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Engineer Research and
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Bluestone Lake Dam Section Model Study

Description A section model investigation was conducted to evaluate structural modifications for safely increasing the discharge capacity of the Bluestone Dam, Hinton, West Virginia.

Issue Bluestone Dam spans the New River at Hinton, WV forming Bluestone Lake, the third largest lake in West Virginia. At summer pool Bluestone Lake covers 2,040 acres and is 10.7 miles long. Bluestone Dam was constructed as part of the Kanawha River Basin flood control system primarily to reduce major flood damages along the New, Kanawha, Ohio, and Mississippi Rivers.

Products At the request of the U.S. Army Engineer District, Huntington, a 1:36 scale section 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 three spillway bays of the Bluestone Lake Dam, 1300-ft of the upper pool and 900-ft of the tailrace. The model was used to evaluate the hydraulic conditions associated with an increase head (increased discharge). These conditions include measuring hydraulic loads on the energy dissipation features of the spillway stilling basin and investigating qualitatively the scour potential downstream of the stilling basin.

Benefits Model results will provide design information to insure proper anchoring of existing structures.

Sponsors U.S. Army Engineer District, Huntington.

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**Sectional flume model of Bluestone
Dam, West VA**