

The existing line is about three miles in length, terminating at a point of the Kawa Kawa River where there is a sufficient depth of water for large barges. The coal is here emptied into the barges and towed down the river to deep water, where it is loaded into coasting vessels. By extending the line as proposed for four and three-quarter miles, and erecting a wharf at the terminus, the coal would be delivered direct on board the vessels at a point where there is sufficient depth of water for vessels of the largest class.

As the surrounding country is very thinly peopled, there can be expected only a very small general traffic for the railway, which may depend almost entirely on the mines. At present, the latter turn out about a hundred tons a day, and it is fair to assume that this would be much more with increased facilities for shipment, and with the advanced demand due to increasing population.

If carefully managed, the present traffic would more than pay working expenses; and there is, I think, every prospect of a fair dividend when the mines shall be more fully developed.

No sections have yet been taken over the proposed line, nor have quantities of work been taken out, so I am not in a position to furnish any estimate, further than to say that, after a careful examination of the country, I am of opinion that the line may be built for the amount appropriated for the purpose, viz., £40,000.

I have, &c.,

JOHN CARRUTHERS,
Engineer-in-Chief.

The Hon. the Minister for Public Works, Wellington.

No. 6.

REPORT ON THE PICTON AND BLENHEIM RAILWAY.

Mr. CARRUTHERS to the Hon. J. D. ORMOND.

SIR,—

Wellington, 16th January, 1872.

The line begins near the wharf at Picton, and ends at the north bank of the Opawa, the length being $17\frac{1}{2}$ miles.

It was intended that the line should be carried across the Opawa into Blenheim, but the expense of doing so would be very great, and would bring no corresponding advantage to the railway. The Opawa has of late become the principal channel of the Wairau River, and this so lately that it has not yet had time to get into train. Its bed is now only forming itself, and it is difficult to predict what effect the piers of a bridge would have. The present road bridge has greatly affected the bed, and has made the river shift considerably. It appears to me, also, very likely that the river will soon leave its present bed altogether, and join the Omaka. Should it be decided to carry the line across the river, it would be necessary, in order to interfere as little as possible with the river, to use very long spans (say 160 feet each); and such a bridge could not be built of the required length of 640 feet for less than £6,400. It does not appear to me that there will be any loss of traffic to the railway by thus stopping short of the Town of Blenheim, as there is a good road and a bridge across the river, which will, when lengthened, as proposed by the Provincial Government, give ready access to the railway.

The country through which the line runs is unfavourable to railway construction, and with every regard to cheapness, it has been impossible to reduce the earthwork below 16,200 cubic yards a mile, of which a great proportion of the cuttings is rock. To avoid the floods, it has been necessary to keep the rails at a height of about 10 feet above the plains of the Tua Marina, which, has of course, much increased the quantity of earthwork.

There are 3,600 lineal feet of wooden bridges, the most important being the bridge over the Waitohi—a trestle 600 feet long and 45 feet high; and that over the Wairau, which is 1,200 feet long and 25 feet high. Heart of black birch will be exclusively used.

The culverts will be of timber throughout.

It is proposed to fence only the first two miles near Picton, and to make good all existing fences with cattle guards, where they cross the line.

Roads will be all crossed on the level. Warning posts will be placed at each crossing, as is done in America and Germany, but no gates will be built nor watchmen engaged.

The rails will weigh 30 lbs. to the yard. Sleepers will be of heart of black birch, 2,050 to the mile, and just sufficient ballast will be used to keep the sleepers from sinking into the banks.

The curves and gradients are very severe, as will be seen by the table affixed.

It is quite evident, from the lightness of the permanent way and the steepness of the gradients, that only a very moderate speed is provided for; ten or twelve miles an hour will be as fast as ought to be attempted.

Two locomotives, three passenger carriages, and seventeen goods waggons are estimated to be sufficient for the opening of the line. The passenger carriages have a central passage, and seats arranged omnibus fashion.

The stations will be of the simplest kind. Buildings will be erected only at the termini.

The estimated cost is as follows:—

Work in New Zealand	...	...	...	...	...	£70,018
Rolling stock (including erecting)	...	...	...	...	...	7,961
Permanent way materials	...	...	...	...	...	10,169
Stations	...	...	...	...	...	1,852
						£90,000

The permanent way material and rolling stock have been ordered in England.