

## EXECUTIVE SUMMARY

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A monitoring survey was conducted in October 2011 at the Douglas Island Disposal Site (DIDS) as part of the Disposal Area Monitoring System (DAMOS) Program. The 2011 survey effort consisted of a multibeam bathymetric survey to characterize seafloor topography and dredged material distribution and sediment profile imaging (SPI) and plan-view imaging surveys to provide additional physical characterization and to assess benthic recolonization. The results of the 2011 surveys were used to document changes at DIDS since the previous surveys in 2004/2005 and the subsequent placement of approximately 195,000 m<sup>3</sup> of dredged material at the site. These results were also used to evaluate the response of DIDS to a change in disposal strategy; prior to the 2004/2005 surveys, placements were targeted at a single location and after the 2004/2005 surveys dredged material was broadly distributed over the entire site.

The multibeam bathymetric survey was conducted over an irregular polygon covering the extent of DIDS and documented broad, but relatively thin, areas of sediment accumulation over much of the site. There was little change to the height of the historical disposal mound near the center of DIDS.

SPI and plan-view images were collected from DIDS, three reference areas, and along a transect between the site and the northern reference area. Evidence of Stage 3 successional status was present in all but one replicate image from all survey stations, suggesting that the benthic community at the disposal site had recovered and was equivalent to reference area benthic communities. Deep apparent redox potential discontinuity (aRPD) depths at all stations indicated intense biological reworking of sediments, and mean aRPDs had increased since the previous SPI survey in 2005.

In summary, the distributed disposal of approximately 195,000 m<sup>3</sup> of material affected the seafloor topography as expected with little change to the height of the existing mound and a varied, thin layer of accumulation over the majority of the site. In addition, DIDS experienced full recovery of the benthic community in the year and a half since cessation of dredged material disposal. Continuation of the distributed placement strategy is recommended to maintain adequate water depth and to limit the potential for mobilization of sediment at this relatively shallow site. Future confirmatory survey work at DIDS is conditional on additional placement of a significant amount of dredged material.