

SESS. II.—1879.
NEW ZEALAND.

PROPOSED RAILWAYS FROM THE TAIERI RIVER TO KAITANGATA, AND OUTRAM TO CLARENDON

(REPORT OF THE GOVERNMENT ENGINEER RELATIVE TO THE).

Laid upon the Table, by permission of the House, by the Hon. Mr. Oliver.

MR. E. R. USSHER to the ENGINEER IN CHARGE, Middle Island.

SIR,—

Public Works Office, Dunedin, 24th October, 1879.

In accordance with instructions contained in your telegram of 5th August, 1879, to make reconnaissance survey of lines of railway from the Taieri River at Hull to Kaitangata, and Outram to Clarendon, I have the honor to report that I have now completed the work, and beg to enclose tracings showing the respective route of each line, with the following report:—

1.—*Taieri River at Hull to Kaitangata.*

This is a continuation of the proposed line to the Taieri River *viâ* Brighton and Kuri Bush, reported on by me on the 31st May, 1878.

From the Township of Hull an ascending grade of 1 in 100 could be obtained until the first saddle is reached, a distance of about 2½ miles from the river. A descending grade of about 1 in 63 can be got from the first saddle to Akatore Creek, a distance of 1¼ miles. From the Akatore Creek, where a high bridge will be necessary, to saddle number two, an ascending grade of 1 in 50 will have to be run for a distance of 3¼ miles, in order to get through the saddle with a cutting of 20 or 30 feet. A descending grade of 1 in 170 for a distance of about 2½ miles, till the third saddle is reached. From here to the fourth saddle, a distance of 1¾ miles, it will be necessary to run a descending grade of 1 in 70, and thence to the flat at the Tokomairiro River, a distance of about 2 miles, a grade of 1 in 50.

As the country from here to Kaitangata is an easy undulating one, with a long distance of flat land along the coast distance, I did not think it necessary to continue the grades through it. They will be very easy throughout, with the exception of a short distance about the forty-third mile, where a 1 in 50 will be necessary in order to get down off the terrace land along the coast to the flat below Kaitangata.

The line throughout, from an engineering point of view, is much better than I anticipated. No works of any great magnitude will be met with except the bridging of the Taieri and Tokomairiro Rivers, and one or two other small streams that cross the line of route. I have marked on tracing the height of saddles A and B, near Trig. Station Q, just above the Township of Kaitangata, and I examined the country adjacent to these saddles with a view of bringing the line direct to Kaitangata by way of the Washpool Creek or the gully under Trig. Station R, on account of the short distance I had to rise from the Kaitangata side. I found in each case a long tunnel would be necessary, and therefore abandoned the idea of taking the line in this direction. I found the only practicable route to be that shown on tracing. Even if it were practicable to take the line up the valley of the Washpool Creek, it would cut off a large portion of the coast district, which, in my opinion, it would not be advisable to do, as a fine seam of coal is found at Coal Point, and a very considerable quantity of grain is grown in this portion of the district.

Should the Government wish at any time to construct a line from the mouth of the Tokomairiro River to Milton, it can be done at a comparatively small cost, as the country presents no difficulties.

The following is an approximate estimate for forming 14½ miles of the line between the Taieri and Tokomairiro Rivers:—

Fencing	...	...	...	...	£3,500
Formation and bridging	...	...	...	...	59,500
Ballasting and permanent way	...	...	...	...	21,500
Land and engineering	...	...	...	...	6,500
Stations and rolling-stock	...	...	...	...	12,000
Contingencies	...	...	...	...	10,000
					£113,000

Say £113,000, or about £7,800 per mile. The remainder of the line, from the Tokomairiro River to the Township of Kaitangata, a distance of $15\frac{3}{4}$ miles—cost of construction, including bridge at the mouth of the Tokomairiro River, permanent way, ballast, fencing, &c., £79,800; or a sum total from the Taieri River to the Township of Kaitangata of £192,800. If to this be added £75,000 (including permanent way, land, rolling-stock, &c.) for the line from Green Island Branch to Taieri River *via* Kuri Bush, it will make a grand total of £267,800 required to construct and equip the loop from the Green Island Branch to Kaitangata, a distance of $45\frac{3}{4}$ miles. I find, by taking Dunedin Station as a starting point, and Stirling Station as the terminating one, that the loop line is about $5\frac{1}{4}$ miles longer than the main line.

Before concluding this report I deem it my duty to express an opinion with reference to the prospect there is of this line paying. I have now made myself thoroughly acquainted with the country along the coast from Green Island to Kaitangata, and also that portion lying between the coast and the main line. With the exception of a narrow slip of agricultural land, averaging not more than 40 or 50 chains in width, along the coast, I can truly say the country between this and the Taieri and Tokomairiro Plains is very broken and nearly unfit for agricultural settlement. Certainly, here and there small farms are to be found, but as a whole the land is only suitable for pastoral purposes. I am not aware of any Crown lands of value that would be opened up, nor any large tracts of timber country. Coal, doubtless, may be found along the route of the proposed line, but this, together with the probable grain traffic, would not, in my opinion, justify the construction of the railway for many years to come.

2.—*Outram to Clarendon.*

This line, you will perceive from the enclosed tracing, leaves the Outram Branch at "Shand's," and follows on direct till the main road is reached. From here to the Township of Berwick the line generally follows the road, with the exception of one or two places where detours are necessary. From Berwick to Clarendon the line follows pretty generally the shores of Lakes Waipori and Waiholā, with the exception of that portion opposite the Township of Waiholā, where it is a mile inland. The remaining portion along the lakes does not average more than 20 or 30 chains from the shore. The total length of the line, from Shand's to the junction at Clarendon on the main line, is 18 miles, and no engineering difficulties whatever are met with. The grades throughout will be particularly good. I may say that, with the exception of a few places between Berwick and Clarendon, the country is comparatively level. I do not think it advisable to bring the line round by the Township of Outram, as by so doing a very unnecessary detour would have to be made, thereby lengthening the line and materially increasing its cost, on account of the country in this portion of the district being more difficult than that where the line is shown.

The country between Outram and Berwick is one of the best farming districts in Otago, but that from Berwick to Clarendon is much broken, and, with the exception of the portion just adjoining the lakes, the land is much more suitable for grazing purposes than agricultural. By reference to the tracing you will observe that the proposed line does not in any place exceed a distance of $3\frac{1}{4}$ miles from the main line, and in many places it is within 2 miles; in fact, I may say the line throughout does not average this latter distance from the main line, the whole of the country between them, with the exception of that about the Waiholā Lake, being a plain.

My approximate estimate for forming, fencing, laying permanent way, rolling-stock, &c., is, in round numbers, £95,000, or, say, £5,260 per mile.

I do not think the prospect of an adequate return is sufficient to justify at present the expenditure of so large a sum of money as is required in the construction of this railway.

I have, &c.,

E. R. USSHER,
District Engineer.

The Engineer in Charge, Middle Island.

By Authority: GEORGE DIDSBURY, Government Printer, Wellington.—1879.