

3.4 Geographic Information Systems Flood Mapping

Flood data were collected and digitized as part of this study. These data are shown at 1:250,000 on Plate 3-2, and summarized on Figure 3-1. The flood maps used to create this map had varying scales. The overall map is accurate to no less than 1:24,000.

These digital data come from a collection of resources. Flood Insurance Rate Maps (FIRM) maps, with completion dates ranging from 1980 to 1999, were compared to the existing County data. The combined maps were then compared to the Q-3 digital flood coverage data set from FEMA (1999). In addition, the U.S. Geological Survey's flood prone map information (Table 3-3) was used to complete the flooding map. The following procedures were followed during the creation of the Flood and Inundation Susceptibility Map of Riverside County (Plate 3-2) :

Flood Insurance Rate Maps (FIRM) from the Federal Emergency Management Agency (FEMA) were digitized for unincorporated parts of Riverside County.

FEMA has three categories for flood zones:

Zone A- Special flood hazard areas inundated by 100-year flood.

- Subzone A- No base flood elevations determined.
- Subzone AE- Base flood elevations determined.
- Subzone AH- Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- Subzone AO- Flood depths of 1 to 3 feet (usually sheet flow or sloping terrain); average depths determined for areas of alluvial fan flooding, velocities also determined.
- Subzones A1-30- Areas of 100-year flood; base flood elevations and flood hazard factors determined.
- Subzone A99- To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

Zone B- Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with the average depths less than one (1) foot or where the contributing drainage area is less than one (1) square mile; or areas protected by levees from the base flood.

Zone X- Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

Table 3-3: U. S. Geological Survey Flood Prone Area Maps Digitized for this Study

Map Name	Scale	Date
Alberhill	1:24,000	1973
Beaumont	1:24,000	1975
Blythe	1:24,000	1974
Blythe NE	1:24,000	1975
Desert Hot Springs	1:24,000	1971
El Casco	1:24,000	1976
Fontana	1:24,000	1976
Guasti	1:24,000	1977
Indio	1:24,000	1976
Lake Mathews	1:24,000	1974
McCoy Wash	1:24,000	1975
Mecca	1:24,000	1973
Mortmar	1:24,000	1976
Oasis	1:24,000	1976
Palm Springs	1:24,000	1973
Palo Verde	1:24,000	1976
Rancho Mirage	1:24,000	1976
Redlands	1:24,000	1975
Ripley	1:24,000	1975
San Jacinto	1:24,000	1976
Seven Palms Valley	1:24,000	1971
Sitton Peak	1:24,000	1974
Steele Peak	1:24,000	1974
Sunnymead	1:24,000	1974

Temecula	1:24,000	1973
Thermal Canyon	1:24,000	1973
Whitewater	1:24,000	1971
Wildomar	1:24,000	1973
Yucaipa	1:24,000	1976

Q-3 digital flood data were obtained from FEMA (1999) and added to the map to cover incorporated as well as unincorporated parts of the County that the FIRM data did not cover.

U. S. Geological Survey (USGS) 7.5' quadrangle Flood Prone Areas maps (Table 3-3) were digitized and added to the map to cover areas not mapped by FEMA. The USGS only covers 100-year flooding in its Flood Prone Areas maps. Zone A is defined as flood-prone areas that have a 1 in 100 chance, on the average, of being inundated during any year. Flood prone areas have been delineated without consideration of present or future flood control storage that may reduce flood levels. Four subzones are represented:

Subzone L- Approximate area occasionally flooded if levees are breached.

Subzone O- Approximate area occasionally flooded.

Subzone I- Flood prone area subject to inundation from local thunderstorms.

Subzone S- Flood prone areas from sheet flow.

The current flood map for the County of Riverside was compared to the map compiled for this study (Plate 3-2) to insure that all county data were represented in the new map. One small area in the city of Riverside was taken from the county map and added to the new map. As a results of this study, areas prone to 100-year flooding were added along the west side of the Salton Sea and the western parts of Blythe for areas not covered by any of the afore mentioned data sets. Data sets for these areas are missing or nonexistent, yet these areas are flood prone, based on flood level elevations of the surrounding areas, and topography of the areas.

3.4.1 Benefits of Flood Mapping Using Geographic Information Systems

Many existing Flood Insurance Rate Maps (FIRMs) are based on flood probability estimates that may now be out-of-date. FIRMs are typically hand-drawn on paper maps that have limited vertical accuracy or can not be easily matched to "real-world" geographical coordinates (Jones and other, 1998). They are based on elevation data that, in many cases, have been or will be superseded by more accurate data. In addition paper FIRM maps are relatively expensive and time-consuming to update.

Existing flood maps need continual updating. In the nearly 20 years since original