or special district boundaries; and

WHEREAS, the City seeks to maintain and enhance both a disaster-resistant City and region by reducing the potential loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters; and

WHEREAS, the City is committed to increasing the disaster resistance of the infrastructure, health, housing, economy, government services, education, environment, and land use systems in the City, as well as in the Bay Area as a whole; and

WHEREAS, the California Government Code's Emergency Services Act (ESA), Section 8589.5(b), calls for public safety agencies whose territory contains populated areas below dams to adopt emergency procedures for the evacuation and control of these areas in the event of a partial or total failure of the dam; and

NOW, THEREFORE, BE IT FURTHER RESOLVED that the City commits to continuing to take those actions and initiating further actions, as appropriate, as identified in the Joint Stevens Creek Dam Failure Plan to provide guidance, direction and clarification to all participatory organizations involved in the dam failure preparation, response, recovery and mitigation activities.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Cupertino this 16<sup>th</sup> day of October, 2012 by the following vote:

Vote

Members of the City Council

AYES: Santoro, Mahoney, Chang, Sinks, Wong


NOES: None

ABSENT: None

ABSTAIN: None

ATTEST:

APPROVED:



Grace Schmidt, City Clerk

Mark Santoro, Mayor, City of Cupertino

# JOINT STEVENS CREEK DAM FAILURE PLAN



PREPARED BY THE SANTA CLARA COUNTY FIRE DEPARTMENT

CITY OF CUPERTINO CITY COUNCIL RESOLUTION DATE:

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## 1.0 Executive Summary

The Stevens Creek Dam and Reservoir is an earthen and rock 1,000 foot long dam rising 120 feet above the valley floor. Designed to trap 4,000 acre-feet of water, its current capacity is 3,138 acre-feet. The facility is owned and operated by the Santa Clara Valley Water District (SCVWD). The surrounding 1,042-acres are operated as Stevens Creek County Park, a unit of the Santa Clara County Parks and Recreation Department. The park abuts the Monta Bello Open Space Preserve's Piccetti Ranch Area to the west, the Fremont Older Open Space Reserve to the east, and the City of Cupertino to the north. Additionally, the waters of the reservoir could reach the cities of Sunnyvale, Mountain View, Los Altos, and Santa Clara County unincorporated areas.

In the United States dam failures are rare but they do occur. Although the risk of dam failure is uncertain, there is a high probability of a major earthquake occurring in the San Francisco Bay Area, potentially increasing our failure risk.

It is important to recognize that the time of year during which a dam failure occurs (e.g. peak of winter rainy season when reservoirs may be full vs. late fall when reservoir levels are depleted) can greatly influence the extent of flooding. Seasonal usage of open recreation spaces significantly affects the number of visitors using the parks and golf courses during daylight hours, particularly on weekends and holidays. The hour and day of the week affects the number of motorists transiting Stevens Creek Boulevard, McClellan Road, and Interstate 280 and Highway 85. Dam failure, in conjunction with another event, such as an earthquake, can magnify the impact.

This plan is written under the directive of the California Government Code's Emergency Services Act (ESA), Section 8589.5 (b), which calls for public safety agencies whose territory contains populated areas below dams to adopt emergency procedures for the evacuation and control of these areas in the event of a partial or total failure of the dam. The State of California Emergency Management Agency (CalEMA), formerly known as the Governor's Office of Emergency Services, is charged to review these local procedures and make recommendations for improvement.

The Stevens Creek Dam and Reservoir's owner, the Santa Clara Valley Water District, operates as a State of California Special District. The State of California's Department of Water Resources, Division of Safety of Dams, is the regulatory agency for SCVWD. The SCVWD is required by both California Government Code's Emergency Services Act, Section 8589.5 (b) and California Water Code, Division 3, Part 1, Chapter 2, Section 6002 to take all necessary actions to protect life and property in inundation areas and to provide inundation maps to CalEMA.

In accordance with the intent of the State Legislature (ESA §8589.5(b)(3)), future reviews and/or updates of this plan are to be undertaken every two years or as needed. The Santa Clara County Sheriff's Office, Santa Clara County Fire Department, as well as the rest of the Cupertino Disaster Council review this plan.

This plan addresses the potential failures (full or partial) of the Stevens Creek Dam and Reservoir that can impact the geographic areas of the cities of Cupertino, Sunnyvale, Mountain View and Los Altos. The plan is designed to:

1. Provide guidelines to the cities of Cupertino, Sunnyvale, Los Altos and Mountain View, affected public and private agencies, special districts, non-governmental organizations and mutual aid emergency organizations in the event of a potential or imminent/actual failure of the dam.
2. Assign planning and functional responsibilities.
3. Outline public notification and information strategies.
4. Identify resources to ensure a swift, coordinated response.
5. Outline recovery strategies for psychological and physical health effects, repairing infrastructure, debris removal and rebuilding.

This plan is written to conform to the National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS).

## 2.0 INTRODUCTION & PURPOSE

This Plan identifies how the cities, public and private agencies, special districts, non-governmental organizations and mutual aid organizations will prepare, respond, recover and mitigate a failure of the Stevens Creek Dam and Reservoir.

The goals of this plan are to:

- Mitigate the dam hazard, and
- Prevent or minimize injury and loss of lives

This plan is intended to provide guidance, direction and clarification to all participatory organizations involved in the dam failure preparation, response, recovery and mitigation activities. The document includes:

- Hazard analysis
- Identified inundation areas
- Roles and responsibilities of all stakeholders
- Evacuation guidelines

## 3.0 SITUATION & ASSUMPTIONS

The Joint Stevens Creek Dam Failure Plan will be jointly activated by the signatories to this document upon receipt of information of a potential or imminent/actual failure of the Stevens Creek Dam.

### 3.1 DAM PROFILE

Stevens Creek canyon, creek, dam and reservoir are named for an early Cupertino settler, Captain Elisha Stephens, whose name has undergone a modification in spelling. Stephens was a South Carolina native who is noted for reaching California as Captain of the 1844-45 Stephens-Murphy-Townsend Wagon train which was the first to cross the Sierra Nevada. Stephens settled in Santa Clara County along the creek in the Arroyo de San Joseph Cupertino, now called Stevens Canyon, on a 160 acre homestead in today's City of Cupertino. He named his land Blackberry Farm where he raised Mission grapes, fruit trees and blackberries. In 1859, he increased his land holdings by purchasing an additional 155 acres. Feeling crowded by other settlers, he sold his property in 1864 and began a ranch in Kern County in the area that became part of the City of Bakersfield. Stephens died at age 83 and is buried in Bakersfield

The Stevens Creek Dam and the Reservoir were originally constructed in 1935, as a Federal Public Works Administration Project 6051, for the Santa Clara Valley Water Conservation District. The Santa Clara Valley Water Conservation District was the predecessor of today's Santa Clara Valley Water District (SCVWD).

The Stevens Creek Reservoir and Dam, constructed as part of the Santa Clara County Water District reservoir and ground water management system, is a small 92 acre reservoir with an earthen and rock dam. According to the United States Geological Survey (USGS), the barren banks, cuts, and slopes surrounding the reservoir consist of Pliocene to early Quaternary Santa Clara Formation. It describes a poorly consolidated formation of gravel and sand deposited in streams along an alluvial fan system. There is ongoing uplift which gives the deposits a steeply dipping orientation around the reservoir.

The dam blocks the combined waters of Stevens, Swiss and Montebello Creeks as they descend down Stevens Canyon to San Francisco Bay. The 1,000 foot long dam rises 120 feet above the valley floor. It was designed to trap 4,000 acre-feet of water, forming a 1.1 mile long, 95 acre reservoir. The reservoir's capacity was reduced to 3,465 acre-feet in 1986 and to 3,138 acre-feet in 2004.





TABLE 3.1-1. SIGNIFICANT DAM AND RESERVOIR DATES

1935	Constructed
1978	Seismic performance analysis by SCVWD reported the dam can withstand 7.9 magnitude earthquake
1985	Seismic safety retrofit performed. Earthen berms constructed upstream and downstream to ensure adequate seismic stability; included raising the dam 10 feet. Other measures were taken to further protect the dam face and shoulders to facilitate water collection and inhibit landslides.
1986	Reservoir capacity reduced to 3,465 acre feet
1994	SCVWD prepared new inundation maps
2003	Reservoir capacity recalculated to 3,138 acre-feet
2007	Seismic stability evaluation by SCVWD. Results not yet provided
2008	City of Cupertino prepares new inundation maps - SCVWD unable to fund
2009	One of two outlet valves stuck in open position. Repair scheduled for Fall 2009.

### 3.2 HAZARD ANALYSIS

There are about 80,000 dams in the United States today and catastrophic dam failures have caused some of the largest disasters in the nation's history. In 1889, 2,209 lives were lost when the South Fork Dam failed above Johnstown, Pennsylvania. Between 1918 and 1958, 33 major U.S. dam failures caused 1,680 deaths. From 1959 to 1965, nine major dams failed worldwide. The 1928 St. Francis Dam failure killed more than 500. During the 1970s the Buffalo Creek, Teton, and Toccoa Creek dam failures collectively cost 175 lives and more than \$1 billion in losses.

Failure of earth and rock filled dams is slower to develop and earth and rock filled dams are less susceptible to catastrophic failure than concrete arch dams, however many of the key determinants of the dam's failure risk are increasing with time. As of 2012 the dam is 77 years old thus exceeding the fifty (50) year ASCE design life of a dam by 27 years. California's Inspection Rating Guide, reports dams over the age of 36 years old receive the poorest risk rating. The Stevens Creek Dam and Reservoir can only be considered safe within reasonable limits.

Dams can fail for many reasons. The most common reasons for dam failure include:

Piping - Internal erosion caused by embankment leakage, foundation leakage, and deterioration of pertinent structures appended to the dam.

Erosion - Inadequate spillway capacity causing overtopping of the dam, flow erosion and inadequate slope protection.

Structural Failures - Caused by an earthquake, slope instability or faulty construction.

These and other potential hazards are discussed below.

**EARTHQUAKE:** Earthquake-related damage is considered the most likely cause of a dam failure in Santa Clara County. The dam is situated in a seismically active area near the San Andreas, Berrocal, Monta Vista, Shannon and Sargent faults. "A seismic stability reevaluation of Stevens Creek Dam completed in 1978 by the Santa Clara County Water District concluded that 'the dam would not meet current performance criteria if subjected to the maximum credible earthquake – Magnitude 8.5 on the nearby San Andreas Fault'. The fault is 2.5 miles from the dam. In addition, an analysis by DSOD in 1979 concluded that the spillway capacity was inadequate." (Donald H. Babbit, M. ASCE, "Improving Seismic Safety of Dams in California, Geotechnical Practice in Dam Rehabilitation, Geotechnical Special Publication No. 35, ASCE, April 1993.)

Seismic performance analysis by SCVWD, in 1978, reported that the dam could withstand a 7.9 magnitude earthquake. In 1985 seismic safety retrofit work was performed. See Table 3.1-1.

In 2002 the USGS studied the affects of ground shaking in the Santa Clara Valley and determined that the valley was actually divided into two separate basins called the Evergreen Basin and the Cupertino Basin. Seismic modeling indicates that the basin configuration will cause seismic waves to reverberate and increase potential ground shaking.

**EXCESS WATER OR DROUGHT:** In a severe winter storm or series of storms a condition of saturated soil and excessively high water flow in the multi-creek drainage system flowing into Stevens Creek Reservoir can occur. Under this condition, earthquake ground shaking could cause significant earth movement.

In drought situations internal pore pressures can be lessened by low water storage levels, an earthquake can cause severe damage through shearing stresses within the earthen and rock materials. Any cracks or deformations extending below the water line can increase the risk of dam failure subsequent to an earthquake's structural deformations.

**LANDSLIDE:** The geological phenomenon of a landslide is primarily driven by gravity and a trigger is often required for a landslide to occur. However there are contributing factors that affect a dam's slope and create preconditions that can destabilize the slope

such as changes in groundwater (pore water) pressure, heavy rains, earthquakes adding loads and earthquake-caused liquefaction.

**SEEPAGE (PIPING) FAILURE:** All embankment dams have some seepage. Control of the seepage through monitoring and maintenance can prevent internal erosion and instability. Routine deformation monitoring of seepage can lead to anticipating problems and initiating remedial action before a structural failure occurs. SCVWD monitors the dam for seepage; however it is difficult to predict the extent that a warning is possible under such circumstances.

**TERRORIST EVENT OR MALEVOLENT ACT:** Acts of terrorism or malevolence causing structural damage to the dam is considered the least likely to occur. Any terrorist or malevolent act will be treated as an unanticipated catastrophic failure.

**MITIGATION EFFORTS:** The Stevens Creek Dam spillway is intended to handle a one in 10,000 year storm event. The spillway capacity has been upgraded to handle a flow of 15,700 cubic feet per second. When a failure of overtipping is anticipated and conditions permit, SCVWD may attempt to lower the reservoir level by releasing water into Stevens Creek. However, the dam and reservoir were designed for water conservation rather than flood control. Therefore, outlet capacity may not permit sufficient release of water quickly enough to have a significant effect on an immediate situation. Water release may allow more time for a gradual state of readiness, activation of emergency service responders, and SCVWD mitigation efforts.

The attached maps show the route of the water flow from the dam to the San Francisco Bay. They plot in color the inundation focusing at the street level from the dam to the bay.

The rate of inundation is calculated based on the sudden and full release of water as calculated by Schaaf & Wheeler in 2008. The timelines are presented based on flow over the right and left embankments. See Table 3.2.1-2.

TABLE 3.2.1-2. INUNDATION TIMETABLE

<b>Flood Time Right Overbank</b>				
<i>Flood Time</i>	<i>Peak Flow</i>	<i>Peak Time</i>	<i>De-flood Time</i>	<i>Location</i>
00:00 min	385,000 csf	7 minutes	13 minutes	Face of dam
15:00 min	205,000 csf	19 minutes	32 minutes	Blackberry Golf
55:00 min	15,000 csf	1 hr 30 min	2 hr 10 min	Fremont/Grant
60:00 min	12,000 csf	1 hr 55 min	4 hr 20 min	Grant/Portland
<b>Flood Time Left Overbank</b>				
24:00 min	15,000 csf	30 minutes	1 hr 28 min	Hwy 280/85
24:00 min	4,400 csf	36 minutes	2 hr 21 min	Homestead/Moffett
28:00 min	7,900 csf	1 hr 13 min	3 hr 31 min	Lawrence/El Camino
33:00 min	1,900 csf	2 hr 13 min	5 hr 53 min	Sunnyvale/El Camino
1 hr 45 min	6,000 csf	3 hr 10 min	7 hr 30 min	Miramonta/Cuesta
2 hr 15 min	3,400 csf	4 hr 30 min	8 hr 50 min	Central/Rengsdorff

\* csf = cubic square feet

### 3.3 ASSUMPTIONS

Using the known detailed technical information about the inundation, and conducting preparedness planning, people can significantly mitigate the potential affect of water release and so avoid or lessen injury or loss of life. Pre-disaster mitigation is essential through using dam inspections and resultant corrective, preventive and maintenance actions along with public education and community evacuation readiness.

Lives are in jeopardy due to dam failure. Costs, both direct and indirect, from a dam failure have wide ranging negative impacts on the infrastructure, the welfare of residents and on the local economy. The multiplier and ripple effects on the ecology and the socio-economic impact cannot be completely quantified.

Damaged primary and secondary roads may not be functional for days or weeks. Sheltering for people and pets may take place outside of the impacted area. Emergency sheltering and evacuation considerations must include the additional populations of tourists, vacationers, etc. Local resources will be overwhelmed and mutual aid will be required.

Potential affected infrastructure can include:

- Transportation arteries (interstates, state highways, rail lines)

- Communications (telephone lines, communications towers)
- Public works (water treatment, sewer and waste water lines)
- Health and medical facilities (healthcare facilities)
- Hazardous materials sites (above ground and underground storage units, pipelines, landfills)
- Energy providers (electric facilities, distribution lines)
- Animal care facilities (family pets, veterinary hospitals)
- Special needs requirements (schools, daycare, public recreational areas, transient populations)

### 3.4 MITIGATION CURRENT AND FUTURE

No price can be put on the lives that could be lost in the future due to dam failure. The probability of the failure of a particular reservoir and dam structure is very difficult to assess. Therefore mitigation, the lessening and alleviating of dam failure hazards; public education and early predictions and warning are key for preventing the loss of life, ecological destruction and property damage.

In understanding the causes and many variables that contribute to dam failure the emphasis on mitigation is fundamental and necessary. Dam inspection along with on-the-ground-studies provides the basis for assessing reservoir and dam safety status. From such evaluation appropriate and necessary maintenance, remedial work and upgrade can be performed. Dams must be maintained to keep them safe.

The SCVWD has a comprehensive dam safety program to ensure public safety and operational availability of the reservoir. This program includes:

- A structured maintenance program
- Dam instrumentation and surveillance
- Emergency action plans and exercises
- Expedient post-earthquake dam assessment procedures
- Special seismic studies

The dam is inspected every 18 months and includes a check of the spillway and concrete, rodent burrowing activity, erosion and outlet valves. There are hydrology gauges that determine the water level and alert the District, via radio, and update the District website in real time.

### PUBLIC EDUCATION

In addition, people living in the dam inundation area must be aware and understand their vulnerability and be prepared for a dam failure emergency. This plan cannot be successful unless the affected population knows what to do when confronted by a dam failure. To rapidly evacuate from the flood zone the public needs to:

- Know the methods of alert and warning

- Understand the definitions of danger warning conditions in order to take appropriate actions
- Have pre-planned and prepared what to take if called upon to evacuate, including taking nothing in extreme emergency
- Have discussed evacuation plans with neighbors to identify and assist people with access and functional needs
- Know the best evacuation route from their homes along with alternative routes
- Develop strategies to reduce the number of vehicles leaving the area
- Know the location of high ground sanctuaries in their area where they can retreat if evacuation time is extremely short, e.g. sudden actual failure
- Understand the disaster area reentry procedures

#### 4.0 CONCEPT OF OPERATIONS

The emergency services staff, from each of the signatory cities, are responsible for guiding the development, coordination and review of the procedures to support this plan. They are also responsible for ensuring that that the plan is accurate and consistent with their city EOPs. The plan provides a framework for each of the signatory cities and interfacing organizations and agencies to develop additional support plans and standard operating procedures.

The primary stakeholders for this plan are the people, businesses and ecological species who live within the inundation area. In 2010, estimates were 2,577 homes and 6,956 people living within the inundation area in Cupertino. The objective of this plan is to prevent or reduce the loss of life. This objective is to be met by mitigating the hazards and preparing to respond most effectively in all anticipated scenarios up to and including the worst case. The strategy for readiness is to educate, engage and exercise all stakeholders using this plan as a guide.

Functional responsibilities for this and all hazards are outlined in Appendix A of the Emergency Operations Plan.

This Plan is compliant with the Standardized Emergency Management System (SEMS) / National Incident Management System (NIMS) including the Incident Command System (ICS) and addresses the four phases of emergency management.

Mutual Aid requests for law enforcement, medical and fire will be conducted through established channels. The Santa Clara Operational Area will facilitate coordination with Los Altos, Mountain View and Sunnyvale. Each signatory city's EOC will respond to the event based on the situation present in that city. The Santa Clara County EOC automatically activates if two or more jurisdictions are impacted. The City and County will facilitate and coordinate resource acquisition.

This plan is based on two potential scenarios. The first is when the dam has experienced damage but it is not catastrophic and time exists for inspections and a calmer, more orderly evacuation. The second is when the dam has suffered catastrophic damage or outright destruction and the fastest evacuation possible is

called for. For purposes of emergency response, the terms *imminent* and *actual* failure are considered the same, although there may be a time lag between imminent and actual failure. Emergency managers and responders are to assume that immediate response actions are required.

Validation of this Plan will be through tabletop, functional and full-scale exercises.

## 5.0 Response

### 5.1 Detection

**DETECTING AND REPORTING THE THREAT** Notification of a possible dam emergency may come from the dam owner (SCVWD), the Santa Clara County Communications Center, Santa Clara County Sheriff's Office, Stevens Creek park staff or members of the public. Any reported threat of potential or imminent/actual dam failure that is not originated by an official response agency must be verified prior to plan activation.

Following a 5.0 or greater magnitude earthquake within 20 miles of Stevens Creek Dam, a SCVWD Post-Earthquake Dam Assessment Program (PEDAP) employee self-dispatches to assess the dam. Detailed follow-up assessments or inspections by staff with specialized expertise are conducted as necessary.

**EMERGENCY ACTIVATION** There are two general conditions that will govern activation of emergency operations plans in the event that Stevens Creek Dam catastrophically fails

1. **POTENTIAL FAILURE** – SCVWD is responsible for immediately notifying the signatory cities and Operational Area (OA) Emergency Operation Centers (EOC) if any unsafe conditions are detected or likely and the status of any remedial actions anticipated by SCVWD.

Any individual who receives information about a potential threat or unsafe condition should call 911. Upon receipt, County Communications will begin notifications, per the Notification List.

The District will continue to provide timely information through their Public Information Officer and Subject Matter Experts. In this scenario, it is anticipated that time will be available to issue warnings and take preparedness actions for affected areas.

The Sheriff's Office will conduct response activities as deemed necessary. In the event of notification of Potential Dam Failure, evacuation operations will commence with the concurrence of the City of Cupertino Director of Emergency Services or his/her designee. Notification list calls will be completed with every notice of potential dam failure. All notifications will be made, regardless of the time of day. See Notification List.

2. **IMMINENT OR ACTUAL FAILURE** – If the SCVWD, the Sheriff's Office, County Park Rangers, members of any public safety agency, or representatives of the City decide

the dam has failed or is about to fail, County Communications will be notified immediately, notifications per the Notification List will be made immediately, and evacuations of the inundation zone will begin immediately under the direction of the Santa Clara County Sheriff's Office.

If County Communications cannot comply, SCVWD retains responsibility to make notifications to respective public safety dispatch centers followed by emergency managers and allied agencies. Completion of the Notification List calls will be completed by each agency.

## 5.2 NOTIFICATION

### PUBLIC WARNINGS OF EVACUATION

The public living in areas that may be affected by failure of the Stevens Creek Dam will be warned through SIMULTANEOUS notification methods:

- The Emergency Alert System (EAS) will broadcast general notice over Bay Area commercial radio and television stations. County Communications or the County Office of Emergency Services/Santa Clara Operational Area EOC must initiate this action.
- County Communications will notify all affected dispatch centers and first responders on their radio frequencies.
- ALERT SCC – Automated phone, email and text notification – message may be written by the Santa Clara County Operational Area EOC, County Communications, or the Cupertino PIO and approved by the Cupertino Director Of Emergency Services or his/her designee.
  - Alert SCC note – It is not appropriate for this plan to usurp the decision making flexibility of people on the scene when an emergency occurs. They must have the ability to adapt to the needs and demands placed on them at that time. However, it will be worth considering at that time to have one immediate Alert SCC message directed to people in the inundation zone, followed by another Alert SCC message when time permits to the rest of the City and County.
- Cupertino's Everbridge System
- Broadcast alert over school alert monitoring receivers during school hours.
- Block Leaders telling neighbors
- Cablecast over the Cupertino City Channel Comcast 26 & Uverse 99
- AM radio broadcast on City owned AM 1670
- Local radio and television stations
- Electronic freeway signs
- Sheriff's patrol units using vehicle-mounted loud speakers, helicopter and personal contact
- Mobile units of the Cupertino Public Works Department and Park rangers may augment this effort
- Cupertino website



- Notification List

Warnings and Evacuation notifications will advise residents of:

- Evacuation routes, with pedestrian evacuation most desired, and with ultimate evacuation methods left to the discretion of personnel in the field and the Incident Commander
- Temporary Evacuation Points (TEPs)
- Transportation resources available
- Shelter sites including arrangements for livestock and pets
- Location of medical services
- Assistance for those with access and functional needs

Attempt will be made to provide information in the three main languages of the area (English, Mandarin Chinese, & Hindi), and in a worst case scenario initial notifications will likely be brief for life safety purposes with more information provided in subsequent notifications.

The amount of lead-time may vary from several minutes to several hours.

#### JOINT INFORMATION CENTER

A Joint Information Center may be established by the County to handle news media inquiries and provide a point of contact for elected and appointed officials and appropriate subject matter experts and the news media. All participating emergency response agencies are invited to provide representatives to staff the center.

### 5.3 EVACUATION

In the event of notification of Imminent or Actual Dam Failure, contingent upon first responder safety, on-duty members of the Santa Clara County Sheriff's Office will commence immediate evacuation of the threatened areas under the authority contained in California Penal Code section 409.5, (Sheriff ordered evacuations for public safety).

Notification and evacuation activities will continue until all residents of the affected area are relocated to safe areas or it becomes too dangerous to continue.

For the purposes of emergency response, the terms *imminent* and *actual* failure are considered the same. Although there may be a time lag between imminent and actual failure, emergency managers and responders are to assume that there is no time for additional mitigation actions and that immediate response actions are required.

The Sheriff's Office will decide what the appropriate methods of evacuation will be, which will for the most part be a choice between allowing people to use vehicles or requiring them to evacuate on foot. At issue is the possibility of vehicular traffic getting jammed, thus inhibiting effective evacuation.

Roughly speaking, the inundation zone runs from south to north bordered by Linda Vista Drive and Byrne Avenue on the east side, and Stevens Canyon Road and Foothill

Boulevard on the west side. This will vary depending on the reservoir's water level. Law enforcement personnel will be able to approach the eastern side of the inundation zone directly from Interstate 280, Stevens Creek Boulevard, and McClellan Road. Getting to the western side of the inundation zone will be more difficult and time consuming because personnel will need to travel south to Saratoga down De Anza Boulevard and/or Highway 85, then down Saratoga-Sunnyvale Road to Pierce Road, then northwards up Pierce Road and Mt. Eden Valley Road past the Stevens Canyon Dam and into the area west of the inundation zone. There is no escaping the fact that this will delay the response to the western side of the inundation zone considerably.

The evacuation process will have three components:

- Main routes out of the danger zone
  - The main west side routes, from south to north will be:
    - Ricardo Drive
    - Riverside Drive
    - McClellan Road
    - Santa Paula Avenue
    - Palm Avenue
    - Stevens Creek Boulevard
    - Cupertino Road
    - Carta Blanca Street
  - The main east side routes, from south to north will be:
    - Columbia Avenue
    - Hyannisport Drive
    - McClellan Road
    - Stevens Creek Boulevard
- Key intersections where the Sheriff's Office and/or other law enforcement agencies will control the flow and direction of traffic
  - The west side key traffic control intersections will be:
    - Scenic Boulevard & Palm Avenue

- McClellan Road & Foothill Boulevard
- Foothill Boulevard & Palm Avenue
- Stevens Creek Boulevard & Carmen Road
- Foothill Boulevard & Vista Knoll Boulevard
- The east side key traffic control intersections will be:
  - McClellan Road & Byrne Avenue
  - Stevens Creek Boulevard & Byrne Avenue
  - Stevens Creek Boulevard & Bubb Road
- The establishment of Temporary Evacuation Points (TEPs) where evacuees will find safety out of the danger zone. TEP's are nothing more than gathering locations out of harm's way, and may become an intermediate step before the establishment of shelters. In some circumstances, locations such as parking lots or parks can serve very well as TEPs.
  - The west side of the inundation zone has only one adequate TEP location, at the Monte Vista Recreation Center and Park
  - The east side of the inundations zone has the following possible locations that can serve as TEPs:
    - Kennedy Middle School
    - Monte Vista High School
    - De Anza College
    - Quinlan Community Center

#### 5.4 TRANSPORTATION

Valley Transportation Agency (VTA) units may be used to move the evacuated public to mass care sites. The Cupertino EOC will support the on-scene Unified Command as it stages and coordinates such assets. VTA supervisory personnel will be asked to report to the Incident Command Post to act as Liaison. VTA knowledge of local transportation routes will be useful not only in coordinating VTA assets but in assisting with evacuation routes, TEPs and shelter/mass care facility location planning.

Transportation assets of the Fremont Union High School and Cupertino Unified School districts may be requested to augment VTA assets.

The Sheriff's Department is responsible for traffic control on all routes leading into and out of the evacuation area. Traffic control will be coordinated with

- California Highway Patrol
- Sunnyvale Department of Safety
- Los Altos Police Department
- Mountain View Police Department
- Cupertino Code Enforcement Division
- DeAnza College Police
- Citizen Corps Volunteers (supporting role)
- City of Cupertino Public Works Department (supporting role)

Traffic on main thoroughfares in the Cities of Cupertino, Sunnyvale, Los Altos and Mountain View can be expected to increase if the CHP elects to detour traffic as a safety precaution from the vicinity of the I-280 and Highway 85 interchange. Increased traffic may also be seen on selected streets and expressways of the Cities of Mountain View, Los Altos, Santa Clara, and San Jose.

#### EVACUATION AREA SECURITY

To ensure the safety of residents' personal property, the evacuation area will be secured and access will be by special pass only. Procedures for obtaining access passes and periods of approved re-entry will be posted at Mass Care facilities and shelters. The Public Information Officer will distribute this information through all appropriate media.

Decisions on re-entry into the evacuation area will be made jointly by the Cupertino City Manager and/or the County Executive in consultation with the SCVWD, the Santa Clara County Sheriff's Office, and the Santa Clara County Public Health Department, the Santa Clara County Fire Department, the Santa Clara County Department of Environmental Health, and other relevant public agencies.

#### 5.5 MASS CARE AND SHELTER

The City operates three facilities that may be opened on short notice as Mass Care Centers for evacuees:

- Cupertino Senior Center, 21251 Stevens Creek Boulevard
- Quinlan Community Center, 10185 North Stelling Road
- Cupertino Sports Center, 21111 Stevens Creek Boulevard

Two additional partner facilities may be requested:

- Northwest YMCA 20803 Alves Drive
- De Anza Community College, 21250 Stevens Creek Boulevard

## AMERICAN RED CROSS SHELTER

The City of Cupertino has an MOU with the American Red Cross (ARC) Silicon Valley Chapter to operate shelters for City disaster victims. The ARC usually makes final site selection at the time of need. The ARC can open a mass care shelter in a matter of hours, upon request, if their local volunteers are not impacted by the event.

Communications and decision making between the City and the ARC will be made directly between City Hall and Chapter Headquarters in a local disaster, and between City Hall and the Operational Area EOC during a Bay Area regional disaster. City staff and volunteers are trained in ARC shelter operations and can open at least one shelter until the ARC can take over its operation. The City will publicize the opening of ARC shelter(s) and assist evacuees in reaching facilities.

## MEDICAL AID

Any first responder may activate the Multiple Patient Management Plan (MPMP) when they become aware that a dam failure is possible. Santa Clara County Communications will notify local hospitals and medical facilities per the MPMP.

The Cupertino Medical Center, 10050 Bubb Rd., is the local provider of medical aid. The Cupertino Medical Reserve Corps can assist at TEPs and at shelters.

## 5.6 ANIMAL CARE AND SHELTER

The Cupertino Citizen Corps volunteers, in coordination with the Operational Area, will provide shelter for owned, injured or lost pets per the Animals in Disaster Annex to the EOP.

## 5.7 PEOPLE WITH DISABILITIES

People who cannot readily react or respond to traditional emergency notifications must plan ahead. There may be little or no time to explain evacuation details. It is important that neighbors discuss plans and develop relationships to help each other before disaster occurs.

The public should notify the nearest authorities, or 9-1-1, of the locations and names of people with access or functional needs (i.e. non-ambulatory or limited mobility, no transportation) who require individual assistance.

## 5.8 SAFETY AND SECURITY

The Santa Clara County Sheriff's Office is the lead agency in all safety and security matters and will;

- Identify procedures for perimeter and interior security of the area before re-entry and in early days of re-entry (eg., identification requirements, passes, anti-looting patrols)

- Identify conditions and procedures for lifting evacuation and procedures for re-entry by the populace

#### DISASTER ASSISTANCE

As soon as possible, a Local Assistance Center (LAC) will be opened in cooperation with state, federal and non-governmental organizations to assist victims. The City Public Information Officer will work with the news media to inform the public about the opening of such facilities, location and available services. Long term assistance to disaster victims from both public and private non-profit agencies will be available at the LAC.

### 6.0 Evacuation Plan Testing and Maintenance

All aspects of the dam failure response must be regularly tested. Testing includes:

- Notification List test – once per year
- Cupertino Everbridge System – once per year
- Tabletop exercise with affected neighborhoods, schools, businesses, first responders, Citizen Corps volunteers and non-governmental organizations – at the City's discretion
- Functional exercise with affected neighborhoods, schools, businesses, first responders, Citizen Corps volunteers and non-governmental organizations – at the City's discretion
- Full Scale – at the City's discretion

### 7.0 PUBLIC EDUCATION

This plan cannot be successful unless the affected population knows what to do. It is important that every entity represented in this plan make every effort to inform the public through every means available to the organization.

Public education resources include

- Letters and information presented to people in the inundation area
- Informational brochure sent to each home in affected neighborhoods annually
- Information posted on signatory cities' websites, Twitter, Facebook, and other social media
- Information posted in signatory cities' facilities
- Information posted at Stevens Creek Park,
- Information provided on cable TV, radio, You Tube, and other video distribution channels
- Information included in signatory cities' community emergency preparedness training to community members

## 7.1 SIGNAGE

The Cupertino Public Works Department will install signage in the inundation zone directing residents what routes should be used to evacuate the area. The primary locations for evacuation signs will be on the two east/west routes out of the area: Stevens Creek Boulevard and McClelland Road, although additional locations for signs will be added. The signs will be easily identified with blue instructions on a white background.

## 8.0 AUTHORITIES AND REFERENCES

### FEDERAL

1. National Dam Safety Act of 2006

### STATE

1. California State Law, SB 896 ( -TBD- if same as California Dam Safety Act of 1972)
2. California Government Code Division 1, Title 2, Chapter 7, California Emergency Services Act §8550 and §8589.5b, as amended
3. California State Emergency Plan, Governor's Office of Emergency Services, 2005
4. California State Law AB 1195, Chapter 65
5. California Water Code Division 3, Part 1, Chapter 2, Sections 6002, 6003 and 6004
6. California Penal Code §409.5
7. California Vehicular Code §2812

### LOCAL

1. Cupertino Emergency Operations Plan
2. Cupertino Municipal Code, Cupertino Emergency Ordinance Sections 2.40.020, 2.40.25, 2.40.30, 2.40.40, 2.40.45, 2.40.50, 2.40.70 and 2.40.080
3. Cupertino Emergency Operations Plan Debris Removal Annex (TBS)
4. Santa Clara Valley Water District Web Pages
  - A. SCVWD Home – [www.valleywater.org](http://www.valleywater.org)
  - B. SCVWD Rainfall and Reservoir Status Report – [www.valleywater.org/Services/MeasuresAndReadings.aspx](http://www.valleywater.org/Services/MeasuresAndReadings.aspx)
  - C. SCVWD Reservoir Storage Report – [www.valleywater.org/Services/Reservoirs.aspx](http://www.valleywater.org/Services/Reservoirs.aspx)
  - D. SCVWD ALERT Hydrologic Data Collection System – [www.valleywater.org/Services/AboutAlert.aspx](http://www.valleywater.org/Services/AboutAlert.aspx)
  - E. SCVWD ALERT System Real-time Data – [www.valleywater.org/Services/Alert.aspx](http://www.valleywater.org/Services/Alert.aspx)
5. Other Relevant Web Pages
  - A. FEMA National Dam Safety Program – [www.fema.gov/plan/prevent/damfailure/ndsp/shtm](http://www.fema.gov/plan/prevent/damfailure/ndsp/shtm)

- B. National Inventory Of Dams – [www.nid.usace.army.mil](http://www.nid.usace.army.mil)
  - C. American Society Of Civil Engineers Infrastructure Report Card – Dams – [www.infrastructurereportcard.org/fact-sheet/dams](http://www.infrastructurereportcard.org/fact-sheet/dams)
  - D. Dam Safety Action – [www.damsafetyaction.org](http://www.damsafetyaction.org)
  - E. Association Of State Dam Safety Officials – [www.damsafety.org](http://www.damsafety.org)
6. Division of Safety of Dams - Important Observations, Recommendations or Actions Taken – From A.J. Mangney, DSOD Inspector, on April 30, 2008
- A. Remove woody vegetation from the downstream face and along the right downstream groin.
  - B. Initiate a rodent control program and backfill existing dens with compacted fill. This item should be a high priority before more extensive repairs are required.
  - C. Repair erosion gullies on the dam faces.
  - D. Clean out weep holes and remove vegetation along panel joints in the spillway.

## 9.0 Attachments

- 1. Notification List
- 2. Organizational Adoption
- 3. Distribution List
- 4. Maps – (Manila Envelope Insert To Binder Cover)
  - a. Schaff & Wheeler Inundation Map 1
  - b. Schaff & Wheeler Inundation Map 2
  - c. GIS Color Inundation Map 1
  - d. GIS Color Inundation Map 2
  - e. GIS Color Inundation Map 3
  - f. Evacuation Map With Temporary Evacuation Points (TEPs) & Main Evacuation Routes



## Notification List

The hub of communications and notifications is the Santa Clara County Communications Department. County Communications will be notified immediately by the first person aware of an emergency at the dam and will then make notifications of the agencies listed below **(listed by roman numerals)**. Those agencies will then make further internal notifications as described below **(alphabetized between roman numerals)**. Phone numbers, radio frequencies, and the like are not listed here because changes to them cannot be tracked accurately in this plan, and because those responsible for knowing those methods of communications have accurate and up to date listings. Therefore, it is the responsibility of each agency that has notification tasks listed below to maintain up to date and accurate methods of communications with the agencies they are responsible for, with multiple and redundant systems as backups. After initial notifications are made of a dam emergency County Communications will continue to update the listed agencies on the severity of the emergency and status changes, as needed, in consultation with the Incident Commander on the scene.

Alert SCC will be used both to make internal notifications at the County and City level, and also to provide information to the public. However, it is important to note two limitations to the Alert SCC system that are relevant to a dam emergency. First, in the case of a catastrophic dam emergency an Alert SCC message cannot be sent quickly enough to warn or notify anybody of the initial water flow or wave, and second, Alert SCC requires functioning phone and internet systems to be useful. Hence, Alert SCC will be valuable in providing people information concerning what to do after a dam emergency (assuming systems are working) but it is unlikely that it will be useful during the dam emergency.

Dam failure annexes to the Emergency Operations Plans for the cities of Los Altos, Mountain View, and Sunnyvale will give detailed notifications in those cities, as are made below for the City of Cupertino.

County Communications notifications will be made to the agencies listed below:

- I. California Highway Patrol
  - A. CalTrans
- II. City of Cupertino – Cupertino Office of Emergency Services (OES)
  - A. Amateur Radio/CARES
  - B. American Red Cross – Silicon Valley Chapter
  - C. California Water Company
  - D. Cupertino CERT Block Leaders
  - E. Cupertino City Manager's Office
    1. Cupertino City Council
  - F. Cupertino Medical Center
  - G. Cupertino Medical Reserve Corps (MRC)
  - H. Cupertino Code Enforcement
  - I. Cupertino Neighborhood Watch Coordinator

- J. Cupertino Parks & Recreation Department
  - 1. Blackberry Farm
  - 2. Blackberry Golf Course
  - 3. Blue Pheasant Restaurant
  - 4. Deep Cliff Golf Course
  - 5. Linda Vista Park
  - 6. McClellan Ranch Park
  - 7. Monte Vista Park & Recreation Center
  - 8. Quinlan Community Center
  - 9. Senior Center
  - 10. Sports Center
  - 11. YMCA
- K. Cupertino Public Information Officer
  - 1. Cupertino Chamber of Commerce
  - 2. Cupertino City Staff – non EOC
  - 3. Cupertino PIO Staff
  - 4. Media
  - 5. Santa Clara County Library – Cupertino Branch
  - 6. Webmaster
- L. Cupertino Public Works Department
- M. Cupertino Sanitary District
- N. Cupertino Union School District
  - 1. Kennedy Middle School
  - 2. Lincoln Elementary School
  - 3. Stevens Creek Elementary School
  - 4. CUSD District Staff
  - 5. CUSD Buses
  - 6. CUSD Custodians
- O. Cupertino Disaster Council
- P. De Anza College
- Q. Fremont Union High School District
  - 1. Monte Vista High School
- III. City of Los Altos Police Department
- IV. City of Mountain View Police Department
  - A. Mountain View Office of Emergency Services
- V. City of Sunnyvale Department of Public Safety
  - A. Sunnyvale Office of Emergency Services
- VI. Hospitals (all)
- VII. Pacific Gas & Electric (PG&E)
- VIII. Rural/Metro Ambulance Service
- IX. San Jose Water Company
- X. Santa Clara County Emergency Alert System
- XI. Santa Clara County Emergency Medical Services
- XII. Santa Clara County Fire Department
- XIII. Santa Clara County Office of Emergency Services (OES)
- XIV. Santa Clara County Sheriff's Office

- A. De Anza College Police Department
- XV. Santa Clara Valley Water District
- XVI. Stevens Creek County Park Rangers
  - A. Stevens Creek Quarry
- XVII. Valley Transportation Authority

I. Cupertino Parks & Recreation  
 1. Blackberry Farm  
 2. Blackberry Golf Course  
 3. Blue Restaurant  
 4. Deep Cliff Golf Course  
 5. Linda Vista Park  
 6. McCallan Ranch Park  
 7. Monte Vista Park & Recreation Center  
 8. Quilan Community Center  
 9. Senior Center  
 10. Sports Center  
 11. YMCA  
 K. Cupertino Public Information Officer  
 1. Cupertino Chamber of Commerce  
 2. Cupertino City Staff - non EOC  
 3. Cupertino PIO Staff  
 4. Media  
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 1. Kennedy Middle School  
 2. Lincoln Elementary School  
 3. Stevens Creek Elementary School  
 4. CUSD District Staff  
 5. CUSD Buses  
 6. CUSD Custodians  
 O. Cupertino Disaster Council  
 P. De Anza College  
 Q. Fremont Union High School District  
 1. Monte Vista High School  
 City of Los Altos Police Department  
 City of Mountain View Police Department  
 A. Mountain View Office of Emergency Services  
 City of Sunnyvale Department of Public Safety  
 A. Sunnyvale Office of Emergency Services  
 Hospitals (all)  
 Pacific Gas & Electric (PG&E)  
 Paramedic Ambulance Service  
 San Jose Water Company  
 Santa Clara County Emergency Alert System  
 Santa Clara County Emergency Medical Services  
 Santa Clara County Fire Department  
 Santa Clara County Office of Emergency Services (OES)  
 Santa Clara County Sheriff's Office

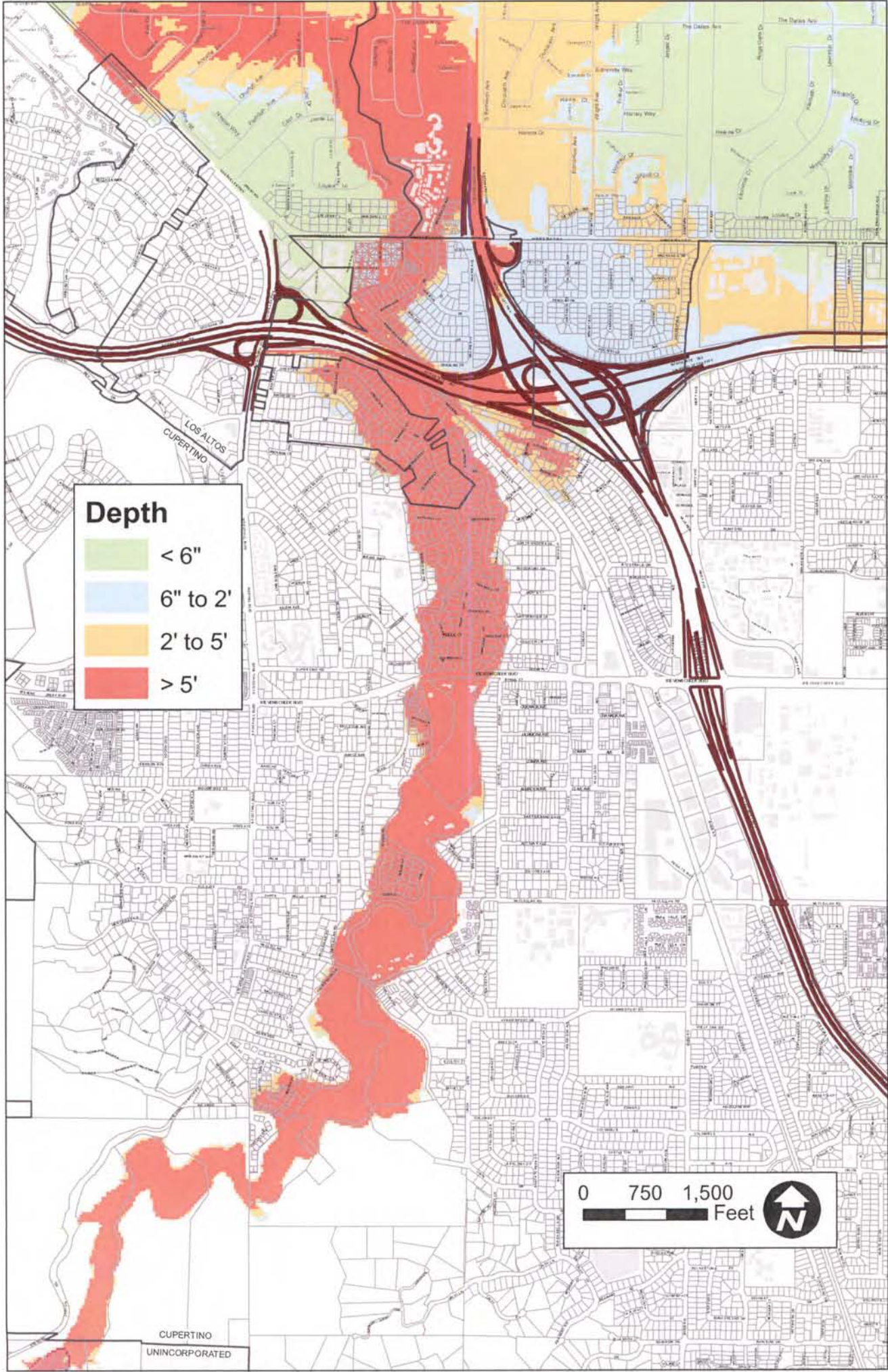
## DISTRIBUTION LIST





City Departments and Organizations	Hardcopy	E-Mail or CD Copy	Letter w/ Web Link
Administrative Services			
American Red Cross – Silicon Valley Chapter			
Block Leader Coordinator			
CalEMA			
CalEMA Coastal Region			
California Highway Patrol			
California Water Service			
CalTrans			
Citizen Corps Coordinator			
City Attorney			
City Manager			
City of Cupertino			
City of Los Altos OES			
City of Mountain View OES			
City of Sunnyvale OES			
Community Development			
Cupertino Sanitary District			
Cupertino Union School District			
Emergency Operations Center			
Emergency Operations Center Alternate			
Environmental Affairs			
Foothill/DeAnza Community College District Police			
Fremont Union High School District			
Lehigh Southwest Cement Company			
Library			
Los Altos Garbage			
Office of the Mayor			
Parks and Recreation			
PG&E			
Planning Commission			
Public Information Officer			
Public Safety Commission			
Public Works			
San Jose Water Company			
Santa Clara County Fire Department			
Santa Clara County OES			
Santa Clara County Parks & Rec			
Santa Clara County Public Health Department			
Santa Clara County Sheriff's Office			

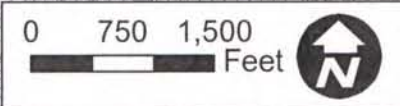






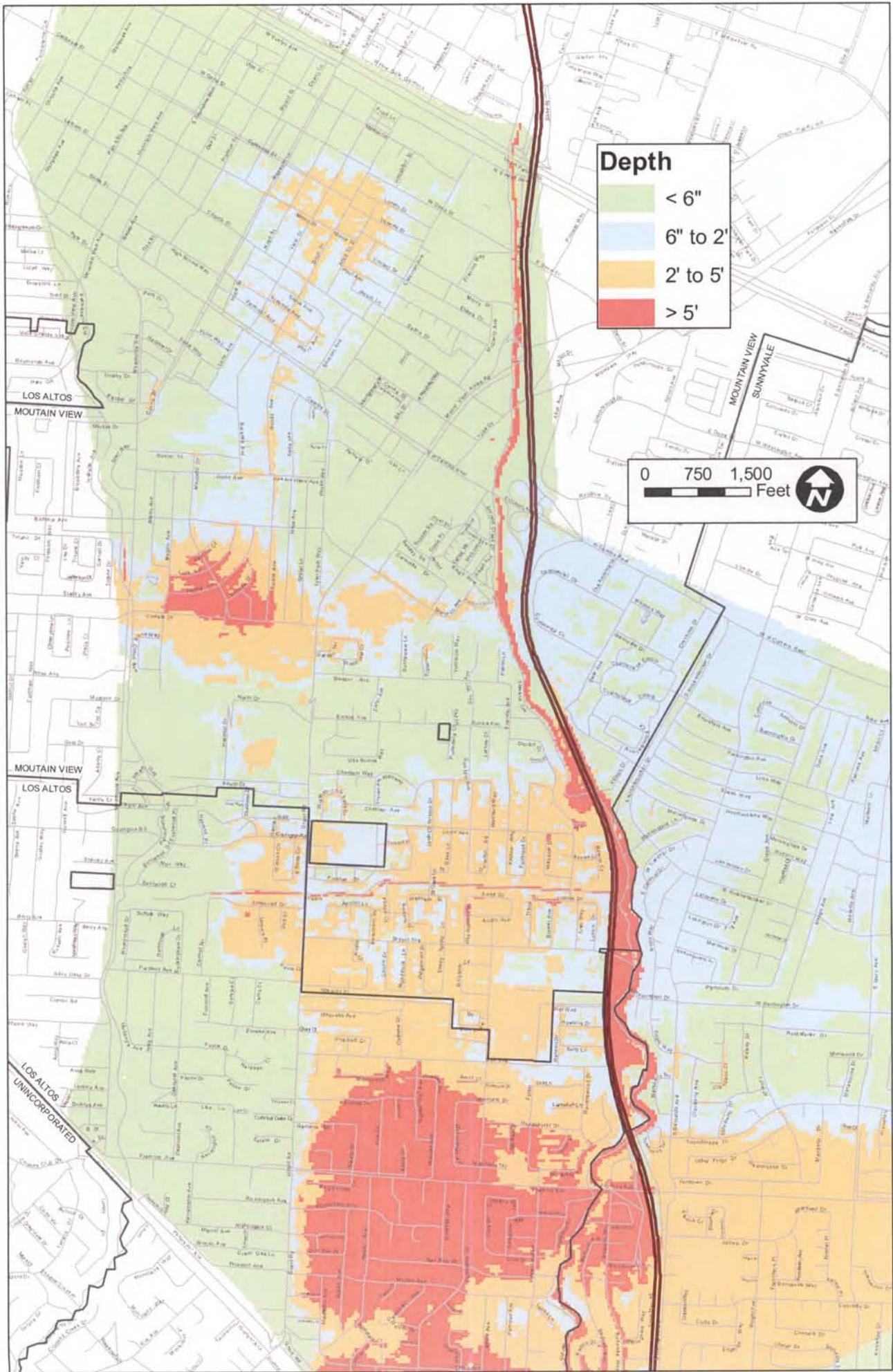


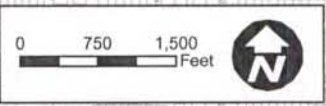
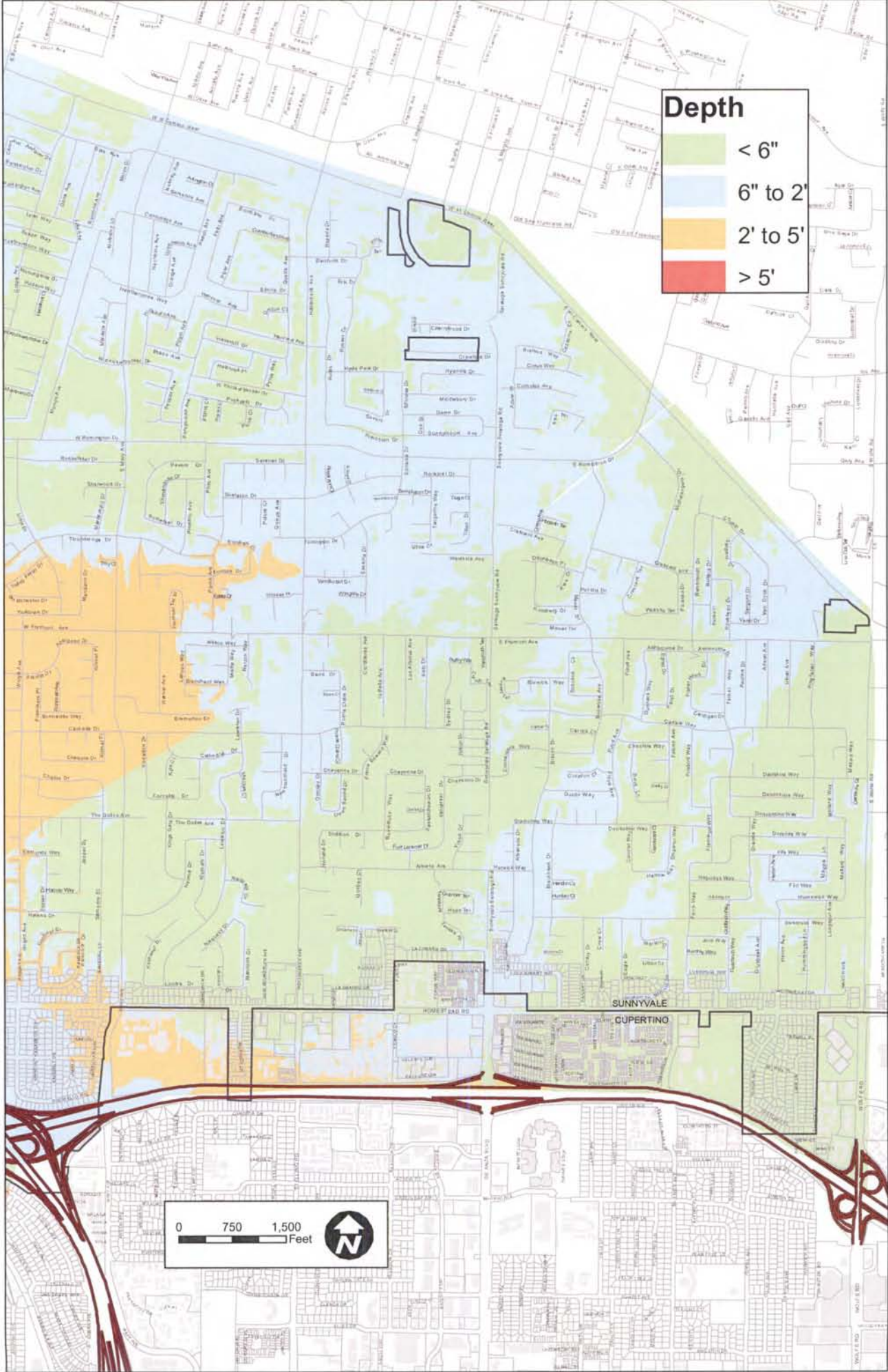
Depth	
	< 6"
	6" to 2'
	2' to 5'
	> 5'

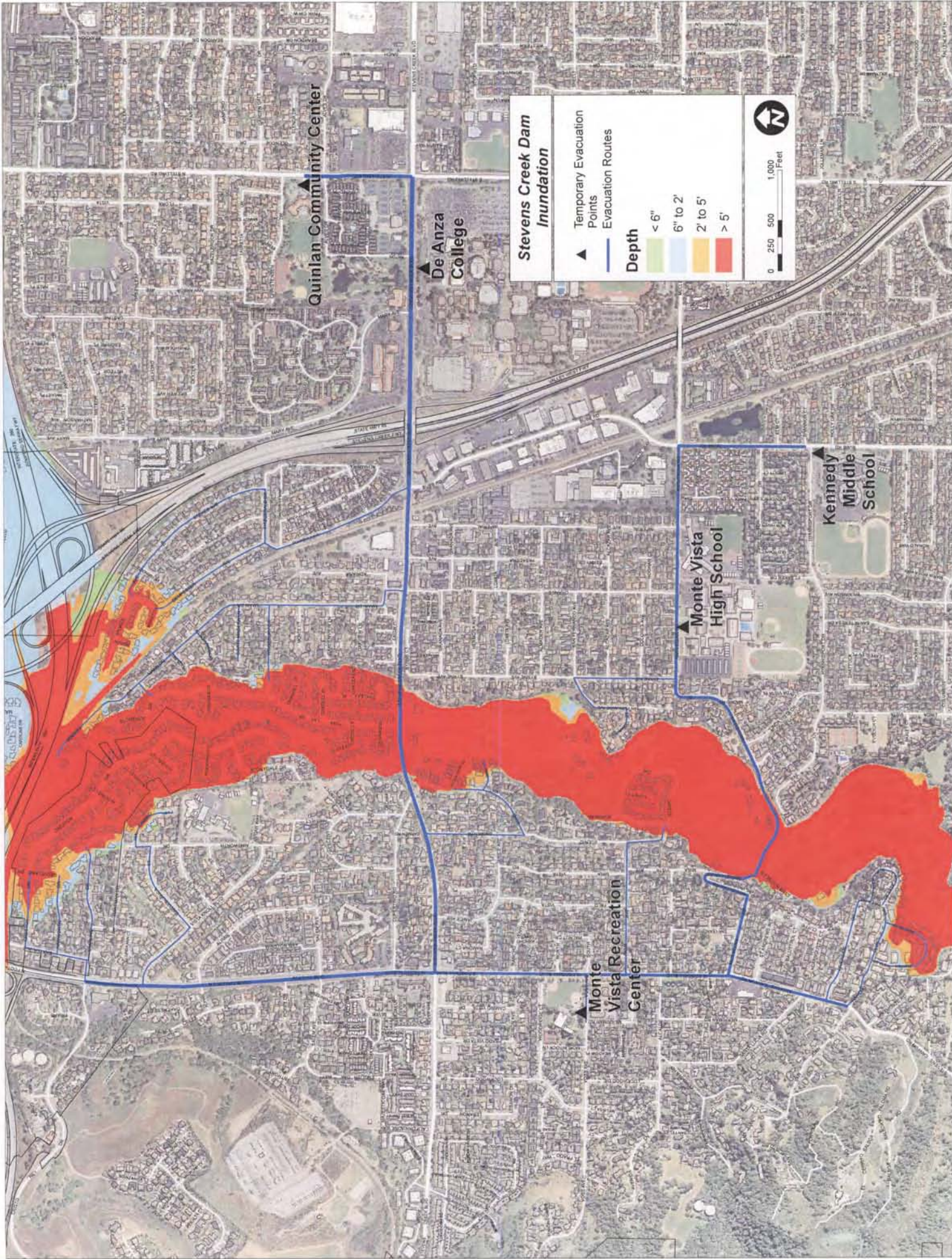


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UNINCORPORATED





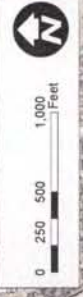




### Stevens Creek Dam Inundation

- ▲ Temporary Evacuation Points
- Evacuation Routes

Depth
< 6"
6" to 2'
2' to 5'
> 5'



Quinlan Community Center

De Anza College

Monte Vista Recreation Center

Monte Vista High School

Kennedy Middle School