Evaluating Floodplain Encroachment H&H Analyses

Local floodplain administrators are responsible for the enforcement of local floodplain ordinances. This includes reviewing and commenting on documentation provided to them in support of Floodplain Development Permits. Where proposed development and/or construction encroaches on a Special Flood Hazard Area where no floodway has been established, a Floodplain Encroachment Analysis is required to demonstrate the proposed project will not increase the base flood elevations (BFE) more than 1 foot [44 CFR 60.3 (c)(10)]. In many cases, a hydrologic and hydraulic (H&H) analysis is necessary and should be reviewed and evaluated by the floodplain adminstrator.

Use the checklists below to review and evaluate Floodplain Encroachment H&H Analyses and supporting technical documentation.

Floodplain Encroachment H&H Analysis - Completeness Checklist

Submission Item / Requirement	Included	Not Included	Not Applicable	Notes
Floodplain Encroachment Analysis Memo				
Memo documenting proposed development will not raise BFE more than 1 foot				
Hydrologic and Hydraulic Analysis Documentation				
Engineering Models				
Effective Model				
Duplicate Effective Model (if necessary)				
Corrected Effective Model (if necessary)				
Existing Conditions Model (may be the Effective, Duplicate, or Corrected Model)				
Proposed Conditions Model				
Technical Supporting Documentation				
Project Narrative				
Topographic Work Map (including effective floodplain)				
Cross Section or Evaluation Line Plots				
Property Survey (or scaled plot, if current and accurate)				
Preliminary or Recorded Plat (if building corridor or conveyancy easement is required)				
Design Plans				

Comments:

Floodplain Encroachment H&H Analysis - Accuracy Checklist

Submission Item / Requirement	Acceptable	Not Acceptable	Not Applicable	Notes
Floodplain Encroachment Analysis Memo includes:				
Registered professional engineer's signature and seal				
Proposed project name, flooding source, community, and effective FIS date				
Language certifying **≤ 1 foot rise** in base flood elevations on published and unpublished cross sections or evaluation lines				
Project Narrative Includes:				
Details of proposed development				
Detailed description of hydrologic and hydraulic analysis methodology				
Any special conditions of the design to meet ≤ 1 foot rise criteria, such as conveyance easements or specific landscaping allowances/restrictions				
Engineering Models Review				
Effective Model				
Model was obtained from FEMA in original modeling format (if available)				
Duplicate Model				
Upgraded to currently FEMA approved software package - Model was not down-graded to earlier version of software				
Results of Duplicate Model do not vary from Effective Model more than 0.5 feet - Justification for >0.5' provided				
Corrected Effective Model				
No man-made changes in floodplain after effective date are included				
All technical changes are documented and justified in narrative - includes hydrologic and hydraulic changes				
Existing Conditions Model				
All man-made changes within the floodplain after the effective model date are incorporated and documented in the narrative				
Includes additional cross sections in proposed development area - not interpolated or duplicated - developed from survey or FEMA accepted topography				
Proposed Conditions Model				
Same cross section lcoations as Existing Conditions model				
No variations in data from Existing Conditions model outside of proposed area				
Incorporates all features of proposed development, such as development geometry, grading, and land cover changes				

Floodplain Encroachment H&H Analysis - Accuracy Checklist (cont.)

Submission Item / Requirement	Acceptable	Not Acceptable	Not Applicable	Notes
Results Comparison				
Base Flood Elevation Comparison Table is included and contains:				
Hydraulic Cross Section Information (i.e., stationing, location of study limits, hydraulic structures)				
Base Flood Elevations from each model version				
Comparisons of Base Flood Elevations between model versions				
1-foot Rise Determination				
Comparison of Proposed to Existing Conditions results in no increases greater than **1.00 foot** on any of the cross sections				

Comments: