



US Army Corps  
of Engineers  
Rock Island District

# Information Paper

## 13. LaGrange – New 1200' Lock

### Upper Mississippi River System - Navigation and Ecosystem Sustainability Program

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#### Location/Description

The program area comprises the Upper Mississippi River System, as defined by Congress in the Water Resources Development Act of 1986 (WRDA 1986), which includes the Upper Mississippi River from Minneapolis, Minnesota, to Cairo, Illinois; the Illinois Waterway from Chicago to Grafton, Illinois; and navigable portions of the Minnesota, St. Croix, Black and Kaskaskia Rivers. This multi-use resource supports an extensive navigation system (made up of 1200 miles of 9 foot channel and 37 lock and dam sites), a diverse ecosystem (2.7 million acres of habitat supporting hundreds of fish and wildlife species), floodplain agriculture, recreation and tourism. Based on the recommendation of the recently completed UMR-IWW System Navigation Feasibility Study that examined system needs over the next 50 years, the Navigation and Ecosystem Sustainability Program (NESP) was implemented to achieve the dual purposes of UMRS ecosystem restoration and navigation improvements. The new Lock & Dam at LaGrange is one of eight initial NESP Navigation component projects being implemented under this new UMRS program.

LaGrange Lock is part of the Illinois Waterway System that includes 8 locks and stretches 327 miles across the state of Illinois from Lake Michigan to the Mississippi River, with confluence at Grafton, Illinois. It is the last lock encountered on the system before reaching the Mississippi.

In order to improve navigation efficiency, part of the recommended alternative is to construct new 1200 ft locks and conversion of the existing 600 ft lock to an auxiliary lock. The new 1200 ft lock for LaGrange will be sited landward of the existing lock in a manmade channel. In order to accommodate the landward lock there will be significant channel, approach and site work. The current project cost estimate is \$232,000,000 (2004 dollars).



#### Problem Statement

LaGrange Lock & Dam was constructed in the 1930's and is 600 ft long, while the prevailing 15-barge tow size has a length approaching 1,200 ft long. As a result, tows must lock through using a two-step process, which takes approximately 1.5 to 2 hours compared to only 0.5 to 1 hour for a one-step process through a 1200 ft lock. Under the current conditions, navigation traffic growth will result in increases in waiting times at the 600 ft locks, creating lock delays that will increase exponentially each year that new 1200 ft locks are not in place.

#### Current Status

FY06 funds were used to collect topographic data, gather historic data, commence work on the numeric hydraulic model, and install video equipment to record lock approach conditions. In addition to gathering existing conditions data a design report was completed which studied several lock alignments and estimated earthwork and cofferdam quantities and costs. The report also concluded the numeric and hydraulic models will be critical in determining the final lock location. FY07 funds will be used to construct the physical hydraulic model, collect geotechnical data, commence environmental and cultural reconnaissance activities, and continue the numeric hydraulic model.

#### Authority

Pending new authority, our current activities supporting UMRS navigation and ecosystem improvements are performed under authority provided by Section 216 of the Flood Control Act of 1970 (Public Law 91-611).