

## D. ENCROACHMENTS

Once a permit application is received and the proposed project is ready for review, the next job is to ensure that the project will not impose flood problems on other properties.

***Basic rule #3: Development must not increase the flood hazard on other properties.***

This is more of a concern in riverine situations where a project may dam or divert flowing water onto other properties or increase flood flows downstream. To prevent this, communities adopt floodways to designate those areas where flood flows are most sensitive to changes brought by development.

Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. For streams and other watercourses where FEMA has provided BFEs, but no floodway has been designated, the community must review developments on a case-by-case basis to ensure that these increases do not occur.

## REGULATORY FLOODWAYS

***44 CFR 59.1 Definitions: "Regulatory floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.***

As explained in Unit 3, Section B, the floodway is the central portion of a riverine floodplain needed to carry the deeper, faster moving water. Buildings, structures and other development activities—such as fill—placed within the floodway are more likely to obstruct flood flows, causing the water to slow down and back up, resulting in higher flood elevations.

A floodway is included with most riverine Flood Insurance Studies and will generally be shown on the Flood Insurance Rate Map (FIRM). Some of the older Flood Insurance Studies will have a separate floodway map. The community officially adopts its "regulatory floodway" in its floodplain management ordinance.

## ENCROACHMENT REVIEW

All projects in the regulatory floodway must undergo an encroachment review to determine their effect on flood flows and ensure that they do not cause problems. Development projects in the flood fringe by definition do not increase flood heights above the allowable level, so encroachment reviews are not needed.

**44 CFR 60.3(d)(3):** *[In the regulatory floodway, communities must] 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 discharge.*

The objective of this requirement and the floodplain management ordinance to ensure that the floodway is reserved to do its natural job: carrying floodwater. The preferred approach is to avoid all development there.

Once your community adopts its floodway, you must fulfill the requirements of 44 CFR 60.3(d). The key concern is that each project proposed in the floodway must receive an encroachment review, i.e., an analysis to determine if the project will increase flood heights. You may also want to require that this review determine if the project will cause increased flooding downstream. Note that the regulations call for preventing ANY increase in flood heights. This doesn't mean you can allow a foot or a tenth of a foot – it means zero increase. If you do not limit the increase to zero, small increases in flood heights from individual developments will cumulatively have significant impacts on flood stages and flood damages. Under NFIP minimum requirements, it is assumed that there will be no cumulative effects since the permissible rise for any single encroachment is zero.

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 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 in flood flows downstream.

Your community may conduct the encroachment review, or you may require the developer to conduct it. Most local permit officials are not qualified to make an encroachment review, so most require that this be done by an engineer at the developer's expense.

As the permit reviewer, it is the community's job to ensure that an activity will not cause a problem. You have two options for doing this: For every project you could require the applicant's engineer to certify that there will be no rise in flood heights or you can make the determination for minor projects.

**Encroachment certification:** To ensure that the encroachment review is done right, you may want to require the developer to provide an encroachment certification. This is often called a "no-rise" certification because it certifies that the development project will not affect flood heights. An example of a form developed by the North Carolina state coordinating agency is shown in Figure 5-5.