



Iowa Department of Natural Resources Flood Plain Management Program

Do I need a Flood Plain Permit? – Earth Embankment Dams

This form has been developed to help you determine if a flood plain permit will be required from the Iowa DNR. You must also obtain approval from the Iowa DNR Sovereign Lands Program (515) 330-6432, the US Army Corps of Engineers (309) 794-5371, and your local flood plain manager (if applicable) before beginning construction. You are legally responsible if you proceed with a project without obtaining all required permits.

When is a DNR Flood Plain Permit Required?

The thresholds for when a Flood Plain Permit from this department is required are outlined in Iowa Administrative Code 567-71.3 and are listed below. The thresholds are primarily based on both dam height and water storage volumes. The height of a dam is defined as the vertical distance from the top of the dam to the lowest elevation at the downstream toe of the dam, typically the streambed.

In rural areas:

- a. Any dam designed to provide a sum of permanent and temporary storage exceeding 50 acre-feet at the top of dam elevation, or 25 acre-feet if the dam does not have an emergency spillway, and which has a height of 5 feet or more.
- b. Any dam designed to provide permanent storage in excess of 18 acre-feet and which has a height of 5 feet or more.
- c. Any dam across a stream draining more than 10 square miles.
- d. Any dam located within 1 mile of an incorporated municipality, if the dam has a height of 10 feet or more, stores 10 acre-feet or more at the top of dam elevation, and is situated such that the discharge from the dam will flow through the incorporated area.

In urban areas:

Any dam which exceeds the thresholds in 71.3(1) "a," "b" or "d."

Low head dams:

Any low head dam on a stream draining 2 or more square miles in an urban area, or 10 or more square miles in a rural area. For additional information see low head dam guidance documents.

Modifications to existing dams:

Modification or alteration of any dam or appurtenant structure beyond the scope of ordinary maintenance or repair, or any change in operating procedures, if the dimensions or effects of the dam exceed the applicable thresholds in this rule. Changes in the spillway height or dimensions of the dam or spillway are examples of modifications for which approval is required.

Maintenance of preexisting dams:

Approval shall be required to maintain a preexisting dam as described in 567—Chapter 73 only if the department determines that the dam poses a significant threat to the well-being of the public or environment and should therefore be removed or repaired and safely maintained. Preexisting dams are subject to the Iowa DNR dam safety inspection program as set forth in 567—Chapter 73.

Please note that public road embankments with culverts which impound water only in temporary storage are exempt from the requirements of this rule. However, the road and culvert may need to be reviewed under Department rules IAC 567-71.1 (Bridges and Culverts).

The following information must be completed to make the determination:

Location (in Quarter-Section-Tier-Range format): Qtr. _____ Sec. _____ T _____ N R _____

County: _____ Stream(s): _____

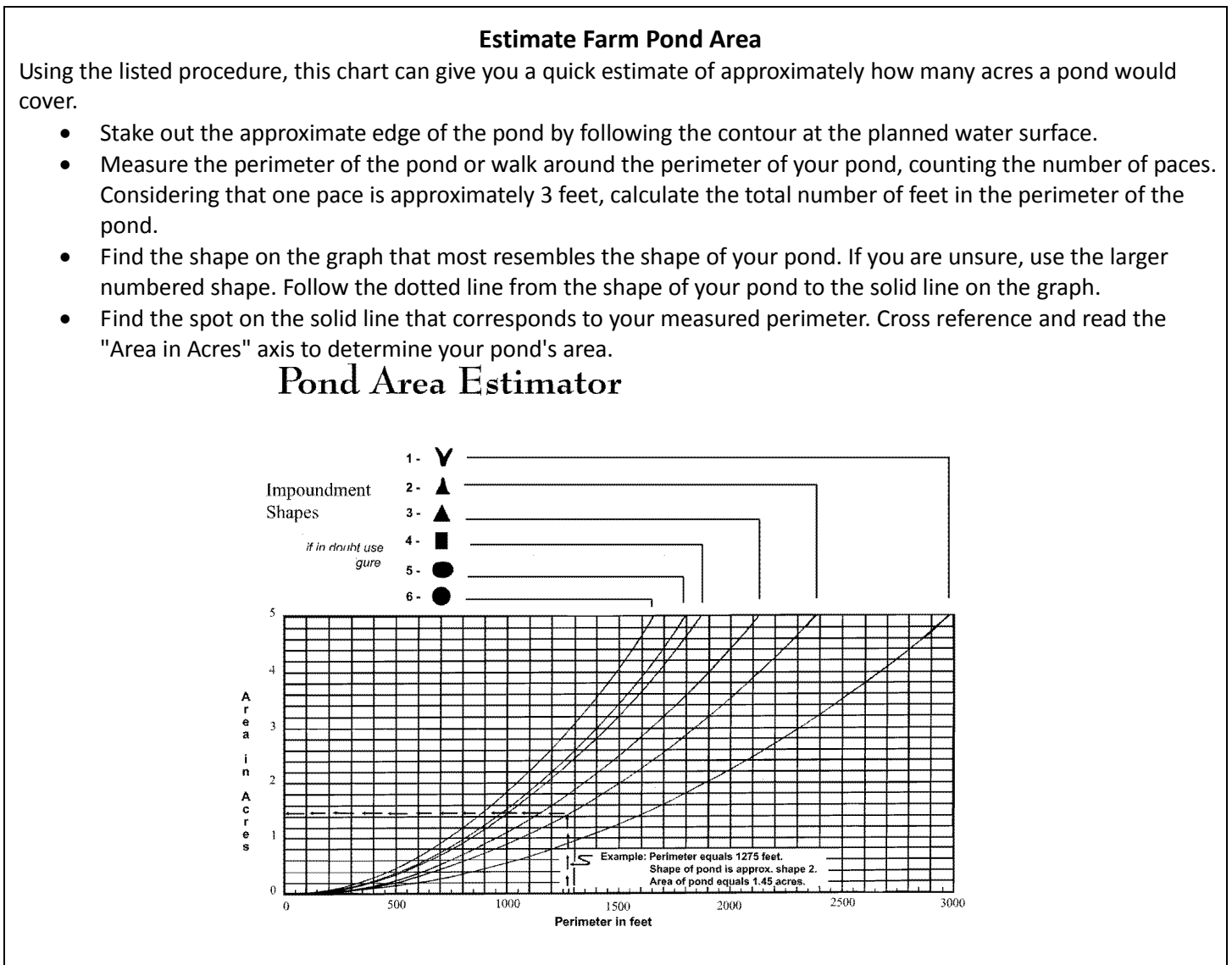
Located within a corporate limit? Yes No

If Yes, provide street address: _____

As noted above, the two key items that are needed to determine if a flood plain permit is required for an earth embankment dam are the potential water storage volumes and height of the earth embankment dam. Topographic mapping of the pond area is required to accurately determine the water storage volume. Short of obtaining topographic mapping, the water storage volume can be calculated with the equation shown below by estimating the surface area of the pond and the maximum depth of the water at the principal spillway crest, the emergency spillway crest, and the top of dam.

$$\text{Water storage volume (acre-feet)} = \text{maximum depth (feet)} \times \text{surface area (acres)} \times 0.4$$

The surface area can be estimated using the technique shown below.



In order to check all approval thresholds, use the table below to determine the water storage volumes at the level of the principal spillway, at the level of the emergency spillway, and at the top of dam.

Pool Level	Surface Area in acres (a)	Max. Depth in feet (b)	Calculated Water Storage (acre-feet) (a) x (b) x 0.4
Principal Spillway			
Emergency Spillway			
Top of Dam			

Using the calculated water storage volumes in the table and the estimated maximum height of the earth embankment dam, does the earth embankment dam exceed any of the previously listed approval thresholds?

Yes No

If "Yes" go to <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Flood-Plain-Management/Flood-Plain-Dev-Permits> and click on Apply for a Permit

If "No", keep this form for your records. If you would like a formal written response from Iowa DNR that your project does not need a flood plain permit, then follow the steps as if you were applying for a permit. Go to <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Flood-Plain-Management/Flood-Plain-Dev-Permits> and click on Apply for a Permit.

Do not forget to gain approval from Iowa DNR Sovereign Lands Program (515) 330-6432, the US Army Corps of Engineers (309) 794-5371, and your local flood plain manager (if applicable) before beginning construction. You are legally responsible if you proceed with a project without obtaining all required permits.