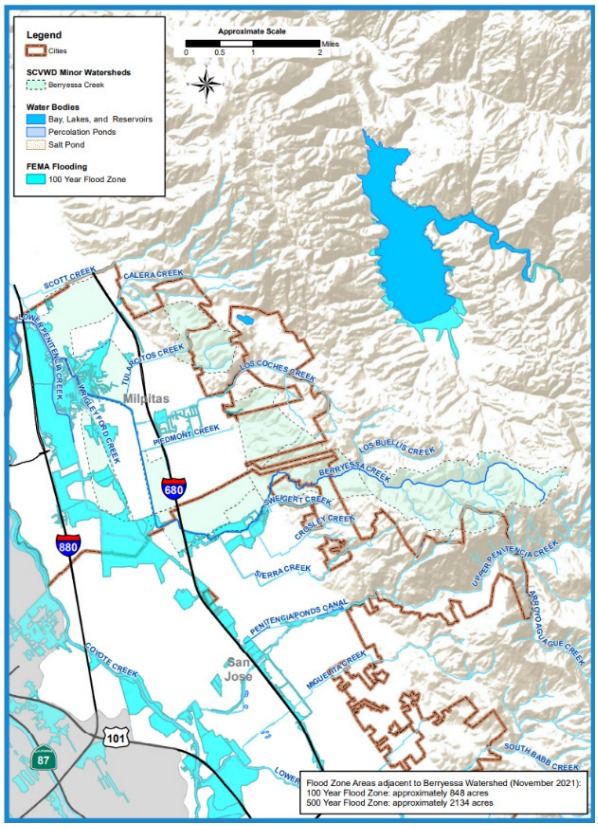
EMERGENCY ACTION PLAN FOR SEVERE STORM AND FLOOD RESPONSE LOWER PENITENCIA CREEK WATERSHED



October 2024

SANTA CLARA VALLEY WATER DISTRICT

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APPROVAL & IMPLEMENTATION

The Emergency Action Plan for Severe Storm and Flood Response in the Lower Penitencia Creek Watershed (EAP) prepared by the Santa Clara Valley Water District (Valley Water) is hereby approved for implementation. This plan, which includes Appendices with more specific guidance for Lower Penitencia Creek and Berryessa Creek, shall be reviewed and updated annually as necessary in coordination with other affected Valley Water divisions/units and, if appropriate, external stakeholders. While this EAP provides specific guidance for storm and flood response for Berryessa Creek, additional guidance relative to coordination with the City of San José for Berryessa Creek is provided in a separate Joint Emergency Action Plan for Severe Storm and Flood Response in City of San José (JEAP) that was prepared and adopted by the City of San José City Council and Valley Water Board of Directors.

This plan uses resources currently available to Valley Water and does not obligate other stakeholders. It is intended to provide guidance on how Valley Water will coordinate, communicate, and make decisions for preparation and response to storm and flood events. It is not intended to prescribe responsibilities or actions nor constrain the freedom of Valley Water during any phase of operations.

Valley Water's Chief Executive Officer has assigned oversight of emergency management to the Chief Operating Officer (COO) of Administrative Services and management of activities relating to creeks in the Lower Penitencia Watershed to the COO of Watersheds. Approval and implementation of this EAP is the responsibility of these COOs.

By signing here, the COOs agree to the concepts outlined in this EAP and will continue work on maintaining the EAP, and provide appropriate risk-based resources for preparedness, mitigation and response to ensure business interruption is minimized and Valley Water's services remain reliable to its customers.

DocuSigned by:
Chris Hakes
8942101CC55E441...

11/16/2023

Christopher Hakes, P.E.
Chief Operating Officer,
Watersheds

DATE

DocuSigned by:
Tina Nguyen Yoke
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11/20/2023

Tina Nguyen Yoke
Chief Operating Officer,
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DATE

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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
AAR	After-Action Report
ALERT	Automated Local Evaluation in Real Time
Alert SCC	Alert Santa Clara County
AP	Action Plan
County	Santa Clara County
DOC	Departmental Operations Center
EAP	Emergency Action Plan for Severe Storm and Flood Response in Lower Penitencia Watershed
EMO	Emergency Management Organization
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FIT	Field Information Team
HH&G	Hydrology, Hydraulics & Geomorphology Unit
IC	Incident Command(er)
ICS	Incident Command System
IPAWS	Integrated Public Alert & Warning System
JIC	Joint Information Center
JIS	Joint Information System
MAC	Multi-Agency Coordination
NIMS	National Incident Management System
NWS	National Weather Service
OC	Office of Communications
OES	Office of Emergency Services
O&M	Watersheds Operations & Maintenance Division
O&MES	Watersheds Operations & Maintenance Engineering Support Unit
PIO	Public Information Officer
SEMS	Standardized Emergency Management System
SME	Subject Matter Expert
VFOU	Vegetation Field Operations Unit
WFOU	Watersheds Field Operations Unit

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GLOSSARY OF TERMS

Readers of this plan may find it useful to understand some terms that may be used in the Emergency Action Plan or may be used before or during an event or training exercise.

TERM	DEFINITION
After-Action Report (AAR)	An After-Action Report (AAR) is the final product of an exercise or actual event. The AAR has three components: 1. Summary of exercise objectives and actual events; 2. Observations and recommendations based on the exercise objectives or actual event as associated with the capabilities and tasks; and 3. A section that identifies specific corrective/improvement recommendations.
Boil/Seepage	When the floodwaters are higher than the land, the groundwater, under pressure from the river, exerts an upward pressure on the land inside the levee or floodwall. With time this increased “head pressure,” as it is known to engineers, can drive water through or under a levee/floodwall to the surface as seepage. When floodwaters remain high for a long time though, seepage can increase in volume and velocity and begin the destructive process of moving sand/soil from the foundation, through the ground, to the surface, forming boils.
Channel Capacity	The maximum flow which can pass through a channel without overflowing the banks.
Channel Improvements or Channelization	The improvement of the water carrying capacity or flow characteristics of a natural or artificial channel by clearing, excavation, bank stabilization, or other means. Also referred to as channel alterations.
Collaboration Software	Collaboration software enables the sharing, processing, and management of files, documents, and other data types among several users and/or systems. This type of software allows two or more remote users to jointly work on a task or project and/or to view the same data.
Community Rating System (CRS)	A program developed by FEMA to provide incentives for those communities in the Regular Program that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.
Critical Facility	For some activities and facilities, even a slight chance of flooding is too great a threat. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans. A critical facility should not be located in a floodplain if at all possible.
Cubic Feet per Second (CFS)	The rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and equivalent to 7.48 gallons per second or 448.8 gallons per minute.
Design Flood	The term “design flood” is used to denote the maximum flood flow used for design and operation of flood control structures and other protective measures. The Design is often set as the 100-year or 1% flow rate, but it may be set at other levels.
Design Stage	The term “design stage” is used to denote the maximum level (generally denoted in feet) above the channel bottom or above sea level at the specific location for which flood control structures and other protective measures are designed. The design stage is based on a Design that is often set as the 100-year or 1% flow rate, but it may be set at other levels.

TERM	DEFINITION
Design Storm	Design storm means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency, and total depth of rainfall.
Discharge	The amount of water that passes a point in a given period of time. Rate of discharge is usually measured in cubic feet per second (cfs).
Emergency Communications Plan	An emergency communications plan (EC plan) is a document that provides guidelines, contact information, and procedures for how information should be shared during all phases of an unexpected occurrence that requires immediate action.
Emergency Management Organization	An Emergency Management Organization (EMO) coordinates activities related to an event. Examples of EMOs are: • Agency leadership and other staff that meet to assess, monitor and determine how to respond to an event. • Emergency Operations Centers • Department Operations Centers • Multi-Agency Coordination Groups
Erosion	The collapse, undermining, or subsidence of land along the bank of a body of water. Erosion is caused by waves or currents of water and can result in flooding or failure of adjacent structures.
Federal Emergency Management Agency (FEMA)	The Federal agency under which the National Flood Insurance Program (NFIP) is administered. In March 2003, FEMA became part of the newly created U.S. Department of Homeland Security. An agency within the U.S. Department of Homeland Security charged with responding to Presidentially declared disasters.
Flash Flood or Flashy System	A flood that reaches its peak flow in a short length of time (hours or minutes) after the storm or other event causing it. Often occurs in watersheds with mostly storm drain runoff and is often characterized by high-velocity flows.
Flood Control	Keeping flood waters away from specific developments and/or populated areas by the construction of flood storage reservoirs, channel alterations, dikes and levees, bypass channels, or other engineering works.
Flood Fighting	Actions taken immediately before or during a flood to protect human life and to reduce flood damages such as evacuation, emergency sandbagging and diking, and provision of assistance to flood victims.
Flood Flow	The discharge at which a body of water begins to flow over its banks and onto dry land, usually expressed in cubic feet per second (cfs).
Flood Forecasting	The process of predicting the occurrence, magnitude, and duration of an imminent flood through meteorological and hydrological observations and analysis.
Flood Frequency	A statistical expression of the average time period between floods equaling or exceeding a given magnitude. For example, a 100-year flood has a magnitude expected to be equaled or exceeded on the average of once every 100 years; such a flood has a 1% chance of being equaled or exceeded in any given year. Often used interchangeably with “recurrence interval”.
Flood Insurance Rate Map (FIRM)	An official map of a community on which the Federal Insurance Administration has delineated the area in which the purchase of flood insurance is required under the National Flood Insurance Program.

TERM	DEFINITION
Flood Stage	The level at which a body of water begins to flow over its banks and onto dry land, usually expressed in feet above channel bottom or above sea level at a specific location.
Flooding – Fluvial or Riverine	Fluvial, or riverine flooding, occurs when excessive rainfall over an extended period of time causes a river to exceed its capacity.
Flooding – Surface or Local Drainage	When rain hits the ground quicker than it can drain or flow away, water builds up and develops the potential to flood streets and properties. In some places, it forms isolated puddles in ground depressions and in others it accumulates and flows downhill towards streams. Typically, surface water flood events have localized effects, impacting properties in close proximity to where the rain fell and for a short amount of time until it can drain into a stream, be pumped into a stream, percolate into the ground, or evaporate.
Floodplain	Any land area susceptible to being inundated by floodwaters from any source. The channel of a stream or watercourse is part of the floodplain.
Floodplain Management	The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood-control works, and floodplain management regulations. Floodplain management is a decision-making process that aims to achieve the wise use of the nation's floodplains. "Wise use" means both reduced flood losses and protection of the natural resources and function of floodplains.
Floodplain Management Regulations	A general term for the full range of codes, ordinances, and other regulations relating to the use of land and construction within stream channels and floodplain areas. The term encompasses zoning ordinances, subdivision regulations, building and housing codes, encroachment line statutes, open-space regulations, and other similar methods of control affecting the use and development of these areas.
Freeboard	A margin of safety added to the flood elevation to account for waves, debris, miscalculations, or lack of data. This term is often used when describing distance of the water surface to top of bank of a stream or in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with state or community floodplain management regulations.
High Flow Stage	The depth of water when a stream flood control facility is nearing Flood Stage or Design stage.
Incident Commander	The Incident Commander is the individual responsible for all incident response activities, including the development of strategies and tactics and the ordering and release of resources. The Incident Commander has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.
Levee or Dike	Permanent or temporary mounds of earth (often engineered with maintenance roads on top) and/or fill, such as sand, sandbags or gravel, piled along a body of water to prevent it from overflowing onto dry land.
Long Range Acoustical Device (LRAD)	LRAD is a high-powered speaker system that emits a shrill sound followed by spoken instructions such as "shelter in place" or "flooding is imminent, evacuate now". The speakers are strategically mounted to cover wide areas as needed. This system cannot only wake you up but inform you as to what's going on.

TERM	DEFINITION
Multi-Agency Coordination (MAC) Group	Administrators/Executives, or their designees, who are authorized to represent or commit agency resources and funds are brought together to form MAC Groups. MAC Groups may be established at any level or in any discipline. Under SEMS, MAC Group activities are typically facilitated by EOCs. A MAC Group can: • Commit agency resources and funds • Provide coordinated decision making • Allocate resources among cooperating agencies • Establish priorities among incidents • Harmonize agency policies • Provide strategic guidance to support incident management activities A MAC group may also be referred to as a multi-agency committee, emergency management committee, interagency policy group, or as otherwise defined by the MAC System.
Multi-Agency Coordination (MAC) System	Multi-agency coordination is a process that allows all levels of government and all disciplines to work together in responding to an emergency. Multi-agency coordination occurs across the jurisdictional lines, or across levels of government. The primary function of MACS is to coordinate activities above the field level and to prioritize the incident demands for scarce or competing resources. MACS consists of a combination of elements: personnel, procedures, protocols, business practices, and communications integrated into a common system.
National Flood Insurance Program (NFIP)	The program of flood insurance coverage and floodplain management administered under the Act and applicable federal regulations promulgated in Title 44 of the Code of Federal Regulations, Subchapter B.
Recovery Activities	Activities that include the development, coordination, and execution of service and site-restoration plans; the reconstitution of government operations and services; individual, private-sector, nongovernmental, and public-assistance programs to provide housing and to promote restoration; long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; post-incident reporting; and development of initiatives to mitigate the effects of future incidents.
Stage or Gauge Height	The water-surface elevation referred to some arbitrary datum. The stage or gauge height represents the water-surface elevation above the channel bottom elevation at a specific location. For example, the elevation of the datum (channel bottom) of the gauge might be 100.00 feet, which, when added to a stage of 12.50 feet, represents a water-surface elevation of 112.50 feet at that location.
Top of Bank	Top of Bank means the point along the bank of a stream where an abrupt change in slope is evident, and where the stream is generally able to overflow the banks and enter the adjacent floodplain during an annual flood event. For steep and narrow valleys, it will generally be the same as the top of slope.
Unified Command	A unified command is established when no one jurisdiction, agency or organization has primary authority and/or the resources to manage an incident on its own It is a method for all agencies who have jurisdictional responsibility, or in some cases who have functional responsibilities at the incident, to determination of overall objectives for the incident, and selection of strategies to achieve the objectives.

CONTROL COPIES AND REVISIONS

RECORD OF HOLDERS OF CONTROL COPIES OF THIS EMERGENCY ACTION PLAN

Copy Number	Unit/Location	Person Receiving Copy	Date
1	Office of Chief Operating Officer – Watersheds	COO - Watersheds	
2	Office of Chief Operating Officer – Administrative Services	Tina Yoke	
3	Watersheds Operations & Maintenance Deputy Operating Officer	Jennifer Codianne	
4	Watersheds O&M Engineering Support	Devin Mody	
5	Watersheds Field Operations	Ryan Tregoning	
6	Watersheds O&M Engineering Support	Greg Meamber	
7	Security Office	Security Office - James Randol	
8	Emergency Operations Center	Alexander Gordon	
9	Hydrology, Hydraulics & Geomorphology	Liang Xu	
10	Office of Communications	Linh Hoang	
11	City of Milpitas	Fire Department - Office of Emergency Services	

RECORD OF REVISIONS AND UPDATES MADE TO EMERGENCY ACTION PLAN

Revision Number	Date	Revision Made	By Whom
1	Oct. 24, 2024	Removed Lower Penitencia Creek on-site monitoring table, changed Berryessa Creek Calaveras Gauge to action level at 13 foot stage, changed operational level to readiness level, removed colors identifying the readiness levels, removed design stage from readiness levels, incorporated the term Emergency Management Organization.	OES

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1. INTRODUCTION

A. PURPOSE. The Federal Emergency Management Agency (FEMA) has identified that floods are the most frequent and costly natural disaster in the United States. Creeks in the Lower Penitencia Creek Watershed have flooded the cities of Milpitas and San José in Santa Clara County many times over the years with the most recent flooding occurring in 1982, 1983, 1998. FEMA floodplain mapping estimates that there are currently about 10,317 acres subject to flooding from a 100-year (1%) flood event (Figure 1). In addition, other properties not shown in the FEMA flood area are still subject to flood threats due to potential unforeseen events (e.g., extreme storm events, levee failures, channel blockages) and from water ponding due to inadequate storm drainage. With this in mind, it is important to adequately prepare and respond to potential or actual flood events to protect the people and property in the Watershed.

This Emergency Action Plan for Severe Storm and Flood Response in the Lower Penitencia Creek Watershed (EAP), a Valley Water internal document, is based on previously prepared Valley Water Emergency Action Plans and follows the same format as other Valley Water Emergency Action Plans for Severe Storms and Flood Response. It is focused on fluvial flood threats caused by severe storms and high flows in the creeks and is intended to provide general guidance for response in the Lower Penitencia Creek Watershed. In addition, specific guidance is included for select creeks within the Appendices (Lower Penitencia Creek and Berryessa Creek are currently included) to facilitate Valley Water's activities within the following four areas:

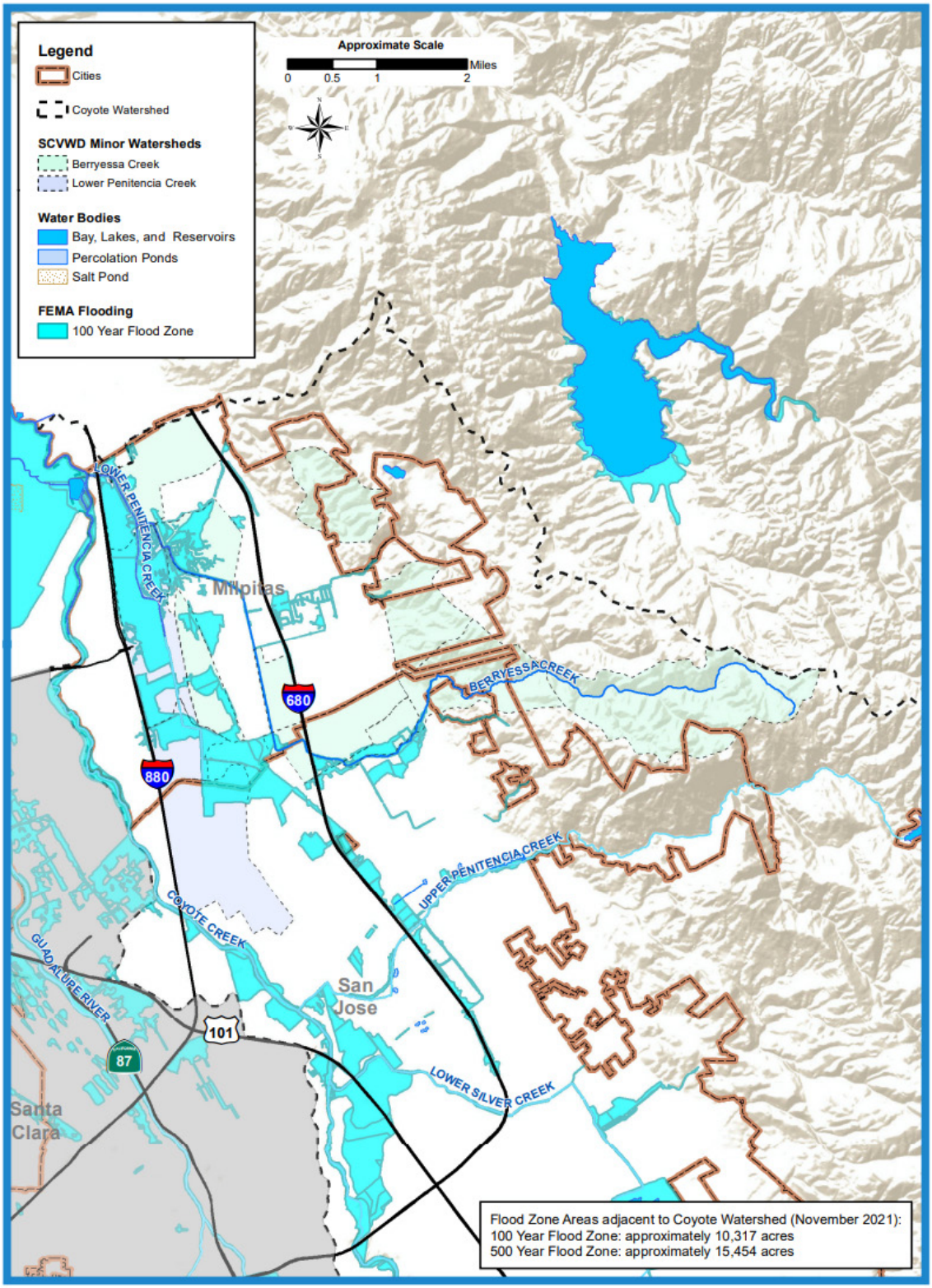
1. Pre-incident planning prior to a storm/flood event;

2. Response to potential, imminent or actual storm/flood events;

3. Recovery actions following a storm/flood event; and

4. Coordination with the other responsible jurisdictions for flooding in the Lower Penitencia Creek Watershed.

FIGURE 1
Lower Penitencia Watershed & FEMA Flood Map
(500-yr flood zone does not always reflect actual conditions)



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.

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Valley Water

B. STRUCTURE OF THIS EMERGENCY ACTION PLAN. The plan is organized in three sections:

Base Plan	The Base Plan identifies the roles, responsibilities and actions assigned to Valley Water and responsibilities and actions expected of other stakeholders in the Lower Penitencia Watershed.
Attachments	Attachments include information and guidance useful in any Severe Storm or Flood Incident.
Appendices	Provides specific details on creeks in the Lower Penitencia Watershed.

C. STAKEHOLDERS. Valley Water is one of many stakeholders in the Watershed and will fulfill related responsibilities before, during and after flood emergencies as resources are available and/or can be safely deployed. Other stakeholders include property owners along the creeks and public agencies that have responsibility related to emergency preparedness or response in the Lower Penitencia Creek Watershed. In addition to Valley Water and private property owners, other stakeholders included in the list below have important responsibilities or functions during flood emergencies in the Lower Penitencia Watershed that may be identified in this EAP:

- City Stakeholders
  - City of Milpitas
  - City of San José
- County of Santa Clara (County)
- Caltrans
- Bay Area Rapid Transit
- Santa Clara Valley Transportation Authority
- School Districts
  - Milpitas Unified School District
  - Berryessa Unified School District
- National Weather Service (NWS)
- Federal Emergency Management Agency (FEMA)

While some of the stakeholders may have jurisdictions, responsibilities and, in some cases, oversight of the creek for flood protection, this plan is focused on the related activities of Valley Water. As such, the Valley Water has many internal stakeholders that are involved in preparing and responding to emergency situations including leadership that is part of the Emergency Management Organization (EMO) that takes an active decision-making role early in any event. Valley Water EMO during an event could include:

- Chief Operating Officer of Information Technology and Administrative Services
- Chief Officers for Water Utility, Watersheds, External Affairs
- Assistant Officer of Emergency, Safety and Security
- Deputy Operating Officer of Raw Water Operations

- Deputy Operating Officer of Treated Water Operations
- Deputy Operating Officer of Watersheds Operations and Maintenance
- Deputy Operating Officer of Information Technology
- Facilities and Fleet Manager
- Environmental Health and Safety Manager
- Security Manager
- Office of Emergency Services (OES)

The primary internal Valley Water stakeholders that may have responsibilities and actions assigned in this 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 – Administrative Services
      - Office of Emergency, Safety and Security
        - Office of Emergency Services (OES)
      - General Services Division
        - Business Customer Support & Warehouse Services
        - Equipment Management
        - Facilities Management
        - Purchasing & Consultant Contracts Services
      - Information Technology Division
    - Financial Planning & Management Services Division
    - Office of Integrated Water Management
      - Raw Water Division
        - Community Projects Review Unit
      - 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
          - Design and Construction Unit
    - Office of Chief of External Affairs
      - Office of Communications (OC)
      - Office of Government Relations

D. LIMITATIONS OF EAP. This EAP shall not constrain the freedom of an Incident Commander (IC) in the field or others of an Emergency Management Organization (EMO) when dealing with flooding in the Lower Penitencia Creek Watershed. This EAP does NOT and will NOT replace or override Valley Water's or other Agency's:

- Emergency Operations Plans;
- Department Operations Center Plans;
- Public Safety Authority;
- Public Information Officer role/responsibility;
- Purchasing Authority; nor
- Responsibility for documentation for any state or federal Declaration of Emergency.

Instead, this EAP will focus on how Valley Water can improve coordination before, during and after a flood incident to include providing oversight and guidance. It is not intended to set precedent or commit resources without knowledge of the conditions that may occur, nor provide prescriptive lists of what to do during storm and flood monitoring and response, that Valley Water and other Stakeholders are individual jurisdictions and have independent responsibility to accomplish their tasks. The conditions of the emergency dictate the response needs and availability of staff and resources as each emergency can be different and updates in stream management and control systems could vary the conditions. Valley Water will utilize this EAP as needed to develop decisions and actions based on the situation and current capabilities, resources and priorities.

While this EAP, an Attachment, or an Appendix within may reference an activity related to facility improvements or maintenance, those will be done through separate plans or activities.

E. USE OF THE EAP. This Valley Water internal document is intended to be used by Valley Water before, during and after a storm and includes proactive cooperation with the cities, County of Santa Clara, and other stakeholders as needed. Some response data includes restricted or sensitive information. The restricted portions of this document will clearly be indicated on the subject pages and will not be distributed or made available externally to individuals outside of Valley Water. Valley Water, cities and other agencies may distribute the full EAP internally but will handle with the same care as other restricted documents.

F. RELATIONSHIP TO OTHER PLANS. This EAP provides additional guidance specific to Valley Water in its planning, response and recovery activities related to flood emergencies in the Lower Penitencia Creek Watershed. This guidance does not supersede existing agreements or internal plans, such as, the Valley Water Emergency Operations Plan (EOP) or Joint Emergency Action Plan for Severe Storm and Flood Response in City of San José and is consistent with other plans and procedures. It may include responsibilities or actions that may be taken by other external stakeholders, many of which are included in 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.

G. TRAINING ON EAP. Regular emergency operations training and exercising of plans is critical to successfully respond to emergency events. As the lead agency for flood protection in Santa Clara County, Valley Water will regularly conduct related training and include other stakeholders as appropriate. Valley Water staff participating in these training exercises should use it as an opportunity to review and exercise the Valley Water EOP and, when appropriate, this or a similar EAP.

The Office of Emergency Services (OES) is generally responsible for coordinating and conducting these training sessions 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 Emergency Management Organization (e.g., EOC). These will often be general training but may also use specific scenarios that could include the use of this EAP.

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

This test can consist of a meeting, including a tabletop exercise, or be conducted as part of Watersheds Operation & Maintenance Division (O&M) tabletop exercises. A scenario or scenarios specific to a creek included in this EAP is recommended to allow participants to discuss response and actions they would take to address and resolve the scenario. It is preferable if each section of an EAP be utilized during the exercise.

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

H. MAINTENANCE OF EAP. O&M should annually review this EAP and if appropriate include OES, Hydrology Hydraulics & Geomorphology (HH&G) and other appropriate stakeholders in the review. If indicated by the review or by an AAR, the EAP should be updated. The EAP annual review should include the following:

- Verify that the phone numbers and persons in the specified positions are current and revise if any of the contacts have changed;
- Verify and, if necessary, update flood maps and flood thresholds;
- Verify the locally available resources and equipment are current; and/or
- Incorporate appropriate recommendations from any AAR prepared after training or activation of this EAP or similar EAP.

REVISIONS. Watersheds O&M Division is responsible for updating the EAP document. If the revisions are minor (e.g., updating names and phone numbers), the updated document does not require extensive reviews and does not necessitate new signature approvals. If there are major revisions (e.g., adding new facilities), stakeholder reviews and new signature approvals are required.

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. This can be done utilizing several methods including electronically using Portable Document Format (PDF) file sharing or emails.

EAP document holders are responsible for updating outdated copies of the respective documents whenever revisions are received. Outdated pages or files should be immediately discarded to avoid any confusion with the revisions.

OES is responsible for maintaining Valley Water's Flood Emergency Action Plans webpage and will post all revised public versions of the EAP on valleywater.org as determined appropriate.

2. CONCEPT OF OPERATIONS

A. READINESS LEVELS. While the primary purpose of this EAP is to provide guidance during flood emergencies, to maintain the collaborative nature of the emergency preparedness and response with other stakeholders this **EAP is in a state of perpetual activation, throughout the year, regardless of the flood readiness level**. As the flood threat changes the readiness level will be changed to reflect the current condition.

The readiness level is generally at Preparedness and is elevated due to an event by the Valley Water EMO, which includes executive leadership and the Emergency Operations Center (EOC) staff when it is activated.

When a potential flood situation develops Valley Water leadership will meet as the Emergency Management Organization (EMO) to determine whether to continue "business as usual" in the preparedness level, to monitor the situation, or to activate the EOC. If the EOC is activated, the EOC Director will determine the flood readiness level. Table 1 provides guidance to determine the flood readiness level. In addition to high flow readiness levels as described in Table 1, Attachment 1 lists other events that may be considered when determining a flood readiness level.

TABLE 1
Flood Readiness Levels

PREPAREDNESS	This is the base stage of readiness that will be the typical condition throughout most of the year. An Emergency Management Organization (EMO) is not active at this level. It is defined as: • Flood stage (Minor Flooding or greater) is not estimated within the next 72 hours or • Measured stream depth is below 50% of flood stage.
MONITORING	This condition is variable and requires more intense monitoring and a heightened level of alertness. An EMO may be minimally active to monitor for any developing flood concern. This condition is defined as: • Flood stage may occur in 48 to 72 hours, or • Measured stream depth is at 50% to 70% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or near design stage within 24 hours.
WATCH	Flood level or a serious flood threat is expected to occur. An EMO may be activated at an appropriate level. This is generally defined as: • Stream depth is estimated to reach flood stage or greater within 24 to 48 hours, or • Measured stream depths are at 70% to 100% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater than design stage within 6-12 hours.

WARNING	This is a more urgent situation with flooding imminent or occurring. The EMO is generally active. This level is generally defined as: • Flood stage or greater is occurring or is estimated to occur within 24 hours, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater within minutes/hours or is occurring.
Note: Flood stage is the depth of water at which a stream or facility begins flooding (see Glossary of Terms).	

B. EMERGENCY ACTION PLAN: OBJECTIVES AND FUNCTIONS. Valley Water and other stakeholders focus on the following Objectives, Capabilities, and Functions. The following is consistent with the concepts of the National Incident Management System (NIMS) and Incident Command System (ICS) from the FEMA and the Standardized Emergency Management System (SEMS) from the State of California Office of Emergency Services.

1. **OBJECTIVES**. The following objectives are in alignment with the purpose of this EAP to coordinate the interagency response, resource management and recovery operations; and to collaborate on public messaging.

    - **Objective 1: Identify Conditions, Actions, and Needs**
        - Core Capability: Situational Awareness
    - **Objective 2: Notification of Involved Agencies and Staff**
        - Core Capability: Activation; Coordination
    - **Objective 3: Emergency Public Information**
        - Core Capability: Public Information Officer (PIO) Collaboration in communications
    - **Objective 4: Warning**
        - Core Capability: Public Warning
    - **Objective 5: Coordination of Field Operations; Resource Sharing**
        - Core Capability: Personnel Accountability; Mutual Aid; Tracking; Finance Issues

2. **FUNCTIONS & PERSONNEL**. In keeping with the concepts of SEMS and NIMS, utilizing common functions to maintain the orderly flow of information and responsibility within an agency and between agencies is important during emergency situations. Consistency in utilizing the SEMS functions in an activation improves the organization and communication flow.

    Four Emergency Management Organization levels for Valley Water's Emergency Response are described in the Valley Water Emergency Operations Plan (EOP) and are shown below:

    1. Policy Group – The Policy Group includes the Board of Directors, District Counsel (Risk and Legal Advisors), Chief Operating Officer (CEO), Assistant CEO and the Valley Water Emergency Steering Committee (ESC). The ESC, led by the Unclassified Leadership Team, provides direction and resourcing for emergency-related preparedness efforts.

2. Emergency Operations Center (EOC) – The EOC is organized based on the SEMS and NIMS functions of Management, Planning & Intelligence, Operations, Logistics, and Finance & Administration.

3. Department Operations Center (DOC) – When utilized, the DOC is part of the Watersheds Operations & Maintenance Division's Emergency Management Organization (EMO) that controls and coordinates actions specific to their area of operations. This EMO or DOC communicates internally and with other organizations through the EOC (when activated). They may function similar to an EOC following SEMS and NIMS, but often will utilize other procedures that is more appropriate for their response to the event while still supporting documentation necessary for an EOC activation.

4. Field Response Teams – These teams have specific skills and capabilities to command or support field incident objectives (e.g., Incident Commanders (IC) and Field Information Teams (FIT)).

During any readiness level, personnel will be assigned to fulfill the required actions. In early progression of an event (e.g., Monitoring), staff may perform the duties of multiple functions. But, as an event progresses in levels and an EOC is activated, the functions will likely require dedicated staff assigned to these Sections to fulfill the duties. The Sections and/or functions utilized during readiness levels are listed below and are described in Valley Water's Emergency Operations Plan (EOP) and EOC Responder Handbook.

a. Management. Activation of an EOC is a Management Section function as described in the EOP or other Standard Operating Procedures consistent with SEMS and NIMS. Responsibilities of the Management Section include: EOC Director, liaison, safety/risk, and public information. As conditions warrant or progress, EOC Management personnel have the ability to make policy decisions within constraints defined by the Elected Officials, including those on matters of cost and/or liability, staffing levels, and resource needs. Agency Representatives (AR) and Agency Coordinators (AC), which are terms used for liaison personnel in other Emergency Action Plans and Multi-Agency Coordination Plans, are members of the Management Section. Valley Water and other Stakeholders Management Sections may confer on:

- Critical conditions
- Agency priority responses
- Common resource needs
- Resource request processing
- Managing conflicting policy issues
- Co-locating EOC personnel
- Sending liaison staff to other stakeholder EOCs

Managing the EOC facility, maintaining the EOP and related documents (excluding the Emergency Action Plans), and assuring staff is properly trained at Valley Water is a responsibility of Office of Emergency Services (OES). OES supports the Management and other EOC Sections during an activation with guidance on procedures, related materials and emergency forms (e.g., ICS Form 214 – Activity Log).

(1) Public Information Officers (PIOs) are staff assigned to the Management Section and are typically staff from the Valley Waters Office of the Chief of

External Affairs. As an event unfolds there is a constant need of notifying the public of conditions and what to do. The PIOs are responsible for identifying with whom to communicate, creating the message, and specifying the format and method of communication to deliver the message to the public and stakeholders.

The PIOs from Valley Water and from each involved Stakeholder Agency will follow the checklists and responsibilities identified in their EOPs. This EAP does not change that responsibility or override the tasks outlined in the EOP.

PIOs should coordinate to create a common message to avoid confusing the public, which can occur when each of the agencies sends out disparate messages. They should also communicate on methods and multi-lingual needs to sending out messages that may be accomplished through use of the Alert Santa Clara County (Alert SCC), Integrated Public Alert & Warning System (IPAWS), deployment of Long-Range Acoustic Devices, door to door contact with volunteers or employees, or other methods.

During an event requiring a significant amount of coordination, the PIOs should consider the establishment of a Joint Information System (JIS) or Joint Information Center (JIC).

(2) Elected Officials have important public and policy functions during the Watch and Warning stages of emergencies, but they should not be involved in the details of an emergency response. To assist them in their function, Valley Water PIO or other Management Section assigned liaison staff will be directed to contact and keep them informed of the situation and provide them with appropriate public messaging. If Elected Officials are in contact with affected constituents and receive pertinent information, they should convey that information to the EOC through PIO or their assigned liaison staff.

b. Planning/Intelligence. In an emergency, it can take some time for an agency to (1) ascertain what has happened, (2) what is likely to happen, and (3) what areas and/or systems are affected. The SEMS and NIMS function of Planning/Intelligence helps gather and validate information and thereby fulfill the need for intelligence. In the early stages of an emergency, Planning/Intelligence Section may be combined under one person who may also be filling other functions (e.g., Operations). As an emergency response grows and additional staff are required it should be separated from other functions and all associated responsibilities transferred to the appropriate Section. Below are some of the responsibilities of Planning/Intelligence.

(1) Documentation. All activity and actions will be documented as best as possible through the use of an ICS Unit Log and other standard forms available at the EOC Facility. The use of status boards is encouraged to clearly communicate information to EOC personnel.

(2) Situation Status. The **Subject Mater Experts (SMEs)** consolidate all intelligence and provide Situational Awareness regarding weather forecasts, damage assessments, flooding reports, traffic conditions, etc. This is accomplished through reports, documentation on status boards and/or maps, and is conveyed through an Action Plan (AP). The AP may be verbal at the Monitoring stage of EOC operations. When the EOC is activated at a Watch or Warning Operational Level, an AP for a specified operational period should be written. For Valley Water, staff from the **Hydrology, Hydraulics &**

Geomorphology Unit (HH&G) are generally assigned this function in the Planning/Intelligence Section, but staff from other units may also be assigned to serve as SMEs.

(3) Agency and Resource Status. Determining what agencies have accomplished and what they may need includes identifying what personnel and resources have been deployed, the prevailing condition, the need for mutual aid, and tracking other resource demands or similar requests.

(4) Notification. The Planning/Intelligence activities accomplished by the SMEs lead to the appropriate notification of Stakeholders as described in Section 2.E., Emergency Action Plan Mobilization, Step 3: Notification and Communication on pages 20 to 23.

c. Operations. Staff from Valley Water's Watersheds Field Operations Unit (WFOU) are often the first responders to flood events in the field and will initiate the ICS by assigning an Incident Commander (IC) for the area of concern. WFOU or Operations & Maintenance Engineering Support Unit (O&MES) will generally coordinate the response with the IC. The IC will notify their Emergency Management Organization (e.g., DOC) and, if activated and appropriate, the Valley Water Emergency Operations Center (EOC) of activities and conditions in the area.

Operations Section and sometimes Planning/Intelligence Section will deploy Field Information Teams (FITs) to observe and inspect facilities. The FIT provides critical "boots on the ground" information and intelligence back to the EMO on facility conditions and storm related concerns.

***(1) FIT Personnel**:* These may be personnel assigned to the Operations Section or Planning/Intelligence Section in their respective EOC. Or these may be staff in the field conducting operations and maintenance related activities as part of the ICS. HH&G manages a Valley Water FIT program and maintains a current master list of "hotspots" for deployments in preparedness for severe storm and high flow events.

***(2) FIT Authority includes**:* Provide field intelligence to their EOC Section Leader or their organizational supervisor/ manager. Take actions that would mitigate risks only if capable and appropriate.

d. Logistics. As the incident unfolds and resources respond to the prevailing conditions, skilled or scarce resources will be tapped-out and require backfill, replacement or additional support. The support can come in the form of mutual aid assistance, contractors, vendors, or other sources. Resource requests will be noted and coordinated as much as possible through the EMOs (e.g., EOCs). The method of request, including any related form, will be coordinated with the Agency fulfilling the need. If resources cannot be met by local stakeholders, a request for assistance can be sent to the Santa Clara County Operational Area.

e. Finance. Acquiring resources or entering into procurement contracts or mutual aid agreements may require financial actions. In addition, the costs associated with an event should be documented for potential future reimbursements. This is especially the case as resources from one Agency are shared with another Agency. This use of equipment, personnel or other resources may be reimbursable, based upon agreement.

C. PROGRESSION. There are general responsibilities for each flood readiness level that are recommended as an event progresses. Responsibilities and activities listed in Table 2 demonstrate how the Valley Water and other Stakeholders functions progress as the flood readiness moves from Preparedness to Monitoring, Watch, and Warning. The overall change in level of participation, number of participants, and staffing needs is incident specific, because not all potential or actual incidents are the same and availability of resources can vary. In addition, in the case of Berryessa Creek, a Multi-Agency Coordination System and Group may be activated by the City of San José to improve coordination between stakeholder agencies to plan and implement actions.

The list of progressive responsibilities and activities listed in Table 2 shows what may be added to responsibilities at each level. They are not intended to be all-inclusive or to commit resources without knowledge of the conditions that may occur, nor are they intended to be a prescriptive list of what to do before and during storm and flood monitoring and response. The actual conditions dictate the response needs and availability of staff and resources as each situation can be different and updates in stream management and control systems could vary the conditions.

TABLE 2
Progressive Responsibilities

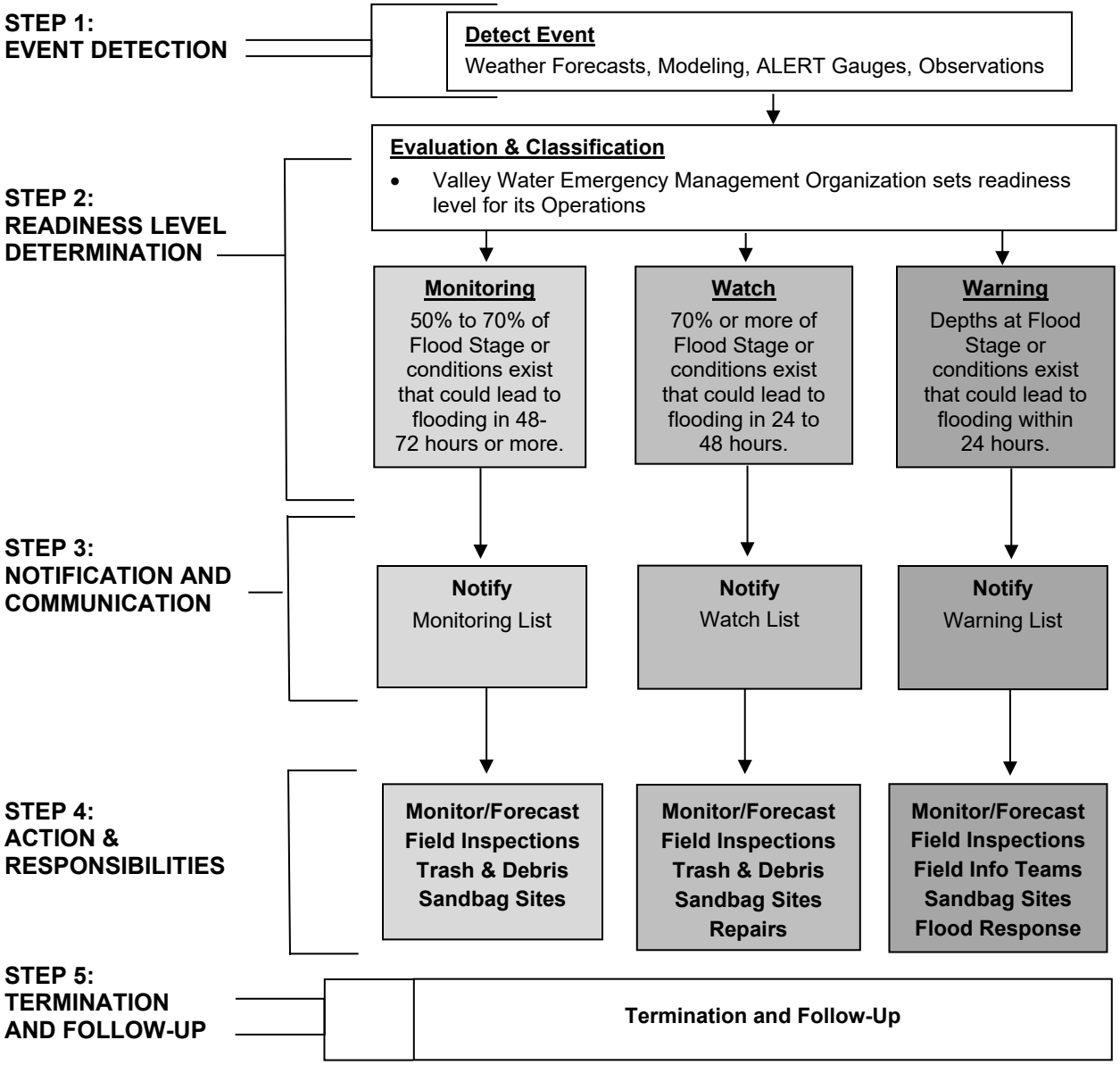
	Responsibility/Activity	Stakeholder/Personnel/Unit*
Preparedness	Train & Exercise EOP/EAP and document any outcomes in an After-Action Report (AAR).	Office of Emergency Services (OES)
	Meet with Stakeholders as appropriate to discuss property management needs and plans.	Operations & Maintenance (O&M)
	Conduct field inspections of creeks and facilities	Operations & Maintenance Engineering Support (O&MES)
	Perform mitigation work to reduce flood risk including actions for unsheltered individuals and encampments. This work is limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements.	Watershed Field Operations Unit (WFOU), Vegetation Field Operations Unit (VFOU), Watersheds Design & Construction Unit
	Inventory and Procure Flood Fighting Materials and Equipment (Attachments 11 & 12).	WFOU and VFOU
	Identify location for flood fighting resources for the public (e.g., sandbag locations shown in Attachment 7).	O&MES & VFOU
	Support & Coordinate with FEMA Floodplain Managers who maintain the National Flood Insurance Program Community Rating System certification.	Community Projects Review Unit and Office of Civic Engagement
	Provide technical floodplain mapping expertise and provide a copy of flood maps on a Valley Water internal drive that can be accessed by appropriate personnel and utilized by Emergency Management Organizations (EMOs) as necessary.	Hydrology, Hydraulics & Geomorphology (HH&G)
	Coordinate, as members of the National Flood Insurance Program, on updates or modifications to FEMA floodmaps.	City Stakeholder, Community Projects Review Unit and Office of Civic Engagement
	Maintain equipment, gauges, telemetry, communications systems, etc.	HH&G, County, and City Stakeholder

	Responsibility/Activity	Stakeholder/Personnel/Unit*
Preparedness	Develop and maintain computer models of watersheds and creeks.	HH&G
	Prepare Field Information Teams (FITs) and maintain FIT Hot Spot information.	O&MES & HH&G
	Conduct winter preparedness workshop.	OES
	Annual review and update of EAP.	O&M, OES, HH&G
	Manage flood information websites (Attachment 13).	Office of Communications (OC), HH&G, OES, National Weather Service (NWS), Federal Emergency Management Agency (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."	Emergency Management Organization (EMO)
	Notify staff about the increased readiness level.	EMO
	Communicate with other agencies to discuss activation level. This often will occur during the Operational Area Coordination conference call.	EMO
	Deploy and coordinate Field Information Teams (FIT) if needed.	O&MES and/or HH&G
	Respond to, and mitigate, minor events as needed (examples of remedial actions are listed in Attachment 2); take actions unsheltered individuals and encampments; coordinate with each responding agency. This work is limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements.	O&MES/WFOU
	Inspect and clean Trash Racks, Bridge and Pier Noses.	WFOU
	Maintain inventory of sandbags at locations shown in Attachment 7.	VFOU
	Respond to equipment needs at localities likely to be affected if possible; coordinate with each responding agency.	WFOU
	Manage and update flood information websites (Attachment 13).	OC, HH&G, NWS, FEMA
	Provide public education in multiple languages.	OC and City Stakeholders
	Provide information to Elected Officials.	EMO-PIO
	Monitor Stream Gauges.	HH&G
	Update computer modeling based on forecast and watershed conditions and update Surface Water Data Portal for Flood Severity Levels. Provide a copy of flood maps on a Valley Water internal drive that can be accessed by appropriate personnel and EMOs. If possible and deemed necessary, provide forecast flood maps to Agency Stakeholders and appropriate EMOs.	HH&G
	Review evacuation planning needs (e.g., maps of impact zones) for unsheltered individuals and encampments.	City Stakeholder and County

	Responsibility/Activity	Stakeholder/Personnel/Unit*
	Report to Agency Stakeholder when directed and available.	EMO Planning/Intelligence or Operations
Watch	Activate the EAP for "Watch."	EMO
	Report to Agency Stakeholder EOC when directed and available.	EOC Planning/Intelligence or Operations
	Determine next level of activation.	EMO
	Confer with Agency Stakeholders to determine response coordination needs and resources needs. This often will occur during the Operational Area Coordination conference call.	Planning/Intelligence or Operations
	Communicate risk to elected officials.	EMO-PIO
	Confer with EOC Director on conditions for potential evacuation and shelter support including actions unsheltered individuals and encampments.	City Stakeholder and County EOC
	Monitor webcams if available at: https://alert.valleywater.org/map?p=map	EOC Operations and/or Planning and Intelligence
	If appropriate, evaluate possible recommendations for City storm pump station operating changes and communicate with City including Wrigley-Ford Creek Pump Station.	Planning/Intelligence and Management
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g., sandbag locations).	EOC Operations, WFOU, and/or VFOU
	Provide public warning in multiple languages.	City Stakeholder is lead. County is key support.
	Prepare evacuation plans and begin to deploy resources as appropriate including actions for unsheltered individuals and encampments.	City Stakeholder and County
	Activate other public notification systems (e.g., Alert SCC, Facebook, Nextdoor), as appropriate.	City Stakeholder is lead.
	Activate Joint Information System (JIS) and, if necessary, Joint Information Center (JIC) as appropriate.	City Stakeholder or County is lead.
	Participate in JIC/JIS if activated.	EOC Management-PIO
	Communicate with media as needed.	Joint Information System (JIS)/Joint Information Center (JIC) or each Stakeholder is lead for own agency activities.
	Provide information on impact and available resources to and from respective EOC's.	EOC Management
	Provide information to and from respective EOC's, including status reports, maps, and briefings.	EOC Management
Warning	Activate the EAP for "Warning."	EMO (EOC Management)
	Coordinate resources through respective EOCs or Operational Area.	EOC Management or Logistics
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g., sandbag locations).	EOC Operations, WFOU and VFOU
	Provide public warning and shelter information in multiple languages.	City is lead. County is key support.

	Responsibility/Activity	Stakeholder/Personnel/Unit*
Warning	Provide information to and from respective EOC's, including status reports, maps, and briefings.	EOC Management
	Implement evacuation plans and deploy resources to evacuate including unsheltered individuals and encampments.	City Stakeholder is lead.
	Proclaim Local Emergency as appropriate.	City Stakeholder is lead.
*If only one Stakeholder is noted as lead, other Stakeholders/Personnel/Units may support the effort.		

D. EMERGENCY ACTION PLAN OVERVIEW



E. EMERGENCY ACTION PLAN MOBILIZATION. While the primary purpose of this EAP is to provide guidance to Valley Water during emergencies, the EAP is in a state of perpetual activation, throughout the year, regardless of the condition. For a majority of the time, Valley Water and City's operations are focused on preparedness. Preparedness is critical to reduce the risk of flooding and during this period, Valley Water and Cities perform activities consistent with their jurisdictional responsibilities. Table 2 describes some of the activities performed by Valley Water and Cities during the preparedness level.

As conditions in flood basin progress, there are four general steps Valley Water and City's follow to determine the readiness level or when to increase the readiness level.

STEP 1: EVENT DETECTION. Several detection methods can be utilized in the Lower Penitencia Creek Watershed that include weather forecasts, hydrologic/hydraulic modeling, Automated Local Evaluation in Real Time (ALERT) stream/reservoir/ precipitation gauge systems, and field observations. Some of these detection methods are available through websites that are listed in Attachment 13.

a. Weather Forecasts. The National Weather Service (NWS) provides weather (e.g., precipitation) forecasts in advance of storm events 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 Agency Stakeholders can participate in these webinars and share all current information. In addition, the NWS maintains websites (Attachment 13) that provide forecasts and will issue public notices of forecasted flood threats on local television and radio programming.

b. Hydrologic/Hydraulic Modeling. If forecasts show a heightened possibility of flooding, it is possible that Valley Water will run hydrologic and hydraulic modeling to determine risk and impact areas for a specific storm event. The most up-to-date flood thresholds and forecast information for ALERT gauges can be viewed at https://alert.valleywater.org/map?p=map&disc=f.

c. Gauge System. All Valley Water gauges can be found in the Surface Water Data Portal at https://alert.valleywater.org/map?p=list&disc=f (links are listed in Attachment 13). Valley Water's Automated Local Evaluation in Real Time (ALERT) system can set alarms to automatically notify appropriate staff at predetermined stages. These gauges and alarms provide data in near real-time and can provide extra warning to determine the level of threat for flooding. In addition, some stream gauges show forecast and flood thresholds. Below is a listing of all gauges for the City of Milpitas:

1. Berryessa Creek above Calaveras Blvd.
2. Berryessa Creek at Old Piedmont Rd. (includes flood thresholds)
3. Lower Penitencia Creek at Machado Ave. (includes flood thresholds)
4. Coyote Creek at Highway 237

d. Visual Monitoring, Field Information Teams and Field Operations & Maintenance. Visual monitoring and/or on-site observations are helpful in assessing current situations in the field. On-line ALERT Cameras are available at some locations (https://alert.valleywater.org/map?p=map) to remotely observe water levels (none are currently available in the Lower Penitencia Watershed) and as water levels

increase in the creeks, rivers, and waterways, Valley Water Field Information Teams (FITs) may be deployed to visually monitor and report back to an EMO the situation that may include rate of water surface elevation increases 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.

Valley Water and, in some cases, other Stakeholders have individual teams in the field to observe flood conditions at "hot spots." Deployment of these teams may be coordinated so that personnel are used most efficiently and effectively. HH&G maintains a master list of flooding hotspots to deploy Valley Water FITs and other teams (Attachment 14).

Operations & Maintenance staff are also typically in the field inspecting and repairing facilities during storm events. These personnel should also provide intelligence back to their agencies EMO (e.g., EOC) 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 Stakeholder or other stakeholder who should promptly relay that intelligence to their EMO or to Valley Water through a contact method shown below:

- Main Valley Water telephone – (408) 265-2600
- After hours telephone – (408) 395-9309
- Valley Water website report problems – https://www.valleywater.org/contact-us or https://access.valleywater.org/s/.
- Non-Emergency Police & Fire dispatch – 311
- Emergency Police & Fire dispatch – 911

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

1. Visual stream gauges – 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. Levees and Floodwalls – 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: READINESS LEVEL DETERMINATION

a. Evaluation. After detecting and gathering adequate intelligence regarding the situation, an evaluation of waterway conditions must be performed by appropriate personnel. The personnel evaluating the intelligence will generally be one or more SMEs that will generally include staff from O&M and HH&G. SMEs evaluation of intelligence information will be shared with appropriate management staff for decisions on actions and establishing readiness levels.

b. Classification. The EAP is always active, however, after detection of an unusual event the readiness level may be changed. If the EOC is not activated, **Valley Water will convene an Emergency Management Organization (EMO) that includes executive leadership to determine whether and how to activate the EOC**.

Based on a technical evaluation of the intelligence detected by SMEs that a threat exists, they may recommend to monitor the situation over a general area or for a specific creek and location. If a specific creek is being assessed the recommendation for monitoring or activating the EOC would be based on facility thresholds detailed in an Appendix of the EAP or situations as described in Attachment 1. These thresholds are consistent with Flood Severity Levels used by the National Weather Service as shown in Table 3.

If the EOC is activated, the readiness level of either Watch or Warning would be set by the EMO, generally the EOC Director, based on all intelligence gathered.

The decision for a change in readiness level from Preparedness to Monitoring is made at a meeting of Valley Water EMO. If they determine that the EOC should be activated, the EOC Director, as part of the EMO, may take the lead to determine whether to set the readiness level at Watch or Warning.

TABLE 3
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.

STEP 3: NOTIFICATION AND COMMUNICATION. After the readiness 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 readiness level, responsibilities for notifications and who is notified would vary. Often during a monitoring level, the Emergency Operations Center (EOC) would not be open or only minimally staffed, however, SMEs and/or Operations may be very active as part of the Emergency Management Organization (EMO). Valley Water's list of entities that may be provided information by Emergency Services or notifications of the readiness level and event severity could include:

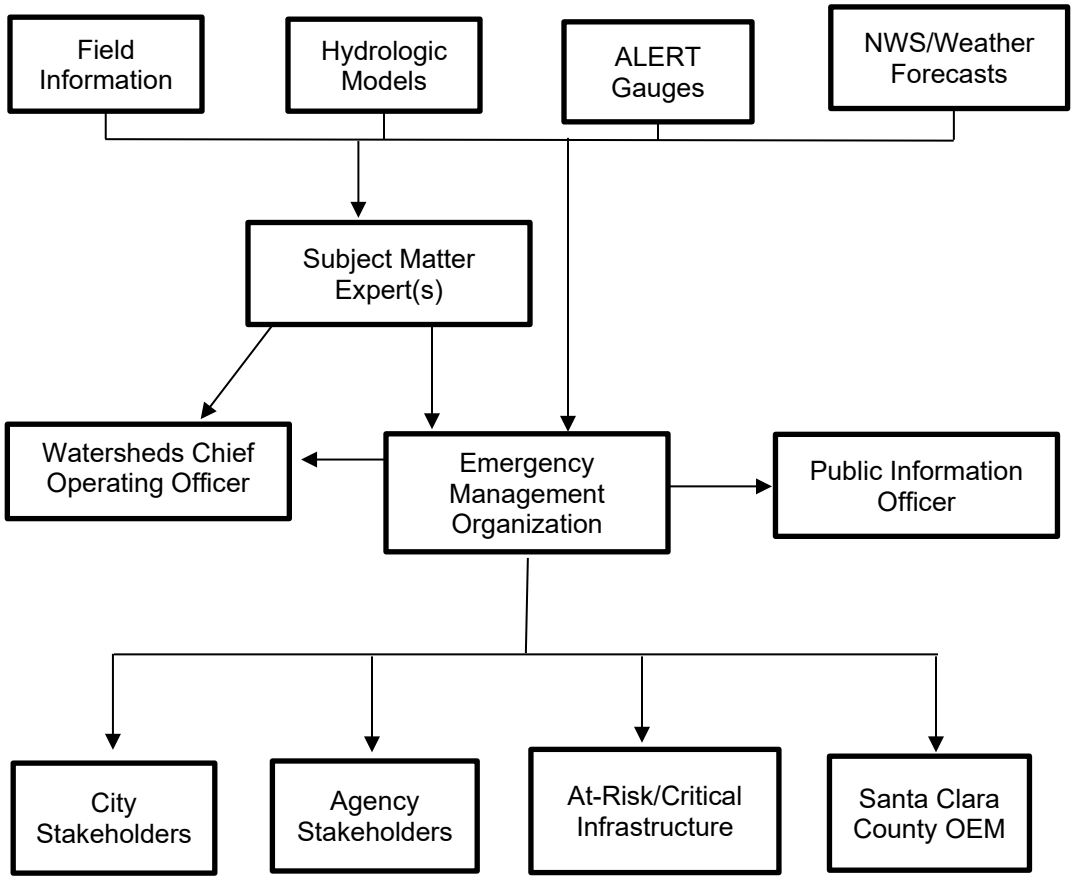
- Internal Valley Water staff;
- City Stakeholders;
- County of Santa Clara Office of Emergency Management;
- Other Agency Stakeholders;
- Valley Water Elected Officials;

- Important Facilities and Infrastructure at risk of flooding, such as, schools, medical, governmental facilities or businesses;
- Public (Generally Valley Water is in a support role to the City Stakeholder during events); and
- Impacted businesses and residents (Valley Water is typically in a support role to City Stakeholders).

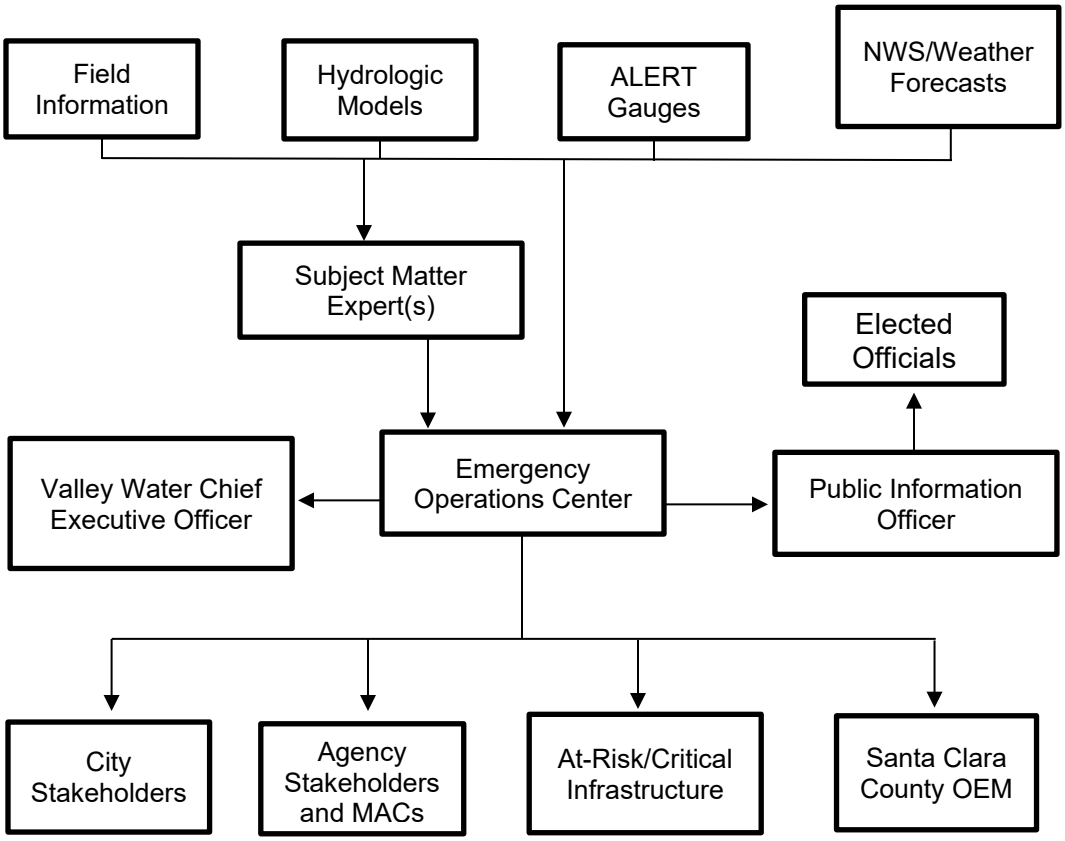
In addition, the readiness level and severity should be reflected on the Valley Water website which should strive to be consistent with website information and public notifications provided by the City Stakeholders and NWS.

The following are charts showing the flow of information and notifications for the three flood threat readiness levels and the contact list is in Attachment 9 – Emergency Services Contact List and Attachment 10 – Valley Water Emergency Responders Contact List.

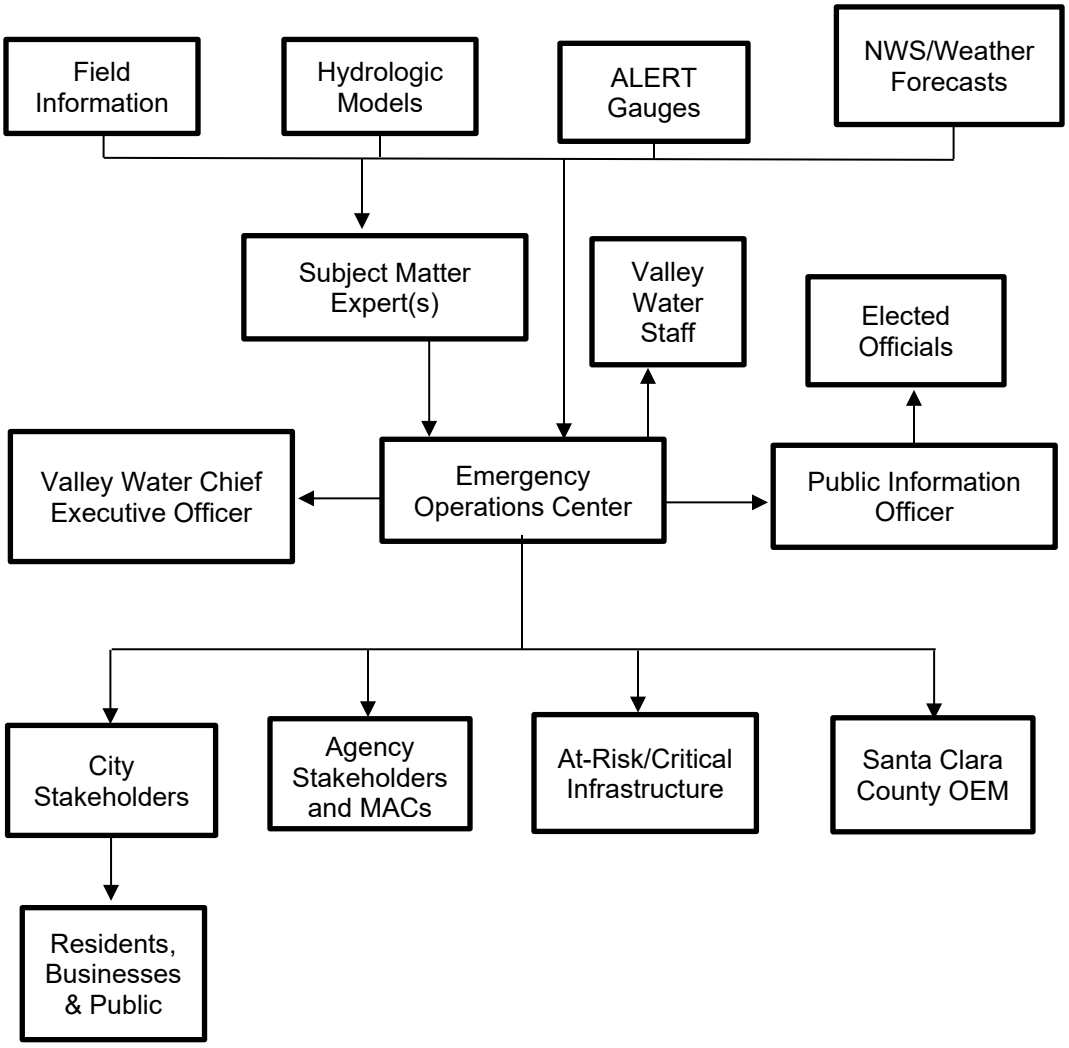
Monitoring Level Information/Notification Flow



Watch Level Information/Notification Flow



Warning Level Information/Notification Flow



External emergency services contacts are listed in Attachment 9 and Valley Water emergency responders are listed in Attachment 10.

STEP 4: ACTIONS & RESPONSIBILITIES. The readiness is considered in the Preparedness level as a standard operational practice. After an unusual or emergency event is detected, the EMO may raise the readiness level, if the EOC has not been activated, the Valley Water leadership acting as the Emergency Management Organization (EMO) will assess the situation and determine whether to activate the EOC. If activated the EOC Director decides on the readiness level.

At each readiness level, there are actions and responsibilities for Valley Water personnel (described in the Concept of Operations Section). Progressive responsibilities are described in Table 2 and personnel specific responsibilities during an event are described in Attachments 3 through 8.

The Incident Commander or Watersheds 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 2 – Emergency Remedial Actions.

STEP 5: TERMINATION AND FOLLOW-UP. After this EAP has been activated at a level of Monitor, Watch or Warning and then returned to Preparedness, EAP operations must be terminated, and follow-up procedures completed.

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

EMO (EOC Management) 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.

b. Follow-Up Responsibilities. The Operations & Maintenance Engineering Support Unit or the Office of Emergency Services (if EOC was activated) will prepare an After-Action Report (AAR) of the event and will track implementation of appropriate recommendations in the AAR.

Cities or other 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.

ATTACHMENT 1
Guidance Table for Evaluating Facility During High Flow and Determining the Readiness Level

EVENT	SITUATION	READINESS LEVEL*
Bank Erosion	Erosion scour that is threatening a facility but is stable (i.e., scour is not getting bigger).	**Monitor**
	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**
	Erosion scour that is threatening a structure on an adjacent property during high flows.	**Watch**
	Erosion scour during high flows that has caused or will cause a blockage in the creek that will produce flooding.	**Warning**
Boil/Seepage	Seepage area with clear water discharging less than 1 gallon per minute.	**Monitor**
	Seepage area with cloudy water or increasing rate.	**Watch**
	Seepage area with discharge greater than 10 gallons per minute.	**Warning**
Levee Damage	New cracks in embankment greater than ¼ inch without seepage.	**Monitor**
	Slippage or erosion scour of levee bank during high flows.	**Monitor**
	Cracks in levee with seepage discharging less than 1 gallon per minute.	**Watch**
	Cracks in levee with seepage discharging more than 1 gallon per minute.	**Warning**
	Sudden or rapid slumping or scour on levee slopes.	**Warning**
Stage at ALERT or Visual Stream Gauge	Water depth corresponds to 50% capacity.	**Monitor**
	Water depth corresponds to 70% capacity.	**Watch**
	Water depth at or greater than top bank.	**Warning**
Downed trees in creek channel	Downed tree, high flows; could collect debris, redirect flow, or move downstream.	**Monitor**
	Downed tree, high flows; redirecting flows causing bank scour or obstructing flow creating backwater effect.	**Watch**
	Downed tree causing flooding.	**Warning**

ATTACHMENT 1
Guidance Table for Evaluating Facility
During High Flow and Determining the Readiness Level (continued)

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

*Table 1 of EAP describes the flood Readiness levels.

ATTACHMENT 2
Emergency Remedial Actions

If time and conditions permit, the following emergency remedial actions should be considered where Valley Water has land rights or a maintenance obligation pursuant to effective licenses and agreements provided they would be effective and can be done safely. 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.

A. BANK EROSION

1. If the erosion is threatening public health and safety and water is no longer rising with stream velocity is low enough, erosion scour may be filled with rock, sandbags, plastic sheeting or materials to prevent further loss of soil.

B. BOILS OR SEEPAGE BEHIND LEVEE OR FLOODWALL

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 if conditions are safe.

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.

C. 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.

D. 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.

2. Assess whether to recommend reduction in operation of storm drain pump stations that may impact the area of overtopping (e.g., pump stations upstream of overtopping).

E. DOWNED TREES/BLOCKAGE

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

F. EARTHQUAKE

1. Immediately conduct a visual inspection of the levees if a magnitude 6.0 or greater earthquake occurs within 50 miles of Santa Clara County.

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.

ATTACHMENT 3
Management Action List

Management is generally the lead of the Emergency Management Organization that is responsible for deciding on readiness levels and EOC activation. In the early activation stages, the level of Management Section staffing may be a Unit Manager filling the position of EOC Director. At the Warning activation level the Management Section staff serving as the EOC Director would likely be a Chief Operating Officer.

Management Section has the authority to assign resources and implement Action Plans that are developed under their oversight.

Staff assigned and directed by Management Section may be provided with specified authorities to act as their delegate unless they are filling another EAP personnel position (e.g., Planning/Intelligence).

PURPOSE:

- Serve in the Management Section roles in the EOC.
- Assure all sections are staffed and assigned adequate authorities to implement the EAP.
- Direct actions to facilitate the EAP.
- Allocate agency resources as needed.
- Provide directives and affect emergency orders.
- City makes final decision on the level of their activation and on evacuation orders.

WHO MAY BE DESIGNATED:

City	Valley Water

• City Manager
• Assistant City Manager
• Deputy City Manager
	• Assistant Chief Executive Officer – Integrated Water Management
	• Chief Operating Officer or delegate
	  ○ Administrative Services
	  ○ Watersheds
	  ○ External Affairs
	  ○ Water Utility

ATTACHMENT 3
Management Action List (continued)

ACTIONS:

	Responsibility/Activity	Stakeholder*
Preparedness	Conduct Winter Preparedness Workshop.	OES is lead.
	Manage assigned Valley Water webpages.	External Affairs and OES
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.	Valley Water is lead.
	Ensure EAP and Contact/Roles list is reviewed and updated and provide revisions to Stakeholders.	Watersheds Operations & Maintenance Division
	Provide resources to support on-going activity to support this EAP and mitigation efforts along waterways.	Each Stakeholder is lead for own agency resources.
Monitoring	Activate for "Monitoring."	Valley Water is lead.
	Determine level of staffing after consult with OES.	Valley Water is lead.
	Assign staff to report and act as liaison to designated EOC facility when directed, and available.	Each Stakeholder responds to designated EOC facility.
	Provide public education.	Each Stakeholder collaborates and is lead to their constituents.
	Provide information to Elected Officials.	Each Stakeholder PIO is lead for own agency.
	Identify conditions for activating next level after consult Planning/Intelligence, Operations, and OES.	Valley Water is lead.
Watch	Activate for "Watch."	Valley Water is lead.
	Allow the Operations & Maintenance to manage field response.	Each Stakeholder is lead within agency resources.
	Provide information on impact and available resources to and from respective EOCs.	Each Stakeholder is lead for own agency resources.
	Direct liaison staff to report to designated EOC facility, as available.	EOC Director
	Assess conditions for activating next level.	Valley Water EOC Director
	Confer with legal staff on process for proclaiming a Local Emergency.	City EOC Directors are lead.
Warning**	Activate for "Warning."	Valley Water is lead.
	Assign staff to report and act as liaison to designated EOC facility when directed, if not already done.	Valley Water is lead.
	Provide public warning and shelter information in multiple languages.	Cities are lead. County is key support.
	Implement evacuation plans and deploy resources to evacuate including unsheltered individuals and encampments.	Cities are lead.
	Contact City EOC regarding any concerns regarding pump station operations if appropriate.	Valley Water is lead.
	Proclaim Local Emergency as appropriate.	City EOC Directors are lead.

*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.
**If not listed, all Watch responsibilities apply to the Warning level.

ATTACHMENT 4
Planning/Intelligence Action List

- Planning/Intelligence Section documents and communicates Action Plans, maintains other information logs (e.g., Situation Summary form #209) related to the event and provides Subject Matter Experts.
- Staff filling the role are generally engineering or technical staff from Watersheds Stewardship & Planning Division or other technical divisions of Watersheds.
- Critical Subject Matter Experts are staff of HH&G that are responsible for the ALERT gauges, watershed modeling, floodplain mapping and flood/storm forecasts.

PURPOSE:

- Provide hydrological, geological, and water way estimated assessments.
- Provide expertise on flood management operations and estimated impacts on critical infrastructure including utilities and transportation.

WHO MAY BE DESIGNATED:

City Stakeholders	Valley Water

• Public Works
• Engineering
• Transportation
• Community Development
	• Watersheds Operations & Maintenance Division (O&M)
	  ○ O&M Engineering Support Unit (O&MES)
	  ○ Watershed Field Operations Unit (WFOU)
	• Watersheds Stewardship & Planning Division
	  ○ Hydrology, Hydraulics & Geomorphology Unit (HH&G)
	• Watersheds Design & Construction Division

ACTIONS:

	Responsibility/Activity	Stakeholder*
Preparedness	Provide technical data on mitigation and preparedness measures.	Each Stakeholder is lead for own agency resources.
	Conduct field inspections of creeks and facilities including tide gates and pumps.	O&MES/WFOU/City Stakeholders are lead in own right of way.
	Address property management needs and plans.	O&M, City Stakeholders are responsible.
	Perform mitigation work to reduce flood risk when feasible.	WFOU, VFOU, Design & Construction, City Stakeholders are lead on own property.
	Develop materials and provide training for Field Information Teams.	HH&G is lead.
	Provide technical floodplain mapping expertise. Provide electronic link to Design Storm (e.g., 10-year, 25-year and/or 100-year) flood maps for creeks included in Appendices if desired and possible.	HH&G

ATTACHMENT 4
Planning/Intelligence Action List (continued)

	Responsibility/Activity	Stakeholder*
Preparedness	Maintain equipment, gauges, telemetry, communications systems, etc.	HH&G is lead for Valley Water stream gauges and equipment. Cities are lead for cities equipment.
	Develop and maintain computer models of watersheds and creeks.	HH&G
	Participate in Winter Preparedness Workshop.	Valley Water and Stakeholders
	Manage technical information in assigned Valley Water web pages.	HH&G
	Support and Coordinate with FEMA Floodplain Managers who maintain the National Flood Insurance Program Community Rating System certification.	Watersheds and Office of Civic Engagement
	Implement and enforce building codes for building in floodplains.	Cities are lead.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.	O&M and all appropriate Stakeholders.
	Manage flood information websites.	HH&G, PIO and City Stakeholders manage own site; points to Valley Water for flow and other related information.
Monitoring	Notify staff of own agency about the increased readiness level.	Each Stakeholder is lead for their staff.
	Conduct formal monitoring, communicate via virtual systems; communicate with other EMOs.	Each Stakeholder EOC is lead for own agency resources.
	Communicate risk to EMO personnel in monitoring meetings.	Each Stakeholder EOC is lead within their agency.
	Report to and act as liaison to designated EOC facility when directed, and available.	Each Stakeholder responds to designated EOC facility as available.
	Review evacuation planning needs.	Cities are lead.
Watch	Communicate risk to EOC representatives.	Each Stakeholder is lead within their agency.
	Notify staff of own agency about the increased readiness level.	Each Stakeholder EOC is lead for own agency.
	Provide information to and from respective EOCs, including status reports and briefings.	Each Stakeholder EOC is lead.
	Report to and act as liaison to designated EOC facility when directed, and available.	Each Stakeholder responds to designated EOC facility as available.
	Update computer modeling based on forecast and watershed conditions and update Surface Water Data Portal for Flood Severity Levels. Provide a copy of flood maps on a Valley Water internal drive that can be accessed by appropriate personnel and EOC. If possible and deemed necessary, provide forecast flood maps to Agency Stakeholders and appropriate EOCs.	HH&G
	Assess whether local drainage pump stations should modify operations.	HH&G

ATTACHMENT 4
Planning/Intelligence Action List (continued)

	Responsibility/Activity	Stakeholder*
Warning**	Report to and act as liaison to designated EOC facility when directed, and available.	Each Stakeholder responds to designated EOC facility as available.
	Communicate risk to EOC representatives in Action Planning meetings.	Each Stakeholder EOC is lead within their agency.
	Update computer modeling based on forecast and watershed conditions and update Surface Water Data Portal for Flood Severity Levels. Provide a copy of flood maps on a Valley Water internal drive that can be accessed by appropriate personnel and EOC. If possible and deemed necessary, provide forecast flood maps to Agency Stakeholders and appropriate EOCs.	HH&G
	Assess whether local drainage pump stations should modify operations.	HH&G

*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.
**If not listed, all Watch responsibilities apply to the Warning level.

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ATTACHMENT 5
Operations Action List

- Staff of Watersheds Operations & Maintenance Division are often the first to respond incidents and assign an Incident Commander before the EOC is activated.
- Operations Section coordinates deployment of Field Information Teams.
- Operations implements the field activities and other duties assigned in EOC Action Plans.

PURPOSE:

- Operations Section primary role is to respond to storm events and coordinate actions as appropriate between the Stakeholders to prepare and respond to related events. Recommend assignment of resources from their respective agency for comprehensive support to the storm conditions and storm related incidents.

WHO MAY BE DESIGNATED:

City	Valley Water

EOC Operations Section staff may include:
• Public Works
• Transportation
• Utilities
• Police
• Fire
• Emergency Services
• Community Development
	• Watersheds Operations & Maintenance Division (O&M)
	  ○ Operations & Maintenance Engineering Support Unit (O&MES)
	  ○ Watershed Field Operations Unit (WFOU)
	  ○ Vegetation Field Operations Unit (VFOU)
	• Watersheds Stewardship & Planning Division
	  ○ Hydrology, Hydraulics & Geomorphology Unit (HH&G)
	• Watersheds Design & Construction Division

ACTIONS:

	Responsibility/Activity	Stakeholder*
Preparedness	Provide technical data on mitigation and preparedness measures.	Each Stakeholder is lead for own agency resources.
	Jointly discuss property management needs and plans as appropriate including actions for unsheltered individuals and encampments.	Each parcel owner is responsible.
	Inventory and Procure Flood Fighting Materials and Equipment.	WFOU/Each Stakeholder is lead for own materials and equipment.
	Participate in Winter Preparedness Workshop.	Valley Water and City Stakeholders are lead.
	Participate in annual EAP review/exercise/updates; ensure plan is functional and up to date.	O&MES

ATTACHMENT 5
Operations Action List (continued)

	Responsibility/Activity	Stakeholder*
	Update EAP and Contact/Roles list and provide revisions to Stakeholders.	O&M is lead.
	Update Emergency Communications Plan and notification systems.	Cities are lead. County is key support for warning.
Monitoring	Notify staff of own agency about the increased readiness level.	Each Stakeholder is lead for their staff.
	Communicate risk to EMO representatives.	HH&G/O&M/City Stakeholders
	Respond to and mitigate minor events as needed (examples of remedial actions are listed in Attachment 2); including actions for unsheltered individuals and encampments; coordinate with each responding agency. This work is limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements.	WFOU/City Stakeholders are lead for own materials and equipment.
	Inspect and clean Trash Racks, Bridge Piers and Tide Gates.	WFOU
	Stage equipment at localities likely to be affected as needed; coordinated with each responding agency.	WFOU/City Stakeholders are lead for own materials and equipment.
	Report and act as liaison to designated EOC facility when directed, and available.	Each Stakeholder responds to designated EOC facility as available.
	Provide sandbags/flood fighting materials for the public (locations shown in Attachment 7).	VFOU
	Confer with EMO on conditions for activating next level.	HH&G/O&M
	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).	O&M/VFOU
	Review evacuation planning needs.	Cities are lead.
Watch	Manage information from Operations.	O&M/City Stakeholders are lead within their agency.
	Allow the Incident Commander to manage field response.	O&M/City Stakeholders are lead within their agency.
	Notify staff of own agency about the increased readiness level.	Each Stakeholder is lead for own agency.
	Confer with responding Agency Stakeholders to determine response coordination needs and resources needs.	O&M/City Stakeholders are equally responsible for cross coordination.
	Respond to and mitigate minor events as needed (examples of remedial actions are listed in Attachment 2); including actions for unsheltered individuals and encampments; coordinate with each responding agency. This work is limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements.	WFOU and City Stakeholders are lead for own jurisdiction.
	Inspect and clean Trash Racks, Bridge Piers, and Tide Gates.	WFOU

ATTACHMENT 5
Operations Action List (continued)

	Responsibility/Activity	Stakeholder*
Watch	Stage equipment at localities likely to be affected as needed; coordinated with each responding agency.	WFOU and City Stakeholders are lead for own materials and equipment.
	Provide sandbags/flood fighting materials for the public (locations shown in Attachment 7).	VFOU
	Update location for flood fighting resources for the public and supply additional resources as needed (e.g., sandbag locations). May establish special temporary sandbag sites.	O&M/VFOU
	Deploy and/or activate public notification as appropriate.	Cities are lead.
	Provide information on impact and available resources to and from respective EOCs.	O&M and City Stakeholders are lead for own agency resources.
	Provide information to and from respective EOCs, including status reports and briefings.	Each Stakeholder EOC is lead.
	Report and act as liaison to designated EOC facility when directed, as available.	Each Stakeholder responds to designated EOC facility as available.
	Confer with EOC Director on conditions for potential evacuation and shelter support.	Cities are lead.
Warning**	Report and act as liaison to designated EOC facility when directed, if not already done.	Each Stakeholder responds to designated EOC facility as available.
	Inspect and clean Trash Racks, Bridge Piers, and Tide Gates.	WFOU
	Respond to and mitigate minor events as needed (examples of remedial actions are listed in Attachment 2); including actions for unsheltered individuals and encampments; coordinate with each responding agency. This work is generally limited to locations where Valley Water has land rights or has maintenance obligations pursuant to effective licenses and agreements. The exception may be urgent or emergency flood protection work where a public purpose is endangered and it is safe to do so.	WFOU
	Provide sandbags/flood fighting materials for the public (locations shown in Attachment 7).	O&M/VFOU
	Implement evacuation plans and deploy resources to evacuate including for unsheltered individuals and encampments.	Cities are lead.
	Coordinate resources through respective EOCs.	Each Stakeholder EOC is lead for own resources.

*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.
**If not listed, all Monitor and Watch responsibilities apply to the Warning level.

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ATTACHMENT 6
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 Operations, Subject Matter Expert from the Hydrology, Hydraulics & Geomorphology Unit (HH&G), FIT Coordinator (Attachment 10), or by the 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 and are generally trained and selected by HH&G.

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 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., Permanente Creek Diversion).
	Report observations to the FIT coordinator or EMO.
	Document events as trained utilizing equipment provided.
	Notify FIT Coordinator, or EMO if staff from another agency is assigned to the same location.

ATTACHMENT 6
Field Information Team Action List (continued)

	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., Permanente Creek Diversion).
	Report observations to the FIT coordinator or EOC.
	Document events as trained utilizing equipment provided.
	Notify FIT Coordinator, O&M, 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., Permanente Creek Diversion).
	Report observations to the FIT coordinator or EOC.
	Document events as trained utilizing equipment provided.
	Notify FIT Coordinator or EOC if staff from another agency is assigned to the same location.

ATTACHMENT 7
Public Information Officer Action List

PURPOSE:

- Provide public communications before, during and after a flood emergency.
- Prepare and coordinate public message between agencies.
- Provide public notification.
- Communicate with Elected Officials

WHO MAY BE DESIGNATED:

City	Valley Water

• Communications Director
• Designated city reps
	• Office of the Chief of External Affairs
	  ○ Office of Communications (OC)
	  ○ Office of Civic Engagement
	  ○ Office of Government Relations
	• Watersheds Stewardship & Planning Division
	  ○ Hydrology, Hydraulics & Geomorphology Unit (HH&G)

ACTIONS:

	Responsibility/Activity	Stakeholder*
Preparedness	Participate in Winter Preparedness Workshop.	Valley Water Emergency Services and Security Unit is lead and appropriate stakeholders participate.
	Participate in annual EAP review/exercise/updates; ensure public components of EAP are functional and up to date.	OC
	Publish Preparedness Public Outreach (e.g., Winter Preparedness).	OC
	Manage the information provided in the Valley Water website.	OC/HH&G
	Provide public education regarding flooding. Stakeholders should communicate and coordinate on outreach.	OC and City Stakeholders are lead for own agency resources.
	Update Emergency Public Communications Plan and notification systems.	Cities are lead. County is key support for warning.
Monitoring	Notify staff of own agency about the increased readiness level.	Each Stakeholder EOC is lead for their staff.
	Provide public education regarding flooding. Stakeholders should communicate on outreach.	OC and City Stakeholders collaborate and are lead to their constituents.
	Provide information to Elected Officials.	Each Stakeholder PIO is lead for own agency.

ATTACHMENT 7
Public Information Officer Action List (continued)

	Responsibility/Activity	Stakeholder*
Watch	Notify staff of own agency about the increased readiness level.	Each Stakeholder EOC is lead for own agency.
	Provide public information in multiple languages.	OC and City Stakeholders collaborate and are lead to their constituents.
	Provide public warning in multiple languages.	Cities are lead. County is key support.
	Deploy Long Range Acoustic Device or other public notification as appropriate.	Cities are lead.
	Provide information to Elected Officials.	Each Stakeholder PIO is lead for own agency.
	Activate Joint Information System (JIS) and if appropriate a Joint Information Center (JIC) as appropriate.	Cities are lead.
	Report to designated Joint Information Center (JIC) when directed, and available.	Each Stakeholder responds to designated JIC as available.
	Communicate with media as needed.	Each Stakeholder PIO is lead for own agency.
Warning**	Provide public information in multiple languages.	OC and City Stakeholders collaborate and are lead to their constituents.
	Provide public warning and shelter information in multiple languages.	Cities are lead. County is key support.
	Activate JIS/JIC as appropriate to jointly communicate with media.	Cities are lead.
	Report to designated Joint Information Center (JIC) when directed, and available.	Each Stakeholder responds to designated JIC as available.
	Coordinate resources through respective EOCs.	Each Stakeholder EOC is lead for own resources.

*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.
**If not listed, all Watch responsibilities apply to the Warning level.

GET FLOOD READY

- Develop an emergency plan.
- Put together your 3-day emergency kit.
- Download disaster emergency apps.
- Check if your home or business is in a FEMA Special Flood Hazard Area at **valleywater.org/floodready**.
- Get sandbags before a flood.
- Keep debris and trash out of streams.
- Get flood insurance ahead of time. Most property insurance policies, such as homeowner's insurance, will not cover flood damage. Visit **floodsmart.gov**.
- Don't drive through standing water. One foot of water is enough to float a vehicle away.
- Check with your city or county floodplain manager before you build.

¿Está preparado para las inundaciones?

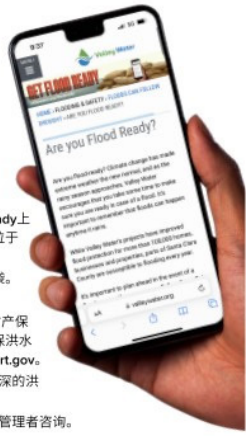
- Elabore un plan de emergencia.
- Arme su kit de emergencia de 3 días.
- Descargue aplicaciones para emergencias durante desastres.
- Revise si su hogar o negocio se encuentra en un área especial de riesgo de inundación de FEMA en **valleywater.org/floodready**.
- Consiga sacos de arena antes de una inundación.
- Mantenga los escombros y la basura fuera de los arroyos.
- Obtenga un seguro contra inundaciones con anticipación. La mayoría de las pólizas de seguro, como el seguro del propietario, no cubren los daños que ocasionan las inundaciones. Visite **floodsmart.gov**.
- Comprenda los riesgos de las inundaciones poco profundas; no conduzca por agua estancada.
- Revise con el gerente de planicies aluviales de su ciudad o condado antes de construir.

Quý vị đã sẵn sàng ứng phó với ngập lụt chưa?

- Thiết lập một kế hoạch khẩn cấp.
- Tập hợp bộ dụng cụ khẩn cấp đủ dùng trong 3 ngày.
- Tải về các ứng dụng ứng phó thảm họa khẩn cấp.
- Kiểm tra xem nhà hoặc cơ sở kinh doanh của quý vị có nằm trong Khu vực đặc biệt có nguy cơ ngập lụt của FEMA hay không tại **valleywater.org/floodready**.
- Chuẩn bị các bao cát trước khi ngập lụt.
- Dọn sạch mảnh vụn và rác khỏi các dòng suối của chúng ta.
- Mua bảo hiểm lũ lụt trước. Hầu hết các hợp đồng bảo hiểm tài sản, chẳng hạn như bảo hiểm dành cho chủ sở hữu nhà, sẽ không bao trả thiệt hại do lũ lụt. Truy cập **floodsmart.gov**.
- Hiểu rõ các rủi ro ở vùng ngập nông không lái xe qua vùng nước đọng.
- Kiểm tra với viên chức quản lý vùng ngập lụt trên địa bàn thành phố hoặc quận của quý vị trước khi quý vị xây dựng công trình.

您做好防洪准备了吗？

- 制定应急计划。
- 将3天应急包放在一起。
- 下载灾害应急应用程序。
- 在**valleywater.org/floodready**上确认您的住宅或商家是否位于FEMA特别洪水危险区。
- 在发生洪水之前准备好沙袋。
- 让碎屑和垃圾远离河流。
- 提前购买防洪险。大多数财产保险，例如业主保险，是不承保洪水带来的损失。访问**floodsmart.gov**。
- 切勿在积水中行车。一英尺深的洪水足以冲走一辆车。
- 建造之前，向市或县河漫滩管理者咨询。



ValleyWater.org/floodready

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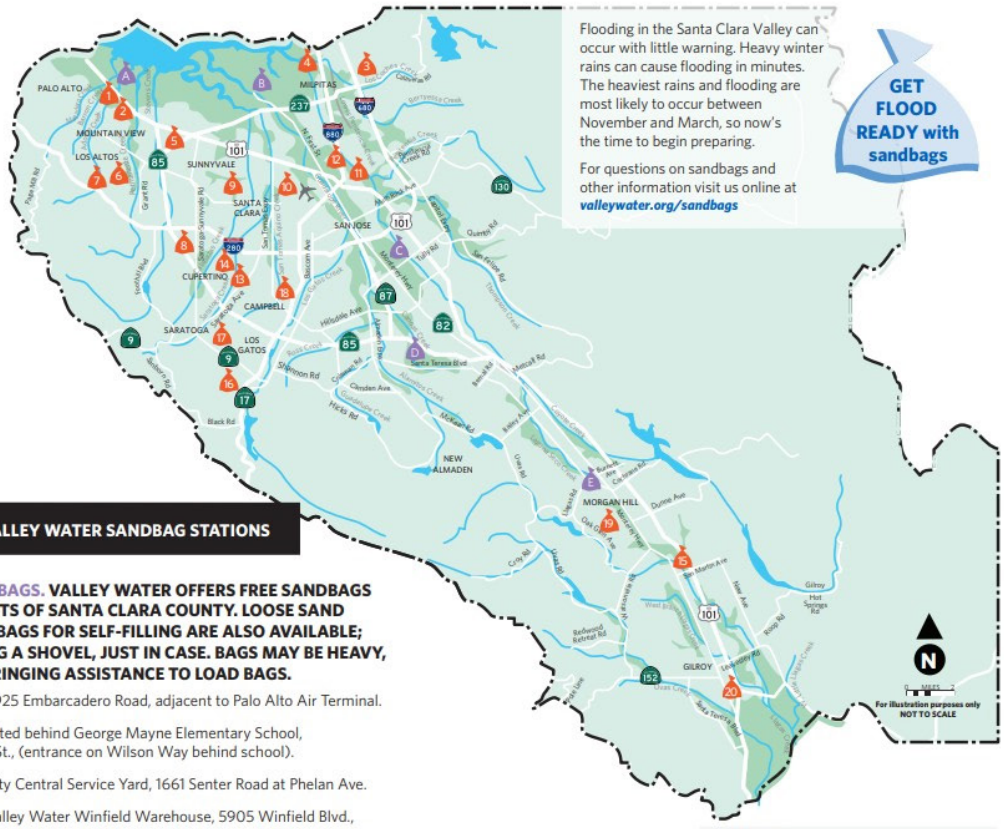
Valley Water

Sandbag Locations

Valley Water



VALLEY WATER SANDBAG STATIONS

FILLED SANDBAGS. VALLEY WATER OFFERS FREE SANDBAGS FOR RESIDENTS OF SANTA CLARA COUNTY. LOOSE SAND AND EMPTY BAGS FOR SELF-FILLING ARE ALSO AVAILABLE; PLEASE BRING A SHOVEL, JUST IN CASE. BAGS MAY BE HEAVY, CONSIDER BRINGING ASSISTANCE TO LOAD BAGS.

A. **Palo Alto**: 1925 Embarcadero Road, adjacent to Palo Alto Air Terminal.

B. **Alviso**: Located behind George Mayne Elementary School, 5030 N 1st St., (entrance on Wilson Way behind school).

C. **San José**: City Central Service Yard, 1661 Senter Road at Phelan Ave.

D. **San José**: Valley Water Winfield Warehouse, 5905 Winfield Blvd., between Blossom Hill Rd. and Coleman Ave. Bag pickup street access only.

E. **Morgan Hill**: El Toro Fire Station, 18300 Old Monterey Rd., next to the Union Pacific Railroad overpass above Monterey Highway.

LEGEND

- Creeks, rivers and reservoirs
- Flood prone areas
- City/County public works yards
- Valley Water maintained sites

OTHER SOURCES OF UNFILLED SANDBAGS

BAGS AND SAND. OTHER SOURCES ALSO PROVIDE BAGS AND SAND. PLEASE BRING A SHOVEL AND ASSISTANCE FOR LOADING HEAVY BAGS, IF NECESSARY. BE AWARE THAT SOME SITES REQUIRE PROOF OF RESIDENCY:

1. **Palo Alto**: Mitchell Park, 600 E. Meadow Dr. near baseball field. Bags and sand. 650-496-6974.
2. **Palo Alto**: Rinconada Park Tennis Court Parking Lot (intersection of Hopkins Ave. and Newell Rd.). Filled bags. 650-496-6974.
3. **Milpitas**: Sport Center Parking Lot at 1325 E. Calaveras Blvd. Filled bags. 408-586-2600, after hours: 408-586-2399.
4. **Milpitas**: Hall Memorial Park Parking Lot, Cross Streets La Honda and Hermina St. Bags and sand. 408-586-2600.
5. **Mountain View**: Public Services, 231 N. Whisman Rd. Bags and sand at parking lot. Must bring shovel. 650-903-6395.
6. **Los Altos**: Municipal Service Center, 707 Fremont Ave. at McKenzie Park parking lot. Bags and sand. 650-947-2785.
7. **Los Altos Hills**: Corporation Yard, 27500 Purissima Rd. at Little League Field. Must bring bag and shovel. 650-941-7222.
8. **Cupertino**: City Corporation Yard, 10555 Mary Ave. Bags and sand outside the gate. Must provide own shovel. 408-777-3269.
9. **Sunnyvale**: Corporation Yard, 221 Commercial St. at end of California St. Filled bags. 408-730-7566, after hours: 408-730-7490.

"All 'Bags and Sand' sites are open 24 hours a day, 7 days a week unless otherwise noted."

10. **Santa Clara**: City Corporation Yard, 1700 Walsh Ave. Filled bags at front door. Daytime: 408-615-3080, after hours: 408-615-5640.
11. **San José**: City Mabury Yard, 1404 Mabury Rd. Bags and sand provided. 408-277-4373.
12. **San José**: County East Yard, 1505 Schallenberger Rd., 408-494-2750.
13. **San José**: County West Yard, 11030 Doyle Rd. Bags and sand outside gate. Must bring shovel. 408-366-3100, after hours: 408-299-2507.
14. **San José**: City West Yard, 5090 Williams Rd., Filled bags outside gate. 408-343-3100.
15. **San Martin**: County South Yard, 13600 Murphy Ave. Bags and sand. 408-683-1240
16. **Los Gatos/Monte Sereno**: 41 Miles Ave. at Balzer Field parking lot (Monte Sereno citizens pick up at Los Gatos site). Bags and sand. 408-399-5770, after hours: 408-354-8600.
17. **Saratoga**: Corporation Yard, 19700 Allendale Ave., near Post Office. Self-fill bags. Bags and sand provided outside gate. 408-868-1245.
18. **Campbell**: Serivce Center, 290 South Dillon Ave. Bags and sand available Monday through Friday from 7 a.m.–3 p.m. Must bring shovel. 408-866-2145.
19. **Morgan Hill**: City Corporation Yard, 100 Edes Ct. Bags and sand outside gate. Must bring shovel. 408-776-7333.
20. **Gilroy**: Corporation Yard, 613 Old Gilroy St. Bags and sand in the parking lot behind fire station. Must bring shovel. 408-846-0370.

valleywater.org

Clean Water • Healthy Environment • Flood Protection

GUIDANCE FOR PUBLIC COMMUNICATIONS DELIVERY METHODS (City Stakeholders Are Lead)

1. ALERT SCC and IPAWS if warranted.
2. Deploy Long Range Acoustic Device if available and appropriate.
3. MEDIA NEWS RELEASE including ethnic media.
4. RADIO & TV STATIONS: Provide specific broadcast information.
5. SOCIAL MEDIA: Post message to NEXTDOOR, FACEBOOK, TWITTER, CITIES' WEBSITES, VALLEY WATER WEBSITE.
6. ENCAMPMENTS: Walk encampments of unsheltered individual in teams of 2 or more and share warnings.

***Contact and provide downloadable flyer**:*

1. Inform administrators at At-Risk or Critical Facilities (e.g., SCHOOLS, CHURCHES, MEDICAL FACILITIES, TECHNOLOGY PARKS, etc.).
2. Contact managers at MOBILE HOME PARK OFFICES if appropriate.
3. Contact leaders at Chamber of Commerce, Downtown Associations to engage BUSINESS DISTRICT.
4. Place SANDWICH BOARD SIGNS ON MAJOR CORNERS: **Be alert to the likelihood of flooding in 24-72 hours**.
5. KNOCK-AND-TALK in at-risk neighborhoods. Staff prepared with numbers to call and basic info if asked.
6. Implement NO PARKING zones and, if necessary, detours.

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ATTACHMENT 8
Elected Officials Action List

PURPOSE:

- Coordinate with constituents.
- Check with respective PIO/Liaison or EOC Director on conditions.
- Coordinate information through the PIO/Liaison.

WHO DESIGNATED:

City	Valley Water
City Councilmember	Board of Directors

ACTIONS:

	Responsibility/Activity	Stakeholder*
Preparedness	Participate in Winter Preparedness Workshop as requested.	Valley Water is lead.
	Provide resources to support on-going activity to support this EAP and mitigation efforts along waterways.	Each Stakeholder is lead for own agency resources.
Monitoring	Communicate with PIO personnel regarding situation and public/media messages.	Each Stakeholder is lead for own agency resources.
	Respond to constituents.	Each Stakeholder is lead for own agency resources.
	Report any constituent concerns or observations to PIO liaison.	Each Stakeholder is lead for own agency resources.
Watch	All Monitoring Responsibilities/Actions	Each Stakeholder is lead for own agency resources.
	Communicate with PIO at designated facility for more detailed briefing when requested, as available.	Each Stakeholder is lead.
Warning	All Watch Responsibilities/Actions	Each Stakeholder is lead for own agency resources.
	Respond to media and constituents with agreed upon messages.	Each Stakeholder is lead.
	Proclaim Local Emergency as appropriate.	Cities are lead.
*If only one Stakeholder is noted as lead, all other Stakeholders support the effort.		

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ATTACHMENT 9
Emergency Services Contact List

CONFIDENTIAL

ATTACHMENT 9
Emergency Services Contact List (continued)

CONFIDENTIAL

ATTACHMENT 10
Valley Water Emergency Responders Contact List

CONFIDENTIAL

ATTACHMENT 10
Valley Water Emergency Responders Contact List (continued)

CONFIDENTIAL

ATTACHMENT 11
Available Resources

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ATTACHMENT 12
Equipment List

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ATTACHMENT 13
Web-Based Data Sources

SURFACE WATER GAUGE STATIONS – Stream Gauges, Rain Gauges, and Reservoir Gauges:

- Valley Water Surface Water Data Portal – http://alert.valleywater.org
- Valley Water Surface Water Data Portal Map – https://alert.valleywater.org/map?p=map
  - Berryessa Creek at Old Piedmont Road (includes flood thresholds) – https://alert.valleywater.org/map?p=sensor&sid=5136.2&disc=f
  - Berryessa Creek at Calaveras Blvd – https://alert.valleywater.org/map?p=sensor&sid=5064&disc=f
  - Lower Penitencia Creek at Machado Ave (includes flood thresholds) – https://alert.valleywater.org/map?p=sensor&sid=5100.1&disc=f

OTHER SITES:

- Valley Water Homepage – http://valleywater.org/
- Valley Water Submit a Request – https://access.valleywater.org/s/
- Report Blockages/Flooding – https://www.valleywater.org/flooding-safety/flood-ready/report-creek-blockages-local-flooding or https://access.valleywater.org/s/
- Valley Water Flood Watch **WebCams** – https://alert.valleywater.org/map?p=map
- Valley Water Flood Watch **Thresholds** – https://alert.valleywater.org/map?p=map
- Valley Water Flood Watch **Forecast** – https://alert.valleywater.org/map?p=map
- NWS Flood Severity – https://water.weather.gov/ahps2/index.php?wfo=mtr
- Valley Water Flood Protection Resources – https://www.valleywater.org/flooding-safety/flood-ready
- Sandbags – https://www.valleywater.org/flooding-safety/flood-ready/sandbags
- FEMA Flood Map Search – https://msc.fema.gov/portal/search
- FEMA NIMS ICS Forms – https://training.fema.gov/icsresource/icsforms.aspx
- County of Santa Clara ALERTSCC - https://emergencymanagement.sccgov.org/AlertSCC
- City of San José:
  - Homepage – https://www.sanjoseca.gov/your-government
  - Emergency Management – https://www.sanjoseca.gov/your-government/departments/emergency-management
  - Emergency Notifications – https://www.sanjoseca.gov/news-stories/news/emergency-notifications
- City of Milpitas:
  - Homepage – https://www.milpitas.gov/
  - Emergency Management – https://www.milpitas.gov/172/Office-of-Emergency-Management
  - Emergency Notifications on ALERTSCC – https://emergencymanagement.sccgov.org/AlertSCC

WEATHER:

- NWS Watch, Warning, Advisory – https://www.spc.noaa.gov/products/wwa/
- NWS Watches, Warning or Advisories for Santa Clara County – https://alerts.weather.gov/cap/wwaatmget.php?x=CAC085&y=1
- NWS Forecasts – https://graphical.weather.gov/sectors/pacsouthwest.php

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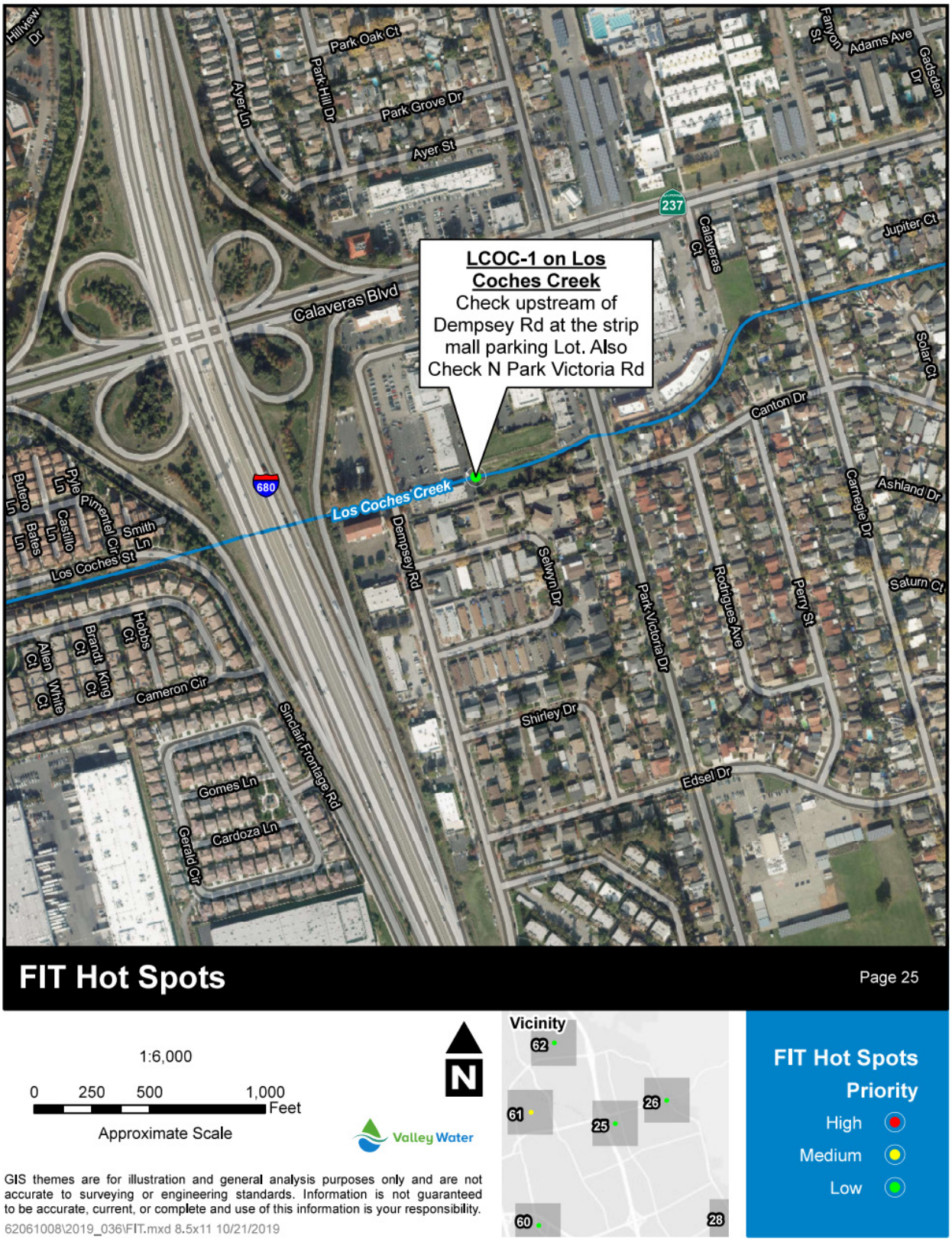
ATTACHMENT 14
Field Information Team Hot Spots


LCOC-1 on Los Coches Creek
Check upstream of Dempsey Rd at the strip mall parking Lot. Also Check N Park Victoria Rd
Calaveras Blvd
Los Coches Creek
Los Coches St
Dempsey Rd
Park Victoria Dr
Selwyn Dr
Rodrigues Ave
Perry St
Carnegie Dr
Canton Dr
Ashland Dr
Saturn Ct
Jupiter Ct
Solar Ct
Edsel Dr
Shirley Dr
Cameron Cir
Sinclair Frontage Rd
Gomes Ln
Cardoza Ln
Gerald Cir
Park Oak Ct
Park Hill Dr
Park Grove Dr
Ayer St
Ayer Ln
Adams Ave
Fanyon St
Gadsden Dr
Calaveras Ct
Hillview Dr
Butero Ln
Pyle Ln
Pimentel Cir
Smith Ln
Castillo Ln
Bates Ln
Hobbs Ct
Brandt Ct
Allen Ct
King Ct
White Ct
680
237
FIT Hot Spots
Page 25
1:6,000
0 250 500 1,000 Feet
Approximate Scale
N
Valley Water
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.
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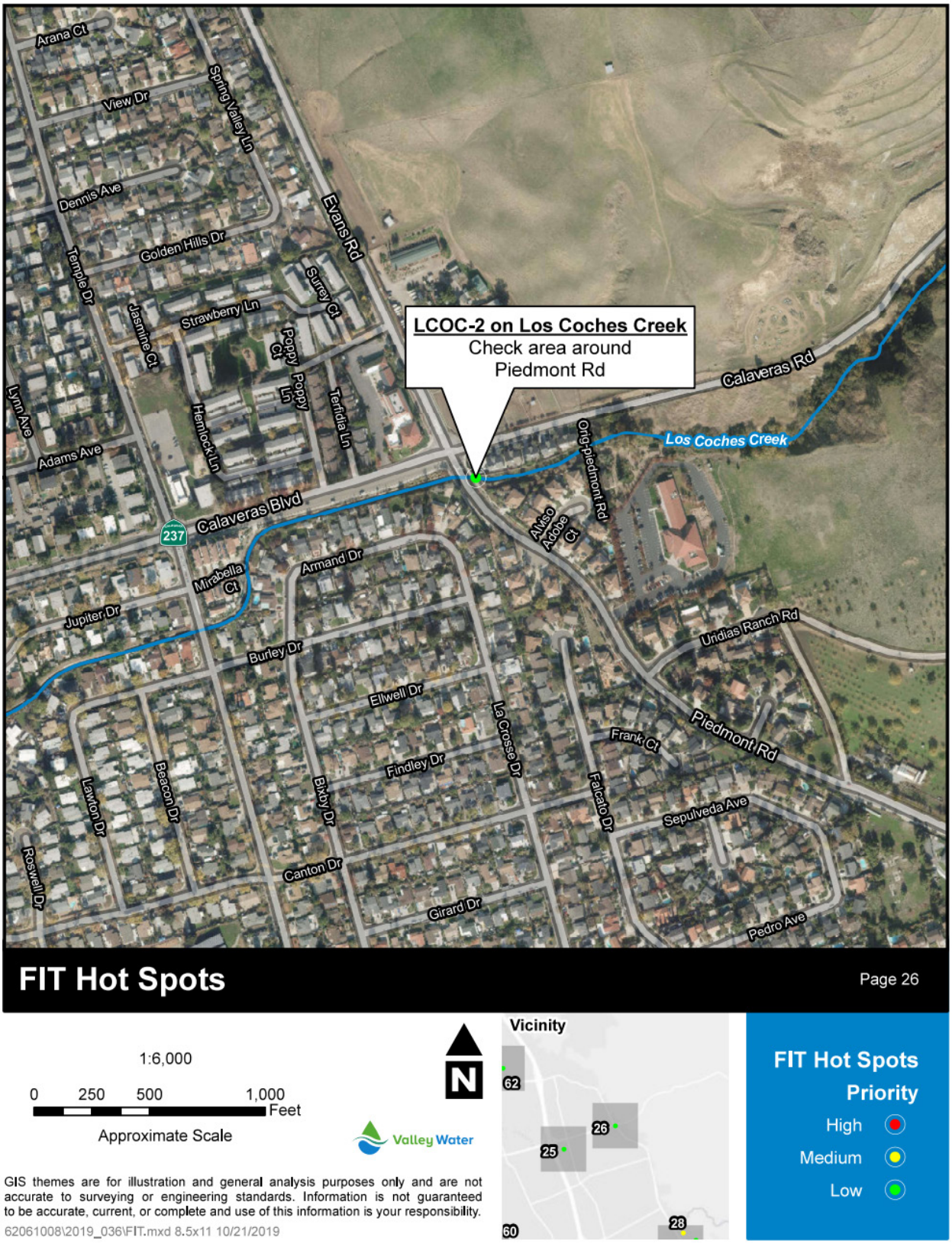
Vicinity
62
61
26
25
60
28
FIT Hot Spots
Priority
High
Medium
Low



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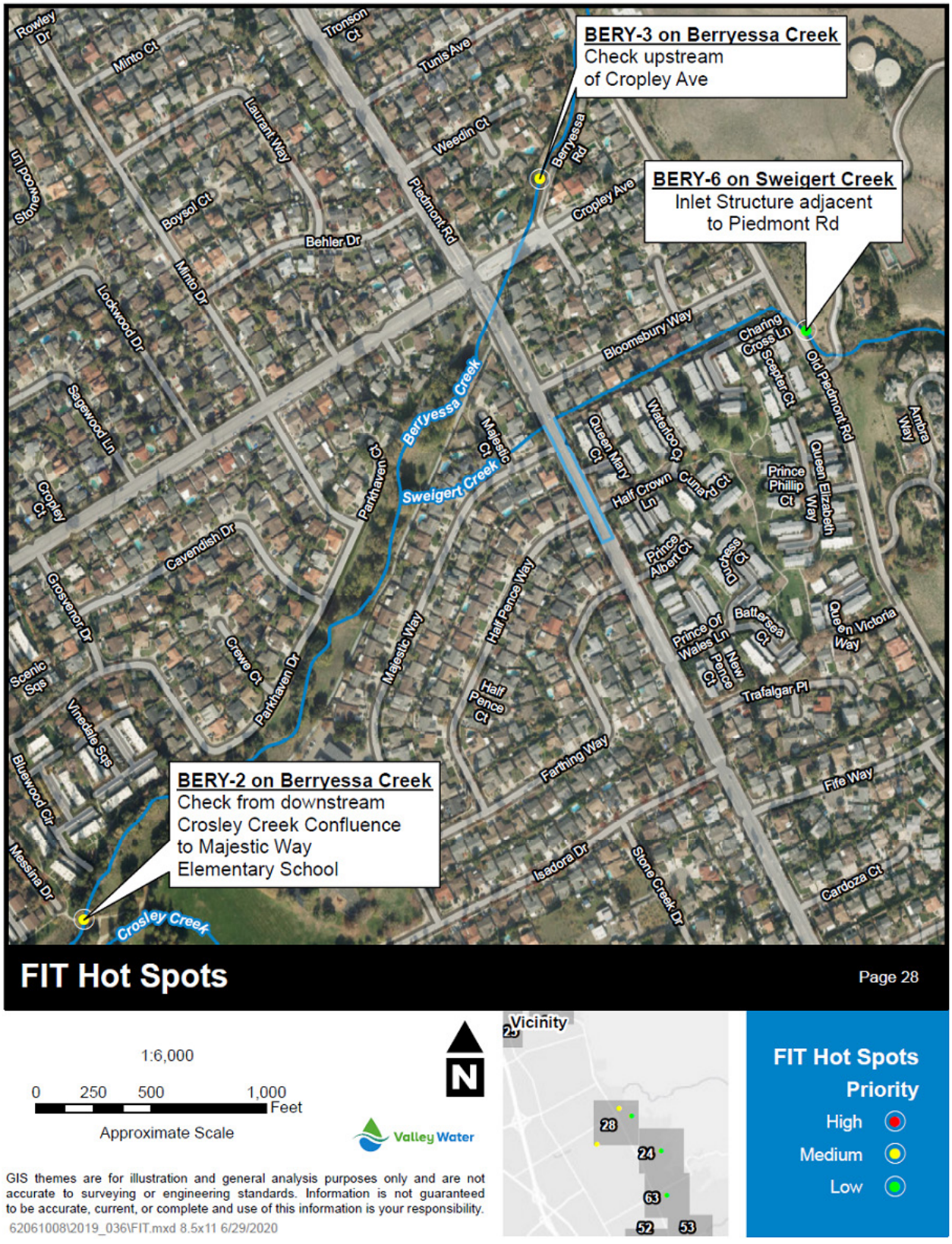
BERY-3 on Berryessa Creek
Check upstream
of Cropley Ave
BERY-6 on Sweigert Creek
Inlet Structure adjacent
to Piedmont Rd
BERY-2 on Berryessa Creek
Check from downstream
Crosley Creek Confluence
to Majestic Way
Elementary School
Berryessa Creek
Sweigert Creek
Crosley Creek
Rowley Dr
Minto Ct
Tronson Ct
Tunis Ave
Laurant Way
Weedin Ct
Berryessa Rd
Piedmont Rd
Cropley Ave
Boycol Ct
Behler Dr
Minto Dr
Lookwood Dr
Sagewood Ln
Cropley Ct
Cavendish Dr
Grosvenor Dr
Scenic Sqs
Vinedale Sqs
Bluewood Cir
Messina Dr
Parkhaven Ct
Parkhaven Dr
Majestic Ct
Majestic Way
Crewe Ct
Half Pence Way
Half Pence Ct
Bloomsbury Way
Charing Cross Ln
Scepter Ct
Old Piedmont Rd
Ambra Way
Queen Mary Ct
Waterloo Ct
Half Crown Ln
Cunard Ct
Prince Phillip Ct
Queen Elizabeth Way
Prince Albert Ct
Duchess Ct
Prince Of Wales Ln
Battersea Ct
Queen Victoria Way
New Pence Ct
Trafalgar Pl
Farthing Way
Fife Way
Isadora Dr
Stone Creek Dr
Cardoza Ct
FIT Hot Spots
Page 28
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Approximate Scale
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Valley Water
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Vicinity
28
24
63
52
53
FIT Hot Spots
Priority
High
Medium
Low


Moon Shadow Dr
Rain Walk
Wind Song
Cloud Walk
Escort Dr
Great Mall Pkwy
Great Mall Dr
Summerfield Dr
Venus Way
Nova Ct
Phoenix Ct
Evening Star Ct
Capella Way
Capitol Ave
Moon Ct
Abel St
Lower Penitencia Creek
LPEN-1 on Lower Penitencia
Check south bank area upstream of Great Mall Parkway to Main St
Fairfiane Dr
Sun Ct
Stellar Way
Moonbeam Way
Sunrise Way
Stardust Way
Moonlight Way
Polaris Ct
Woodland Ct
Woodland Way
Fallen Leaf Dr
Greentree Cir
Main St
McCandless Dr
Evergreen Way
Moonlight Cir
Greentree Way
Canal St
Drive E2
Drive E1
Bleecker St
Newbury St
Lonetree Ct
FIT Hot Spots
Page 60
1:6,000
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Approximate Scale
N
Valley Water
Vicinity
61
25
26
60
FIT Hot Spots
Priority
High
Medium
Low
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BERY-1 on Wrigley Ford Ditch
Check along Railroad Ave for possible overbanking
Berryessa Creek
Wrigley Ford Creek
Lower Penitencia Creek
Adobe Ave
Calero St
Vasona St
Berryessa St
Almaden Ave
Klamath Rd
Geneva Rd
Oroville Rd
Sark Ct
Escuela Pkwy
Paseo Refugio
Folsom Cir
Edgewater Dr
Meadowland Dr
Milpitas Blvd
Silverlake Ct
Silverlake Dr
Fairmeadow Way
Meadowhaven Way
Sagemeadow Ct
Berrisford Ct
Marylinn Dr
Railroad Ct
Abel St
Images Cir
Penitencia St
Gemstone Way
Diamond Way
Reflections Way
Pond Ct
Crystal Ct
Weller Ln
Main St
Railroad Ave
Norwich Ave
Butler St
Alton St
Winsor St
237
Calaveras Blvd
Chysis Rd
FIT Hot Spots
Page 61
1:6,000
0 250 500 1,000 Feet
Approximate Scale
N
Valley Water
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62061008\2019_036\FIT.mxd 8.5x11 10/21/2019
Vicinity
62
61
25
60
FIT Hot Spots
Priority
High
Medium
Low

FIT Hot Spots

1:6,000

0 250 500 1,000 Feet

Approximate Scale

N

Valley Water

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.

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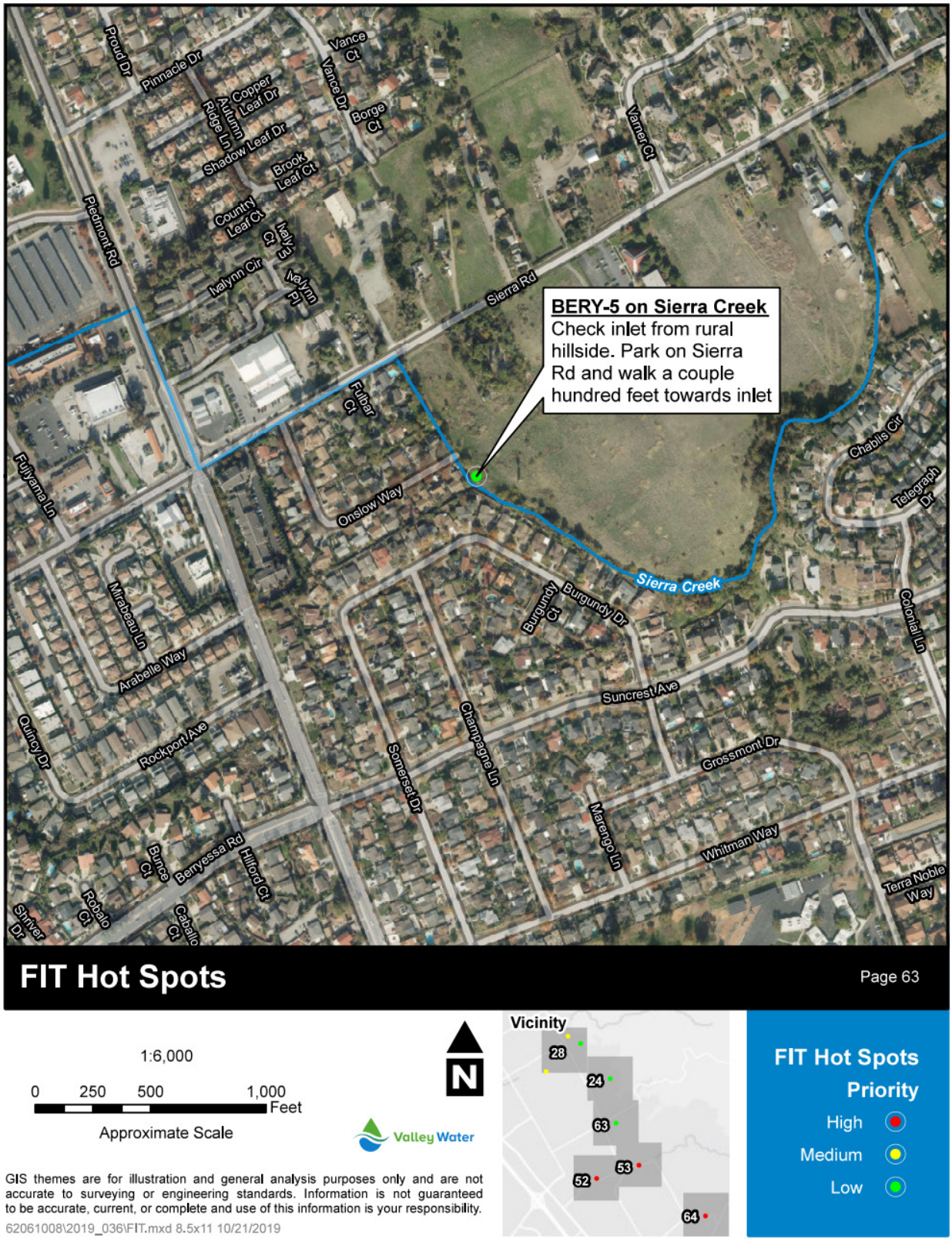
FIT Hot Spots
Priority
- High
- Medium
- Low

ATTACHMENT 14
Field Information Team Hot Spots (continued)



APPENDIX A
Lower Penitencia Creek

A. PURPOSE. This Appendix to the Emergency Action Plan for Severe Storms and Flooding in Lower Penitencia Watershed (EAP) is meant to provide additional guidance specific to Lower Penitencia Creek. It will not duplicate information already in an Emergency Operations Plan or the EAP, but will provide specific information and guidance for Lower Penitencia Creek.

B. LOWER PENITENCIA CREEK DESCRIPTION. Lower Penitencia Creek Watershed is located in the City of Milpitas and runs on the valley floor about 4.1 miles in length originating near Montague Expressway. It discharges into Coyote Creek near Interstate 880 and Dixon Landing Road interchange about 8.3 miles upstream of San Francisco Bay. The watershed was much larger until the upper watershed was diverted into Coyote Creek near Berryessa Creek Road in 1875 to create Upper Penitencia Creek. The resulting watershed is about 28.3 square miles of which Berryessa Creek is approximately 22 square miles. The watershed originates in the east foothills at about 2,000 feet elevation and has Berryessa Creek and Penitencia East Channel as it's only tributaries.

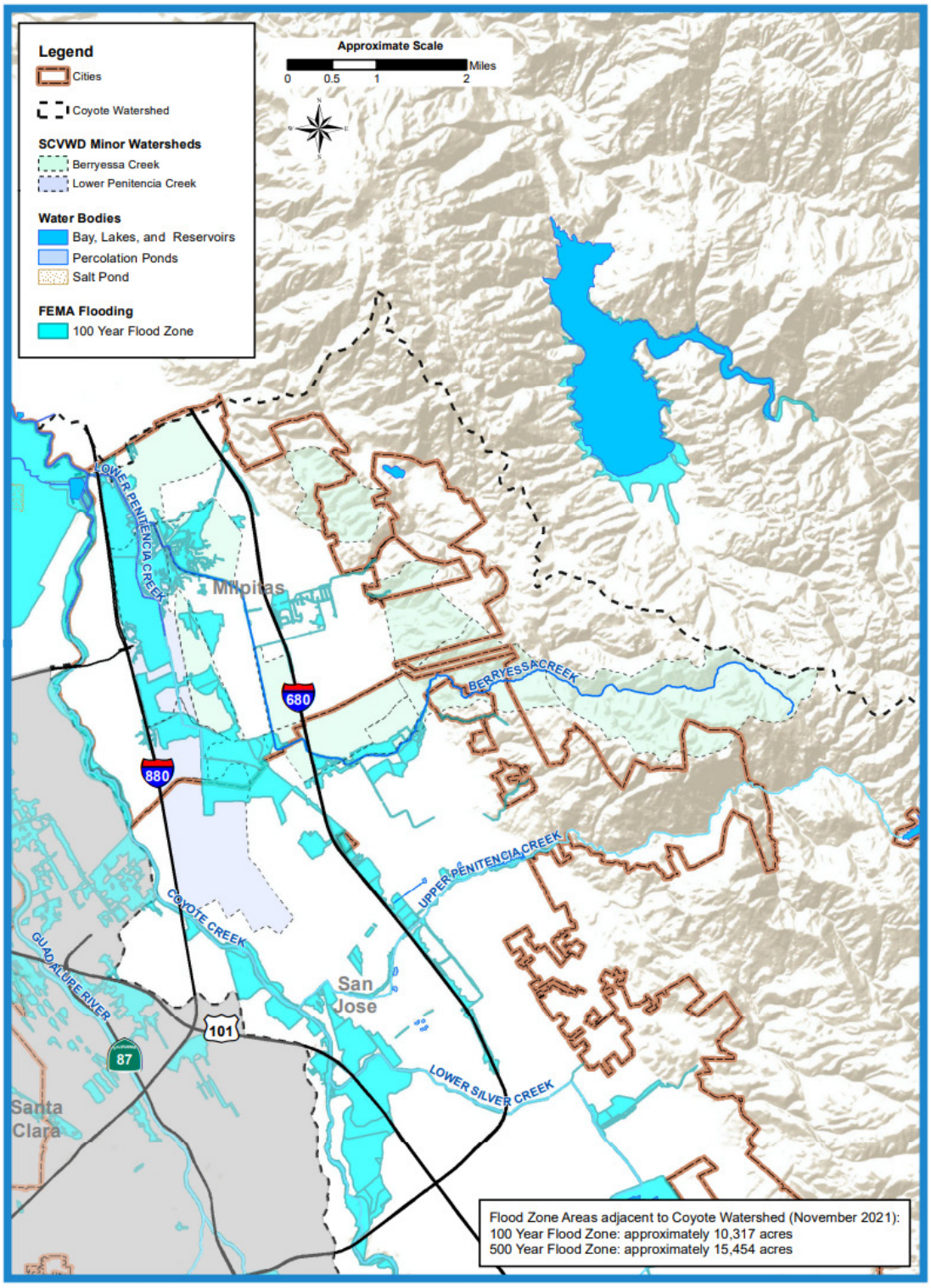
Lower Penitencia Creek flows through mostly residential and commercial areas on the valley floor. It crosses under railroad tracks, driveways, local roads, collector roads and arterial roadways that include Union Pacific Railroad, Interstate 880 (I-880), Montague Expressway, Great Mall Parkway, Abel Street, South Main Street and Calaveras Boulevard. Hetch-Hetch water supply pipeline crosses under the creek just downstream of the Elmwood Correctional Facility. The channel alignment is adjacent to Abel Street for about 1.4 miles of which about ½ mile is the Elmwood Correctional Facility on the other side of the creek.

Most of the creek is a trapezoidal earth channel with some areas of concrete lining. There are levees or floodwalls from the confluence with Coyote Creek for about 2.6 miles to just upstream of Sylvia Avenue. There is good maintenance access along most of its length with much of its length including maintenance roads. Many of these maintenance roads are also utilized as bike and pedestrian paths. Valley Water owns most of the creek in fee-title with some easement except under Interstate 880. Tides from the San Francisco Bay influence the creek for about 1.7 miles upstream to near Marylinn Drive.

Flooding has been an issue on Lower Penitencia Creek with one of the most severe floods occurring in 1982/83. Flood protection improvement projects to increase capacity have been completed on the creek in 1955, 1962, 1965, 1984, and 2023. The City of Milpitas operates six pump stations for local drainage along areas that are protected by levees or floodwalls. Figure 1A is a map showing the watershed and the current FEMA 1% flood area.

A reach map based on the 1982 Lower Penitencia Creek Engineer's Report is shown Figure 2A and is followed by pictures and a description of each reach.

FIGURE 1A
Lower Penitencia Creek Watershed and FEMA Floodplain



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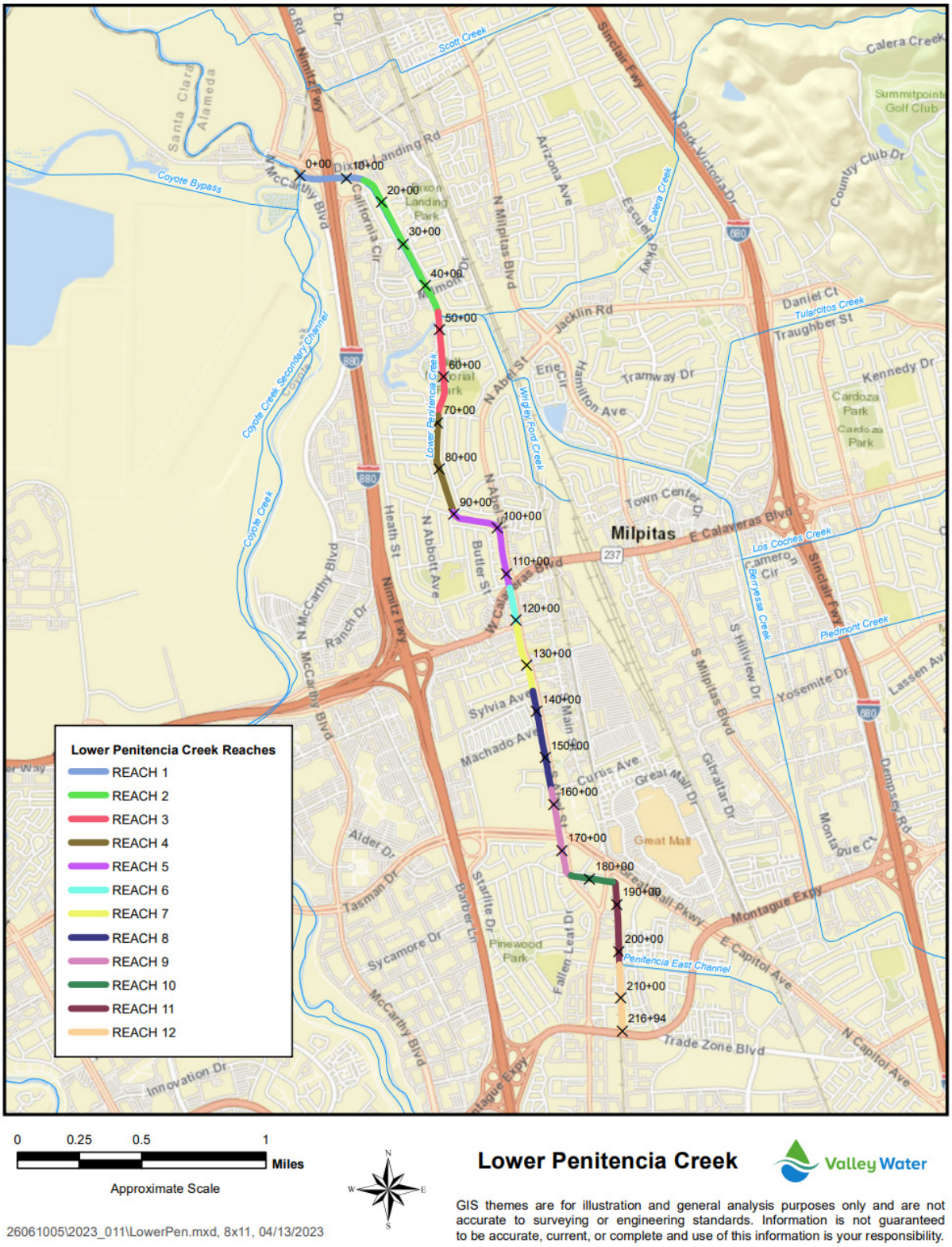
Valley Water

FIGURE 2A
Lower Penitencia Creek Reach Map

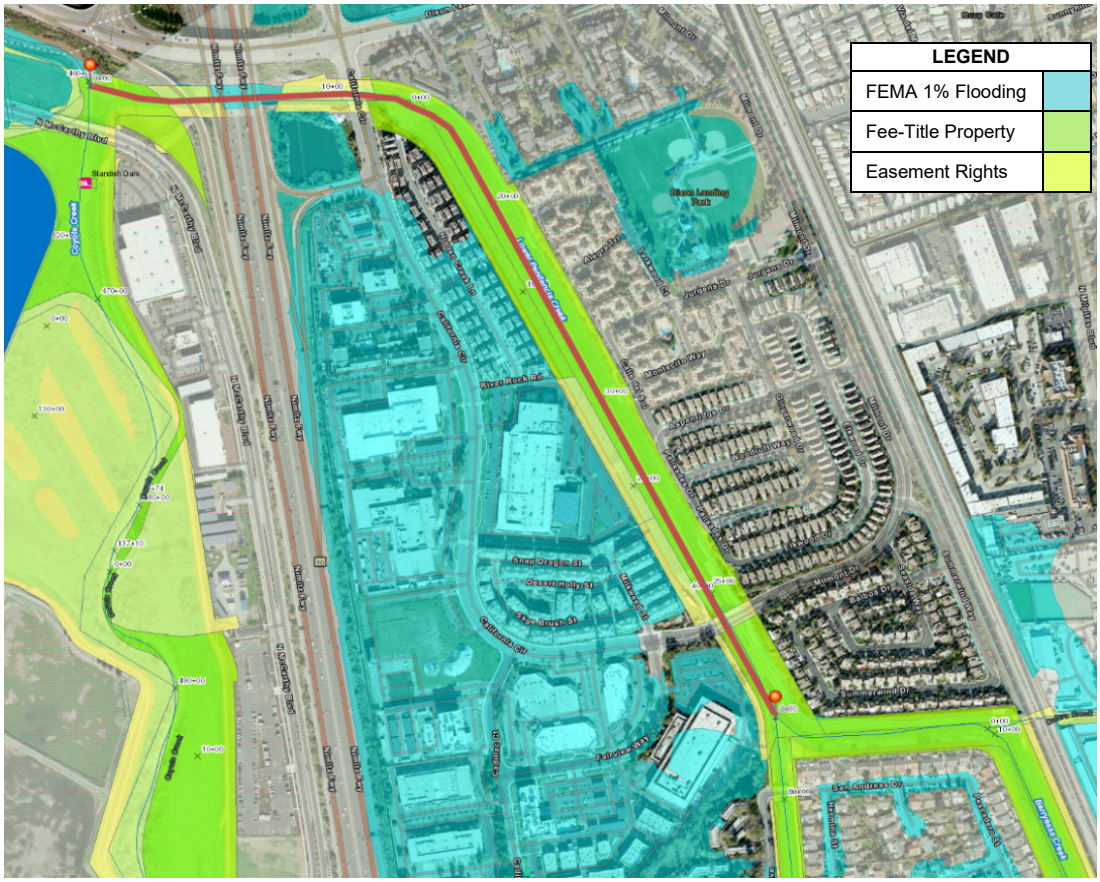


REACH DESCRIPTIONS

a. **Reach 1 & 2 – Coyote Creek to Berryessa Creek**. Reach 1 and 2 begins at the confluence with Coyote Creek and continues about 4,700 feet upstream to the Berryessa Creek Confluence. Lower Penitencia Creek is an earthen channel with floodwalls on both banks from I-880 to Milmont Drive. Between Milmont Drive and Berryessa Creek the channel is concrete lined with a floodwall on the west bank and a levee on the east bank. There are maintenance roads on both sides with a depressed east bank maintenance road from about California Circle to Milmont Drive. A 2,586-foot-long secondary channel with a vegetated island starts just upstream of California Circle and ends just downstream of Milmont Drive.

   The flow is subject to tidal influence and during higher flows it is controlled by the starting water surface in Coyote Creek. The City of Milpitas operates two pump stations to discharge local stormwater in this reach. The California Circle (three 28-inch discharge pipes) has three pumps rated at 17,000 gpm each for a total maximum discharge of 112 cfs and the Jurgens stormwater pump station (72-inch diameter outfall) has 4 pumps rated at 16,000 gpm for a total maximum discharge of 141 cfs.

   There are bridges at Interstate 880 (I-880), California Circle and Milmont Drive in this reach. Valley Water has property rights for the creek throughout this reach, except directly under I-880. Maintenance roads are on both sides of the creek with good access, with the exception of under I-880 where there is no access.



Reach 1 – Looking upstream at I-880

Reach 1 – Looking at I-880 from California Circle

Reach 2 – Downstream from Milmont Drive

Reach 2 – Upstream from Milmont Drive

b. Reach 3 – Berryessa Creek to Redwood Avenue. This 2,100-foot-long reach of the creek is an earthen channel with floodwalls on both banks downstream of San Andreas Drive and levees upstream of San Andreas Drive. There are maintenance roads/pedestrian paths on both banks and a depressed maintenance road on the west side upstream of San Andreas Drive. A pedestrian bridge crosses the creek at Hall Memorial Park and there is a sandbag station located in Hall Memorial Park. Valley Water owns mostly fee-title through this reach.

The City's Penitencia Pump Station is located at the north end of Hall Memorial Park and discharges up to 65 cfs from the Hall Park Lagoon located across Lower Penitencia Creek near the pedestrian bridge. Just upstream of the confluence with Berryessa Creek is the City's Abbott Avenue stormwater pump station with two 18-inch discharge pipes and 2 pumps that have a maximum discharge capacity of 24 cfs.

Reach 3 – Downstream San Andreas Drive

Reach 3 – Looking upstream from San Andreas Drive

c. **Reach 4 – Redwood Avenue to Marylinn Drive**. This 2,150-foot-long reach is an earthen channel with floodwalls and maintenance roads on both banks. Valley Water owns fee-title through this reach. The City's Manor Pump Station is just downstream of Marylinn Drive and has a capacity to discharge up to 95 cfs. Tidal influence ends near Marylinn Drive.

Reach 4 – Upstream Redwood Avenue start floodwalls

Reach 4 – Downstream from Marylinn Drive

d. **Reach 5 – Marylinn Drive to Calaveras Boulevard**. Berryessa Creek Reach 5 is about 2,300 feet long from Marylinn Drive to Calaveras Boulevard Bridge. About 1,200 feet of the upstream part of this reach alignment runs along Abel Street. The creek is an earthen trapezoidal channel with floodwalls and maintenance roads on both banks. Valley Water owns fee-title property rights throughout this reach.

Reach 5 – Upstream from Marylinn Drive

Reach 5 – Downstream from Calaveras Boulevard

e. **Reach 6 – Calaveras Boulevard to Serra Way**. Berryessa Creek is about 900 feet in length, crosses under Calaveras Boulevard and is aligned along Abel Street. There are floodwalls on both banks and the channel is concrete lined in this reach. There are no maintenance roads. Valley Water owns fee-title property rights in this reach except where it has no rights under Serra Way. Spence Creek Pump Station discharges up to 94 cfs into this reach through a 42-inch outfall.

Reach 6 – Looking downstream at Serra Way

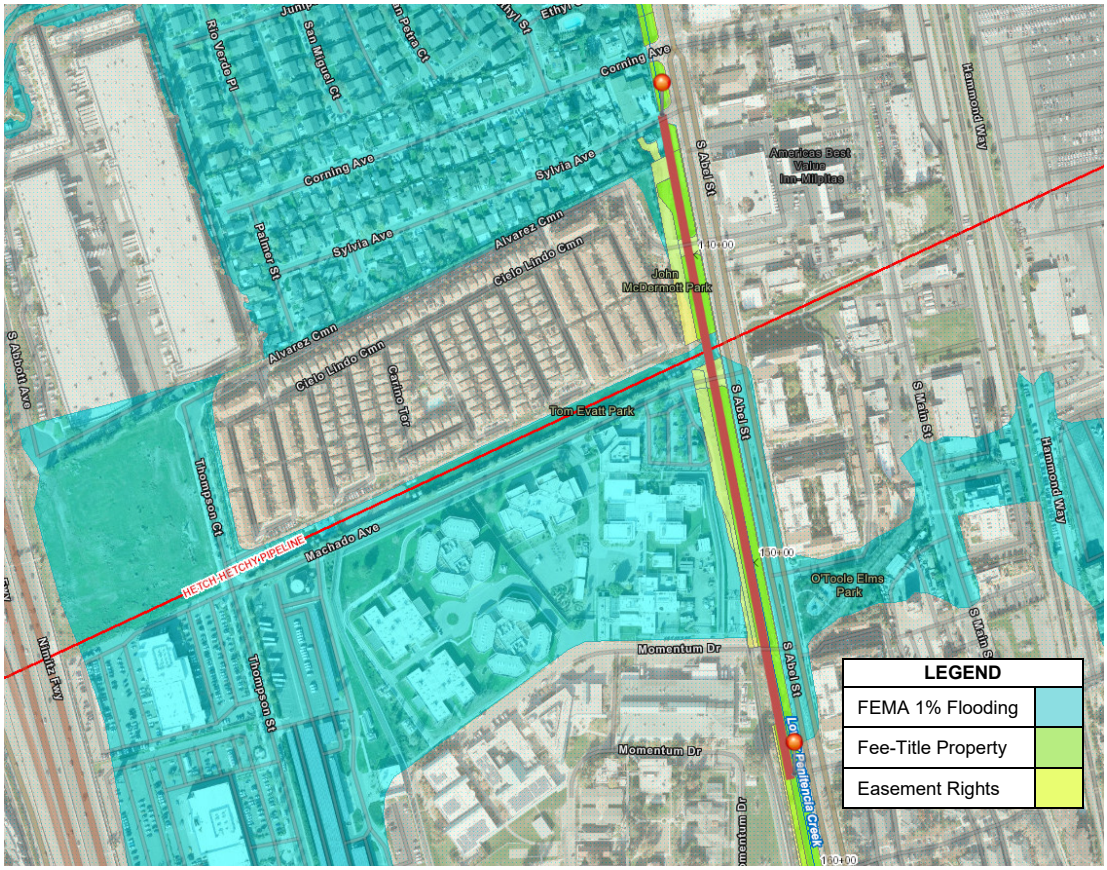
f. **Reach 7 – Serra Way to Sylvia Avenue**. This reach is about 1,300 feet long and is a concrete lined channel with floodwalls and no maintenance roads. Crossing bridges are at Serra Shopping Center, Serra Avenue, Junipero Drive, and Corning Avenue. Valley Water owns fee-title for this reach except where it has no rights under Corning Avenue and Sylvia Avenue.

Reach 7 – Downstream Serra Way

Reach 7 – Upstream from Serra Way

g. **Reach 8 – Sylvia Avenue to Curtis Avenue**. Reach 8 is about 2,300 feet in length running adjacent to Able Street. There is a small floodwall along Abel Street that extends to near Curtis Avenue and an approximate 300 foot section of floodwall on the opposite bank upstream of Sylvia Avenue. The channel is mostly earthen trapezoidal with a short section of concrete lining just upstream of Sylvia Avenue. It has a pedestrian path/maintenance road on the west bank between Sylvia Avenue and Alvarez Court and another on the west bank from an Elmwood Correctional Facility entrance bridge to Curtis Avenue. Bridges cross the creek at Sylvia Avenue, Alvarez Court, Machado Avenue and an entrance bridge into Elmwood Correctional Facility. Hetch-Hetchy pipeline crosses under the creek just downstream of Machado Avenue where there is a linear park along the pipeline alignment.

The only stream gauge on the creek is located at Machado Avenue. This stream gauge is utilized for flood thresholds (Table 2A). Valley Water owns fee-title for the creek and some easement on the west bank. The only exception is at Hetch-Hetchy where there are no Valley Water property rights.

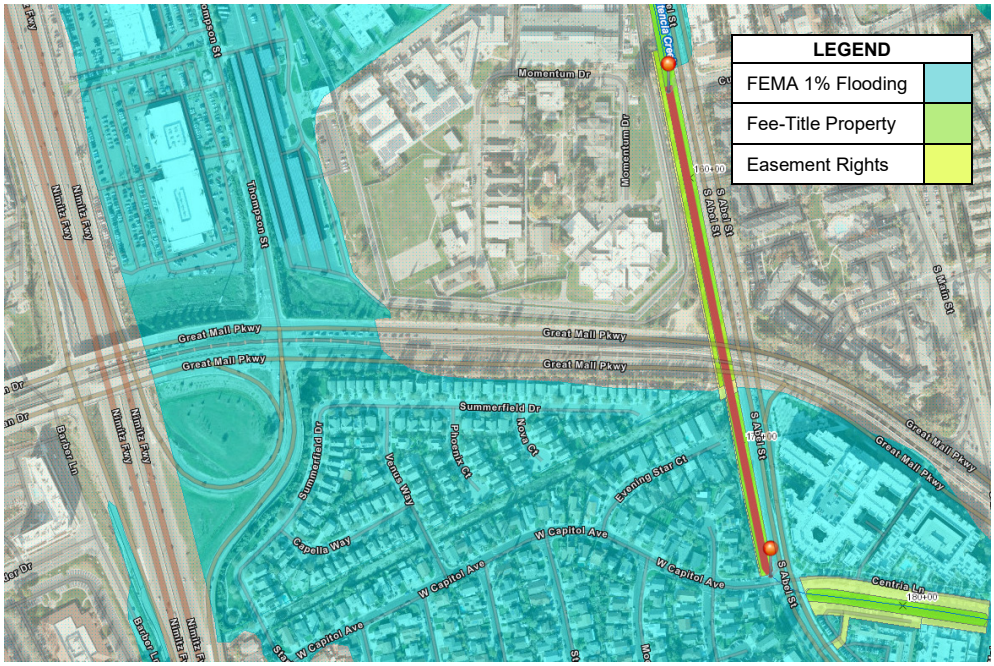


Reach 8 – Upstream of Sylvia Avenue

Reach 8 – Downstream from Machado

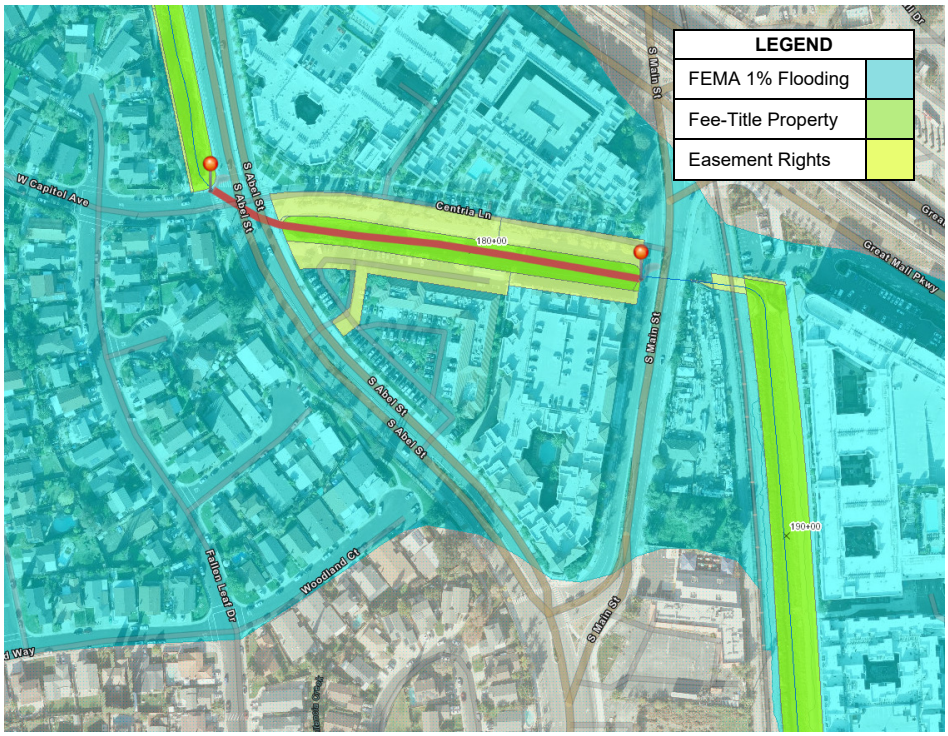
Reach 8 – Machado Avenue Stream Gauge

h. **Reach 9 – Curtis Avenue to Abel Street**. This 1,900-foot-long reach is mostly trapezoidal earthen channel with some concrete transitions at bridge crossings for Great Mall Parkway and the Abel Street/Capitol Avenue intersection. There is a maintenance road on the west bank from Curtis Avenue to Great Mall Parkway. Valley Water has fee-title for most of this reach except where there is easement on a Pacific Gas and Electric alignment just upstream of Great Mall Parkway.



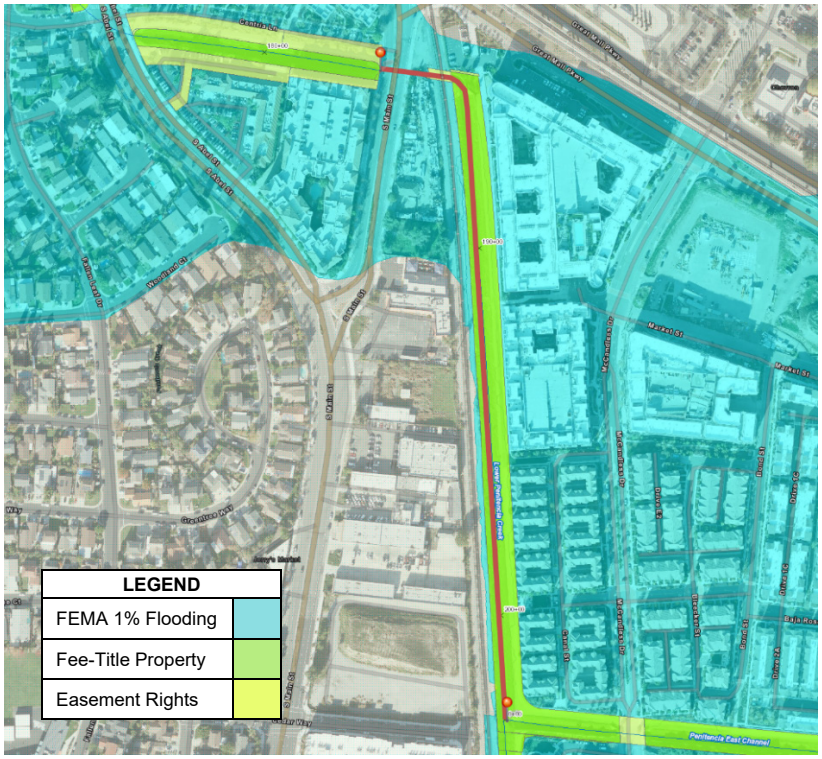
Reach 9 – Looking downstream from W. Capitol Avenue and Abel Street Intersection

i. **Reach 10 – Abel Street to Main St./Union Pacific Railroad (UPRR) Culvert**. This 800-foot-long reach of the creek flow east to west and is adjacent to an apartment driveway and parking lot on the north and commercial property and apartments on the south. It is an earthen trapezoidal channel with a maintenance road/pedestrian path on the north bank. Valley Water owns fee-title for the creek and has an easement on the top of bank area.



Reach 10 – Lower Penitencia Creek looking upstream from Abel Street

j. **Reach 11 – Main St./UPRR to East Penitencia Channel Confluence**. Reach 11 flows south to north along the Union Pacific Railroad railway and is an earthen trapezoidal channel upstream of the culvert that crosses under the railway and Main Street. There is a maintenance road/pedestrian path on the east bank along high-density residential property. Valley Water owns the creek and the east top of bank area in fee-title.

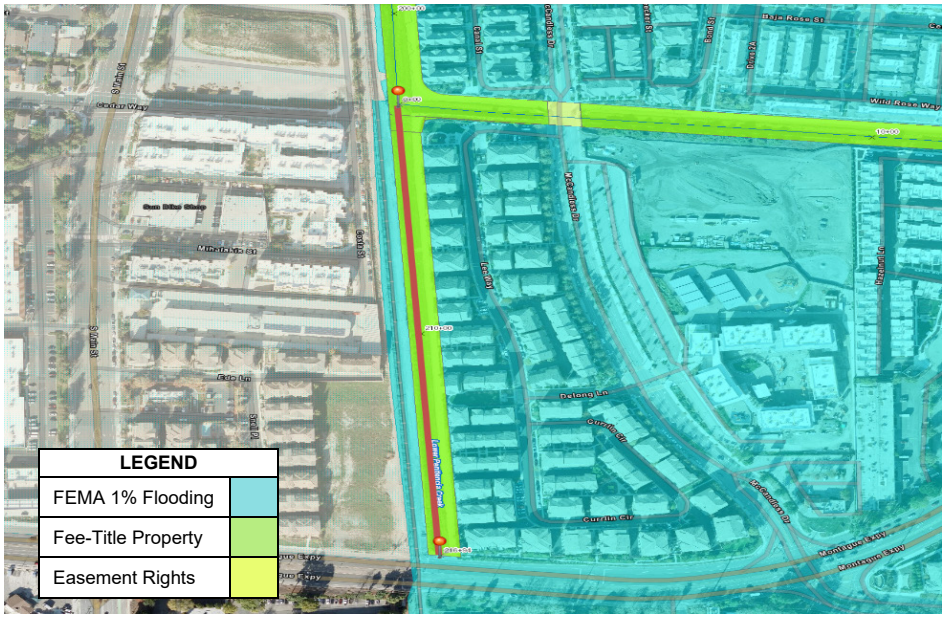


Reach 11 – Upstream UPRR) crossing

Reach 11 – Upstream from UPRR with tracks on right

k. Reach 12 – East Penitencia Channel Confluence to Montague Expressway

Reach 12 begins at the Valley Water limit of jurisdiction at Montague Expressway and flows north along the Union Pacific Railroad railway to the confluence with East Penitencia Channel. The creek is earthen trapezoidal with a maintenance road/pedestrian path on the east bank along high-density residential property. Upstream of this reach the creek is in pipes and is considered a local drainage facility. Valley Water owns the creek and the east top of bank area in fee-title.



Reach 12 – Downstream Montague Expressway

Reach 12 – Montague Expressway

C. LOWER PENITENCIA CREEK FLOOD DESCRIPTION. Flooding has been experienced many times in the past on Lower Penitencia Creek with the earliest recorded flooding occurring in 1889 and most recently in 1982-83. Most of the flooding has occurred from near Main Street to Dixon Landing Road with the floodwaters sometimes joining with flooding from Coyote Creek, Berryessa Creek and Upper Penitencia Creek. In addition, high tides have caused high flood stage downstream of the Berryessa Creek confluence. Local drainage in the adjacent residential areas has also been an issue during high flows when storm drains aren't able to flow into the creek.

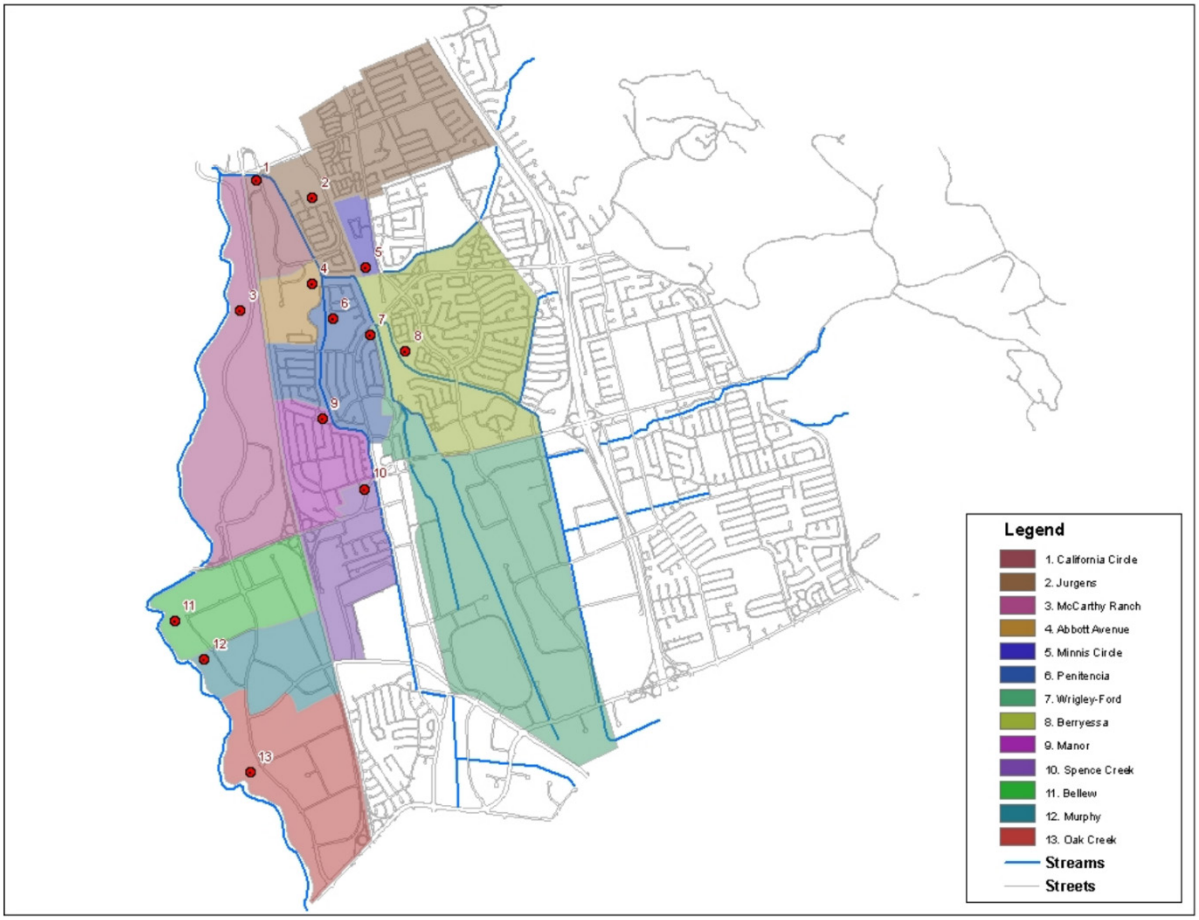
Flood protection projects have been completed on Lower Penitencia Creek in 1955, 1962, 1965, 1984 and most recently in 2023. These improvements are mostly composed of levees, floodwalls, channel lining, and channel enlargement. The most recent improvements were completed to convey the increase in flows expected from Berryessa Creek following completion of flood protection improvements on that tributary. Lower Penitencia Creek is expected to convey the 1% flow with freeboard downstream of the Berryessa Creek confluence if it is operating as intended. However, upstream flooding is still a concern with overtopping possible near Abel Street and Great Mall Parkway. This spill would flow westerly towards Interstate 880 and possibly commingling with floodwaters from Berryessa Creek and Upper Penitencia Creek and result in ponding in the neighborhoods.

To address the local drainage flooding problem during high creek flows, the City of Milpitas owns and operates six pump stations along Lower Penitencia Creek where the creek has floodwalls and levees. In extreme high flow situations, it may be necessary to coordinate with the City of Milpitas on the operations of these pump station. Below is a list of the pump stations discharging into Lower Penitencia Creek and Figure 3A shows their location:

- California Circle
- Jurgens
- Penitencia (Hall Memorial Park)
- Abbott Avenue
- Manor
- Spence Creek

While these improvements have significantly reduced the potential of flood hazards, there are still concerns regarding flooding during unforeseen events. Attachment 1 describes some unforeseen events and Attachment 2 discusses possible remedial actions that may be taken for those events.

FIGURE 3A
Milpitas Stormwater Pump Stations



D. FLOOD EVENT DETECTION. Several detection methods can be utilized for Lower Penitencia Creek including weather forecasts, hydrologic/hydraulic modeling, Automated Local Evaluation in Real Time (ALERT), other stream/precipitation gauge systems, and field observations. Some of these are available through websites listed in Attachment 13.

1. **WEATHER FORECASTS**. The National Weather Service (NWS) provides weather (e.g., precipitation) forecasts in advance of a storm events. Valley Water also contracts with a service provider for enhanced forecasting in the regional area.

   During storm events, the NWS will host webinars with affected agencies and utilities to discuss forecasts and share information to enhance regional preparedness. Valley Water and Agency Stakeholders can participate in these webinars and share all current information. In addition, the NWS maintains websites (Attachment 13) that provide flood threat information and they will issue public notices of forecasted flood threats on local television and radio programming if the level of threat is high.

2. **HYDROLOGIC/HYDRAULIC MODELING**. Based on the weather forecast and other real-time data, Valley Water may utilize computer modeling to predict flood stage up to 72 hours in advance. These models are not run operationally and are performed on an ad hoc basis. Outputs are considered estimates and can vary, sometimes significantly, from the actual flood flows. Lower Penitencia Creek is generally considered to have

flashy flow upstream of Berryessa Creek confluence and will likely not benefit from computer modeling to predict flooding too far in advance of a storm event.

Modeling is also used to improve ALERT gauge data and refine flood thresholds. To improve the accuracy of the modeling, Valley Water will review the computer model periodically and determine if additional information can be gathered to update the model. The type of information that can be used to update the models include: surveys of channel geometry, reevaluation of channel roughness due to vegetation or blockages, and data gathered during high flow events. The most up-to-date flood thresholds and forecast information for ALERT gauges can be viewed at https://alert.valleywater.org/map?p=map.

Valley Water and NWS will utilize this modeling to help set their flood readiness level for Lower Penitencia Creek (Table 1A) and provide the information to local agencies and the public as appropriate. And, this same modeling and information that helps determine flood threat levels is used by Valley Water in determining flood severity levels for Lower Penitencia Creek (Table 2A) during storm events.

3. **GAUGE SYSTEM**. Stream gauges provide valuable information for high flow events and may give notice to take action or to deploy staff for field observations. Gauges may be both visual and remote sensing Automated Local Evaluation in Real Time (ALERT). An ALERT gauge is located at Machado Avenue and is set with alarms to automatically notify appropriate staff at stages as described in Table 2A. This gauge also includes the latest available flood thresholds and can be found at https://alert.valleywater.org/map?p=map.

   A listing of all ALERT gauges can be found at http://alert.valleywater.org. These gauges provide data in near real-time.

   The following is a summary of the current stream gauge program.

   1. Annually sites will be prioritized for manual gauging and teams are assigned.

   2. After every high flow event, the rule curves (depth versus discharge) are updated/calibrated.

   3. The most current flood thresholds and forecast information for ALERT stream gauges is available at the Valley Water Surface Data Portal - https://alert.valleywater.org/map?p=map.

4. **VISUAL OBSERVATIONS**. Visual observations can be critical to verify what is occurring because ALERT gauges are not always a reliable source of information and modeling information can vary from the actual condition. In addition, there are other known hot-spots and facilities that should be visually checked during high flows. As water levels increase in the creeks, rivers, and waterways, Valley Water Field Information Teams (FITs) are deployed to visually monitor and report back the water levels 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.

   Valley Water and, in some cases other Stakeholders, have individual teams who deploy into the field to observe flood conditions at “hot spots.” Deployment of these teams may be coordinated if there are more than one team in the same area. HH&G maintains a

master list of flooding hotspots and monitoring locations (Attachment 14) to deploy FITs and other teams to Lower Penitencia Creek at:

- **Lower Penitencia Creek at Great Mall Parkway to Abel Street and W. Capitol Avenue** – check for bank area for erosion issues, high flows and blockages at culverts (Attachment 14, page 63).

Watershed Operations & Maintenance personnel are also typically out in the field inspecting, repairing, and removing debris from 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 Stakeholders or other Agency Stakeholders who should promptly relay to the EOC or to Valley Water through a contact method shown below:

- Main Valley Water telephone – (408) 265-2600
- Valley Water after hours telephone – (408) 395-9309
- Valley Water Watershed Hotline: 408-630-2378
- Valley Water website report problems – https://www.valleywater.org/ or https://access.valleywater.org/s/.
- Non-Emergency Police & Fire dispatch – 311
- Emergency Police & Fire dispatch – 911

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

1. Visual stream gauges – 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. Levees and Floodwalls – 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

E. LOWER PENITENCIA CREEK FLOOD READINESS LEVELS AND SEVERITY DETERMINATION

Sometimes an event is a flash flood that occurs suddenly without much early notice, which is likely to occur in small watersheds like most of Lower Penitencia Creek that are controlled by storm drain runoff. However, with weather forecasting and modeling there is often an ability to estimate flood events before they occur. This is extremely valuable when preparing for necessary evacuations and road closures.

To provide this advanced notice, a threat level should be used to provide an indicator of preparedness for a response and a level of potential severity for areas subject to flooding to assist the Agency's in planning and implementing appropriate actions. Modeling in the future is filled with uncertainties, therefore, a readiness of Watch will be used when flood stage is estimated about 24 to 72 hours or more in the future. If flooding is estimated within about 24 hours, the threat level will be elevated to Warning.

TABLE 1A
Flood Readiness Levels

PREPAREDNESS	This is the base stage of readiness that will be the typical condition throughout most of the year. An Emergency Management Organization (EMO) is not active at this level. It is defined as: • Flood stage (Minor Flooding or greater) is not estimated within the next 72 hours or • Measured stream depth is below 50% of flood stage.
MONITORING	This condition is variable and requires more intense monitoring and a heightened level of alertness. An EMO may be minimally active to monitor for any developing flood concern. This condition is defined as: • Flood stage may occur in 48 to 72 hours, or • Measured stream depth is at 50% to 70% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or near design stage within 24 hours.
WATCH	Flood level or a serious flood threat is expected to occur. An EMO may be activated at an appropriate level. This is generally defined as: • Stream depth is estimated to reach flood stage or greater within 24 to 48 hours, or • Measured stream depths are at 70% to 100% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater than design stage within 6-12 hours.
WARNING	This is a more urgent situation with flooding imminent or occurring. The EMO is generally active. This level is generally defined as: • Flood stage or greater is occurring or is estimated to occur within 24 hours, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater within minutes/hours or is occurring.
Note: Flood stage is the depth of water at which a stream or facility begins flooding (see Glossary of Terms).	

When the threat level is at a Watch or Warning, there is an expectation that flooding will occur or is occurring at some locations. The severity of the situation at specific locations is determined by the flood stage. The areas subject to flooding for different stream stages are estimated utilizing hydraulic models and flood maps prepared by the Hydrology, Hydraulics and Geomorphology Unit (HH&G). Flood severity categories are defined by this EAP are consistent with the NWS and Table 2A below shows the information as of the date of this EAP. The most current information regarding flood severity and flood thresholds is available at https://alert.valleywater.org/map?p=map.

TABLE 2A
Lower Penitencia Creek 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.
	• **Lower Penitencia Creek**
	  ○ The Machado Ave. stream gauge is near or expected to be at or near 5.5 feet.
	  ▪ Creek is flashy and fed primarily with storm drains and pump stations. Watch water level near Great Mall Parkway.

Minor Flooding (Orange)	Minimal or no property damage, but possibly some public threat (e.g., inundation of roads).
	• **Lower Penitencia Creek**
	  ○ The Machado Avenue stream gauge is near or expected to be 7.5'.
	  ▪ Overtopping just south of Great Mall Parkway on the east bank, flooding South Abel Street. Possible localized flooding from urban flooding.

Moderate Flooding (Red)	Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.
	• **Lower Penitencia Creek**
	  ○ Machado Ave. stream gauge is near or expected to be at or greater than 8.0'.
	  ▪ Spills occur around S. Abel Street, flowing westward along West Capitol Avenue toward I-880 and ponding in the neighborhoods.

Disclaimer: This table is current as of the publishing of this document. The most current flood severity thresholds are at https://alert.valleywater.org/map?p=map.	

F. ACTIVITIES AND NOTIFICATIONS. General activities and actions are described in Concept of Operations – Table 2 and Attachments 3 through 8 of the EAP. General notifications are described in EAP Mobilization – Step 3 of the EAP. The general level of activity and notifications will be guided by the best information available to the EAP Personnel. The level of activity may mirror those activities of the individual jurisdictional Emergency Management Organizations (e.g., Emergency Operations Centers).

The general activities in Table 2 and Attachments 3 through 8 of the EAP sufficiently cover activities needed for Lower Penitencia Creek. However, the proper function of the system to protect properties from flooding also relies on the operation of the City of Milpitas pump stations. Valley Water does not control those operations, but can coordinate with the City as needed.

1. PREPAREDNESS

- Valley Water O&M will conduct field inspections of the creek for flow conveyance and the integrity of levees and floodwalls.
- Valley Water O&M will perform mitigation work on all facilities to assure they will function prior to a storm event.
- Valley Water WFOU will inventory and procure flood fighting materials and equipment.

2. WATCH & WARNING

- Valley Water WFOU will inspect and clean bridge piers, culverts, and energy Tide Gates and Detention Facilities.
- Valley Water WFOU will stage equipment at localities likely to be affected as needed.

Lower Penitencia Creek flows through the City of Milpitas. Contact information for the city and other Agency Stakeholders is included as Attachment 9 of the EAP.

There are important infrastructure and facilities at risk of flooding from Lower Penitencia Creek. Based on intelligence gathered during the storm event, the EOC and other stakeholders will determine the risk and provide notifications as appropriate. In general, a City Stakeholder would provide notifications to critical facilities at risk.

Below is a list of some important facilities that may be at risk. If needed and available, more detailed flood maps may be provided to City Stakeholders by Valley Water's Hydrology, Hydraulics and Geomorphology Unit to better determine which facilities are threatened:

FACILITY TYPE	NAME	ADDRESS	PHONE
Schools and Correctional Facilities	Elmwood Correctional Facility	701 S. Abel Street Milpitas, CA 95035	(408) 957-5900
	Anthony Spangler Elementary School	140 N. Abbott Avenue Milpitas, CA 95035	(408) 635-2870
	Curtner Elementary School	275 Redwood Avenue Milpitas, CA 95035	(408) 635-2852

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APPENDIX B
Berryessa Creek

A. PURPOSE. This Appendix to the Emergency Action Plan for Severe Storms and Flooding in Lower Penitencia Creek Watershed (EAP) is meant to provide additional guidance specific to Berryessa Creek. There is also a separate Joint Emergency Action Plan for Severe Storm and Flood Response in City of San José (JEAP) that was prepared and adopted by the City of San José and Valley Water. This appendix should be sufficient for use during severe storms or flooding, however, if the focus of the event is in the City of San José, it is recommended that the JEAP also be utilized.

B. BERRYESSA CREEK DESCRIPTION. The Berryessa Creek watershed drainage area is approximately 22.4 square miles in extent and drains portions of the Diablo Range on the east side of the Santa Clara Valley. About 5.4 square miles of the watershed is on the valley floor. The highest elevation in the watershed is approximately 2,500 feet.

The creek begins in the rural unincorporated foothills of the Diablo Mountain Range at an elevation of about 2,100 feet and flows downstream westerly for over 10 miles to its confluence with Lower Penitencia Creek at an elevation of about 3 feet above Mean Sea Level. The lower 5.7 miles of the creek from Old Piedmont Road to its confluence with Lower Penitencia Creek is on the valley floor. The first 2.3 miles after it flows out of the foothills are located in the City of San José as it flows past residential properties, Majestic Elementary School, and through Berryessa Creek Park. It then turns to the north into the City of Milpitas and runs about 2 miles primarily through commercial and industrial land uses before flowing past more residential areas all the way to its confluence with Lower Penitencia Creek.

Berryessa Creek crosses many local roads, major thoroughfares, and other important infrastructure. The major roadway crossings include Interstate 680, Montague Expressway, and Calaveras Boulevard. The critical infrastructure it crosses over or under are South Bay Aqueduct Pipeline, Union Pacific Railroad railway, Hetch- Hetchy Pipeline, and the Bay Area Rapid Transit (BART) railway. Tributary creeks on the valley floor from upstream to downstream are Sweigert Creek, Sierra Creek, Piedmont Creek, Los Coches Creek, Tularcitos Creek and Wrigley-Ford Creek.

Upstream of Old Piedmont Road the creek is unmodified natural channel on private range lands with the exception of approximately 500 feet of Valley Water right of way just upstream of the road. Downstream of Old Piedmont Road the creek is mostly excavated trapezoidal channel with some areas of concrete lining upstream of Montague Expressway and some vegetated earth channel through Berryessa Park. There are levees and/or floodwalls along the creek upstream of the confluence with Lower Penitencia Creek to about Calaveras Boulevard. In addition, there are some short sections with levees from Morrill Avenue to near Majestic Elementary School (about 1,500 feet downstream of Piedmont Road).

Valley Water has easement or fee-title right of way on most of Berryessa Creek from Old Piedmont Road to the confluence with Lower Penitencia Creek with the exception of roadway crossings and portions of Berryessa Creek Park where the City of San José has the right of way and the creek is a vegetated earth channel with levees.

Sedimentation and erosion can be issues on the creek. There are reaches and areas with bank stabilization (concrete, sacked concrete, articulating concrete block mats, or rocks) and several locations of channel invert stabilizers (concrete drop structure, concrete energy dissipation structures and concrete trapezoidal channel). Deposition of sediments from the upper watershed areas should primarily occur from Old Piedmont Road to just downstream of Piedmont Road.

REACH DESCRIPTIONS

a. **Reach 1 – Lower Penitencia Creek to Abel Street**. This 2,500-foot reach is an earthen trapezoidal channel with a floodwall and a depressed articulating concrete mat maintenance road on the west side. The east side is protected by a levee with a top of levee maintenance road. The Calera Creek enters on the east side about 900 feet upstream of Lower Penitencia Creek confluence. Tidal action from the San Francisco Bay occurs through this reach. Valley Water owns fee-title property rights in the reach.

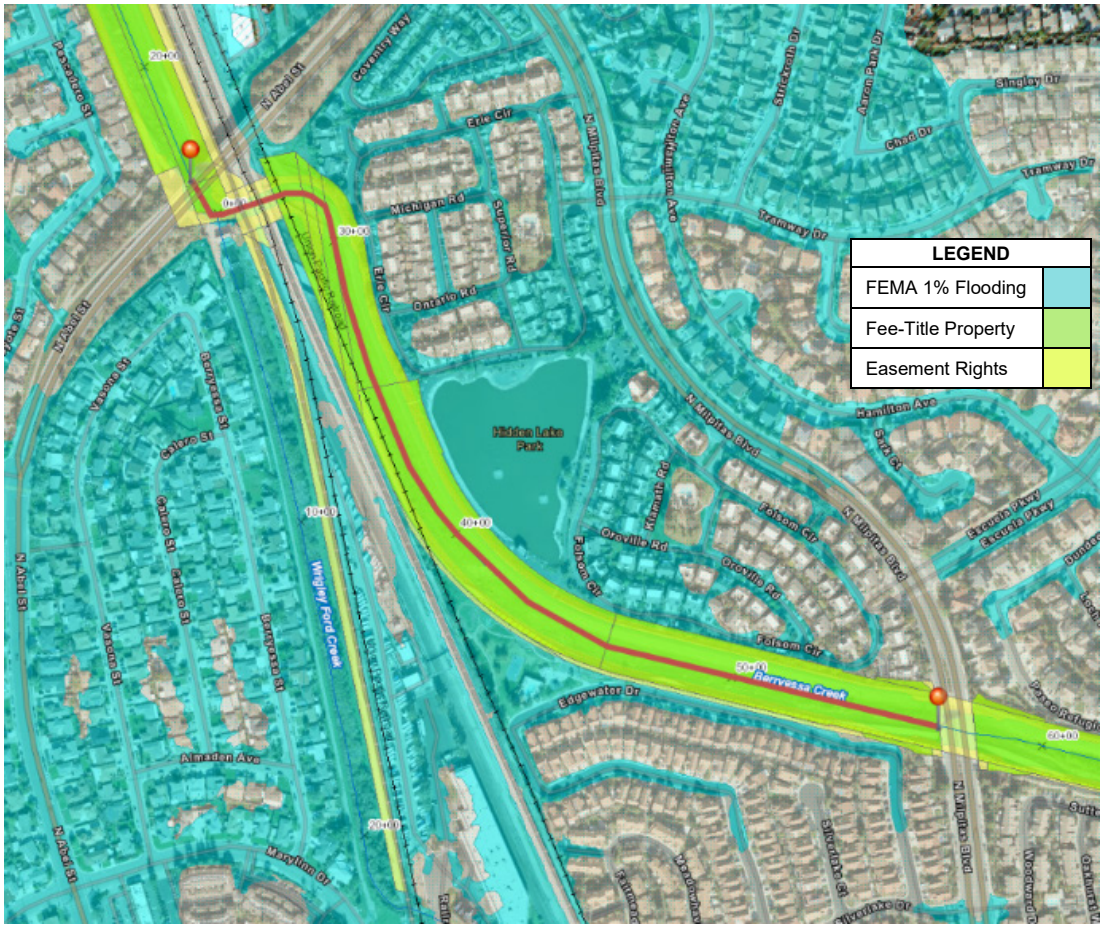
Reach 1 – Lower Penitencia Creek Confluence to Abel Street

Reach 1 – Looking Downstream at Lower Penitencia Creek confluence with Berryessa Creek and levee on right

Reach 1 – Looking from Lower Penitencia Creek floodwall on right and levee on left

Reach 1 – Looking downstream from Abel Street

b. **Reach 2 – Abel Street to Milpitas Boulevard**. The reach is approximately 2,200 feet in length with a floodwall on the west bank and a combination of levee and short sections of floodwall on the east bank. The Wrigley-Ford Creek pump station discharge is just upstream of Abel Street and has capacity to discharge up to 430 cfs and the Berryessa pump station located just upstream at Hidden Lake discharges up to 150 cfs. Union Pacific Railroad (UPRR) crosses Berryessa Creek immediately upstream of Wrigley-Ford Creek with no maintenance access at the crossing. There are maintenance roads upstream of the UPRR with a top of levee maintenance road on the east that also serves as the Berryessa Creek Trail. On the west is a depressed articulated concrete mat maintenance road adjacent to the floodwall. Tidal action ends upstream of the UPRR crossing. Valley Water owns fee-title in this reach except for an easement at the UPRR crossing.

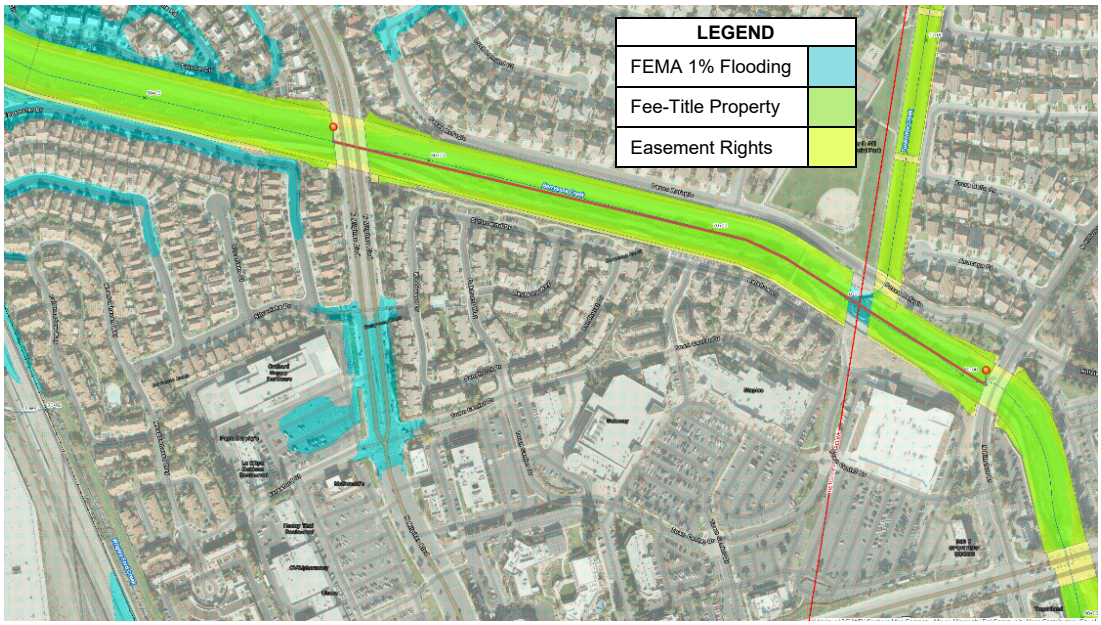


Reach 2 – Abel Street to Milpitas Boulevard

Reach 2 – Looking upstream from Abel Street at UPRR crossing and Wrigley-Ford Creek Pump Station on right

Reach 2 – Looking downstream from Milpitas Boulevard

c. **Reach 3 – Milpitas Boulevard to Hillview Drive**. Reach 3 is a trapezoidal earth channel with vegetated channel bottom, a levee on the north bank and a floodwall on the south. There is a depressed articulated concrete mat maintenance road adjacent the floodwall and a top of levee maintenance road on the east that also serves as a pedestrian path. A pedestrian bridge crosses at about the mid-point of this reach just downstream of the Hetch-Hetchy crossing and Tularcitos Creek confluence. Valley Water owns fee-title with easements under the roadway bridge crossings and no right of way at the Hetch-Hetchy crossing.



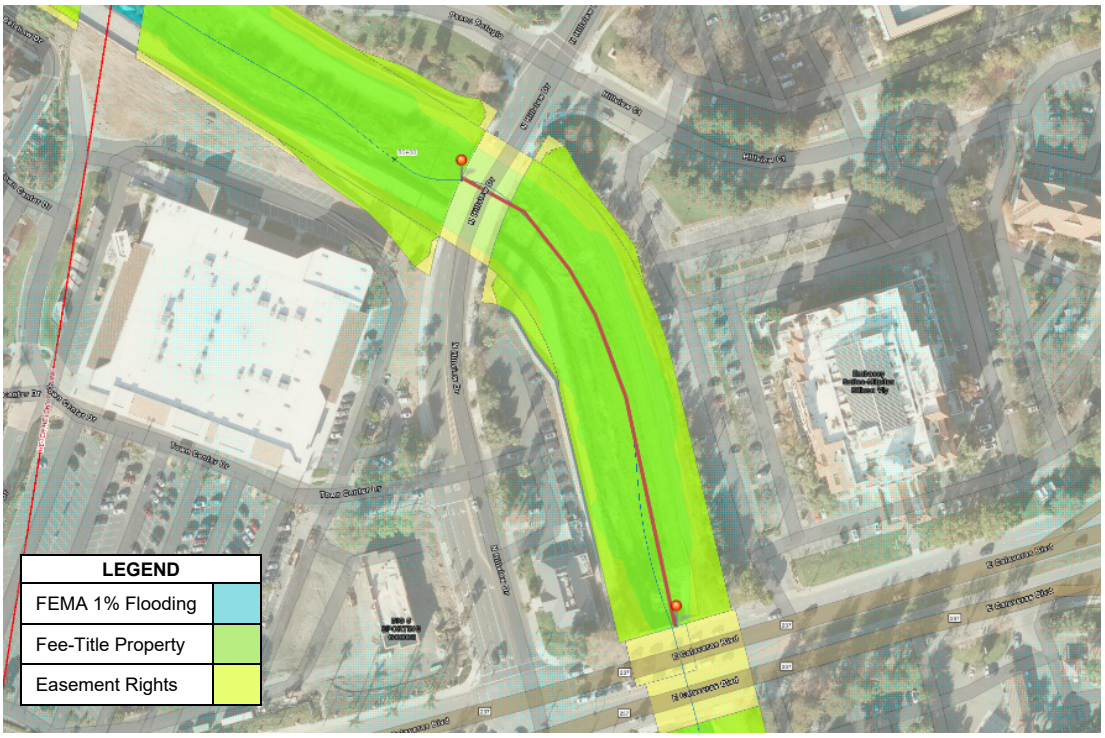
Reach 3 – Milpitas Boulevard to Hillview Drive

Reach 3 – Looking downstream from pedestrian bridge at north levee

Reach 3 – Looking downstream from pedestrian bridge at south floodwall

Reach 3 – Looking upstream from pedestrian bridge at north levee (left), south floodwall (right), confluence with Tularcitos Creek (on left), and Hetch-Hetchy crossing

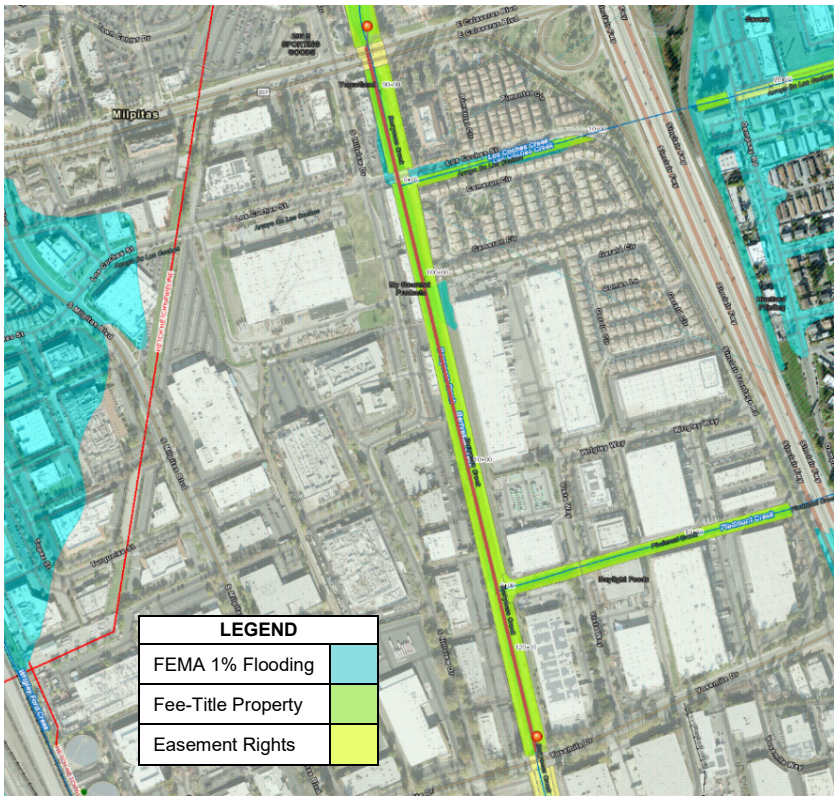
d. **Reach 4 – Hillview Drive to Calaveras Boulevard**. This 600-foot reach is an earthen trapezoidal channel with floodwalls and levees. The Berryessa Creek Trail/Maintenance Road is located on the top of levee on the east side and there is maintenance road on the west side adjacent to a floodwall. Valley Water owns fee-title with only easements under the bridge crossings.



Reach 4 – Hillview Drive to Calaveras Boulevard

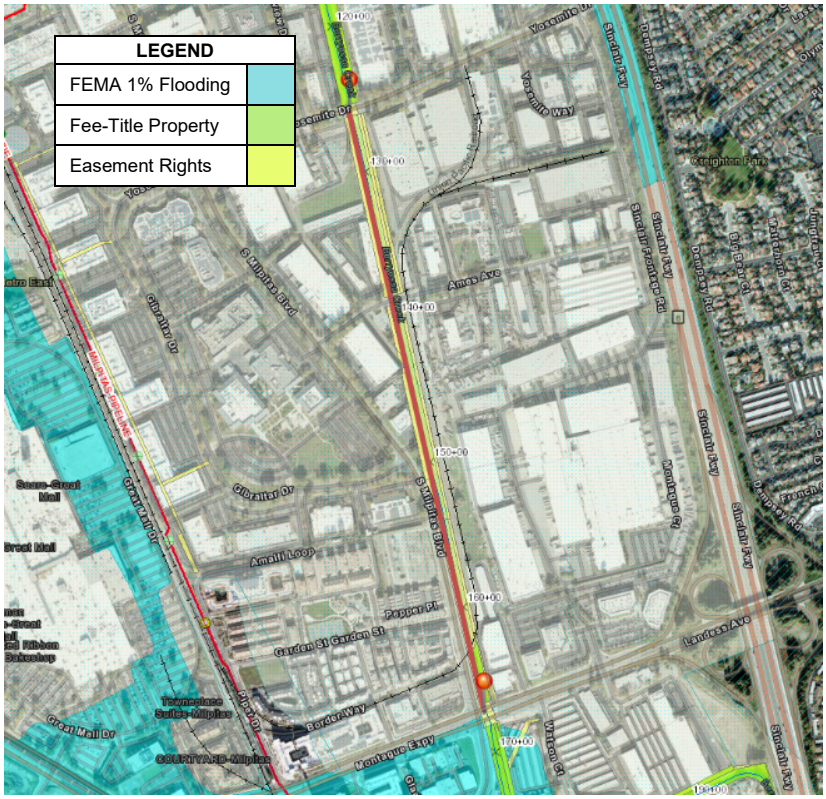
Reach 4 – Looking upstream from Hillview

e. **Reach 5 – Calaveras Boulevard to Yosemite Drive**. Reach 5 is a 3,900-foot-long straight trapezoidal earthen channel with maintenance roads on both banks. Los Coches Creek confluence is about 630 feet upstream of Calaveras Boulevard and Piedmont Creek confluence is another 2,160 feet upstream. Most of the adjacent land is industrialized. Valley Water owns fee-title in the creek.



Reach 5 – Looking downstream from Los Coaches Street toward Calaveras Boulevard

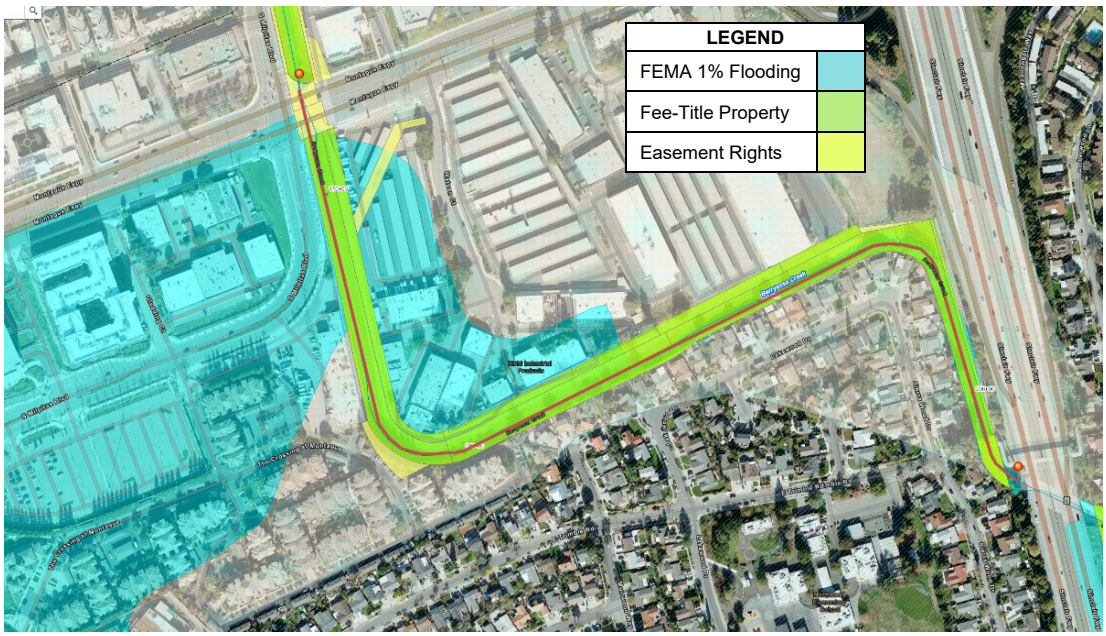
f. **Reach 6 – Yosemite Drive to Montague Expressway**. This reach is about 4,120 feet in length and is a trapezoidal earth channel flowing through industrialized areas with maintenance roads on both banks. Union Pacific Railroad (UPRR) crosses the creek about 400 feet downstream of Montague Expressway. Valley Water owns easement property rights for all of the creek except for a short section of fee-title between the UPRR crossing and Montague Expressway.



Reach 6 – Looking upstream from Yosemite Drive

Reach 6 – Looking downstream at UPRR crossing

g. **Reach 7 – Montague Expwy to Interstate 680**. Reach 7 is an excavated earth channel about 2,000 feet in length. There are maintenance roads on both banks. City of San José city limits starts 2,000 feet upstream in this reach and much of that area is along residential properties. There is a pedestrian crossing just downstream of I-680. Valley Water owns the creek in fee-title.



Reach 7 – Looking upstream from Montague Expressway

Reach 7 – Looking upstream at I-680 crossing

h. **Reach 8 – Interstate 680 to Cropley Avenue**. This reach is a concreate line trapezoidal channel about 2,000 feet long along residential areas. There are maintenance roads on both banks with no maintenance access under I-680. Valley Water owns the creek in fee-title and has no rights under I-680 or Cropley Avenue.

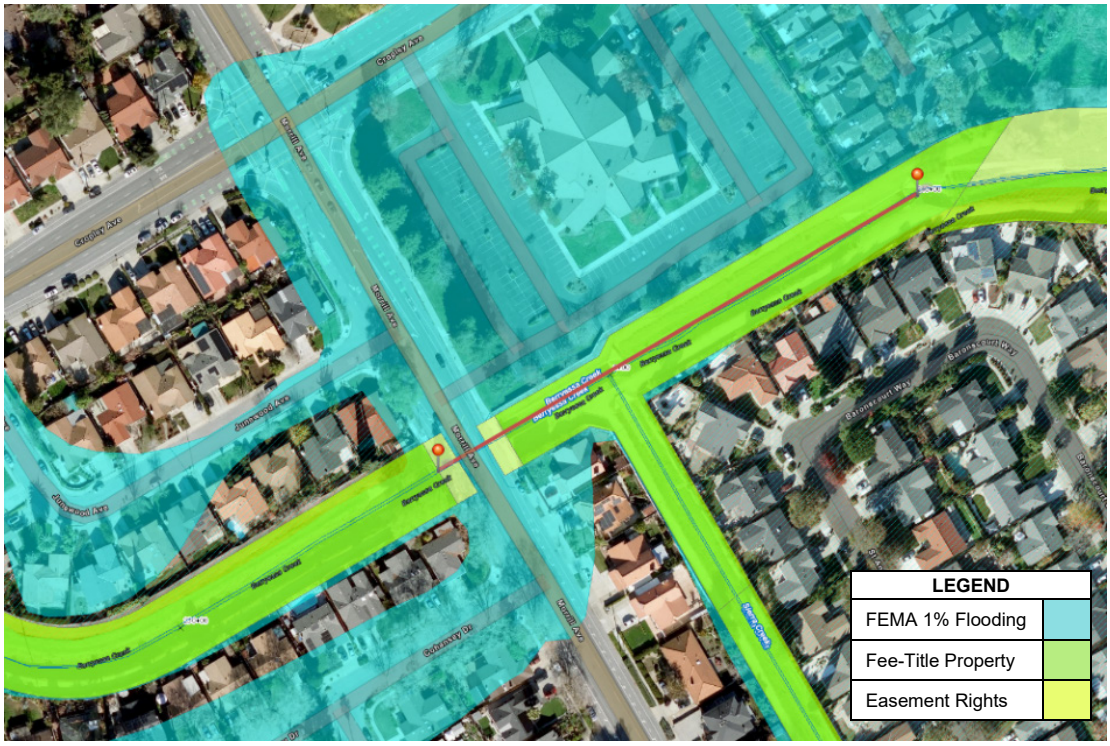
Reach 8 – Looking downstream from Cropley Avenue

i. **Reach 9 – Cropley Avenue to Morrill Avenue**. This 1,000-foot-long reach is an excavated earth channel in residential areas with maintenance roads on both banks. There is an energy dissipator at the entrance to the Cropley Avenue culvert. There is a 50-foot section of U-frame concrete channel downstream of Morrill Avenue. Valley Water owns mostly fee-title with no rights under Morrill Avenue.

Reach 9 – Looking at Cropley Avenue culvert entrance

Reach 9 – Looking downstream from Morrill Avenue at concrete transition to excavated earth channel

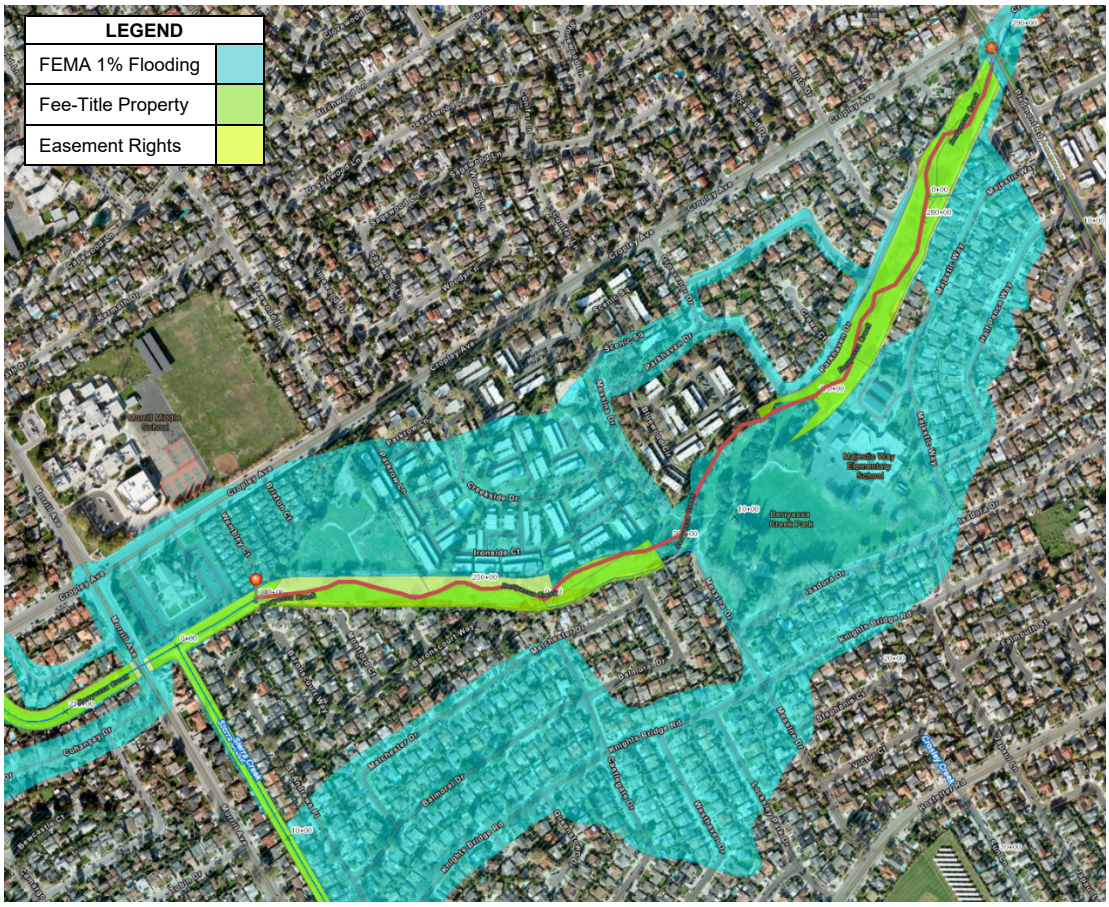
j. **Reach 10 – Morrill Avenue to Grade Control**. This reach is about 550 feet in length with small levees and maintenance roads on both banks. It is a U-frame concrete channel for about 150 feet to the Sierra Creek confluence where there is an energy dissipater structure just upstream. The next 400 feet of the reach is an excavated earthen channel with a grade control structure at its upstream limit. Valley Water owns fee-title in this reach.



Reach 10 – Looking upstream from Morrill

Reach 10 – Looking upstream at Sierra Creek confluence (left picture) and at Grade Control Structure (right picture)

k. **Reach 11 – Grade Control Structure to Piedmont Road**. This 4,700-foot-long reach is a vegetated earth channel with some sections of levee. There is a short section of maintenance road on the north bank near the downstream grade control structure and a short section near Piedmont Road. The south bank maintenance road continues in most of the reach except where there is no Valley Water right of way in Berryessa Creek Park. A levee on south side of creek in Berryessa Creek Park protects Majestic Elementary School. Valley Water has a visual stream gauge just downstream of a pedestrian bridge near Messina Drive. Valley Water owns fee-title or easement in this reach but has no rights in the park.



Reach 11 – Looking upstream of Messina Drive at the levee

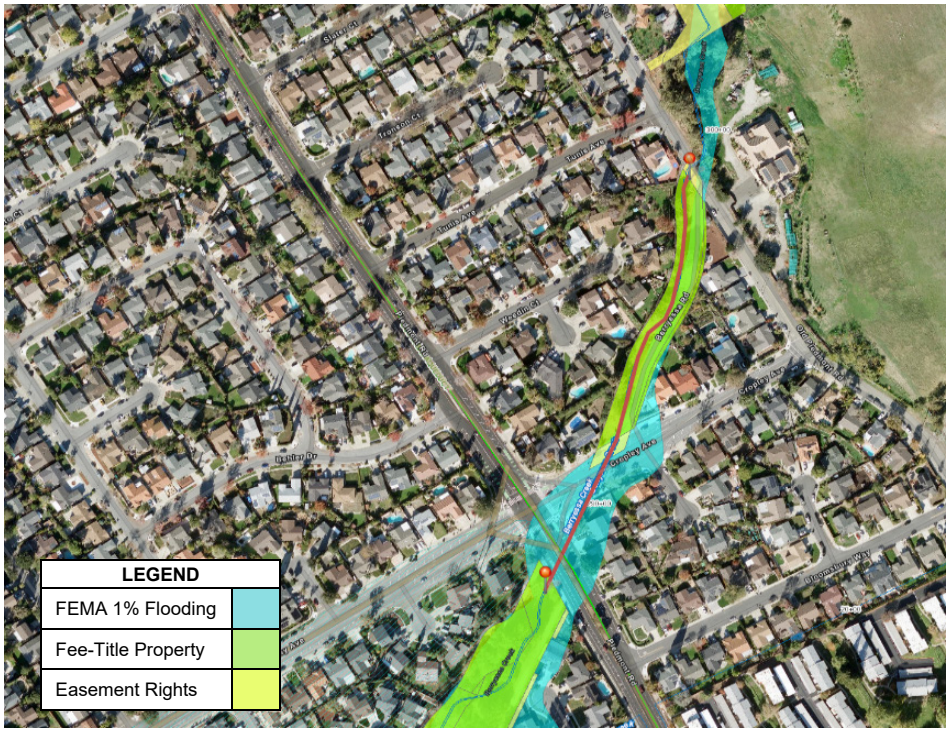
Reach 11 – Visual stream gauge downstream of Messina Drive pedestrian bridge in Berryessa Creek Park

Reach 11 – Messina Drive pedestrian bridge

Reach 11 – Looking downstream of Messina Drive at levee on north side of creek

Reach 11 – Looking downstream of Piedmont Road at earthen channel beginning of heavily vegetated area. About 600 feet upstream of Sweigert Creek confluence.

I. **Reach 12 – Piedmont Road to Old Piedmont Road**. This 1,100-foot-long excavated earth channel includes an a 400-foot culvert under the Piedmont Road and Cropley Avenue intersection. A maintenance road is on the southerly bank. There is an ALERT gauge upstream of the culvert. Valley Water owns mostly fee-title except for the culvert over which it has no rights.



Reach 12 – Looking from downstream of Piedmont Road at exit of approximately 400-foot culvert that crosses under Cropley Road and Piedmont Road.

Reach 12 – Upstream Cropley Road entrance to the 400-foot culvert with visual gauge and web cam

Reach 12 – Looking upstream at the Old Piedmont Road culvert and drop/grade control structure with ALERT stream gauge

C. BERRYESSA CREEK FLOOD THREAT. Berryessa Creek has flooded numerous times in the past with recent flooding occurring in 1998 and one of the most significant occurring in January 1983. The 1983 flood was highest peak flow ever recorded upstream of Calaveras Boulevard at an estimated 1,045 cfs.

During the 1983 event, the creek overtopped from upstream of Old Piedmont Road to the Piedmont Road/Cropley Avenue culvert in the City of San José causing damage to four homes and damaging property and vehicles in the residential area. It also overtopped upstream and downstream of Montague Expressway and between Yosemite Drive and Calaveras Boulevard in Milpitas damaging at least six businesses in the commercial/ industrial area. That overtopping in Milpitas continued overland westerly flooding streets and parking lots in the vicinity of Abel Street and Marylinn Street. The floodwaters also contained a significant amount of sediment required extensive cleanup. And Valley Water crews had to remove over 15,500 cubic yards of sediment from the creek channel in the month following the storm to restore channel capacity for the remainder of the storm season.

In response to the significant threat of flooding, 1% flood protection improvement projects have been completed or are planned to be completed by Valley Water and the US Army Corps of Engineers (COE). These projects are:

- Berryessa Creek from Lower Penitencia Creek to Abel Street completed in 2016 by Valley Water,
- Berryessa Creek from Abel Street to Calaveras Boulevard completed in 2020 by Valley Water,
- Berryessa Creek from Calaveras Boulevard to I-680 completed in 2017 by COE,
- Lower Penitencia Creek from Coyote Creek confluence to Berryessa Creek completed in 2023 by Valley Water,

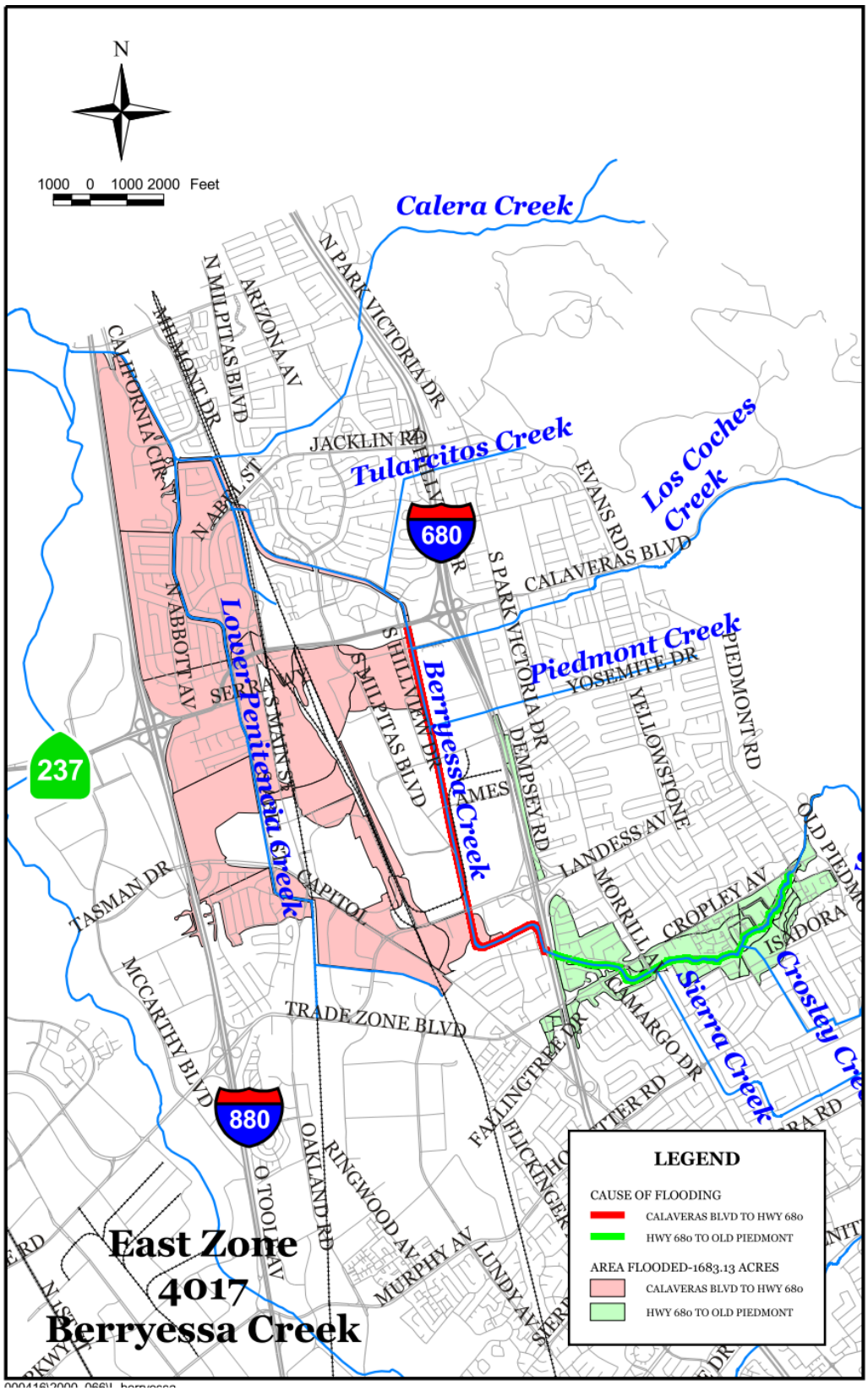
- Lower Calera Creek completed in 2023 by Valley Water, and
- Tularcitos Creek has not yet been started by Valley Water.

The expected 1% flow used for design purposes varies from about 4,700 cfs just upstream of Calaveras Boulevard to 1,430 cfs just upstream of Sweigert Creek confluence near Piedmont Road. However, current channel capacities in the reach upstream of I-680 area as low as 1,000 cfs upstream of Morrill Avenue. FEMA estimates that during a 1% event over 1,680 acres could flood (Figure 1B). Much of the flooding just upstream of Calaveras Boulevard that flowed westerly in the City of Milpitas and commingled with floodwaters from Lower Penitencia Creek should be removed by the flood protection projects. These FEMA flood areas should be removed from maps by 2024. Other flooding, however, would continue to be shown to have a 1% chance to occur upstream of I-680 and impact mostly residential areas in the City of San Jose.

In addition to flooding from high flows that are included in FEMA flood maps, unforeseen events pose risks in all reaches. Attachment 1 describes some unforeseen events and Attachment 2 discusses possible remedial actions that may be taken for those events.

APPENDIX B
Berryessa Creek (continued)

FIGURE 1B
Berryessa Creek FEMA Floodplain



D. FLOOD EVENT DETECTION. There are several detection methods that are described in the EAP that include weather forecasts, hydrologic/hydraulic modeling, Automated Local Evaluation in Real Time (ALERT) stream/reservoir/precipitation gauge systems, and field observation of stage gauges and other areas of high flow. Some of these are available through websites that are listed in Attachment 13.

1. **WEATHER FORECASTS**. The National Weather Service (NWS) provides weather (e.g., precipitation) forecasts in advance of a storm events. Valley Water also contracts with a service provider for enhanced forecasting in the regional area.

   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 Agency Stakeholders can participate in these webinars and share all current information. In addition, the NWS maintains websites (Attachment 13) that provide flood threat information and they will issue public notices of forecasted flood threats on local television and radio programming if the level of threat is high.

2. **HYDROLOGIC/HYDRAULIC MODELING**. Based on the weather forecast and other real-time data, Valley Water may utilize computer modeling to predict flood stage up to 72 hours in advance. These models are not run operationally and are performed on an ad hoc basis. Outputs are considered estimates and can vary, sometimes significantly, from the actual flood flows. Lower Penitencia Creek is generally considered to have flashy flow upstream of Berryessa Creek confluence and will likely not benefit from computer modeling to predict flooding too far in advance of a storm event.

   Modeling is also used to improve ALERT gauge data and refine flood thresholds. To improve the accuracy of the modeling, Valley Water will review the computer model periodically and determine if additional information can be gathered to update the model. The type of information that can be used to update the models include: surveys of channel geometry, reevaluation of channel roughness due to vegetation or blockages, and data gathered during high flow events. The most up to date flood thresholds and forecast information for ALERT gauges can be viewed at https://alert.valleywater.org/map?p=map&disc=f.

   Valley Water and NWS will utilize this modeling to help set their flood readiness level for Lower Penitencia Creek (Table 1A) and provide the information to local agencies and the public as appropriate. And, this same modeling and information that helps determine flood threat levels is used by Valley Water in determining flood severity levels for Lower Penitencia Creek (Table 2A) during storm events.

3. **GAUGE SYSTEM**. There are ALERT stream gauges on Berryessa Creek at Calaveras Boulevard and at Old Piedmont Road. These gauges provide data in near real-time at the two locations on Berryessa Creek, however, none of the tributaries have gauges. The gauge at Old Piedmont Road also includes a table of the most current flood thresholds. A listing of all ALERT gauges in the Berryessa Watershed can be found on the Valley Water Surface Water Data Portal at https://alert.valleywater.org/map?p=map.

   The following is a summary of the current stream gauge program.

   1. Annually sites will be prioritized for manual gauging and teams are assigned.

   2. After every high flow event, the rule curves (depth versus discharge) are updated/calibrated.

3. The most current flood thresholds and forecast information for ALERT stream gauges is available at the Valley Water Surface Data Portal - https://alert.valleywater.org/map?p=map.

4. **VISUAL OBSERVATIONS**. Visual observations can be critical to verify what is occurring because ALERT gauges are not always a reliable source of information and modeling information can vary from the actual condition. In addition, there are other known hot-spots and facilities that should be visually checked during high flows. Supplementing with visual observations by viewing real-time images from WebCams (Valley Water Surface Water Data Portal – http://alert.valleywater.org), staff deployed in the field (i.e., Field Information Teams) and other field reporting is an important component to detection.

   To allow additional information to be accurately gathered, several visual stream stage monitoring locations have been installed for observations. These are located at:

   Upstream crossing of Cropley Avenue

   - Check upstream of Cropley Avenue near Piedmont Road for high water and any blockages.
   - Check depth on visual stream gauge.

   Morrill Avenue to Majestic Way Elementary School

   - Check for high water and any downed trees causing blockage.
   - Take reading from visual stream gauge (see photos below) near Messina Drive pedestrian bridge just downstream of pedestrian bridge.
   - Check grade control/energy dissipaters structures upstream of Morrill Avenue.

Valley Water operates Field Information Teams (FITs) that are assigned to specific locations during storms and high flow events to provide this valuable information. In addition, the City Stakeholders may also deploy FIT teams to assure that all critical locations are being monitored. Locations of FIT deployment by the City Stakeholders and Valley Water may overlap during storm and flood events. The EOC and/or MAC Group should coordinate this effort through the Planning/Intelligence Section so that resources are most effectively utilized and information is shared.

In addition, the public may be helpful in reporting situations that may pose a flood threat. These are typically reported to Valley Water, City Stakeholders or other Agency Stakeholders who should promptly relay to the EOC or to Valley Water through a contact method shown below:

- Main Valley Water telephone – (408) 265-2600
- Valley Water after hours telephone – (408) 395-9309
- Valley Water Watershed Hotline: (408) 630-2378
- Valley Water website report problems – https://www.valleywater.org/ or https://access.valleywater.org/s/
- Non-Emergency Police & Fire dispatch – 311
- Emergency Police & Fire dispatch – 911

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

1. Visual stream gauges – 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. Levees and Floodwalls – 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

E. BERRYESSA CREEK FLOOD READINESS LEVELS AND SEVERITY. Sometimes an event is a flash flood that occurs suddenly without much early notice. However, with weather forecasting and modeling there is often an ability to estimate flood events before they occur. This is extremely valuable when preparing for necessary evacuations and road closures, however, this information should be used as guidance only and not with absolute certainty.

To provide this advanced notice, a threat level will be used to provide an indicator of preparedness for a response and a level of potential severity for areas subject to flooding to assist the Agency's in planning and implementing appropriate actions. Because of the uncertainties of modeling in the future, a readiness of Watch will be used when flood stage is estimated about 24 to 48 hours or more in the future. If flooding is estimated within about 24 hours, the threat level will be elevated to Warning. In addition, an unexpected situation may occur during high flows that may result in a change in readiness level (Attachment 1 – Guidance Table for Evaluating Facility During High Flow and Determining Readiness Level).

APPENDIX B
Berryessa Creek (continued)

TABLE 1B
Flood Readiness Levels

PREPAREDNESS	This is the base stage of readiness that will be the typical condition throughout most of the year. An Emergency Management Organization (EMO) is not active at this level. It is defined as: • Flood stage (Minor Flooding or greater) is not estimated within the next 72 hours or • Measured stream depth is below 50% of flood stage.
MONITORING	This condition is variable and requires more intense monitoring and a heightened level of alertness. An EMO may be minimally active to monitor for any developing flood concern. This condition is defined as: • Flood stage may occur in 48 to 72 hours, or • Measured stream depth is at 50% to 70% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or near design stage within 24 hours.
WATCH	Flood level or a serious flood threat is expected to occur. An EMO may be activated at an appropriate level. This is generally defined as: • Stream depth is estimated to reach flood stage or greater within 24 to 48 hours, or • Measured stream depths are at 70% to 100% of flood stage, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater than design stage within 6-12 hours.
WARNING	This is a more urgent situation with flooding imminent or occurring. The EMO is generally active. This level is generally defined as: • Flood stage or greater is occurring or is estimated to occur within 24 hours, or • For areas that are controlled purely by storm drain runoff (flashy systems), the stream depth is estimated to reach flood stage or greater within minutes/hours or is occurring.
Note: Flood stage is the depth of water at which a stream or facility begins flooding (see Glossary of Terms).	

When the threat level is at a Watch or Warning, there is an expectation that flooding will occur or is occurring at some locations. The severity of the situation at specific locations is determined by the flood stage. The areas subject to flooding for different stream stages are estimated utilizing hydraulic models and flood maps. Flood severity categories are defined by this EAP are consistent with those of the NWS and Table 2B and 3B below show the information as of the date of this EAP. The most current information regarding flood severity and flood thresholds is available at https://alert.valleywater.org/map?p=map.

TABLE 2B
Berryessa Creek Flood Severity Levels

Action	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.
	• Berryessa Creek
	  ○ Calaveras Boulevard gauge is at or near 13 feet.
	  ▪ Possible overtopping from Highway 237 to Ames Avenue. Check levees.
	  ○ Old Piedmont Road gauge is at or near 11 feet.
	  ▪ Water at Cropley Avenue culver soffit likely due to heavy sedimentation.

Minor Flooding	Minimal or no property damage, but possibly some public threat (e.g., inundation of roads).
	• Berryessa Creek
	  ○ Old Piedmont Road gauge is at or near 12 feet.
	  ▪ Creek may overbank upstream of Cropley Avenue flowing down Cropley Avenue toward the west. Possible overbanking at and around Berryessa Creek Park near Messina Drive, Majestic Way Elementary School, and homes on Creekside Drive.

Moderate Flooding	Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.
	• Berryessa Creek and Tributaries
	  ○ Old Piedmont Road gauge is near or greater than 13.0 feet.
	  ▪ Extremely high runoff from the hills suggest widespread flooding on tributaries such as Wrigley Ford Creek and Sierra Creek. Street flooding likely, with overland flow ponding towards I-680 and Cropley Avenue.

Disclaimer: This table is current as of the publishing of this document. The most current flood severity thresholds are at https://alert.valleywater.org/map?p=map.	

APPENDIX B
Berryessa Creek (continued)

TABLE 3B
Berryessa Creek On-Site Monitoring Thresholds

ID #	MONITORING LOCATION	FLOODING DESCRIPTION	FLOOD THREAT STAGE AT MONITORING LOCATION			PHOTO
			50% Capacity	70% Capacity	100% Capacity	
1	**Upstream Cropley Avenue**	Heavy sediment loads during storms will deposit under the culvert, reducing its capacity and possibly leading to overtopping on the upstream end of the bridge. Capacity estimates vary due to sediment deposition.	n/a	n/a	9	
2	**Berryessa Park downstream Messina Drive Pedestrian Bridge**	Homes along the north bank of Berryessa Creek just downstream the Park will see spilling. Berryessa Creek Park may also spill.	3.5	4.5	5.5	

Disclaimer: The flooding thresholds in this table are current as of the publishing of this document. They are based on hydraulic modeling results calibrated with data collected during historical flood events. Hydraulic modeling results may be preliminary and should be used for general analysis purposes. Information is accurate within the model limitations and assumptions/data used for model development. The most current flooding thresholds check are at https://alert.valleywater.org/map?p=sensor&sid=5100.1&disc=f. Use care while interpreting results.

F. ACTIVITIES AND NOTIFICATIONS. General activities and actions are described in Concept of Operations Section – Progression of Responsibilities (Table 2) and Attachments 3 through 8 of the EAP. General notifications are described in EAP Mobilization – Step 3 of the EAP. The general level of activity and notifications will be guided by the best information available to the EAP Personnel. The level of activity may mirror those activities of the individual jurisdictional Emergency Operations Centers (EOCs).

The general activities in Table 2 and Attachments 3 through 8 of the EAP sufficiently cover activities needed for Berryessa Creek.

1. PREPAREDNESS (GREEN)

- Valley Water O&M will conduct field inspections of the creek for flow conveyance and the integrity of levees and floodwalls.

- Valley Water O&M will perform mitigation work on all facilities to assure they will function prior to a storm event.
- Valley Water WFOU will inventory and procure flood fighting materials and equipment.

2. WATCH (YELLOW) & WARNING (RED)

- Valley Water WFOU will inspect and clean bridge piers, culverts, and energy Tide Gates and Detention Facilities.
- Valley Water WFOU will stage equipment at localities likely to be affected as needed.

Berryessa Creek flows through the City of Milpitas and City of San José. Contact information for them and other Agency Stakeholders is included as Attachment 9 of the EAP.

There are important infrastructure and facilities at risk of flooding from Berryessa Creek. Based on intelligence gathered during the storm event, the EOC and other stakeholders will determine the risk and provide notifications as appropriate. In general, a City Stakeholder would provide notifications to critical facilities at risk.

Below is a list of some important facilities that may be at risk. If needed and available, more detailed flood maps may be provided to City Stakeholders by Valley Water's Hydrology, Hydraulics and Geomorphology Unit to better determine which facilities are threatened by the high flow event.

FACILITY TYPE	NAME	ADDRESS	PHONE
Schools	Majestic Way Elementary School	1855 Majestic Way San José, CA 95132	(408) 923-1925
	Morrill Middle School	1970 Morrill Avenue San José, CA 95132	(408) 923-1930
Medical	Kaiser Permanente	770 East Calaveras Blvd. Milpitas, CA	(408) 945-2640

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