



Under Keel Clearance Surveys

What was problem

Under keel clearance in ports and harbours can be a costly and dangerous hazard if not effectively managed. With the risk of vessel's running aground on the ocean floor, authorities typically keep on top of this by gathering bathymetric data to help make informed decisions in the management of their waters. Total Hydrographic were contracted by two separate harbour authorities to provide assistance in the management of their under-keel clearance models.

How did we solve the problem – what we did

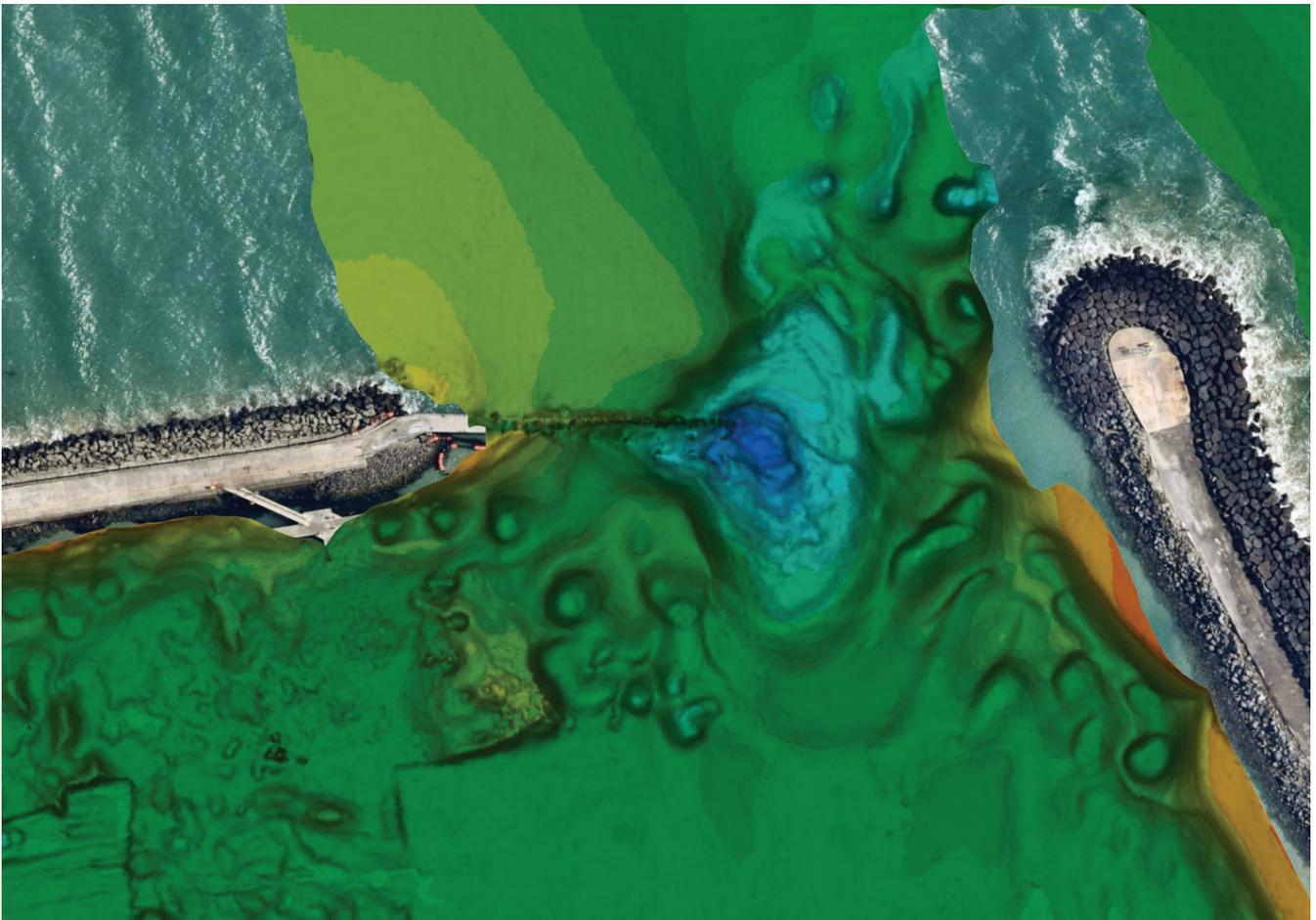
Total Hydrographic's work scope for these projects included the capture of bathymetric data within these port waters, to update their under-keel clearance models. To meet the scope of both these projects, Total Hydrographic used its Norbit Winghead i77h with integrated POS MV multibeam echo sounder to capture high resolution bathymetric data. Coupled with RTK GNSS for positioning, this system is capable of meeting the most stringent standards set by the International Hydrographic Organisation.

The survey system was calibrated before each deployment for both the projects, a patch test was conducted to calculate the offsets in the roll, pitch, and yaw of the system. A patch test is crucial for a Multibeam Echo Sounder (MBES) system so that the fine misalignments between the survey sensor can be corrected for. This then allows us to capture finely calibrated bathymetric survey data.

What were the results

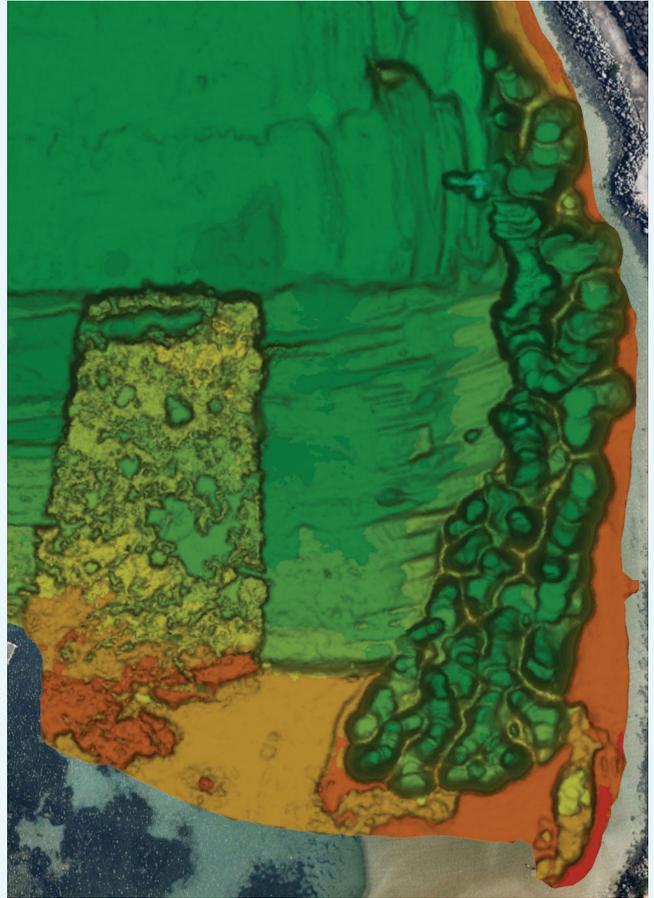
The final deliverable that we presented to the clients were two high resolution bathymetric XYZ data sets. These data sets had been fully validated via in-house quality control measures and adjusted to the datums of the client's choice. To help visualise these data sets, Total Hydrographic drafted plans of surveys that exhibited the bathymetric contours as a geo-referenced tiff that was overlain on aerial imagery.

A key part of these projects had been the Norbit Winghead MBES system, our latest MBES system. It's integrated design, coupled with its unique portus pole, allows a rapid setup and pack down. The system was deployed on Total 2, our 4.0m aluminium monohull vessel, making it perfect for navigating shallow waters safely and easy to transport to almost any body of water.



How did this resolve the problem for the client?

The XYZ datasets and bathymetric survey plans, provided a quantitative and visual assessment of the depths in the port waters. The dataset highlights the location and size of areas within the port that are shallower than the declared depths that are maintained by the port for their channels, berths and anchorages. With this geo-referenced information, the clients were able to calculate the volume of material needed to be removed in order to meet their declared depths. Information such as this is vital for undertaking an efficient and cost-effective dredging campaign.



To find out more on how Total Hydrographic can help you mitigate risks and supply you with current data for your reservoir please contact:



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