

# **Whakarau Road, Gisborne: Flood Damage Lateral Thinking Leads to Two Connected Solutions**

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## **Abstract**

This paper covers the concept, design and construction of repair works following serious flood damage on Whakarau Road. This remote road (a side cut) was damaged in two locations by very high flows in the river. The presence of an active spring on the uphill side complicated the problem. Because of its remoteness, the emphasis was on a "value for money" solution. One retaining wall, damaged by flood flow, was relocated to a downstream site, while its original site was addressed by lowering the road level, obviating the need for a relatively expensive replacement wall.

Treatment of the underlying problem of batter toe erosion as well of the spring-fed overslip is discussed, and construction described.

## **Bios**

Darren is currently the Gisborne District Council Assistant Area Roothing Engineer (Western), as well as management of Gisborne District Council Passenger Transport Services. Darren has carried out these roles for the last 4 years, prior to that a 3 year period as Roothing Administration. The main duties involve Contract Administration, Asset Management, Service Delivery and Long Term Strategic Planning of the network.

Daniel Crichton is a Design Engineer within Downer EDI Works. Daniel has been based at Works' Gisborne office, where he is closely associated with maintenance and construction teams. Daniel's experience encompasses many design projects which have included areas such as structural design including bridge analysis and evaluation, and retaining walls. Daniel also has experience in geometric road design, hydrological design of large culverts and buttresses and construction management.