

DAM FAILURE

Dam failures can result from a number of natural or man-made causes such as earthquakes, erosion of the face or foundation, improper siting, rapidly rising flood waters, and structural/design flaws.

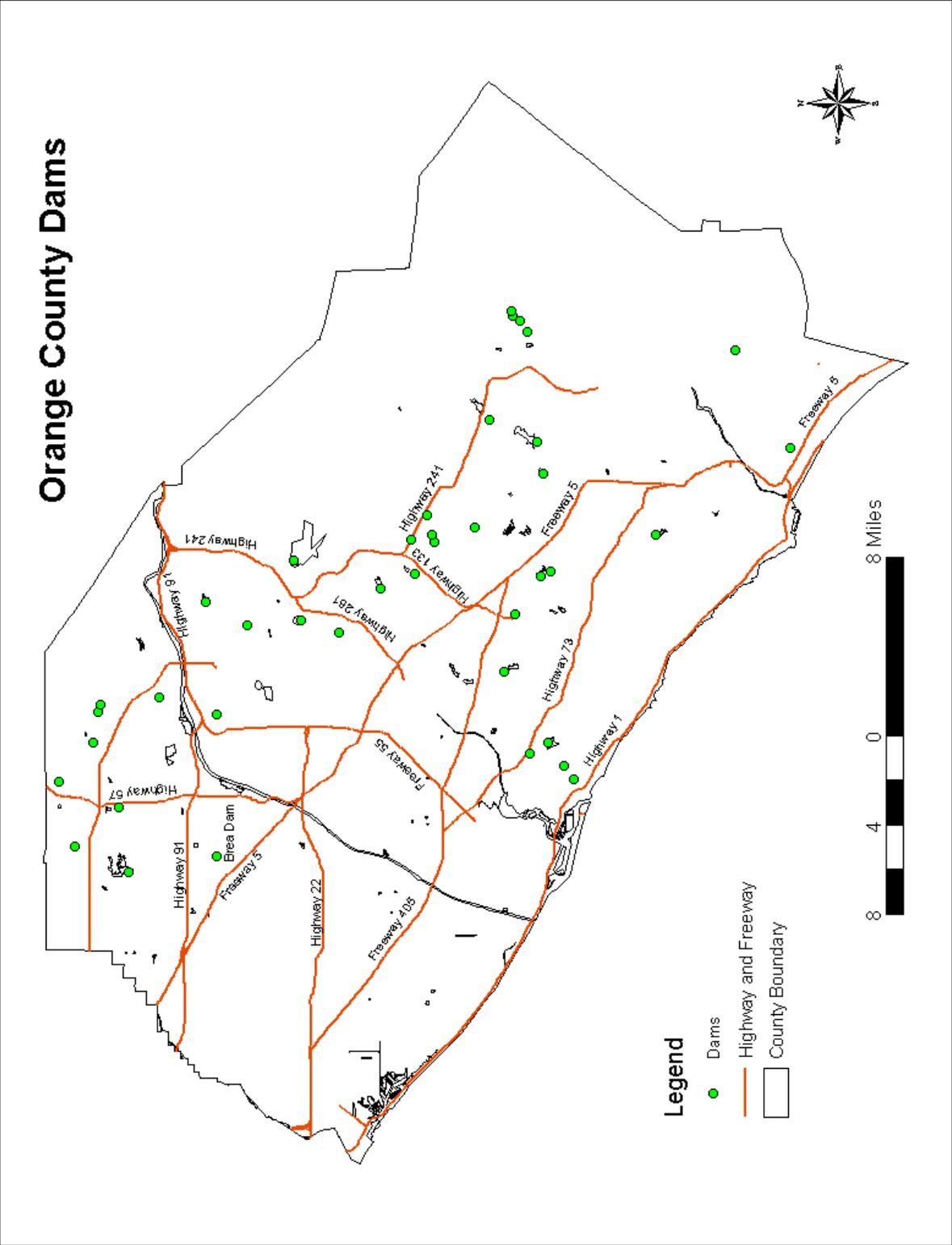
A dam failure will cause loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside the immediate hazard areas.

Governmental assistance could be required and may continue for an extended period. These efforts would be required to support evacuation, search and rescue, debris removal and roadway clearing, the demolishing of unsafe structures, reestablishment of public services and utilities, and continued care and welfare for the affected population including, as required, sheltering and temporary housing for displaced persons.

The dams in Orange County are considered potential terrorist targets. The weapon most likely to be used would be explosives with the goal of collapsing the dam. Such an event would result in a dam inundation event with little or no warning. The potential of using other types of weapons such as chemical or biological are considered low due to the large amount of material that would be required to contaminate the reservoirs, but the potential does exist. This scenario would only apply to those dams where the reservoirs are used for drinking water.

Currently, there are 34 dams located within or immediately adjacent to Orange County. They include reservoirs which normally contain water and flood control facilities which may be dry most of the time. Their sizes range from 18 acre-feet to 196,235 acre-feet (Prado Dam) holding capacity. At least 21 of the 34 dams may impact unincorporated County areas. Figure 3 shows the location of the major dams within Orange County. Additional information on dam structures, inundation maps, and proposed evacuation routes can be found in the Dam/Reservoir Failure Annex to this EOP.

Figure 3 - Major Dams in Orange County



Santiago Dam and Villa Park Dam – Santiago Dam is an earthfill structure with a 25,000 acre-feet capacity reservoir (Irvine Lake). The dam is jointly owned by the Irvine Ranch Water District and the Serrano Irrigation District. Villa Park Dam is a flood control dam located downstream from Santiago Dam. It is an earthfill structure with a capacity of 15,600 acre-feet and is owned by the Orange County Flood Control District.

Affected OA Members include:

- Unincorporated County areas
- Cities of Costa Mesa, Fountain Valley, Huntington Beach, Irvine, Newport Beach, Orange, Santa Ana, Tustin, Villa Park

Alerting is provided by dam keepers who are on duty at both Santiago Dam and Villa Park Dam. Initial alerting is expected to come from those individuals.

Rattlesnake Reservoir Dam – Rattlesnake Dam is an earth-filled structure with a storage capacity of about 1,700 acre-feet with a surface area of approximately 46 acres. The reservoir is owned by the Irvine Ranch Water District and is presently being used for the storage of pressure pipe treated sewage effluent which is used for irrigation.

Affected OA Members include:

- Unincorporated County areas
- Portions of the City of Irvine

Alerting is provided by operations personnel at the Irvine Ranch Water District who will notify the Sheriff's Department Control One of dam failure or possible dam failure.

Olive Hills Reservoir Dam – Olive Hills Reservoir is an earth-filled asphalt lined structure owned by the City of Anaheim and is operated by the Anaheim Water Department. Olive Hills Reservoir has a storage capacity of about 197 acre-feet with a surface area of approximately 555 square feet. The reservoir is presently being used for the storage of potable water for use by residents of the City of Anaheim.

Affected OA Members include:

- Unincorporated County areas
- Portions of the City of Orange

Alerting is provided by operations personnel at the Olive Hills Reservoir who will make the initial call to Anaheim authorities who, in turn, would contact Sheriff's Department Control One.

El Toro Reservoir Dam – El Toro Reservoir is an earth-filled structure owned by the El Toro Water District. The impounded reservoir has a storage capacity of about 722 acre-feet with a surface area of approximately 20.6 acres. The reservoir is presently being

used as a seasonal and operational storage site for the El Toro Water District's imported Colorado River water.

Affected OA Members include:

- Unincorporated County areas
- Portions of the City of San Juan Capistrano

Alerting is provided by operations personnel at the El Toro Water District who will notify the Sheriff's Department Control One of dam failure or possible dam failure.

San Joaquin Reservoir Dam – San Joaquin Reservoir is an earth-filled structure jointly owned by a number of water districts and is operated for these agencies by the Metropolitan Water District of Southern California. The reservoir has a storage capacity of about 3,000 acre-feet with a surface area of about 54 acres. San Joaquin Reservoir is a water supply reservoir.

Affected OA Members include:

- Unincorporated County areas
- Portions of the Cities of Irvine and Newport Beach

Alerting is provided by operations personnel from the Metropolitan Water District who will notify the Irvine Ranch Water District who, in turn, will notify the Sheriff's Department Control One of dam failure or possible dam failure.

Sulphur Creek Dam – Sulphur Creek Dam has a capacity of 382 acre-feet.

Affected OA Members include:

- Unincorporated County areas

Alerting is provided by the Park Ranger on-duty who will notify Sheriff's Department Control One of dam failure or possible dam failure.

Prado Dam – Prado Dam is owned and operated by the Los Angeles District, U.S. Army Corps of Engineers and was constructed for the primary purpose of providing protection from floods for the metropolitan areas in Orange County, California. Installation of the Seven Oaks Dam in San Bernardino County has lessened the impact of a Prado Dam failure.

The affected OA Members include:

- Cities of Anaheim, Brea, Buena Park, Costa mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Los Alamitos, Orange,

Newport Beach, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Westminster,
and Yorba Linda

In the event that downstream interests need to be alerted, the U.S. Army Corps of
Engineers (USACE) will contact the following:

- Sheriff's Department Control One
- Orange County Public Works
- Riverside County Disaster Preparedness
- Governor's Office of Emergency Services, Sacramento

Once contacted, the above agencies will notify all pertinent federal, state, county, and
local agencies through the State's National Warning System (fan out communication
system) and all applicable Orange County communications systems. Refer to
Dam/Reservoir Failure Annex.

