

The last two are measured to Orakau, as it is more direct than the other place, to the respective starting points. The country in all the routes is very easy, and after reaching the general level from the river, most remarkably so. Unless some overwhelming natural advantages should overrule it, I believe it to be desirable to prefer one of the present townships to making another at the starting point. Starting, then, from Alexandra, sixty miles of construction would be saved from Mercer, from Cambridge sixty-one, from Hamilton fifty-one, and from Ngaruawahia forty miles. Carrying the principle to the utmost of making most use of water carriage, and taking other things into consideration, I believe Alexandra to be the best point. Next, I prefer Hamilton, which, although requiring ten miles more railway than from Cambridge, takes a more central route in the delta. I must here note that steamers which could best carry on a great traffic on Lower Waikato, are not suitable for plying between Ngaruawahia and Cambridge or Alexandra, although they would do to Hamilton very well, unless it could always be insured that two steamers would not require to pass each other in these rivers.

The comparison being reduced to the limits of Hamilton and Ngaruawahia, I am inclined to think best of the latter; its central position, good accommodation for wharves, and easy ascent by moderate gradients to the plateau level, go very far to weigh against an extra eleven miles of the very easiest construction in the delta. The route would be towards Hamilton, after reaching the latitude of which it would be much the same as from the latter place, crossing the Rukuhia Swamp in a direction about south by east, finding an easy way into the valley of the Mangapiko, and at Te Awamutu leading two or three miles up the Mangahoi to the terminus. The whole route is through a country being rapidly settled and brought into a state of cultivation. The Rukuhia and other swamps, now in process of drainage, will for eight or nine miles present great facilities of construction, and eventually prove a most productive district.

By the adoption of the policy I have here advocated, the money otherwise required for forty miles of construction below Ngaruawahia, would, when required, suffice to extend the line nearly forty miles from Orakau towards Taupo. As to the suitability of the river to carry an immense traffic, I have for the last eight or nine years had occasion to closely study this subject, and feel assured that steamers drawing 2 feet 6 inches of water, or even less, can be got to steam twelve miles an hour in still water, and take a total paying load of 60 tons, within suitable limits of length and breadth of beam. This speed would make the up-journey to Ngaruawahia in four hours, and down in two hours fifty minutes, against a railway, if at fifteen miles an hour, two hours forty minutes each way; if at twenty miles an hour, two hours each way.

I cannot conclude without expressing my sense of obligation to many gentlemen in the Waikato, who by rendering information, the result of much travelling and intelligent observation, greatly facilitated my work, and by personally guiding me to the more salient points of observation, saved much time in forming my judgment of the work I had to do.

I was also much gratified to find a general desire to sink minor differences of opinion, in the endeavour of all to secure the public good.

I have, &c.,

JAMES STEWART, A.I.C.E.,
Resident Engineer.

The Engineer-in-Chief, Public Works.

Enclosure 2 in No. 1.

REPORT ON RAILWAY FROM DUNEDIN TO MOERAKI.

Mr. BLAIR to Mr. CARRUTHERS.

SIR,—

Dunedin, 21st February, 1872.

I have the honor to inform you that, in accordance with your instructions, I have made a reconnaissance survey for a railway between Dunedin and Moeraki, and I now beg to submit the following report thereon:—

The work was only carried on when it did not interfere with my other engagements, which, together with the difficulty of getting to some portions of the routes examined, has delayed its completion till now.

The accompanying plans show the lines examined—

No. 1, coloured yellow, leaves the Otago Southern Trunk Railway on the Taieri Plain, passes up the Silver Stream, and down the south branch of the Waikouaiti River to the Waikouaiti Township.

No. 2, coloured red, leaves the Otago Southern Trunk Railway at the south end of the Caversham Tunnel, runs up the Waikorai Valley to the head, then passes to the west of the reservoir, and through a low saddle at Lothian Bank into the valley of the Water of Leith. The line follows this valley up to the dividing range between it and the Waitati Stream, then works down on the west side of the latter to the Waihema Creek, which is crossed a little above the main road. The plans show the red line continued to Moeraki, but being the only route from Blueskin northwards, this portion will be described under a separate head.

No. 3, coloured blue, leaves the Port Chalmers Railway at Pelichet Bay, and passes through a saddle at Dundas Street and the Botanical Gardens. The Leith Valley is then followed up to near the summit, where this line merges into No. 2.

No. 4, coloured green, leaves the Port Chalmers Railway at Black Jack's Point, and rises up the range to the head of the valley, at Sawyer's Bay. It then passes under the Main North Road, near the eighth mile-post, and works down the northern slope of Mount Cargill, and the west bank of the Waitati, to the head of Blueskin Bay, where it merges into No. 2.

No. 5, coloured brown, is a continuation of the Port Chalmers Railway round the coast to Blueskin.