

1930.
NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

RANGITAIKI LAND DRAINAGE.

REPORT FOR THE YEAR ENDED 31st MARCH, 1930, TOGETHER WITH STATEMENT OF ACCOUNTS.

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

SIR,—

Department of Lands and Survey, Wellington, 1st July, 1930.

I have the honour to submit herewith the report upon drainage operations in the Rangitaiki Plains for the year ended 31st March, 1930, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

The accompanying statement of accounts and balance-sheet shows the financial transactions for the year, and the position of the account as at the 31st March last. A plan of the drainage district is attached.

I have, &c.,

J. B. THOMPSON,

Under-Secretary for Lands.

The Hon. E. A. Ransom, Minister of Lands.

REPORT OF CHIEF DRAINAGE ENGINEER.

SIR,—

In accordance with the provisions of the Rangitaiki Land Drainage Act, 1910, I beg to submit report on these operations for the financial year ending 31st March, 1930.

No major construction works were undertaken during the year under review, and the work carried out consisted almost entirely of maintenance and improvement of existing works. Maintenance dredging was continued to completion by the two plants engaged on similar work during the preceding period, and the plants were then laid up in order to be available when it is necessary to undertake future canal-maintenance.

Evidence was given during the sittings of the Rangitaiki Commission in 1925, that the average annual maintenance of works would be £7,000, and this figure has proved to be an accurate forecast. On works of this nature the hand-dug drains require maintaining each year, whilst the machine-dug drains require redredging at varied intervals, according to the growth of aquatic weeds and the accumulation of silt. As a result the annual expenditure under this heading must vary each financial year, but every endeavour is being made to stabilize the rates struck for this purpose.

Excellent weather conditions obtained practically throughout the period, with an abundance of spring and summer growth. The rainfall in the spring and summer months was ample, and, although followed by a fairly dry autumn, the pastures on the lighter and higher lands were not seriously affected, as they were under the drier conditions of the previous two summers. The cultivation of paspalum on this class of land is placing it in a better position to withstand a prolonged dry spell than when growing English grasses only.

Serious flooding on the Plains was confined to a limited area in the White Pine Bush district, which suffered from an overflow of the Whakatane River during February. In this instance, fortunately, the heavy rains were of short duration and confined to the watershed of the Whakatane River. The result served to show that the danger of a severe summer flood from the rivers running through the Rangitaiki Plains is always present. The consequences attending such a flood will, of course, be intensified as the area becomes more closely cultivated and farmed.

Another substantial increase in the yearly output of the Rangitaiki Plains Dairy Co. is recorded. The total amount of butter manufactured during the season was 2,273½ tons, an increase of 339½ tons over the total for the previous season, and just over three times the total manufactured during 1925. The Tarawera Cheese-factory manufactured 230 tons, last year's total being 243 tons.

The remarkably rapid increase of output of the principal dairy company operating in the district is a sure indication of the progress of permanent settlement and cultivation on the area. Credit also must be given to the progressive methods adopted by the older-established settlers on the area in increasing the production of their herds, both by improving the quality of their stock and by scientific treatment of the pastures. Already some of the individual herd returns and returns per acre compare very favourably with those of much older established dairying districts. There are some exceptionally

good herds on the Rangitaiki Plains, and a number of farms which give a high return of butterfat per acre, all of which goes to indicate that in a few years the total yield of butterfat should increase enormously. The Rangitaiki Swamp has reached that stage in its development when its progress is almost entirely dependent on the individual efforts of the settlers. There is ample proof that the future of the district is in good hands.

The preparation of the land and the planting of flax on the several areas acquired for the purpose has been vigorously prosecuted by the several companies operating in the district. Altogether an area totalling over 7,000 acres has been acquired for flax-cultivation, comprising for the most part lands too low-lying or with too great a depth of peat to make them anything but doubtful propositions for the cultivation of grass. If the present rate of progress is continued, there is every prospect that in the future these areas will become substantial revenue producers.

Attention is also being paid to the lighter and poorer classes of land in and fringing the drainage area. Cheaper manures, following the completion of the railway, have enabled the owners of some of this land to experiment with the growing of grass and root crops. From the results obtained it seems to be safe to predict that the pasture-lands on the Plains will be materially extended in the course of years.

In the previous year several electrically-driven flood-pumps were installed on low-lying areas to relieve the congestion of water in abnormal times and to reduce the water-table in normal times. Pumping has now been resorted to over an increased area, and although it is too early to predict the ultimate result a general improvement is already noticeable in these areas.

In connection generally with the Rangitaiki drainage-works it is pleasing to quote the following extract from an article appearing in the *New Zealand Herald* in August, 1929, written by their special commissioner :—

“ There has been a good deal of criticism and comment regarding the cost of reclaiming the Rangitaiki Plains, and some people still retain the impression that the State has lost money over this work. This, of course, may be true if the narrowest interpretation of the term ‘ State ’ is taken, but in the truer and broader light the State has gained enormously, for it can be shown that even at the present time, while the district is still very far from its full productive stage, it is producing in one year nearly as much as the total cost of all the drainage and reclamation work. Moreover, at the present rate of progress it will go on increasing its production until the yearly output of wealth is double the original cost.”

Rainfall.—The average rainfall as recorded at Thornton for the past twelve years has been 54·63 in. Last year's total was 59·88 in., rain falling on sixty-seven days. The wettest month was February, with a fall of 9·22 in., when a fall of 8 in. was recorded in forty-eight hours at Thornton, and the driest was March, with a fall of 0·73 in.

Eastern District.—No dredge-work was carried out in this area during the period under review, there being, however, several canals requiring attention when a suitable plant is available for the work.

The Royal Commission of 1925 recommended that a flood-gate should also be constructed at the Rangitaiki end of the Kopeopeo, but after consideration this desirable work had to be abandoned, owing to the difficult country for work of this nature in the vicinity, and also owing to the risk of a wash-out when the Rangitaiki River overflowed its banks.

Relief workers were employed during the latter half of the period in carrying out desirable drain-improvement work and the construction of several lengths of new drain, with very satisfactory results.

Two new flood-gates to serve areas of low-lying lands and several small bridges were placed. The usual maintenance of hand drains and stop-banks was carried out throughout the area.

Western District.—Maintenance dredging was completed in the Tarawera Western and Section 109 Canals early in the period, and the two plants engaged carried out further work in the Awaiti Road Drain, Seccombe's Drain, and Section 110 Canal.

In addition to the usual maintenance of existing works, the ring-barking of willows on the Rangitaiki River between Te Teko and the mouth was put in hand. This work is the forerunner of a proposal to clear the river banks and bed of all possible obstruction, with a view to improving the flood-capacity of the channel.

Maintenance and protection work has been carried out on the Tarawera River stop-banks as required. These banks are formed solely of pumice dredged from the river, and it is essential that they should be covered with some surface growth so as to bind them together. Lupins have been sown in some places, with satisfactory results, and an endeavour will be made to establish kikuyu-grass in conjunction with the lupin, and this combination, if successful, would tend to stabilize the banks. The daily readings taken of the water-levels in this river disclose a satisfactory position, no permanent rise in the bed or water level having taken place.

Dredges.—Only two of the three dredges remaining on the works were in commission during the period. A total of 160,120 cubic yards of spoil was dredged, covering a distance of 583 chains. The cost per cubic yard of the material excavated was 4·19d.

The following table shows the total amounts excavated and rate per cubic yard for the past eleven years :—

	Cubic Yards.	Cost per Cubic Yard.		Cubic Yards.	Cost per Cubic Yard.
1919-20 ..	176,672	6·62d.	1925-26 ..	431,277	5·88d.
1920-21 ..	215,768	8·82d.	1926-27 ..	227,006	6·05d.
1921-22 ..	473,994	6·68d.	1927-28 ..	359,080	5·28d.
1922-23 ..	540,802	8·13d.	1928-29 ..	339,450	5·73d.
1923-24 ..	788,059	5·59d.	1929-30 ..	160,120	4·19d.
1924-25 ..	626,762	5·56d.			

No. 8 Priestman Dredge: This plant was laid up in the Tarawera River throughout the period.

No. 9 Priestman Dredge: This plant carried out maintenance dredging in Section 109 Drain, Seccombe's Drain, Section 110 Drain, and a short section of the Awaite Road Drain during the period. The distance dredged was 344 chains, a total of 74,500 cubic yards of spoil being removed. Work was completed about the middle of the period, when plant was laid up.

No. 21 Bay City Dredge: This plant was engaged on the Tarawera Western Drain redredging, and was laid up after completing a short length of the Central Drain and the northern end of the Awaite Road Drain. The distance dredged during the period worked was 239 chains, a total of 85,620 cubic yards of spoil being removed.

Bridges, Flood-gates, &c.—Three single-barrel flood-gates were placed during the period, one steel-girder bridge and four small sill bridges were erected, also two pile bridges lengthened.

Drains, Stop-banks, &c.—A length of 1 mile 41 chains of new drain was constructed during the period. A length of 140 chains of stop-bank was erected by the Bay City plant working in the Tarawera Western and Awaite Road Drains in order to prevent overflow of these drains into the low lands adjoining.

Drains in Operation.—The total length of drains constructed is as follows: Dredge canals, 68 miles 28 chains; main-outlet drains, 107 miles 65 chains; road-drains, 30 mile 46 chains. Of the hand drains a total of 98 miles is maintained annually by the Department.

Roads opened.—The total length of roads opened is 113½ miles, of which 86 miles have been constructed by the Department.

Workshop and Smithy.—The workshop and smithy have been engaged during the year on repair work for dredges employed on the Rangitaiki and Waihi works, and ironwork for general construction work. It is proposed to close down the workshop and smithy early in the coming year.

Plant and Machinery.—This consists of two Priestman dredges, one Bay City Walker, one Priestman pontoon, two coal-punts, one oil-launch, two-launch-hulls, four small boats, punts, and motor-lorry.

Summary of Work done:—

	Miles ch.	Cub. yd.
Drains constructed	1 41	9,180
Drains cleaned	106 0	..
Drains deepened and widened	7 37	21,050
Drains dredged	0 62	15,300
Dredge-cuts cleaned	6 41	144,770
Fencing	1 38	..
Willows ring-barked	13 15	..
New stop-banks dredged	1 60	..
Stop-banks repaired and protected	2 40	..
Levels taken	36 0	..
Traverses run	20 0	..
	Number.	
Flood-gates built	3	..
Sill bridges erected	5	..
Spoil excavated by dredges	160,120

Proposed Works.—Maintenance dredging in Reid's Central Canal and Te Rahu Canal; minor construction and improvement; and general maintenance.

Rates.—A total of 805 demands for rates were issued during the year, covering a total sum of £8,200, and rates collected totalled £10,400.

Works Expenditure.—The total expenditure recorded for the year was £13,253 1s. 6d., day labour accounting for £7,480 18s. 8d. and forty-eight piecework contracts totalling £2,052 16s. 6d.

I have, &c.,

R. G. MACMORRAN,

Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

RANGITAIKI LAND DRAINAGE ACCOUNT.

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1930.

<i>Receipts.</i>			<i>Payments.</i>		
	£	s. d.		£	s. d.
To Cash in Public Account, 1st April, 1929 ..	6,411	9 11	By Drainage-works, stop-banks, cleaning channels, and other expenditure incidental to drainage operations	10,597	19 8
Proceeds from sales and transfers of plant, &c., to other works	121	15 0	Engineering and administration expenses	509	7 9
Subsidy from Consolidated Fund for maintenance of completed works	3,100	0 0	Fuel	98	14 9
Subsidy from Consolidated Fund short paid, 1927-28	1,160	0 0	Legal expenses	66	10 0
Rents	131	3 2	Material and stores	429	17 9
Rates	10,473	5 4	Plant and machinery	776	16 8
"Thirds"	7	17 8	Refund of rates	537	19 7
Interest on investments	116	1 1	Interest on debentures recouped to the Consolidated Fund	1,370	0 0
Temporary advances from other accounts under section 40, Public Revenues Act, 1926 ..	7,000	0 0	Temporary advances from other accounts repaid under section 40, Public Revenues Act, 1926 ..	12,000	0 0
Sundries	283	18 2	Balance—Cash in Public Account	2,418	4 2
	<u>£28,805</u>	<u>10 4</u>		<u>£28,805</u>	<u>10 4</u>

REVENUE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1930.

<i>Dr.</i>				<i>Cr.</i>			
	£	s.	d.		£	s.	d.
To Interest on debentures	20,687	11	0	By Rates levied for maintenance costs	4,989	19	5
Interest on temporary advances	230	3	9	Add penalty levied	190	13	9
Maintenance of completed works	4,336	17	5		5,180	13	2
Rates, &c., written off	72	5	0	Less levy in reduction maintenance costs not recovered previous year	843	15	9
Reserve—Excess capital rate levied	349	9	3		4,336	17	5
				Rates levied for repayment of capital and interest	3,209	1	10
				Add penalty levied	140	7	5
					3,349	9	3
				Interest on investments		116	1
				Accrued rent		143	9
				“Thirds”		7	17
				Capitalized interest under section 12, Finance Act, 1927 (No. 2)	11,452	5	10
				Less capital rate levied	3,000	0	0
					8,452	5	10
				Balance carried down	9,270	5	8
	£25,676	6	5		£25,676	6	5
	£	s.	d.		£	s.	d.
To Balance brought down	9,270	5	8	By Balance transferred to Drainage Works Account	9,405	13	4
Adjustment on account of previous years	135	7	8				
	£9,405	13	4		£9,405	13	4

BALANCE-SHEET AS AT 31ST MARCH, 1930.

<i>Liabilities.</i>				<i>Assets.</i>			
	£	s.	d.		£	s.	d.
Loan Account	515,500	0	0	Drainage-works—Expenditure in connection therewith (including wages, supplies, administration and engineering expenses, depreciation of plant and capitalized interest charges)—reduction under section 22, Finance Act, 1925	363,255	17	5
Less loans redeemed under Public Debt Repayment Act, 1925—securities cancelled and amount written off as <i>per contra</i>	15,500	0	0	Less securities and amounts written off as <i>per contra</i>	15,500	0	0
			500,000		347,755	17	5
Loans redeemed from Consolidated Fund	2,500	0	0	Drainage-works—Cost recoverable out of rates	205,000	0	0
Less sinking fund in hands Public Trustee	1,525	16	0	Capitalized interest—Section 12, Finance Act, 1927 (No. 2)	32,498	3	2
			974		237,498	3	2
Reserve Account—Capital rates			349	Plant and machinery		12,948	9
Consolidated Fund—				Buildings		1,203	14
Interest paid on loan capital and sinking fund	100,615	0	9	Loose tools		290	8
Interest paid on temporary advances	363	15	5	Live-stock		2	2
			100,978	Material and stores		906	3
Unpaid purchase-money for land taken			210	Fuel		39	0
Sundry creditors—				Land for Settlements Account		20	0
Interest on debentures	260	7	8	Maintenance costs (recoverable by rates)		232	6
Miscellaneous	728	19	7	Sundry debtors—			
Departmental	44	3	1	Rates	4,725	19	2
			1,033	Law-costs	88	11	4
Interest on debentures accrued but not due			4,549	Rents	6	13	8
Suspense Account			631	Miscellaneous	69	9	9
Rates paid in advance			11	Departmental	162	5	3
Rent paid in advance			3				5,052
							1
				Stamps on hand			0
				Cash—			
				In transit from Post Office	374	8	3
				In Public Account	2,418	4	2
							2,792
							12
	£608,742	16	0				5
							£608,742
							16
							0

25th June, 1930.

J. B. THOMPSON, Under-Secretary for Lands.

J. H. O'DONNELL, Controller of Accounts.

I hereby certify that the Statement of Receipts and Payments, Revenue Account, and Balance-sheet have been duly examined and compared with the relative books and documents submitted for audit, and correctly state the position as disclosed thereby.—J. H. FOWLER, Deputy Controller and Auditor-General.

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