

PARADIP PORT, ODISHA

Background

Paradip Port is situated on the East Coast in the state of Odisha, which caters to the large portion of the sea-borne trade of the eastern part of the country. This is an artificial Lagoon type protected from waves by two breakwaters viz. South breakwater with a length of 1217 m and a North breakwater with a length of 538 m commissioned in the year 1966. The wave climate during the southwest monsoon is more severe compared to the northeast monsoon season. Large wave action of about 3 to 4 m height occurs during southwest monsoon where as 2 m during northeast monsoon period, resulting in large quantum of littoral drift. The port has been developed in stages to accommodate increasingly bigger vessels of 1,25,000 DWT with 19 m draft.

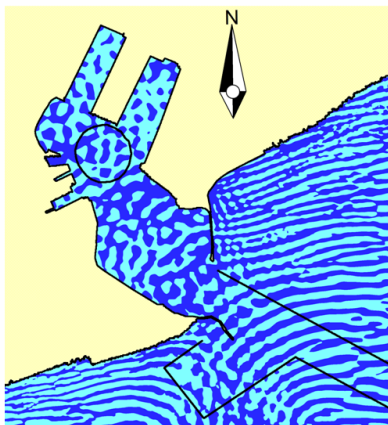
Studies Conducted

More than 25 studies have been conducted on physical and mathematical models covering the following important aspects:

- Optimization of breakwater lengths and cross section for wave tranquility.
- Suitable alignment of berths
- Field studies for data collection on various coastal parameters.
- Prediction of Siltation and maintenance dredging.
- Studies for location of sand trap and nourishment of the northern shore.
- Development of fishing harbour.
- Mathematical model studies for outer harbour development, ship motion & siltation studies
- Development of Southern Dock



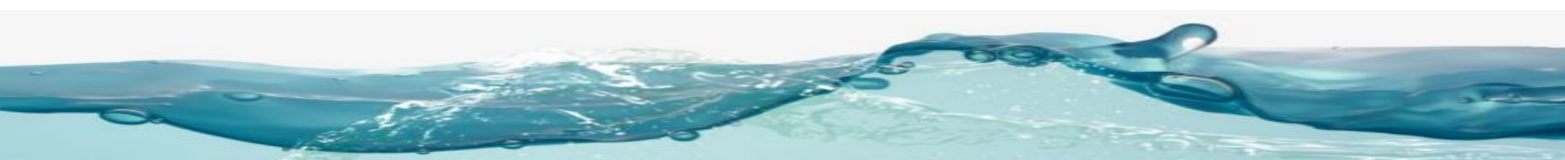
Location of Paradip Port

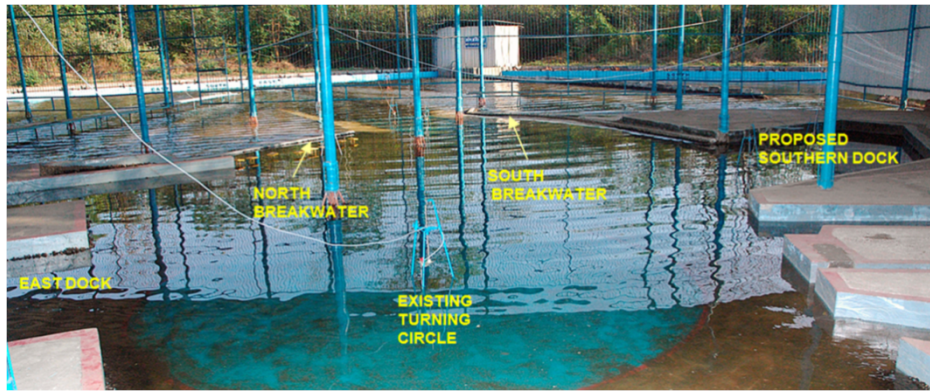


Numerical Model : Wave Propagation

Outcome and Benefits

- Optimising the alignment & length of breakwater to provide necessary wave tranquility in harbour area and also evolved the location of Sand trap for minimizing the siltation in the harbour and approach channel
- Hydrodynamic studies using numerical models evolved the layout of southern dock, the rate of siltation in the harbour and approaches.
- Identification of location of sand bypassing and nourishment of northern shore
- Optimization of length of breakwaters
- Optimum alignment of berthing structures
- Alignment of southern dock





Physical Model : Wave Propagation

