

Piney Run Watershed Study – FAQs

When was Piney Run Reservoir constructed?

Piney Run Reservoir was constructed in 1974 as a future water supply for the South Carroll area as well as for recreation and flood control.

What is the reservoir's capacity?

Piney Run Reservoir covers 290 acres and is 54 feet deep at the place of maximum depth. It holds approximately 1.7 billion gallons of water.

What is a dam?

An artificial barrier that can impound water, wastewater, or any liquid-borne material, for the purpose of storage or control of water. The Piney Run dam is a 73-foot-tall, 600 feet long earthen embankment.

How often is the dam inspected?

The dam is inspected annually. County, Maryland Department of the Environment (MDE), and Natural Resources Conservation Service (NRCS) engineers last inspected the dam on November 12, 2020. The dam was found to be in good condition and well maintained.

Why was the Piney Run Watershed Study initiated?

The Maryland Department of the Environment, Dam Safety Division is the regulatory agency responsible for the safety of dams in the state. MDE expressed concern that the Piney Run Dam may not meet current standards. They have required that Carroll County evaluate the dam and determine if there are any deficiencies. If there are deficiencies, they are to be resolved by August, 2027.

What is a hazard potential classification?

A system categorizing dams according to the degree of adverse consequences resulting from a failure. The hazard potential classification does not reflect the current condition of the dam. A "high-hazard" designated dam in Maryland is a dam with the potential to cause probable loss of life and serious damage to residential, industrial, or commercial buildings; important public utilities, public roads; or railroads should it fail. Piney Run is assigned a "high-hazard" classification and is the only high-hazard dam owned and maintained by the County.

What does the term Probable Maximum Flood mean?

The flood that may be expected from the most severe combination of critical weather and hydrologic conditions that are reasonably possible in a particular area. The probable maximum flood (PMF) at Piney Run is the flood from a storm consisting of approximately 39 inches of rainfall over a 72-hour period. The PMF is the required design event for both the State of Maryland and NRCS for high hazard dam's spillway.

What is a principal spillway?

Designed to operate frequently during most rain events. The principal spillway at Piney Run is the lower concrete riser tower and pipe conduit located near the dam. It controls the reservoir water level.

What is an auxiliary spillway?

Also referred to as the emergency spillway, it is the wide grass channel next to the dam designed to handle extreme flood events that exceed the capacity of the principal spillway.

What is a water supply intake structure?

Designed to withdraw water from the reservoir for conveyance to a water treatment plant. The water supply intake tower (the structure with bridge to it from the dam and the "house" on top of it) and conduit have never been put into service.

What has the Watershed Study accomplished so far?

The County's consultant, AECOM, has been working on the watershed study since late 2019. The study includes a comprehensive inspection of the dam, including a significant number of soil and rock borings to determine the dam's susceptibility to erosion. The study also includes how the dam will perform under different storm scenarios to determine the related risk to people and property downstream. Included in the study will be an evaluation of options to address any deficiencies that are identified.

The results of the analysis are complete, and it has been verified that the capacity of the auxiliary spillway must be increased as well as armored to prevent erosion.

Will the reservoir need to be drained for any of the proposed work?

The work required to address the issues with the auxiliary spillway will not affect the reservoir and would not require the reservoir to be drained.

However, there is a need to ensure water security for the County and establish redundancy in water supply sources. While bringing Piney Run Reservoir online as a water supply source is a long process, the first step would require some modifications to the dam that would require draining the reservoir. Taking this first step is being considered as there is the potential for funding assistance from NRCS.

If the reservoir is drained down for construction, how long will it be drained?

There are many factors that will determine that time frame, some of which we have no control over, and some that remain to be figured out. Draining the reservoir must be done safely to not affect the structural integrity of the dam and not affect the stream below the dam. This process would more than likely take a couple of months. The duration of the construction activity has not been determined but will be several months. Refilling the reservoir depends on rainfall. Under normal rainfall conditions, refilling the reservoir could take a year. It should be assumed that the water level in the reservoir will be affected for 1 to 2 years.

If the reservoir is drained, what will happen to the fish?

During the design process, the County will explore options that do not require draining the entire reservoir. If it is economically feasible, some portion of the reservoir may be able to be kept with water. However, if this is not feasible, the County will coordinate with the Maryland Department of Natural Resources regarding what should be done with the fish. Unfortunately, cost and the risk of disease spread by relocation from one ecosystem to another may result in the existing fish not surviving construction.

Should the County be considering replacing Piney Run with a concrete dam?

There are no known issues with the structural integrity of Piney Run Dam. The issues being looked at relate to the spillway around the dam. Addressing the spillway issues are anticipated to cost several million dollars. Constructing a new concrete dam would be orders of magnitude more expensive and not necessary.

Is the reason for implementing water supply at Piney Run to allow for development in the area?

There is currently not a lack of water in the area. The issue the County is looking to address is water security. Relying on a single source of water supply for an area is a risk. It is a normal safe practice to have back up water supplies. While the County is also exploring options for wells to provide some backup, wells by themselves will not provide enough redundancy to what is obtained from Liberty Reservoir.