

# SLOEHAVEN

## SILTATION PROCESS ANALYSIS & WID EXPERIMENT

The Sloehaven near Vlissingen is subject to severe siltation. To reduce maintenance dredging effort, Zeeland Seaports has asked Svašek Hydraulics to gain insight into the driving forces behind this siltation. Svašek Hydraulics has performed current, turbidity measurements and a model study. Beside Svašek Hydraulics measured during an experiment with Water Injection Dredging (WID).

To get a good insight into the prevailing current and turbidity in the Sloehaven, 13-hours sailing current measurements and simultaneously turbidity measurements are conducted.

The measurements show a strong current with high suspended sediment concentrations at the east breakwater of the Sloehaven during flood. During ebb an outgoing current is detected over the whole port entrance and the current velocities and sediment concentrations are much lower than during flood. The biggest part of the suspended sediment transported into the port during flood settles down in the middle of the Sloehaven. This is caused by a big eddy which is generated during flood.

A FINEL2D model of the Western Scheldt has been set up to model the current and sedimentation in the Sloehaven. The model results show a good reproduction of the measured current and sedimentation.

Meetings with different parties like contractors, governments, Port authorities and consultants resulted in Water Injection Dredging (WID) combined with an construction of a trough to pass the fluid mud layer out of the harbour as the most potential solution to reduce the siltation in the Sloehaven. Using a TUDflow3D model the required angle is determined. Next an experiment with WID is executed in the Sloehaven. Svašek has performed measurements during the experiment and the fluid mud layer can be identified.

CLIENT

Zeeland Seaports

LOCATION

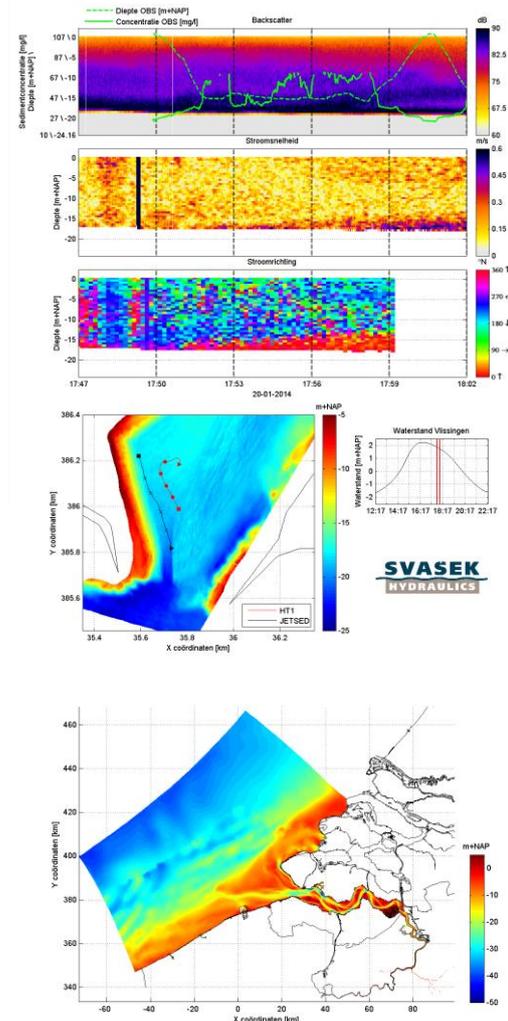
Netherlands

DATE

2011-2014

SERVICES

Current measurements  
Turbidity measurements  
Data processing and analyses  
Numerical modelling



**SVASEK**  
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