



Response Summary:

The USACE and the Brazilian National Department of Transportation Infrastructure (in Portuguese: Departamento Nacional de Infraestrutura de Transportes or DNIT) entered into an Intergovernmental Partnership Agreement that supports both short-term and long-term objectives of DNIT in the areas of river engineering and river navigation services. As part of the Agreement, USACE provides capacity building and knowledge transfer in DNIT with analysts, engineers, planners and others, specifically in the area of waterway and river engineering. USACE supports this mission by providing Subject Matter Experts (SMEs) to work with the DNIT. As the first project associated with this agreement, the Madeira River Navigation Improvement Planning Study consists of the development of a plan by DNIT to improve navigation on the Madeira River from Porto Velho, Rondônia to the confluence with the Amazon River near Itacoatiara, Amazonas. Jointly, the DNIT-USACE team performs the planning and design necessary to meet the objective of improving the navigation reliability of the Madeira Waterway. The DNIT-USACE team leverages the USACE Planning Process and engineering expertise of the USACE SMEs. The ERDC provided temporary subject matter expertise to lead a specific task investigating and communicating how the planning project was incorporating PIANC's Working with Nature (WwN) philosophy into the planning and design phases of the project.

Period of Performance:

1 June to 30 September 2020.

Benefits of the Response to the USACE Dredging/Navigation Program:

The objective of this DOTS request was to provide ERDC assistance to the DNIT-USACE team for a submittal of the Madeira River Navigation Improvement Planning Study to the PIANC WwN certification and award. Given the vast involvement and experience of ERDC in the PIANC WwN initiative, the DOTS request included the following tasks: 1) Review the completed work to date on the Madeira River project and provide comments on previously incorporated WwN philosophy in the planning project; and 2) Provide suggestions to the DNIT-USACE (Brazil) team to incorporate additional WwN elements in future tasks (design and construction phases) of this project.



A barge strike observed at Baianos, Brazil in 2016 illustrates the current hazards to navigation on the Madeira River.

Deliverables:

There were several products generated to support this request. A kick-off meeting (via webinar) was held that included a presentation by ERDC on the overview of WwN philosophy, the process to certify a WwN project and to submit for the WwN award. Prepare a submittal package for the PIANC WwN initiative was prepared, along with a summary of the Madeira River project for posting to the ERDC Engineering with Nature website. A manuscript was also developed for peer review publication in a Special Series of the journal Integrated Environmental Assessment and Management.



Providing environmental and engineering technical support to the U.S. Army Corps of Engineers
Operations and Maintenance navigation and dredging missions