



US Army Corps of Engineers

Institute for Water Resources

BUILDING STRONG®

Integrated Decision Support Tools (2011)

Status: Completed

Purpose: The US Army Corps of Engineers (USACE) provides services through activities and assets that secure the nation's Navigation, Hydropower, Flood Risk Management, and Ecological Restoration, among others. The many USACE activities across districts, which may include renewal, rehabilitation, repairs, reallocation, removal, or rejection projects, have impact on realization of each of the services and others, and ultimately impact USACE Value to the Nation.

This project seeks to develop a tool and develop a service for support of decision-makers to align USACE civil works budget with National priorities. This tool will assist in evaluating impacts of budget priorities and strategies for recapitalization of infrastructure and projects. To do this, an integrated budget decision support tool to help analyze large quantities of different types of information, effectively resolve and communicate findings to and among diverse groups of individuals, and identify and take appropriate actions in the absence of complete data and in the face of uncertainty will be developed and supported. As economic pressures grow, the quality of our nation's investment decisions becomes increasingly important. We have a pressing need for such a tool to help us understand and communicate the magnitude and nature of challenges facing our natural and constructed resources, their relationships to one another, and their relative significance to the Nations overall well-being.

The goal of this project is to transparently highlight how the outputs from resources that are budgeted support USACE services, and how these result in outcomes that enhance USACE Value to the Nation. This evaluation must be flexible to adjust to changes in national policies and priorities, and examine across different scales of interest, such as geographic, programmatic or organizational.

Objective: Develop a pilot study of FY2014 budgeting process to examine the potential results of project priorities as a function to their aggregate Value to the Nation.

Develop a flexible integrated budget decision support tool to integrate USACE data, information, and analysis onto a performance module to help evaluate how USACE projects are associated with Value to the Nation, as defined by national priorities at any given time, such as quality of life, global competitiveness, and energy independence.

Based on USACE subject matter experts and guidelines, develop a prioritization module to evaluate project priorities under budget proposals with respect to Value to the Nation given different policy scenarios under different management criteria and management units of interest, and identify financing gaps by a Value-to-the-Nation-recapitalization module.

Develop a web based tool to integrate the performance, prioritization, and

recapitalization modules.

Develop a logic engine to incorporate rules for prioritization portfolio under all key services provided by USACE subject matter experts. This will include the implementation of a 'concept' pilot at the district level to develop a logic engine with district H&H to incorporate their knowledge for Spill Way gate repair scheduling.

Benefits: The WIDT will enhance our ability to communicate complex information, evaluate investment decisions and opportunities, improve communications related to the budget justification process, and support other decision-making processes. It is also envisioned as a utility to help the USACE anticipate emerging needs, allowing the USACE and its partner agencies opportunities to coordinate efforts and engage in meaningful dialogues that are too frequently complication by reaction-driven timelines.

This project will integrate and relate the many performance metrics across all USACE projects under a common platform to enable multi-criteria evaluation of resources as a function to their impact to desired outcomes in Global Competitiveness, Energy Independence, and Quality of Life, and ultimately how these are integrated onto an overall Value to the Nation. This project will provide the ability to integrate and examine information from one of the largest service providers and evaluate it in unprecedented ways.

The integrated budget decision support tool will provide a platform to help decision makers evaluate how different policies and budgetary decisions applied to USACE activities affect current and future President priorities (currently quality of life, global competitiveness, and energy independence) that shape USACE Value to the Nation. The decision support tool will enhance our ability to integrate complex and different types of information, evaluate investment decisions and opportunities, improve communications related to the budget justification process, and support other decision-making processes. The decision support tool will provide visualization of integrated information through maps and tables, incorporate expert logic within USACE and evaluate the impact of USACE services in terms of Value to the Nation.

Progress: An interim WIDT has been developed and functions as specified in original design criteria.

The WIDT is under continued development in FY11.

Products:

- [WIDT Background Information](#) (pdf, 1.6 MB) (interim)
- [WIDT Presentation](#) (pdf, 1.9 MB) (interim)

Related Links:

Partners:

- [Cold Regions Research and Engineering Laboratory](#)
- [Construction Engineering Research Laboratory \(CERL\)](#)
- [Engineer Research and Development Center \(ERDC\)](#)
- Environmental Protection Agency
- [National Oceanic and Atmospheric Administration](#)
- Redlands Institute

- U.S. Fish and Wildlife Service
- US Forest Service