



**US Army Corps
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Engineer Research and
Development Center

Tygart Dam Study

Description A physical model investigation was conducted to evaluate alternative ways of conveying the revised Probable Maximum Flood (PMF).

Issue The Tygart Dam is located on the Tygart River approximately 2.25 miles south of Grafton, West Virginia. It is a concrete gravity dam 1921-ft in length and forms the Tygart Lake. The lake and dam were constructed as a multipurpose lake project for flood control, navigation, water supply and recreation.



Physical model of Tygart Dam, Tygart River, WV

Tygart dam construction was started in 1935 and completed in 1938. The lake area created by the dam is 3430 acres.

Products At the request of the U.S. Army Engineer District, Pittsburgh, a 1:60 scale physical model was designed and constructed at the U.S. Army Engineer Research and Development Center by the Coastal and Hydraulics Laboratory. The model reproduces the spillway, abutments, stilling basin and sufficient upper pool and tailrace length to simulate the prototype flow conditions near the structure. The model permitted evaluation of several alternatives to pass the revised PMF (a 38% increase). These options were partial overtopping, raising the dam, spillway modification, auxiliary spillway and dam replacement.

Benefits Model study results provided an economical solution to safely pass the revised PMF by allowing overtopping of the dam and conveying the overtopped flow to the stilling basin through gutter channels.

Sponsors U.S. Army Engineer District, Pittsburg.

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