

IOWA DEPARTMENT OF NATURAL RESOURCES
Flood Plain Management Program

Gaining Approval for Buildings and Houses

For information on when a permit is required and what criteria must be met to obtain a permit, please refer to the “Flood Plain Management Procedural Guide for Buildings and Houses” which can be found within <http://www.iowadnr.gov/water/floodplain/index.html>.

If you know your proposed construction site is in the flood plain and you know the appropriate minimum protection level (MPL) and floodway limits, please skip to Part 2 of this document, “Applying for Approval for Flood Plain Development: Buildings and Houses”.

If you are unsure, please continue to Part 1 of this document (below).

Part 1 – Minimum Project Information Requirements:

Basic site information is necessary to determine if a project site is located on a flood plain regulated by the Iowa DNR. The checklist below lists the minimum information that must be submitted for this department to make the determination. The information will also allow the department to check on the availability of information that would allow us to determine the MPL and the floodway limits (minimum offset from the stream).

- _____ Project description: engineering plans or concept plans (if available) or a narrative description.
- _____ Project location in “section - township – range” format or the street address (in an urban area) if accompanied by a city map identifying the project site.
- _____ A United States Geological Survey (USGS) topographic map or an aerial photo clearly identifying the project location. The scale of the aerial photo or topographic map must be marked on the photo or map. Crop (compliance) photos available from the county Farm Service Agency are satisfactory for this purpose. Also, aerial photos and topographic maps which can be found on-line at <http://ortho.gis.iastate.edu/> make good site maps.
- _____ A to-scale (preferred) or fully dimensioned site plan showing the project features (both existing and proposed), the stream, roads, property lines and other pertinent physical features.

If the department has the necessary flood information available, the MPL and the floodway limits will be provided to you.

Please be aware that the information listed above may not be sufficient for the DNR reviewer to determine whether or not a proposed building site is located in the flood plain. In some cases, the DNR reviewer may need to request additional information. That information could include the following:

- The surveyed elevation of the lowest natural ground within the footprint of the proposed structure, or, if fill is to be placed for a building pad, the surveyed elevation of the lowest natural ground at the proposed location of the toe of the fill.
- Stream valley cross section(s) taken perpendicular to the direction of flow through the project area, representing typical conditions or located as shown on the attached topographic map. Include a site map showing where the cross section(s) was taken. It is recommended that the survey be based on the National Geodetic Vertical Datum of 1929 (NGVD 1929). Regardless of the survey datum used,

IOWA DEPARTMENT OF NATURAL RESOURCES
Flood Plain Management Program

that datum reference and a benchmark description must be included on the prepared cross section. The cross section must be prepared by a professional engineer or land surveyor licensed in the State of Iowa.

- A site-specific stream slope based on a minimum of two survey shots taken on the water surface at least 500 feet apart.

Once the requested information has been reviewed by a DNR flood plain management program reviewer, you will be informed whether or not the site is situated on a regulated flood plain and, if so, you will be provided with the MPL and floodway limits for that location.

Once you know the MPL and the floodway limits for the site, the design plans will need to be completed incorporating the elevation (MPL) and minimum offset (floodway) data. When the design plans are complete, you are ready to proceed to Part 2 - "Applying for Approval for Flood Plain Development: Buildings and Houses".

Part 2 - Applying for Approval for Flood Plain Development: Buildings and Houses

In order for an application for a building or house to be considered complete and to allow the Department to conduct a review of the project, all items listed in the "Application for Approval Checklist for Flood Plain Development: Buildings and Houses" (page 3 of this document) must be submitted to the department.

After a completed application and project plan have been received, the project will be reviewed to assure that it meets all applicable DNR criteria for approval, as listed in the "Flood Plain Management Procedural Guide for Buildings and Houses".

Permits are issued with both general and special conditions. General conditions include, for example, the expiration date of the permit and the requirement for the applicant to secure all other necessary permits, obtain all lands, easements and rights-of-way for the project, Special conditions are more specific and include requiring the building to be constructed at a minimum elevation (the minimum protection level or MPL), requiring an elevation certificate upon completion of construction, prohibiting some or all of a structure from being finished and restricting the use of all or portions of a building.

Other Permits

In addition to the flood plain development permit from this department, building construction and placement of associated fill may require a permit from the local zoning department. Also, a Section 404 Permit from the U.S. Army Corps of Engineers may be required for the project. You should contact the local zoning department and the Corps to determine their permit requirements. The Rock Island District of the Corps is responsible for regulation in a majority of the state. The Corps can be contacted at: United States Army Engineer District, Rock Island Corps of Engineers, Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004 or phone 309/794-5373.

IOWA DEPARTMENT OF NATURAL RESOURCES
Flood Plain Management Program

**Application for Approval Checklist for Flood Plain Development:
Buildings and Houses**

- Completed and signed application (Form 36, *Joint Application Form - Protecting Iowa Waters*). Please indicate if the project site is inside the incorporated limits of a city by using the word 'in' when listing the city in item 7 of the application. An application form can be downloaded from the following website: <http://www.iowadnr.gov/water/floodplain/index.html>.

- A topographic map or an aerial photo showing the location of the house. The following website can be used to obtain topographic maps and aerial photos for the project:
<http://ortho.gis.iastate.edu/>.

- A to-scale (preferred) or fully dimensioned site plan showing the house/building, stream, roads, property lines and other pertinent physical features.

- A basic floor plan of the structure showing the outside dimensions of the structure.

- Front, back and side views of the structure.

- Anchorage description or detail for flood protection method for an LP tank, if part of the proposal.

- Completed "Flood Protection Method Checklist: Buildings and Houses" (pages 4 and 5 of this document).

- Flood maps published by the Federal Emergency Management Agency (if available for the site) overlaid on the site plans to identify the location of the project relative to the flood plain and floodway.

IOWA DEPARTMENT OF NATURAL RESOURCES
Flood Plain Management Program

Flood Protection Method Checklist: Buildings and Houses

Buildings and residential structures must be protected to the appropriate minimum protection level (MPL) by one of the following methods. For example, houses are classified as “high damage potential” and the MPL for houses is the 100-year flood elevation plus 1 foot. There are several methods of meeting the MPL requirement. Please indicate how your building will be protected from flooding and provide all additional information (as indicated by any additional checkboxes) required for the specific flood protection method.

Building Elevated on Fill with a slab on grade type construction.

Building Elevated on stilts (piers, pilings, etc.). ** (With area below the elevated building remaining open).

The following must be clearly indicated on the plans:

Size and spacing of the stilts (piers, pilings, etc.)

Building with a Basement. A basement is defined as any fully enclosed area that has its lowest floor below adjacent grades on all sides. A basement must satisfy the following criteria:

- Basement walls and floors below the applicable minimum protection level (MPL) shall be structurally designed and constructed to be watertight to the MPL with walls and floors that are substantially impermeable to the passage of water.
- All structural components must be able to withstand debris impact forces, and hydrostatic and hydrodynamic forces, including the effects of buoyancy, associated with a water table elevation equivalent to the minimum protection level.
- All utilities located below the MPL (such as sanitary sewer drains) shall be equipped with automatic closure valves to prevent backflow.

Please note that many communities prohibit construction of basements in the flood plain. You should check with your local building or zoning official prior to having a structural design completed for your basement.

The following must be clearly indicated on the plans:

Structural design plans for the basement.

Certification by a professional engineer licensed in the State of Iowa that the basement design meets the above listed criteria.

IOWA DEPARTMENT OF NATURAL RESOURCES
Flood Plain Management Program

Building that is elevated on an enclosed area below the lowest floor (Minimum Protection Level) that is not a basement (as defined above). ** The lower enclosed area must satisfy all of the criteria listed below:

- The enclosed area must be designed to equalize hydrostatic pressure during floods by providing a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. The openings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic entry and exit of floodwaters. Windows and doors are not considered acceptable openings under this requirement because they require manual operation.
- The bottom of all openings shall be no higher than one foot above the adjacent grade.
- The enclosed area must remain unfinished (not carpeted, drywalled, etc.) and used solely for low damage potential uses such as building access, parking or storage.
- Machinery and service facilities (e.g., hot water heater, furnace, electrical service) contained in the enclosed area must be situated at least one (1) foot above the 100-year flood level.

The following must be clearly indicated on the plans:

Number and size of flood vents: _____. Please note that standard windows, service doors and overhead doors do not meet the requirements of flood vents since they require manual operation.

Location of the flood vents shown on the floor plan.

Total area of flood vents/openings: _____square inches.

Total enclosed area subject to flooding: _____ square feet

All utilities (furnace, air conditioner, hot water heater, water softener, non-submersible water pump, electrical services and other utilities) are elevated above the MPL.

Sanitary sewer drains below the MPL are provided with automatic closure valves to prevent backflow.

** Please note that the department does not undertake a review of the structural aspects of the stilts, piers, pilings or other extended footing plans. The applicant should have the structural stability of such a plan reviewed by a structural engineer or other qualified individual.