



Federal Emergency Management Agency

Region X
130-228th Street SW
Bothell, WA 98021-9796

Procedures for "No-Rise" Certification For Proposed Developments in the Regulatory Floodway

Section 60.3 (d) (3) of the National Flood Insurance Program (NFIP) regulations states that a community shall "prohibit encroachments, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base (100-year) flood discharge."

Prior to issuing any building, grading or development permits involving activities in a regulatory floodway the community must obtain a certification stating the proposed development will not impact the pre-project base flood elevations, floodway elevations, or floodway data widths. The certification should be obtained from the permittee and be signed and sealed by a professional engineer.

The engineering or "no-rise" certification must be supported by technical data.

The supporting technical data should be based upon two separate analyses:

1. a step-backwater analysis, and
2. conveyance compensation analysis.

The standard step-backwater computer model is utilized to develop the 100-year floodway shown on the community's effective Flood Insurance Rate Map or Flood Boundary and Floodway Map (FBFM) and the results tabulated in the community's Flood Insurance Study (FIS). The conveyance compensation analysis is necessary because it is our position that any blockage to flow in the floodway will result in a rise to the one hundred year flood profile, regardless of the tabular results comparing BFE's in pre- and post-development conditions in the backwater analysis.

Although communities are required to review and approve the "no-rise" submittals, they may request, in writing, technical assistance and review from the FEMA regional office. However, if this alternative is chosen, the community must review the technical submittal package and verify that all supporting data, listed in the following paragraphs, are included in the package before forwarding to FEMA. Additionally, they must state what part of the no rise submittals they want FEMA to comment on.

To support a "no-rise" certification for proposed developments encroaching into the regulatory floodway, a community will require that the following procedures be followed:

Currently Effective Model

1. Furnish a written request for the step backwater computer model for the specified stream and community, identifying the limits of the requested data. A fee will be assessed for providing the data. Send data requests to:

Kerri Castillo
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304
(703) 960-8800
or call the FEMA Regional office for assistance

Duplicate Effective Model

2. Upon receipt of the step-backwater computer model, the engineer should run the original step-backwater model to duplicate the data in the effective (FIS).

Existing Conditions Model

3. Revise the original step-backwater model to reflect site-specific existing conditions by adding new cross-sections (two or more) in the vicinity of the proposed development without the proposed development in place. Floodway limits should be manually set at the new cross-section locations by measuring from the effective FIRM or FBFM. The cumulative reach lengths of the stream should also remain unchanged. The results of these analyses will indicate the 100-year floodway elevations for revised existing conditions at the proposed project site.

Proposed Conditions Model

4. Modify the revised existing condition model to reflect the proposed development at the new cross-sections, while retaining the currently adopted floodway widths. The overbank roughness coefficients should remain the same unless a reasonable explanation of how the proposed development will impact Manning's "n" values is included with the supporting data. The results of this floodway run will indicate the 100-year floodway elevation for proposed conditions at the project site. These results must indicate NO impact on the 100-year flood elevations,

floodway elevations, or floodway widths shown in the Duplicate Effective Model or in the Existing Conditions Model.

The "no-rise" supporting data and a copy of the engineering certification must be submitted to and reviewed by the appropriate community official prior to issuing a permit.

The "no-rise" supporting data should include but may not be limited to:

- 1) Duplicate of the original FIS step-backwater model printout or floppy disk.
- 2) Revised existing conditions step-backwater model
- 3) Proposed conditions step-backwater model.
- 4) FIRM and topographic map, showing floodplain and floodway, the additional cross-sections, the site location with the proposed topographic modification superimposed onto the maps, and a photocopy of the effective FIRM or FBFM showing the current regulatory floodway.
- 5) Documentation clearly stating analysis procedures. All modifications made to the original FIS model to represent revised existing conditions, as well as those made to the revised existing conditions model to represent proposed conditions, should be well documented and submitted with all supporting data.
- 6) Copy of effective Floodway Data Table copied from the (FIS) report.
- 7) Statement defining source of additional cross-section topographic data and supporting information.
- 8) Cross-section plots, of the added cross sections, for revised existing and proposed conditions.
- 9) Certified planimetric (boundary survey) information indicating the location of structures on the property.
- 10) Copy of the microfiche, or other applicable source, from which input for original FIS HEC-2 model was taken.
- 11) Floppy disk with all input files.
- 12) Printout of output files from EDIT runs for all three floodway models.
- 13) Hand computed conveyance compensation calculations using the cross-section and 100-year encroached hydraulic data in the modified existing conditions model comprised of:

- i) Calculation of the reduction in conveyance (K) caused by the proposed obstruction, assuming no change in floodway water-surface elevation, and using the "n" value appropriate for the site of the proposed obstruction
- ii) Calculation of the increase in conveyance (K) obtained by the proposed offsetting measure, using the "n" value appropriate for the site of this measure.
- iii) Comparison showing that the conveyance increase computed in ii) equals or exceeds the loss computed in i).

14) Evidence that the increase in effective conveyance provided for in ii) will be maintained perpetually. This should be in the form of a self-maintaining measure or certified maintenance plans for the measure provided.

The engineering "no-rise" certification and-supporting technical data must stipulate NO impact on the 100-year flood elevations, floodway elevations, or floodway widths at the new cross-sections and at all existing cross-sections anywhere in the model. Therefore, the revised computer model should be run for a sufficient distance (usually one mile, depending on hydraulic slope of the stream) upstream and downstream of the development site to insure proper "no-rise" certification.

Attached is a sample "no-rise" certification form that can be completed by a registered professional engineer and supplied to the community along with the supporting technical data when applying for a development permit and a sample conveyance compensation calculation.

ENGINEERING "NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified engineer licensed to practice in the State of _____.

It is to further certify that the attached technical data supports the fact that proposed _____ will
(Name of Development)

not impact the 100-year flood elevations, floodway elevations and floodway widths on _____ at published sections
(Name Of stream)

in the Flood Insurance Study for _____,
(Name of Community)

dated _____ and will not impact the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

(Date)

(Signature)

(Title)

seal:

(Address)