



US Army Corps  
of Engineers  
St. Paul District

# Information Paper

## Mississippi River: Lock & Dam 3 Navigation Safety and Embankment Improvements, Minnesota and Wisconsin



*New 862-foot guide wall extension at Lock and Dam 3*

### Contact

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### Location/Background

Lock and Dam 3 is a navigation dam and lock on the Mississippi River approximately 6 miles upstream of Red Wing, Minnesota. Its position on a bend in the river makes downbound navigation difficult because of an outdraft current that tends to sweep towboats and barges away from the lock and toward the gated part of the dam. The outdraft current has resulted in many accidents, including 11 incidents since 1968 when tows collided with the gated part of the dam.

The low and weak embankments on the Wisconsin side are a related problem. Navigation accidents can render the four roller gates inoperable, resulting in overtopping and erosion of the embankments. Three series of Wisconsin side embankments divide the 8-foot head at the dam into three steps and work together as part of Lock and Dam 3. Failure of the embankment system could result in an accidental drawdown of Pool 3 with significant economic and environmental consequences.

### Status

The navigation improvements included three construction activities, an 862-foot long guide wall extension that was completed in April 2011, construction of a closure dike to mitigate outdraft conditions near the guide wall that was completed in October 2011, and channel dredging and the placement of approximately 150,000 cubic yards of material which was completed in February 2012. The lower embankment improvements included the construction of a series of engineered embankments and spillways totaling several thousand linear feet and associated control structures. Construction has been slowed due to extended high flows and will be completed in fall 2012. The upper embankments improvements included the reconstruction of nine channel closures along the Wisconsin embankment. The closure structures consist of 1,200 feet of sheet pile and riprap erosion protection placed along the adjacent embankments and improvement to the existing access trail/vehicle roadway. Construction was completed in October 2011. Environmental mitigation is ongoing to restore 313 acres of floodplain; it will be completed fall 2012.

### Authority

The Upper Mississippi River Nine-Foot Channel Navigation Project was authorized as part of the Rivers and Harbors Act approved July 3, 1930.

### Fiscal

Total construction cost is estimated to be \$69,043,000. The estimated benefit-cost ratio is 1.4. The total allocation through fiscal year 2008 reflects 50/50 contributions from the Corps Construction appropriation and the Inland Waterways Trust Fund (IWTF). The 2009 allocation includes Federal and American Recovery and Reinvestment Act (ARRA) contributions.

	Federal	IWTF	Fed & IWTF
FY98-08	\$ 3,702,000	\$3,702,000	\$ 7,404,000
FY09	\$ 957,000	\$ 0	\$ 957,000
ARRA09	\$60,682,000	\$ 0	\$60,682,000