

# Hydrologic and Hydraulic Investigations

## Background

NSW Public Works Manly Hydraulics Laboratory (MHL) has extensive experience in the investigation of effects of water flows in the environment and on structures. In the current climate, understanding flooding characteristics, estuarine and other system processes can be extremely important in management decisions.

## Services Provided

NSW Public Works MHL has a broad collection of numerical models, a wealth of physical modelling experience and facilities backed by specialist expertise in their application to flooding and water circulation issues.

Data collection, desktop studies and hydrologic and hydraulic models are used to investigate:

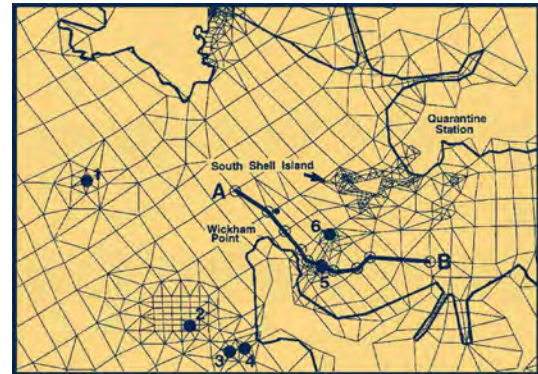
- catchment runoff
- flood flows in channels and floodplains
- estuarine circulation and dispersion patterns
- wetland hydraulics
- outfall dispersion
- fishway hydraulics
- spillway hydraulics
- reservoir circulation including artificial mixing and water withdrawal characteristics.

We provide specialist advice to natural resource and asset managers on a range of issues including:

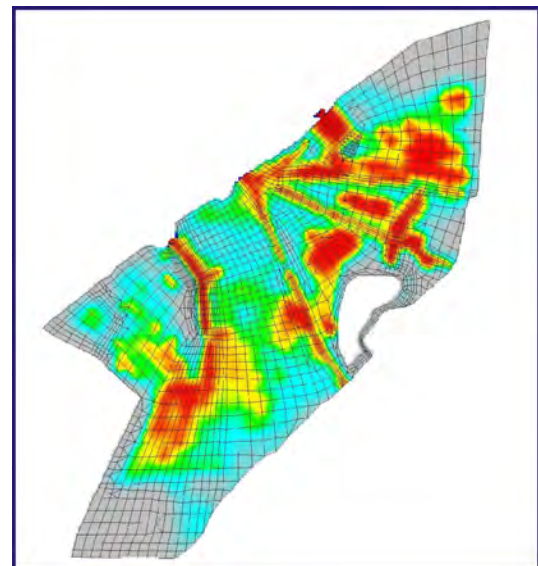
- flood scoping
- flood warning systems
- decision support tools
- selection of appropriate models
- data needs and model robustness
- analysis of model outputs for management needs
- simulation of flows in a range of environments.

## Benefits

NSW Public Works MHL specialises in tailoring solutions to client needs and optimising the investigative approach to achieve outcomes. Numerical modelling is coupled with our extensive data collection capabilities to offer a total investigative capability.



Darwin Harbour finite element mesh



Wanngal Wetland modelled tidal inundation

## Key Features

- Staff with hydrology, hydraulics, flooding and estuary processes experience
- Our modelling expertise and process understanding ensures appropriate models are applied to achieve optimal solutions
- Real-time assimilation of flood data and model results via the internet provides stakeholders with decision support information
- Vast physical modelling capabilities