

SECTION 11: REGULATORY FLOODWAYS

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11.1. THE FLOODWAY

11.1.1. The floodway concept

During the 1800's, there were many occasions when railroads and other development blocked drainage ways and floodplains. After the floods and resulting damage, the builders were sued. Since then, Illinois courts have consistently ruled that it is illegal to block the flow of surface waters so as to cause damage to others.

Basic Rule #3:

Development must not increase the flood hazard on other properties.

One of the key purposes of floodplain management is to prevent construction projects similar to those that created problems in the past. This is done by withholding the development permit until the project plans are reviewed to ensure that no obstruction to flood flows or increases in flood damages will be created.

Trying to determine a proposed project's effect on flood heights can be difficult and expensive, particularly when future developments are considered. To reduce this regulatory burden on communities and property owners, detailed Flood Insurance Studies include a map of the regulatory floodway.

11.1.2. Floodway map

44 CFR 59.1 Definitions: "Regulatory floodway" means the channel of a river or other water-course 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 Section 4, 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.

The designation of a regulatory floodway and the resulting map are based on the following legal concepts:

- ◆ Property owners should be allowed to develop their land provided they do not obstruct flood flows and cause damage to others. The Base Flood Elevation (BFE) may be allowed to increase but not if significant damage would result; and

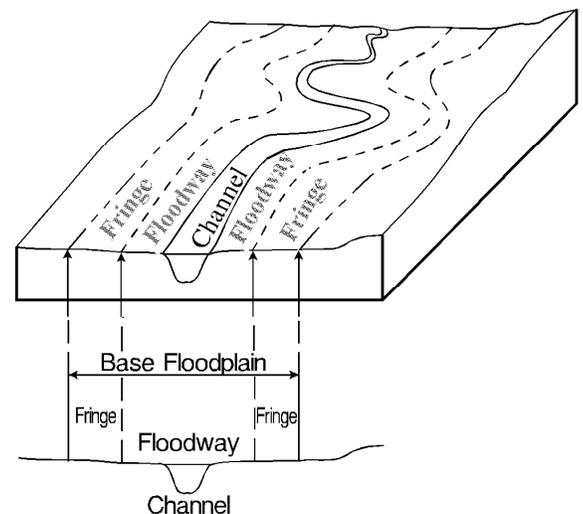


Figure 11-1: Floodway cross section and map

- ◆ Properties on both sides of a stream must be treated equitably. The degree of obstruction permitted for one must also be permitted for the other.

Floodway maps are adopted 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, developments must be reviewed on a case-by-case basis to ensure that these increases do not occur.

11.1.3. Floodway permitting

Once a floodway is delineated, the job of a local floodplain administrator is greatly simplified. When a permit application is submitted, the site location must be checked in relation to the floodway boundaries. If the site is in an identified fringe (in other words, outside of the floodway), the floodplain administrator knows that the development will not cause flood damage to others by blocking flood flows: the floodway study already calculated that fringe obstructions will not cause a significant increase in flood heights.

Note: this does not mean that the development will not create a localized drainage problem, only that it will not block the flow of waters from flooding of the stream that was studied.

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;*

In Illinois, when a development site is determined to be within the floodway, the applicant must first obtain a permit or “letter of permit not required,” from the Illinois Department of Natural Resources, Office of Water Resources (IDNR/OWR).

In both cases, a local permit is still required to ensure that all the other requirements of the local ordinance are met.

11.1.4. Changing the floodway

In some situations, it may be in the public interest to allow an increase in flood heights greater than allowed under the IDNR/OWR or NFIP regulations. For example, it would be hard to build a flood control reservoir without affecting flood heights. Because a dam would have a major impact on flood heights, there needs to be a way to permit such projects, especially those that are intended to reduce flooding.

However, when the project will change the flood level, the floodway maps must be changed to reflect the new hazard. Floodway maps can also be revised to reflect changed conditions and/or

better ground information. The process for doing this is explained under the section on map revisions in Section 7.

11.1.5. Streams without floodway maps

In some areas, floodways have not been designated because of high costs and historically low development pressure. If the community has a FIRM with base flood elevations along rivers or streams, but no mapped floodway, all development must be evaluated to ensure that it will not increase flood stages by more than one foot (0.1 foot in Illinois).

44 CFR 60.3(c)(10): *[Communities must] 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.*

Under IDNR/OWR rules, this requirement applies even to those areas without base flood elevations that meet the minimum drainage area requirements (see Section 11.2). Communities with riverine floodplains and no mapped floodway must still make sure that new development will not cause increased flood heights and damages.

An applicant for any work in the floodplain can be referred to IDNR/OWR for State review of the project if there is any question when their approval is necessary. The State review will ensure that this standard is met, either by a determination that the site is not in the floodway, or by a detailed review of the project proposal. In some communities, the State has delegated their permit authority for certain types of floodplain development.

In either case, IDNR/OWR can provide notification of its determination to both the applicant and the community. If an IDNR/OWR determination is not available (e.g., the project is in a small drainage area not under IDNR/OWR's jurisdiction) the floodplain administrator should require sufficient plans and data from the applicant to determine that the project will not damage other properties.

11.2. IDNR/OWR FLOODWAY PERMITS

In accordance with the Rivers, Lakes and Streams Act, 615 ILCS 5/29a, the IDNR/OWR regulates all public water construction activities and all construction activities in the floodways of streams:

- ◆ draining 1 square mile (640 acres) or more in urban areas or
- ◆ 10 square miles (6400 acres) or more in rural areas.

The purposes of IDNR/OWR's regulations are to protect the public interests and uses in the state's public bodies of water and to prevent increased flood damage. IDNR/OWR does not have authority to ensure that the building protection standards and other requirements of the National Flood Insurance Program or of the local ordinance are met.

Application for an IDNR/OWR floodway permit is made on the joint application form that is discussed at the end of Section 10. Communities should have a supply of these forms on hand for applicants for permits for projects found to be in a floodway.

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

11.2.1. Exemptions

Some projects are too small to warrant an engineering study and the work to apply for, review, and issue an IDNR/OWR floodway permit. For example, a sign post should not block flood flows. A driveway, road, or parking lot at grade (without any filling) should not cause a problem, either.

Over the years, certain minor construction activities have been exempted from IDNR/OWR floodway review either by legislative action or administrative decision. Exempted activities include:

- ◆ Installation of field tile systems, tile outlet structures, and any water or sediment control construction activity in any floodway land (overbank) area which would not obstruct flood flows, such as grade stabilization structures and waterways.
- ◆ Installation of irrigation equipment in any floodway land (overbank) area.
- ◆ Work on private lakes which would not impact the dam or traverse the lake such as the construction of boat docks, bank stabilization and maintenance dredging.
- ◆ Removal of brush, woody vegetation, trash, or other debris.
- ◆ Routine maintenance and repair of existing structures.
- ◆ Maintenance and repair to preserve design capacity and function, of artificially improved stream channels, drainage ditches, levees and pumping stations.

Projects that are not exempted must be permitted by IDNR/OWR.

11.2.2. Types of permits

IDNR/OWR issues three types of permits:

- ◆ Statewide
- ◆ Regional
- ◆ Formal

Statewide and Regional permits are ‘blanket type’ permits that authorize many relatively minor projects. Regional permits have only been issued in northeastern Illinois and are discussed in Section 11.3.2.

Formal permits are issued to authorize major projects and minor projects that cannot be authorized by a Statewide or Regional Permit. Issuance of a 21 day public notice is required for dams, projects in a public body of water, and projects in Northeastern Illinois that change the regulatory floodway boundary or flood profile.

11.2.3. Statewide permits

Statewide Permits reduce the permit workload for small projects and projects that will not create obstructions to flood flows. Twelve Statewide Permits have been issued to authorize various minor projects across the State. Note that Statewide Permits are not applicable in mapped floodways in the six northeastern Illinois counties.

All projects that are built in accordance with the terms and special conditions of a Statewide Permit are authorized by that Statewide Permit. Projects built in accordance with a Statewide Permit do not need individual permit applications. Authorization of a project under a Statewide Permit does not supersede nor relieve the permittee's responsibility to obtain other Federal, State, or local permits.

Remember:

1. Local ordinance requirements must still be met
2. These Statewide Permits are not applicable in Northeastern Illinois

The 14 Statewide Permits are listed here. If an application is received for a project that looks like one of these, the floodplain administrator should get a copy of that Statewide Permit and verify that the project fully complies with the conditions. If it does, it can be allowed without a separate application for an IDNR/OWR floodway permit.

- Statewide permit No. 1. authorizes flood fringe construction on the lower Rock River in Rock Island County.
- Statewide permit No. 2. authorizes construction of some bridge and culvert structures in rural areas.
- Statewide permit No. 3. authorizes mooring facilities for barge fleeting purposes.
- Statewide permit No. 4. authorizes aerial utility crossings.
- Statewide permit No. 5. authorizes minor, non-commercial boat docks.
- Statewide permit No. 6. authorizes minor, non-obstructive construction activities, such as light poles, sidewalks, and playground equipment. This permit authorizes work in the overbank area only. Other minor activities may meet the intent of Statewide Permit No. 6 but plans of the activity must be submitted to IDNR for review and a determination.
- Statewide permit No. 7. authorizes outfalls, including pipes, and ditches.
- Statewide permit No. 8. authorizes underground pipeline and utility crossings. There are many streams that are excluded from this Statewide Permit that are listed on the permit.
- Statewide permit No. 9. authorizes minor shoreline and streambank protection activities.
- Statewide permit No. 10. authorizes accessory structures and additions to existing residential buildings.
- Statewide permit No. 11. authorizes minor maintenance dredging activities.
- Statewide permit No. 12. authorizes specified State and County bridge and culvert replacement structures.
- Statewide permit No. 13. authorizes temporary construction activities.
- Statewide permit No. 14. authorizes special uses of public waters.

11.2.4. Conveyance shadow

Building additions, swimming pools, garages, 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.

Determining the limits of the conveyance shadow is illustrated in Figure 11-2. Small structures located completely within the shadow may be permitted without an extensive hydraulic analysis.

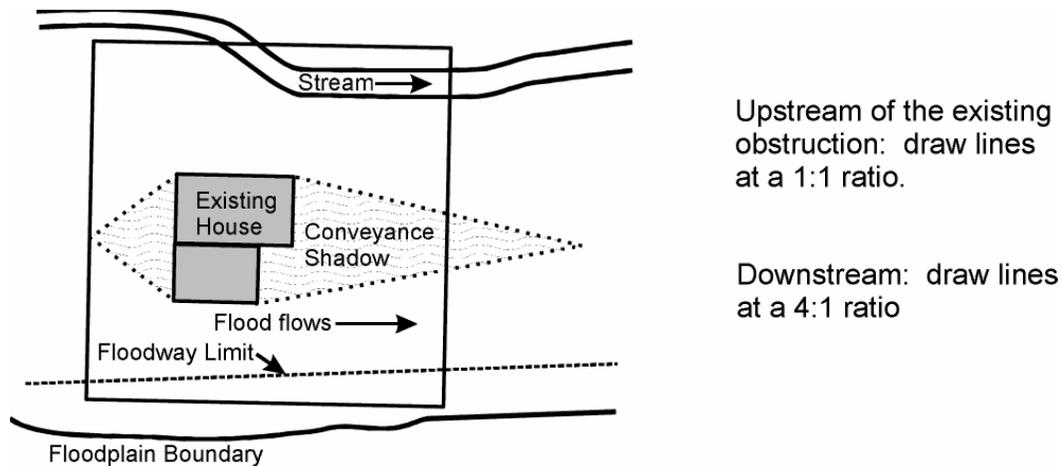


Figure 11-2: Determining the conveyance shadow

Note: Although a small structure can be located in the conveyance shadow, it is still preferable to keep all development out of the floodway. Don't forget: all buildings must be elevated or otherwise protected from the base flood and compensatory storage and other requirements still apply.

11.2.5. Watercourse alterations

44 CFR 60.3(b)(6) [The community must] Notify, in riverine situations, adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse, and submit copies of such notifications to the [Federal Insurance and Mitigation] Administrator;

In addition to receiving an IDNR/OWR permit, a community must notify adjacent communities and IDNR/OWR prior to altering or relocating any river or stream within its jurisdiction. Copies of such notifications must be submitted to the FEMA Regional Office.

44 CFR 60.3(b)(7) [The community must] Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;

Any alteration or relocation of a watercourse should not increase the community's flood risks or those of any adjacent community. This could happen if the watercourse's capacity to carry flood

flow is reduced because a smaller or less-efficient channel is created, or by modifications to the floodway as a result of the project.

After altering a watercourse, the developer has created an artificial situation and must assume responsibility for maintaining the capacity of the modified channel. Otherwise, flooding is likely to increase as the channel silts in, meanders or tries to go back to its old location.

For any significant alteration or relocation, a floodplain administrator should consider requiring the applicant to have an engineer certify that the flood-flow carrying capacity is maintained and that there will be no increase in flood flows downstream.

It is recommended that the floodplain administrator require the submittal and approval of a CLOMR from FEMA for large-scale proposals (see CLOMR procedures discussion in Section 7).

11.3. NORTHEASTERN ILLINOIS

There are some special requirements for floodway construction in northeastern Illinois. These were implemented following the severe flooding in the area in 1986 and 1987.

Note that some requirements only apply to where a floodway map has been issued and adopted. Others apply to floodways in both areas that have been mapped and in those areas where the maps have not been made.

Remember: every stream has its floodway whether or not a government agency has shown it on a published map.

11.3.1. Appropriate uses

In northeastern Illinois, only appropriate uses are allowed in a floodway. “Appropriate uses” are activities which:

- ◆ will not cause a rise in the base flood elevation,
- ◆ will not create a damaging or potentially damaging increase in flood heights or velocity,
- ◆ will not be a threat to public health and safety and welfare, and
- ◆ will not impair the natural hydrologic and hydraulic functions of the floodway or channel, or permanently impair existing water quality or aquatic habitat.

The “appropriate uses” requirement is unique to the six northeastern counties. IDNR/OWR’s approved appropriate uses are as follows (this list is probably in the local ordinance):

- ◆ Flood control structures, dikes, dams, and other public works or private improvements relating to the control of drainage, flooding, erosion, or water quality or habitat for fish and wildlife;
- ◆ Buildings, structures, or other facilities relating to the use of, or requiring access to, the water or shoreline, such as instream aeration and similar treatment facilities, and facilities and improvements related to recreational boating, commercial shipping and other functionally water dependent use;
- ◆ Storm and sanitary sewer relief outfalls;
- ◆ Underground and overhead utilities;
- ◆ Open space and recreational facilities such as playing fields and trail systems, including any related fencing (at least 50 percent open when viewed from any one direction) built parallel to the direction of flood flows;
- ◆ Detached garages, storage sheds, or other non-habitable accessory buildings that will not block flood flows nor reduce floodway storage;
- ◆ Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;
- ◆ Parking lots built at or below existing grade where either:
 - (a) The depth of flooding at the 100-year frequency flood event will not exceed 1.0 foot, or
 - (b) The applicant of a short-term recreational use facility parking lot, formally agrees to restrict access during overbank flooding events and accepts liability for all damage caused by vehicular access during all overbank flooding events.
- ◆ Designated floodway regrading, without fill, to create a positive non-erosive slope toward a watercourse. Regrading or other modifications of the floodway for the convenience of site design for a private development is not considered an appropriate use;
- ◆ Floodproofing activities to protect previously existing lawful buildings including dry floodproofing a building and the construction of floodwalls where the outside toe of the floodwall shall be no more than ten (10) feet away from the exterior wall of the existing building;
- ◆ The replacement, reconstruction, or repair of a damaged building, provided that the outside dimensions are not increased;
- ◆ Modifications to an existing building that will not increase the enclosed floor area of the building below the flood protection elevation (see Section 12) and which will not block flood flows, including, but not limited to, fireplaces, bay windows, decks, patios, and second story additions.

Appropriate uses do not include:

- ◆ The construction or placement of any new buildings, fill, or building additions;
- ◆ Critical facilities or wastewater treatment plants;
- ◆ Excavation or channel modifications done to accommodate otherwise non-appropriate uses in the floodway;
- ◆ Fencing (including landscaping or planting designed to act as a fence);
- ◆ Storage of materials except as specifically defined above as an appropriate use.

Repairs to damaged buildings in the floodway are allowed provided that the repairs are less than 50 percent of the market value of the structure before it was damaged and the outside dimensions of the building are not increased. Note that if damage is greater than 50 percent of the pre-flood market value, then the building must meet the ordinance's substantial damage provisions which are explained in Section 16.

11.3.2. Regional permits

Three Regional Permits have been issued to authorize minor projects in designated floodways in Cook, DuPage, Kane, Lake, McHenry, and Will Counties.

Regional Permits No. 1 and 2 were issued by the Illinois Department of Transportation, Division of Highways for minor highway improvements and are not addressed here.

Regional Permit No. 3 was issued by IDNR/OWR to authorize other minor improvements. As with the Statewide Permits, a completed application form and plans do not need to be submitted. All projects that meet the terms and special conditions of Regional Permit No. 3 are allowed. However, this does not relieve the permittee of the responsibility to obtain other federal, state, or local authorizations.

Regional Permit No. 3 authorizes the following minor projects in Northeastern Illinois regulatory floodways:

- ◆ Underground and overhead utilities
- ◆ Storm and sanitary sewer outfalls
- ◆ Sidewalks
- ◆ Patios
- ◆ Athletic fields and playground equipment
- ◆ Streambank protection activities

Regional Permit No. 3 does not authorize utility crossings across certain streams that are noted in the regional permit. Other minor projects not specifically listed are not authorized by Regional Permit No. 3 and must receive a formal permit.

11.3.3. Compensatory storage

The NFIP floodway standard in 44 CFR 60.3(d) restricts new development from obstructing the *flow* of water and increasing flood heights. However, this provision does not address the need to maintain flood *storage*.

Especially in flat areas, the floodplain provides a valuable function by storing floodwaters. When fill or buildings are placed in the flood fringe, the flood storage areas are lost and flood heights will go up because there is less room for the floodwaters. This is particularly important in smaller watersheds which respond sooner to changes in the topography.

For this reason, IDNR/OWR requires compensatory storage in any northeastern Illinois regulatory floodway if storage will be lost from fill or structures (including flood control projects) placed in the floodway. The developer is required to offset new fill put in the floodplain by excavating an additional floodable area to replace the lost flood storage area.

This should be done at “hydraulically equivalent” sites — fill put in below the 10-year flood elevation must be compensated by removal of soil below that elevation elsewhere in the floodplain. Fill above the 10-year and below the 100-year must be compensated within that level. All such excavations must be constructed to drain freely and openly to the watercourse.

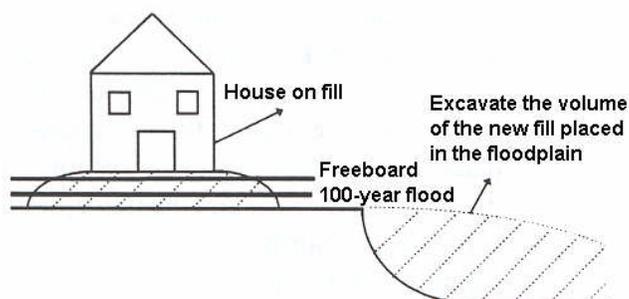


Figure 11-3: How compensatory storage works

IDNR/OWR and the Northeastern Illinois Planning Commission recommend additional compensatory storage regulations. See Section 13.5.2. for further details.

Storage floodways are normally wider than conveyance floodways and will result in the more stringent “appropriate uses” requirements being enforced in a larger area of the community. In SFHAs where floodways are not identified, compensatory storage must be provided.



The Community Rating System credits prohibition of fill and compensatory storage under Activity 430, Section 431.f in the *CRS Coordinator’s Manual* and the *CRS Application*. See *CRS Credit for Higher Regulatory Standards* for example regulatory language.