

# Reallocation of sediment within the harbor, part of a green port strategy

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**Introduction:** Ports need nautical depth, which means that dredging and reallocation of dredged sediments is a part of the daily operational cycle. From a port management point of view the costs for dredging and reallocation have to be minimal to be competitive as a port. Reallocation close by, or even in, the port can be an alternative to reallocation at sea, as long as most of the sediments leave the port. The sediment that is deposited can help to reinforce the river bank against erosion and flooding (Figure 1).



Figure 1 Current (left) and future (right) impression of the river bank at the entrance of Port of Rotterdam (Nieuwe Water Weg)

**Methods:** The INTERREG VB NWE project “Sediment Uses as Resources In Circular And Territorial EconomieS” (SURICATES) looks into upscaling of sediments use. The reallocation of sediment within the port of Rotterdam is one of the pilot applications, reallocating 500.000 m<sup>3</sup> sediment within the port. Figure 2 illustrates the principle of the reallocation for a similar project (The Mud motor, Ecoshape), using sediment as source for the nourishment of a nearby salt marsh.



**Results:** The pilot will be carried out in 2019.

**Discussion:** The impact survey will make use of the continuous surveying of the port for bathymetry changes, combined with new monitoring techniques (optical cables for sediment transport, rare earth elements for fingerprinting the sediment composition and (green) LIDAR to monitor topography and shallow water bathymetry changes).

**References:** SURICATES (2017 – 2021), INTERREG VB NWE program: (<http://www.nweurope.eu/projects/project-search/suricates-sediment-uses-as-resources-in-circular-and-territorial-economies/>)

Figure 2 Example of a sediment reallocation project for creating a salt marsh