

SESSION II.
1921.
NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY:
RANGITAIKI LAND DRAINAGE.

REPORT FOR THE YEAR ENDED 31st MARCH, 1921, TOGETHER WITH STATEMENT
OF ACCOUNTS.

Presented to both Houses of the General Assembly pursuant to Section 10 of the Rangitaiki Land Drainage Act, 1910.

SIR,—

Department of Lands and Survey, Wellington, 10th June, 1921.

I have the honour to submit herewith the report upon drainage operations in the Rangitaiki Plains for the year ended 31st March, 1921, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

The report of the Chief Drainage Engineer, Mr. J. B. Thompson, is attached hereto, from which it will be seen that very great progress has been made with the works during the year, and that most of the land already drained has been subdivided and settled with satisfactory results.

The accompanying statement of cash transactions and balance-sheet shows the financial transactions for the year, and the position of the account as at the 31st March last.

I have, &c.,

The Hon. D. H. Guthrie, Minister of Lands.

T. N. BRODRICK, Under-Secretary.

REPORT OF CHIEF DRAINAGE ENGINEER.

SIR,—

In accordance with the provisions of the Rangitaiki Land Drainage Act, 1910, I have the honour to submit my report for the year ending 31st March, 1921.

The year has been one of very great progress indeed. All over the Rangitaiki Swamp, and wherever large holdings have been subdivided, great improvements have been made, as shown in the improved returns in both dairy factories located in the drainage area. Plenty of fall is available, and many of the farmers have taken advantage of same to deepen their private drains. A great amount of timber has been met with, making the work much more costly; but unless this timber is disposed of the fall cannot be made use of.

One new Priestman dredge is now in operation in the Tarawera River, and is doing splendid work. So far it has had considerable quantities of timber to contend with, but is easily able to cope with same. The other new Priestman will start operations in April in Section 109 drain.

When the up-to-date machinery purchased recently in America is in operation—which will be very shortly—all the main drains will have ample fall.

EASTERN DISTRICT.

The drainage in this district has been pushed along satisfactorily during the year. Outfalls cut the previous year from the Tohakatoa Kawa Stream southwards through Section 30 to the south boundary of Section 38 have been widened and deepened, that on the western side being now fully 14 ft. wide, and on the eastern side (which is only partially constructed) about 18 ft. wide. All spoil from these drains has been thrown into the centre of the road, and this, with some extra material carted, has made a very good road.

Although the Otarere drain was widened last year, it was found necessary to deepen the same drain this year owing to so much silt from the hills lodging in the bed of the stream.

The Eastern drain has been deepened from the Kopeopeo to McLean's Road, and the tide now rises at McLean's Road fully 6 in. Nearly all the spoil from this and adjoining drains has been used in forming roads adjacent thereto. It is proposed to take up fall through the sandy ridge, and scoops are being utilized in this very necessary work.

The Western drain has been deepened and widened from Feist's Road to McCracken's Road, and the result is a splendid drain, giving all the adjoining settlers ample fall.

Putiki drain has been cut through the lagoon near the Kopeopeo cut, and has been cleaned to the southern boundary of Section 75. Owing to more fall being available by dredging operations,

Kuhunui drain has been deepened fully another 18 in., and the lagoon in Section 61 is now quite dry, and country which two or three years ago was covered by raupo and water is now feeding bullocks and is improved beyond expectations.

The drains in Native Section 28 have been deepened and two others constructed, but unless steps are taken to fence these drains work will be ineffective owing to so many wild horses and other stock using drains for watering purposes. This work will be taken in hand immediately, rough posts being used until more suitable material comes to hand.

The Te Rahu—Mangaroa outfall and Whakaire drain have been cleaned, and fall is now being taken up in the latter. This stream would be a good one to test the capability of the drag-line excavators purchased recently in America, and it is proposed to place a machine in the Te Rahu—Mangaroa dredge-cut and the Whakaire drain shortly, which would avoid the necessity of diverting the Whakaire as desired by several of the settlers, but which would be a costly work. Deep silt-traps will be excavated throughout.

Several small drains in the eastern portion of district have also been deepened with material advantage to the settlers, and a new drain was cut in portion of the Native country near Poroporo, but, as there is a considerable distance between this drain and the White-pine Bush Road, another outfall drain will be commenced shortly.

WESTERN DISTRICT.

The hand drain cut from the Omehu adjunct to the cross-road last year has been extended as far as the Tengaroa drain, and No. 4 dredge is now occupied in dredging a 30 ft. cut along this drain, and is within about 20 chains of the Tarawera cross-road. The Tengaroa drain, which was widened last year, has now been deepened to a short distance past the main Rotorua Road, and the country is very dry indeed.

The Awakaponga outfall drain has again been cleaned out, and fall taken up in the Amiona and Collins drains. The former drain was deepened, but very heavy timber was met with, which made the construction very costly. It may be of interest to note that in nearly all drains now being deepened large quantities of timber, 6 ft. or 8 ft. underground, have been met with, showing conclusively that at one period forests must have been in existence over the Rangitaiki Plains.

The Awaiti drain as far as its junction with the Tarawera Western drain has been widened and deepened from the Omehu dredge cut, and the Tarawera Western as far as the Railway Road. This has been of great advantage to the surrounding country, which, owing to the extra fall, is now quite dry and can be brought into cultivation. This drain can be deepened by hand for another 40 chains, but, owing to there being no possibility of diverting water after this distance, one of the new machines, which straddles the drain, will be used.

Murray's drain, which branches off from the Tengaroa drain, has been widened and deepened. This drain will be continued through Crown lands, shortly to be opened for occupation, to about a mile south of the main Te Teko—Rotorua Road.

PRIESTMAN DREDGES.

Similar conditions have happened during this year as in the previous one—viz., shortage of coal, and hard dredging-country—but notwithstanding this very fair progress has been made.

No. 3 dredge has been occupied in redredging the Kopeopeo outfall and deviation, and on the return journey has picked up considerable fall. It has reached the northern end of Putiki drain, but as coal-supplies were short progress was not so good as anticipated. The total spoil accounted for was 133,250 cubic yards.

No. 4 dredge has been occupied dredging up the Omehu outfall, but owing to various causes, chief of which was the building of new pontoon and dismantling of dredge, re-erection of machinery, and change of dredgemasters twice, progress was not nearly so good as anticipated, but a decided improvement is now manifest. The country immediately adjoining this cut, which previously was almost under water, has now plenty of freeboard, and has increased considerably in value. Total amount of spoil shifted was 43,418 cubic yards.

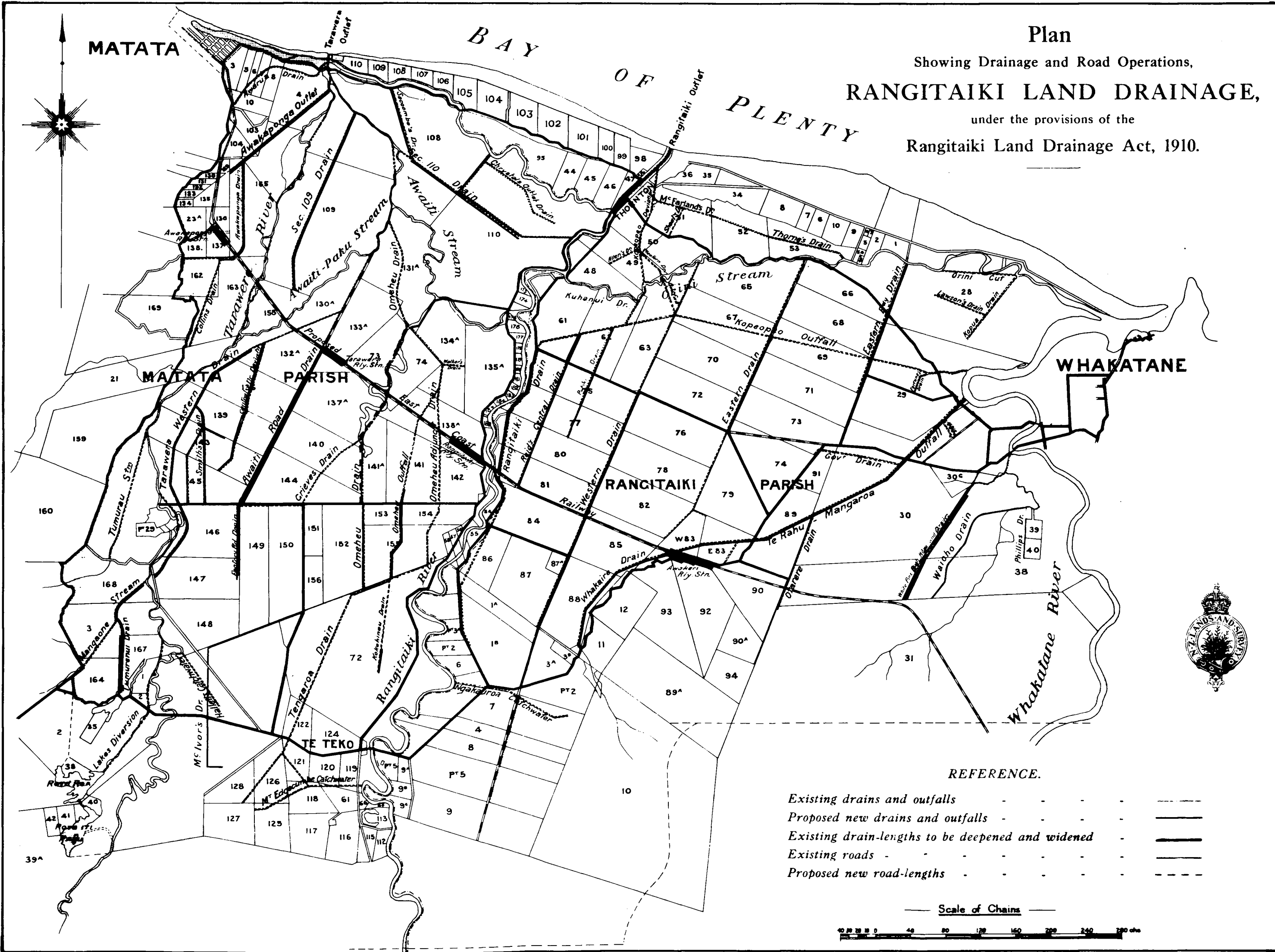
No. 8 dredge was put into commission in October, 1920, and is now engaged in dredging channel in the Tarawera River in its upper reaches, and also stop-banking. The dredge has done good work from the start, although it has been hampered to a considerable degree by striking large quantities of timber. The total amount of spoil shifted was 39,100 cubic yards.

No. 9 dredge: It is expected that this dredge, which is now practically ready, will commence work in April.

The following table shows the total amount excavated, with the cost per cubic yard, for the past nine years:—

					Cubic Yards.	Cost per Cubic Yard.
1912-13	..	..	..	..	31,486	4.12d.
1913-14	..	..	..	..	272,370	3.07d.
1914-15	..	..	..	..	268,760	3.48d.
1915-16	..	..	..	..	224,740	4.54d.
1916-17	..	..	..	..	261,751	4.36d.
1917-18	..	..	..	..	320,614	3.72d.
1918-19	..	..	..	..	229,659	5.70d.
1919-20	..	..	..	..	176,672	6.62d.
1920-21	..	..	..	..	215,768	8.82d.

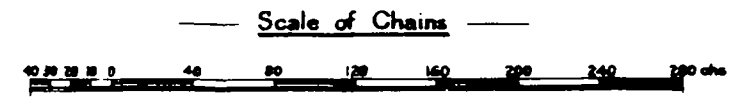
The increase in wages, coal, and other supplies has materially increased dredging-costs.

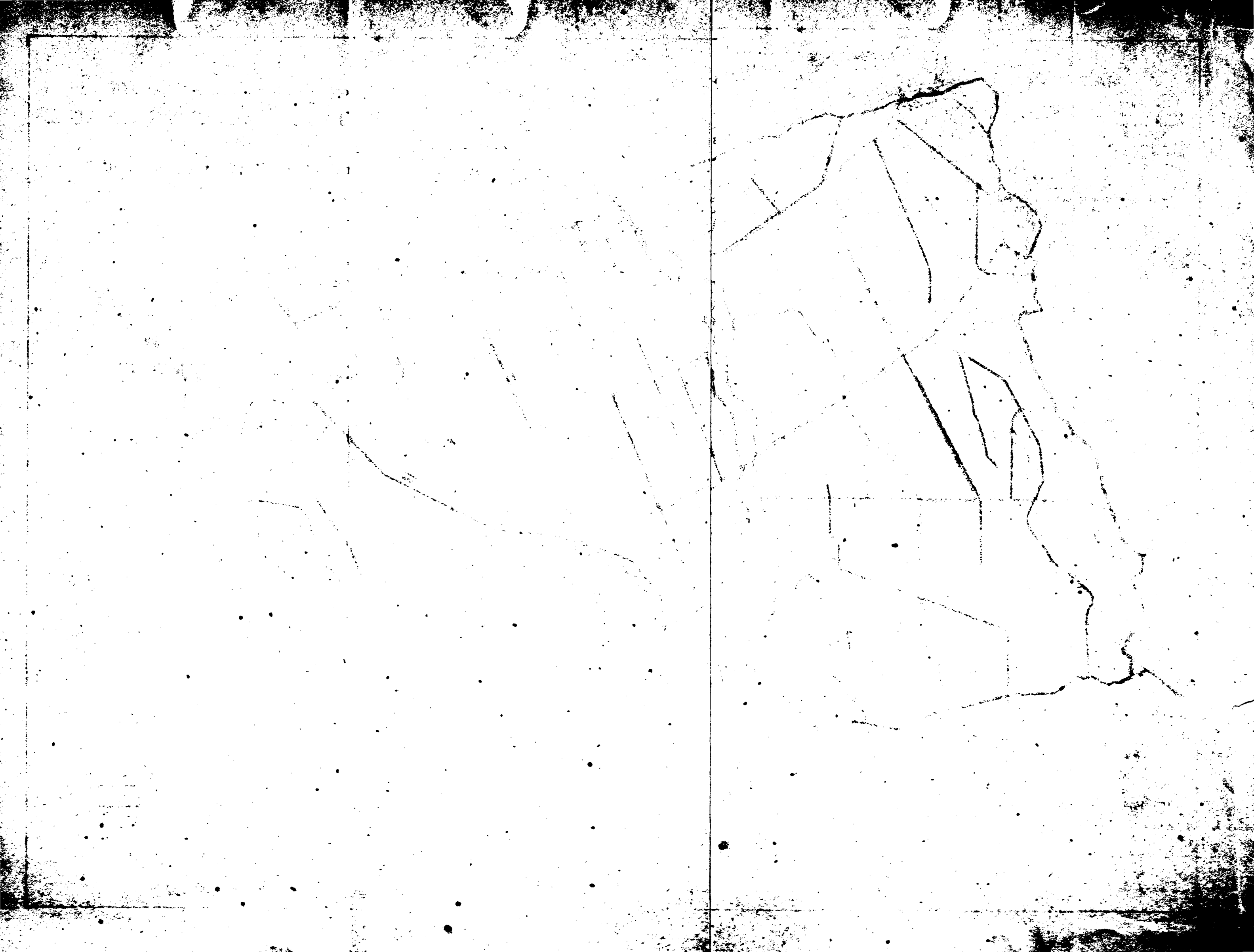


Plan
Showing Drainage and Road Operations,
RANGITAIKI LAND DRAINAGE,
under the provisions of the
Rangitaiki Land Drainage Act, 1910.

REFERENCE.

- Existing drains and outfalls - - - - -
- Proposed new drains and outfalls - - - - -
- Existing drain-lengths to be deepened and widened - - - - -
- Existing roads - - - - -
- Proposed new road-lengths - - - - -





ROADS.

The White-pine Bush Road was completed during the year, and has been found very useful, especially being used by the public in connection with the extension of the East Coast Railway from Awakeri onwards.

A road has also been formed along the Te Rahu—Mangaroa outfall drain from the main Whakatane—Matata Road to the main Rotorua Road, whilst the road from the Kopeopeo outfall drain down along the Eastern drain has been completed and carries a great deal of traffic, as this road saves a long detour.

The main East Coast Road is now complete from Awakeri to the Tarawera River, and drains have been cut from the Tarawera River towards Awakaponga Station, and the formation is now in course of construction by carts, as the Public Works Department found that, owing to the shortage of trucks and other causes, they could not supply material arranged for previously.

BRIDGES.

The bridge gangs have completed several flood-gates and bridges, including the following: Gow's Bridge across dredge cut (30 ft.); Roulston's, Dunstan's, and McCorley's bridges (small); Whakatane Main Road (small); branch drain from Western drain to dredge cut (small); Section 110 drain, two bridges (small); Hyland's drain, two bridges (small); Awaiti drain, one bridge (small); Tarawera Western drain, one bridge (small); Mayo's X Road, one bridge (small); Reid's Central (one 20 ft. span); dismantling and re-erecting bridge across Kopeopeo dredge cut (30 ft., pile); McCracken's Road drain (20 ft., pile); Railway Road—Western drain (20 ft., pile); Palmer's Bridge dredge cut (pile); railway road near Wharfe's dredge cut (pile); railway road near Reid's central (pile); flood-gate across main Matata Road near Powell's; flood-gate across main Matata Road near Seccombe's; Sheat's flood-gate; flood-gate, Rahunui Drain; Eastern Boundary Road bridge and flood-gate; Section 63, flood-gate. Also the benzine-shed was removed from Matata to Thornton, besides many other small works, consisting of repairs to dredges, punts, fencing, &c.

STOP-BANKS.

Day-labour gangs have been employed for some time in strengthening and raising existing stop-banks alongside the Tarawera River, and a contract was let to a gang of Dalmatians, who did over 90 chains; but experience shows that stop-banks are best built by the day-labour gangs. Dredge No. 8 has deposited extra material on existing banks.

DRAINS IN OPERATION.

The total length of drains in operation to date is as follows: Dredge cuts, 26 miles; main outlet drain, 97 miles; road-drains, 26 miles.

ROADS IN OPERATION.

The total length of roads in operation is now 106 miles.

SUMMARY.

New drains	9 miles 20 chains.
Widening and deepening drains	35 "
Dragging and cleaning drains and dredge cuts	60 "
New roads formed	7 " 53 chains.
Surfacing roads.. .. .	6 " 60 "
Stop-banks	4 "
Fencing	7 " 40 chains.
Levels taken	57 " 40 "
Pile bridges	8 (number).
Small bridges	10 "
Flood-gates	6 "
Spoil dredged	215,768 cubic yards.

WORKSHOP, THORNTON.

This year a great deal of repair work has been done for dredges, scoops, &c., and the saving in time by having work done expeditiously cannot be estimated, as both time and expense are kept at the lowest possible level.

BUILDINGS.

All the buildings in connection with the works are in good order, having been kept in repair.

FLOATING PLANT.

This consists of four Priestman dredges, three oil-launches, one towing-barge, and various small boats and punts.

The ferry punt in use some time ago at Thornton was towed to Waihi, and is being used there as a coal-barge. The punt at Matata was dismantled, and any bolts and iron found serviceable used in the construction of the new pontoon, which was built there for dredge No. 9.

PROPOSED WORKS.

The principal works to be carried out during the coming year are as follows: Dredging the Tarawera Western drain from the railway southwards; dredging Reid's central drain; dredging Section 109 drain; redredging the old Awakaponga dredge cut; flood-gate on the old Rangitaiki River; redredging the Te Rahu—Mangaroa outfall drain; new outlet drains, and general development-works.

WORKS EXPENDITURE.

The total amount expended on the works during the year was £65,624 0s. 9d. This includes day labour, piecework, hire of teams, purchase of plant and machinery, supplies, and repairs. Of the total amount, the sum of £57,200 was paid out of Whakatane Imprest Account. The amount paid out for day labour of all descriptions was £21,921 3s. 5d.; piecework, £24,679 8s. 8d.; hire of teams, £4,336 2s. 2d.

GENERAL.

The vouchers for day labour, contracts, hire of teams, &c., are prepared in the local office at Thornton, but final action thereon is taken in the Auckland Office, where all vouchers for purchase of plant, materials, and supplies are dealt with. The books recording all transactions are kept in the Auckland Office.

The local officer in charge is Mr. J. H. Treseder, Land Drainage Engineer, who has carried out his manifold duties in an able manner.

I have, &c.,

J. B. THOMPSON,

Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

RANGITAIKI LAND DRAINAGE ACCOUNT.

Statement of Transactions during the Year ended 31st March, 1921.

Receipts.			Expenditure.		
	£	s. d.		£	s. d.
Cash in hand at 1st April, 1920	50,754	7 5	Drainage - works, stop - banks, clearing channels, and other expenditure incidental to drainage operations	56,704	5 2
Debentures issued under Rangitaiki Land Drainage Act, 1910	30,000	0 0	Management and engineering expenses	2,253	6 10
"Thirds" and "fourths"	17	9 2	Travelling-expenses	250	5 5
Rates—			Legal expenses	10	0 11
Year 1917-18	276	18 11	Machinery and plant	2,668	17 7
„ 1918-19	703	4 5	Stores	4,078	9 11
„ 1919-20	7,754	3 10	Loose tools	271	13 0
„ 1920-21	795	19 0	Compensation for purchase of Native land under section 8 of the Rangitaiki Land Drainage Act	40	0 0
Rent of buildings		32 10 0	Rates refunded	171	6 8
	9,530	6 2	Interest	19,064	14 3
			Cash in hand	4,821	13 0
	<u>£90,334</u>	<u>12 9</u>		<u>£90,334</u>	<u>12 9</u>

BALANCE-SHEET.

Liabilities.			Assets.		
	£	s. d.		£	s. d.
Debentures—Rangitaiki Land Drainage Act, 1910	280,000	0 0	Drainage - works — Expenditure in connection therewith, including wages, supplies, administration, engineering expenses, and depreciation of plant	246,069	1 1
Consolidated Fund	375	10 6	Sundry debtors for rates	14,332	10 4
Unpaid purchase-money—Sundry Natives	429	13 1	Balance of interest on loan to 31st March, 1917 (recoverable from ratepayers)	6,897	13 8
Suspense Account	68	8 11	Lands for Settlement Account	20	0 0
Loan Redemption Account	9,230	11 5	Investments—Public Trust Office	904	5 4
Sundry creditors	31	12 3	Loose tools	648	6 6
Interest unpaid	1,776	2 9	Plant and machinery	18,093	10 0
	<u>£291,911</u>	<u>18 11</u>	Stores	120	0 0
			Sundry debtors	4	19 0
			Cash in hand	4,821	13 0
				<u>£291,911</u>	<u>18 11</u>

J. H. O'DONNELL, Chief Accountant.

Approximate Cost of Paper.—Preparation, not given; printing (650 copies, including plan), £22 10s.

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