Ohio Dam Safety Program

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What is a Dam?

A dam is an artificial barrier usually constructed across a stream channel to impound water. Timber, rock, concrete, earth, steel or a combination of these materials may be used to build the dam. In Ohio, most dams are constructed of earth. Dams must have spillway systems to safely convey normal stream and flood flows over, around, or through the dam. Spillways are commonly constructed of non-erosive materials such as concrete. Dams should also have a drain or other water-withdrawal facility for control the pool or lake level and to lower or drain the lake for normal maintenance and emergency purposes.

Most dams in Ohio are small and are constructed by farmers and other private individuals for water supply, recreation, swimming and fishing. Numerous other (usually larger) dams are built be cities and industry to form reservoirs for water supply or liquefied waste storage. Ownership of dams is diverse and maintained by both public and private interests. The federal government owns and operates over 30 dams for flood control, recreation and water supply. The state of Ohio has more than 100 dams, primarily located instate park and wildlife areas for recreational purposes. Flood control and some water supply are provided by dams owned by watershed conservancy districts.

The oldest dams in Ohio were constructed over 150 years ago to create water supply reservoirs for a network of navigational canals. Buckeye Lake Dam, built about 1825 as part of the canal system and located in Licking and Fairfield counties, is the oldest dam in the state. The highest dam in Ohio is located in Jefferson County and is 240 feet high.

What is a Levee?

A levee is any artificial barrier together with appurtenant works that will divert or restrain the flow of a stream or other body of water for the purpose of protecting an area from inundation by flood waters.

The terms dike and levee have been used interchangeably in Ohio. Historically a dike is used to divert or restain flood water from tidal bodies of water such as the system of dikes which protect the Netherlands. A levee, on the other hand, diverts or restains flood waters from streams and lakes, such as the system of levees which protect cities along the Mississippi River.

How Many Dams are there in Ohio?

ODNR has records for more than 5,000 dams in Ohio. A number of smaller structures do not fall under the jurisdiction of Ohio’s dam safety laws. Those which do fall under ODNR jurisdiction as of 5/2013 are as follows:

* Class I Dams - 365
* Class II Dams - 544
* Class III Dams - 608
* Class IV Dams - 1033

Classification of Dams in Ohio

According to [Ohio Administrative Code Rule 1501:21-13-01](http://codes.ohio.gov/oac/1501:21-13-01), dams are classified as follows:

* **Class I:**
  + Dams having a total storage volume greater than five thousand acre-feet or a height of greater than sixty feet shall be placed in class I. A dam shall be placed in class I when sudden failure of the dam would result in one of the following conditions.
    1. Probable loss of human life
    2. Structural collapse of at least one residence or one commercial or industrial business
* **Class II:**
  + Dams having a total storage volume greater than five hundred acre-feet or a height of greater than forty feet shall be placed in class II. A dam shall be placed in class II when sudden failure of the dam would result in at least one of the following conditions, but loss of human life is not probable.
    1. Disruption of a public water supply or wastewater treatment facility, release of health hazardous industrial or commercial waste, or other health hazards
    2. Flooding of residential, commercial, industrial, or publicly owned structures
    3. Flooding of high-value property
    4. Damage or disruption to major roads including but not limited to interstate and state highways, and the only access to residential or other critical areas such as hospitals, nursing homes, or correctional facilities as determined by the chief
    5. Damage or disruption to railroads or public utilities
    6. Damage to downstream class I, II or III dams or levees, or other dams or levees of high value. Damage to dams or levees can include, but is not limited to, overtopping of the structure
* **Class III:**
  + Dams having a total storage volume greater than fifty acre-feet or a height of greater than twenty-five feet shall be placed in class III. A dam shall be placed in class III when sudden failure of the dam would result in at least one of the following conditions, but loss of human life is not probable.
    1. Property losses including but not limited to rural buildings not otherwise described in paragraph (A) of this rule, and class IV dams and levees not otherwise listed as high-value property in paragraph (A) of this rule. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potentially affected property
    2. Damage or disruption to local roads including but not limited to roads not otherwise listed as major roads in paragraph (A) of this rule
* **Class IV:**
  + Dams which are twenty-five feet or less in height and have a total storage volume of fifty acre-feet or less may be placed in class IV. When sudden failure of the dam would result in property losses restricted mainly to the dam and rural lands, and loss of human life is not probable, the dam may be placed in class IV. Class IV dams are exempt from the permit requirements of [section 1521.06 of the Revised Code](http://codes.ohio.gov/orc/1521.06) pursuant to paragraph (C) of rule [1501:21-19-01 of the Administrative Code](http://codes.ohio.gov/oac/1501:21-19-01).

Classification of Levees in Ohio

According to [Ohio Administrative Code Rule 1501:21-13-09](http://codes.ohio.gov/oac/1501:21-13-09), levees are classified as follows:

* **Class I:**
  + probable loss of human life, structural collapse of at least one residence or one commercial or industrial business
* **Class II:**
  + disruption of a public water supply or wastewater treatment facility, or other health hazards; flooding of residential, commercial, industrial, or publicly owned structures; flooding of high-value property; damage or disruption to major roads including but not limited to interstate and state highways, and the only access to residential or other critical areas such as hospitals, nursing homes, or correctional facilities as determined by the chief; damage or disruption to railroads or public utilities
* **Class III:**
  + property losses including but not limited to rural buildings not otherwise described in this rule; damage or disruption to local roads including but not limited to roads not otherwise listed as major roads in this rule
* **Class IV:**
  + a levee having a height of not more than three feet; losses restricted mainly to the levee, owner's property and rural lands

[History of Dam Safety in Ohio](http://water.ohiodnr.gov/safety/dam-safety)

[Ohio Laws Related to Dam Safety](http://water.ohiodnr.gov/safety/dam-safety)

[Contacts](http://water.ohiodnr.gov/safety/dam-safety)