



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 National Flood Insurance Program (NFIP) provides Federal Flood Insurance, emergency aid, and/or assistance in the event of natural disasters. In order for the citizens and local government to qualify for the NFIP, the Federal Emergency Management Agency (FEMA) requires local governments to adopt and enforce certain minimum floodplain management standards.

On December 7, 1983, the Board of Supervisors adopted the *County Flood Damage Prevention Ordinance #8334, Section 811.101*, 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 the Culp-Tubb Canyon complexes have been analyzed and mapped to assist in designing flood protection on these alluvial fans as shown on the Flood Hazard Map.

Regions where two or more fans intersect, called a Fan Terminus Alluvial Wash, can concentrate flows during flash floods. Two fan terminus alluvial washes in the Borrego Springs region, shown on the accompanying Flood Hazard Map as shaded areas, have been analyzed to determine the amount of depth and flow. Additionally, local washes (the small channels formed by previous flows down an alluvial fan) concentrate flows from individual flash floods. Non-analyzed washes, often only apparent from the air or high ground, usually require additional engineering analysis prior to construction.

Flood Protection

- Raise the finished floor elevation of your structure to a specified height above the highest **natural** grade next to the structure. The intent is to

leave the surrounding fan in its existing grade so that the flows will not be diverted and damage other property.

- Protect the foundation of your structure from erosion to a specified depth below the existing natural grade. The intent is to prevent scour from undermining the foundation of the structure, thus preventing structural collapse into the flood flow.
- Keep at least one-half of the lot open, **perpendicular** to the fan flow. The intent of this is to assure that flood flows will not be diverted and damage other 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 Section at either (858) 694-3281 or (858) 694-3267. Information can also be found on the County Web Site at: <http://sdcdpw.org/> Locate the Flood Control Page by first selecting **Table of Contents**, then **F**, then **Flood Control**.

Flood Hazard Map

Borrego Valley Alluvial Fans

