



**Tonkin & Taylor**

## Hydropower Engineering

Tonkin & Taylor has over 35 years experience in hydroelectric engineering and is a leader in applying innovative thinking to projects.

### Expertise

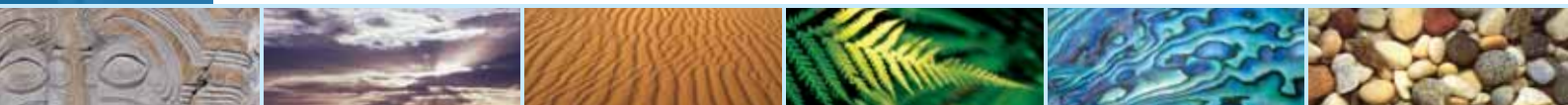
Typical services include:

- Scoping studies, conceptual and feasibility studies
  - Project definition and project viability
  - Geotechnical investigations and assessment
  - Hydrology and hydro power generation estimates
  - Hydraulic and civil engineering design
  - Cost estimating and project programming
  - Environmental and planning assessments.
- Consents
  - AEE preparation
  - Evidence to Environment Court
  - Building consents and process.
- Detailed design and documentation
  - Costing and programming
  - Advice during construction
  - Commissioning
  - Operation, maintenance and surveillance manual
  - Emergency action planning.
- Construction management
- Safety management
  - PIC assessments (dam projects)
  - Annual inspections
  - Comprehensive safety reviews.
- Rehabilitation and upgrading
- Peer review and expert witness.

### Experience

Project examples include:

- Scoping studies for clients in South Island and Northland for run-of-river, dams and dams in cascade arrangements
- Consenting evidence for run-of-river projects in South Island
- Philippines scoping studies, detailed design and construction of run-of-river and dam projects
- Wairau Falls - design and implementation of the final unit for the existing run-of-river hydro station including upgrade works on the canal, penstock intake, new penstock and powerhouse
- Kaituna in North Island providing scoping studies, concept and feasibility designs and AEE submissions
- Project Aqua prefeasibility and feasibility studies
- The feasibility study of hydro potential at 42 existing dams or weirs in Queensland, Australia
- A scoping study for the flood protection of the 50 MW Warragamba dam hydro station, Sydney, Australia
- New Zealand regional studies for hydro potential ranging from 1 MW up to 180 MW
- Aniwhenua 25 MW hydro station on Rangitaiki river for Bay of Plenty Electricity investigations, feasibility, detailed design, construction and on going safety management
- Monitoring sand safety management for a number of hydro stations.



**ENVIRONMENTAL AND ENGINEERING CONSULTANTS**