

SAN FRANCISQUITO CREEK

Emergency Action Plan

Quick Guide



EAP Last Revised: December 2023

This document summarizes key information/guidelines as described in the Lower Peninsula Watershed Emergency Action Plan (EAP). Page numbers are referenced (in red) identifying the location in the EAP where full information and data can be found. This guide is a summary and does not replace the full EAP.

1.A Purpose of EAP (Pages 1 & 113)

The EAP is intended to provide general guidance for response to flood threats caused by severe storms and high flows in the Lower Peninsula Watershed. Specific guidance is included for select creeks and facilities within the Appendices (San Francisquito Creek, Palo Alto Flood Basin, Permanente Creek and Hale Creek are currently included) to facilitate Valley Water’s activities within the following four areas:

- Pre-incident planning prior to a storm/flood event
- Response to potential, imminent or actual Storm/flood events
- Recovery actions following a storm/flood event
- Coordination with other responsible jurisdiction including the San Francisquito Creek Multi-Agency Coordination (SFC MAC) Group for Severe Storm and Flood Response

1.D Limitations of EAP (Page 5)

The EAP shall not constrain the freedom of an Incident Commander (IC) in the field or others when dealing with flooding in the San Francisquito 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.

2.A Operational Levels (Page 9-10)

The EAP is in a state of perpetual activation, throughout the year, regardless of the flood condition level. As the flood threat changes the operational levels will be changed to reflect the current condition. The operational level is composed of the Flood Condition Level and, if determined appropriate, a Flood Severity Level.

FLOOD CONDITION LEVELS

Green	<p>Preparedness - This is the base stage of readiness that will be the typical condition throughout most of the year. It is defined as:</p> <ul style="list-style-type: none">• Flood stage (Minor Flooding or greater) or 90% to 100% of Design stage is not estimated within the next 72 hours or• Measured stream depth is below 70% of Flood stage or Design stage.
Yellow	<p>Monitoring - This condition is variable and requires more intense monitoring and a heightened level of alertness. Minimal staff in each Stakeholder’s Emergency Operations Center (EOC) may be activated. A virtual MAC could be activated if appropriate. An informal EOC Action Plan (AP) could be initiated if activated. This condition is defined as:</p> <ul style="list-style-type: none">• Stream depth is estimated to reach Flood stage or 90%-100% of Design stage in 72 hours or more; or• Measured stream depth is at 50% to 70% of Flood stage or 70% to 90% of Design 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.
Orange	<p>Watch - The Stakeholders’ would increase staff in their EOCs, if they had been activated, and a MAC facility could also be established if appropriate. If activated, a formal EOC AP will be drafted. This condition is defined as:</p> <ul style="list-style-type: none">• Stream depth is estimated to reach Flood Stage or greater than Design stage within 24 to 72 hours; or• Measured stream depths are at 70% to 100% of Flood stage; or

	<ul style="list-style-type: none"> Measured stream depths are at 90% to 100% of Design 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.
Red	<p>Warning - This is a more urgent situation. The Stakeholders' EOC may be activated along with a MAC, if appropriate, that would monitor the situation, providing notifications and responding according to a written AP. Often for smaller watersheds with flashy creeks, an EOC or MAC will not be opened until the storm event is occurring. This condition is defined as:</p> <ul style="list-style-type: none"> Flood stage or greater than Design stage or is occurring or is estimated to occur within 24 hours; or Measured stream depths are 100% or greater than Flood stage; or Measured stream depths are greater than Design 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 minutes/hours or is occurring.

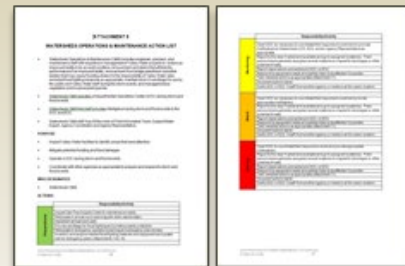
FLOOD SEVERITY LEVELS

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.
Minor Flooding	Minimal or no property damage, but possibly some public threat (e.g., inundation of roads).
Moderate Flooding	Some inundation of structures and roads near stream, evacuations of people and/or transfer of property to higher elevations.
Major Flooding	Extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations.

2.B Personnel (Pages 11-14)

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. During any condition 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 condition levels, the functions will likely require dedicated staff assigned to these Sections to fulfill the duties. The Sections and/or functions utilized during condition levels are listed below and, for Valley Water staff, are described in Valley Water's Emergency Operations Plan (EOP) and EOC Responder Handbook.

Action lists for each position can be found in Attachments 3-8
(Page 35-53)



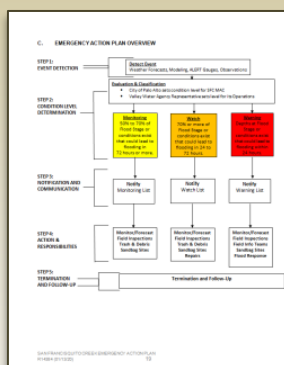
- MANAGEMENT:** Activation of an EOC or DOC is a Management Section function as described in the EOP or other Standard Operating Procedures consistent with SEMS and NIMS. Responsibilities of the Management Section include: EOC Director, liaison, safety/risk, and public information. Agency Representative (AR) and Agency Coordinators (AC), which are personnel terms used in other Emergency Action Plans and Multi-Agency Coordination Plan, are also members of the Management Section. As conditions warrant or progress, EOC/DOC 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.
 - PUBLIC INFORMATION OFFICERS (PIO):** Staff assigned to the Management Section typically 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.
 - ELECTED OFFICIALS:** 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 DOC/EOC through PIO or their assigned liaison staff.

- **PLANNING/INTELLIGENCE:** Planning/Intelligence Section contains the function of a Subject Matter Expert (SME) that helps gather and validate information and thereby fulfill the need for intelligence. In the early condition levels 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. 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.
 - **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 Incident Command System (ICS) by assigning an Incident Commander (IC) for the area of concern. WFOU or Operations & Maintenance Engineering Support Unit (O&MES) will generally open a Department Operations Center (DOC) to coordinate the response. The IC will notify their 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 EOC/DOC on facility conditions and storm related concerns.
- **FIELD INFORMATION TEAMS (FIT):** Provide field intelligence to their DOC/EOC Section Leader or their organizational supervisor/manager. Take actions that would mitigate risks only if capable and appropriate.
- **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 EOCs or DOCs.
 - **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.

2.C Progressive Responsibilities (Pages 15-19)

As the weather conditions change, the responsibilities of the City, District and other Stakeholders adjust. The list of responsibilities provided in Table 3 of the EAP illustrates in general terms some recommended actions at each threat level, and who has lead responsibility.



2.C EAP Overview (Page 20)

There are five steps in the EAP process:

1. Event Detection
2. Condition Level Determination
3. Notification & Communication
4. Actions & Responsibilities
5. Termination & Follow-up

STEP 1: Event Detection (Pages 21-22)

This step describes the detection of an unusual or emergency event and provides information to assist in determining the appropriate emergency operational level for the event. Several detection methods can be utilized on San Francisco Creek that include:

- Weather forecasts
- Hydrologic/hydraulic modeling
- Automated Local Evaluation in Real Time (ALERT) and other stream/reservoir/precipitation gauge systems. Valley Water gauge system, forecasts, and flood severity threshold are now available at <https://alert.valleywater.org/map?p=map> and links to other sites can be found in Attachment 13, Web-Based Data Sources (Pages 64-65)
- Field observations that include FITs, other agency operations and maintenance staff, the public, and in certain locations WebCams.

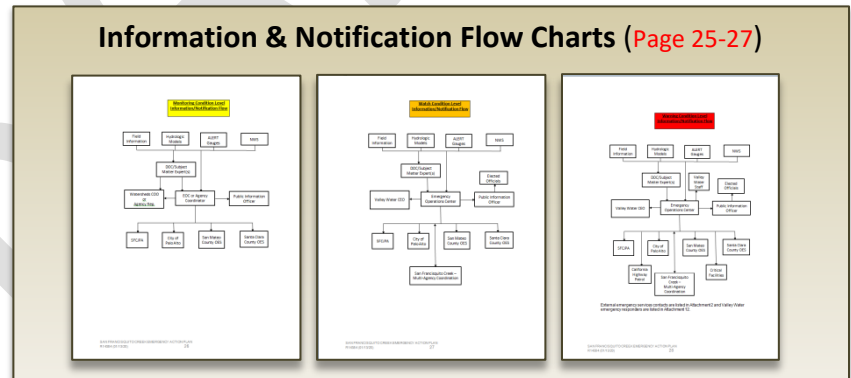
STEP 2: Condition Level Determination (Pages 22-23)

- **Evaluation** - After detecting and gathering adequate intelligence regarding the situation, an evaluation of the waterway conditions must be performed by appropriate personnel. The personnel involved will generally be one or more Subject Matter Experts (SME) that will generally include staff from O&M and HH&G.
- **Classification** - Based on a technical evaluation of the intelligence detected, an operational level will be established by an appropriate level of personnel, such as the Management Section (e.g., EOC Director or Agency Representative).
- Tables 4 and 5 (Pages 23-24) provide flood threshold information to use as guidance in establishing a condition levels.
- Attachment 1 (Pages 30-31) provides additional guidance for other conditions that could occur during high flows.

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STEP 3: Notification & Communication (Pages 23-27)

- Depending on the condition level, responsibilities for notifications and who is notified will vary.
- Often during a monitoring condition, the Emergency Operation Center would not be open or only minimally staffed and the SFC MAC may not yet be activated, however, Valley Water's DOC, SMEs and/or ACs may be very active.
- List of entities that may be provided information or notifications of the condition level and flood severity could include:



- Internal Valley Water staff
 - SFC MAC
 - City of Palo Alto
 - County of Santa Clara Office of Emergency Services
 - County of San Mateo Office of Emergency Services
 - SFCJPA
 - Valley Water Elected Officials
 - Critical Facilities, such as, Schools, Hospitals, governmental facilities or Businesses
 - Public (Generally Valley Water is in a support role during events)
 - Impacted businesses and residents (Valley Water is in a support role)
- The condition level and severity should be reflected on the Valley Water website. It should be consistent with websites provided by the City, SFCJPA and NWS. The charts above (Pages 25-27) show the flow of information and notifications for the three flood threat condition levels and the contact list is in Attachment 9 in the Agency/Internal Version of the EAP—Emergency Services Contact List (Page 55-56).

STEP 4: Actions & Responsibilities (Page 15-19 and 28)

- The EAP will be in the Preparedness condition level for the majority of the time.
- After an unusual or emergency event is detected, the DOC/EOC or, if the DOC/EOC has not been activated, the Watersheds Field Operations Unit Manager, Watersheds O&M Engineering Support Unit Manager, or HH&G Unit Manager may classify the event into a higher condition level.
- At each condition level, there are some recommended actions and responsibilities for Valley Water personnel (described in [Table 3](#) of the Concept of Operations Section ([Pages 15-19](#))).
- More detail on recommended actions specific to the personnel involved in an emergency event are described in [Attachments 3-8](#) ([Pages 35-53](#)).
- The Incident Commander or Field Operations staff will take action to mitigate the event as appropriate.
- Examples of emergency remedial actions that could be taken to mitigate the event are provided in [Attachment 2—Emergency Remedial Actions](#) ([Pages 33-34](#)).

STEP 5: Termination & Follow-up (Page 28)

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

- [Termination Responsibilities](#)
 - In a Watch or Warning, the DOC or EOC Director, is responsible for terminating EAP operations.
 - The DOC or EOC Director will ensure that all forms for Action Planning, Situational Reports, or others utilized during the event are collected and organized chronologically as determined appropriate.
- [Follow-Up Responsibilities](#)
 - The Operations & Maintenance Engineering Support Unit, if only the DOC is activated, or the Emergency Services & Security Unit, if the EOC was activated, will prepare an After-Action Report (AAR) of the event and will track implementation of appropriate recommendations in the AAR.
 - Cities or other stakeholders is responsible for damage assessment to homes and businesses and permit requirements required to reoccupy structures and to promote flood mitigations measures during reconstruction.

Appendix B San Francisquito Creek ([Pages 113-130](#))

B San Francisquito Creek Description ([Pages 113-119](#))

The San Francisquito Creek watershed, approximately 45 square miles, forms the boundary between Santa Clara and San Mateo Counties. The creek runs through the cities of Palo Alto, Menlo Park, & East Palo Alto.

Downstream of Highway 101 the creek can be described as a modified trapezoidal channel with levees and maintenance roads with adequate maintenance access. Upstream of Highway 101, it is an earthen, unimproved, heavily incised channel with homes and roads adjacent to the top bank.

Most of the creek downstream of Sand Hill Road is owned by adjacent property owners with Valley Water intermittently holding some easements that allow for maintenance to protect the community from flood threats.

Valley Water ownership of the creek is shown in [Figures 2B & 3B](#) ([Pages 118-119](#)) and Valley Water staff can view at <https://gis.valleywater.org/scvwd/>.

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

Detailed Descriptions of Creek Reaches ([Pages 114-116](#))

- San Francisco Bay to U.S. Hwy 101 - Reach 1
- U.S. Hwy 101 to Newell Road - Reach 2a
- Newell Road to University Avenue - Reach 2b
- University Avenue to Chaucer Street - Reach 2c
- Chaucer Street to Middlefield Road - Reach 2d
- Middlefield Road to El Camino Real - Reach 2e
- El Camino Real to Sand Hill Road - Reach 2f
- Sand Hill Road to Interstate 280 - Reach 2g
- Interstate 280 to Searsville Dam

C Flood Threats (Pages 120-122)

Flooding threats exist along the lower reaches of San Francisquito Creek from the Bay to the Middlefield Road Bridge. The two primary types of flooding in these areas are tidal and riverine (fluvial) flooding, but emergency events can occur at any location due to the nature of the creek (e.g., many large trees, steep erosive banks, etc.).

With completion of a flood protection project downstream of Highway 101, the remaining fluvial flooding areas are upstream of Middlefield Road, at Chaucer Street Bridge, University Avenue, and near Newell Road. [Figure 4B \(Page 122\)](#) shows the flood threats during a 100-year flood. The most significant recent flooding events on San Francisquito Creek occurred in 1998 and 2012.

Infrastructure at Risk (Pages 120-121)

Duveneck Elementary	705 Alester Avenue, Palo Alto
Emerson School Palo Alto	2800 W. Bayshore Road, Palo Alto
Mid-Peninsula High School	1340 Willow Road, Menlo Park
Ohlone Elementary	950 Amarillo Avenue, Palo Alto
Missing Girls Middle School	3400 W Bayshore Road, Palo Alto
St. Elizabeth Seton	1095 Channing Avenue, Palo Alto
Satellite Health Care	1040 Hamilton Court, Menlo Park
Menlo Park Fire - Station #77	1467 Chilco Street, Menlo Park

D Flood Event Detection (Pages 123-125)

Several detection methods can be utilized on San Francisquito Creek that include weather forecasts, hydrologic/hydraulic modeling, Automated Local Evaluation in Real Time (ALERT) and other stream/reservoir/precipitation gauge systems, and field observations. Some of these are available through websites that are listed in [Attachment 13](#). Below is a description of methods specific to San Francisquito Creek:

1. Gauge System

A listing of all Valley Water gauges and the San Francisquito USGS gauge at Stanford University can be found at <https://alert.valleywater.org/map?p=map>. The primary gauge used for detecting and classifying an event is the USGS gauge at Stanford. Valley Water's Automated Local Evaluation in Real Time (ALERT) system can set alarms to automatically notify appropriate staff at predetermined stages. In addition, the City of Palo Alto maintains several gauges that can be found at https://www.cityofpaloalto.org/gov/depts/pwd/creek_monitor/default.asp and SFCJPA website found at <https://www.sfcjpa.org/>. The combination of these gauges provides data in near real-time for San Francisquito Creek and using the Stanford gauges can provide about an extra hour of warning to determine the level of threat for flooding.

2. Field Information Teams and Field Operations & Maintenance

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

The City of Palo Alto, Valley Water and other SFC MAC Stakeholders have individual teams who deploy into the field to observe flood conditions at "hot spots." Deployment of these teams should be coordinated between the City of Palo Alto and Valley Water. The HH&G master list of flooding hotspots to deploy FITs and other teams are shown in [Attachment 14 \(Pages 67-69\)](#) and include:

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



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

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

E Condition Levels and Severity (Pages 125-129)

Based on a technical evaluation of the intelligence detected, an operational level, which are generally described in Table 1B (Page 126), will be established by an appropriate level of personnel, such as an Agency Representative. If appropriate, a **Flood Severity Level** for San Francisquito Creek would be set based on specific thresholds. Table 2B (Page 128) shows three locations where visual observations can be made on-site to establish flood thresholds and Table 3B (Page 129) provides flood severity information associated with USGS Stanford ALERT gauge that is available on the Valley Water Data Portal at <https://alert.valleywater.org/?p=sensor&sid=5112&disc=f>. Attachment 1 (Pages 29-30) provides additional guidance for other conditions that could occur during high flows. These levels are consistent with those issued by the National Weather Service.

TABLE 2B (Page 128)
San Francisquito Creek Flood On-Site Monitoring Thresholds

LOCATION	FLOODING DESCRIPTION	FLOOD THREAT STAGE AT MONITORING LOCATION*			PHOTO/CROSS SECTION
		50% Capacity	70% Capacity	100% Capacity	
West Bayshore Road	Overtopping occurring 1000 feet upstream near the Woodland – West Bayshore Intersection along the East Palo Alto bank.	9.5'-10.5'	11'-12'	13'-14'	 W. Bayshore Rd.
Chaucer Street	Overtopping both banks and flowing overland towards Highway 101. Flood flows can cross Highway 101 in Menlo Park.	12.5'-13.5'	17.5'-18.5'	20.5'-21.5'	


LOCATION	FLOODING DESCRIPTION	FLOOD THREAT STAGE AT MONITORING LOCATION*			PHOTO/CROSS SECTION
		50% Capacity	70% Capacity	100% Capacity	
Near Waverley Street upstream of Middlefield	Overtopping at Middlefield Road Bridge primarily flowing overland towards Palo Alto with some minor flooding in Menlo Park.	12'-13'	16'-17'	21'-22'	

TABLE 3B (Page 129)
San Francisquito Creek Flood On-Site Monitoring Thresholds

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

*Note: The Hydrology, Hydraulics and Geomorphology Unit and the NWS have flood **inundation** maps for each of the stages that can be shared with the stakeholders as needed for planning actions, such as street closures and evacuations. The most current thresholds are available at <https://alert.valleywater.org/?p=sensor&sid=5112&disc=f>.

ATTACHMENTS

- Attachment 1: Guidance for Evaluating Facility During High Flow and Determining the Condition Level ([Pages 29-31](#))
- Attachment 2: Emergency Remedial Actions ([Pages 33-34](#))
- Attachment 3: Management Action List ([Pages 35-36](#))
- Attachment 4: Planning/Intelligence Action List ([Pages 37-39](#))
- Attachment 5: Operations Action List ([Pages 41-43](#))
- Attachment 6: Field Information Team Action Checklist ([Pages 45-46](#))
- Attachment 7: Public Information Officer Action List ([Pages 47-51](#))
- Attachment 8: Elected Officials Action List ([Page 53](#))
- Attachment 9: Emergency Services Contact List ([Pages 55-56 of Agency/Internal Version](#))
- Attachment 10: Valley Water Emergency Services Contact List ([Pages 57-58 of Agency/Internal Version](#))
- Attachment 11: Available Resources ([Page 59 of Agency/Internal Version](#))
- Attachment 12: Equipment List ([Page 61 of Agency/Internal Version](#))
- Attachment 13: Web-Based Data Sources ([Pages 63-65](#))
- Attachment 14: Field Information Team Hot Spots ([Pages 67-78](#))

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