

**PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT'S
TECHNICAL POLICY**

POLICY NAME: Acceptable Methods for Floodplain Delineation
POLICY NUMBER: Technical Policy, TECH-016
EFFECTIVE DATE: December 1, 2007

PURPOSE

To standardize the selection of hydraulic models and other methods for delineating regulatory floodplains and assessing encroachments.

BACKGROUND

A hydraulic model or previously accepted delineation may be used when floodplain delineations must be established. The Hydrologic Engineering Center (HEC) HEC-2 and HEC-RAS models are the most widely used hydraulic models for delineating floodplains in riverine systems. This policy describes when HEC-2 and HEC-RAS models or other methods are acceptable for submittal to the Pima County Regional Flood Control District (District). Modeling protocols and accepted parameters are not discussed in the policy. Furthermore, the technical policy does not address FEMA LOMR submittal requirements or models used for purposes other than floodplain delineation or encroachment analysis such as calculating scour depths for utility crossings.

The District supports FEMA's preference for HEC-RAS rather than the older and less functional HEC-2 software (FEMA memorandum, 2001). Where a gradually varied flow or backwater model is needed, new mapping shall be done using HEC-RAS. Revisions or re-studies of HEC-2 models shall be done by converting HEC-2 to HEC-RAS and verifying that the water surface in the effective model and duplicate model have not changed. If differences do occur, the observed differences must be justified or the HEC-RAS model must be adjusted.

POLICY

- A. The HEC-RAS model shall be used under the following conditions (models that include geospatial representation, such as HEC Geo-RAS, are encouraged):
1. ***Floodplain delineations on channels with 100-year discharges > 2000 cfs:*** These are major regulatory watercourses as defined in Title 16 of the Pima County Ordinance.
 2. ***Floodplain delineations where backwater conditions are known to exist:*** Backwater is known to occur under the following conditions:
 - i. *above stream confluences;*
 - ii. *above flow splits;*
 - iii. *above ponded areas such as detention basins;*
 - iv. *above sharp channel bends; and*
 - v. *above crossings, such as bridges, culverts or dip sections.*

Other conditions such as a reduction in slope may also result in backwater conditions.

