

# The Impacts of Unscheduled Lock Outages



On November 1, the National Waterways Foundation (NWF), in cooperation with the Maritime Administration (MARAD), released a ground-breaking study—“The Impacts of Unscheduled Lock Outages”—that examines multiple impacts of unscheduled lock outages on the inland waterways system. The study also serves to highlight the economic benefits associated with reliable inland waterways navigation.

The study was conducted by the Center for Transportation Research at the University of Tennessee, and the Vanderbilt Engineering Center for Transportation and Operational Resiliency at Vanderbilt University. It studied four geographically different locks on the inland waterways system: Markland Locks and Dam (Ohio River near Cincinnati), which opened in 1959; Calcasieu Lock (Gulf Intracoastal Waterway in Louisiana), which opened in 1950; LaGrange Lock and Dam (southern-most of the navigation structures on the Illinois River), which opened in 1939; and Lock and Dam 25 (Mississippi River, north of St. Louis), which opened in 1939.

These four locks that were studied support traffic on critical segments of the Mississippi River system. For each lock, specific screening tool elements reflected Physical Characteristics; Performance; and Network Role. Among the key findings, the study reported:

- If an unscheduled closure of the Markland Locks and Dam were to occur, the Shipper Supply Chain Cost Burden expected is estimated to exceed \$1.3 billion annually. An unscheduled outage that carriers and shippers would have no opportunity to prepare

for at Markland would require the availability and use of 40,000 additional rail carloads and 60,000 additional truckloads to transport the cargo transiting the lock.

- The Shipper Supply Chain Cost Burden of an unscheduled closure of the Calcasieu Lock is estimated to exceed \$1.1 billion annually. An unscheduled lock outage at Calcasieu would require the availability

“

*The findings underscore the critical need to recapitalize the lock and dam infrastructure*

”

and use of 10,000 additional rail cars and several hundred locomotives to transport the current cargo transiting the lock.

- The Shipper Supply Chain Cost Burden for a closure at LaGrange and/or Lock and Dam 25 is estimated to exceed \$1.5 billion at either lock annually. Unscheduled outages at LaGrange and/or Lock and Dam 25 would severely stress the nation’s railroad system to transport the current cargo transiting the locks. Trucking to alternative waterway locations would mean an additional 500,000 loaded truck trips per year and an additional 150 million truck-miles in affected states.

- These navigation projects span a broad

range of both geographies and economic purposes, and in some cases provide freight mobility that may not be easily replaced by other transport modes.

- Lock outage duration for this study is based on a one-year closure that triggers long-term changes by shippers and carriers.
- While every state supported by the four locks benefits from the availability of inland navigation, the results reflect the system’s extraordinary value to 18 states, especially Louisiana, Texas, and Illinois.

The mission of the National Waterways Foundation is to develop the intellectual and factual arguments for an efficient, well-funded and secure inland waterways system. This national study reveals, for the first time, the broad range of economic and societal impacts of unscheduled lock outages. There were real-world examples of outages that occurred in September through November at Locks and Dams 52 and 53 in Illinois, and at the Inner Harbor Navigation Canal Lock in October in Louisiana. Both events impacted shippers and consumers.

“The study underscores that if the inland waterways were unavailable to transport the nation’s freight, the average number of trucks on rural highways would increase and result in significant impacts on safety, highway maintenance cost, and fuel consumption,” said Joel Szabat, MARAD Executive Director.

On the inland waterways system, there are 219 locks at 176 sites. The average age of the locks is more than 60 years, with 59 percent of them more than 50 years old. The total tonnage moved on the inland system in 2016 was 557.8 million tons valued at \$300 billion dollars. This study’s findings underscore the critical need to recapitalize the inland waterways lock and dam infrastructure.

There may be a chance to do just that ahead in the Administration and in Congress, and we remain hopeful – and vigilant – for that opportunity.

See the full study at: [waterwayscouncil.org/locksdams/](http://waterwayscouncil.org/locksdams/) For additional information visit [www.nationalwaterwaysfoundation.org](http://www.nationalwaterwaysfoundation.org) and [www.marad.dot.gov](http://www.marad.dot.gov)



**DAN MECKLENBORG**  
Chairman,  
National Waterways  
Foundation