UPPER OHIO NAVIGATION STUDY, PENNSYLVANIA

PROJECT DESCRIPTION: The Upper Ohio River Navigation Study Project is located in southwestern Pennsylvania and consists of the Emsworth, Dashields and Montgomery Locks and Dams, all over 70 years old. These three facilities are the uppermost navigation structures on the Ohio River located 6.2, 13.3 and 31.7 river miles below the "Point" in Pittsburgh, Pennsylvania.

All three facilities have dual locks chambers with 110" x 600' main chambers and 56' x 360' auxiliary chambers which are the smallest capacity chambers of the Ohio River navigation system. The Emsworth pool (which extends 6.7 miles up the Allegheny River and 11.5 miles up the Monongahela River) is formed by main and back channel gated dams totaling 1,717 feet in length and comprised of 14 gates and one fixed weir section. The Dashields pool is formed by a 1585' fixed crest weir dam. The Montgomery pool is formed by a dam with 10 gates and one fixed weir section. Emsworth was constructed in 1922 with the new gated dam added in 1938 using old fixed crest dams as stilling basins and aprons. Dashields was constructed in 1929 and Montgomery constructed in 1936. Emsworth and Montgomery Dams are the oldest gated structures on the Ohio River, while Dashields Dam is the only fixed crest dam on the river. Each of the three facilities are showing significant signs of structural and operational degradation increasing risk of structural and/or operational failure which would halt navigation. The focus of the Upper Ohio River Navigation Study is to develop the best plan for maintaining safe, reliable, efficient and environmentally sustainable navigation on the upper 40 miles of the Ohio River.

TRANSPORTATION IMPORTANCE TO THE SYSTEM.

Traffic through the Upper Ohio River projects totaled 24 million tons in 2006, with coal accounting for 17 million tons or 74 percent. Coal moves both upbound and downbound depending on the characteristics of the coal, and on the locations of mines and coal consuming facilities. Electric utilities move coal from mines in Monongahela Basin upstream of the Upper Ohio projects to generating plants downstream on the Ohio while steel and other electric generating companies move coal from mines downstream of the projects to West Virginia and Kentucky mines to coking and generating plants upstream in the Monongahela Basin. Construction companies use the project to move materials like stone, sand and gravel, and cement into the Pittsburgh area. The estimated transportation savings attributable to the Upper Ohio subsystem is $144 million annually.

RISK & RELIABILITY, ECONOMIC IMPACTS OF UNSCHEDULED LOCK OUTAGES.

Analysis, modeling, and inspections have shown the projects to be extremely unreliable with high probabilities of failures that could result in unscheduled closures of up to a year in duration. If the failures occurred at a main lock chamber or one of the dams, the consequences would be

catastrophic given their location in the Pittsburgh metropolitan area. In fact, the projects create the pool along which the "Point", or downtown area of the City of Pittsburgh, is located. It is the site of numerous office buildings, sports arenas, residential housing, and marinas. The effects would not be limited to barge transportation, but would extend to a multitude of uses of the river including municipal and industrial water supplies, tour boat operators that service the major league stadiums and other entertainment facilities in the pools, and possibly to buildings and other shoreside infrastructure that could be damaged by bank cave-ins. Fish and wildlife could be destroyed due to loss of habitat if a loss of pool was to occur.

Directly affected by disruptions to transportation are the US Steel Clairton Works, the largest coke plant in the country, and the Bailey/Enslow Fork Complex owned by Consol Energy, the largest underground coal mine in the country. Disruption in coal supply and transportation would also impact steel plants and coal-fired electric power plants. A recent survey of the effects of an unscheduled closure at Montgomery found the cost to one Pittsburgh area company of $1 million dollars a day of lost production. The costs to other industries were generally lower but with over 500 shippers and 500 receivers, the total was significant. At some point industry will either switch to other transportation modes or locate to other areas, including overseas, if they deem the system sufficiently unreliable and the costs of alternative transportation too high. This would jeopardize the 33,000 jobs related to the operation of an efficient and reliable system.

PROJECT MILESTONE SCHEDULE.

- Feasibility Scoping Meeting – September 2007
- Alternative Formulation Briefing – June 2010
- Civil Works Review Board – July 2011
- Chief of Engineer's Report - November 2011

Upper Ohio Navigation Study: http://www.lrp.usace.army.mil/pm/upper_ohio.htm