

Threat Assessment 3 Flooding

General Situation

The size and frequency of a flood in a particular area depends on a complex combination of conditions, including the amount, intensity and distribution of rainfall, previous moisture condition and drainage patterns.

The magnitude of a flood is measured in terms of its peak discharge, which is the maximum volume of water passing a point along a channel. Floods are usually referred to in terms of their frequency of occurrence, such as 50 or 100 years.

The primary effect of flooding is the threat to life and property. People and animals may drown; structures and their contents may be washed away or destroyed; roads, bridges, and railroad tracks may be washed out; and crops may be destroyed.

Floods may also create health hazards due to the discharge of raw sewage from damaged septic tank leach fields, sewer lines, and sewage treatment plants and due to flammable, explosive, or toxic materials carried off by flood waters. In addition, vital public services may be disrupted.

Floods are generally classed as either slow-rise or flash floods. Slow-rise floods may be preceded by a warning time lasting from hours, to days, or possibly weeks. Evacuation and sand bagging for a slow rise flood may lessen flood related damage. Conversely, flash floods are the most difficult to prepare for due to the extremely short warning time, if available at all. Flash flood warnings usually require immediate evacuation within the hour. On some occasions, adequate warning may be impossible.

Once flooding begins, personnel will be needed to assist in rescuing persons trapped by flood waters, securing utilities, cordoning off flood areas, and controlling traffic. The Public Health Department would be actively involved in addressing the public health impact of a flood, such as disease and environmental health issues. These actions may overwhelm local agencies, and additional personnel and resources may be required. It is anticipated that existing mutual aid resources would be used as necessary to augment local resources.

Specific Situation

The potential for flooding is not normally a major threat to the City. The city receives an average of **xxx** inches of rainfall annually, with most of it occurring between September and October (Source: <http://cdec.water.ca.gov/>). Heavy rains occur about every (indicate how many years).

SAF Code

Areas subject to flooding drain either naturally into flood controls or are assisted by pumping stations designed to handle average and above average flows. **(Insert the specific problem areas for your Jurisdiction).**

Some flooding may occur in low-lying areas during heavy prolonged storms, or when storm drains are clogged with debris and unable to carry excess water away. Time should be available to organize forces, obtain needed supplies, equipment and outside aid.

An unusual number of brush fires in hillside areas may create the potential for mudslides if heavy rains arrive before the replanting has taken hold. Situations of this nature can usually be managed by warnings to the residents and making sandbags available in advance of the predicted heavy rainfall.

Emergency Readiness Stages

Flood in the special risk areas can occur rapidly or slowly depending on the heaviness and severity of rainfall. Emergency preparedness will be based on three stages of response actions.

Stage I (Flood Watch)

Stage I indicates light to moderate rain. Monitor storm to establish precise nature of flood risk. Alert key personnel. Ensure availability of Shelters (if it is later necessary to evacuate and look after local people). Ensure availability of sandbags at pre-designated locations

Stage II (Flood Warning or Urban and Small Stream Advisory)

Stage II means moderate to heavy rain. Monitor storm constantly to establish precise nature of flood risk and evolving situation. Establish liaison with all emergency services agencies and consider whether to set up Emergency Operations Center. Deploy staff to risk areas to monitor river levels. If needed alert staff to open shelters. Deploy reserve sand bags. Post flood warnings in affected areas.

Stage III (Flood Statement)

Stage III signifies a continuation of heavy rain and a threat to private property and persons. Areas should be evacuated. In addition to the Flood Warning activities, open shelters, assist with evacuation of flooded area(s), deploy staff to assist in spreading flood warnings, liaison with media to pass on important information.

Evacuation Routes

It is expected that most major streets will be open. As such, evacuation should be easily facilitated. **Other pertinent information relating to evacuation operations are in Part Two, Operations Section Annex, Supporting Documents.**

Emergency Response Actions

Emergency response actions applicable to all hazards are included in **Part Two Annexes, Checklist Actions for each Section.**

Note: For more detailed information and flood plain maps, refer to the City's Local Hazard Mitigation Plan.