

New Zealand Government Railways, Head Office, Wellington, N.Z.,
15th July, 1899.

MEMORANDUM for Mr. P. S. HAY, Superintending Engineer, Public Works Department,
Wellington.

RIMUTAKA DEVIATION.—With further reference to your memorandum of the 9th ultimo, the Locomotive Superintendent of this department states that wagon-tires and brasses will run about four times as long on a fairly straight road, in comparison with such a road as between Upper Hutt and Cross Creek.

T. RONAYNE,
General Manager
(per T. W. W.).

APPENDIX K.

WELLINGTON-NAPIER RAILWAY.

REPORT ON PROPOSED ROUTE FOR DEVIATION OF LINE IN ORDER TO AVOID THE FELL INCLINE OVER THE RIMUTAKA, BY MR. R. W. HOLMES, M.Inst.C.E.

Public Works Office, Wellington, 11th September, 1899.

Hon. Minister for Public Works.

MR. R. W. HOLMES, Resident Engineer, having made an examination of the country from Petone to Pigeon Bush, in the Wairarapa Valley, with a view of ascertaining if a practicable route for a railway is obtainable by way of the Wainuiomata, Orongorongo, and Wairongomai Valleys, his report and plans are submitted for your information.

It will be seen by the report and plans that the country between the Lower Hutt Valley and the Wairarapa Lake is of a very rough character, being intersected by high ridges, through which, in order to obtain a line with moderately easy grades, it will be necessary to construct two large tunnels, one through the Wainuiomata Ridge being one mile in length, and the other through the Orongorongo, between the head of the Wainuiomata and the Wairongomai Valley, will require to be 3 miles 50 chains long, the latter on a grade of 1 in 100. This latter tunnel, on account of its great length, will be costly to construct, and will take a long time to excavate, besides the difficulty of working such a length of tunnel with heavy trains on a grade of 1 in 100, unless very efficient means of ventilation are provided.

Mr. Holmes estimates the cost of constructing the 30 miles 60 chains of new railway at £463,547, but has probably underestimated the value of the work in the long tunnels, for which I consider £35,000 should be added. The construction of the railway along the Wainui-o-mata Valley is likely to interfere considerably with the source and head-works of the Wellington City water-supply, consequently some objection to the work may be expected from the Corporation.

WILLIAM H. HALES.
Engineer-in-Chief.

MEMORANDUM for the ENGINEER-IN-CHIEF, Public Works Department.

WELLINGTON-NAPIER RAILWAY.

PROPOSED DEVIATION BETWEEN PETONE AND PIGEON BUSH VIA WAINUI-O-MATA—LOW-LEVEL LINE.

SIR,—

Public Works Department, Wellington, 9th September, 1899.

I HAVE the honour to inform you that I have examined the country between the Petone Station and Pigeon Bush Station, *via* the Wainui-o-mata and Wairongomai Valleys, with the object of seeing whether or not a practicable route exists for a deviation of present line of railway and now report upon the same as follows:—

The obstacles to the construction of a line are three watershed-divides—namely, Hutt-Wainui-o-mata, Wainui-o-mata-Orongorongo, and Orongorongo-Wairongomai.

The saddles in these divides cannot be made use of because the mountain-sides are too precipitous, too broken by branch valleys, and too liable to slip to permit of the construction of a railway-line in the position that would be necessary to allow of grading over them; also, there is not sufficient distance to grade down in from the Orongorongo River to the Wainui-o-mata River with a 1-in-60 grade, while a Fell incline on a very unstable foundation would be required on the Wairongomai side. The summit-level of a graded line would be about 1,400 ft. above the sea, and situated at the head of the Wainui-o-mata River.

The difficulties presented by these divides can be surmounted by the construction of two tunnels, one 80 chains (one mile) long between Lowry Bay and Wainui-o-mata, the other 3 miles 50 chains long between Wainui-o-mata and Wairongomai Rivers, passing under the Orongorongo River at a depth of 800 ft. below the bed.

There will be two miles of heavy work grading up to the first tunnel from the Hutt Valley, and three miles of heavy work grading down the Wairongomai Valley from end of second tunnel, the rest of the formation-works will be very easy, and situated on flat ground.

With the exception of three miles in the Wairongomai Valley the formation-works will be very stable, neither liable to slip nor suffer damage by flood, consequently the maintenance of line will be very light.

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