

# Permanent Tide Station for Dubai



Unique System FZE, a Unique Maritime Group Company, UAE, together with the Geodesy and Hydrographic Survey Section of Dubai Municipality has established a permanent tidal station at Al Mamzaar. The purpose of the project is to collect precise tide data continuously for a period of 19 years to calculate mean sea level and annual sea-level rise and to provide precise tide and tide-related meteorological data to various users, as well as to define and update a precise vertical datum for Dubai Emirate.

Dubai Municipality's Geodesy and Hydrographic Survey Section has several components comprising various sub-systems that provide real-time monitoring, alerts, warnings and timely dissemination of information to concerned departments.

There is no such permanent tidal station elsewhere in the Gulf region and this is first time in the history of Middle East that such a scientific project is being executed. As a result of significant dredging and construction in the near-shore / offshore area of Dubai Emirate, the sea level has risen. Because of this, and also due to global warming, the Geodesy and Hydrographic Survey Section of the Survey Department, Dubai Municipality, felt the need for a permanent tide gauge station in the Gulf sea.

The Survey Department of Dubai Municipality already had a network of five coastal and offshore tide/meteorological stations which have been monitoring and recording tide/meteorological data from 2004 onwards. The surveyors, mariners, fishing community, marine / offshore / near-shore construction engineers, hydrographers, Coastal Management Group and the navigators are the ones who benefit most from the tidal information.

Following is the output from the network of tidal stations:

1. Very precise daily tidal variation, annual mean sea-level variations, sea-level rise due to tsunamis/earthquakes/low pressure etc...
2. Atmospheric pressure, atmospheric temperature and sea water temperature, which are the basic reasons for sudden variations in sea levels.
3. Wind speed, wind direction and visibility sensors are monitored with the help of a meteorological station nearby .
4. The most important result from a permanent tidal station is the tidal data, which is used to define a precise vertical datum for Dubai Emirate.