



WEST COAST
REGIONAL COUNCIL

31 July 2025

State of the art modelling confirms earlier report

State of the art computer modelling for the Waiho River has confirmed the findings of an earlier report about the deepening and widening of the Tatare Avulsion.

The 2D morphological modelling was done by Earth Sciences NZ (formerly NIWA and GNS Science) on their Mahuika supercomputer to investigate the progress of the avulsion and predict further development.

The findings of the WCRC-commissioned cutting-edge research will be presented to the Franz Josef Rating District Joint Committee meeting tonight.

“It models river flow and sediment flows. It’s something of a first for New Zealand for modelling to be done at this scale. We wanted to know if there was substantial change from the report done by the Waiho Technical Advisory Group (TAG) in 2023,” says Chief Executive Darryl Lew.

“The modelling confirms what the TAG report proposed would happen, the avulsion will continue to deepen, widen and back cut. It estimates within five years - from 1 July 2024 - it will have reached the current end of the Havill Wall and be threatening the Franz Josef wastewater treatment ponds.

“The modelling confirms extending the Havill Wall 400m (cost \$2.8M) will buy an extra two to three years for the Franz sewage ponds.”

The modelling also confirms upgrading of protection on the south side of the Waiho is still warranted to buy time for masterplanning to take place, says Darryl Lew.

“The advice still is we have to release on the south side otherwise, in less than 20 years, the Franz Josef township is vulnerable on the north side.

“Despite the Tatare Avulsion the TAG report, verified by the modelling, shows riverbed levels will still aggrade at a very fast rate adjacent to the township. The north bank stopbanks will come under increasing pressure from that avulsion and the backcutting working its way up to the ponds. The most effective way to relieve that pressure is to release to the south.

“In over 30 years of experience I’ve never seen aggradation rates of a riverbed like this. It’s not only the sewage ponds, over the medium term everything is at risk between the Waiho and the Tatare – farmland, the school, holiday park, residences and the state highway.”

The modelling vindicates the recommendations in the TAG report, he says.

Westland District Council is leading the land use planning and emergency management work at Franz Josef. WCRC is supporting by disseminating this information and doing what can be done to manage infrastructure risk and supporting emergency management.

The presentation about the modelling is available online: [Waiho Morphological Modelling - YouTube](#)

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Contact

Darryl Lew, Chief Executive
Mobile: 027 217 9306

More information:

Waiho Technical Advisory Group report:
[Waiho River – Future Management Strategy - West Coast Regional Council](#)