

1879.
NEW ZEALAND.

DAMAGES BY FLOODS IN THE WAIMAKARIRI RIVER.

(REPORT BY RESIDENT ENGINEER, RAILWAY DEPARTMENT, CHRISTCHURCH ON.)

Laid on the Table of the House by the Hon. Mr. Macandrew, with the Leave of the House.

Mr. LOWE to the COMMISSIONER of RAILWAYS, Middle Island.

Resident Engineer's Office,
Christchurch, 14th November, 1878.

SIR,—

According to your instructions, on the 4th instant I met the Mayor of Kaiapoi, and inspected the protective works and generally the effects of recent floods in the River Waimakariri.

The damages complained of by the Borough Council of Kaiapoi are chiefly situated at the lower portion of the town, contiguous to Mr. Ellen's woolworks. The river has made a large encroachment there on the soft sandy soil. The land for a breadth of about ten chains has been washed away, carrying with it two lines of protective embankments which have been successively formed. The river has now reached a third line of embankment, and is on the point of breaching that.

A fourth embankment several chains further inland has just been completed by the borough to protect the town when No. 3 bank shall give way. Mr. Ellen's works stand between the third and fourth embankments, and are in imminent danger of being washed away. It appears all but certain that one or two more floods will take away all the land on which the works stand.

The stream has set so determinedly against this bank that nothing but works of very great magnitude can prevent its cutting away this part of the township.

The only feasible plan for preventing further damage by the river to the Town of Kaiapoi is to allow as much water as possible to get into the old south-branch outlet-channel.

The bridge at Stewart's Gully is designed to effect this, but it may be some time before a sufficiently deep channel is formed by the river itself to permanently relieve the town from further encroachment; and, with the object of securing the township, it would be advisable to cut a channel through Stewart's Gully without delay.

This is the more requisite because, during the last flood, a mud-bank was formed in the river-bed at the inlet to Stewart's Gully, and there appears a possibility of the river diverting its course away from that direction, and it might ultimately prove difficult to induce it to flow down after preparation is made for it.

The security of Kaiapoi would be still further insured by adding three 40-feet spans to the south end of the old bridge, instead of only one as now proposed. The water flowing through these spans would naturally find its way into the old south channel, and all the water flowing that way would be diverted from the weak points of Kaiapoi bank.

For the above reasons, I would recommend the cutting of the inlet to Stewart's Gully without any delay: that will be the first, simplest, and most effective relief that can be given to Kaiapoi.

I would also propose the addition of three spans to the South Bridge, for, although not required for the purposes of the railway alone, they would doubtless afford a further and very considerable relief to the town.

Complaints have been made by farmers and others living on the north bank of the river that the raising the bank across Irishman's Flat has caused the floods to rise higher between Chaney's and Stewart's Gully than formerly.

The breaches made in the banks during recent floods have not been filled up again, but temporary water openings have been left.

I propose to keep them open until the channel under the new bridge at Stewart's Gully is formed; and, if it should then be found that the channel provides ample waterway, then these openings could be closed: otherwise permanent water openings should be formed. This will, I believe, meet all the requirements of the railway, as well as fulfil the wishes of the landowners.

The cost additional to the present authorized works would be then—

Two additional 40-feet spans of iron girders	...	...	...	...	...	£
Cutting channel	...	...	...	...	...	700
						100
						<hr/> £800

I have, &c.,

The Commissioner of Railways, Middle Island,
Christchurch.

J. HENRY LOWE,
Resident Engineer.