APPENDIX F
STANDARDS FOR FLOOD HAZARD EVALUATIONS

When required, the subdivider shall follow these procedures for evaluating flood hazards:

A. General. Land subject to being flooded by a flood of one hundred year (100) frequency as defined by Title 76, Chapter 5, M.C.A., or land deemed to be subject to flooding by the county Commission, may not be subdivided for building or residential purposes, or other uses that may increase or aggravate flood hazards to life, health or welfare, or that may be prohibited by state or local floodplain or floodway regulations.

B. Procedure. If any portion of a proposed subdivision is within two thousand (2,000) horizontal feet and less than twenty (20) vertical feet of a stream draining an area of twenty five (25) square miles or more, and no official floodplain or floodway delineation (study) of the stream has been made, the subdivider shall provide in detail the calculated 100 year frequency water surface elevations and/or 100 year floodplain boundaries. This detailed study must be performed by a licensed professional engineer experienced in this field of work. This information may be submitted, upon the request of the commissioners, to the Floodplain Management Section, Water Resources Division, Department of Natural Resources and Conservation for review and concurrence.

C. Detailed Information. The detailed information to be submitted to the Water Resources Division, Department of Natural Resources, shall include the following:

1. Certification: Certification by a registered professional engineer.

2. Overall Plan View: An overall scaled plan view (project map) with identified scale for vertical and horizontal distance showing the following:

   a. watercourse

   b. floodplain boundaries

   c. location of property

   d. contours

   e. cross-sections

   f. bridges or other contractions in the floodplain

   g. USGS gauging stations (if any)

3. Benchmark(s): The location and elevation of a temporary benchmark(s) established within the subdivision and referenced to mean sea level with appropriate elevation adjustment.

4. Cross-sectional information:

   a. Cross-section elevations and stations should be determined at points representing significant breaks in ground slope and at changes in the hydraulic characteristics of the

floodplain (i.e., points where ground cover, soil, or rock conditions change). Elevations must be reported in NAVD 88 or NGVD 29 datum.

b. Each cross-section must cross the entire floodplain. The cross-section alignment should be perpendicular to the general flow of the watercourse (approximately perpendicular to contour lines). Occasionally, wide floodplains require a dog-leg alignment to be perpendicular to the anticipated flow lines. Shots should be taken at the water's edge and measurements taken (if elevation shots cannot be taken) to determine the channel bottom shape. Cross sections must be accurately located on a USGS 7 ½ minute quad sheet.

c. The number of cross-sections needed, and the distance between cross-sections will vary depending on the site, the slope of the watercourse, the slope of the channel, and the hydraulic characteristics of the reach. A minimum of four cross sections are required over the entire reach with at least two cross-sections at the property where the elevations are desired. Additional cross-sections must be taken at bridges, control structures, or natural constrictions in topography.

**Note: Photogrammetric methods may be used in lieu of cross sections whenever appropriate and when reviewed and approved by the county.

5. Bridges: Descriptions and sketches of all bridges within the reach, showing unobstructed waterway openings and elevations.

6. Water Surface: Elevation of the water surface is to be determined by survey as part of each valley cross section.

7. Supporting Documentation: Engineering reports of computer computations, calculations, and assumptions that may include:

a. Hydrology (research of published hydrology or calculations showing how hydrology was derived)

b. Input files (hardcopy and on diskette)

c. Output files (diskette only