CEE-USV™ Deployed for Oregon Lake Marina Surveys

Statewide Land Surveying, Oregon USA expanded their unmanned survey capabilities with the CEE-USV™ single beam hydrographic survey drone boat. The first survey conducted was at Detroit Lake, OR where two marinas were surveyed for a dredging project. The job showed the flexibility of the CEE-USV™ for shallow water restricted-access bathymetry surveys.

As part of their unmanned vehicle surveying program, Statewide's new CEE-USV™ hydrographic survey drone boat was in action performing a pre-dredge survey at Detroit Lake in Oregon, USA. Able to weave between the hundreds of moored boats in the marinas, the CEE-USV™ was the perfect way to maximize single beam echo sounder coverage in the confined spaces of the survey where using a regular manned survey boat would have made it difficult or impossible to achieve the same survey quality.

Local control was provided for the survey using a Trimble R8 GNSS base station with UHF radio, and a Trimble R8 rover was used on the USV. While the CEE-USV™ was supplied with a Hemisphere Eclipse GNSS receiver capable of submeter to decimeter level performance, Statewide's configuration allowed for cabled or Bluetooth GNSS data input to the USV from their Trimble R8 or R10 precision receivers as the primary source of high quality centimeter-grade position and elevation for their surveys.

The first marina afforded a convenient boat launch close to the survey location with a convenient base for operations. Sound velocity and calibration bar checks were performed at the dock side. The shore station offered remove viewing of the data while the operator on the dock was driving the boat along the survey pattern, separately connected to the CEE-USV™ with a second field acquisition PC.

The network radio system used in the CEE-USV™ allows multiple users to connect at the same time and view or acquire the same data, as easy as connecting to a coffee shop wireless network!

The dedicated CEE LINK™ base station includes a high-power radio to receive data even if the vehicle is located behind obstructions, in this case moored boats. Real time review of sounding quality happens throughout data acquisition, in this case using Eye4Software Hydromagic.

Moving to the second marina required the USV to be driven in down the lake. Fortunately, a highway bridge between the two marinas allowed the operator to relocate the drone vessel without needing to use the on-board camera.

With a high vantage point, much of the second marina could be surveyed from the shore observation and control location.

When the boat survey was completed, the CEESCOPE-LITE™ echo sounder was removed from USV and single point “fill in” soundings were taken from the docks to complete the pre-dredge survey. The CEE-USV™ will be back at Detroit for the post-dredge survey.