

CEE-ECHO™ Selected for BayLand Consultants & Designers, Inc. Hydrographic Services in the Chesapeake Bay, USA.

Maryland, USA engineering and environmental services firm BayLand Consultants & Designers, Inc. selected the CEE ECHO™ single beam survey system for use with their Trimble GNSS equipment. Primarily for projects in the Chesapeake Bay, with a focus on shallow water environments and high precision, the new echo sounding package with HYPACK software presents the latest available technology for clients.

BayLand Consultants & Designers, Inc. based in Baltimore, Maryland USA is an experienced engineering and environmental services firm operating throughout the Chesapeake Bay region. BayLand offers complete project services, including assessments, planning, design, permitting, construction management and post-construction monitoring. With a significant land and hydrographic survey requirement within many of BayLand's dredging, shoreline, and ecological restoration projects, the survey department has many years of field expertise providing survey services in the region. Since their inception in 1995, BayLand has completed hundreds of surveys throughout the Chesapeake Bay.

During a 2018 survey equipment lifecycle review, BayLand decided to undertake an investigation of available new hydrographic echo sounding equipment. With a focus on instruments with capabilities matched to their unique projects, BayLand was looking for detail, accuracy and provision of quality control for shallow water environments. The goal was to

take advantage of the latest single beam echo sounding technology to improve cost effectiveness for projects and continue to enhance in-house survey capabilities.

Working within a Trimble GNSS infrastructure, the new echo sounding equipment was to be used with a R8S GNSS rover utilizing cell phone VRS or UHF base station corrections.



High-precision Trimble GNSS base station.

After a technical review, BayLand selected the CEE HydroSystems CEE ECHO™ echo sounder with HYPACK® software for real time navigation and acquisition. In addition to offering the detail and accuracy needed, the CEE

ECHO also manages and records the GNSS and sounding data, allowing BayLand to identify efficiencies and new enhanced QC processes for future projects. The new compact echo sounding system also offered advances in survey craft flexibility and mobilization time. For reliability in data processing, industry standard HYPACK software is used from acquisition through editing, to generation of the reduced final hydrographic dataset. BayLand's hydrographic results are expressed as an elevation above Mean Low Water as determined by the local geoid or using the HYPACK VDATUM transformation to a tidal datum and would typically be merged in with a concomitant land survey dataset.



BayLand equipment training.

During an icy CEE HydroSystems training course in Baltimore, BayLand augmented their hydrographic skills with instruction in collection and interpretation of the full water column echogram available from the CEE ECHO. With survey projects sometimes encountering submerged aquatic vegetation (SAV), BayLand is now able

to more quickly identify and remove SAV signals from survey datasets.



Ice breaking during CEE ECHO training.

BayLand Principal and Vice President Sepehr Baharlou, P.E., summarized the new CEE HydroSystems acquisition; "for us to reinvest in our hydrographic survey equipment we chose CEE Hydrosystems for its ability to work in shallow water, portability, integration with HYPACK software, customer service and cost efficiencies. We plan to use the equipment to provide hydrographic surveys in support of our environmental assessments, waterway restoration and marine infrastructure projects."