

KANDLA PORT, GUJARAT

Background

The Kandla Port is located at the head of Gulf of Kutch along a tidal creek known as “Kandla creek” in the state of Gujarat. The Kandla creek is 140 km inside the gulf from the entrance. The region is dominated by high tidal range and strong tidal currents though wave disturbances in the approaches to Kandla creek are not much significant. The port is of strategic importance and is the nearest Indian port from the Middle East and Europe.

Studies Conducted

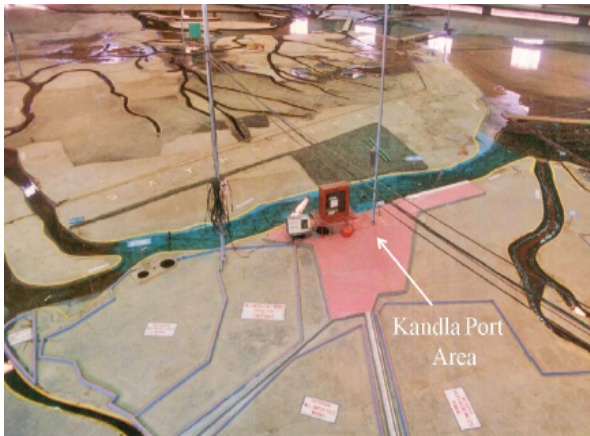
- CWPRS was approached for advice on various hydraulic related issues such as alignment of berths and jetties in Kandla creek, alignment and siltation of approach channel, dredging and disposal strategies in the approaches.
- The Physical tidal model (scale: 1/1000H and 1/100V) of Kandla estuary is used to study the flow conditions and patterns under different tidal conditions in the approaches to Kandla creek for assessment of siltation and to suggest dredging and disposal strategies.
- Additional Physical tidal model (scale: 1/300 H: 1/50 V) of Kandla creek is used to study flow conditions during flood and ebb tides to suggest suitable alignment of berths and jetties.
- Mathematical models are also setup using MIKE-21, HD/MT for studying tidal hydrodynamics, assessing the quantity of maintenance dredging and location of disposal grounds etc.



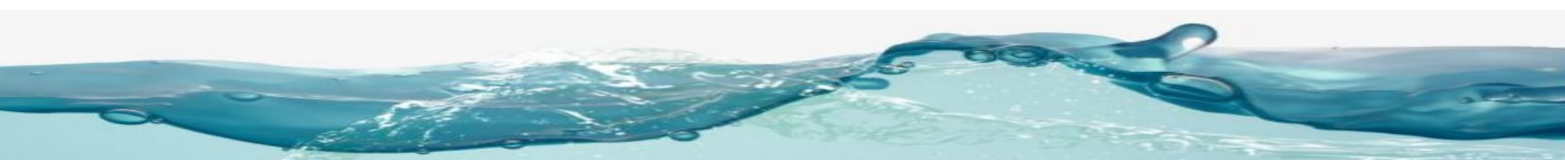
Location of Kandla Port

Outcome and Benefits

- As per the advice of CWPRS, the depth along the navigational channel at Kandla Port has improved significantly to (-) 8.5m below Chart Datum from earlier (-) 3.5m and the port now caters to ships of upto 14.m draft
- The strategy of shifting the channel and identifying the critical reach of siltation has yielded very fruitful results. The annual maintenance dredging was correctly assessed as 7.0 Million cum.
- With the help of hydraulic model studies, it was possible to align the cargo berths and the oil jetties without significantly affecting the morphodynamics of Kandla creek. The port has 12 cargo berths to accommodate vessels of 11 m draft till recently. Now 4 more berths are being added to cater to vessels of 14 m draft. Apart from these, the port also has six jetties to cater to oil and liquid cargo.



Kandla Port Model





Kandla Port

