

# Finding the story: National Inventory of Dams

*By Liz Lucas and Andrew Kreighbaum, IRE & NICAR*

## Introduction

Maybe you've taken a tour of the Hoover Dam on your way to Las Vegas or taken in Glen Canyon Dam on a visit to Lake Powell. Most dams aren't such impressive feats of engineering. And many are much closer to populous metro areas. There are more than 85,000 dams littered throughout the U.S. in the most recent count and even more including those not counted in the National Inventory of Dams (NID).

For a reporter covering infrastructure or breaking news involving one of these structures, the NID is an important resource. Journalists have used the data to produce stories on aging infrastructure, emergency preparedness and lack of adequate dam inspections.

The database can help you get an idea of how many dams are in your area – they're listed by county and Congressional district, and include latitude and longitude as well as their size, completion date and ownership.

## History of the data

With the 1972 [National Dam Inspection Act](#), Congress required the U.S. Army Corps of Engineers (USACE) to inspect every dam in the U.S. But because of a lack of funding and other issues, that [requirement](#) was never fulfilled. Instead, the act led to creation of the NID, which is based on information from inspections completed by both federal and state regulatory agencies.

USACE is tasked with periodically updating the dam inventory, taking into account any dams that have been added, removed or decommissioned. This task is difficult because of the varied sources for this data; there is no mandated reporting on the part of states.

USACE began [denying requests](#) for dam inspection data after the 2002 data release, citing the USA PATRIOT Act and general national security concerns. In the last few years the National Inventory of Dams was available to the public on its website (in searchable format only) if you requested a login. Following a 2007 recommendation from the National Dam Safety Review Board, key fields listing hazard classification and nearest city to the dam [are still redacted](#).

In early 2015, the USACE removed the login and made the database searchable to anyone, at which point IRE & NICAR began the process of pulling the records from the site. USACE has said it will publish the NID every two years, but is already falling behind schedule.

## Getting to know the data

The NID should include all dams in the United States that meet the following criteria:

- 1) High hazard classification – loss of one human life is likely if the dam fails,
- 2) Significant hazard classification — possible loss of human life and likely significant property or environmental destruction if the dam fails,
- 3) Equal or exceed 25 feet in height and exceed 15 acre-feet in storage,
- 4) Equal or exceed 50 acre-feet storage and exceed 6 feet in height

**Note:** Hazard classification is **not** an assessment of the current condition of the dam structure, but rather an assessment of the consequences of a dam failure.

Dams are a crucial part of our national infrastructure, albeit a part that does not claim the limelight like roads or bridges. The NID gives us insight into the state of that infrastructure.

For example, the oldest dam in the database, Old Oaken Bucket Pond Dam, was built in 1640 in Massachusetts and 36 other dams were built before 1800. The most prolific years of dam construction were in the 1950's, 1960's and 1970's, and construction has slowed considerably since then. Dam construction in the last 15 years is concentrated in Central U.S. states such as Iowa, Missouri, Kansas and Nebraska.

There are about 70 fields in the NID, including key pieces of information such as owner name and owner type (e.g. private or state-owned); inspection date; height and storage levels; river or stream on which the dam is built; longitude and latitude; and year of construction. A list of detailed field definitions is included in the files provided with the NID data table. Because the data includes many technical terms, reporters should probably consult an engineer at some point in their reporting to provide perspective.

**Important:** Before you start working with the data, please read all the documentation carefully, particularly the “Dams Readme” that NICAR provides.

## Where to start

The NID can give you an overview of dams in your state: how many are there? What percent are high hazard? (Consult “Hazard\_by\_state.xls” for this.) Look at the inspection dates of these dams (“INSPECTION\_DATE”) and see if the state is keeping up with inspections.

If you want to zero in on individual dams, the NID is a good starting place but you'll have to seek additional documentation on individual dam hazard and the results of inspections. But the NID can help you figure out which dams to start investigating.

Start by pulling records for your state, county or congressional district (fields: “STATE”, “COUNTY”, “CONGRESSIONAL\_DISTRICT”). Note how many dams are found in counties

in your state: some counties may have a high number of dams but those structures may be smaller on average than those in other counties. Take a look at the largest dams, by storage (“NID\_STORAGE”) or height (“NID\_HEIGHT”).

Where are these dams? (You can use various fields, including “LATITUDE” AND “LONGITUDE” to answer this question). Do they have emergency action plans (“EAP”), should they fail?

Look up the most recent inspection date (“INSPECTION\_DATE”) of dams that have caught your eye. Check the inspection frequency (“INSPECTION\_FREQUENCY”) – the scheduled frequency interval for periodic inspections — to see whether the most recent inspection date fell within the planned inspection interval.

How many of the large dams are publicly versus privately owned? What regulatory agencies are responsible? (See “STATE\_REG\_AGENCY”).

Are there any older dams in your area that have gone many years without inspection? Are there very large dams that have gone a significant length of time without inspection?

The size and maximum storage level of a dam will only tell you so much about the importance of inspections. You will likely want to check with state regulators on the hazard classifications of dams.

## Stories that have used NID data

<http://www.dispatch.com/content/topic/special-reports/2015/dams.html>

“Thousands of Ohioans living downstream from deficient dams are in danger because of poor maintenance and lack of enforcement of safety regulations.”

<http://www.cnn.com/2015/08/20/why-california-is-demolishing-the-san-clemente-dam.html>

“Within California, 42 percent of the state's dams are privately owned, and more than half of the dams in the total registry (685 dams out of the 1,248 listed) are considered "high-hazard potential," meaning their failure could cause loss of human life, according to the National Inventory of Dams. Nationally, about 17 percent of the dams are categorized as "high-hazard potential."

<http://wishtv.com/2015/04/30/indianas-lack-of-dam-upkeep-could-have-catastrophic-consequences/>

“Federal records compiled by the U.S. Army Corps of Engineers and obtained by I-Team 8 show the biggest part of those concerns centers on the increasing age of Hoosier dams. Nearly 60 percent of them were constructed during a nationwide building blitz in the late 1950s and early 1960s. Most were designed for a 50-year lifespan — a mark they’re either nearing or have already passed, according to data analysis by I-Team 8.”

<http://www.newsleader.com/story/news/local/2015/05/22/dams-lack-emergency-action-plans/27817577/>

“In Virginia, about 800 dams are supposed to have an EAP. But 43 percent of them don't, according to a Capital News Service analysis of data from the National Inventory of Dams.”

<http://kxan.com/2015/05/26/bastrop-state-park-dam-failure-highlights-safety/>

“The Bastrop dam was last inspected in 2005, according to data from the National Dam Inventory. The Texas Commission on Environmental Quality conducts the bulk of all dam inspections in Texas, but more than 3,200 Texas dams are exempt from TCEQ inspection, said Warren Samuelson, dam safety program manager at the agency.”

<http://newsok.com/small-dams-could-pose-big-problems-for-oklahoma-in-the-future/article/3719239/?page=2>

“According to the Association of Dam Safety Officials (ADSO), Oklahoma has 4,758 dams on the National Inventory of Dams registry. Of these, 4,539 are state-regulated dams. Oklahoma has 321 dams in the “high hazard” category, which is based on the potential effects from a dam failure. Each of the handful of state dam regulators has an average of 848 dams to oversee. This compares with a national average of 210 dams per regulator.”

<https://stateimpact.npr.org/texas/2013/11/26/if-rains-refill-reservoirs-can-texas-dams-hold-up/>

“Nearly 97 percent of the dams in Texas are earthen dams, according to the U.S. Army Corps of Engineers’ National Inventory of Dams.

Drought can also crack concrete dams by shifting the soil. As the ground around the dam moves, Samuelson says that cracks will “develop through the bottom, up from the concrete.”

[http://blog.al.com/wire/2014/04/dam\\_safety\\_advocates\\_encourage.html](http://blog.al.com/wire/2014/04/dam_safety_advocates_encourage.html)

“Ogden said the National Inventory of Dams lists almost 200 known high-hazard dams in Alabama where a failure could result in loss of life or significant property damage. He said only 19 percent of those have been inspected within the last five years.”