



Dam Failure

General

Dam failures are usually a secondary effect of massive rainfall and flooding, and occur when too much water enters the spillway system. This will occur with little or no warning. Spring thaws, severe thunderstorms, and heavy rainfall are also contributory factors. Additionally, poor engineering or poor maintenance may cause dam failures. The Pennsylvania Department of Environmental Protection and the U.S. Army Corps of Engineers award permits for dams and share inspection responsibilities. Inspection results are characterized as either safe or unsafe. Dams are evaluated on categories such as slope instability, excessive seepage, and inadequate spillways. As of October 2001, the U.S. Army Corps of Engineers inspected 100 percent of the dams in Snyder County.

Six dams in Snyder County are registered with the U.S. Army Corps of Engineers in the National Inventory of Dams; five dams are considered high-hazard dams, and require Emergency Action Plans. However, according to the National Inventory of Dams, only four of the five high-hazard dams have plans. An inventory of Snyder County dams, including those that require an Emergency Action Plan, can be seen below:

Snyder County Dam Inventory						
Dam Name	Other Names	Former Names	River	Owner	Hazard	EAP Completed
Adam T. Bower Memorial Dam	-	Sunbury Fabridam	Susquehanna River	DCNR - Bureau of State Parks	Low	Not Required
Ash Pond Number 2			TR Susquehanna River	PPL Montour LLC	High	Yes
Ash Pond Number 3			TR Susquehanna River	PPL Montour LLC	High	No
Kern Run Dam (PA-638)	Middle Creek	Beaver Springs Water Supply	Kern Run	Spring Township Municipal Authority	High	Yes
Walker (PA-637)	Clarence F. Walker Lake		North Branch Middle Creek	PA Fish & Boat Commission	High	Yes
Faylor Lake Dam (PA-636)	Faylor Lake		Middle Creek	Commissioners of Snyder County	High	Yes

Source: Pennsylvania Department of Environmental Protection

History

No major dam failures have been recorded in Snyder County to date. However, Pennsylvania has experienced severe dam failures. The worst dam failure ever experienced in the Commonwealth was in Johnstown in 1889. The resulting flood claimed 2,100 lives.

Vulnerability

There is always the possibility any dam could fail, however the probability is low. According to the Pennsylvania Emergency Management Agency (PEMA), minor dam failures occur every



year, but their impact is minimal. Usually, they are unexpected, gradual, low-volume releases and do not cause loss of life or damage to the environment.

Probability

Minor dam failures occur often. However, most dam failures are minor and go unnoticed without any major effects on the population. Significant dam failures occur less frequently, approximately every 30 years or less. They are often a secondary effect of another hazard, such as heavy rainfall from a hurricane or tropical storm.

Maximum Threat

Snyder County contains five high-hazard dams, four of which require Emergency Action Plans. The municipalities that contain these high-hazard dams face the maximum threat of a significant dam failure. Kern Run Dam in Beavertown, Walker Dam in Troxelville, and Faylor Lake Dam in Beaver Springs are all high-hazard dams requiring Emergency Action Plans.

Secondary Effect

Flooding is the most prominent secondary effect of a dam failure. If the dam failure is severe, a large amount of water will enter the riverbeds, overflowing their banks. Depending on the contents of the water and the path it takes, there may be significant environmental vulnerability due to a severe dam failure. Most often, however, dam failures will be quite minor with little to no secondary effects.