

CURRENT MEASUREMENTS

DEN HELDER

13-HOUR CURRENT MEASUREMENTS FROM A MOVING VESSEL

For calibration and validation of a FINEL flow model of the Nieuwe Haven Den Helder, it is important to gain insight into the current patterns in the harbour. To map the current patterns in the harbour both spatially and temporally, 13-hour current measurements from a moving vessel were conducted.

Continuous measurements were performed along predefined transects during an entire tidal cycle. The measurements were carried out using an AWAC (Acoustic Wave and Current Profiler) attached to a boat. This measuring instrument uses Doppler shift to measure the current velocity and current direction at several depths over the vertical.

The measurement transect was chosen in such a way that it covers the area of interest spatially and at the same time regularly returns to the same point to record temporal variation. In this way, the current is mapped both spatially and temporally. The surveyed transects are mostly within the Nieuwe Haven Den Helder, but they also

include the harbour mouth and the area just outside the harbour in the Waddensea.

The 13-hour measurement was conducted during spring tide, when the current velocities are highest. The measurement started and ended around the change of the tide such that both the ebb and flood currents are fully captured within the measurement period.

The measurement results provide a clear picture of the current patterns at the harbour mouth. They were used to calibrate the FINEL flow model. Both the model and the measurements show the formation of eddies. The measurements provide detailed information on the shape and strength of these eddies, which was used to calibrate the model.

CLIENT

Dutch Central Government Real Estate Agency

LOCATION

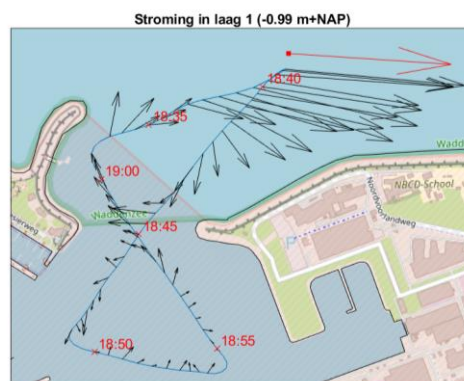
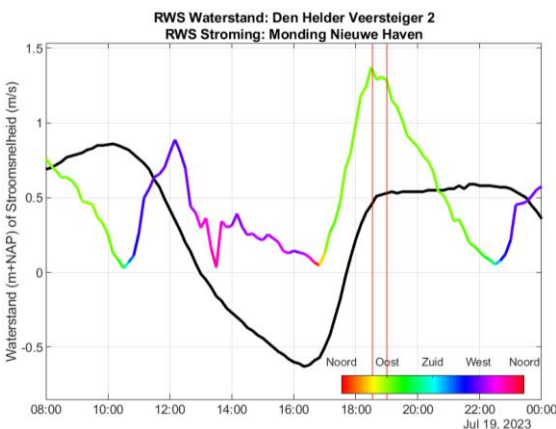
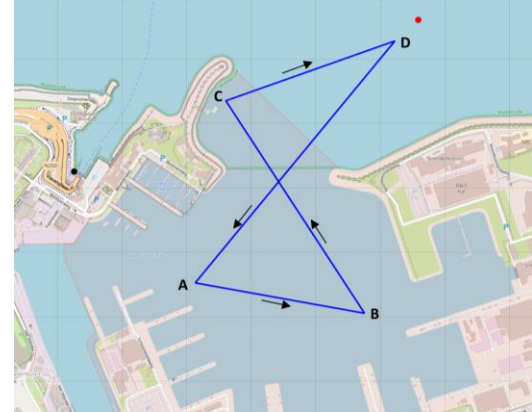
Nieuwe Haven Den Helder

DATE

2023

SERVICES

Current measurements



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