

SESS. II.—1897.
NEW ZEALAND.

ROAD FROM TEKAPO TO MOUNT COOK

(RECONNAISSANCE SURVEY OF A).

Return to an Order of the House of Representatives dated Wednesday, the 13th day of October, 1897.

Ordered, "That there be laid before this House any report or reports in possession of the Government relating to the reconnaissance survey recently made of the route of an alleged shorter and better road from Tekapo to Mount Cook."—(Hon. Major STEWARD.)

Mr. T. N. BRODERICK, District Surveyor, to the CHIEF SURVEYOR, Christchurch.

SIR,—

Timaru, 27th January, 1897.

Re *Roads to Hermitage*.—Acting on the instructions contained in your letter of the 21st ultimo, I visited the Mackenzie country and thoroughly explored it for new routes to the Hermitage, and have now the honour to submit for your consideration four schemes for shortening and improving the road. It will perhaps be more convenient to give the total lengths of the rival routes here, and afterwards describe them in detail.

The present road *via* Pukaki is 96 miles long—viz., Fairlie to Tekapo, 26 miles; Tekapo to Pukaki, 30 miles; Pukaki to Hermitage, 40 miles.

A. By Mackenzie County Council's proposed route *via* the Clay Cliffs and Burnett's, 59 miles.

By old Braemar Road to Burnett's, thence by new route same as above, 63 miles.

B. By Lake Pukaki route, with steam-launch, 77 miles.

By bridges across island from Braemar to Jack's Creek, 65 miles.

It is not possible to shorten the first route *via* Pukaki by more than 2 miles, but the road can be made into an excellent one by the expenditure of sufficient money. From Pukaki Bridge to Birch Hill, by following the lake as shown on the accompanying plan (C), by making slight deviations here and there, and by forming where it is required, this might be done for about £2,500. From there to the Hermitage the road should always have a surfaceman on it, for no formation would ever stand. This part, however, is by no means a bad road. Following the lake round would make it a more interesting drive for the tourists than it is at present, and the long and toilsome pull uphill for miles, only to zigzag steeply and awkwardly down to the lake again, would be avoided. The time saved by the new route along the lake cannot be estimated by the difference in the lengths of the two roads. Cost of the new piece would be about £1,400.

Route A, *via* the Clay Cliffs, as proposed by the Mackenzie County Council: From Tekapo to Trig. L is roughly formed, but a good enough road in summer, equal to the one now in use between Tekapo and Pukaki, with an excellent ford over the Fork Stream. From L to Z very good gradually-ascending grades can be got, and a good ford over the Landslip Creek, but from these to the Jollie River, a distance of about 3 miles, the grade could not be made easier than 1 in 13 without a zigzag. The Jollie would have to be bridged at the Gorge with a one-span bridge from rock to rock of 86 ft., and a deep cutting made to get at it from the south side. From there to Black Point (4½ miles) it is flat formation on a shingly soil, with the exception of 61 chains of side cutting, half of which is very heavy. At this point the real difficulties commence, which are, in my opinion, so great as to condemn the route at present, because of its great cost; for from this point to the site of the proposed bridge across the Tasman (2 miles) the river often runs right into the foot of the hills, and the only way to make it quite certain that traffic would not be interrupted is either to cut it along the hillside, which has an average slope of 40°, and for one-third of the distance is solid rock, and the remainder a loose mixture of rock and clay, which would most certainly slip when cut into, or to build it up with rubble along the base of the hills. Indeed, I am of opinion that the latter is the only plan which could be adopted, and then it is probable that part of it would be destroyed from time to time by the river. Then comes the Tasman Bridge of 35 chains in length, the cost of which would, of course, depend on the kind of structure required, which would in any case have to be very strong; and from there to the road (about a mile) is a high gravel bank of old formation cut through here and there by channels from the Hooker overflow and the creeks, which might stand for ages, but on the other hand might be washed away by the next flood. The road, with the bridge over the Jollie, could at a rough estimate be made for from £4,000 to £4,500, but the bridge would be a costly addition, for the piles would have to be driven very deep.

By the old Braemar to Burnett's Road, thence as above, the new formation from L to Burnett's and steep incline into the Jollie would be saved, but the length would be 4 miles longer, and at least £1,200 would have to be spent on the old road to make it all passable.

B. The Lake Route: This seems to me to be the most feasible of any. From Tekapo to the deviation of the road is already formed, and is in places metalled; and is, in fact, a fair summer road. No doubt, should it ever be made the main road, more formation and metalling would have to be done before long; but it is no worse in this respect than the coach-road now in use between Tekapo and Pukaki, which for a greater proportion of its length is neither formed nor metalled. The $4\frac{1}{2}$ miles of new formation to the navigable water of the lake can be made at a good grade for about £500, and a steam-paddle ferry-boat capable of carrying the coach and horses might be employed to ply between this point and Boundary Creek—say, one similar to those employed on Sydney Harbour—or a simple steam-launch to carry passengers and luggage only would do very well, with a coach for each side of the lake. About £1,000 spent between the lake and the Hermitage would now make that portion of the road very passable indeed. I think this route would not be a very wearisome one-day journey to tourists; the distance would be broken and monotony relieved by the 4 miles' steam across the lake, and with good horses the journey could be done very quickly. The same number of horses now employed would be sufficient to run right through to the Hermitage, and the work for them would be much lighter, and consequently they would do it more quickly and better than at present. There should be three stages: Fairlie to Tekapo, 26 miles, say, four hours; change horses Tekapo to ferry-boat, 20 miles, three hours and a half; lunch and boating across the lake, one hour; new coach and fresh horses 27 miles to Hermitage, say, four hours and a half: total, thirteen hours, say, from 6 a.m. to 7 p.m.; and I have estimated the journey at the low rate of six miles an hour, which speed could always be maintained without fail. Should a weekly service only be required, each horse would not have to travel more than a maximum of fifty-four miles and minimum of forty miles per week. At present they are doing eighty and some of them a hundred and sixty, which accounts for their poorness and utter inability to do the journey in a reasonable time, and yet the company has at least four sets of horses.

There is deep water at both sides of Lake Pukaki at the points indicated as landing-places, and only small stages, with a boathouse and a hut for the boatman, would have to be erected. I may say enough horse-feed can be had, and is at times now grown on the freehold at the head of the lake to feed all the horses which are ever likely to be employed on the road.

It was no use making costly and extensive surveys with exact estimates of the different routes at this stage of the proceedings, but I have measured all that was necessary to enable me to speak accurately in the general way that I have done, and this, I am sure, will be near enough for you to decide whether the survey of any particular route should be undertaken.

If it is thought worth while to bridge the Tasman in preference to any other scheme, it would be as well to consider whether it is not less costly to put the bridge across the two streams opposite Braemar, and make a raised causeway, protected by wire fence and willows, across the island and swamp. Both swamp and island are always wet, and at times flooded in places, but neither are ever washed away in the slightest.

The Chief Surveyor, Christchurch.

T. N. BRODERICK,
District Surveyor.

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