

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
Department of Energy and Environment

**TECHNICAL GUIDANCE**

**FROM:** Department of Energy and Environment (DOEE)  
Natural Resources Administration  
Regulatory Review Division

**DATE:** June 1, 2021

**SUBJECT: Guidance for Permit Applicants with Infrastructure Maintenance, Repair,  
and Replacement Projects that May Cause Encroachment**

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This document provides technical guidance on how to comply with the District’s Flood Hazard Rules and Construction Codes. DOEE prepared this and other technical guidance documents to make compliance and the application and permitting processes clearer and easier. Ultimately, however, compliance with the Flood Hazard Rules and Construction Codes is the responsibility of the applicant.

Specifically, this guidance provides information on the documentation required to show that infrastructure maintenance, repair, and replacement projects will comply with District and federal requirements for encroachment. In this context, encroachment refers to the increase in flood elevations caused by development within a floodplain that displaces water onto other areas. Encroachment is limited by law to prevent property owners from causing an adverse impact on other properties by increasing the level of flood risk. Different types of projects have different levels of capacity to cause encroachment, so different levels of analyses are required commensurate with the scale of development and the magnitude of potential risk.

This document is a high-level overview of what DOEE looks for in infrastructure projects that may cause encroachment and is intended for applicants that have some familiarity with construction and permitting. Please contact [flood.risk@dc.gov](mailto:flood.risk@dc.gov) if you have any questions about this document or have questions about your specific project.

## **Requirements for Work that May Cause Encroachment**

All applications for development in a Floodway or an SFHA associated with a watercourse that lacks a mapped Floodway shall certify that there will be no increase in flood elevations as a result of the project, with one exception. This certification should be in the form of a “No-Rise” certificate (shown on page 5) and stamped by a Professional Engineer. A project that is limited to only grouting and patching of cracks in culvert is not required to provide a certification.

Projects are classified according to their capacity to cause encroachment. Classifications and their documentation requirements described below. The table on page 3 lists various types of work along with the classification and required documentation.

- A project is classified as “Negligible” if no hydraulic study is required.
- A project is classified as “Minor” if a hydraulic study may be prepared at the discretion of the certifying engineer, but is not specifically required by DOEE.
- A project is classified as “Major” if a hydraulic study to prove that there will be no increase in flood elevations is required to accompany the “No-Rise” certificate.

Hydraulic studies should include hydrologic and hydraulic analyses performed in accordance with standard engineering practice using technical data that is based on the same computer model used to develop the floodway shown on the Flood Insurance Rate Map.

A project combining multiple types of work can be considered “Minor” as long as all phases are listed as such, but any project with at least one phase in a “Major” category must provide an engineering study with certification.

<b>Type of Work</b>	<b>Classification</b>	<b>Conditions (If Applicable)</b>
Grouting/patching of cracks in culvert	Negligible - no study or "no-rise" required.	Plans shall state that existing flood-carrying capacity is to be maintained.
Trenching for installation of buried utilities	Minor - no study required.	Plans shall state that existing grade is to be maintained.
Restoration of eroded streambank or channel using fill	Minor - no study required.	Plans shall state that existing flood-carrying capacity is to be maintained and that no grade change from original conditions will occur.
Replacement of outfall pipe with outfall pipe of equivalent dimensions and identical location.	Minor - no study required.	Plans shall state that existing flood-carrying capacity is to be maintained due to dimensions of pipe.
Replacement of damaged culvert using culvert of equivalent dimensions	Major - Study required.	N/A
Replacement of culvert using new culvert of different dimensions.	Major - Study required.	N/A
Replacement of in-channel structures (I.e. bridge support or pipeline) with equivalent type and dimensions.	Major - Study required.	N/A
Replacement of in-channel structures (I.e. bridge support or pipeline) with different type or dimensions.	Major - Study required.	N/A

## Enabling References

### **FEMA 480 Manual (Unit 5, Section D “Encroachments”)**

- “Projects, such as filling, grading, or construction of a new building, must be reviewed to determine whether they will obstruct flood flows and cause an increase in flood heights upstream or adjacent to the project site. Projects, such as grading, large excavations, channel improvements, and bridge and culvert replacements, should also be reviewed to determine whether they will remove an existing obstruction, resulting in increases to flood flows downstream.”
- “Some projects are too small to warrant an engineering study and certification. Many of these can be determined using logic and common sense: a sign post or telephone pole will not block flood flows. Barbed wire farm fences that will be pushed over or ripped out early in the flood may also be performed without a certification; however, larger more massive fences could also be an obstruction to flood flows and may require an engineering study and certification. A driveway, road, or parking lot at grade (without any filling) won’t cause an obstruction, either.”

### **Title 20 Chapter 31 DCMR Section 3104.10**

“As applicable to the location and nature of the proposed construction or development, and in addition to the requirements of this section, the applicant shall have the following analyses prepared and sealed by a District registered professional engineer for submission with the site plan:

- (a) For activities proposed to be located in a floodway: (1) A floodway encroachment analysis that demonstrates that the encroachment of the proposed development or work will not cause any increase in the base flood elevation; or (2) If the applicant proposes to undertake activities that increase the base flood elevation, the applicant shall submit such analysis to FEMA as specified in § 3105.7 of this chapter and shall have received a Conditional Letter of Map Revision from FEMA;
- (b) For activities proposed to be located in any SFHA for which base flood elevations are included in the FIS or on the FIRM and floodways have not been designated, an encroachment analysis which demonstrates that the cumulative effect of the proposed development, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the base flood elevation more than one foot (1 ft.) at any point; and
- (c) For alteration of a watercourse, an engineering analysis prepared in accordance with standard engineering practices which demonstrates that the flood-carrying capacity of the altered or relocated portion of the watercourse will not be decreased, and certification that the altered watercourse shall be maintained in a manner which preserves the channel’s flood-carrying capacity.”

### **44 CFR 60.3(c)**

“When the Federal Insurance Administrator...has designated...special flood hazard areas without base flood elevations on the community's FIRM, but has not identified a regulatory floodway...the community shall...Require until a regulatory floodway is designated, that no new

construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.”

**44 CFR 60.3(d)**

“When the Federal Insurance Administrator...has provided data from which the community shall designate its regulatory floodway, the 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 flood;”

**Certification Template**

Applicants should use this template to certify that their project will not increase flood elevations. It is copied from Figure 5-5 on pg. 5-23 of the FEMA 480 manual.

**“NO-RISE” CERTIFICATION**

This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of \_\_\_\_\_

It is further to certify that the attached technical data supports the fact that proposed \_\_\_\_\_ (Name of Development) will not impact the 100-year flood elevations, floodway elevations, or floodway widths on \_\_\_\_\_ (Name of Stream) at published sections in the Flood Insurance Study for \_\_\_\_\_ (Name of Community) dated \_\_\_\_\_ (Study Date) and will not impact the 100-year flood elevations, floodway elevations, or floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents that support my findings:

\_\_\_\_\_

\_\_\_\_\_

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

Signature: \_\_\_\_\_

Title: \_\_\_\_\_ {SEAL}