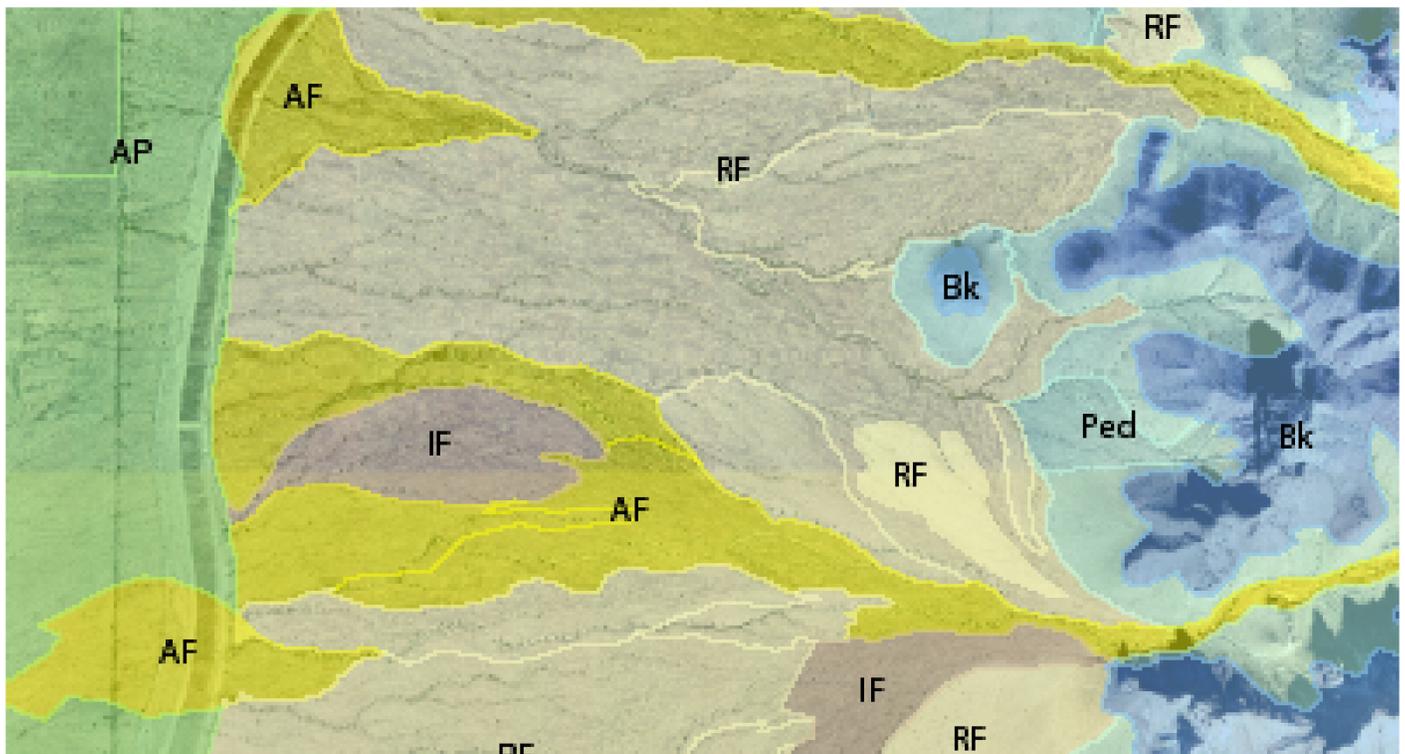




# GEOMORPHIC MAPPING FOR FLOOD HAZARD ANALYSIS AND PLANNING of the Lower Centennial Wash Watershed Maricopa County, Arizona

## **PROJECT DESCRIPTION**

**Earth Consultants International** was retained to conduct a low-level geomorphic assessment of the Lower Centennial Wash and surrounding environs in Arizona. The purpose of the study was to analyze and document landforms in the study area, and identify locations where surface geomorphology may affect channel networking and result in distributary flow. Specific tools used to map and delineate the landforms include: 1) digital and stereoscopic aerial photography, 2) 7.5-minute USGS topographic quadrangle maps and 10-foot-contour elevation datasets provided by the client, 3) Soil Conservation Service soil maps for Maricopa County, 4) published geologic and alluvium maps of the area, and 5) limited field work.



Overlay map of the West Saddle region showing areas mapped as active fans (AF), inactive fans (IF), relict fans (RF), alluvial plains (AP), pediment (Ped) and bedrock (Bk). In other areas, we mapped alluvial terraces, paleo-terrace surfaces and bedrock inselbergs.

## **SOLUTION**

The following geomorphic areas were identified and mapped: active channels where most riverine flooding occurs, alluvial plains that experience sheet flooding, areas of alluvial fan deposition, stable areas that are underlain by pediments, and relict fans. Two general types of stable areas were observed: 1) those with channelized flow in rills incised 1 to 4 meters below a pediment or relict fan surface, and 2) those with areas of channelized flow that are very close to the average elevation of the surrounding fan or pediment. In all cases where field checks were conducted, the pediments and relict fans are underlain by stage IV calcic horizons and/or well-formed argillic horizons (Typic Paleargids and Petrocalcic Paleargids), capped by well-developed desert pavements. To distinguish the various landforms mapped for this study, we used channel network morphology, surface texture, relative degree of surface coloration due to desert pavement and varnish development (patina development), relative differences in vegetation density, and limited field observations of soil characteristics.

