**Section 3708.70 Permitting Appropriate Uses of the Regulatory Floodway**

a) The Department will issue permits for appropriate uses of the regulatory floodway of which *periodic inundation will not pose a danger to the general health and welfare of the user or require the expenditure of public funds or the provisions of public resources or disaster relief services* (Section 18g of the Act) or result in increased flood stages due to the singular or cumulative loss of regulatory floodway storage or regulatory floodway conveyance or increase in flood velocities.

b) To receive a permit for work in the regulatory floodway, the proposed construction shall meet two criteria:

1) The proposed construction shall be an appropriate use of the regulatory floodway as defined in subsection (c); and

2) The proposed construction shall not reduce the regulatory floodway storage or conveyance and shall not increase regulatory floodway velocities.

c) Appropriate uses of the regulatory floodway that will be considered for permit issuance consist of construction, modification, repair, or replacement of:

1) *Flood control structures, dikes, dams and other public works or private improvements relating to the control of drainage, flooding or erosion* (Section 18g of the Act) or water quality or habitat for fish and wildlife (e.g. Section 3708.80(a)(3) and(4));

2) *Structures or facilities relating to the use of, or requiring access to, the water or shoreline, such as pumping and treatment facilities, and facilities and improvements related to recreational boating, commercial shipping and other functionally dependent uses* (Section 18g of the Act);

3) Storm and sanitary sewer outfalls;

4) Underground and overhead utilities;

5) Recreational facilities such as playing fields and trail systems including any related fencing built parallel to the direction of flood flows;

6) Detached *Garages, storage sheds, or other* non-habitable *accessory structures to existing buildings that will not block flood flows. This does not include the construction* or placement *of any other new structures*, (Section 18g of the Act) fill, building additions, buildings on stilts, fencing (including landscaping or plantings designed to act as a fence) and the storage of materials;

7) Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;

8) 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 parking lot is for short-term outdoor recreational use facilities where the applicant agrees to restrict access during overbank flooding events and agrees to accept liability for all damage caused by vehicular access during all overbank flooding events;

9) Aircraft parking aprons built at or below ground elevation where the depth of flooding at the 100-year frequency flood event will not exceed 1.0 foot;

10) Regulatory floodway regrading, without fill, to create a positive slope toward a watercourse;

11) Flood proofing activities to protect existing structures such as, but not limited to, constructing water tight window wells, and elevating;

12) The replacement, reconstruction or repair of a damaged building, provided that the outside dimensions of the building are not increased, and provided that, if the building is damaged to 50% or more of the building's market value before it was damaged, the building will be protected from flooding to or above the 100-year frequency flood elevation; and

13) Modifications to an existing building that would not increase the enclosed floor area of the building below the 100-year frequency flood elevation, and which will not block flood flows including but not limited to, fireplaces, bay windows, decks, patios and second story additions.

d) The construction of an appropriate use below the 100-year frequency flood elevation will be considered permissible provided the proposed project meets the following criteria and is so stated in writing with supporting plans, calculations and data by a registered professional engineer or in the case of a federal project, by the federal agency:

1) In the case of the construction of a new bridge or culvert crossing and roadway approach, the proposed structure shall not result in an increase of upstream flood stages greater than 0.1 foot when compared to the existing conditions for all flood events up to and including the 100-year frequency event; or the upstream flood stage increases will be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements; or a flood control project is built to mitigate the increased backwater due to the structure.

2) In the case of bridge and culvert reconstruction or modification, the bridge or culvert and roadway approach reconstruction or modification shall be constructed with no more than 0.1 foot increase in backwater over the existing flood profile for all flood frequencies up to and including the 100-year event, if the existing structure is not a source of flood damage. The proposed construction shall meet the following criteria:

A) The proposed structure, including approach roads, does not result in an increase in upstream stages for normal and flood flows when compared to the existing structure.

B) On publicly navigated waterways, the proposed structure is not an obstruction to navigation.

C) The determination as to whether the existing structure is a source of flood damage shall be made according to the following method:

i) Determine the increase in upstream flood profile due to the existing bridge or culvert by calculation or from the flood study used to delineate the regulatory floodway for all reported flood profiles up to and including the 100-year flood.

ii) Determine if there are any buildings or structures located in the 100-year flood plain upstream of the existing bridge or culvert that may be subjected to flooding. The upstream flood plain shall be checked for the length of stream required for the backwater impacts due to the existing bridge or culvert to be reduced to 0.1 foot or less.

iii) Collect the low opening elevations or lowest damageable elevations of the upstream buildings and structures as identified in subsection (d)(2)(c) (ii), above. Determine if any buildings or structures are subject to inundation by the 100-year frequency flood event.

3) In the case of bridge or culvert reconstruction and modification, if the existing bridge or culvert and roadway approach is a source of flood damage to buildings or structures in the upstream flood plain, based on the above review, the applicant's engineer must evaluate the feasibility of redesigning the structure to reduce the existing backwater, taking into consideration the effects on flood stages on upstream and downstream properties.

A) The applicant's engineer must submit to the Department his or her evaluation to justify why the proposed structure should be designed to allow an increase in the upstream flood stage of more than 0.1 foot when compared to a flood stage without the existing bridge or culvert or roadway approach in place for all flood events up to and including the 100-year frequency event.

B) The evaluation shall also consider the feasibility of containing the upstream flood stage increases within the channel banks (or within existing vertical extensions of the channel banks such as within the design protection grade of existing levees or flood walls), or within recorded flood easements; or constructing a flood control project to mitigate the increased backwater due to the structure.

4) In the case of any other on-stream structure built for the purpose of backing up water in the stream during normal or flood flows, but not permitted as a dam according to 17 Ill. Adm. Code 3702 (Construction and Maintenance of Dams), the proposed structure shall not result in an increase of upstream flood stages greater than 0.0 foot when compared to the existing conditions, for all flood events up to and including the 100-year frequency event; or the upstream flood stage increases will be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements; or a flood control project is built to mitigate the increased backwater due to the structure.

5) In the case of the construction of appropriate uses other than bridge or culvert crossings, on-stream structures or dams, all effective regulatory floodway conveyance lost due to the project will be replaced for all flood events up to and including the 100-year frequency flood. In calculating effective regulatory floodway conveyance, the following factors must be taken into consideration:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A) | Regulatory flood way conveyance,  | K | = | 1.486 AR (⅔) |
| n |

where "n" is Manning's roughness factor, "A" is the effective area of the cross-section, and "R" is the ratio of the area to the wetted perimeter. (See Open Channel Hydraulics, Ven Te Chow, 1959 Edition, McGraw-Hill Book Company, New York, New York. This incorporation contains no later editions or amendments).

B) The same Manning's "n" value shall be used for both existing and proposed conditions unless a recorded maintenance agreement with a federal, state or local unit of government can assure the proposed conditions will be maintained or the land cover is changing from a vegetative to a non-vegetative land cover.

C) Transition sections must be provided and used in calculations of effective regulatory floodway conveyance. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to the Department through engineering calculations and model tests that more abrupt transitions may be used with the same efficiency:

i) When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length.

ii) When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length.

iii) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.

iv) Transition sections shall be provided between cross-sections with rapid expansions and contractions and when meeting the regulatory floodway delineation on adjacent properties.

v) All cross-sections used in the calculations must be located perpendicular to flood flows.

6) For all appropriate uses, compensatory storage shall be provided for any regulatory floodway storage lost due to the proposed work from the volume of fill or structures placed and the impact of any related flood control projects. Artificially created storage lost due to a reduction in head loss behind a bridge shall not be required to be replaced. The compensatory regulatory floodway storage must be placed between the proposed normal water elevation and the proposed 100-year flood elevation. All regulatory floodway storage lost below the existing 10-year flood elevation must be replaced below the proposed 10-year flood elevation. All regulatory floodway storage lost above the existing 10-year flood elevation must be replaced above the proposed 10-year flood elevation. If the compensatory storage will not be placed at the location of the proposed construction, the applicant's engineer must demonstrate to the Department through a determination of flood discharges and water surface elevations that the compensatory storage is hydraulically equivalent.

7) For all appropriate uses, except bridges or culverts or on-stream structures, the proposed work will not result in an increase in the average channel or regulatory floodway velocities. However in the case of bridges or culverts or on-stream structures built for the purpose of backing up water in the stream during normal or flood flows, velocities may be increased at the structure site if scour, erosion and sedimentation will be avoided by the use of rip-rap or other design measures.

8) When excavation is proposed in the design of the bridge and culvert openings, including the modifications to and replacement of existing bridge and culvert structures, or to compensate for lost conveyance for other appropriate uses, transition sections must be provided for the excavation. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to the Department through engineering calculations and model tests that more abrupt transitions may be used with the same efficiency:

A) When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length;

B) When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length; and

C) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.

9) If the 100-year regulatory floodway elevation at the site of the proposed construction is affected by backwater from a downstream receiving stream with a larger drainage area, the proposed construction shall be shown to meet the requirements of this section for the 100-year frequency flood elevations of the regulatory floodway conditions and conditions with the receiving stream at normal water elevations. However, for bridge and culvert construction or reconstruction, a smaller bridge or culvert may be built if it can be demonstrated to the Department that the proposed structure would meet the requirements of this section for the 100-year frequency flood elevation of the regulatory floodway flood study profile and would not be a source of flood damage as determined according to the method described in subsections (d)(2)(C)(i)-(iii), to any existing upstream building or structure when analyzed as follows:

 The proposed bridge or culvert shall be analyzed for a 100-year flood frequency flow on the tributary stream and for all tailwater elevations on the receiving stream between and including the normal water elevation and the 10-year flood frequency elevation.

10) If an applicant learns from the Department, local government or a private owner that a downstream restrictive bridge or culvert is scheduled to be removed, reconstructed, modified, or a public flood control project is scheduled to be built within the next five years, the proposed construction shall be analyzed and shown to meet the requirements of this Section for both the existing conditions and the expected flood profile conditions when the bridge, culvert or flood control project is built.

11) In the case of flood proofing activities, if construction is required beyond the outside dimensions of an existing building, the flood proofing construction shall be placed as close as possible to the existing building and be the minimum width necessary to protect the building. Compensation of lost storage and conveyance will not be required for flood proofing activities.

12) For public flood control projects (as defined in Section 3708.20), the permitting requirements of this Section will be considered met if the applicant can demonstrate to the Department through hydraulic and hydrologic calculations that the proposed project will not singularly or cumulatively result in increased flood heights outside the project right-of-way or easements for all flood events up to and including the 100-year frequency event.

13) If the appropriate use would result in a change in the regulatory floodway location or the 100-year frequency flood elevation, the applicant shall submit to the Department and to FEMA all the information, calculations and documents necessary to be issued a conditional regulatory floodway map revision and receive from the Department a conditional approval of the regulatory floodway change before a permit is issued. However, the final regulatory floodway map will not be changed by the Department until as-built plans are submitted and accepted by FEMA and the Department. In the case of non-government projects, the municipality in incorporated areas and the county in unincorporated areas must concur with the proposed conditional regulatory floodway map revision before Department approval can be given.

14) All engineering analyses shall be performed by or under the supervision of a registered professional engineer, except in the case of a federal project.

15) All dams, as defined by 17 Ill. Adm. Code 3702, shall meet the permitting requirements of Part 3702 (Construction and Maintenance of Dams).

(Source: Amended at 18 Ill. Reg. 11284, effective July 5, 1994)