Tonkin & Taylor

Computational Flow Modelling

Achieving environmentally sound and sustainable solutions for water management is a challenge facing communities throughout the world. Meeting this challenge requires modelling strategies that combine expertise with a range of disciplines.

Tonkin & Taylor's modelling approach sees a dynamic integration of environmental and engineering skills, allowing for the identification of innovative solutions.

Expertise

T&T utilises a wide range of in-house, custom developed and third party modelling packages including:

- DHI software - MIKE11, MIKE21, MIKE3, MIDEFLOOD and MIKEURBAN (MOUSE)
- Haestad software - HEC-HMS, HEC-RAS, WATERCAD
- Other software - ACES, BOSS SMS, Genesis, REF/DIF, SBEACH, SWAN, UNIBEST, SWMM.

We are specialises in the following flow modelling fields:

- Hydrological Modelling
- Network Analysis
- Flood Hazard Mapping
- Water Supply Modelling
- River Modelling
- Dam Break Analysis
- Coastal Modelling.

Hydrological Modelling

Analysis of catchment hydrology to assess water resource and runoff flows for various objectives, such as design flows for control works, the optimisation of water supply demand management, the provision of real time forecasts of flood levels based on telemetered rainfall data and the impact of dam construction on the natural flow regime.

Network Modelling

Development of calibration of combined sewer/wastewater/stormwater network models using flow gauge data, with the assessment of both existing and future development scenarios. Model results used to identify a range of management and remedial options to address combined and wastewater overflow containment, flood mitigation and stormwater quality improvements.

Flood Hazard Mapping

Development and validation of combined sewer/stormwater network models using survey questionnaires and historical flood records. Model results used to identify flood hazard areas for both existing and future development scenarios, with the identification of unsafe overland flows.

Water Supply Modelling

Development of water supply network models to identify available pressure and fire flow volumes for both existing reticulation networks and proposed subdivision developments. Model results used to identify areas with inadequate flow, with the identification of possible remedial measures.

River and Open Channel Modelling

Development and calibration of computational river models using historic flood levels and gauged flow data. Model results used to define flood hazard areas and to support bank protection and stopbank design.

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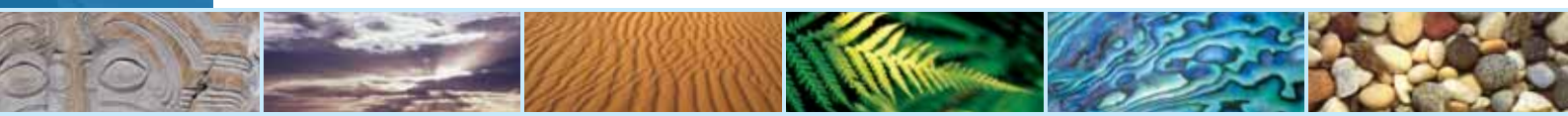
Coastal Modelling

Development of detailed coastal models to analyse water level, current, wave and sediment transport processes. Model results used to delineate coastal hazard zones, assess long-term and short-term shoreline trends and assist in the design of beach replenishment. Design of canal waterways to optimise flushing, enhance water quality and minimise sedimentation.

Dam Break Analysis

Analyses of dam break scenarios for various hydropower and water supply dams with the identification of flood plains and flood prone properties.



ENVIRONMENTAL AND ENGINEERING CONSULTANTS