

Kentucky and Barkley Locks and Dams

Kentucky and Barkley Locks work as a system for passing barge traffic even though they are located on different rivers. Kentucky Lock and Dam is located on the Tennessee River 22.4 miles upstream of the junction with the Ohio River. Barkley Lock and Dam is located on the Cumberland River 30.6 miles upstream of the Ohio. The two rivers are connected by the Barkley Canal, which intersects the Tennessee River at mile 25.3 and the Cumberland River at mile 32.8. Kentucky's lock chamber is 110' x 600' and has been in operation since 1944. Barkley was completed in 1966 and has a 110' x 800' lock chamber.



Kentucky Lock and Dam

The Cumberland River downstream of Barkley Locks features several sharp turns (or bends) which limit navigation to one tow at a time. This, combined with varying flow levels on the Cumberland, cause the towing industry to favor using Kentucky Lock for loaded barges and Barkley Locks for empty barges.

The project, as authorized for construction by WRDA 96, recommends construction of a new lock chamber at Kentucky L&D measuring 1200' by 110', to be located landward of the existing 600' lock. Ground was broken in October of 1999 on a new 110' x 1200' lock at Kentucky Lock. The new lock will use in-sill intakes with wall filling valves and culverts located in lock walls. A multi-port filling and emptying system will be used to fill and empty the lock chamber. The Corps will use floating approach wall in the upper approach (similar to Olmsted walls) and is considering the use of pre-cast cofferdam which will become a permanent lock wall. This would



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help to reduce congestion and interference with traffic using the existing lock. The lower guide wall combines roller compacted concrete (RCC) with the foundation constructed “in-the-wet” (cast-in-place) to avoid costly cofferdam construction. The upper guide wall and guard wall will be floating concrete pontoon walls. Construction on the project began in July of 1998 and the scheduled completion date is 2011, depending upon funding.

The existing 110’ x 600’ lock will continue to be used as an auxiliary. Kentucky Lock and Dam’s current single lock chamber is insufficient to handle increasing tonnage. The lack of an auxiliary chamber forces tows to use Barkley Lock during periods of extended delays and closures. Kentucky Lock is at 90% capacity and tows face average delays of 5 to 6 hours.

Kentucky and Barkley Locks 2004 Commodity Distribution <i>(values in millions of dollars)</i>				
Commodity	Tonnage	Percent	Value	Percent
Coal	13,791,044	37%	\$528	7%
Petroleum	1,588,351	4%	\$357	5%
Aggregates	10,375,385	28%	\$522	7%
Grains	4,037,207	11%	\$631	8%
Chemicals	1,752,673	5%	\$2,176	29%
Ores/Minerals	1,184,295	3%	\$124	2%
Iron/Steel	2,789,186	7%	\$2,142	29%
Other	2,206,663	6%	\$989	13%
Total	37,724,804	100%	\$7,469	100%
<i>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</i>				

According to the Corps of Engineers Waterborne Commerce Statistics for 2004, nearly 38 million tons of commodities moved through Kentucky and Barkley. Coal made up 37% of that tonnage, with aggregates next at 28%. The 38 million tons moved was worth \$7.5 billion.

The state that shipped the most tonnage through Kentucky and Barkley Locks was Kentucky, with more than 16.5 million tons worth over \$1.2 billion. Of this amount, coal made up over 8.0 million tons, with aggregates next at 7.7 million tons. Illinois was the second highest shipping state, moving over 9.4 million tons.

Kentucky and Barkley Locks 2004 Barge Tonnage Shipped from States <i>(values in millions of dollars)</i>			
Shipments By	Tons	Value	Top Commodity
Kentucky	16,572,622	\$1,202	Coal
Illinois	9,472,595	\$774	Coal
Louisiana	3,903,040	\$1,251	Iron/Steel
Tennessee	2,039,664	\$756	Aggregates
Alabama	1,562,136	\$868	Iron/Steel
<i>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</i>			

Tennessee is the state receiving the greatest amount of shipments through Kentucky and Barkley Locks, with 16 million tons and a commodity value of over \$1.9 billion. Coal made up almost 50%

of this amount. Alabama was second in receipts, with 8.8 million tons. See map for a graphical representation of state tonnage movements through the Kentucky-Barkley system.

Kentucky and Barkley Locks 2004 Barge Tonnage Shipped to States (values in millions of dollars)			
Receipts By	Tons	Value	Top Commodity
Tennessee	19,321,399	\$2,208	Coal
Alabama	8,880,865	\$2,944	Grain
Louisiana	3,566,484	\$408	Aggregates
Kentucky	1,803,563	\$333	Coal
Arkansas	1,716,676	\$401	Aggregates
<i>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</i>			

Kentucky’s 1st Congressional District shipped the most commodities through Kentucky and Barkley Locks, shipping 13 million tons of aggregates, coal and other commodities, worth \$672 million. Illinois 19 was next, with almost 5 million tons. See map for the top 10 Congressional Districts shipping tonnage through Kentucky and Barkley Locks.

Kentucky and Barkley Locks 2004 Barge Tonnage Shipped from Congressional Districts (values in millions of dollars)				
Shipments By	District	Tons	Value	Top Commodity
Kentucky	1	15,441,434	\$824	Coal
Illinois	19	6,755,236	\$235	Coal
Louisiana	3	2,893,046	\$664	Ores/Minerals
Illinois	12	1,161,253	\$309	Petroleum
Alabama	5	847,429	\$730	Iron/Steel
<i>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</i>				

The leading Congressional District in receipts of Kentucky and Barkley commodities was Tennessee District 8, which received 6.5 million tons. This tonnage was mainly coal, aggregates and chemicals and had a combined value of \$394 million. Alabama District 5, second in tonnage, had the highest commodity value of \$2.4 billion. See map for the top 10 Congressional Districts receiving commodities through the Kentucky and Barkley locks.

Kentucky and Barkley Locks 2004 Barge Tonnage Shipped to Congressional Districts (values in millions of dollars)				
Receipts By	District	Tons	Value	Top Commodity
Tennessee	8	8,776,084	\$547	Coal
Alabama	5	6,038,792	\$2,636	Coal
Tennessee	5	4,725,730	\$716	Aggregates
Tennessee	6	3,178,787	\$118	Coal
Arkansas	1	1,716,676	\$401	Aggregates
<i>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</i>				