

1909.
NEW ZEALAND.

DRAINAGE OPERATIONS IN HAURAKI PLAINS:

REPORT FOR THE YEAR ENDED 31st MARCH, 1909, TOGETHER WITH
STATEMENT OF ACCOUNTS.

Presented to both Houses of the General Assembly pursuant to Section 10 of "The Hauraki Plains Act, 1908."

SIR,—

Department of Lands, Wellington, 7th June, 1909.

In accordance with the provisions of "The Hauraki Plains Act, 1908," I beg to forward you the attached report upon the drainage operations carried out under my supervision during the year ended 31st March, 1909. A statement of accounts for the year is also appended.

I have, &c.

WM. C. KENSINGTON,
Under-Secretary.

The Right Hon. Sir Joseph G. Ward, P.C., K.C.M.G.

REPORT.

IN accordance with the provisions of "The Hauraki Plains Act, 1908," I beg to report that the year ending 31st March, 1909, has been fruitful in very good results from the operations of the drainage-works. The Engineer's report, which is inserted below, gives the details of the work carried out. It has resulted in completely establishing the fact that nearly the whole 90,000 acres will be eventually made fit for settlement. It is also evident that the principal cause of the submergence of a large area of the plains was due to the fact that under the existing circumstances (before drainage-works were started) the Piako and Waitakaruru Rivers were incapable of discharging the waters forced upon them. The first important undertaking was the removal of the willows obstructing the current, the clearing out of snags, and the removal of the numberless sunken logs. This was carried out from the mouth to the junction with the Waitoa; also several tongues of land impeding the flow of the river have been removed by the Priestman dredges. The Awaitei River has been widened and deepened by the dredges for a considerable distance. The consequence has been that the rivers have now been able to receive and discharge all flood-waters without the adjoining lands, as heretofore, being submerged. Lands which in previous floods would have been covered by flood-waters to a depth of 3 ft. are now unaffected by the rains, and remain dry. The drainage operations proper have also gone hand-in-hand with the river-clearing operations, and up to the 31st March 127 miles of drains have been constructed.

The principal works now in progress are the deepening of the drains; the erection of stop-banks in the lower Piako River to prevent spring tides and a flood combined from overflowing the land made dry by the drains. The two Priestman dredges specially imported will now be kept continuously at work—one at the end of the canal emptying into the Waitakaruru River, the channel of which the dredge has already straightened and deepened, and at whose mouth a township and suburban lots will be laid off; the other dredge will be kept at work at the Maukoro end of the canal—that is, some fifteen miles from the northern end; and the two dredges will gradually advance towards each other.

The other important works started are the fixing and laying-off of the main road-lines which will intersect the whole area, and the actual formation of these roads in readiness for settlement.

siderably blocked the flow of water, owing to their materially reducing the sectional area of the river, have been removed for the distance above mentioned. Also several projections, or weedy muddy points have been removed by the dredges.

The consequence of the above-named operations has been extraordinary and satisfactory, as can be well understood, as so far this season the flood-water has practically been confined to the channel from Waikaka Landing to the Hauraki Gulf. The effect is most noticeable at Kerepehi and its vicinity. Proof of this is that the late rains which rose the Waihou River to such an extent as to submerge a great part of Paeroa caused no appreciable difference at Kerepehi. I am credibly informed that near the junction of the Waihou and Ohinemuri Rivers the flood rose within 1 ft. 9 in. of the level of the big flood of two years ago. At Kerepehi on the same date the flood did not rise within 5 ft. or 6 ft. of the level of the flood referred to. At Waikaka the level was at least 3 ft. lower than at the former period referred to. This result has been obtained by the removal of the obstructions in the Piako River, immediate vent having been afforded the flood-waters.

The Awaiti Creek has been further widened and deepened by the dredges for a considerable distance; consequently a large area of land which under previous circumstances would have been submerged by 2 ft. or 3 ft. of water is now unaffected by any rains we have had this season.

In my last annual report I asked your attention to the overflow of the Waihou River, and informed you that unless something was immediately undertaken to confine the said river to its natural channel a large area of the Hauraki Plains would be subject to occasional flooding from the Waihou River. I informed you then that I considered that the Piako River, if cleared from obstructions, could supply outlet for its natural tributaries, and also afford all that was necessary for local drainage. On this question I am now satisfied; but its sectional area is not sufficient to provide for overflow from the Waihou River.

I inspected the Waihou River, and reported thereon to you, and the information I gave would, I think, satisfy you as to the present condition of the river, and as to a feasible method of dealing with the question, which is of considerable magnitude and importance to all lands abutting or contiguous to the course of the river.

I enclose herewith two plans, one of which indicates the drains already constructed. The drains are principally shallow or surface drains, but are made of sufficient size to allow them to be deepened as may be necessary without increasing the present top width, the necessity being to relieve as immediately as possible the lands of stagnant water, and thus enable said lands to be utilised and brought to profit at the earliest possible date. The matter of these lands and the drains thereon will be referred to later.

On the site of the canal shown on plan has been opened up (for its entire length) one of these surface drains, which is by measurement on an average 9 ft. wide at the surface, 3 ft. deep, and 6 ft. wide at its sole or bottom. This drain, though so small, has been of considerable benefit to the property, and has strengthened my idea as to the necessity for and the location of the proposed canal. The canal, when completed, will convey and give a quick discharge of the flood-waters of the Piako and Waitoa Rivers into the Hauraki Gulf; also, will prevent flooding of the plains from the waters and creeks from the watershed of the ranges on the western side of the property.

It is beyond all doubt that the canal, when finished, will materially benefit not only the Government lands, but also all the low-lying land abutting the Waitoa and Piako Rivers and their tributaries.

Dredges.

One of the dredges is now working straightening the channel of the Waitakaruru River. This is necessary to enable the dredge to be taken to the mouth proper of the canal, also to create an immediate discharge of waters from the Waitakaruru River and from the canal which will intersect all creeks lately discharging into the swamp. The other dredge is now engaged removing banks, bars, and weedy points in the Piako River. It will shortly be removed to the top end of the canal near the Maukoro Block. The commencing of this latter work is now practicable owing to the present supply of flood-water in the river. It was not economically practicable to work here when the river was anything like its summer level. Next summer this question will not cause any difficulty, as we shall have plenty of water from the swamp at our disposal.

Work performed.

Last year I returned a total of 29½ miles of drains as having been constructed. I have now to report that a total of 127 miles, which, with the exception of 7½ miles performed by day-labour, were performed by contract or piecework, have been constructed, including, of course, the opening-up of original water-courses or creeks, which were completely blocked, and in most cases not traceable for miles. Generally the course of the creeks was followed when economically practicable. Besides these drains, about 250 chains of drains have been made, and the excavated material therefrom formed into roads or bridle-tracks; 181 chains of drains have been deepened, and the total excavations therefrom formed into roads or bridle-tracks. Not included in above, the material from 1,208 chains of drains has been spread into bridle-tracks; 325 chains of drains have been widened and deepened; 102 chains of drains have been made, and the excavated material has been utilised in forming a stop-bank to prevent the overflow of the tide or flood.

Flood-gates.

Eight double-door flood-gates have been erected with satisfactory results, and at least twenty more will be constructed as early as practicable.

Wharves.

Two wharves for landings have been erected, and two more are under construction.

Buildings.

One cottage, one office, and nine workmen's dwellings have been erected; and, as there was no accommodation available at Waitakaruru, no stores or conveniences, a cook-house is now being constructed there, as it was difficult without such accommodation to get men for the work required there; but the Department will not in any way have anything to do in the matter of food-supplies to the men.

Artesian Wells.

Since my last annual report nothing further has been done as to this matter. I informed you that I had tried driving, and with what result. The appliances at my disposal did not permit of boring, and as fresh-water supply will be absolutely necessary when the land is taken up for settlement, I must ask your consideration of the advisableness of obtaining the services of a water-diviner, and then boring.

Some considerable amount of fresh water will flow down the drains, being the waters tapped by the intersection of the original creeks, but not sufficient for the quantity of settlers and their stock who will be located on the plains possibly within the next twelve months.

Telephone and Postal Communication.

I informed you last year that a telephone had been laid from Kerepehi to Turua, thus giving communication with Thames. This has been a very serviceable undertaking, but to make it more so it is necessary that there should be direct communication with Thames, as there is so much work between Turua and Kopu and the Thames that it is often difficult to communicate without considerable delay. It is very desirous that we should have telephone-communication with Waitakaruru, or, rather, with the site of the proposed township, near the mouth of the canal. One of the houses erected for the workmen can easily be fixed up temporarily for that purpose. The more especially do I recommend this, as I apprehend in a very short time that a post-office will be required for the use of the settlers.

As to Kerepehi, there is only one mail-service a week. This is not sufficient, and I hope some better facilities will be afforded.

Labour.

There are now employed on the works about 145 men, but the average number for the month of March would not exceed 100. The average number for the year working contract or piecework being from sixty to seventy, and day-labour in all capacities, including dredge hands, about thirty.

Fires.

During the year we have suffered practically no damage from fires.

Other Improvements, Clearing and Grassing.

I hope to sow about 400 acres this season, and seed has been ordered through you for that purpose. The grass sown last year shows a good result, but still it suffered considerably through not having stock on before it could seed.

Flax-seed.

The seed sown last year has not resulted as I anticipated. However, I am trying again this season, and I hope for a more successful issue. I have planted a considerable area with flax plants, some of which were obtained from the Makerua Swamp, near Shannon. The latter are of two varieties not general, and, in fact, unseen by me in this district. The whole of the planting has been successful.

Flax.

It has been a great disappointment that the flax market dropped so much. There are considerable areas of first-class flax land, and I had hoped this year to obtain a considerable revenue from the raw material grown on this property.

Land.

In my last annual report I stated that it was possible, if certain lands were acquired, to have 15,000 acres ready for settlement within a year of their acquisition. By the plan herewith you will notice that I have drawn up a scheme of roads; also, said plan shows the Government lands tinted pink. Further, it indicates by the darker colour land that will be fit for settlement as soon as the roads can be surveyed and constructed and subdivisions made. If the roads were made to the extent of affording frontage to the blocks coloured dark-red, then the Government could easily offer for selection at least 20,000 acres. The land is sufficiently drained to be suitable for a location, each settler having an outlet, and being in the position of forming what further drainage he may require. Small drains made along the boundaries of proposed subdivisions would meet nearly every requirement when the drains along the proposed roads are completed. The land which twelve months ago was almost impassable and more or less suffering from pools of stagnant water is now practically dry—fit to carry cattle—the stagnant water being taken off by the drains already made, which also immediately relieve the ground of a heavy downfall of rain. Of the 20,000 acres above referred to, half that area can, if authority be given for the necessary expenditure, and the surveyors have time for pegging out the necessary subdivisions and preparing the plans thereof, be ready for settlement within six months. The balance—say, 10,000 acres—could be ready three months later, subject to the above conditions; and, within a year from now, it is quite practicable also under the same conditions to have a further 10,000 acres in a similar condition. It is proposed to lay out a township at Waitakaruru.

Regarding the block of land on southern portion of property of 5,697 acres, subdivided some time ago by Mr. Haszard for settlement purposes, I have to inform you that when the outlets are made as authorised by you about 1,000 acres on the banks of the Piako River will be suitable for settlement, and I believe will be readily taken up if offered for selection. The work necessary for this can, if funds are available, be completed within three months. The rest of the block I would advise to be kept until the drainage of the lower portions of the swamp is more developed. Several drains along the road-lines have been made, and the excavated material deposited on the roads; but the drains are not deep enough to afford any appreciable improvement. Further, the outlets do not allow of sufficient fall; but if a special vote of, say, £500 can be obtained for the further improving of the channel of the Waitoa River up to the northern boundary of this block, then the whole area could be satisfactorily dealt with. This estimate (£500), of course, does not include cost of drains which have to be made, or the deepening of those already made within the boundaries of the block. The work already done by me under the special vote in the Waitoa during the past season has lowered the water of the river at the point above indicated—i.e., north-eastern corner of block—between 2 ft. and 3 ft.

Roads.

The lithographic plan which accompanies this report shows a general scheme of the main roads necessary for the settlement of the whole area of the plains. The subdivisional roads can be determined later; but it is only my intention for the present to ask your authority for making drains and forming roads with excavated material therefrom so far as is necessary to give frontage or access to the portions coloured dark-red on the lithograph. You will notice that the main road will be the Turua-Waitakaruru Road, and when this road is completed there will be almost direct communication from the lower Waikato to the Thames and Paeroa.

The other roads, as indicated on the plan, show their own necessity as main arteries, besides giving access to the lands they afford frontage to.

Principal Works proposed.

The principal works proposed for the ensuing year are making the drains and constructing the roads referred to in last paragraph, including bridges and culverts.

1. The formation of the road, being portion of the Turua-Piropoa-Wairangi Road, from the canal to Waitakaruru, and, beyond the £500 voted, a further sum would be required for the portion from Coxhead's house to where the formation is completed from Wairangi. A sum of money is also required for completion of the road from Waitakaruru to Morrinsville. Also the two roads from the boundary of the Hauraki Plains to Turua. I refer to these two last-mentioned roads particularly, as I presume they will come within the jurisdiction of the Public Works Department.

2. The progression of the works pertaining to the construction of the canal, and the formation of a road on each side with excavated material therefrom.

3. The completion of the stop-bank to Waitakaruru.

4. The completion of the drain and track from Piropoa Block southwards as far as the proposed subdivisions go.

5. The making of a drain and track on the eastern bank of the river where same intersects the Crown lands.

6. The completion of the construction of the flood-gates.

7. The construction of culverts and erection of wharves or landing-places and bridges as may be required within the area proposed to be offered for settlement during the year.

8. The construction of a drain as overflow for the Waitoa River along the boundary between Te Huihui and Kaikupenga Blocks.

9. The construction of the outlet into the Piako River through Te Whanake up to the southern boundary of the Hauraki Plains. I do not propose to construct any drains on any portion of the property except that area proposed to be first offered for selection.

Of course, there are many minor works not enumerated above which require performance, but the items above are the principal features of the work proposed to be carried on next year.

In conclusion, I have great pleasure in stating that I am satisfied with the property as a very valuable asset, and when the sections are offered for selection the result will prove to your satisfaction that I have not been too sanguine in my expectations or anticipations.

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Price 6s.]

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's social development.

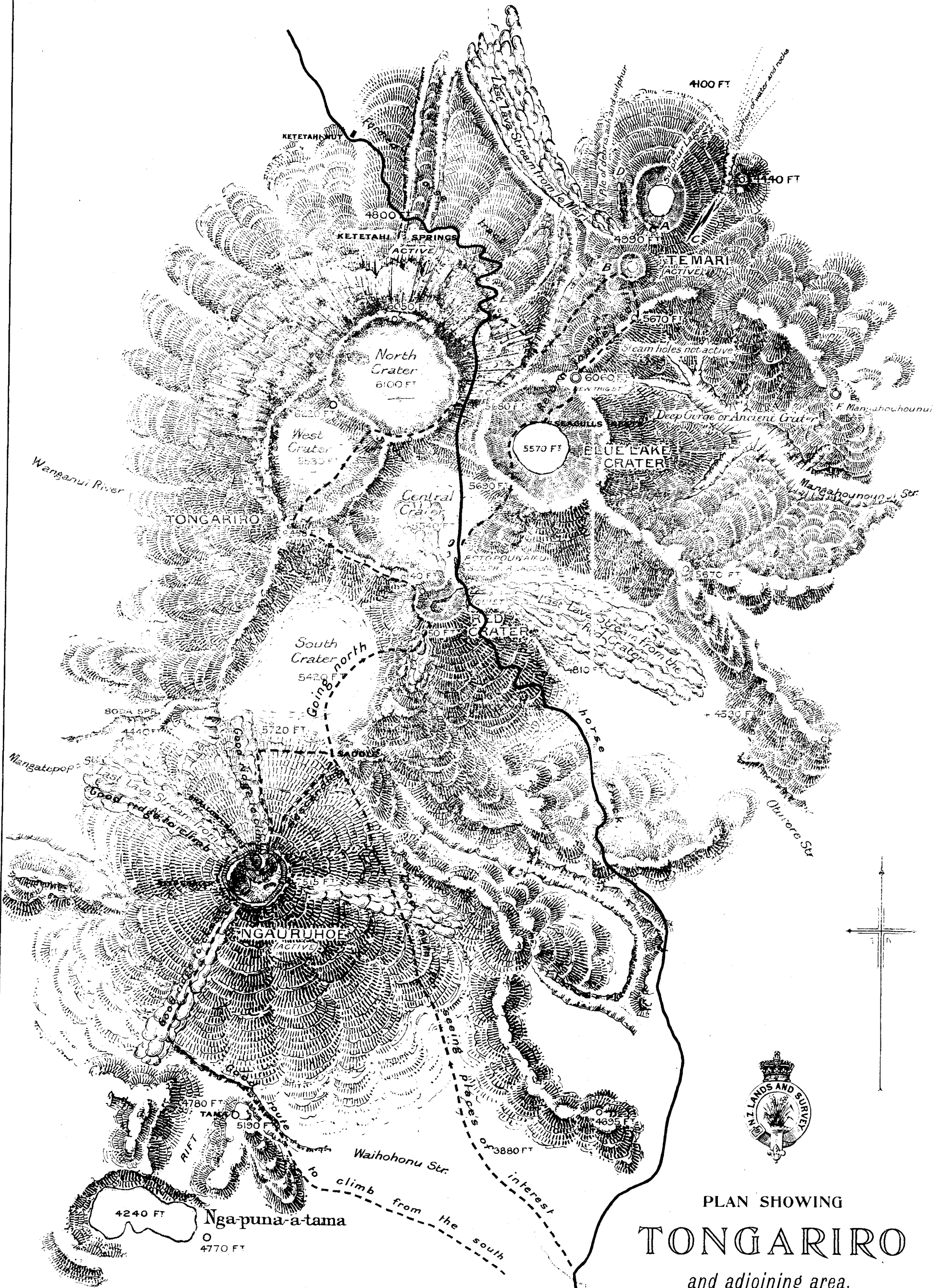
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The sixth part of the report deals with the environmental situation of the country. It is a very interesting and informative study of the country's environmental development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's environmental development.

The seventh part of the report deals with the future of the country. It is a very interesting and informative study of the country's future development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's future development.

Nº2.



PLAN SHOWING
TONGARIRO
 and adjoining area.
 with the craters and latest lava-flows.

REFERENCE.
 Formed horse track. ————
 Best route for seeing points of interest. - - - - -

About 1 mile from
 Ruapehu Mt.

