

Port & Harbour Dredging Survey

Scope of Project

A corner stone of Total Hydrographic's operations is to provide underwater survey solutions that can help Port and Harbour Authorities determine an appropriate dredging solution for their waterways. Dredging solutions often takes place because of sedimentation gradually encroaching in navigable waterways, and or when Port and Harbour authorities look to expanding their operations.

Total Hydrographic were bought onboard to provide a Harbour Authority along the Great Ocean Road, with a bathymetric survey of their berths and channel to highlight areas of shoaling that could cause future navigational issues for larger fishing and berthing vessels. With our in house store of equipment we were able to respond quickly to our client, and undertake a pre-dredge survey days after talking to the client.



Survey Requirements

The specifications for the survey were to undertake a Singlebeam Echosounder (SBES) survey using a CEE-Echo SBES and dual frequency transducer (24/200 kHz). The objectives of the survey were to obtain a clear resolution of the harbour bathymetry, calculate the volume of material needed to meet the clients declared depth and provide the dredge contractors with an appropriately coloured matrix to aid in their dredging.

Our teams pre dredge survey acted as the reference surface for which progress surveys would be analysed against allowing for volume calculations of the dredging material that was removed throughout the campaign.



What we encountered

Dredging works on a tight window of work, they don't get paid for any material dredged beyond the limit set by the client. For us that meant regular progress surveys, working with the client on a rapid response time. Often when one progress survey was completed, we'd set the equipment and supplies ready for the next. We provided a day response time for when a survey was asked for. Total Hydrographic's procedures were set so that surveying was achieved in the morning and processing could be completed in the afternoon. From the time of surveying to the time of delivery this was all achieved before 5pm, on most days at least.

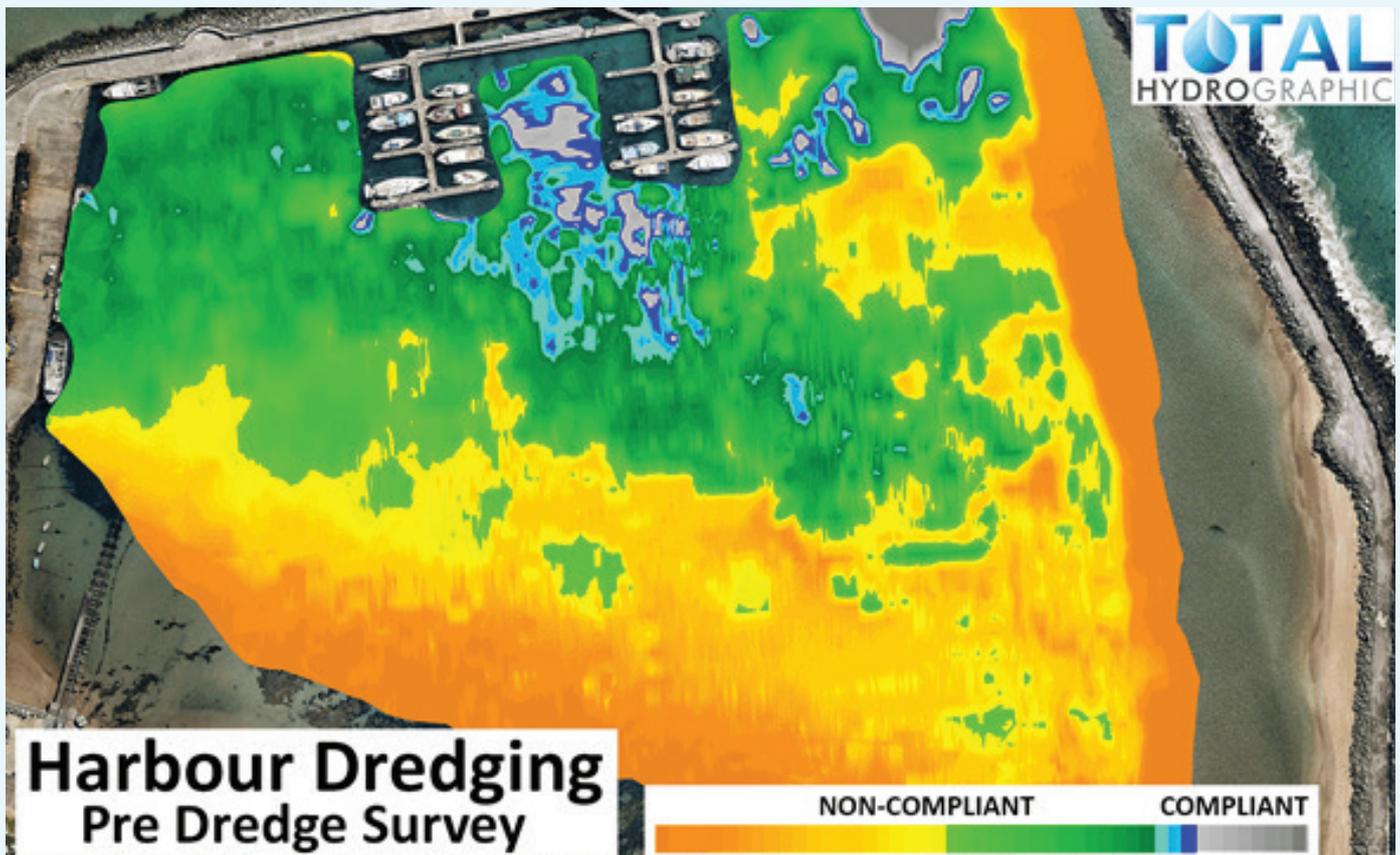
With the location of our survey site being along the Great Ocean Road we were not lucky enough to have a Geodetic Permanent Survey Mark near the Harbour. An easy decision for us to make was to set up a Temporary Benchmark on site allowing for us to save time. Our survey team undertook a Geodetic Control Validation Survey, to allow for the survey systems horizontal and vertical positioning to be validated against established control points.

The results of this validation highlighted to our team that there was a vertical offset between our RTK GNSS and PSM's of 12mm that we determined to be an AusGeoid Variation within the area. This was a crucial selection of analysis from the team as it allowed us to account for this Geoid offset and make sure that we are delivering correctly adjusted data to the client. With the dredgers working to a set declared depth anything dredged over this would have been time and money wasted.

Survey Outcomes

In total our team performed 1 pre dredge survey, 5 progress surveys and 1 post dredge survey for our client down on the Great Ocean Road.

The main outcome of the survey is that we were able to meet the clients request in providing detailed bathymetry of the survey site and accurate volume calculations. The final tally on total volume removed from the pre dredge to post dredge in this 2020 campaign was 72400 cubic metres. Through this partnership vessels can confidently navigate through the Harbour.



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