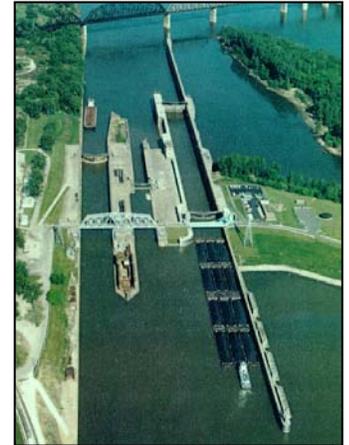




**US Army Corps  
of Engineers®**  
Engineer Research and  
Development Center

# Lock Operations Management Applications (LOMA)

**Description** Managing federal waterways in a safe and efficient manner is a challenge that involves the coordination and cooperation of the entire navigation community. With the Coast Guard requirement for commercial vessels to transmit the Automatic Identification System (AIS) signal there is the opportunity to leverage the AIS signal into a broader use and exchange of navigation information.



The LOMA concept is to provide to the navigation community (lock operators, district managers, vessel operators etc) navigation information, in an easy to understand format that will expand situational awareness, improve navigation safety, and promote better, more efficient communications within the community. It is envisioned that the capability to receive and transmit information such as weather conditions, gate settings, lock delays, notice to mariners, as well as the ability to capture/transmit/display data from the Real Time Current Velocity Meters (RTCVs) will become operational realities. LOMA will not replace the existing lock data collection system.



The Engineering Research and Development Center (ERDC), assisted by the Institute for Water Resources (IWR), is leading the effort to develop the requirements and software to meet the needs of the Corps and benefit other interests. Information such as vessel location, tracks taken, current velocity and direction, weather including wind, rain and fog, river stages, hazards such as debris, notice to mariners, gate settings will be gathered and made available from a central source to the lock operator, vessel operator and navigation community at large. Lock operators will have an increased situational awareness and be better able to manage and plan

lock activities to have minimal impact on the flow of river traffic. Navigation program and project managers as well as district, division and HQ Business Line Managers will be able to view entire river systems and evaluate the functionality and flow of traffic on that system. Vessel operators and owners will be able to better manage the movement of vessels to minimize delays and keep traffic smoothly flowing. All this will greatly improve navigation safety. The software will also have the



capability to include vessel traffic in coastal areas already served by the Coast Guard AIS receivers. LOMA software development is being done under contract in FY 2010.

**Users** The Corps of Engineers, the inland vessel operators, and shippers will be the primary users of LOMA.

**Products** A user friendly web-based program to display various levels of navigation information and a means for two way communication between the Corps and vessel operators will be developed and deployed. AIS receivers will be purchased and, placed at locks and critical locations to assure adequate coverage of the navigation channels.

**Benefits** The availability of this suite of information will enable lock and vessel operators to improve safety, manage smartly, communicate more effectively and ultimately maximize business while reducing costs. Lock operators will be able to plan routine maintenance when there is a lull in traffic. Other maintenance activities that will affect vessel traffic can be announced in advance to avoid congestion. Knowledge of current conditions in advance of the lock approach will improve safety and maintain traffic flow. Corps Navigation PM's will have real time information of the waterway conditions and traffic. This information is critical in times of emergencies.

**Corps Program** Funds for LOMA are supplied by the Corps O&M portion of the American Reinvestment and Recovery Act (ARRA). This covers the software development, testing and deployment as well as the purchase of AIS receivers.

**Sponsors** Corps HQ Operations

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