



Analysis of Dredge Essayons Turtle Deflector Approach Angles, Inflow Screening, and Use of Turtle Tickler Chains

ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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Response Summary:

Two POH harbors (Port Allen on the Island of Kauai, and Honolulu Harbor on Oahu) are scheduled for dredging by the ESSAYONS beginning in February 2019 (funds permitting). As part of ongoing POH negotiations with NMFS, the revised Biological Assessment will in all likelihood require increased observer monitoring and installation of a modified turtle deterrence device to mitigate/eliminate hawksbill and green sea turtle takes during dredge activities. In order to comply, various options will require evaluation, several of which include employing additional measures to increase observer monitoring to 100% by installing intake screens at the hopper inflows, and, to better deter takes, by implementing turtle tickler chains. To upgrade the ESSAYONS, a modification to the hopper distribution circuit to allow for 100% inflow screening to monitor for turtle takes, will be a non-trivial action that will require a mutli-disciplinarian analysis approach due to Essayons' confined deck and hull structures relative to the slurry pipeline distribution system. This response consists of the facilitation of the selection, design, and construction of the most effective cost-efficient inflow screening and engineering controls as possible.



Period of Performance:

15 May – 15 September 2018.

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

Facilitation of these measures will allow POH to achieve its navigation mission in the most efficient and effective manner possible. If proven successful as an engineering control to minimize turtle takes, use of the turtle tickler chains in lieu of currently-used turtle deflectors will improve hopper dredge production rates, reduce fuel usage rates (and attendant cost and emissions).

Deliverable:

The products produced by this response include a design for hopper inflow screening, review and issuance of a Biological Assessment that includes the use of turtle tickler chains, and analysis of operational approach angles of turtle deflectors at varying depth and tide conditions.



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

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