GIS & DATA MANAGEMENT

Project	:	Brightlingsea Harbour Dredging and Restoration
Client	:	Brightlingsea Harbour Commissioners
Date	:	September 2017
Keywords	:	Bathymetric Survey • UAV Survey • GIS • Data Management • Project Design Volume Calculation • Beneficial Use • Habitat Restoration • Dredging • Environmental Monitoring • Management Plan
Description	:	A holistic understanding of the environment is critical for the sustainable development and maintenance of infrastructure. With regards to the beneficial use of dredged material (BUDM), particularly its application in habitat creation, restoration and enhancement projects, detailed knowledge of the local topography is fundamental. This allows volume and storage calculations, matching of sources and sinks and facilitating post-works monitoring of processes that typically occur over the medium- to long- term, such as consolidation of material and biological colonisation. As part of the Brightlingsea Dredging and Restoration project, Exo conducted dual-frequency bathymetric and unmanned aerial vehicle (UAV) (drone) photogrammetric surveys throughout the site, during high and low water spring tides respectively. The high resolution datasets were then merged across the overlapping intertidal zone (an approximate tidal range of 5m) using specialist software, to provide a comprehensive map of levels throughout the Creek. Applying the clients requested target depths for each dredge area, accurate dredge volumes can be calculated and used to match with the storage volumes of restoration sites selected following the comparison of historic and current saltmarsh extents. In addition to project design, the data obtained also supports project planning through the identification of priority areas, provides baseline data for continued environmental monitoring and assists in the formulation of a long-term management plan for the Brightlingsea Harbour Authority. The combination of these survey techniques provides excellent data coverage for logistically challenging sites located at the land-water boundary such as the intertidal zone.