1908.

NEW ZEALAND.

CLUTHA VALLEY TO TUAPEKA MOUTH RAILWAY

(REPORT ON THE PROPOSED).

Return to an Order of the House of Representatives dated the 17th July, 1908.

Ordered, "That there be laid before this House a return being a copy of the report by the Engineer on the proposed railway up the Clutha Valley to Tuapeka Mouth."—(Mr. J. ALLEN.)

REPORT UPON ALTERNATIVE RAILWAY ROUTES, BALCLUTHA TO TUAPEKA MOUTH, BALCLUTHA TO RONGAHERE, AND BALCLUTHA TO POMAHAKA VALLEY.

THREE separate routes have been examined for this work, and plans and estimates made.

As they have been compiled from examination of the country only, without any instrumental survey except a few aneroid heights, the information is necessarily approximate only, and the total length of lines examined being about seventy-three miles prevented any great amount of time being expended on the flying survey.

The following is a description of the different lines examined:—

Line No. 1, shown in red on plan, starts a few chains north of the Balclutha Bridge on the main south line, and ends near the school at Tuapeka Mouth, and follows the north bank of the Molyneux River. Length, 21 miles. Estimated cost, £99,580, or £4,718 per mile.

Between 0/0 and 1/0 about 25 chains of rocky sidings occur near the railway-bridge; for the remainder of the distance banks and cuttings alternate, of probably no greater height or depth than 7 ft. or 8 ft. The main road will require to be diverted for some distance along this length. From 1/0 to about 3/10 the line runs straight across the Barnego Flat, where a bank will be required from 3 ft. to 4 ft. high. From 3/10 to about 5/0 rocky hillsides alternate with short stretches of river-flat. The main road will also have to be diverted for this length. About 5/0 the line will leave the river-bank and go over a low saddle about 70 ft. above river-level at 5/60, behind a rocky knob called Balmoral Hill. Another rocky ridge occurs about 7/0, and the line runs at the back of this over a low saddle; from there it will keep away from the river to get at the back of numerous rocky outcrops, and will run at a height of 60 ft. to 70 ft. above the river to about 9/0, grades and formation being very easy. At 9/0 the line runs at the back of Begg Brothers' homestead, and from thence falls gently to the Waitahuna River, which it crosses about one mile above the mouth, and then gets close to the Molyneux River about 12/0, and keeps along the river-bank to about 14/0; from thence it ascends gently and shapes a course towards the main road at Crookburn about 14/40, winding where necessary to avoid rocky outcrops, and running through very easy country. From Crookburn the line will run alongside the road to 21/0, where there is a suitable site for a railway terminus on level dry ground, between the Post-office and the school, and nearly opposite the punt over the Molyneux River.

The difficulties on this route consist of about 25 chains of rocky hillside in the first mile, and the rocky hillsides between 3/0 and 5/0. From 5/0 to 21/0 no special difficulties occur, and the line can be located with easy grades and curves, and will wind along the back of the rocky outcrops which occur near the river.

A bridge will be required at Waitahuna River, about 120 ft. long by 20 ft. to 25 ft. high. The bottom is rock. No other streams of any size occur on this route; small bridges of 20 ft. or 30 ft. length will be required in a few places. A good many culverts and pipes will be required, as the country is well watered by numerous small streams and watercourses. Plenty of stone for building purposes can be obtained, and also shingle and sand from the Molyneux River bed, should concrete be required.

Stations will be required on this line at Cruickshank's (5/40), Begg's (7/0), Greenfield (15/20), and at terminus (21/0).

Line No. 2, shown in green on plan, starts from the Balclutha Railway-station, and follows the south bank of the Molyneux River to a flat beyond the Blackcleugh Creek, above Rongahere. Length of line, 27 miles. Estimated cost, £145,310, or £5,382 per mile.

From 0/0 to 1/0 the line runs along level country, partly through the township, where the location of the line will be determined by the roads, and be in the best position to avoid cutting up properties. At about 1/0 the river-bank is reached, and from here to 2/0 the line will be close to bank, and for about 30 chains will be on steep rocky siding, locally named Difficult Point. From this point the line runs straight across a cultivated flat through McNeill's property, with very easy formation, and comes close to the river about 3/40, and from there to the Kaihiku River runs along flat ground at the foot of the hills. Near Kaihiku River the line is at the back of a rocky hill, on quite level ground, evidently a former course of the Molyneux. Kaihiku River has a rock bottom, and requires a bridge, say, 120 ft. long by 25 ft. high. After crossing Kaihiku River the line runs along a flat for about a quarter of a mile, and then keeps close to the river-bank as far as the Waiwhera River, being for the most part on easy sloping hillside, with a few flats intervening, and will be chiefly in light rock cutting, with two rocky points about 7/20 and 8/60, each about 10 chains long, with cuttings about 15 ft. deep. The bridge over the Waiwhera River will be similar to that over the Kaihiku. Between Waiwhera and Pomahaka Rivers there are two rock cuttings, one about 6 chains long and 15 ft. deep, and the other, near the Pomahaka River, about 7 chains long and up to 30 ft. deep. Pomahaka River requires a bridge about 400 ft. long by 25 ft. to 30 ft. high. The line above this river follows a flat at foot of rocky slopes to about 13/20, very easy formation of light bank. From 13/20 to 15/20, just above Clydevale punt, the formation is very easy, and above that the line will run straight across a flat, well away from the river, as far as 17/0, where the low hills come close to the river, and from here to 21/20, at Tuapeka Mouth punt, the river-bank will be followed, with easy, safe formation. From 21/20 to 24/40 the formation will be easy, the line running on flat or undulating ground, clear of the river, with a few small rocky points. From 24/40 to 27/0 there are some steep rocky points, which will entail some considerable expense in cutting for railway and for road-diversion.

A bridge will be required at Blackcleugh Creek, about 60 ft. or 70 ft. long by 25 ft. high.

A good many culverts will be required on this line, mostly small, and there will be four bridges.

Five stations will probably be required — at Kaihiku (5/0), Pomahaka (11/50), Clydevale (15/0), Tuapeka Mouth punt (21/20), and terminus (27/0).

Line No. 3, shown on plan in yellow, starts from the Balclutha Railway-station, and is common to line No. 2 as far as 11/0. From thence it follows up the Pomahaka Valley to join the constructed line from Waipahi to Edievale, at the junction of the Waipahi and Pomahaka Rivers. Length, 36 miles. Estimated cost, £180,560, or £5,015·5 per mile.

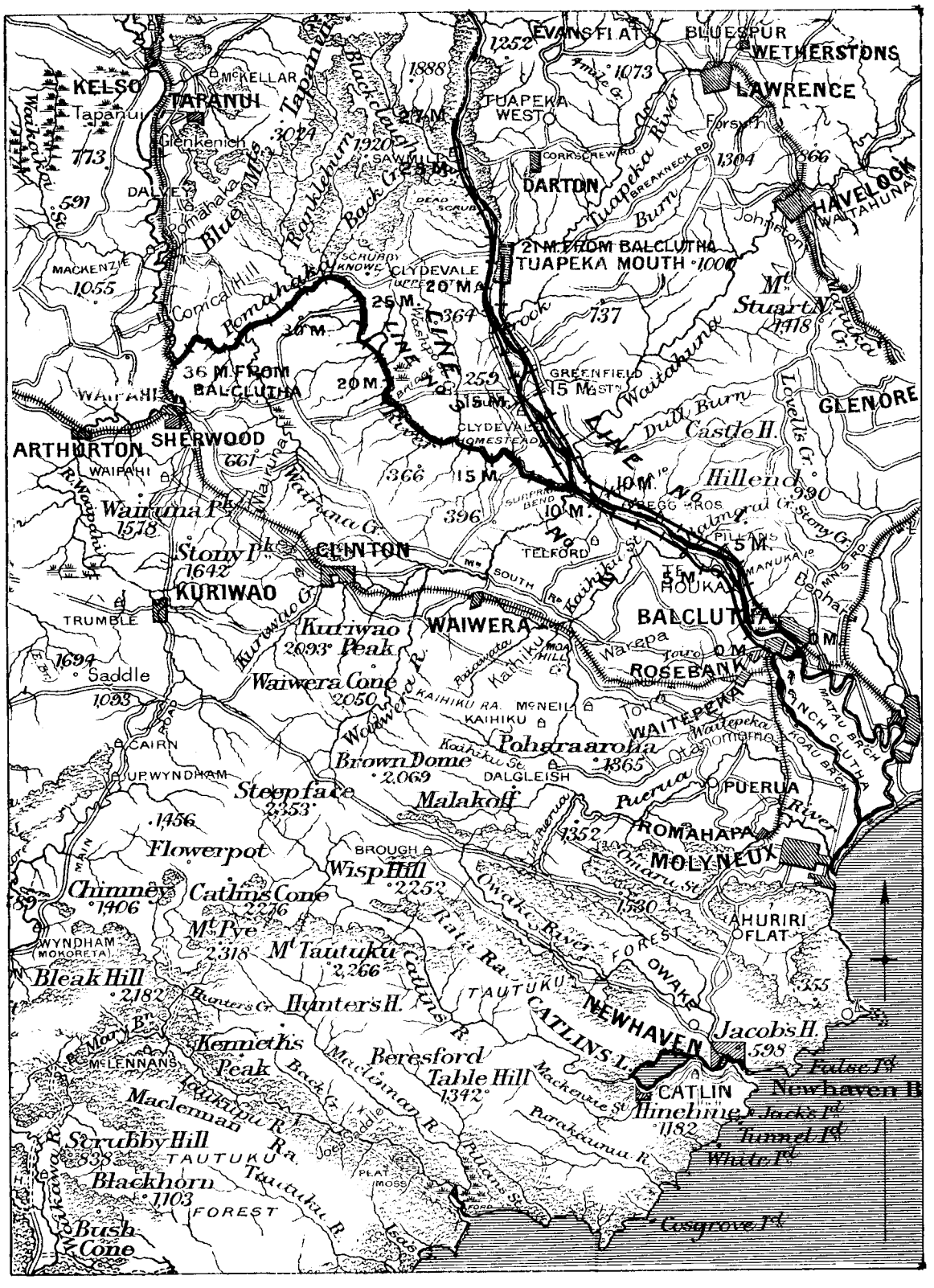
From 11/0 to 14/0, near Pomahaka Road Bridge, the line will follow the Pomahaka River, and formation, for the most part, will be on flats above flood-level, but a few short rock points occur at intervals. From 14/0 up to Pomahaka settlement, about 26/0, the formation will be very easy, on level ground above river, with a few rocky points to cut through. From 26/0 to 29/0 the river is in gorge, with narrow flats above floods for some distance, but with a considerable extent of rock cutting in short bluffs. The Pomahaka River in this gorge appears to rise about 20 ft. in high floods. From 29/0 to 32/0 some rock bluffs occur, but most of the distance is easy. A bridge will be required at Wairuna Creek, about 40 ft. long. From 32/0 to 36/0 formation will be very easy, and the line will run along flats above flood-level, with one small rock cutting about 5 chains long. A bridge will be required over the Waipahi River, after crossing which the line will join the constructed railway from Waipahi to Edievale, about 2¾ miles out from Waipahi.

With regard to the economic possibilities of the different lines, it may be noted that they serve quite different localities, line No. 1 being the most useful for all the settlement on the north side of the Molyneux River as far as Tuapeka Mouth, where there is a large extent of good land closely settled. Line No. 2, as far as the Pomahaka River, is only a few miles from the main south railway, with good roads connecting. All the settlement on the right bank of the Pomahaka River is comparatively well served already by existing railway and good roads, so that most of the traffic would have to be looked for from the country inland from the Pomahaka River, the Clydevale and Rankleburn Estates supplying the greater part of it.

A good trial survey, with theodolite traverse, dumpy-levelling, and numerous long cross-sections on broken ground would give an accurate and reliable estimate of the cost of the different lines, and would be made with a small expenditure of time and money, as the country is nearly all open and easy of access.

ALTERNATIVE RAILWAY ROUTES.

Balclutha to Tuapeka Mouth	Line No. 1.
Balclutha to Rongahere	,, No. 2.
Balclutha to Pomahaka	,, No. 3.



PLAN SHOWING ALTERNATE RAILWAY-ROUTES.

Balclutha to Tuapeka Mouth ... ... *Red, No. 1.*

Balclutha to Rongahere ... ... *Green, No. 2.*

And from 11 miles on green line up Pomahaka Valley to Waipahi-Ellesvale Railway ... *Yellow, No. 3.*

COMPILED FROM PLAN D. 23 345.

0 1 2 3 4 5 10 15 MILES.

SCALE

1400.10.08.916.

SUMMARY ESTIMATES.

Line No. 1.

	£
Grading	47,820
Fencing	2,600
Bridging and culverts	6,900
Permanent-way	37,800
Stations, &c.	3,740
Land-purchase	720
	£99,580

Line No. 2.

	£
Grading	66,200
Fencing	3,300
Bridging and culverts	18,050
Permanent-way	48,600
Stations, &c.	4,490
Land-purchase	1,720
	£142,360

Line No. 3.

	£
Grading	91,500
Fencing	4,320
Bridging and culverts	12,920
Permanent-way	64,800
Stations, &c.	4,700
Land-purchase	2,320
	£180,560

H. J. H. BLOW,
Under-Secretary for Public Works.

24th July, 1908.

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