

1949
NEW ZEALAND

DEPARTMENT OF LANDS AND SURVEY

RANGITAIKI LAND DRAINAGE

REPORT FOR THE YEAR ENDED 31st MARCH, 1949

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, 22nd June, 1949.

I have the honour to submit herewith the report of the Chief Drainage Engineer on drainage operations on the Rangitaiki Plains for the year ended 31st March, 1949, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

I have, &c.,

D. M. GREIG,

Director-General of Lands.

The Hon. the Minister of Lands.

REPORT OF THE CHIEF DRAINAGE ENGINEER

SIR,—

In accordance with the provisions of the Rangitaiki Land Drainage Act, 1910, I have the honour to submit a report of the work carried out during the year ended 31st March, 1949.

Distribution of rainfall and drainage conditions in the district have been satisfactory for two consecutive years. The Whakatane River on one occasion caused some flooding. This must be expected every year until further protection schemes are undertaken. The Rangitaiki River did not overflow. Some country was inundated in July by a breach in the Tarawera River stop-bank. Although the level of this river was particularly high, the breach in the stop-bank was not due to overflow, but developed from a bad seepage which caused the bank to collapse. In pumping areas some ground lay under water for a time as the result of phenomenal rainfall during coastal thunderstorms. On one day during April 6·35 in. of rain were recorded on the rain-gauge at Thornton. It is fortunate that on those occasions when pastures have been submerged during the year the period of inundation has not, in most cases, been injurious to grass-growth. The rainfall for the year ended 31st March as gauged at Thornton was 61·82 in., which fell on 112 days. The wettest month was May, with 12·78 in., and the driest January, with 0·45 in.

Production figures for the Rangitaiki Plains district for the year ended 31st March, 1949, are not yet available, but for the year ended 31st March, 1947, 4,873 tons of butter were manufactured and for the year ended 31st March, 1948, a peak figure of 5,307 tons was produced.

It has been evident for some time that to maintain production from the land in this district the present drainage system must be developed and extended by further capital work in those areas where subsidence of the peat land is causing drainage difficulties. A drainage-improvement scheme covering that part of the district which lies between the Whakatane and Rangitaiki Rivers has been prepared and submitted for consideration by the ratepayers. Discussions have also taken place with ratepayers concerning the installation of a community pumping scheme in the old Rangitaiki Channel area.

Arrears of maintenance-work are being overtaken with the aid of additional plant. Essential channel maintenance carried out during the year included an unusual amount of widening and deepening drains where their efficiency has been reduced by subsidence of the land. The flattening of the grade in the lower channels has been responsible for increased deposits of sand and silt, which must be removed, particularly where hill-water is carried by the drains. This work has been carried out with drag-line excavators, and five of these machines have been employed during the year. For part of the year the old re-erected Monaghan excavator has made the sixth machine. There have been varying periods when the excavators have been held up for repairs. The length of time in each case has been dependent on delivery of spares. The total length of drains and canals on which the removal of silt and deepening was carried out during the year by drag-line excavators amounted to approximately sixteen miles, and in this length over 96,000 cubic yards of material was removed from the drains.

Each year it becomes more difficult to let contracts for the cleaning of drains by hand-labour. This year the length of drains cleaned by the use of a tyne drag on a drag-line excavator has been increased by over four miles, an increase of one-third over last year's figure. A continuous battle has been waged against the rapid growth of aquatic weeds. The results of special efforts to control the growth of water hyacinth, which had spread with phenomenal speed in the Orini Canal, may, from present indications, be only a reduction in the rate of increase of the infected area. However, experiments carried out with the assistance of a field officer of the Department of Agriculture, have produced a chemical preparation which has given some encouraging results, and investigations are being continued.

This year an abnormal number of small washouts and slips occurred along the banks of the Rangitaiki River. These appear to have been due to the usual winter rises in the river following a very dry summer. In most of these cases rebattering and easing of the bends was carried out with a drag-line excavator, and where necessary the stop-bank was moved back and topped up. Below Thornton Bridge 15 chains of the left bank of the Rangitaiki River was battered and fascined, willows were planted, and the berm was widened by setting back the stop-bank. Some work of a more substantial nature was carried out on the left bank below Edgecumbe at two bends on the outskirts of the settlement where the river passed through an established residential area. At the two affected areas the bank was rebattered and heavily reveted with stone. A total length of 15 chains was protected in this way. It was expected that during the past year an attempt would be made to re-establish the direct approach of the Rangitaiki River to the sea by cutting through the sand-spit which has formed with the easterly movement of the mouth, but owing to unsuitable conditions the work was postponed. As mentioned earlier, a bad breach occurred in the left bank of the Tarawera River about one mile above the railway bridge. Here the normal river-water is about 4 ft.

above the country outside the stop-bank. All available assistance was required to control the break. It will be appreciated that under these conditions there is a grave risk of the river changing its course, with very serious results. This length of stop-bank was lightly constructed a number of years ago with unemployment relief funds and contributions from the settlers. In the meantime the protected area has been developed, and to avoid the risk of further breaches, which must now be expected, approximately two miles of stop-bank on the left bank above the railway bridge requires rebuilding to a much larger section.

A determined effort has been made to improve the accommodation for workmen. Two dwellings on the river-bank reserve which were privately owned have been purchased and improved. Improvements have also been made to two other dwellings. Thus by the end of the year four more married workmen have been provided with satisfactory housing. The year's work, though improving the standard of housing, has not provided the additional accommodation required for more men to live on the works, thus reducing transport to a minimum. In addition to the erection of further dwellings, certain existing housing of a very low standard will require replacing in the near future.

To provide data for planning efficient drain maintenance and improvement works automatic water-level recorders installed at the various outlets to the sea have been maintained and records kept of maximum and minimum levels at the main key points. The survey staff has also made regular quantity measurements of the work performed by each excavator which has enabled comparative records to be kept of the output of various plant units. In addition to this routine work the survey staff has also been engaged on the topographical and sub-soil survey of the district commenced some years ago.

The following is a summary of the drain cleaning work carried out during the year :—

Drains cleaned by hand on wages	962 chains.
Drains cleaned by hand on contract	6,972 „
Drains cleaned by weed-cutter launch	779 „
Drains cleaned by excavator with tyne drag ..	1,294 „
Drains cleaned and deepened by excavator ..	1,261 „

Other work carried out included the cutting of gorse, blackberry, and other noxious weeds from the river-bank and drain reserves and the removal and re-erection of fences to allow the working of excavators. Where the lower Rangitaiki River bank is protected with willows the trees have been trimmed to keep the growth in its most useful state. The grids at the main flood-gates have had constant cleaning.

The depot and workshop at Thornton has provided maintenance service for excavators, tractors, launches, and transport vehicles. The problem of providing sufficient transport has not yet been overcome.

The field and engineering work associated with this Department's drainage activities will be undertaken by the Ministry of Works as from 1st April, 1949.

EXPENDITURE AND RATES

Expenditure on maintenance for the year amounted to £19,780.

Rates struck : Special, £10,510 ; general, £11,511.

Rates collected, including arrears : Special, £13,583 ; general, £14,842.

The amount shown as expenditure on maintenance may be subject to slight variation on completion of accounts.

MAORI RATING

The total Maori rates paid, including arrears, during the year under review was £2,556. Maori rates levied for the year 1948–49 amounted to £2,328.

I have, &c.,

E. TAYLOR,

Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

STATEMENT OF ACCOUNTS

A statement of accounts is published in parliamentary paper B.-1 [Pt. IV].

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