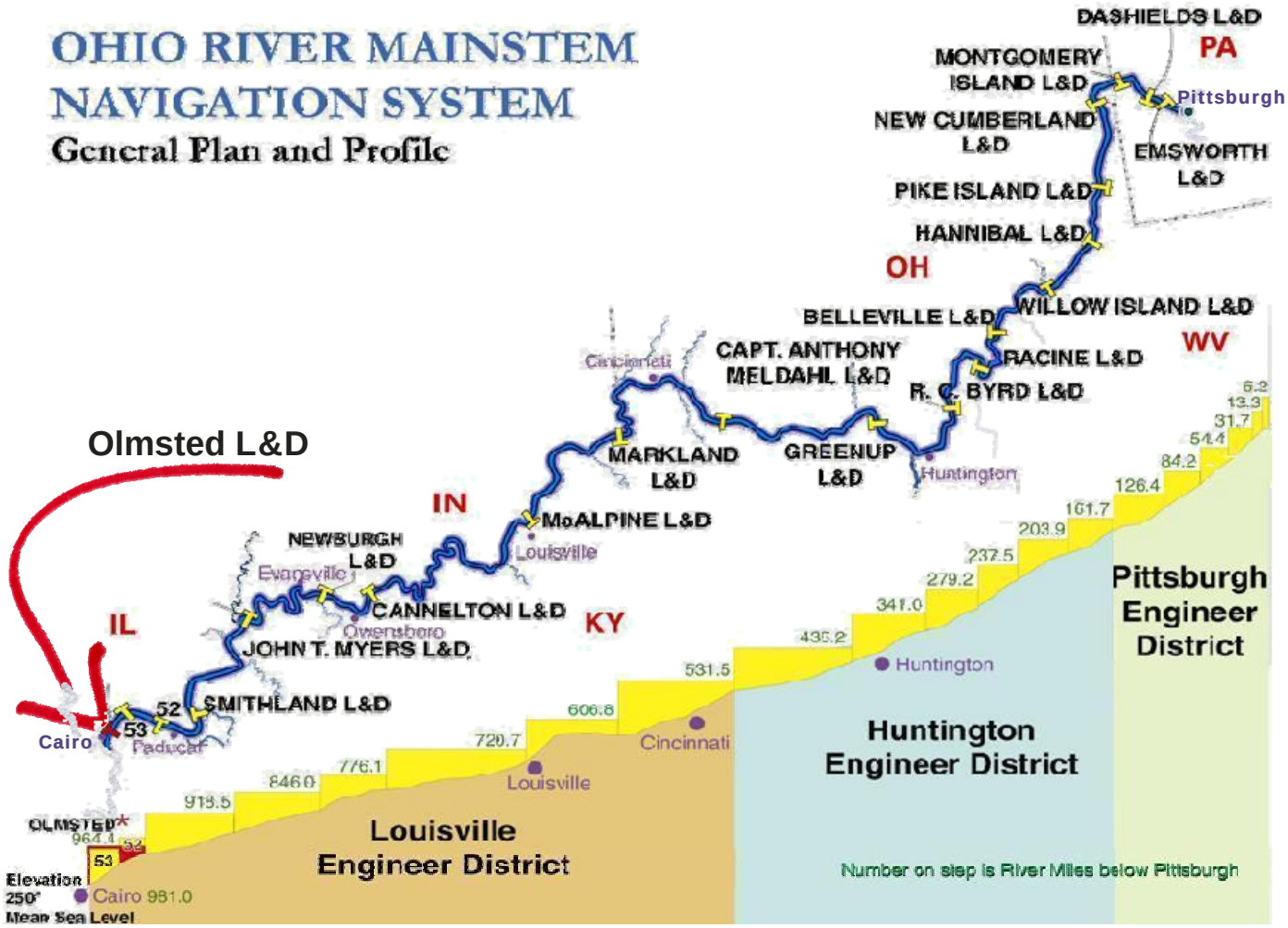

The underside of a 3,700-ton dam shell

Olmsted Locks and Dam replacement project

The antiquated design, age and temporary nature of locks and dams 52 and 53 make it impossible to meet traffic demands without significant delays and the U.S. Army Corps of Engineers is replacing these aged facilities with one of the largest civil works projects undertaken by the Corps. The Olmsted Locks and Dam project is under construction near the community of Olmsted, Ill. at Ohio River Mile 964.4, about 17 miles upstream of the confluence of the Ohio and Mississippi rivers. This stretch provides a connection between the Ohio, Tennessee, Cumberland, and Mississippi rivers and tonnage averages between 80 and 90 million annually – more than any other place in America's inland navigation system. Construction of the Olmsted Locks and Dam project was authorized by the Water Resources Development Act of 1988. The cost of this project is shared by congressional appropriation and the navigation industry tax on diesel fuel which goes to the Inland Waterways Trust Fund. The fund has been paying 50 percent of the cost, estimated to be $3.1 billion. The project comprises two 110-foot by 1,200-foot lock chambers located along the Illinois shoreline and a dam with five tainter gates, a navigable pass section and a fixed weir.

Construction of the dam

The project is being built using several construction contracts; the locks and guide walls are finished, the dam is scheduled for completion in 2020. The Corps of Engineers has been using an innovative method known as "in-the-wet" for the Olmsted Dam. Sections of the dam, called shells, are being fabricated in a casting yard on land, then carried out into the river and set in place. The method has been likened to a child building with LEGOs, only the concrete and rebar monoliths weigh up to 3,700 tons and are 125x102x30 feet.

The super gantry crane lifts a dam stilling basin shell off its construction pad in the casting yard.

Prior to placing the shells, the bottom of the river is graded, a sheet pile cut-off wall is built upstream and downstream and pipe piles are driven in the center. Challenges to building at this location include the river's changing velocity and levels. River levels fluctuate 50 feet annually.

High standards of project management

The Corps of Engineers and the prime contractor for the dam, the joint venture URS (Washington Group)-Alberici, have fielded a production planning and accountability management system to eliminate waste, boost productivity and ensure the safety of the work force. At the regular production planning and control meetings all the trades together develop daily schedules out three weeks. They also take corrective action to keep their work on schedule and synchronized with the various crews comprising crafts such as ironworkers, carpenters, electricians, mechanics and heavy lift operators.

Benefits

When the condition of locks and dam 52 and 53 is included in the calculation, the Corps of Engineers estimates this project will produce average annual economic benefits to the nation of more than $800 million. Operation and maintenance costs will be reduced and the locks will pass tows with fewer delays. Total lockage time will be reduced from five hours through the locks at 52 and 53 to less than an hour through the Olmsted locks.

Olmsted Locks and Dam project site

For more information:

U.S. Army Corps of Engineers
Louisville District Homepage

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Olmsted Locks and Dam

Louisville District