

Intake Design and Sediment Management Consultancy

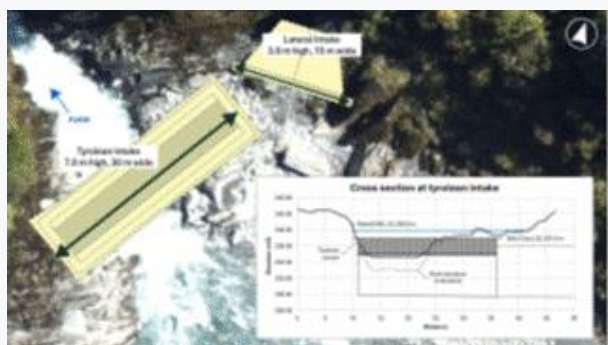
Waitaha Hydropower Project, New Zealand

Challenge

Waitaha is a new hydropower project located on New Zealand's South Island. The intake site is exposed to extreme rainfall, high sediment transport and large flood events. Hydraulic control from Morgan Gorge causes inundation of the intake area during floods, creating challenging conditions for sediment management and reliable operation.



SediCon recommendations for improved intake hydraulics and sediment handling



Comparison of alternative intake concepts evaluated during the study

Solution

SediCon provided specialist consultancy on intake design and sediment management for the Waitaha Hydropower Project. Alternative intake concepts were evaluated, including Tyrolean and lateral intake arrangements.

The work focused on bedload passage, gravel exclusion, sediment flushing, trash rack cleaning and desander operation. SediCon's recommendations were incorporated into the preferred intake concept and detailed design process.



Project Location

Project facts

Client: AusHydro / Westpower
Project: Waitaha hydropower project
Location: South Island, New Zealand
Technology: Intake design consultancy
Installed Capacity: 20 MW
Design Flow: 23 m³/s

Results and benefits

- Alternative intake concepts assessed
- Sediment risks identified
- Gravel exclusion optimized
- Design recommendations adopted
- Bedload passage verified
- Basis for detailed design

For more than 30 years, SediCon has developed and supplied proprietary sediment handling technologies from Trondheim, Norway. Our solutions for reservoirs, intakes, desanders and tunnels have been successfully implemented in hydropower projects in more than 20 countries across five continents.