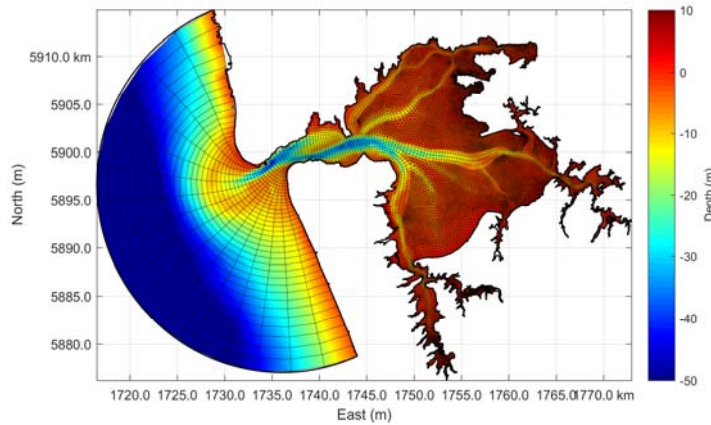


The Manukau Harbour Hydrodynamic Model Project



Watercare
An Auckland Council Organisation

Recap: Four Models in One

Catchment Models

1. Hydrological Model (TOPNET)
2. Water Quality Model (CLUES)

Harbour Models

1. Hydrodynamic Model (DeltaFM)
2. Water Quality Model (DELWAQ)

Results

**Nutrient: sources, processes,
& final destinations**

Recap: What is Modelled

Catchment Models	
Hydrology –TopNet	Hourly discharge time series
Catchment WQ – CLUES	Daily TN & TP loads
Harbour Models	
Hydrodynamic – DeltaFM	<ul style="list-style-type: none"> ▪ Detailed, multiple layer hydrodynamic simulations incorporating seasonal and other driving factors ▪ Animations of hydrodynamic processes
Water Quality - DELWAQ	<ul style="list-style-type: none"> ▪ Phytoplankton ▪ Nutrients (N & P) ▪ Particulate Organic Matter ▪ Dissolved Organic Matter ▪ Iron ▪ Sulphur

Progress

Progress: On track and on budget. Project management includes RIMU and Healthy Waters from Auckland Council.

Significant Milestones Reached:

- DeltaFM & DelWAQ model framework completed
- CLUES & TOPNET models completed on time
- Buoy instrument deployment was successful
 - Data has been processed and will be incorporated into the model from July onwards

Next Steps

- Calibrate the DeltaFM & DelWAQ models with buoy data and CLUES and TOPNET data (due to be completed by 12.18)

