



Fact Sheet

COMMONWEALTH OF PENNSYLVANIA • DEPARTMENT OF ENVIRONMENTAL PROTECTION

DAMS, ENCROACHMENTS AND WATER OBSTRUCTIONS WHY PERMITS ARE NEEDED

HISTORICAL REFERENCE: 4:10 to 4:17 p.m., May 31, 1889, Johnstown, Pennsylvania:

" the deserted streets became black with people. An instant later the flood came and lapped them up with one eager and ferocious lap. The whole city was one surging and whirling mass of water. . ." — The Johnstown Flood, by Edward Oxford.

Perched safely on one of the surrounding hillsides, this was one man's recollection of what he witnessed in Johnstown that fateful day. Spawned by the collapse of the South Fork Dam located about 14 "stream miles" upstream of the city, 20 million tons of water and a 100,000 tons of flood debris swept over Johnstown like a giant avalanche. Approximately 1,500 houses were destroyed, almost all of the factories and businesses were either destroyed or rendered inoperative, and worst of all, over 2,000 people were killed. At the city's eastern edge, a grotesque 30-foot high wall of flood debris lodged against the big stone railroad bridge. Likely set on fire by live coals from stoves, fire broke out in this wreckage killing some 80 of the approximately 600 people who had been swept into the pile.

At the time of the Johnstown flood disaster, the South Fork Dam was owned by the "South Fork Fishing and Hunting Club" whose 61 members included most of Pittsburgh's wealthy aristocrats of business and industry. Previously in 1862, spring runoff washed out a 200-foot section of the dam embankment leaving the dam high and almost dry. The next owner removed the dam's cast iron discharge pipes leaving a

274-foot "hole" through the dam base. Finally, in 1879 the dam was purchased by the South Fork Fishing and Hunting Club which then spent the grand sum of \$12,000 to restore the dam. A professional engineer was never consulted during the restoration process. Instead, a "muleskinner" was hired to do the work which did not include replacing the discharge pipes. The club undertook additional work, such as lowering the top of the dam and placing a metal screen across the spillway to prevent the loss of fish, both of which further reduced the structure's ability to withstand a major flood. Despite the complaints of many downstream residents and officials, the club did not correct these problems and in 1881, no state or federal laws existed to require these corrections.

REACTION

Despite the magnitude of the Johnstown disaster, and the occurrence of over 20 additional dam failures in the next 22 years, it was not until the occurrence of another "major" dam failure flood event that the state government began to regulate the design and construction of dams and other water control structures. On September 30, 1911, a 50-foot high concrete gravity dam located above the Borough of

Austin in Potter County suddenly gave way sending a wall of water downstream into the Borough and killing 80 people. Finally, in 1913, the Water Obstructions Act (Act of June 25, 1913, P.L. 555) was passed, empowering the Water Supply Commission of Pennsylvania to regulate the design, construction and maintenance of dams and other water obstructions.

The title of the 1913 Water Obstructions Act reads as follows:

An act providing for the regulation of dams, or other structures or obstructions, as defined herein, in, along, across, or projecting into all streams and bodies of water wholly or partially within, or forming part of the boundary of, this Commonwealth; vesting certain powers and duties in the Water Supply Commission of Pennsylvania, for this purpose; and providing penalties for the violation of the provisions hereof,"

One of the most important provisions of this act was power given to the Water Supply Commission to investigate the condition of existing dams and other water obstructions and, if the structure was found to be unsafe, require the owner to repair or remove it. If the owner could not be found, or refused the commission's instructions to repair/remove, the commission had the power to directly repair or remove the unsafe structure and recover the cost of said operations from the owner.

CURRENT PROGRAM STATUS

Since the original "Water Obstruction Act" was passed in 1913, several pieces of amending legislation have been passed. The most significant, was the passage of the Dam Safety and Encroachments Act, Act of November 26, 1978, P.L. 1375. No. 325. Under this legislation, the Department of Environmental Protection was empowered to administer a regulatory program to meet the following purposes of the Act:

1. Provide for the regulation of dams and reservoirs, water obstructions and encroachments in the Commonwealth, in order to protect life, health, safety and welfare of the people and property.

2. Assure proper planning, design, construction, maintenance, monitoring and supervision of dams and reservoirs, including such preventative measures as are necessary to provide an adequate margin of safety.
3. Protect the natural resources, environmental rights and values secured by the Pennsylvania Constitution and conserve the water quality, natural regime and carrying capacity of watercourses.
4. Assure proper planning, design, construction, maintenance and monitoring of water obstructions and encroachments, in order to prevent unreasonable interference with waterflow and to protect navigation.

Today, the construction, operation, maintenance, modification, enlargement and abandonment of dams, bridges, culverts, levees, docks and other encroachments are reviewed and monitored by the Department of Environmental Protection. By requiring permits for new construction activities, the Department can review the design, construction methods, materials and sizing of these proposed projects to ensure public safety and environmental protection. Likewise, requirements for project inspection by their owners and an active program of independent Departmental inspections helps ensure that the "Great Johnstown Flood of 1889" will never be repeated because of human indifference.

FOR MORE INFORMATION CONTACT:

**Department of Environmental Protection
Bureau of Water Quality Protection
Division of Waterways, Wetlands and
Erosion Control
P.O. Box 8465
Harrisburg, PA 17105-8465
717-787-6827**

This fact sheet and related environmental information are available electronically via Internet.

Access the DEP Web Site at <http://www.dep.state.pa.us>

(choose Information by Water Management/
choose Water Quality Protection).