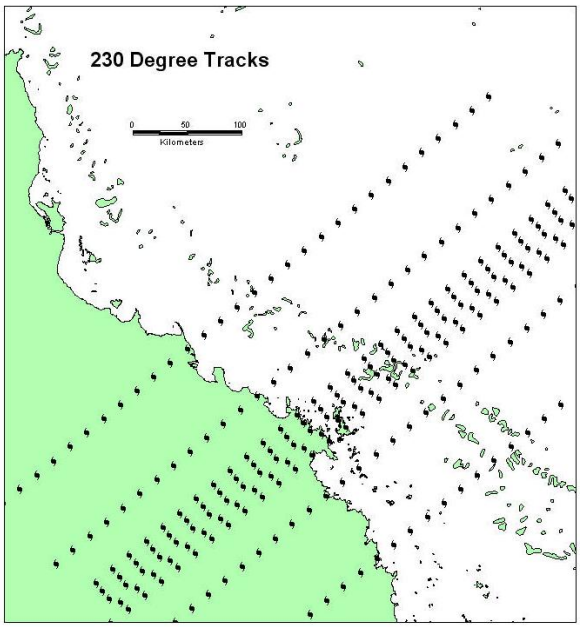
Whitsunday Shire Storm Surge Study



CLIENT:
GHD Pty Ltd for
Whitsunday Shire Council;
2003.

LOCATION
Whitsunday Region

SEA PERSONNEL PROVIDED

- Tropical cyclone climatology and wind field model;
- Spectral wave modelling;
- Development of parametric storm tide models;
- Statistical modelling.

PROJECT DESCRIPTION

Systems Engineering Australia Pty Ltd provided specialist technical support for GHD Pty Ltd in a study of the storm surge risk in the Whitsunday region of the Queensland coast.

The study was commissioned by Whitsunday Shire Council and designed to provide quantitative storm tide risks for the coastal region east of Proserpine. The principal towns in the area include Airlie Beach, Cannonvale and the nearby Shute Harbour, which is the principal tourist port for the region. Numerous island resorts, such as Hamilton, South Molle, Daydream, Hayman, Lindeman and Long Island were also included in the work scope.

The work was performed jointly by GHD and SEA, whereby numerical hydrodynamic modelling was done using GHD's Delft3d ocean modelling system while SEA undertook spectral wave modelling to estimate wave setup components, was responsible for the climatological assessment of the region, the tropical cyclone wind fields and the development of parametric models of surge and wave setup leading to the probabilistic analysis.

The principal outcome of the study is a series of maps indicating potential levels of inundation that would be associated with a given probability of exceedance, for example, the 100 year and 1000 year return period events.

GHD also undertook a detailed study of the vulnerability of shire infra-structure and highlighting aspects of the storm tide threat that may be able to be mitigated through judicious long term planning.

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