

On the line just described, by the Waiau River, first, in the locality of Jones's Station, it would be found exceedingly rough and expensive in construction, also difficult to grade. Secondly and more especially in the locality of Glen Wye Station, where a formidable gorge in the Waiau River exists, with very high and rocky banks, and about three-quarters of a mile in length, with rapid descents on either side almost to the level of the river; and, again, the impracticability of passing the river a little east of the Boyle and Hope Rivers.

These are some of the engineering difficulties along this line, but of sufficient importance, I consider, to condemn the route. It is true that a line over the high terrace from the junction of the above-mentioned rivers, and passing in rear of the Glen Wye Station, may be considered more practicable and less expensive than that by the rivers just mentioned; but even in this case the same difficulty is to be met with in getting from the high terrace down to the low ground near the river.

No such formidable difficulties exist on the route of the other line, and it must be admitted that, upon further consideration, the difference in distance as a direct line from the Waikari Plains, namely, twenty miles, is in itself a convincing recommendation in favour of the route *viâ* Lake Sumner.

I have always considered, and as before expressed in my report upon the Lewis Saddle and Cannibal Gorge route (copy of which can be had from the Public Works Office), that the line connecting Canterbury with the West Coast should be made as short as possible, because, not only will there be an ever-increasing through traffic between these two localities, but I would further predict that, by the time this line shall have been constructed, a considerable traffic may at once be reckoned upon.

The sketch map, upon which the competing lines are shown, supplies, in my opinion, the best possible argument in favour of the proposed line, and which I feel certain will be amply proved when the survey is fully completed.

This intercoastal line should, I respectfully submit, also take precedence, as regards construction, of that of the extension of the main trunk line northwards, for reasons that will be given further on.

The route of this line *viâ* Lake Sumner will pass over better and more favourable ground than that of any other line that can be projected as an intercoastal line. No engineering difficulties, as far as I have had an opportunity of observing from an examination of the country, exist on any portion of the line by this route that may be considered exceptionally bad.

As regards this intercoastal line, there are no engineering difficulties of a serious nature until the tunnel at the Hope Saddle is reached, and, as mentioned in a former report, this line can be worked from the Waikari Plains to the highest point on the main range—namely, at the tunnel, with a “ruling gradient” not exceeding that of 1 in 25. The tunnel, which is one mile in length, is, as a matter of course, the most formidable obstacle along the route of this line; nevertheless it is the lowest that can be obtained at all the saddles over the main range in this part of the country, and also the shortest in length, except that of the Lewis Saddle, which is but twenty-five chains. But to use this saddle in preference to that of the “Hope” by reason of the shortness of the tunnel would be a fatal mistake, as I will endeavour to show.

By way of comparison, a survey was made over the Lewis Saddle, which resulted in proving the necessity of a tunnel of twenty-five chains in length, or having recourse to grades of exceptional steepness: added to this, the distance of a direct intercoastal line would be increased, according to Mr. Fowler's report, by sixteen miles, but, in my opinion, at least twenty miles.

The cost of haulage over this extra distance would be fatal to it as an intercoastal line, and it would prove a most injurious and repressive tax upon the trade and commerce of the districts on the East and West Coasts, as it would enhance the cost of every article of merchandise conveyed over it, whether the same be import or export trade, and which, as regards coal, timber, cattle, grain, and other articles of trade, would be very serious when the price of these articles again came into competition with the produce of other countries; and would, in addition thereto, become the means of preventing the railway from ever being able to enter into a fair competition with the coasting trade. Again, this extra haulage of twenty miles would be worked at a dead loss to the railway, for this reason: that, from the Haupiri Flats to the junction of the Boyle and Hope Rivers, by way of the Nancy, Grey, Marina, Lewis, and Boyle Rivers, not an article of produce would be forthcoming from the soil, nor could a single source of industry possibly develop itself along the whole route; and it further appears to me that it should be our highest aim to make the railways, which pass *through* the country, casting their innumerable benefits in every direction amongst the inhabitants, the highway of trade and commerce, instead of allowing it to be diverted and monopolized by the coasting trade, that cannot in any way whatever contribute to the general benefits of a community as a railway is capable of doing, as is proved by experience in every country where they exist.

It is with reluctance I refer to the report of Mr. Fowler's reconnaissance survey through this part of the country, because I cannot do so without condemning it in all its principal features; for, in the first place, none of the grades shown upon his section have been able to stand the test of a survey; and as for the routes and the character of the works along them, both are equally condemnatory of the scheme of which they form a part.

The line from the head of the Marina Plains to Reefton is also a failure, and the route of the extension to Blenheim and Nelson (as part of the scheme) is entirely out of the question, as the results of our survey will abundantly prove; and when viewed in this light I fear his report will be shorn of all its sanguine recommendations.

Reverting again to the line at the Hope Saddle: it must be admitted that the tunnel is indispensable. Nevertheless, whatever its cost, I consider it to be the proper and legitimate route for the intercoastal line, which fact, I am certain, will be confirmed some ten or twenty years hence. It is the lowest, or as low, as any of the other saddles on the range, and the tunnel is the shortest, except that at the Lewis, as before stated.

The first cost of a tunnel is, generally speaking, the only one, and, if it is located at the right place, it is always sure to have saved distance, which, in its relation to the cost of maintenance, becomes an important matter in the working of a railway.