



Department of Public Works

Guidelines for Flood Protection of Structures in Borrego Springs

Purpose – To offer information concerning the existing County ordinances and policies regarding flood protection for new structures in Borrego Springs.

Background - The Federal Emergency Management Agency (FEMA) provides federal flood insurance, emergency aid, and assistance in the event of natural disasters. In order for the citizens and local government to qualify for the federal flood insurance, FEMA requires local governments to adopt and enforce certain minimum floodplain management standards.

On December 7, 1993, the Board of Supervisors adopted the [County Flood Damage Prevention Ordinance #8334](#), which establishes flood protection criteria for construction of structures in flood prone areas.

On October 17, 1989, the Board accepted the Boyle Engineering report, *Borrego Valley Flood Management Report*, which specifically deals with flood protection on alluvial fans in Borrego Springs.

Alluvial Fans – Alluvial fans are created when flash floods move rapidly down the steep desert canyons, depositing sand and debris in a fan-shaped pattern onto the desert floor. Smaller flood flows will typically move along an existing channel, or wash, on the fan for several years until either an obstruction is

encountered or the sediment builds up on that section of the fan to a level at or above the general elevation of the local fan. When this condition is reached, the floodwaters can suddenly change course and move to a new wash location on the fan. A design-storm flood is typically too large for the existing washes, will tend to sheet flow across the fan, and may even establish a new wash location. Therefore, all areas on the fan are subject to flooding unless appropriate flood protection is provided.

Specific Sources of Flash Floods – Box Canyon, Unnamed Canyon, Coyote Canyon, El Vado Canyon, Henderson Canyon, Borrego Palm Canyon, Fire Canyon, Hellhole Canyon, Dry Canyon, and Culp-Tubb Canyon complexes have been analyzed and mapped by the County to assist in designing flood protection on these alluvial fans. These areas are shown on the FEMA Flood Insurance Rate Map (FIRM).

The NFIP identifies alluvial fan hazards on FIRMs as Zone AO and provides information on flood depths and velocities. AO zones are Special Flood Hazards Areas (SFHA) subject to inundation by 1% annual chance (100-year) sheet-type flow, which are sometimes associated with high velocities.

Flood Protection - Construction within alluvial fan areas is subject to certain regulations (in addition to those which apply to *all* SFHA's) found in Chapter 44 of the Code of Federal Regulations, Part 60.3:

- Elevate lowest floor (including basement) above the highest adjacent grade to at least as high as the depth number specified on the FIRM. It is recommended, however, that the depth of flow assumed for a site should take into consideration local topographic anomalies when determining the elevation of any flood protection measure.
- Mechanical and utility equipment must also be placed above the depth of flooding.

- Provide adequate drainage paths around structures on slopes, to guide floodwater around and away from proposed structures. The intent is to prevent scour from undermining the foundation of the structure, thus preventing structural collapse.
- Do not deflect flood flow onto adjacent properties.

Summary - Several methods of flood protection are available for flood safe construction in Borrego Springs. However, there is no one method of design acceptable for use on every lot. The method of flood protection chosen for your property must adequately address the local conditions of the land on and upstream of your property. Lots with unique characteristics may require special engineering studies to determine associated flood hazards and flood protection details.

Before purchasing any lot or architectural plans, the potential project owners/developers should obtain all available information about the local geology and possible flood hazards. It is the property owner's responsibility to make certain that the lot and plans together satisfy intended project goals and incorporate flood protection for their property without detriment to adjacent properties. For additional information, please contact the Flood Control Counter at the County of San Diego Operations Center Annex at (858) 694-2112. Information can also be found on the county website at: <https://www.sandiegocounty.gov/content/sdc/dpw/flood.html>.

Flood Hazard Map

Borrego Valley Alluvial Fans

