

No. 1 dredge, which also was overhauled, but did not require so much attention. The cost of this overhaul was about £200, and has been charged against the work. Since the overhaul No. 2 dredge has been working more efficiently than previously, and I consider that the repairs could not have been carried out better than they were.

In about a year's time No. 1 dredge will require an overhaul of a similar nature, as the wheel-race is showing signs of wearing through.

WAITAKARURU—MAUKORO CANAL.

Owing to both dredgers being engaged on the Piako River improvements, no dredging was undertaken on this canal during the past year. However, a drain 10 ft. wide on top was constructed as far as Torehape, a distance of 6 miles 20 chains from the Hauraki Gulf. Of this distance, 189 chains has been dredged, whilst for 85 chains, 5 ft. of peat has been sluiced out to a width of 40 ft., leaving a distance of 2 miles 46 chains of 10 ft. drain constructed.

The latter portion of the country traversed by this drain is very solid peat country. The fall from the end of this drain to the sea is over 20 ft., and therefore renders it impracticable to construct a canal with a dredge for a large portion of this distance. However, every endeavour has been made to utilize this drain as a catchment-drain, and at the present time there are only two streams that require outlets in order to complete the purpose for which it was intended. These two are the Waikumete and the Torehape, both of which will be tapped during the coming year, as the Department will construct the Torehape outlet, whilst the Waikumete outlet will be accomplished by private enterprise, as the land through which it passes is freehold.

WAIKAKA CANAL.

This canal, which was completed in 1911, has been standing remarkably well, as all the traffic up and down the river passes through this waterway. Some further improvements to this canal are contemplated as opportunity offers.

PIAKO AND WAITOA RIVERS IMPROVEMENT.

The works detailed under the heading "Priestman dredgers" describe all the works that have been carried out in the above connection, for which a special vote of £2,000 for two years was obtained in 1912.

In the year ending 31st March, 1913, the sum of £465 was expended in dredging the Piako River, being only for a period of four months, whilst during the year under review a sum of £2,073 13s. 5d. was expended, practically all in dredging, a small sum being utilized in removing spoil from alongside the river-banks.

As mentioned before, the work that has been carried out has been especially beneficial to the reaches above Kerepehi, and as a result the flood-waters do not become so congested as formerly, and are got rid of very quickly.

It has not been possible, so far, to undertake any work in connection with the removal of the hard bars in the Waitoa River, but it is hoped to do so shortly.

STOP-BANKS.

The total length of stop-banks (or levees) that has been constructed is 27 miles 50 chains, a length of 8 chains having been completed along the Waitakaruru Stream during the year. In addition the Department constructed 71 chains of stop-bank along the Waitakaruru Stream, where the Waitakaruru Loan Block has frontage to the stream. This was not constructed out of Hauraki Plains funds, but forms part of the whole scheme for preventing the flood-waters from the stream overflowing the adjacent Crown land.

During the year there has not been a case where the banks have been washed away, as, where they are exposed, special protections have been constructed from time to time. Wherever necessary the banks have been strengthened, and this policy will be carried out in the future.

FORMED ROADS.

The total length of formed cart-roads, in most cases with a drain on each side, is now 53 miles 78 chains, the distance formed for the year being 3 miles 50 chains, all the work being new formation.

In addition some 3,000 cubic yards of sand was utilized in blinding and raising peat roads within the Waitoa Block, drays and scoops being the method of carting. This has practically completed the road-formation within the Waitoa Block, although in a few low places it will be necessary to raise the roads still further.

A special vote of £1,595 was obtained to assist in the construction of the Waikaka Tramway Road, and during the past year the sum of £402 has been expended on this work. Over a mile of drain was constructed, and in February the actual road-construction was commenced. Before spreading the spoil, which is obtained from the upper end of the road, fascines had to be laid to ensure a solid foundation. Six trucks were built and are being used continually on the tram-line, which at the same time is being moved to the centre of the road instead of being on the side, as previously. At the end of the year over 1,600 cubic yards had been trammed and utilized in the preliminary ballasting.

During the summer six drays have been engaged continually in carting spoil for the Pate-tonga Road, which passes through peat country. This has been very heavy work; the amount of spoil required per chain has in some cases been as high as 60 cubic yards.

All roads are being maintained as well as possible.

ROAD-BANKS.

The total length of road-banks—i.e., spoil from road-drains removed about 4 ft. from the edge thereof and spread—is still 13 miles. During the year nothing has been done to convert any of these into cart-roads. Quite half of the above distance is not required for the subdivision of the land, and has been left mainly as a reserve. This distance will be reduced, as at Waikaka some of the roads will be ballasted during the coming summer.