



Tonkin & Taylor

Dambreak Assessment

Hypothetical analyses of dam breach are undertaken within the dam industry, primarily to help assess the downstream hazard potential, which in turn determines the Potential Impact Category (PIC) and sets the standards to adopt for dam design, construction, and operation.

Tonkin & Taylor undertake dambreak assessments of varying complexity to suit a variety of situations. For example, the dam break assessment requirements of a small rural irrigation dam, may be significantly different to a large hydro-scheme dam with high downstream hazard potential.

T&T has a proven track record in successfully carrying out peer reviewed 'sunny day' and flood induced dambreak assessments throughout the world.

Expertise

T&T's dambreak assessments are often divided into the following parts:

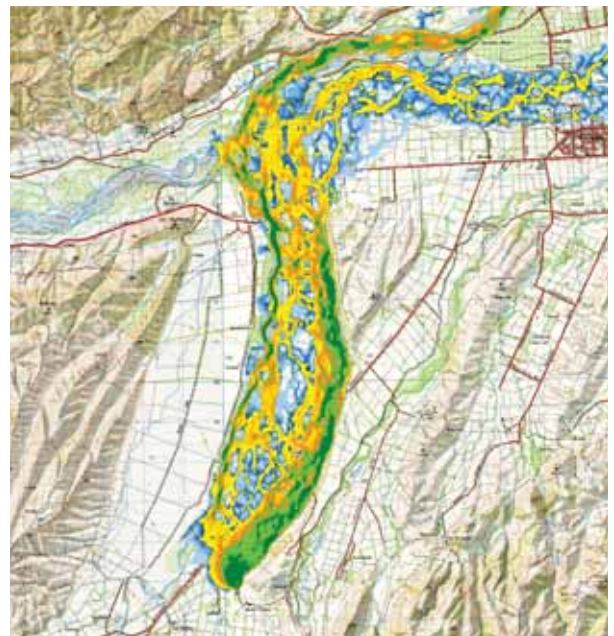
- Assessment of dam breach potential failure mechanisms, including breach parameters and discharge hydrographs
- Use of empirical methodologies, or qualitative assessments to identify downstream inundation area and flow characteristics
- Quantitative assessment using 1-D or 2-D numerical modelling to identify downstream flooding characteristics and inundation areas
- Identification of "population at risk" and incremental damage potential to major infrastructure

- Recommendation of Potential Impact Category in accordance with NZSOLD guidelines and Dam Safety Regulations 2008.

T&T provides expert witness testament for Council and Environment Court hearings and can provide peer review services.

Other skills offered by T&T associated with dambreak assessments include:

- Dam design
- Geotechnical engineering
- Hydrology and water resources
- Hydropower
- Irrigation
- Construction site supervision
- Numerical modelling
- Consenting.



Output from 2-D model indicating hazard severity