



## Procedures for “No-Rise” Certification For Proposed Developments in the Regulatory Floodway

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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 applicant and be signed and sealed by a professional engineer.

**The engineering or "no-rise" certification must be supported by technical data or a detailed explanation of why a hydraulic analysis is not required.**

A hydraulic analysis is anticipated in most cases. Exceptions are limited to the following:

- **Minor projects:** A sign post or telephone pole will not block flood flows. A driveway, road or parking lot at grade (without any filling) won't cause an obstruction, either. Barbed wire farm fences that will be pushed over or ripped out early in the flood may also be permitted without a certification; however, larger more massive fences could be an obstruction to flood flows and may require an engineering study and certification.
- **Conveyance Shadow:** Building additions, accessory buildings, and similar small projects can be located in the conveyance shadow. This is the area upstream and downstream of an existing building or other obstruction to flood flows. Flood water is already flowing around the larger obstruction, so the addition of a new structure will not change existing flood flow.

The supporting technical data must be based upon hydraulic analyses that utilize the same model used to prepare the effective Flood Insurance Study (FIS) report and Flood Insurance Rate Map (FIRM) unless it is demonstrated that the “effective” hydraulic model is unavailable or its use is inappropriate. If an alternative hydraulic model is used, the new model must be calibrated to reproduce the FIS profiles within 0.5 feet. The hydraulic model used in the analysis must be on FEMA’s accepted models list, or documentation must be provided showing the model meets the requirements of NFIP regulation 65.6(a)(6).

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



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### **CURRENT EFFECTIVE MODEL**

Submit a written request for the effective model for the specified stream and community, identifying the limits of the requested data. A fee will be assessed for providing the data. Data request forms and instructions can be obtained at:

<http://www.fema.gov/national-flood-insurance-program-flood-hazardmapping/how-order-technical-administrative-support>

or by writing to:

FEMA Engineering Library  
847 S. Pickett Street  
Alexandria, VA 22304  
Phone: 1-877-336-2627  
Facsimile: 1-703-212-4090

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### **DUPLICATE EFFECTIVE MODEL**

Upon receipt of the effective computer model, the engineer should run the original model to duplicate the output in the effective (FIS).

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### **CORRECTED EFFECTIVE MODEL**

The model that corrects any errors that occur in the Duplicate Effective model, adds any additional cross sections, or incorporates more detailed topographic information than that used in the current effective model. 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 Corrected Effective model must not reflect any manmade physical changes since the date of the effective model.

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### **EXISTING, OR PRE-PROJECT CONDITIONS MODEL**

Revise the Duplicate Effective or the Corrected Effective model to reflect any modifications that have occurred within the floodplain since the date of the Effective model but prior to the construction of the project. If no modifications have occurred since the date of the effective model, then the model would be identical to the Duplicate Effective or Corrected Effective model. The results of this Existing Conditions analysis will indicate the 100-yr elevations at the project site.

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### **PROPOSED, OR POST-PROJECT CONDITIONS MODEL**

Modify the Existing Condition or Pre-Project Conditions Model (or Duplicate Effective model or Corrected Effective model, as appropriate) to reflect revised or post-project conditions. 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 analysis will indicate the 100-year elevation for proposed conditions at the project site. These results must indicate NO impact on the 100-year floodway elevations when compared to the Existing Conditions or Pre-Project Conditions model. If an increase results the project will require the submittal of a CLOMR prior to the start of the project.



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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. Copy of the Duplicate Effective model;
2. Copy of the Corrected Effective model;
3. Existing conditions, or Pre-Project conditions model
4. Proposed conditions or Post-Project conditions model.
5. 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 copy of the effective FIRM or FBFM showing the current regulatory floodway.
6. 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.
7. Copy of effective Floodway Data Table copied from the (FIS) report.
8. Statement defining source of additional cross-section topographic data and supporting information.
9. Cross-section plots, of the added cross sections, for revised existing and proposed conditions.
10. Certified planimetric (boundary survey) information indicating the location of structures on the property.
11. Copy of the source from which input for original FIS model was taken.
12. CD with all input and output files.
13. Printout of output files from EDIT runs for all three floodway models.

The engineering "no-rise" certification and-supporting technical data **must stipulate NO impact on the 100-year flood or floodway elevations 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.



# ENGINEERING "NO-RISE" CERTIFICATE

## For Arkansas NFIP Communities

### OFFICE USE ONLY

Date Received: \_\_\_\_\_

File Number: \_\_\_\_\_

## INSTRUCTIONS FOR THE ENGINEER

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." This certification -an Engineering "No-Rise" Certificate - must be obtained from the applicant and be signed and sealed by a professional engineer.

The engineering "no-rise" certification must be supported by technical data based upon hydraulic analyses that utilize the same model used to prepare the effective Flood Insurance Study (FIS) report and Flood Insurance Rate Map (FIRM) unless it is demonstrated that the effective hydraulic model is unavailable or its use is inappropriate.

The "no-rise" supporting data should include the following:

- Copy of the Duplicate Effective model;
- Copy of the Corrected Effective model;
- Existing conditions, or Pre-Project conditions model
- Proposed conditions or Post-Project conditions model.
- 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 copy of the effective FIRM or FBFM showing the current regulatory floodway.
- Analysis procedures noting modifications made to original FIS model to represent revised existing conditions, as well as those made to the revised existing conditions model to represent proposed conditions.
- Copy of effective Floodway Data Table copied from the (FIS) report.
- Statement defining source of additional cross-section topographic data and supporting information.
- Cross-section plots, of the added cross sections, for revised existing and proposed conditions.
- Certified planimetric (boundary survey) information indicating the location of structures on the property.
- Copy of the source from which input for original FIS model was taken.
- CD or flash drive with all input and output files.
- Printout of output files from EDIT runs for all three floodway models.

The engineering "no-rise" certification and-supporting technical data must stipulate **NO impact on the 100-year flood or floodway elevations 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.

Failure to follow this guidance may result in notification to the Arkansas State Board of Licensure for Professional Engineers, the Arkansas Floodplain Managers Association Professional Development and Certification Committee, and/or FEMA Region VI.

If you have any questions regarding the Engineering "no-Rise" Certificate or need additional information, please contact the State National Flood Insurance Coordinator at 501-682-3969.



# ENGINEERING "NO-RISE" CERTIFICATE

For Arkansas NFIP Communities

OFFICE USE ONLY	
Date Received:	_____
File Number:	_____

## SITE INFORMATION

<p><b>Date</b> _____</p> <p><b>Community</b> _____</p> <p><b>County</b> _____</p> <p><b>Applicant</b></p> <p style="padding-left: 20px;">Name _____</p> <p style="padding-left: 20px;">Address _____</p> <p style="padding-left: 20px;">Telephone _____</p> <p><b>Engineer</b></p> <p style="padding-left: 20px;">Name _____</p> <p style="padding-left: 20px;">Address _____</p> <p style="padding-left: 20px;">Telephone _____</p>	<p><b>Project</b></p> <p style="padding-left: 20px;">Address _____</p> <p>_____</p> <p>_____</p> <p><i>Description of Development:</i></p> <p>_____</p> <p>_____</p> <p><i>Principal Use of Premises:</i></p> <p>_____</p> <p>_____</p>
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## FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

NFIP map(s) and panel(s) affected: \_\_\_\_\_

Effective date of map: \_\_\_\_\_

Base Flood Elevation on FIRM: \_\_\_\_\_

Name of flooding source: \_\_\_\_\_

## SUPPORT DOCUMENTS

Attached are the following documents that support this Engineering "No-Rise" Certification:

<input type="checkbox"/> Copies of the Duplicate Effective, Corrected Effective, Existing or Pre-Project conditions, and Proposed or Post-Project conditions models	<input type="checkbox"/> Copy of effective Floodway Data Table
<input type="checkbox"/> Analysis procedures documentation	<input type="checkbox"/> Cross-section plots
	<input type="checkbox"/> CD or flash drive with all input and output files.
	<input type="checkbox"/> Printout of output files runs for all three floodway models.

Please see **INSTRUCTIONS FOR THE ENGINEER** for additional documentation that may be required.

## CERTIFICATION

This is to certify that I am a duly qualified Professional Engineer licensed to practice in the State of Arkansas. I further certify that the attached engineering data supports the fact the proposed development would not result in any increase in flood levels within the community during the occurrence of a base flood event.

\_\_\_\_\_

CERTIFIER'S NAME LICENSE NUMBER

\_\_\_\_\_

COMPANY NAME (embossed seal)

\_\_\_\_\_

SIGNATURE DATE

\_\_\_\_\_

TITLE