The Civil Works Challenge: Water Resources Infrastructure

The Army Corps of Engineers undertakes transformation to meet 21st century water-resource demands.

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U.S. Army Corps of Engineers Nashville District work crews from the Cumberland River Operations Center unwater Barkley Lock on the Cumberland River, near Kuttawa, Ky., to perform scheduled inspection and major maintenance repairs Aug. 12, 2011. The navigation lock is located on the left bank of the main dam structure and was opened to navigation in July 1964. it is 800 feet long and 110 feet wide. the gravity fill-and-empty system exchanges 37,500,000 gallons of water per lockage. The lock is operated 24 hours per day. U.S. Army Corps of

Engineers photo by Mark Rankin

The U.S. Army Corps of Engineers (USACE) faces a massive challenge: America's aging water resources infrastructure is deteriorating rapidly.

Tasked with operating, maintaining, planning, and constructing a significant portion of that infrastructure under the banner of Civil Works, USACE is coming to grips with the difficulties that lie ahead in the execution of one of its core missions.

> *"The bottom line, according to USACE Director of Civil Works Steven L. Stockton, is that USACE needs to start making tough decisions about its vital water resources assets – what to recapitalize, what to repurpose, and what is no longer serving any useful purpose and therefore should be divested.*

Complicating the decision-making process is the certainty that solutions must take into account what is likely to be a protracted period of fiscal austerity for the nation's prime provider of public engineering services.

"We've invested about a quarter-trillion dollars over the last century in water resources infrastructure," Stockton explained. "That's locks and dams and levees, those kinds of things. We have about a $60 billion backlog of authorized projects, but we only get about $2 billion every year to actually chip away at that backlog. It's just not enough federal resources to meet the needs that are out there and to do the things people expect us to do.

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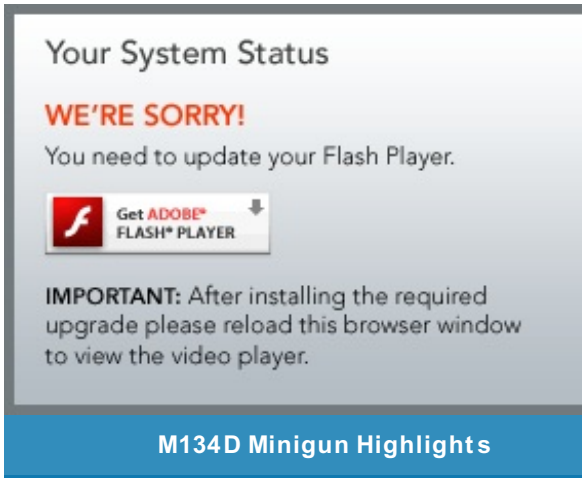

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“What we’re dealing with is: ‘How do we continue to operate, maintain, and rehab what we own, as well as meeting new water resources challenges?’ That’s the Civil Works challenge.”

To address the situation, USACE has spent more than a year crafting a transformation plan aimed at improving the management of the nation’s water resources infrastructure and making investments for the future. Transformation is based on four pillars – managing the water resources infrastructure portfolio; planning modernization; enhancing product and service delivery methods; and transforming the Civil Works budget to better address America’s water resources needs.

Planning Modernization

Transformation begins with planning modernization, said Stockton. Currently, USACE has a very rigorous planning process that considers the engineering feasibility of solving water resources problems, the environmental acceptability of a given project, and its economic viability. Over the last two decades, planning studies have become excessive and complex because of litigation associated with USACE efforts – whether deepening a channel or building a dam. Answering those three questions has led to bloated tomes, which are years in the making.

Steve Hobbs, structural engineer for the USACE St. Louis District and level I rope

“Unfortunately, some of our studies could be poster children for enormously expensive undertakings,” Stockton said frankly. “Our Savannah Harbor Expansion Project to deepen the channel there by about 5 feet has taken more than 16 years and $40 million – just to do a study. That produces a report that’s about 3 feet wide. So we’ve really tried to rethink how we make investment recommendations to the administration and Congress and how to get back to the basics – how to make good, solid investment recommendations with

access technician, prepares to inspect the top chords of the railroad truss at the Holston Army Ammunition Plant in Tennessee. The St. Louis District employs this unique technique to conduct inspections of USACE bridges, dams, and other structures as well as those of other federal agencies. U.S. Army Corps of Engineers photo by George Stringham

rigorous analysis without trying to answer every foreseeable question before trying to make an investment decision."

Getting back to basics has led Stockton and the architects of the transformation plan to emphasize execution, accountability, and improvement of the organizational and operational model regionally and nationally to ensure consistent quality in planning. USACE planners will improve their capabilities via mandatory training and professional certification. Updated planning processes and planning guidance will allow management to streamline the development of projects, putting a premium on performance and the timely delivery of quality solutions to water resources needs.

To more clearly illustrate the goals of planning modernization and provide simplified guidance, the transformation plan applies a metric known as the "3-by-3-by-3 rule."

"Three years is our stretch goal for the completion of projects studies," Stockton stressed. "Three years, $3 million dollars, and three levels of vertical coordination are part of the '3-by-3-by-3 rule.' You can add to that the recommendation that you put your report in a binder less than 3 inches thick.

> *"A lot of the problems we have are created because we have a very complicated set of principles, guidelines, policies, and rules that we have to adhere to, as well as the National Environmental Policy Act. Together with the potential for litigation, those considerations have convoluted our process. We're trying to refocus and do what's necessary without going overboard. When you produce a report that's 3 feet thick, no one reads it. And a lot of the data and information gathered is compiled simply as a preventative measure to address potential litigation."*

Accordingly, the main report associated with any feasibility study will be targeted for encapsulation in 100 pages or fewer. Any schedule or budget exceeding these guidelines will require USACE Headquarters approval. Finally, a thorough review of the total number of studies in USACE's planning portfolio will be completed to help focus available resources on the most viable studies.




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