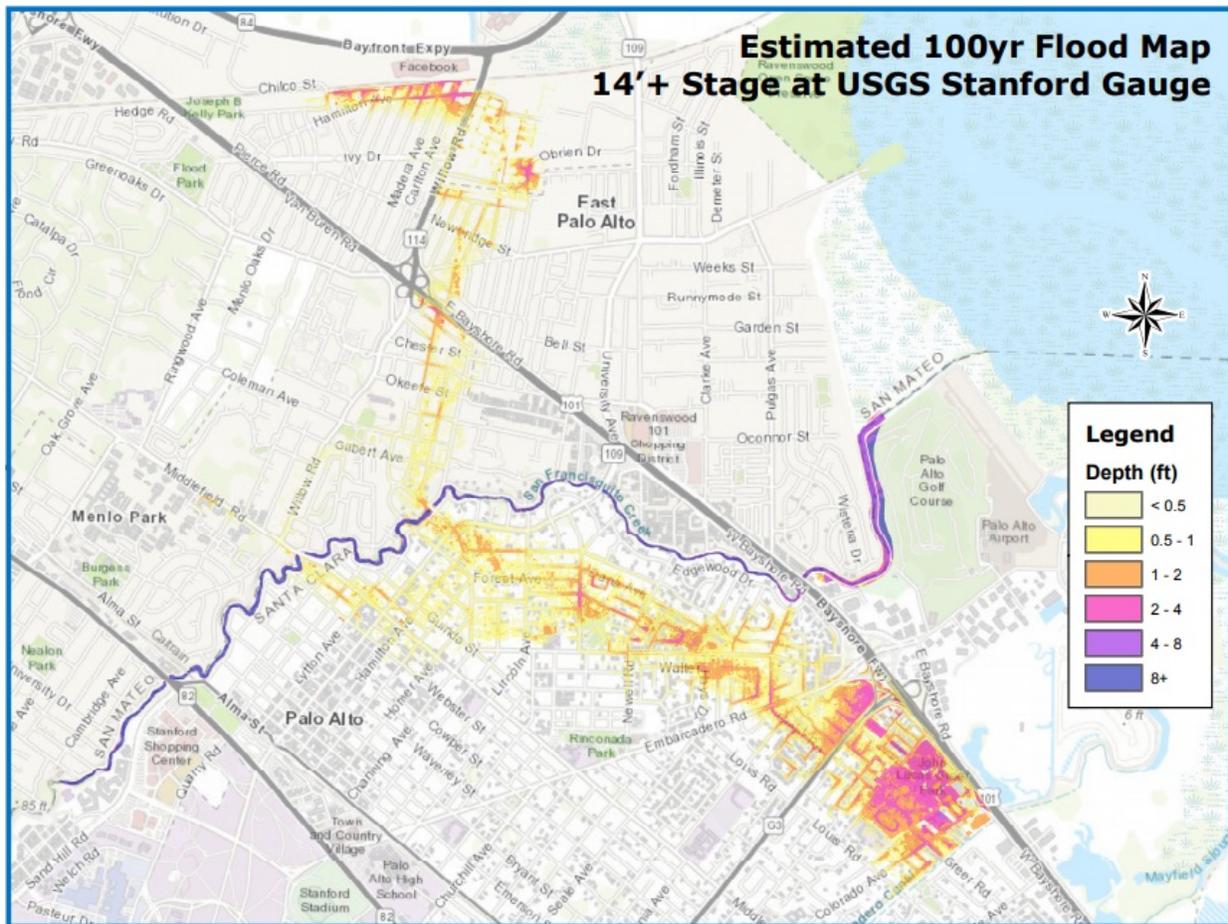


SAN FRANCISQUITO CREEK EMERGENCY ACTION PLAN



Updated: January 13, 2020

SANTA CLARA VALLEY WATER DISTRICT

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ACRONYMS

Readers of this plan may find it useful to be familiar with the Acronyms used in the document.

Acronym	What is it
AC	Agency Coordinator
ALERT	Automated Local Evaluation in Real Time
AP	Action Plan
AR	Agency Representative
AAR	After-Action Report
City	City of Palo Alto
D&C	Design & Construction
DOC	Departmental Operations Center
DWR	California Department of Water Resources
EAP	Emergency Action Plan
ES&S	Emergency Services & Security
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FIT	Field Information Team
HH&G	Hydrology, Hydraulics & Geomorphology
IC	Incident Command(er)
JIC	Joint Information Center
JIS	Joint Information System
NWS	National Weather Service
OC	Office of Communications
OES	Office of Emergency Services
OGR	Office of Government Relations
O&M	Operations & Maintenance
PIO	Public Information Officer
SFCJPA	San Francisquito Creek Joint Powers Authority
SFC MAC	San Francisquito Creek Multi-Agency Coordination
SME	Subject Matter Expert
USGS	United States Geological Survey
Valley Water	Santa Clara Valley Water District

RECORD OF HOLDERS OF CONTROL COPIES OF THIS EMERGENCY ACTION PLAN

Copy Number	Unit/Location	Person Receiving Copy	Date
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13	Office of Communications	Jose Villarreal	Jan. 2020
14	City of Palo Alto	Ken Dueker	Jan. 2020
15	San Francisquito Creek Joint Power Authority	Len Materman	Jan. 2020

RECORD OF REVISIONS AND UPDATES MADE TO EMERGENCY ACTION PLAN

Revision Number	Date	Revision Made	By Whom
1			

1. INTRODUCTION

A. PURPOSE

The San Francisquito Creek has flooded the City of Palo Alto (City) in Santa Clara County and the Cities of Menlo Park and East Palo Alto in San Mateo County many times over the years with the flood of record occurring in 1998. About a year following the 1998 flood, the three cities, County of San Mateo and Santa Clara Valley Water District (Valley Water) joined together to create a new regional governmental authority titled the San Francisquito Creek Joint Powers Authority (SFCJPA) that would unify the jurisdictions to address flooding issues.

The primary objective of the SFCJPA was to facilitate construction of flood protection improvements on San Francisquito Creek. However, flooding in 2012 identified the need for a more coordinated response to a flooding event by all the responsible agencies. In October 2016, these agencies adopted a San Francisquito Creek Multi-Agency Coordination Operation Plan for Severe Storm and Flood Response (SFC MAC) to facilitate interagency coordination prior to, during, and after a flood incident. The SFC MAC does not detail the specific actions of the stakeholder agencies, but it created a framework for them to work together in response to flooding and emergency events.

This San Francisquito Creek Emergency Action Plan (EAP), a Valley Water internal document, is focused on fluvial flood threats caused by high flows in the creek and is intended to provide more specific guidance to facilitate Valley Water's:

1. Pre-incident planning prior to a storm/flood event,
2. Response to potential, imminent or actual Storm/flood events,
3. Post-incident actions following a storm/flood event, and
4. Coordination with the SFC MAC

B. RELATIONSHIP TO OTHER PLANS

This EAP provides additional guidance specific to Valley Water in its planning, response and recovery activities related to flood emergencies on San Francisquito Creek. This guidance does not supersede existing agreements or internal plans, such as, the Emergency Operations Plan (EOP), and is consistent with the SFC MAC Operations Plan for Severe Storm and Flood Response. It may include responsibilities or actions that may be taken by other external stakeholders that are not a part of this plan, but is not intended to prescribe that responsibility or action to them or to Valley Water. The reference to external stakeholders is intended to show that the responsibility or action is not expected of Valley Water.

C. STAKEHOLDERS

Valley Water is one of several stakeholders of the SFC MAC and will fulfill related responsibilities before, during and after flood emergencies as resources are available and/or can be safely deployed. While San Mateo County Flood Control District and other SFC MAC stakeholders also have oversight of the creek for flood protection, this plan is focused on the related activities of Valley Water and, as such, the Valley Water internal stakeholders for the EAP are:

- Valley Water Board of Directors
 - Office of District Counsel
 - Risk Management Program
 - Office of the Chief Executive Officer
 - Office of Chief Operating Officer - Information Technology & Administrative Services
 - Emergency Services & Security Unit (ES&S)
 - Office of Chief Operating Officer - Watersheds
 - Operations & Maintenance Division (O&M)
 - Watersheds Field Operations Unit (WFOU)
 - Vegetation Field Operations Unit (VFOU)
 - Operations & Maintenance Engineering Support Unit (O&MES)
 - Watershed Stewardship & Planning Division
 - Hydrology, Hydraulics & Geomorphology Unit (HH&G)
 - Watersheds Design & Construction Division (D&C)
 - Community Projects Review Unit (CPRU)
 - Design and Construction Unit
 - Office of Chief of External Affairs
 - Office of Communications (OC)
 - Office of Government Relations (OGR)
 - Office of Civic Engagement

The SFC MAC is considered an external stakeholder of this EAP. Members of the SFC MAC include City of Palo Alto, City of Menlo Park, City of East Palo Alto, Menlo Park Fire Protection District, San Francisquito Creek Joint Powers Authority, San Mateo County, Santa Clara County, Santa Clara Valley Water District, and Stanford University.

D. LIMITATIONS OF EMERGENCY ACTION PLAN

This plan does not provide detailed actions of what to do during an emergency event. It provides guidance to Valley Water staff involved in an event and shall not constrain the freedom of those staff active in the San Francisquito Creek Multi-Agency Coordination Group, Emergency Operations Center, Departmental Operations Center, External Affairs, and Field Operations.

E. TRAINING ON EAP

Regular emergency operations training and exercising of plans is critical to successfully respond to emergency events. As the lead agency in the SFC MAC, the City of Palo Alto is to annually conduct training with the stakeholders. Valley Water staff participating in these annual SFC MAC training exercises should use it as an opportunity to review and exercise this EAP.

ES&S will also regularly conduct internal Valley Water training that may include: Discussion-based exercises, such as, Workshops, Seminars, or Tabletop Exercises; Operational exercises to test communications or notifications systems; or Functional Exercises to test the operational capabilities of the Departmental Operations Centers (DOC) and/or Emergency Operations Centers (EOC). These will often be general training but may also use specific scenarios that could include the use of this EAP.

If this EAP has not been included as part of another training effort or activated for any other reason over a 5-year period, the Watersheds O&M Engineering Support Unit will work with ES&S to schedule a test of the EAP.

This test can consist of a meeting, including a tabletop exercise, or be conducted as part of Watersheds O&M tabletop exercises. A scenario or scenarios specific to San Francisquito Creek should be given to allow participants to discuss response and actions they would take to address and resolve the scenario. Each section of the EAP should be utilized during the exercise.

Following any exercise or activations, responses and actions should be reviewed, any opportunities to improve or make changes to the EAP should be discussed, and all of this should be documented in a summary document or After-Action Report (AAR) prepared by an appropriate party.

F. MAINTENANCE OF EAP

Watersheds O&M Division will work with ES&S, HH&G and other appropriate stakeholders to review and, if needed, update the EAP at least once each year. The EAP annual review should include the following:

- Verify that the phone numbers and persons in the specified positions are current. The EAP will be revised if any of the contacts have changed (to be provided by Field Operations Unit Manager and Emergency Services & Security Unit Manager),
- Verify and, if necessary, update flood maps and flood thresholds
- Verify the locally available resources and equipment are available and current (to be provided by Field Operations Unit Manager), and/or
- Incorporate appropriate recommendations from any After-Action Report developed from training or actual activation of the EAP.

REVISIONS

Watersheds O&M Division is responsible for updating the EAP document. The EAP document held by Watersheds O&M Engineering Support Unit Manager is the master document. When revisions occur, the Watersheds O&M Division will provide the revised pages and an updated revision summary page to all EAP document holders. EAP document holders are responsible for updating outdated copies of the respective documents whenever revisions are received. Outdated pages shall be immediately discarded to avoid any confusion with the revisions.

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2. BASIC DATA FOR SAN FRANCISQUITO CREEK

A. SAN FRANCISQUITO CREEK DESCRIPTION

The San Francisquito Creek watershed is approximately 45 square miles in extent and forms the boundary between Santa Clara and San Mateo Counties. The creek meanders through the cities of Palo Alto, Menlo Park, and East Palo Alto and provides some of the best habitat for steelhead and other sensitive species on the Lower San Francisco Peninsula. Figure 1 is a location map of the creek and shows the three primary reaches of the creek that are currently part of the Flood Protection Study: (1) San Francisco Bay to Highway 101; (2a-g) Highway 101 to Interstate 280; and (3) Interstate 280 to Searsville Dam.

Downstream of Highway 101 the creek can generally be characterized as a modified trapezoidal channel with levees and maintenance roads with adequate maintenance access. The creek upstream of Highway 101 is an earthen unimproved heavily incised channel with homes and roads immediately adjacent to the top bank.

Most of the creek downstream of Sand Hill Road is owned by adjacent property owners with Valley Water intermittently holding some easements that allow for maintenance to protect the community from flood threats. However, the adjacent land uses make maintenance access difficult requiring work be done from adjacent roadways or through private property. Valley Water ownership of the creek is shown in Figures 2 and 3 and can also be viewed at <https://gis.valleywater.org/scvwd/>, which would be the most current information. Stanford University owns a significant amount of property on the creek (primarily upstream of Sand Hill Road) and in the watershed, which includes maintaining and operating several reservoirs.

There are several stream gauges on the creek and tributaries with the USGS gauge on San Francisquito Creek providing the most reliable information that will be used for forecasting before and during storm events. The flow of record at this gauge was 7,200 cubic-feet per second (cfs) and occurred in 1998. A hydrology study completed December 2016 has established that the 100-year design flow rates are:

- USGS gauge—7,640 cfs,
- Chaucer Street bridge—8,150 cfs, and
- Highway 101—8,410 cfs.

Below is a more detailed description of the creek reaches.

- San Francisco Bay to U.S. Hwy 101 (Reach 1):
 - A 1.5-mile earthen channel with levees and a floodwall
 - Four bridge crossings (one Bay Trail pedestrian bridge, and a concrete culvert at U.S. Hwy 101 that extends beneath East Bayshore Rd, Highway 101, and West Bayshore Rd)
 - A very flat channel slope of 0.05%
 - Daily tidal influence

- U.S. Hwy 101 to Newell Road (Reach 2a):
 - A 0.6-mile open channel that has been heavily encroached upon by urban residential development
 - An 84% hardscape channel lining (e.g., sacked-concrete, concrete walls, rock slope protection)
 - A 1,000-foot long floodwall extending upstream from U.S. Hwy 101 in Santa Clara County that is predominantly sacked concrete on the west side and concrete wall on the east side.
 - Two channel constrictions to flow or “bottle-necks”
 - One bridge crossing at Newell Rd with abutments located in the channel
 - One potential fish passage barrier (concrete cover) located near Clarke Avenue
 - A flat slope of 0.2%
 - Daily tidal influence

- Newell Road to University Avenue (Reach 2b):
 - A 0.4-mile open channel flowing adjacent to Woodland Avenue that has been heavily encroached upon by urban residential development
 - A 62% hardscape channel lining
 - One bridge crossing at University Ave with abutments located in the channel
 - A flat slope of 0.1%

- University Avenue to Chaucer Street (Reach 2c):
 - A 0.8-mile open channel flowing adjacent to Woodland Avenue that has been heavily encroached upon by urban residential development
 - A 49% hardscape channel lining
 - One bridge crossing with a culvert at Chaucer Street that is a **major constriction** and two private pedestrian bridges
 - A flat slope of 0.2%
 - A residence that is situated below top of bank

- Chaucer Street to Middlefield Road (Reach 2d):
 - A 0.9-mile open channel that has been heavily encroached upon by urban residential development and is also constrained by Palo Alto Avenue and Woodland Avenue
 - A 24% hardscape channel lining
 - One bridge crossing with a culvert at Middlefield Rd is a **major constriction** to the flow.
 - A flat slope of 0.3%

- Middlefield Road to El Camino Real (Reach 2e):
 - A 1.0-mile open channel flowing adjacent to Palo Alto Avenue that has been heavily encroached upon by urban residential development
 - An 11% hardscape channel lining

- One bridge crossing with abutments located in the channel at El Camino Real, one pedestrian bridge at Willow Pl, and one Cal Train bridge just downstream of El Camino Real
- One fish passage barrier at the El Camino Real crossing (bridge apron)
- A flat slope of 0.3%
- El Camino Real to Sand Hill Road (Reach 2f):
 - Open channel that has urban residential development along the top of bank
 - About 20% hardscape channel lining
 - One bridge crossing at Sand Hill Road and one pedestrian bridge crossing at San Mateo Dr
 - A flat slope of 0.5%
 - Numerous creek bank erosion sites
- Sand Hill Road to Interstate 280 (Reach 2g):
 - Open channel that runs through Stanford University Golf Course and residential areas that have at times encroached upon the creek banks
 - Nine bridge crossings including:
 - Junipero Serra Blvd
 - Piers Ln
 - Alpine Rd
 - Northbound I-280
 - Southbound I-280
 - 2 Bike/Pedestrian
 - 2 Golf Cart/Pedestrian serving Stanford Golf Course
 - Three fish passage barriers
 - approximately 300 feet downstream from Junipero Serra Blvd. (golf cart crossing)
 - approximately 300 feet upstream from Junipero Serra Blvd. (USGS gage weir)
 - approximately 300 feet downstream from the confluence with Los Trancos Creek (Denil fish ladder)
 - Hardscape channel lining is undetermined but expected to be no more than 2%
 - A flat slope of 0.6%
- Interstate 280 to Searsville Dam:
 - Open channel that has urban residential development along some of the top of bank up to Alpine Road
 - Hardscape channel lining is expected to be no more than 2%
 - Searsville Dam is a fish passage barrier
 - A flat slope of 0.6%

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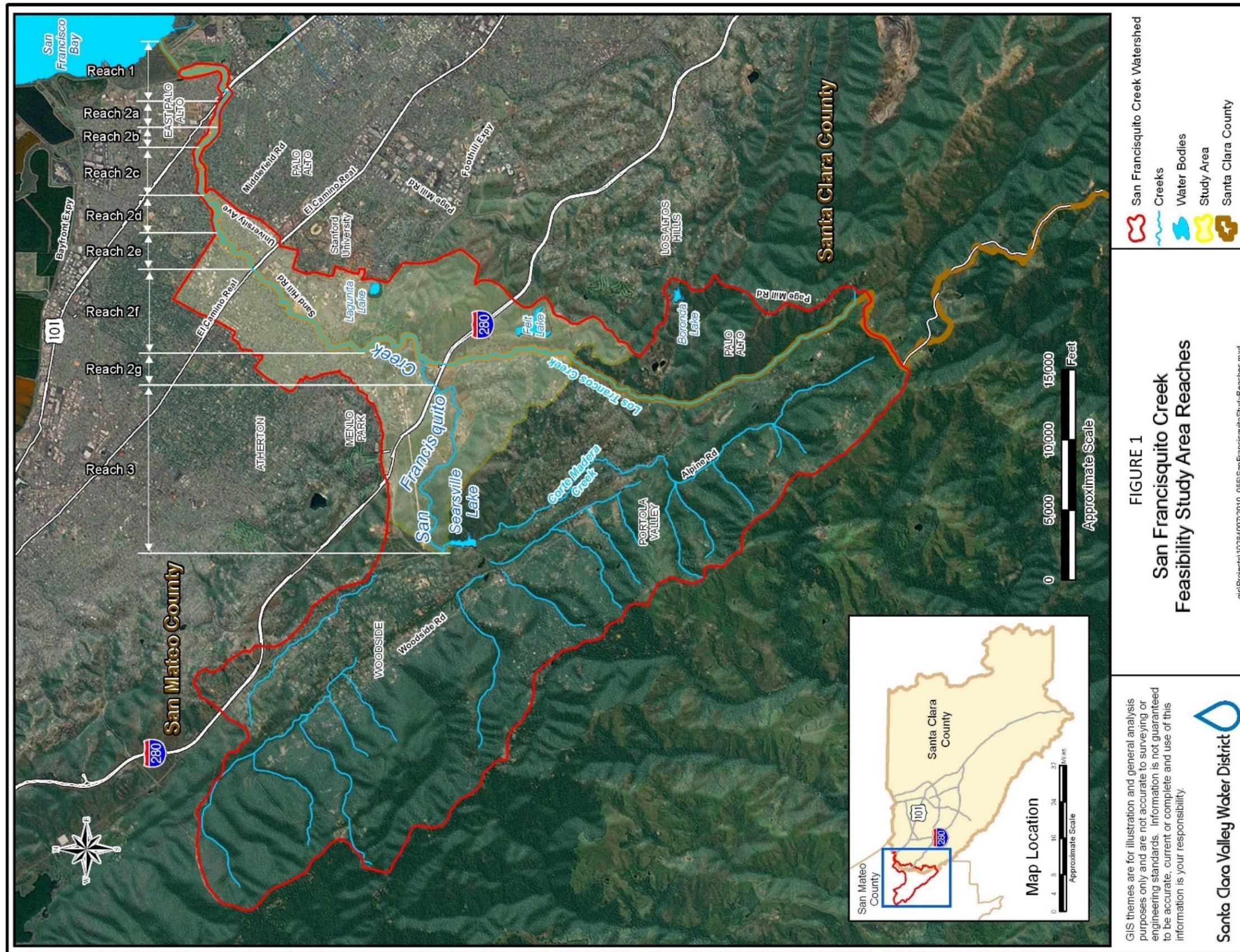


FIGURE 1
San Francisquito Creek
Feasibility Study Area Reaches

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GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current or complete and use of this information is your responsibility.



FIGURE 1: San Francisquito Creek Study Reaches

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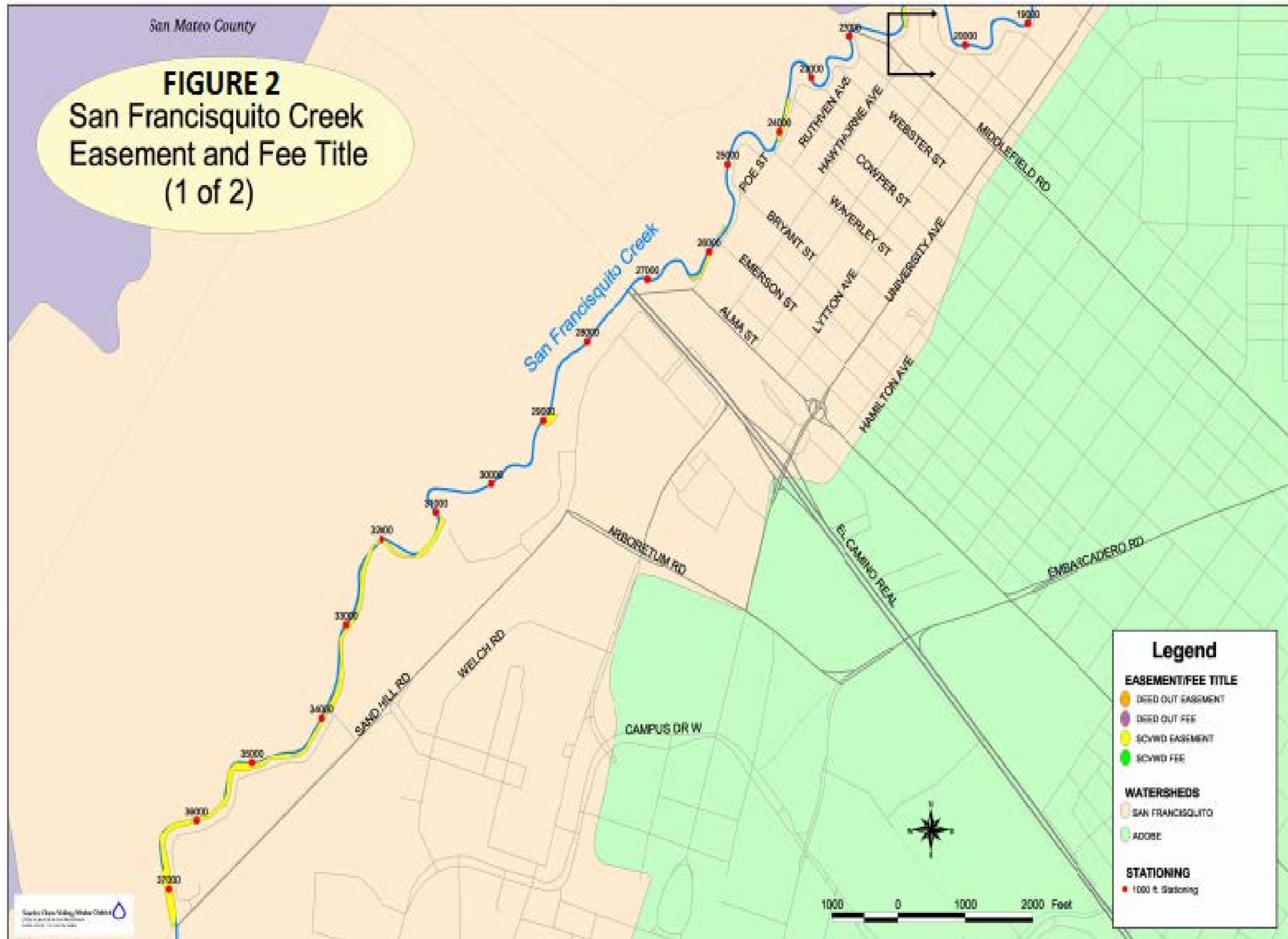


FIGURE 2: San Francisquito Creek Easement and Fee Title (1 of 2)

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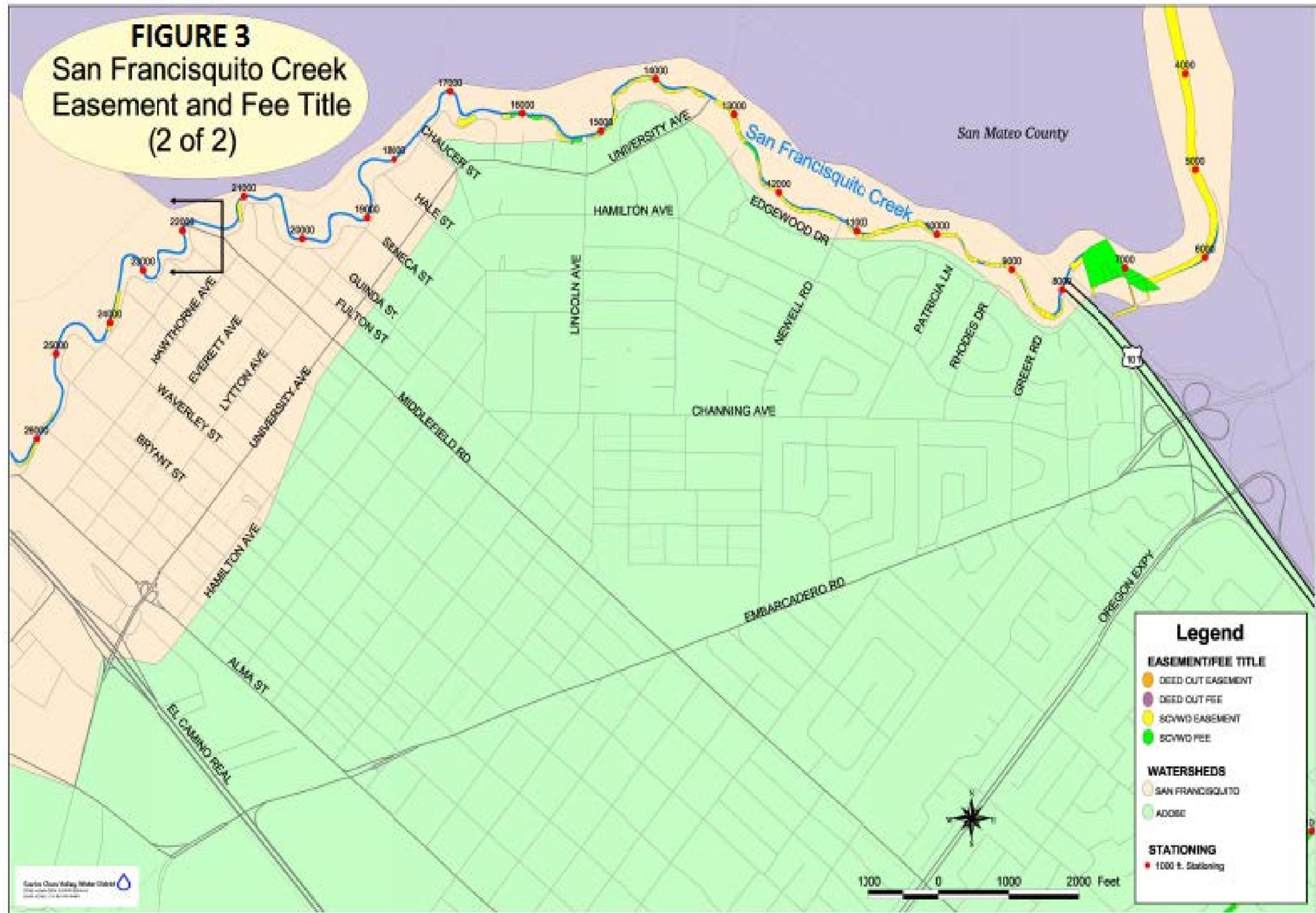


FIGURE 3: San Francisco Creek Easement and Fee Title (2 of 2)

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B. SAN FRANCISQUITO CREEK FLOOD THREATS

Flooding threats exist along the lower reaches of San Francisquito Creek from the Bay to the Middlefield Road bridge. While the two primary types of flooding in these areas are tidal and riverine (fluvial) flooding, unexpected emergency events can occur at almost any location due to the nature of the creek (e.g., many large trees, steep erosive banks, levees/floodwalls, and urban encroachment).

With the completion of a flood protection project downstream of Highway 101, the remaining fluvial flooding hotspots are upstream of Middlefield Road, at Chaucer Street bridge, University Avenue, and near Newell Road. Figure 4 shows the remaining flood threats during a 100-year flood.

Flooding has occurred many times in the past and is generally documented in a report published by Valley Water that can be accessed on their website at <https://www.valleywater.org/floodready/flood-reports>. The most significant recent flooding events on San Francisquito Creek occurred in 1998 and 2012.

- In 1998, San Francisquito Creek overtopped its banks at numerous locations flooding about 1,700 cfs: upstream of the Middlefield Road bridge, at Seneca Street and Palo Alto Avenue, upstream of Chaucer Street bridge, downstream of Highway 101, at the golf course, and at Palm Street. More than 400 homes flooded, 325 people were evacuated in the City of East Palo Alto and Highway 101 was closed.
- In 2012, water spilled over the levee between Verbena Drive and Daphne Way, University Avenue, and Woodland Avenue. Levees on both sides of the creek downstream of East Bayshore Road also suffered minor failures as water seeped through the levees causing soil to boil at multiple locations on the outboard levee faces. The flood condition resulted in the closure of northbound Highway 101 and evacuation of residents.

The facilities below are within the area where people, property, and infrastructure may be at risk and, if needed, more detailed flood maps are available from Valley Water's Hydrology, Hydraulics and Geomorphology Unit to determine how they are threatened:

FACILITY TYPE	NAME	ADDRESS	PHONE
SCHOOL	Duveneck Elementary	705 Alester Avenue Palo Alto	SFC MAC or Local Agency to contact (650) 322-5946
	Emerson School Palo Alto	2800 W. Bayshore Road Palo Alto	SFC MAC or Local Agency to contact (650) 424-1267
	Mid-Peninsula High School	1340 Willow Road Menlo Park	SFC MAC or Local Agency to contact (650) 321-1991
	Ohlone Elementary	950 Amarillo Avenue Palo Alto	SFC MAC or Local Agency to contact (650) 856-1726
	St. Elizabeth Seton	1095 Channing Avenue Palo Alto	SFC MAC or Local Agency to contact (650) 326-9004

FACILITY TYPE	NAME	ADDRESS	PHONE
HOSPITAL	Satellite Health Care	1040 Hamilton Court Menlo Park	SFC MAC or Local Agency to contact (650) 273-9951
FIRE STATION	Menlo Park Fire District Station #77	1467 Chilco Street Menlo Park	SFC MAC or Local Agency to contact (650) 688-8400/911

Estimated 14'+ Stage Flood Map for San Francisquito Creek (Stanford Gauge)

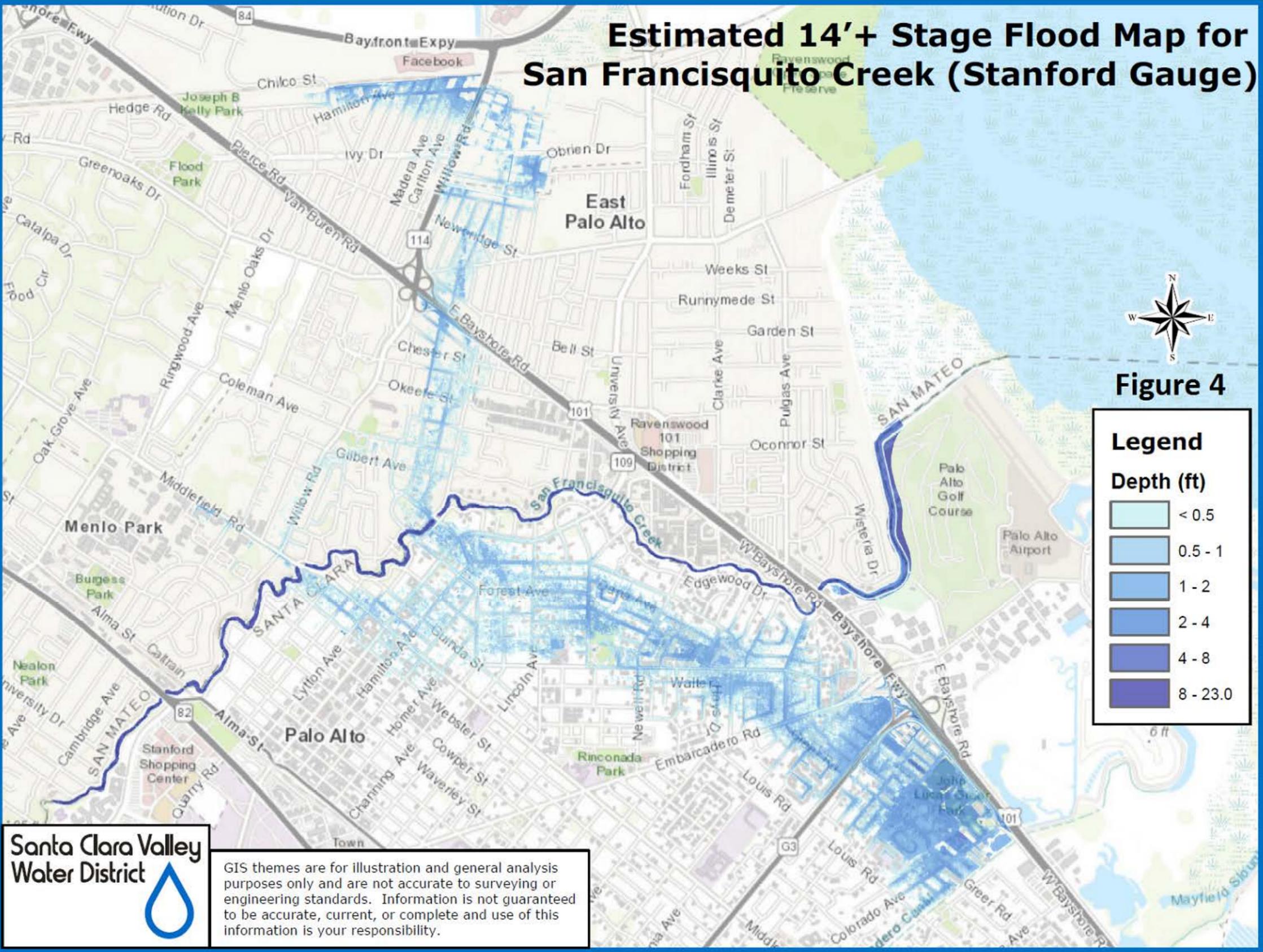


FIGURE 4: Estimated 100yr Flood Map

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3. CONCEPT OF OPERATIONS

A. OPERATIONAL LEVELS

While the primary purpose of this EAP is to provide guidance during flood emergencies, to maintain the collaborative nature of the SFC MAC this **EAP is in a state of perpetual activation, throughout the year, regardless of the condition.** As the flood threat increases the operational levels will be elevated. The operational level is composed of the Flood Condition Level (probability) and, if determined appropriate, a Severity of Flooding (consequence). Tables 1 and 2 below describe the Flood Condition Levels and the Severity Levels respectively. These levels are consistent with those used by the National Weather Service.

TABLE 1: Flood Condition Levels

Preparedness (Green)	Flood stage (Minor Flooding or greater) is not estimated within the next 72 hours; and measured stream depth is below 50% of flood stage.
Monitoring (Yellow)	Stream depth is estimated to reach flood stage in 72 hours or more, or the measured stream depth is 50% to 70% of flood stage. This condition is variable and requires more intense monitoring and a heightened level of alertness. Minimal staff in the Emergency Operations Center (EOC) or in Watersheds Departmental Operations Center (DOC) may be activated. An informal EOC Action Plan (AP) could be initiated.
Watch (Orange)	Stream depth is estimated to reach flood stage within 24 to 72 hours or measured depths are at 70% to 100% of flood stage. If activated, the staffing would increase in the EOC/DOC and an SFC MAC facility could be established. A formal EOC AP may be drafted.
Warning (Red)	This is an urgent situation when flood stage or greater is estimated to occur within 24 hours or is occurring. The EOC will have been activated and would be monitoring the situation, providing notifications and responding according to a written AP.

TABLE 2: Flood Severity Levels

Action (Yellow)	An established gauge height which when reached by a rising stream, lake, or reservoir represents the level where action is taken in preparation for possible significant hydrologic activity.
Minor Flooding (Orange)	Minimal or no property damage, but possibly some public threat (e.g., inundation of roads).
Moderate Flooding (Red)	Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.
Major Flooding (Purple)	Extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations.

B. PERSONNEL

Describing personnel groups that are designated specific authority and responsibilities is important for effectiveness during all operations levels. To avoid confusion, the personnel groups follow the conventions used in the SFC MAC, the Incident Command System used by Valley Water's Emergency Operations Plan, and other emergency operations plans. Depending on the event, staff may fill more than one of the personnel groups. Progressive responsibilities for the personnel groups are listed in Table 3 and some of Valley Water's emergency responders are listed in Attachment 12.

Field Information Teams (FIT): Staff who have been deployed into the field during storm events to observe and inspect facilities. The FIT provides critical "boots on the ground" information and intelligence back to Valley Water on facility conditions and storm related concerns.

- *Personnel:* These may be personnel assigned to the **Operations or Planning/Intelligence Section** in their respective Departmental Operations Center (DOC)/Emergency Operations Center (EOC). Or these may be Valley Water staff in the field conducting operations and maintenance related activities. HH&G manages a Valley Water FIT program and maintains a current master list of "hotspots" for deployments.
- *Authority includes:* Provide field intelligence to their DOC/EOC Section Leader or their organizational supervisor/manager. Take actions that would mitigate risks if capable and appropriate.

Subject Matter Experts (SME): Staff who have specific knowledge related to the issues of permitting, creek flow, potential impacts of flood, geology, hydrology, hydraulics, flood monitoring, engineering, maintenance and/or flood response.

- *Personnel:* These may be the Watersheds On-Call staff, other staff of Watersheds Operations and Maintenance Division, HH&G, and/or personnel assigned to the **Operations or Planning/Intelligence Section** in the Departmental Operations Center (DOC)/Emergency Operations Center (EOC).
- *Authority includes:* Represent Valley Water on technical matters; Confer with Agency Coordinators (AC) regarding activation level; and engage outside resources such as National Weather Service.

Agency Coordinators (AC): Staff who have specific knowledge (e.g., flood conditions, maintenance and operations) and have authority to recommend actions or updates to plans.

- *Personnel:* These may include personnel assigned to the following positions:
 - Managers who would usually be assigned to the **Command Section** in the DOC/EOC, provide a lead role in the field, or represent Valley Water in the SFC MAC from:
 - Watersheds
 - Water Utility

- *Authority includes:* Represent Valley Water in discussion of plans and procedures; Direct access to Valley Water Representatives; Ability to affect operations to support response and mitigation; Ability to affect operations to coordinate with other EOC's and/or designated SFC MAC Group members; Represent Valley Water in decision-making; and Communicate with next level of Valley Water management; and to request activation of next flood condition level.

Public Information Officers (PIO): Staff who have experience with managing and disseminating information to the public via traditional media, social media, electronic methods or other tools with the purpose of distributing preparedness, response, evacuation and recovery information.

- *Personnel:* These may include personnel assigned to the following DOC/EOC positions:
 - Public Information Officer of the **Command Section** in the DOC/EOC.
- *Authority includes:* Ability to create and distribute outreach materials for community awareness and preparedness; Represent Valley Water to produce and distribute public notices regarding potential flood, as appropriate; and coordinate with SFC MAC agencies to disseminate storm and flood related information.

Agency Representative (AR): Staff from Valley Water authorized to re-allocate resources, provide directives and affect emergency orders. AR makes final decision on the level of activation of the EAP and, if appropriate, communicates with SFC MAC and/or Cities on the situation and provides advice regarding evacuation orders.

- *Personnel:* These may include personnel assigned to the following DOC/EOC positions and may sometimes also serve as the AC:
 - Command Section—DOC/EOC Director or manager assigned Section Lead
 - Administration
 - Watersheds
 - Water Utility
 - External Affairs
- *Authority includes:* Ability to commit or redirect resources. AR sets flood condition levels, approves Action Plans, and confirms with SFC MAC and/or Cities on considerations for potential evacuation and evacuation order. However, Valley Water does not participate in the actual decision to evacuate since this is generally the city's responsibility.

Elected Officials: Through the Valley Water PIO or other assigned Liaison staff, elected officials will be contacted and kept informed of the situation during the Watch and Warning stages and provided with appropriate public messaging. If officials are in contact with affected constituents and receive pertinent information, they will convey that information to the DOC/EOC through PIO or Liaison staff.

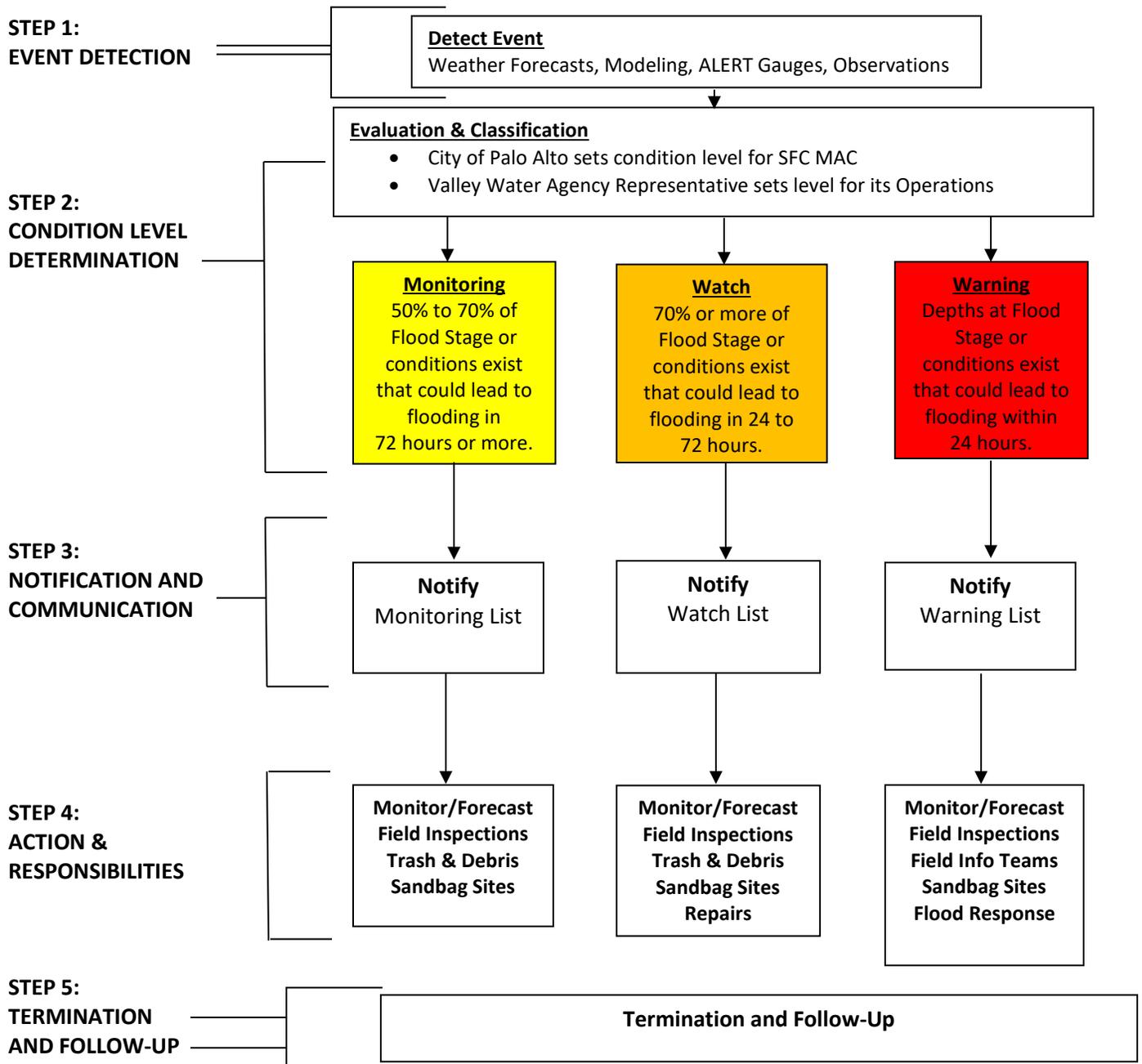
TABLE 3: Progressive Responsibilities

	Responsibility/Activity	Stakeholder/Personnel*
Preparedness	Train & Exercise EOP/EAP/SFC MAC	ES&S, SFC MAC
	Meet with SFC MAC members to discuss property management needs and plans.	O&M
	Conduct field inspections of creeks and facilities.	O&M
	Perform mitigation work to reduce flood risk.	O&M, D&C, SFC MAC
	Inventory and Procure Flood Fighting Materials and Equipment (Attachments 13 & 14).	O&M
	Identify location for flood fighting resources for the public (e.g. sandbag locations).	O&M
	Support & Coordinate with FEMA Floodplain Managers who maintain the National Flood Insurance Program (NFIP) Community Rating System (CRS) certification.	Watersheds, Office of Civic Engagement
	Provide technical floodplain mapping expertise.	HH&G
	Maintain equipment, gauges, telemetry, communications systems, etc.	HH&G, City
	Develop and maintain computer models of watersheds and creeks.	HH&G
	Conduct winter preparedness workshop.	ES&S
	Annual SFC MAC review/updates; ensure plan is functional and up to date.	City
	Annual review and update of EAP.	O&M, ES&S, HH&G
	Manage flood information websites (Attachment 3).	OC, HH&G, City, SFCJPA, NWS, FEMA
	Publish Preparedness Public Outreach (e.g., Winter Preparedness) in multiple languages.	OC
Provide public education in multiple languages.	OC	
Monitoring	Activate the EAP for "Monitoring."	AR
	Confer with City/SFCJPA for activation of a MAC.	AR
	Activate the SFC MAC for "Monitoring."	City
	Notify staff about the increased condition level.	AR, AC, SME & PIO
	Communicate with SFC MAC Agency Coordinators to determine next level of activation.	AR or AC
	Deploy and coordinate Field Information Teams (FIT)	O&M/HH&G
	Respond to, and mitigate, minor events as needed; coordinate with each SFC MAC responding agency.	O&M
	Respond to equipment needs at localities likely to be affected if possible; coordinate with each SFC MAC responding agency.	O&M
	Manage flood information websites (Attachment 3).	OC, HH&G, City, SFCJPA, NWS, FEMA
	Provide public education in multiple languages.	SFC MAC members collaborate and each is lead for their constituents.
	Provide information to Elected Officials.	PIO
	Monitor Stream Gauges	HH&G
	Update computer modeling based on forecast and watershed conditions and, if possible and deemed necessary, provide forecast flood maps to City and, if requested, to other SFC MAC Stakeholders.	HH&G

	Responsibility/Activity	Stakeholder/Personnel*
	Review evacuation planning needs.	City
	Report to designated SFC MAC facility when directed, and available.	AC/AR
Watch	Activate the EAP for "Watch."	AR
	Confer with City/SFCJPA for activation of a MAC if not already done.	AR
	Activate the SFC MAC for "Watch."	City
	Report to designated SFC MAC facility when directed, as available.	AC
	Notify appropriate staff about the increased condition level.	AR, AC, SME & PIO
	Communicate with SFC MAC AC to determine next level of activation.	AR or AC
	Confer with SFC MAC to determine response coordination needs and resources needs.	AC
	Communicate risk to elected officials.	PIO
	Confer with EOC Director on conditions for potential evacuation and shelter support.	City EOC Staff is lead.
	Respond to, and mitigate, minor events as needed; coordinate with each responding agency.	O&M
	Respond to equipment needs at localities likely to be affected if possible; coordinate with each SFC MAC responding agency.	O&M/AC
	Deploy and coordinate Field Information Teams (FIT).	O&M/HH&G
	Monitor Stream Gauges.	HH&G
	Update computer modeling based on forecast and watershed conditions and, if possible and deemed necessary, provide forecast flood maps to City and, if requested, to other SFC MAC Stakeholders.	HH&G
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g. sandbag locations).	O&M
	Manage flood information websites (Attachment 3).	OC, HH&G, City, SFCJPA, NWS, FEMA
	Provide public information in multiple languages.	Each SFC MAC Stakeholder collaborates and is lead to its constituents.
	Provide public warning in multiple languages.	City is lead. County is key support.
	Activate other public notification systems (e.g., Alert SCC, Facebook, Nextdoor), as appropriate.	City is lead, PIO is support.
	Activate Joint Information System (JIS) and, if necessary, Joint Information Center (JIC) as appropriate.	City is lead.
	Participate in JIC/JIS if activated.	PIO
	Communicate with media as needed.	SFC MAC, JIS/JIC or each Stakeholder is lead for own agency activities.
	Provide information on impact and available resources to and from respective EOC's and/or with SFC MAC.	AC/AR
Provide information to and from respective EOC's or SFC MAC, including status reports and briefings.	AC/AR	

	Responsibility/Activity	Stakeholder/Personnel*
Warning	Activate the EAP for "Warning."	AR
	Confer with City/SFCJPA for activation of a MAC if not already done.	AR
	Activate the SFC MAC for "Warning."	City
	Report to designated SFC MAC facility when directed, as available.	AC
	Notify appropriate staff about the increased condition level.	AR, AC, SME & PIO
	Confer with SFC MAC to determine response coordination needs and resources needs.	AC
	Communicate risk to elected officials.	PIO
	Confer with EOC Director on conditions for potential evacuation and shelter support.	City EOC Staff is lead.
	Provide information on impact and available resources to and from respective EOC's and/or with SFC MAC.	AC/AR
	Coordinate resources through respective EOCs.	Each SFC MAC Stakeholder is lead for own resources.
	Respond to, and mitigate events as needed; coordinate with each responding agency.	O&M
	Respond to equipment needs at localities likely to be affected if possible; coordinate with each SFC MAC responding agency.	O&M/AC
	Deploy and coordinate Field Information Teams (FIT).	O&M/HH&G
	Monitor Stream Gauges.	HH&G
	Update computer modeling based on forecast and watershed conditions and, if possible and deemed necessary, provide forecast flood maps.	HH&G
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g. sandbag locations).	O&M
	Manage flood information websites (Attachment 3).	OC, HH&G, City, SFCJPA, NWS, FEMA
	Provide public information in multiple languages.	Each SFC MAC Stakeholder collaborates and is lead to their constituents.
	Provide public warning and shelter information in multiple languages.	City is lead. County is key support.
	Activate other public notification systems (e.g., Alert SCC, Facebook, Nextdoor, door to door/mobile for warning) as appropriate.	City is lead, PIO is support.
	Activate Joint Information System (JIS) and, if necessary, Joint Information Center (JIC) as appropriate.	City is lead.
	Participate in JIC/JIS if activated.	PIO
	Communicate with media as needed.	SFC MAC, JIS/JIC or each Stakeholder is lead for own agency activities.
Provide information to and from respective EOC's or SFC MAC, including status reports and briefings.	AC/AR	
Implement evacuation plans and deploy resources to evacuate.	City is lead.	
Proclaim Local Emergency as appropriate.	City EOC Director is lead.	
*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.		

C. EMERGENCY ACTION PLAN OVERVIEW



D. EMERGENCY ACTION PLAN MOBILIZATION

Step 1: Event Detection

Several detection methods can be utilized on San Francisquito Creek that include weather forecasts, hydrologic/hydraulic modeling, Automated Local Evaluation in Real Time (ALERT) and other stream/reservoir/precipitation gauge systems, and field observations. Some of these are available through websites that are listed in Attachment 3.

Weather Forecasts

The National Weather Service (NWS) provides weather (e.g., precipitation) forecasts in advance of a storm event and Valley Water contracts with a service provider for enhanced forecasting.

During storm events, the NWS will host webinars with affected agencies and utilities to discuss forecasts and share information to enhance regional preparedness. The Valley Water and many SFC MAC Stakeholders participate in these webinars and share all current information. In addition, the NWS maintains web-sites (Attachment 3) that provide forecasts and will issue public notices of forecasted flood threats on local television and radio programming.

Hydrologic/Hydraulic Modeling

Based on the weather forecast and other data, the NWS River Forecast Center utilizes computer modeling of the San Francisquito watershed that predicts flood stage over 72 hours in advance. These models are considered estimates and can vary, sometimes significantly, from the actual flood flows. The forecasts can be found at:

<https://water.weather.gov/ahps2/hydrograph.php?wfo=mtr&gage=sfcc1>.

To improve the accuracy of the modeling, Valley Water coordinates with NWS to help review the computer model periodically and determine if additional information can be gathered to update the model. The typical type of information that can be used to update the models includes: surveys of channel geometry, reevaluation of channel roughness due to vegetation or blockages, and data gathered during high flow events.

The NWS will utilize this modeling to set their threat level, which is similar to the EAP condition levels, and provide the information to news organizations, local agencies and the public via their website. And, this same modeling and information on NWS threat levels is likely the primary method used by Valley Water in determining flood condition levels and flood severity levels for storm events.

Gauge System

A listing of all Valley Water gauges and the San Francisquito USGS gauge at Stanford University can be found at <http://alert.valleywater.org/sgi.php>. The primary gauge used for detecting and classifying an event is the USGS gauge at

Stanford. Valley Water's Automated Local Evaluation in Real Time (ALERT) system can set alarms to automatically notify appropriate staff at predetermined stages. In addition, the City of Palo Alto maintains several gauges that can be found at https://www.cityofpaloalto.org/gov/depts/pwd/creek_monitor/default.asp and SFCJPA uses three Stanford gauges (Searsville Dam, Los Trancos Creek, and Bear Creek) for their flood warning website found at <http://floodwarning.sfcjpa.org>. The combination of these gauges provides data in near real-time for San Francisquito Creek and using the Stanford gauges can provide about an extra hour of warning to determine the level of threat for flooding.

Field Information Teams and Field Operations & Maintenance

As water levels increase in the creeks, rivers, and waterways, City of Palo Alto (City) and Valley Water Field Information Teams (FITs) are deployed to visually monitor and report back to a DOC or EOC the rate of increase in areas of potential flooding. In addition, FITs can monitor facilities for potential damage, identify surface drainage issues, thoroughly document actual flooding, and report landslides/erosion affecting the adjacent land uses.

The City, Valley Water and other SFC MAC Stakeholders have individual teams who deploy into the field to observe flood conditions at "hot spots." Deployment of these teams should be coordinated between the City and Valley Water. HH&G master list of flooding hotspots to deploy FITs and other teams to include:

- Along Palo Alto Avenue – possible overtopping
- Upstream of Middlefield Road—overtopping
- Upstream of Chaucer Street Bridge—overtopping concern and visual stream gauge
- Upstream of University Avenue Bridge—high water causing potential flooding concern
- Upstream of Newell Road—overtopping
- Culvert at West Bayshore Road and Highway 101—possible flooding of highway

Field Operations & Maintenance personnel are also typically out in the field inspecting and repairing facilities during storm events. These personnel also provide intelligence back to their agencies regarding facility conditions and any storm related concerns.

In addition, the public may be helpful in reporting situations that may pose a flood threat. These are typically reported to Valley Water, City or SFCJPA who should promptly relay to the DOC/EOC.

All together the intent of these observations is to cover the following:

1. Visual stream gauge at Chaucer St.—check for high water and rate of change
2. Known Flood Hot-Spots

3. Real-time Flooding—report and document flooding
4. Bridge Piers—check for debris blockages
5. Trash Racks—check for debris blockages
6. Levee downstream of Highway 101—check for damage and stability
7. Sandbag sites—check for supply and access issues
8. Previously repaired or other project sites—check for performance
9. Bank Stability—check for threats to adjacent land uses

Step 2: Condition Level Determination

Evaluation—After detecting and gathering adequate intelligence regarding the situation, an evaluation of the waterway conditions must be performed by appropriate personnel. The personnel involved will generally be one or more Subject Matter Experts (SME) that will generally include staff from O&M and HH&G.

Classification—The EAP is always active, however, after detection of an unusual event occurs the operational level may be changed. Based on a technical evaluation of the intelligence detected, an operational level will be established by an appropriate level of personnel, such as an Agency Representative. Tables 4 and 5 provide flood threshold information to use as guidance in establishing a condition levels and Attachment 1 provides additional guidance for other conditions that could occur during high flows. Below is an example:

EXAMPLE:

Situation – *A Valley Water FIT has reported that the water surface upstream of Chaucer Street is at 20' on the staff gauge and appears to be rising. USGS gauge at Stanford is at a height of 12.5 feet. HH&G is also forecasting that, based on the weather forecast and watershed condition, depth of flow will continue to increase and peak at or near 21' sometime in the next 8 hours at Chaucer Street.*

Response – *Condition level of **Warning (Red)** for a severity of **Moderate Flooding (Red)** should be established since: (1) The water level is already near 100% capacity at Chaucer St (Table 4) and is forecast continue to rise to 21' within the next 8 hours; and (2) Moderate Flooding (Table 5) is likely based on a 12.5 food depth at Stanford gauge with the likely potential that it may rise.*

Flooding is very possible at Chaucer Street and upstream of Middlefield that could flow overland towards Highway 101. Activities should be taken as listed in Table 3.

TABLE 4: San Francisquito Creek Flood On-Site Monitoring Thresholds

Location	Flooding Description	FLOOD THREAT STAGE AT MONITORING LOCATION*			PHOTO/CROSS SECTION
		50% Capacity	70% Capacity	100% Capacity	
West Bayshore Road	Overtopping occurring 1000 feet upstream near the Woodland – West Bayshore Intersection along the East Palo Alto bank.	9.5'-10.5'	11'-12'	13'-14'	
Chaucer Street	Overtopping both banks and flowing overland towards Highway 101. Flood flows can cross Highway 101 in Menlo Park.	12.5'-13.5'	17.5'-18.5'	20.5'-21.5'	
Near Waverley Street upstream of Middlefield	Overtopping at Middlefield Road Bridge primarily flowing overland towards Palo Alto with some minor flooding in Menlo Park.	12'-13'	16'-17'	21'-22'	

*Note: Monitoring thresholds above are preliminary and need to still be verified by survey to ensure assumptions are correct. 1998 Flood high water mark at Chaucer St. also needs to be verified.

TABLE 5: Stanford University Gauge Flood Severity Thresholds (NWS Model)

USGS Stanford Gauge Thresholds	Stage (ft)	Description*
Action	9.5	<ul style="list-style-type: none"> Possible flood could occur near Chaucer Street Bridge or due to stream blockages.
Minor Flooding	11	<ul style="list-style-type: none"> Chaucer Street Bridge begins to overtop at the upstream face.
Moderate Flooding	13	<ul style="list-style-type: none"> Flooding begins upstream of Middlefield Road, sheet flowing in both Palo Alto and Menlo Park, eventually comingling with spill from Chaucer Bridge. Significant flooding is occurring from Chaucer Street Bridge bounded by Louis Road and Highway 101. Menlo Park floodwaters begin ponding along Highway 101. Flooding is possible near Newell Road Bridge.
Historical High Water	13.6	<ul style="list-style-type: none"> February 1998
Major Flooding	14	<ul style="list-style-type: none"> Disastrous flooding continues to flow towards San Francisco Bay. Palo Alto floodwaters flow towards Matadero Creek, bounded by Louis Road and Highway 101. Menlo Park spills flow northward along Highway 101, spilling over highway south of Marsh Road.

*Note: The Hydrology, Hydraulics and Geomorphology Unit and the NWS have flood **inundation** maps for each of the stages that can be shared with the stakeholders as needed for planning actions, such as street closures and evacuations.

Step 3: Notification and Communication

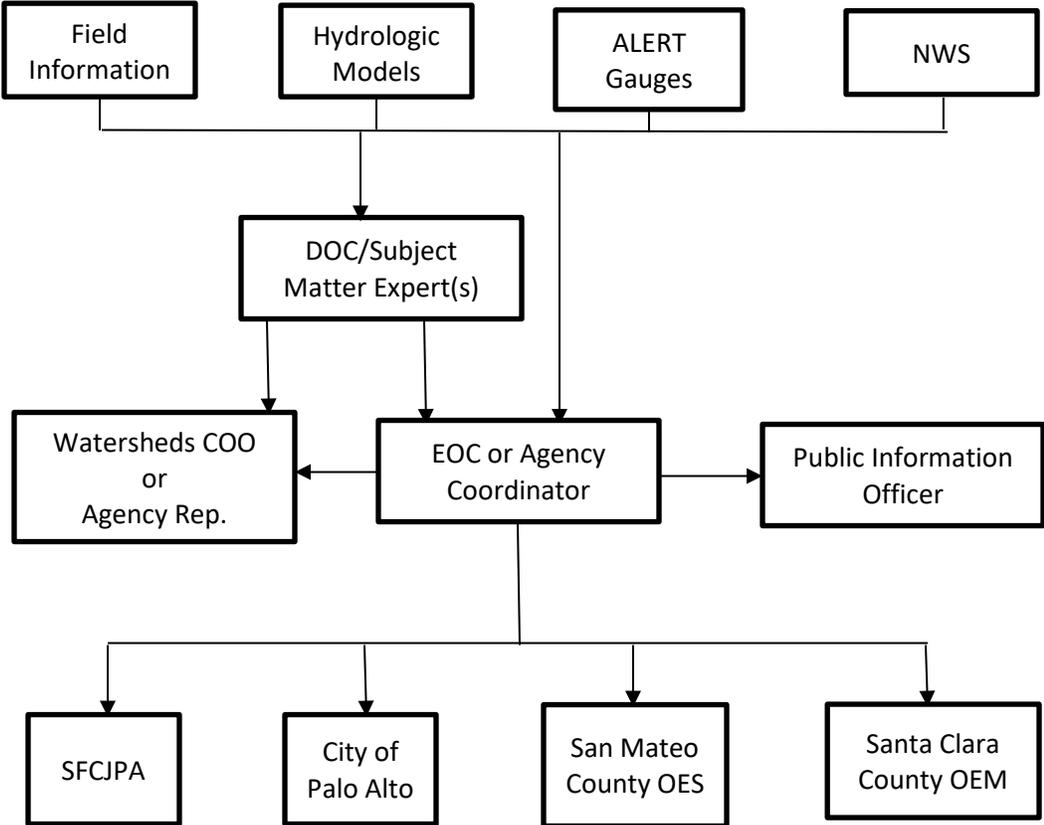
After the condition levels and severity have been determined, appropriately communicating the situation to responsible agencies, staff, and other identified individuals and groups is critical. Depending on the condition level, responsibilities for notifications and who is notified would vary. Often during a monitoring condition, the Emergency Operation Center would not be open or only minimally staffed and the SFC MAC may not yet be activated, however, Valley Water’s DOC, SMEs and/or ACs may be very active. Valley Water’s list of entities that may be provided information or notifications of the condition level and flood severity could include:

- Internal Valley Water staff;
- SFC MAC;
- City of Palo Alto;
- County of Santa Clara Office of Emergency Management (OEM);
- County of San Mateo Office of Emergency Services;

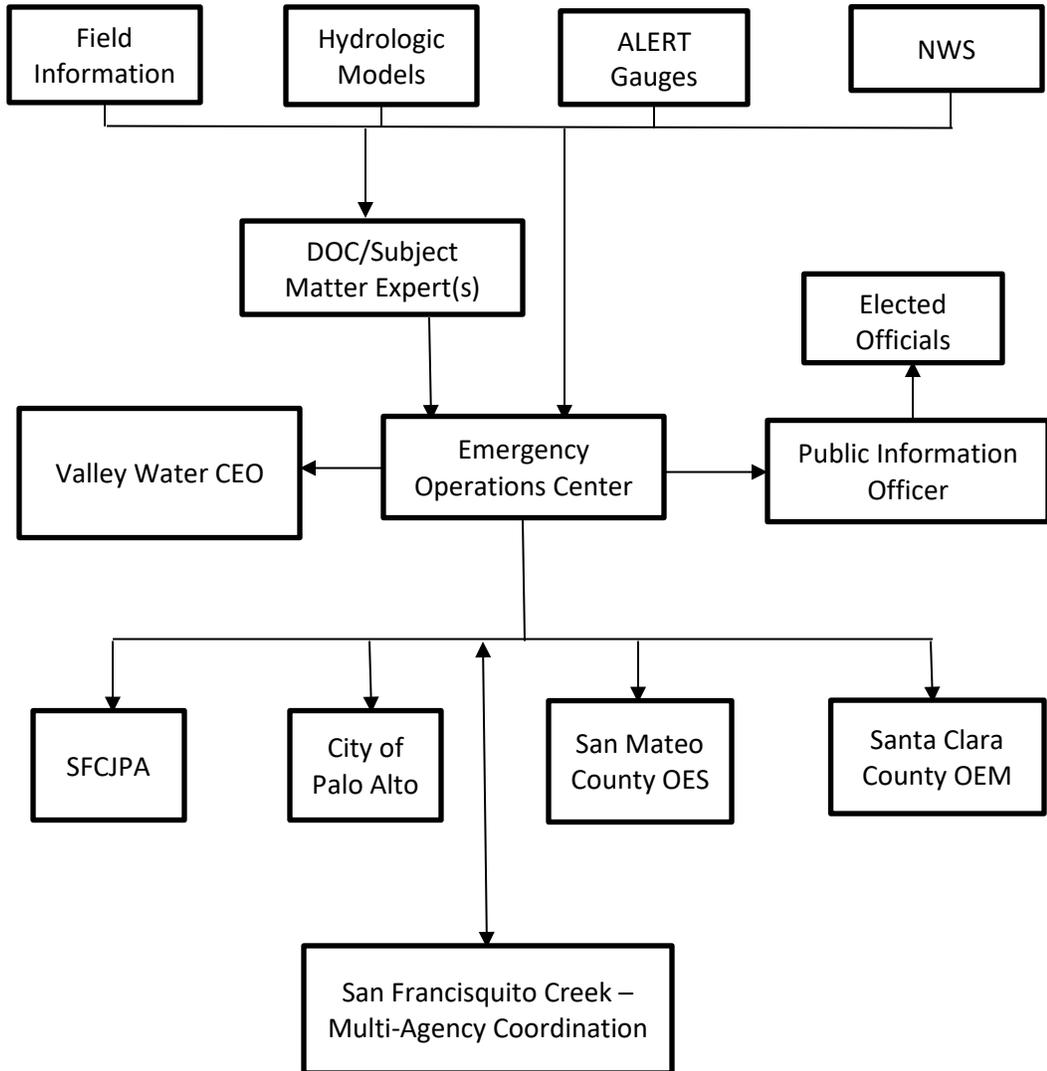
- SFCJPA;
- Valley Water Elected Officials;
- Critical Facilities, such as, Schools, Hospitals, governmental facilities or Businesses;
- Public (Generally Valley Water is in a support role during events).
- Impacted businesses and residents (Valley Water is in a support role)

In addition, the condition level and severity should be reflected on the Valley Water website which should strive to be consistent with website information and public notifications provided by the City, SFCJPA and NWS. The following are charts showing the flow of information and notifications for the three flood threat condition levels and the contact list is in Attachment 2—Emergency Services Contact List.

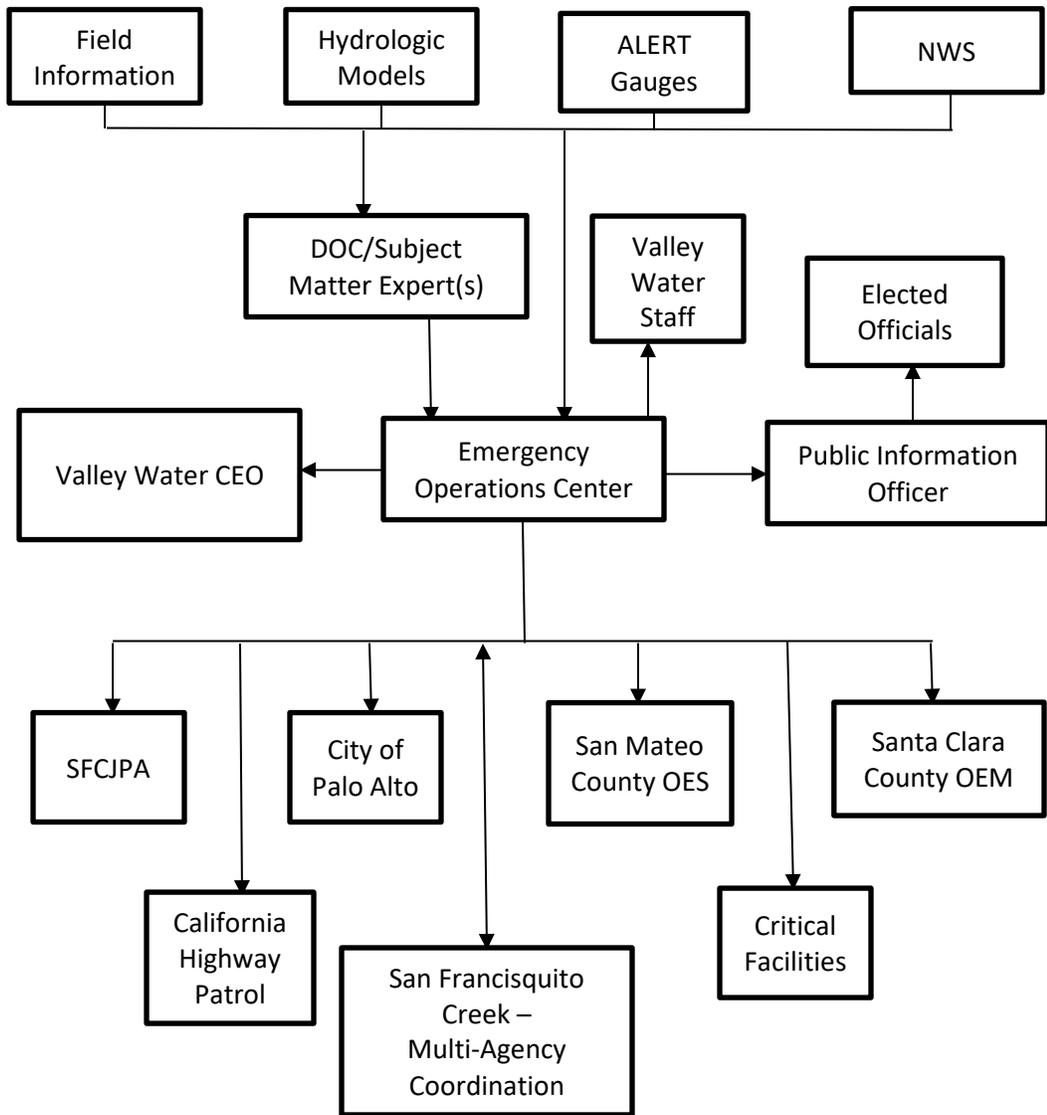
**Monitoring Condition Level
Information/Notification Flow**



**Watch Condition Level
Information/Notification Flow**



**Warning Condition Level
Information/Notification Flow**



External emergency services contacts are listed in Attachment 2 and Valley Water emergency responders are listed in Attachment 12.

Step 4: Actions & Responsibilities

The EAP will be in the Preparedness condition level for the majority of the time. After an unusual or emergency event is detected, the DOC/EOC or, if the DOC/EOC has not been activated, the Watersheds Field Operations Unit Manager, Watersheds O&M Engineering Support Unit Manager, or HH&G Unit Manager may classify the event into a higher condition level.

At each condition level, there are actions and responsibilities for Valley Water personnel (described in the Concept of Operations Section). Responsibilities are described in Table 2 above. More detail on actions specific to the personnel involved in an emergency event are described in Attachments 4-10.

The Incident Commander or Field Operations staff will take action to mitigate the event as appropriate. Examples of emergency remedial actions that could be taken to mitigate the event are provided in Attachment 11—Emergency Remedial Actions.

Step 5: Termination and Follow-Up

After this EAP has been activated at a level of Watch, Monitor or Warning and then returned to Preparedness, EAP operations must be terminated and follow-up procedures completed.

Termination Responsibilities

In a Watch or Warning, the DOC or EOC Director, is responsible for terminating EAP operations and directing that this decision is relayed to each person notified during the original event.

The DOC or EOC Director will ensure that all forms for Action Planning, Situational Reports, or others utilized during the event are collected and organized chronologically as determined appropriate. If electronic documentation was utilized, these could be saved on a storage device that could be retrievable or could be printed and saved as a hard copy in the file.

Follow-Up Responsibilities

The Operations & Maintenance Engineering Support Unit, if only the DOC is activated, or the Emergency Services & Security Unit, if the EOC was activated, will prepare an After-Action Report (AAR) of the event and will track implementation of appropriate recommendations in the AAR.

The City or other SFC MAC stakeholders will be responsible for damage assessment to homes and businesses and any permit requirements required to reoccupy structures and to promote flood mitigations measures during any reconstruction.

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ATTACHMENT 1

GUIDANCE TABLE FOR EVALUATING FACILITY DURING HIGH FLOW AND DETERMINING THE CONDITION LEVEL

EVENT	SITUATION	CONDITION LEVEL*
Bank Erosion	Erosion scour that is threatening a facility but is stable (i.e., scour is not getting bigger)	Monitor Yellow
	Erosion scour during high flows that is threatening a facility (e.g., a bridge) that if allowed to continue, could result in failure of facility	Watch Orange
	Erosion scour that is threatening a structure on an adjacent property during high flows	Watch Orange
	Erosion scour during high flows that has caused or will cause a blockage in the creek that will produce flooding	Warning Red
Boil/Seepage	Seepage area with clear water discharging less than 1 gallon per minute	Monitor Yellow
	Seepage area with cloudy water or increasing rate	Watch Orange
	Seepage area with discharge greater than 10 gallons per minute	Warning Red
Levee Damage	New cracks in embankment greater than ¼ inch without seepage	Monitor Yellow
	Slippage or erosion scour of levee bank during high flows	Monitor Yellow
	Cracks in levee with seepage discharging less than 1 gallon per minute	Watch Orange
	Cracks in levee with seepage discharging more than 1 gallon per minute	Warning Red
	Sudden or rapid slumping or scour on levee slopes	Warning Red
Stage at Chaucer Street Bridge	Water depth of 13.2 feet corresponds to 50% capacity	Monitor Yellow
	Water depth of 17.9 feet corresponds to 70% capacity	Watch Orange
	Water depth greater than 24 feet—water will begin to overtop bank	Warning Red
ALERT Gauge	USGS gauge @ Stanford reads 9.5 feet	Watch Orange
	USGS gauge @ Stanford reads 11.0 feet or greater	Warning Red
Downed trees in creek channel	Downed tree, high flows; could collect debris, redirect flow, or move downstream	Monitor Yellow
	Downed tree, high flows; redirecting flows causing bank scour or obstructing flow creating backwater effect	Watch Orange
	Downed tree causing flooding	Warning Red

EVENT	SITUATION	CONDITION LEVEL*
Bridge/Pier nose blockage	Debris build up that could affect forecast flows or is affecting flows but water receding	Monitor Yellow
	Debris build up affecting flows with increased flows forecast or more debris collecting, threatening to block flow under bridge/culvert	Watch Orange
	Debris build up obstructing flow backing up water and will overtop banks or is already flooding	Warning Red
Embankment overtopping	Creek level is within 1 foot of top of bank	Watch Orange
	Creek level is overtopping bank	Warning Red
Sabotage/Vandalism	Facility or levee damage that could adversely impact flows	Monitor Yellow
	Facility or levee damage that is affecting flows or causing minor leakage in levees or significant levee damage during low flows	Watch Orange
	Facility damage that is blocking flows that will result in flooding or levee damage that will likely result in failure or has failed during high flows	Warning Red
Earthquake	Magnitude 6.0 or greater within 50 miles of creek with flows below 70% flood stage and not expected to rise.	Monitor Yellow
	Magnitude 6.0 or greater within 50 miles of creek with flows below 70% of flood stage with visible damage to bridges, facilities, or levee movement or cracking	Watch Orange
	Magnitude 6.0 or greater within 50 miles of creek with damage to levees or facilities that are affecting flows, bridge failure, levee cracking or leaking or movement but minor risk of flooding	Watch Orange
	Magnitude 6.0 or greater within 50 miles of creek with damage to levees or facilities that are affecting flows, bridge failure, levee cracking or leaking or movement when flows are above 70% of flood stage or forecast to be rising	Warning Red

* Table 1 describes the condition level

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ATTACHMENT 3

WEB-BASED DATA SOURCES

Valley Water Flood Ready: <https://www.valleywater.org/floodready>

Valley Water ALERT Stream Gauge Information: <http://alert.valleywater.org/index.php>

Valley Water Flood Forecasting: <https://gis.valleywater.org/alert/>

Valley Water Flood Severity Thresholds:
<https://gis.valleywater.org/SCVWDFloodWatch/report.html?ALERTID=1878>

Valley Water Flood Watch: <https://gis.valleywater.org/SCVWDFloodWatch/>

Sandbag Sites: <https://www.valleywater.org/sandbags>

Historic Flood Reports: <https://www.valleywater.org/floodready/flood-reports>

Valley Water GIS with multiple layers including right of way and facilities:
<https://gis.valleywater.org/scvwd/>

Palo Alto Creek Monitoring:
https://www.cityofpaloalto.org/gov/depts/pwd/creek_monitor/creek_monitor_only.asp

SFCJPA Flood Early Warning System: <http://floodwarning.sfcjpa.org/>

National Weather Service Flood Observations:
<https://water.weather.gov/ahps2/index.php?wfo=mtr>

NWS Flood Forecast: <https://water.weather.gov/ahps2/forecasts.php?wfo=mtr>

NWS San Fran. Flood Forecast:
<https://water.weather.gov/ahps2/hydrograph.php?wfo=mtr&gage=sfcc1>

FEMA Flood Map Search: <https://msc.fema.gov/portal/search>

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ATTACHMENT 4

FIELD INFORMATION TEAM ACTION LIST

- Field Information Teams (FIT) are Valley Water staff who have either volunteered or have been assigned to be deployed in the field to make observations during storm and high flow events. They may be directed in their assignments by a Subject Matter Expert from the Hydrology, Hydraulics & Geomorphology Unit, a FIT Coordinator or by the DOC/EOC Planning & Intelligence Section.
- Field Information Teams preferably have some knowledge or expertise relative to storms and flood events and ideally the location assigned.
- A Field Information Team is composed of at least two people who have been trained and adequately equipped.

PURPOSE:

- Visually identify and verify areas on the creek that need attention during storm and flood events.
- Provide real-time on-the-ground information to decision makers in the DOC/EOC.
- Document events with notes, logs, photos, drawing and maps that will be utilized after an event occurs for analysis, public meetings, planning studies, and documentation.

WHO DESIGNATED:

- Valley Water personnel

ACTIONS:

Responsibility/Activity	
Preparedness	Volunteer to be trained as a Field Information Team (FIT) member.
	Receive approval from immediate supervisor to be a FIT member.
	Receive training as a FIT.
	Provide current contact information to the FIT coordinator.
Monitoring	Report to the duty if called and available and go to assigned location(s). Generally assigned locations to observe the depth of water at the flood hot spots (e.g., Chaucer Street bridge).
	Report observations to the FIT coordinator, DOC, or EOC
	Document events as trained utilizing equipment provided
	Notify FIT Coordinator, DOC, or EOC if staff from another agency is assigned to the same location

Responsibility/Activity	
Watch	Report to the duty if called and available and go to assigned location(s). Generally assigned locations to observe the depth of water at the flood hot spots (e.g., Chaucer Street bridge).
	Report observations to the FIT coordinator, DOC, or EOC.
	Document events as trained utilizing equipment provided.
	Notify FIT Coordinator, DOC, or EOC if staff from another agency is assigned to the same location.
Warning	Report to the duty if called and available and go to assigned location(s). Generally assigned locations to observe the depth of water at the flood hot spots (e.g., Chaucer Street bridge).
	Report observations to the FIT coordinator, DOC, or EOC.
	Document events as trained utilizing equipment provided.
	Notify FIT Coordinator, DOC, or EOC if staff from another agency is assigned to the same location.

ATTACHMENT 5

WATERSHEDS OPERATIONS & MAINTENANCE ACTION LIST

- Watersheds Operations & Maintenance (O&M) includes engineers, planners, and maintenance staff with expertise in management of Valley Water property to: restore an improved facility to its as-built condition; remove trash and debris that affects the performance of an improved facility; remove trash from bridge piers/trash racks/fish ladders that may cause flooding where it is the responsibility of Valley Water; take remedial flood fighting measures as appropriate; maintain stock of sandbags for use by the public and Valley Water staff during the storm events; and manage/remove vegetation and invasive plant species.
- Watersheds O&M operates a Departmental Operations Center (DOC) during storm and flood events.
- Watersheds O&M field staff provides intelligence during storm and flood events to the DOC and EOC.
- Watersheds O&M staff may fill the roles of Field Information Team, Subject Matter Expert, Agency Coordinator and Agency Representative.

PURPOSE:

- Inspect Valley Water facilities to identify areas that need attention.
- Mitigate potential flooding and flood damages.
- Operate a DOC during storm and flood events.
- Coordinate with other agencies as appropriate to prepare and respond to storm and flood events.

WHO DESIGNATED:

- Watersheds O&M

ACTIONS:

Responsibility/Activity	
Preparedness	Inspect San Francisquito Creek for maintenance needs.
	Participate in annual work planning with other stakeholders.
	Implement annual work plan.
	Provide sandbags for flood fighting and private property protection.
	Participate in emergency operations training and emergency plan reviews.
	Inventory and acquire needed flood fighting materials and equipment and update lists for emergency plans (Attachments 13 & 14).

Responsibility/Activity	
Monitoring	Open DOC as necessary to coordinate field response to event and to provide notifications to Watersheds COO, EOC, and/or Agency Representative as appropriate.
	Report to the duty if called and available and go to assigned location(s). Field personnel are generally assigned several locations to inspect for blockages or other potential threats.
	Report observations and actions to DOC, or EOC.
	Respond to equipment needs at localities likely to be affected if possible.
	Take remedial actions as appropriate (Attachment 11).
	Document actions taken.
	Notify DOC or EOC if staff from another agency or media is at the same location.
Watch	Open DOC as necessary to coordinate field response to event and provide appropriate notifications.
	Report to the duty if called and available and go to assigned location(s). Field personnel are generally assigned several locations to inspect for blockages or other potential threats.
	Report observations and actions to DOC, or EOC.
	Respond to equipment needs at localities likely to be affected if possible.
	Take remedial actions as appropriate (Attachment 11).
	Document actions taken.
	Notify DOC or EOC if staff from another agency or media is at the same location.
Warning	Open DOC to coordinate field response to event and provide appropriate notifications.
	Report to the duty if called and available and go to assigned location(s). Field personnel are generally assigned several locations to inspect for blockages or other potential threats.
	Report observations and actions to DOC, or EOC.
	Respond to equipment needs at localities likely to be affected if possible.
	Take remedial actions as appropriate (Attachment 11).
	Document actions taken.
	Notify DOC or EOC if staff from another agency or media is at the same location.

ATTACHMENT 6

SUBJECT MATTER EXPERTS ACTION LIST

- Subject Matter Experts (SME) are staff who may be assigned to a role in the DOC/EOC Planning & Intelligence Section or Operations Section or they may be in the field, possibly serving as an Incident Commander.
- Subject Matter Experts are staff who have expertise or knowledge in an area related to the event.

PURPOSE:

- Provide hydrological, geological and waterway assessments.
- Provide expertise on flood fight operations and estimated impacts on critical infrastructure including utilities and transportation.

WHO DESIGNATED:

- Watersheds On-Call personnel
- Watersheds O&M Engineering Support, Vegetation, or Field Operations personnel
- Watersheds Hydrology, Hydraulics & Geomorphology personnel
- Other technical or operational personnel related to event (e.g., Geotechnical Engineer)

ACTIONS:

Responsibility/Activity	
Preparedness	Provide technical data on mitigation and preparedness measures.
	Conduct field inspections of San Francisquito Creek and facilities.
	Assess property management needs and plans.
	Perform mitigation work to reduce flood risk.
	Provide technical floodplain mapping expertise. Provide flood maps as appropriate.
	Maintain equipment, gauges, telemetry, communications systems, etc.
	Develop and maintain computer models of watersheds and creeks.
	Participate in winter preparedness workshop.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.
	Manage flood information websites.
Monitoring	Notify supervisor or Agency Coordinator about the changes in conditions and risk.
	Conduct formal monitoring, communicate via virtual systems; communicate with Agency Coordinators to provide advice to determine next level of activation.
	Take remedial actions as appropriate (Attachment 11).
	Report to designated DOC/EOC/SFC MAC facility when directed, and available.
	Review and advise on Field Information Team deployments.

Responsibility/Activity	
Watch	Communicate risk to DOC/EOC.
	Continue monitoring situation and provide advice on next level activation.
	Review and advise on Field Information Team deployments.
	Take remedial actions as appropriate (Attachment 11).
	Report to designated MAC facility when directed, as available.
	Update computer modeling based on forecast and watershed conditions and, if possible and deemed necessary, provide forecast flood maps.
Warning	Communicate risk to DOC/EOC.
	Continue to monitor situation.
	Take remedial actions as appropriate (Attachment 11).
	Update computer modeling based on forecast and watershed conditions and, if possible and deemed necessary, provide forecast flood maps.
	Review and advise on Field Information Team deployments.

ATTACHMENT 7

AGENCY COORDINATORS ACTION LIST

- Agency Coordinators are designated Valley Water staff who may normally be assigned roles in an EOC Management or Operations Section.
- Agency Coordinators may also be in the field serving in the role of an Incident Commander.
- Agency Coordinators should have authority to recommend actions or updates to plans.

PURPOSE:

- Agency Coordinator’s primary role is to manage or help lead a section in the DOC/EOC.
- If the SFC MAC is convened, an Agency Coordinator will help coordinate actions between the Stakeholders to resolve questions on response and assign resources from their respective agency for comprehensive support to the event.

WHO DESIGNATED:

- Watersheds Operations & Maintenance Division
- Watersheds Stewardship & Planning Division
- Watersheds Design & Construction Division

ACTIONS:

Responsibility/Activity	
Preparedness	Provide direction and perform mitigation and preparedness measures.
	Participate in annual Stakeholder inspection of O&M needs on San Francisquito Creek and implement agreed upon work.
	Assess property management needs and implement plans.
	Inventory and Procure Flood Fighting Materials and Equipment.
	Maintain the Community Rating System certification with the National Flood Insurance Program (NFIP).
	Advise agencies on floodplain management measures for building in floodplains.
	Conduct winter preparedness workshop.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.
	Assist in update of EAP.
	Coordinate with SFCJPA and SFC MAC for preparedness measures.
Monitoring	Provide notifications of the increased condition level to staff that would include PIO and Watersheds COO.
	Communicate risk to EOC/SFC MAC representatives.
	Direct Response to and mitigate minor events as needed; coordinate with each responding agency.

Responsibility/Activity	
	Plan the staging of equipment at localities likely to be affected as needed; coordinated with each responding agency.
	Report to designated SFC MAC facility when directed, and available.
	Confer with SME, AR & EOC Director on conditions for activating next level.
	Assist in developing and implementing Action Plans.
	Identify location for flood fighting resources for the public (e.g. sandbag locations). May begin planning for establishment of special temporary sandbag locations (Attachment 10).
	Assist in coordinating Field Information Teams.
Watch	Confer with AR/EOC Director for activation of a SFC MAC.
	Report to designated SFC MAC facility when directed, as available.
	Manage information from the SME/Department Operational Center (DOC).
	Allow the DOC to manage field response.
	Notify appropriate Valley Water staff about the increased condition level.
	Confer with SFC MAC responding Agency Coordinators to determine response coordination needs and resources needs.
	Respond to and mitigate minor events as needed; coordinate with each responding SFC MAC agency.
	Direct the staging of equipment at localities likely to be affected as needed; coordinated with each responding SFC MAC agency.
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g. sandbag locations).
	Provide information on impact and available resources to and from respective SFC MAC EOCs.
Provide information to and from respective SFC MAC EOCs, including status reports and briefings.	
Warning	Report to designated SFC MAC facility when directed, if not already done.
	Manage information from the SME/Department Operational Center (DOC).
	Allow the DOC to manage field response.
	Notify Valley Water staff of own agency about the increased condition level.
	Confer with SFC MAC responding Agency Coordinators to determine response coordination needs and resources needs.
	Respond to and mitigate minor events as needed; coordinate with each responding SFC MAC agency.
	Direct the staging of equipment at localities likely to be affected as needed; coordinated with each responding SFC MAC agency.
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g. sandbag locations).
	Provide information on impact and available resources to and from respective SFC MAC EOCs.
	Provide information to and from respective SFC MAC EOCs, including status reports and briefings.

ATTACHMENT 8

PUBLIC INFORMATION OFFICER ACTION LIST

PURPOSE:

- Provide public communications before, during and after a flood emergency.
- Prepare and coordinate public message between agencies.
- Provide internal and public notifications.
- Provide information to Elected Officials.

WHO DESIGNATED:

- Office of Communications
- Office of Government Relations
- Office of Civic Engagement

ACTIONS:

Responsibility/Activity	
Preparedness	Participate in winter preparedness workshop.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.
	Publish Preparedness Public Outreach (e.g., Winter Preparedness).
	Provide public education regarding flooding.
	Coordinate with SFC MAC Stakeholders on outreach.
	Review standard recommended public statements and delivery methods.
	Provide appropriate training to staff involved in events on how to respond to the public, media, and elected officials.
	Update Emergency Communications Plan and notification systems.
Monitoring	Notify Valley Water staff of the increased condition level.
	Report to designated SFC MAC facility when directed, and available.
	Provide public outreach regarding flooding.
	Communicate with media as needed.
	Provide DOC/EOC staff with public messages regarding event.
	Coordinate with SFC MAC Stakeholders on outreach.
	Provide information to Valley Water Elected Officials as appropriate.
Watch	Notify Valley Water staff of the increased condition level.
	Update Valley Water website as needed to provide emergency information.
	Provide public information in multiple languages.
	Communicate with media as needed.
	Provide DOC/EOC staff with public messages regarding event.
	Coordinate with SFC MAC to provide public warning in multiple languages.

Responsibility/Activity	
	Coordinate with SFC MAC to activate public notification systems as appropriate.
	Provide information to and from Elected Officials.
	Participate in JIS/JIC as appropriate.
	Communicate with media as needed.
	Report to designated SFC MAC facility when directed, as available.
Warning	Report to designated SFC MAC facility when directed and available, if not already done.
	Notify Valley Water staff of the increased condition level.
	Update Valley Water website as needed to provide emergency information.
	Provide public information in multiple languages as appropriate.
	Support the SFC MAC to provide public warning and shelter information in multiple languages and assist in door to door or mobile warnings if available and appropriate.
	Provide information to and from Elected Officials.
	Participate in JIS/JIC as appropriate to jointly communicate with media.
	Communicate with media as needed.
	Coordinate PIO resources through respective EOCs.

ATTACHMENT 9

AGENCY REPRESENTATIVE ACTION LIST

- Agency Representatives are designated Valley Water staff who may normally be assigned lead roles in an DOC/EOC Management or Operations Section.
- Agency Representatives may also be serving in an Executive Management position at Valley Water.
- Agency Representatives should have authority to assign or reallocate resources, update and implement plans, and to set policy as authorized.

PURPOSE:

- Direct actions to facilitate the EAP.
- Re-allocate agency resources to address EAP as needed.
- Provide directives and affect emergency orders.
- Makes final decision on the level of activation of the EAP and coordinates on SFC MAC activation level.

WHO DESIGNATED:

- Watersheds
- External Affairs
- Water Utility
- Administration

ACTIONS:

Responsibility/Activity	
Preparedness	Support and, if available, participate in winter preparedness workshop.
	Ensure public education is provided.
	Provide resources to support the FEMA Community Rating System in Santa Clara County.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.
	Update EAP and Contact/Roles list and provide revisions to Stakeholders.
	Provide resources to support on-going activity to support this EAP and mitigation efforts along waterways.

Responsibility/Activity	
Monitoring	Activate the EAP for "Monitoring."
	Determine level of DOC or EOC staffing after consult with OES.
	Report to designated SFC MAC facility when directed, and available.
	Assure public outreach is provided.
	Provide information to Valley Water CEO and, if needed, Elected Officials.
	Identify conditions for activating next level after consulting with AC/SME.
	Determine need to recommend activation of SFC MAC.
Watch	Activate the EAP for "Watch."
	Allow the DOC to manage field response.
	Provide information on impact and available resources to and from respective EOCs.
	Report to designated SFC MAC facility when requested and as available.
	Confer with EOC Director/SME on conditions for activating next level.
	Provide information to Valley Water CEO and, if needed, Elected Officials.
Warning	Activate the EAP for "Warning."
	Report to designated SFC MAC facility when directed, if not already done.
	Provide information on impact and available resources to and from respective EOCs.
	Allow DOC to manage field response and provide resources as available.
	Provide information to Valley Water CEO and, if needed, Elected Officials.

ATTACHMENT 10

ELECTED OFFICIALS ACTION LIST

PURPOSE:

- Coordinate with constituents.
- Check with CEO or PIO on conditions.
- Coordinate information through the Public Information Officer/Liaison.
- Communicate to Elected Officials of other agencies as appropriate.

WHO DESIGNATED:

- Valley Water Board of Directors

ACTIONS:

Responsibility/Activity	
Preparedness	Support the winter preparedness workshop.
	Set policy guidance for Valley Water related to emergency response.
	Provide resources in budget to support the Board’s relative policies and the flood related mitigation efforts along waterways.
Monitoring	
	Communicate with PIO personnel regarding situation and public/media messages.
	Respond to constituents.
	Report any constituent concerns or observations to PIO.
Watch	
	All Monitoring Responsibilities/Actions stated above.
	Communicate with PIO at designated SFC MAC facility for more detailed briefing when requested, as available.
Warning	
	All previous Responsibilities/Actions stated above.
	Respond to media and constituents with agreed upon messages.
	Support and communicate with other Elected Officials about Local Emergency as appropriate.

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ATTACHMENT 11

EMERGENCY REMEDIAL ACTIONS

If time and conditions permit, the following emergency remedial actions should be considered for emergency situations. Immediate implementation of these remedial actions may delay, moderate, or prevent flooding. Several of the listed adverse or unusual conditions may occur along the creek at the same time, requiring implementation of several modes of remedial actions. Close monitoring of the creek must be maintained to confirm the success of any remedial action taken along the creek.

BANK EROSION

1. If water is no longer rising, erosion scour may be filled with rock, sandbags, plastic sheeting or materials to prevent further loss of soil.

BOILS OR SEEPAGE BEHIND LEVEE

1. Monitor creek level and seepage flow until seepage stops.
2. Inspect slopes to determine if the entrance to the seepage origination point is visible (whirlpool) and accessible. Attempt to plug entrance with readily available material such as soil, rockfill or plastic sheeting.
3. Cover the seepage exit area (s) with sand or gravel to hold fine-grained soils in place. Alternatively, construct a sandbag or other type of ring dike around the seepage exit area to retain a pool of water, providing backpressure and reducing the erosive nature of the seepage.
4. Do not drive vehicles or equipment between the seepage area and the creek to avoid collapse of any underground voids.

LEVEE DAMAGE

1. Settlement of crest may be filled with sandbags or earth and rockfill materials in the damaged area to restore freeboard.
2. Sloughing may be stabilized by placing a soil or rock filled buttress against the toe of the sloughing.

EMBANKMENT OVERTOPPING

1. If water level is no longer rising, place sandbags along the low areas of the top of the bank/levee to reduce flow concentration during minor overtopping.

DOWNED TREES/BLOCKAGE

1. Where it is safe to do so, clear debris and downed trees that pose a threat to obstructing flow. Clear pier noses and trash racks.

EARTHQUAKE

1. Immediately conduct a visual inspection of the levees if a magnitude 6.0 or greater earthquake occurs within 50 miles of the creek.
2. If time allows, perform a field survey to determine if there has been any settlement or movement of levees.
3. Visually inspect creek for any movement or damage along the creek including creek banks, outlets, bridges, access ramps.

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