

## Flood Plain Management for CDBG Projects



## Two main questions, right?

- Is my project proposed to be located on a flood plain?
- If so, what criteria must the project meet to gain DNR Flood Plain Program approval?

## The process for seeking approval:

- 1) PGA Project Research
  - PGA researches project and decides that project is in the flood plain (or it's too close to call).
- 2) PGA Initial Submittal
  - PGA submits project description and accurate location maps to DNR via letter.
- 3) DNR FP Initial Review
  - DNR reviews submittal, decides if DNR has approval authority, and if so, replies with the Q100 elevation and floodway boundaries for use in project design.

(It really can be this easy!)

- 4) PGA Communicates with Design Consultant
  - PGA provides information to consultant, who proceeds with design.
- 5) Design Consultant at Work
  - Design consultant completes site plan. Submits site plans to DNR with Joint Application Form, continues to finalize detailed design plans.
- 6) DNR FP Final Review
  - DNR reviews site plan. Verifies that the Q100 elevation and floodway boundaries provided were used. Issues construction permit.

## Background

- Legislative authority:
  - 455B.264 – Jurisdiction
  - 455B.275 – Powers of the commission and the director
- Administrative Rules
  - 567 IAC Chapters 70 through 76
- Approx. 16,000 approvals since 1925
  - First Permit – March of 1925
  - Mill dam for the City of Charles City

## Types of Projects

- Bridges, culverts, roadways
- Channel modifications
- Dams, dikes
- Levees, flood protection
- Waste treatment facilities
- Water treatment facilities
- Sanitary landfills
- Buildings and associated fill
- Pipeline/utility crossings
- Stream protective devices
- Boat docks
- Excavations
- Animal feeding operations
- Deposits and obstructions not otherwise listed

## The applicable rules, at first glance ...

- 567-70.517A, 45B, 481A) Requesting approval of flood plain development.
- 70.4(1) Development/land use approval. Any development in a floodway or flood plain which exceeds the thresholds in 567-Chapter 71 and is not otherwise regulated by a department flood plain management order or a department approved local adopted flood plain management ordinance requires a department flood plain development permit.
- 70.4(2) Approval for a flood plain development permit. Application for a flood plain development permit shall be made on DNR Form 36 or a reasonable facsimile thereof. The application shall be submitted by or on behalf of the person or persons who have or will have responsibility by reason of ownership, lease, or easement for the property on which the project site is located. The application must be signed by the applicant or a duly authorized agent. Completed applications along with supporting information shall be mailed or otherwise delivered to the Flood Plain Management Section, Environmental Protection Division, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319.
- 567-70.514(3)
- Ch 70 - 4 Environmental Protection(567) IAC 22091.514-03
- 70.4(3) Engineering plans.
  - a. General requirement of certified plans. An application shall not be considered until sufficient engineering plans have been submitted to enable the department to determine whether the project as proposed satisfies applicable criteria. The engineering plans shall contain information as specified by the department, which is needed for the department to conduct a technical review pursuant to paragraph 70.4(3) b.
  - b. The engineering plans shall include specifications, operation procedures and other information relevant to environmental impacts. The engineering plans and other engineering information shall be certified by a registered professional engineer or, if applicable, a registered land surveyor, as required by Iowa Code chapter 549B. Duplicate copies of certified plans are required so that one copy can be returned to the applicant upon approval or disapproval of the application. An additional copy of the certified plans shall be retained if the plans are incorporated by part of an approval or disapproval order which is filed with a county recorder.
  - c. Waiver of submission of certified plans. The department may waive the requirement in paragraph "a" of this subrule that the application for approval of a flood plain project be supported by certified engineering plans by making one of the following determinations:
    - (1) Engineering data are not required to determine that the project conforms to all applicable administrative and statutory criteria; or
    - (2) Available engineering data used to evaluate the dimensions and effects of the project were already available to the engineering staff.
  - d. Flood with the greatest adverse effect. The department may issue a constructive notice to future landowners of any conditions or requirements imposed by the final decision.

## Continued:

- 567-70.517A, 45B, 481A) Procedures for review of applications.
- 70.5(1) Initial Review of Applications. Upon submission an applicant shall be promptly evaluated by the department to determine whether adequate information is available to review the project. The department shall advise the applicant of any additional information required to review the project. If the requested information is not submitted within 60 days of the date the request is made, the department may consider the application withdrawn.
- 70.5(2) Order of processing. In general, complete applications including sufficient plans and specifications shall be reviewed in the order that complete information is received. However, when there are a large number of pending applications, which preclude the department from reviewing all applications, the department may expedite review of a particular application on the order of the completed application and supporting documents were submitted at the earliest practicable time and any of the following conditions exist:
  - a. A reasonably time staff review time (generally less than four hours) is required and delay will cause the applicant hardship.
  - b. The applicant can demonstrate that a delay in the permit will result in a substantial cost increase of the project.
  - c. Prompt review of the permit would result in earlier completion of a project that conveys a significant public benefit.
  - d. If the need for a permit is the result of an unforeseen emergency or natural resource event, or
  - e. A permit is needed to complete a project that will share or prevent an environmental benefit to the public health and welfare.
- 567-70.514(3)
- Ch 70 - 4 Environmental Protection(567) IAC 22091.514-03
- 70.5(3) Permit evaluation. The department shall make an evaluation of a project for which an indication is submitted. The following are standard procedures for an investigation of an application:
  - a. Inspection. Agency personnel may make one or more field inspections of the project site when necessary to obtain information about the project. Submission of the application is deemed to constitute consent by the applicant for the agency staff and its agents to enter upon the land to inspect the proposed activity or project will be located for the sole purpose of collecting the data necessary to process the application, unless the applicant indicates to the contrary on the application.
  - b. Technical review. The department staff shall conduct a technical review using appropriate analytical techniques such as application of hydrologic and hydraulic models to determine the effects and impacts of a proposed project.
  - c. Consideration of event conditions and environmental effects. For channel changes or other developments which may cause significant adverse effects on the water use and protection of water resources, water quality, fish, wildlife and recreational facilities or water, the department shall request comments from the fish and wildlife division of the department or other knowledgeable sources.
  - d. Summary report of project review. The department shall file a summary report of project review which summarizes the results of the review with respect to relevant criteria, the analytical methods used in the review and other project information. Typical indications of when project summary reports will be prepared are for those projects for which negative comments have been received from potentially affected landowners, those projects which are not approvable, and those projects which are complex in nature. Project summary reports will not normally be prepared for routine, noncontroversial projects.
  - e. Notice to landowners who might be affected. Before an application for approval of a levee or channel change is approved the department shall require the applicant to provide the names of the owners and occupants of lands located immediately upstream, downstream and adjacent from the project site, and owners of any other lands which the agency staff determines may be adversely affected by the project. The department shall then notify the landowners that the project is under consideration and provide a reasonable opportunity for submission of comments. The requirements of this paragraph also apply to other types of flood plain development when the project review discloses that lands not controlled by the applicant may be adversely affected by the project.
  - f. Notice to the applicant that project does not conform to criteria. If the project review discloses that the general criteria are not met and that the project should be discontinued or approved only subject to special conditions to which the applicant has not agreed, the department shall notify the applicant and, when practical, suggest appropriate project modifications. The department shall offer the applicant an opportunity to submit comments before an initial decision is made.
  - 70.5(4) Initial decision by the department. The initial decision by the department on an application for a flood plain development permit shall be either approval or disapproval. The initial decision shall include a determination whether the project satisfied all relevant criteria and may incorporate by reference and attach the summary report discussed in 70.5(3) f.
  - a. Approval. Issuance of a flood plain development permit shall constitute approval of a project.
  - b. The permit shall include appropriate general conditions listed in 567-Chapter 72 and may include one or more special conditions when reasonably necessary to implement relevant criteria.
  - c. Disapproval. A letter to the applicant denying the application shall constitute disapproval of a project.
  - d. Notice of initial decision. Copies of the initial decision shall be mailed to the applicant, any person who commented pursuant to 70.5(3) f, and any other person who has requested a copy of the decision. The decision may be sent by ordinary mail, first class, and shall be accompanied by a certification of the date of mailing. An initial decision becomes the final decision of the department unless a timely notice of appeal is filed in accordance with 70.6(17A, 45B, 481A). The final decision may be filed with the appropriate county recorder to give constructive notice to future landowners of any conditions or requirements imposed by the final decision.

## Continued:

- a. Summary report of project review. The department staff may, if indicated, prepare a project summary report which summarizes the results of the review with respect to relevant criteria, the analytical methods used in the review and other project information. Typical indications of when project summary reports will be prepared are for those projects for which negative comments have been received from potentially affected landowners, those projects which are not approvable, and those projects which are complex in nature. Project summary reports will not normally be prepared for routine, noncontroversial projects.
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## In summary:

- The rules establish the method and criteria to answer two questions:

1. Is the project reasonably safe from flooding?
2. Does the project cause others to flood?

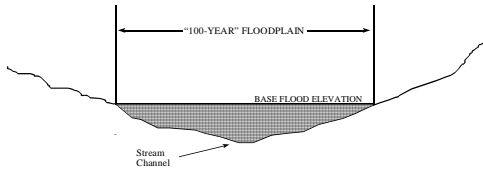
## Flood Plain Management 101:

- Flood plain
- 100-year Flood / Q100 / Regulatory flood
- 100-year Flood Elevation / Q100 Elevation / BFE
- Floodway
- Flood Fringe / Fringe / Floodway fringe

## Flood Plain Management 101, con'd:

- Flood plain
  - The low lying area along a river or stream that is subject to flooding
- "100-year"/ Q100/ Regulatory flood plain is:
  - The area inundated by the one percent chance flood (think bag of marbles)
- - *site specific*
  - Dependent upon hydrology – the flood that has a 1% probability of occurring in any year
  - Dependent upon hydraulics - how the water moves through the stream reach, considering topography, channel geometry and ground conditions

## The Flood Plain “100-year”/ Q100/ Regulatory



## Flood Plain Management 101, con'd:

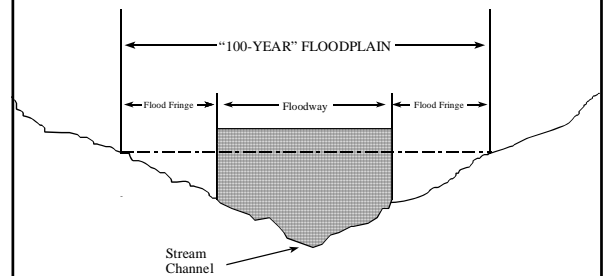
“Floodway” defined:

The channel of a river or stream and those portions of the flood plains adjoining the channel, which are reasonably required to carry and discharge flood waters or flood flows so that confinement of flood flows to the floodway area will not cumulatively increase the water surface elevation of the base flood by more than one foot

## Flood Plain Management 101, con'd:

- The floodway is:
  - The area within the flood plain that is reserved for the conveyance of flood flows.
- Determined by modeling
  - Squeezing the Q100 flood plain in from the sides (encroaching on the fringe) until the water level is 1 foot above the Q100 elevation

## Floodway/Flood Fringe/Flood Plain



## “Safe from flooding” - Flood protection

- To be protected from flooding under Iowa rules (most types of projects):
  - Build outside of the regulatory flood plain - called the Special Flood Hazard Area (SFHA) where mapped by FEMA
  - If within the flood plain, elevate at least 1 foot above the “Q100” elevation – called the Base Flood Elevation by FEMA
    - Structural flood proofing may be an option

## “Not causing others to flood” – Not causing obstruction in the floodway

- Under Iowa rules, construction in the **floodway is prohibited** (almost always)
  - “Young Plumbing and Heating vs. INRC”
- Construction in the fringe (also called flood fringe) is allowed, but must gain approval

## Main Question 1: “Is my project proposed to be located on a flood plain?”

- What information do I need to gather?
- How do I find the answer?

## What information do I need to gather?

- **Location !** You must be able to accurately locate the project and show the location on a map
- **Description:**
  - “Quarter/quarter - section - tier – range” format or the street address in an urban area if accompanied by a city map identifying the project site.
- **Site map:**
  - USGS topographic map w/scale
  - Aerial photo w/scale
    - <http://ortho.gis.iastate.edu/>
  - Crop (compliance) photos
  - County Farm Service Agency office

## How do I find the answer?

- Access published flood maps
  - FEMA’s Map Service Center at: [msc.fema.gov](http://msc.fema.gov)
  - Local community zoning/planning office
    - FEMA’s Community Status Book at: <http://www.fema.gov/fema/csb.shtm>
  - DNR office in Des Moines
- Consult flood plain managers/regulators
  - Local community or DNR
  - Will need the location accurately described (preferably on a map)

## Types of Flood Maps

- Flood Hazard Boundary Map (FHBM)
- Flood Insurance Rate Map (FIRM)
- Flood Boundary Floodway Map (FBFM)

## Definition of “Special Flood Hazard Area”

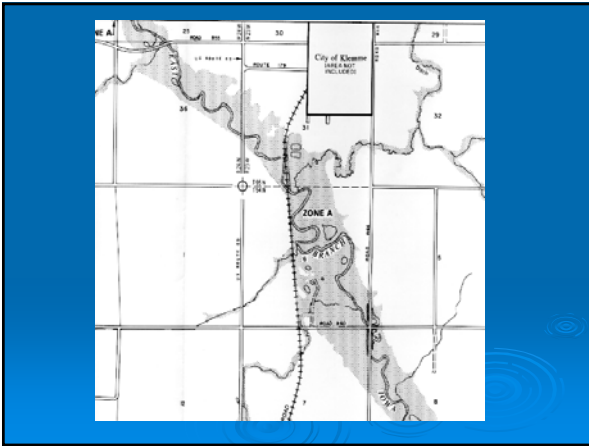
“Darkly shaded area on a Flood Hazard Boundary Map or a Flood Insurance Rate Map which identifies that area that has a one percent chance of being flooded in any given year. The FIRM identifies these shaded areas as flood zones A, AO, AH, A1-30, AE and A99.”

## Flood Hazard Boundary Maps FHBM

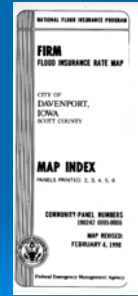


No elevations shown

May be used until a community enters the regular phase of the program, then may be converted to a FIRM or revised

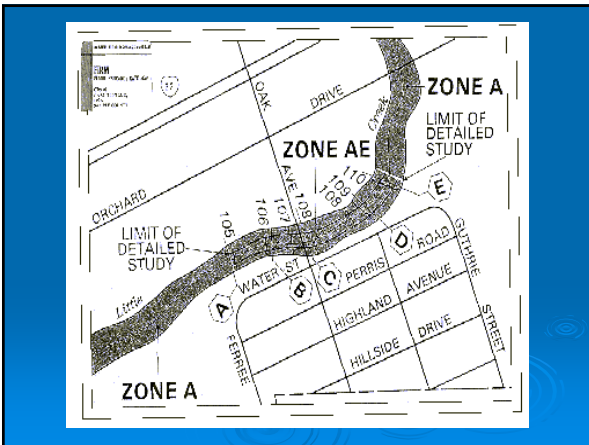


## Flood Insurance Rate Maps FIRM

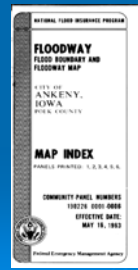


- Adopted when a community enters the regular phase of the program

Elevations rounded to the nearest foot shown for studied streams



## Flood Boundary and Floodway Map FBFM



- Shows same 100-year flood plain boundaries as FIRM with additional information on the floodway for segments of studied streams

City of Ankeny



## Main Question 2: "What criteria must the project meet to gain DNR Flood Plain Program approval?"

- Satisfy the two questions addressed in our rules:
- Is the project reasonably safe from flooding?
    - Project must either be documented as out of the flood plain
    - OR
    - The Q100 elevation (BFE) must be determined
  - Does the project cause others to flood?
    - Project must either be documented as out of the flood plain
    - OR
    - The floodway (FW) boundaries must be determined

## The process for seeking approval:

- 1) PGA Project Research
  - PGA researches project and decides that project is in the flood plain (or it's too close to call).
- 2) PGA Initial Submittal
  - PGA submits project description and accurate location maps to DNR via letter.
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(It really can be this easy!)

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### Step 1) PGA Project Research

- We're happy to assist with the close calls ...
  - But the more "way out of the flood plain" decisions you can make, the more time DNR has for stickier projects
- OK to err on the conservative side, but please check!
- "Ouch" example: Consultant did not check flood maps before proceeding with design, came in for FP clearance at last minute and discovered entire site was in FP.
  - (The kicker - FP program was accused at that point of "holding up" the project.)

### Step 2) PGA Initial Submittal

- The projects with complete project description and accurate location maps take less time to review.
- Reviewer can make a determination without trading emails or playing phone tag.
- Timing –"out-of-order" processing?
  - DNR FP program processes over a thousand applications a year and must take projects in order of "first ready, first reviewed" unless otherwise justified.
- "Ouch" examples: Consultant submitted request for approval, but didn't tell where facility was to be located. Consultant sent detailed map for the facility itself - but nothing that showed the physical location of the facility.

### Step 3) DNR FP Initial Review

- Possibilities: (In order of increasing time needed to respond)
  - BFE and FW info available from detailed studies
  - BFE and FW info available from recent DNR determination
  - BFE and FW info available from old DNR determination
  - BFE and FW info not available – consultant has survey information available ("valley cross-section")
  - BFE and FW info not available – consultant must obtain survey information from the site ("valley cross-section")
- "Ouch" examples: Elevation data with no datum reference. Consultant who took 4 attempts to provide a useable surveyed valley cross-section that was across the stream and tied to a datum. (2+ months delay)

### Step 4) PGA Communicates with Design Consultant

- Parameters - Make sure design consultant understands the importance of the parameters provided.
- Application for a permit - Make sure design consultant knows that an application for a flood plain permit is still needed – and should be submitted as soon as site plans are complete.
- Variances - Make sure design consultant knows that if the design cannot directly meet parameters (and a needs a variance), that DNR be contacted as soon as possible

## Step 5) Design Consultant at Work

- Submit application for flood plain permit as soon as site plans are complete – DNR can review the applications while the design consultant is working on final detail process drawings
- “Ouch” examples: DNR provides BFE and FW information, then does not hear anything about the project for several years.
  - When plans finally come in – you guessed it - FP program is accused of "holding up" the project.

## Step 6) DNR FP Final Review

- Very straightforward if :
  - Site plans are clear
  - BFE and FW information used and Q100 + 1 and offset criteria met
- Variances:
  - Do require additional time, but not much if well justified

## Final comments:

- We understand you have a schedule to keep and we'll do what we can to help you keep it.
- We have a “thousand” things to do, so give us some lead time.
- If we communicate and information is provided as we suggest, things will proceed smoothly, and you all will be as happy as ...



## For more information



- Contact Kelly Stone
  - Iowa Department of Natural Resources
  - Wallace Building
  - 502 E. 9th Street
  - Des Moines, IA 50319-0034
  - (515)281-4312, 281-8895(fax)
  - E-Mail, [kelly.stone@dnr.state.ia.us](mailto:kelly.stone@dnr.state.ia.us)