1876.

NEW ZEALAND.

PUBLIC WORKS STATEMENT,

BY THE MINISTER FOR PUBLIC WORKS, THE HON. EDWARD RICHARDSON,
TUESDAY, 25TH JULY, 1876.

Mr. SPEAKER,—

In obedience to the wish of the House, I propose this evening to give an account of the proceedings of the Public Works Department during the year just ended. I regret that I am called upon to do so at a period so soon after the close of the financial year, as it has compelled me to prepare this Statement more hurriedly than I should otherwise have done.

When this Statement is printed for circulation, there will be attached to it Tables in similar form to those of previous years, together with a few additional ones which I hope honorable members will find interesting. One of these additional Tables has been prepared by request, showing the estimated cost of various classes of rolling stock, including shipping and colonial charges.

The reports of the Engineer-in-Chief on railways, the Assistant Engineer-in-Chief on roads, the Colonial Architect on buildings, the Chief Inspector of Machinery on the working of his department, the Assistant Geologist on the Buller Coal Field, and the Officer in Charge of constructed railways on the railways now being worked by the Government are, with maps showing the present position of the works, also appended.

Throughout the statement, when I speak of the present year, I mean the current financial year, commencing on the 1st of July instant.

RAILWAYS.

The railway works throughout the colony have not been pushed on so rapidly during the year under review as during the two years preceding, but a very large expenditure has taken place, and wherever works have been retarded care has been taken not to interfere with such as were approaching completion. This course was adopted so as to enable those portions of the railways under construction to be made remunerative at as early a date as possible.

During the past year several circumstances have arisen in connection with the railways which have interfered with the estimates of previous years.

In the first place, it has been found necessary to line several of the tunnels that had previously been considered would not require it, and this item will cause an addition to the cost of the railways of £59,000 over the whole colony.

Then it is found that, to meet the requirements of the constantly increasing traffic on the railways now open, very considerable additions have to be made to the station accommodation previously estimated; and although last year large additional provision was made for rolling stock, honorable members will be glad to be informed that still further provision will, for the same reason, have now to be made.

As I have on previous occasions referred in detail to most of the lines of railway, I think it will be convenient if I do so again to-night, taking them in the order they appear in the Appropriation Act of last year.

A small expenditure has been made on the Kawakawa Coal Railway, and during the present year the line is expected to be in working order to the place of shipment; but I am advised that if hereafter it is deemed necessary to carry the line to deep water, a much larger appropriation will be required.

Experience has shown that the traffic on the Kaipara and Riverhead Railway would be very considerable if there were proper means of loading and unloading vessels at the termini. An estimate has been made of the cost of the necessary extension at Kaipara, together with a wharf, and a vote of £15,000 will be required.

The Riverhead and Auckland line has not been commenced. The Proclamation for this line is withheld until the Government have ascertained the amount of expenditure likely to be incurred in the purchase of land. They have taken this course because they are advised that very heavy claims for compensation will be made along the present route. Should this prove to be the case, it will be the duty of the Government to endeavour to alter the route at present decided upon.

The exceptionally bad winter of last year caused some damage to the works, and very serious delay to the progress of the line between Mercer and Newcastle, and it is only now that we are able to call for tenders for laying the permanent way. The line cannot be open for traffic until this time next year.

The Napier and Manawatu line has been opened for some months to Te Aute. The land claims on this line have been unexpectedly heavy; and the floods during the past year have shown the necessity for further provision for water-ways. On the opening to Waipukurau, it is anticipated the traffic will be largely increased.

The extension of the Waitara to Patea line to Inglewood is well in hand, and it is proposed to extend the line southwards as soon as practicable.

The Patea to Wanganui and the Wanganui to Manawatu lines do not call for special remark, except that the land claims are very much in excess of any estimates which have been made. The works are progressing satisfactorily.

The Foxton and Manawatu tramway has been during the year in process of conversion into a railway, and it is hoped by the 1st of September next will be so far completed as to allow it to be worked under railway regulations.

The works of the Wellington and Masterton line have not progressed as fast as the contracts entered into warranted the Government to expect; but there has been great difficulty experienced in getting men to stop in the bush country. The tunnel at the Rimutaka, although exceedingly difficult to bore, is found now to require lining throughout, as also the other tunnels on the line. The portion open to the Upper Hutt gives very satisfactory results.

The Nelson and Foxhill line has not suffered much from the floods of last season, and the traffic on it is likely to be much increased when the line is extended to the new wharf. This extension will cost about £8,000.

The necessity for the early extension of the Picton and Blenheim Railway over the River Opawa into the Town of Blenheim has become more and more evident, and without this extension very much of the traffic which ought to fall to the railway, will be excluded.

On the railway from Amberley to Waitaki very little remains to be done, and specifications are now being prepared for the last plate-laying contract between Waimate and the Waitaki River.

The amount of land claims on this railway, together with the branch lines running into it, have been very excessive, and the additional station accommodation which has been demanded over and above that provided by previous appropriations has been at least £18,000; and, I am advised, very considerable additions to the rolling stock will have to be provided if the traffic continues to increase as it has done during the past year.

An extension of the Kaiapoi and Eyreton Railway to join the line from Oxford to Rangiora is necessary, and the loss on working these lines, owing to their not being connected, is such that the provincial authorities have voted a portion of the cost of the extension.

The length is four miles, and the country so favourable that there will be little more required than the cost of the permanent way. The additional cost beyond the provincial vote is about £8,000.

It has been considered prudent to incur a further liability on the Waitaki Bridge of some £600, to provide water supply as a means of protection from fire. The bridge has been open for traffic for some months, and is being worked, together with the railway to Oamaru, by the Provincial authorities of Otago.

I am advised that the railway between Oamaru and Moeraki will be completed and ready for traffic in about two months.

The works south of Moeraki are under contract all through to Dunedin, with the exception of a length of 9 miles at Waikouaiti. It is proposed to let the formation on this section in time to be completed as soon as the Blueskin contract is finished.

The works are progressing favourably.

The compensation for land taken has also on this length, as, indeed, all through the district, been very heavy; and although every effort has been made to keep the claims down, they have nevertheless exceeded very largely the highest estimates made of them.

An unexpected contingency has arisen in connection with all the tunnels in this district, inasmuch as it has been found necessary to line them all with brickwork, involving a further appropriation hereafter of some £36,000.

The remarks I have made in reference to station accommodation in the Canterbury district apply to this district, as also with respect to further supplies of rolling stock.

I visited Balclutha during the recess, and the result of the various inquiries I made was, that the main line ought to be taken in the direction selected by the Engineer-in-Chief; and I gave him instructions to have the line set out for contract in accordance therewith.

The works on the section south of Clinton are not likely to be completed before the end of the year.

The works on the Westport and Mount Rochfort Coal Railway are progressing satisfactorily. A contract for the works necessary for loading coal, protective works, and the requisite station accommodation has been let in excess of the appropriation already made; but there are conditions attached which enable the Government, in the event of the funds not being voted, to stop the contract without being liable for damages. The Government consider this work should be continued for the present as a colonial work, and, if this course is taken, further votes will have to be asked for year by year.

There is a fair prospect of this coal field being practically opened up, and by the time the railway is in a position to carry coal in large quantities more than one mine will be in full working order.

The Report of the Royal Commission appointed to inquire into the question of the future dealing with the Colliery Reserve at Westport has been laid on the table, and is in the hands of honorable members. I only now refer to it to express my concurrence in the decision, and the appreciation by the Government of the pains taken to make so exhaustive an inquiry as the Commissioners did in this case. A very considerable revenue will hereafter be derivable from this reserve.

The Greymouth and Brunner Railway has been open for traffic for some months past. It is supposed the coal trade will commence about the 1st of September next, as by that date the bridge over the River Grey will be completed.

The Government consider the works at Greymouth, as in the case at Westport, should be dealt with by the colony, at all events for the present, and the more so as they are really a part of the railway.

An arrangement has been entered into between the Government and the Corporation of Greymouth, that the latter body should hand over the wharf now owned by them to the Government, that they should be paid the present value thereof, and, on condition of their giving up all the river frontage for the railway works and their rights to levy tolls, &c., that the balance due by the Corporation to the Government of the moneys lent to them in the year 1872 should be remitted. To enable the Government to complete this transaction and to continue the work, a further vote of £25,000 will be asked beyond previous appropriations,—pending the result of which the Government are receiving the wharf dues and keeping a separate account of them.

The lengths of the railways authorized, open for traffic, and in progress, exclusive of the lines constructed out of provincial appropriations, are—

	Authorized.	Open for Traffic.	In Progress.
In the North Island ...	391.48 miles	145.2 miles	183.6 miles
In the Middle Island ...	638.40 „	404.71 „	199.39 „
Total ...	1030.08 „	549·73 „	382.45 „

Honorable members probably noticed last year that there was a difference between the amount stated by me as expended to the end of the financial year and that stated in the Third Schedule of the Immigration and Public Works Appropriation Act. The difference is explained by the fact that by the Act last mentioned the expenditure in the General Railway Account was not allocated to the several railways, and also that a separate appropriation was provided for the expense of raising the loans including discount, whereas in my Statement this expense and discount were inclnded. I accept the statement contained in the Act, and therefore the distributed expenditure on railways up to June, 1875, exclusive of loan charges, amounted to £3,576,003 12s. 7d.

The amount appropriated by the Immigration and Public Works Appropriation Act of last year for railways, was £2,342,398 10s. 6d.; the expenditure against this vote has been £1,639,014 7s. 9d., including the greater portion of the distribution of the General Railway Account to which I have just alluded. There are liabilities for works in the colony and advances to the Agent-General for purchase of material, amounting to £983,253 19s. 7d., including the undistributed balance of the General Railway Account.

The total expenditure up to 30th June, 1876, was therefore £5,215,018 0s. 4d., and the outstanding liabilities, including the undistributed balance of the General Railway Account, £983,253 19s. 7d. This amount includes the liabilities for all existing contracts, some of which extend into the year 1878, and for plant and materials ordered from home.

I have in detail referred to the great additional cost of land, and that the House may judge to what extent the increase is on that item since our estimates were made up last year I should mention that the compensation already paid, and liabilities which will come in for payment over the next eighteen months, will amount to over £90,000.

It becomes a question whether, when further extensions of railways are contemplated, the district through which it is proposed to carry the railway should not provide the land free of charge to the State, before any expenditure is incurred towards construction.

Further exploration surveys have been made during the past year, northwards, from Canterbury towards Blenheim, but it is still doubtful whether the best route has been discovered. It is proposed to continue the exploration during the present year. A full report is attached, showing what has already been done in this direction.

The surveys and working drawings of the proposed railway from Hokitika to Greymouth have been completed. The estimates, which have been carefully prepared, show that the line will cost upwards of £222,000, as against the original amount stated some years since at £85,000. Some deviations are now being surveyed which will probably reduce the cost.

During the year a good line has been found for the railway between the present terminus of the Napier line and Manawatu. This has been a very difficult part of the country to survey, and at one time it was feared that it would scarcely be possible to get through, except at an enormous cost. By the line now surveyed, the cost will not be excessive.

I wish to draw the attention of honorable members to the great saving to the Government which has accrued from the Photo-Lithographic establishment. In railway plans alone it has saved at least £2,000 per annum.

ROADS.

In comparison with previous years a very small amount has been spent on new road works. The Tables attached to this Statement show the various localities in which the money has been spent.

The only districts calling for special mention are Wairarapa and the North of Auckland.

During the year the road has been opened through from Masterton to the Manawatu Gorge. Contracts have been let for metalling all the worst portions of it; but owing to the weather having broken much earlier than was expected, the Contractors have necessarily been allowed to let the completion of their contracts stand over until after the winter. This road runs through fine country, and will be the means of opening up a very large tract for settlement.

A separate statement has been made out of the expenditure on the roads North of Auckland, It shows that up to the 30th June, 1875, £62,739 1s. 10d. had been spent and charged to that item, but this included the Mangere Bridge. Deducting, however, the cost of that bridge, it leaves £47,252 14s. 2d. as spent up to that date. There has been expended during the past year the sum of £3,727 2s. 2d., and there are liabilities to the amount of £3,162 1s. 1d., leaving a balance of £5,858 2s. 7d. still unexpended.

This money, it is proposed, shall be principally expended in building all the bridges required on the main trunk road from Auckland to the Bay of Islands, and such other works as may be required to make that road passable for ordinary traffic.

I should here mention that a vote of £20,500 was taken last year (No. 69), under the head of "Repayment to Immigration and Public Works Account of Advances made therefrom," to meet the expenditure that had been made on account of roads for opening up confiscated lands. As it was stated in the Appropriation Act that this vote was to meet liabilities, it has been held that it could not legally be issued for new works as was intended; the amount at the disposal of the department has therefore been curtailed to the extent of £17,872 11s. 2d. This sum the House will be asked to re-vote, to enable the department to meet the liabilities it has incurred on the presumption that the money voted was at its disposal.

During the year, as will be seen from the report of the Assistant Engineer-in-Chief, a very considerable number of the Armed Constabulary have been employed on the roads. The larger portion of the work done by them is in the shape of maintenance and repairs, and but in a few instances they have been employed in construction. No extra pay has been given to the men for this work, but an allowance for forage for horses has been made to the officers. So long as this force is necessary, useful work can be found for these men; but it must not be supposed the work done by them, taking their time and pay into account, will be executed as cheaply as it would be by contract. Seeing, however, that it is done in addition to their duties as Armed Constabulary, it is a clear gain to the country.

WESTLAND ROADS.

Only a very small expenditure has taken place during the past year on the roads in Westland, under the Public Works Department. There is a balance of last year's vote unexpended, which I shall ask the House to re-vote, with a view of expending it to the southward of Hokitika.

ROADS.—NELSON SOUTH-WEST GOLD FIELDS.

A reference to the Tables and the Report of the Assistant Engineer-in-Chief will show the works on which expenditure has taken place during the past year. There is a balance in hand over liabilities, which is considered to be sufficient to complete the road between Greymouth and Reefton.

WATER-RACES.

The Thames Race is now very nearly completed.

The Waimea and the Mount Ida Water-Races, and the Waipori Sludge Channel, are also in the same position.

The Nelson Creek Race will take some months yet to complete.

As it is a part of the Government proposals to hand these races over to the counties in which they are situated, it will not be necessary to ask for votes for the expenses of their management.

Tenders have been twice invited for the construction of the first section of the long tunnel on the Mikonui Water-Race, but those sent in so greatly exceeded the amount the Government were led to believe the work would be done for, that I have been reluctantly compelled to decline them.

It is now proposed, as has been stated by my honorable colleague the Colonial Treasurer, that this work will be handed over to the county, and by the Financial Arrangements Bill it is provided that a further contribution of ten thousand pounds is to be advanced by the Government.

The appendix tables show how much has been spent on each of these large works.

PUBLIC BUILDINGS.

From the Colonial Architect's Report, it will be seen that a large amount has been expended upon public buildings throughout the colony; but I do not propose troubling the House with any details, as a return has been called for which will show, not only the expenditure incurred this year, but the total expended on all classes of buildings from the year 1870.

COAL EXPLORATION.

During the past year the topographical survey of the Buller Coal Field has been proceeded with, and the plotting of all outcrops has been going on contemporaneously with it. The principal time has been devoted to the survey of Overhanger's prospecting license in Toden Creek, the completion of the sea-face, and a survey of the Upper Orikaka country.

The results of the survey have been to show an extension of the coal measures, part of which are in rather inaccessible places, but a considerable portion will probably be available for working as early as any which have yet been found.

Thirteen leases of coal areas, aggregating 10,420 acres, have been applied for, of which eleven have been granted, aggregating 8,520 acres; and it is expected that by the time the railway from Westport to Ngakawau is completed, several of the lessees will be in a position to avail themselves of its facilities in getting the produce of their mines to market.

The principal coal bearing areas of the Buller Coal Field have now been ascertained, and it is not proposed to continue the survey further for the present. The maps illustrating the work done are in hand, and will be soon ready for publication.

In addition to the foregoing work on the Buller Coal Field, there is little of importance to report in connection with coal exploration in other parts of the colony.

At Greymouth, fresh outcrops of coal have been discovered in Coal Creek, and a company, formed to work the coal along the coast line north of the Grey River, have had a line surveyed for the transit of the coal, which they propose to construct shortly.

At the Abbey Rocks, far south on the West Coast, a development of the coal measures has been examined, but up to the present time no workable coal seams have been discovered, and the same remarks apply equally to Jackson's Bay.

From West Wanganui, samples of coal of a superior quality have been forwarded for assay, and the country will shortly receive attention.

INSPECTION OF MACHINERY.

This Act is being carried out very fairly, and the Report from the Chief Inspector attached will give honorable members a clear idea of what each Inspector has done during the past year. The fees charged have rather more than covered the expense of the department.

RAILWAYS OPEN FOR TRAFFIC.

I now come to the question of working the several railways completed and open for traffic.

Honorable members will see, on reference to the Tables, that the railways now worked by the Public Works Department have produced the following results during the past year:—

	Receipts. £ s. d.	Expenditure. £ s. d.
The Kaipara Railway	2,497 18 9	2,638 16 3
Auckland–Mercer	22,487 16 10	19,416 18 1
Napier–Waipukurau	12,417 2 4	7,902 12 0
Waitara–New Plymouth	1,833 12 3	2,190 12 0
Wellington and Upper Hutt	9,429 5 3	6,293 10 2
Picton and Blenheim	3,516 3 2	3,083 9 9
Nelson and Foxhill	2,531 4 1	2,303 17 9
Brunner–Greymouth	1,063 8 8	883 11 8
Making a total of receipts for the year of ...	55,776 11 4	
Expenditure for the year of	...	44,713 7 8
Leaving a balance of	...	£11,063 3 8

The permanent rolling-stock has been kept up in thorough repair, and, indeed, large improvements have been made in most of them, so that they are really enhanced in value during the past year.

The receipts on the Foxton Tramway have been £9,940 12s. 10d. and the expenditure, £10,878 5s. 5d. The circumstances of the tramway have, during the past year, been altogether abnormal; but it is now paying its expenses, and promises to be remunerative.

I have added a statement showing the receipts and expenditure on the railways in the Provinces of Canterbury and Otago, from which it will be seen that the receipts on those in Canterbury for the year ending 31st March, were £185,806 17s. 5d.; and on those in Otago for the same period, £90,790 18s., or a total of £276,597 15s. 5d. The expenditure in Canterbury during the same period was £124,513 8s. 10d., and in Otago £66,852 2s. 2d., or a total of £191,365 11s.; leaving a credit balance of £85,232 4s. 5d.

The traffic on the Auckland and Mercer Railway has not been nearly as large as was anticipated. Great objection has been taken locally to the rates charged on this line, but it is impossible they can be lowered if the line is to be worked so as to leave any margin above working expenses; and, indeed, there is no reason why they should be reduced, as they are lower than on many other lines in the colony, and much lower than the ordinary average rates on railways in England.

I will only add, in connection with this subject, that there is a very prevalent opinion through the country that upon the railways which have been constructed the public ought to have the same amount of accommodation as on the railways in England or the adjoining colonies, where they have cost so much more; and the public consequently complain of the rates charged in different parts of the colony. Now, it is a fact that the rates charged in New Zealand are generally below those charged in England, and only in Otago are they as high as the rates charged in Victoria.

If the accommodation which is now asked for in various parts of the colony where the lines are open for traffic, and which has been to a great extent given in Canterbury, is to be as a rule acceded to, then the railways will cost much more, and the rates for carriage will have to be generally raised.

It should, in any case, be the aim of the Government to equalize the rates throughout the colony as much as possible; but I see no necessity that they should be raised above the rates now prevailing in the southern part of the Middle Island.

SUMMARY OF EXPENDITURE.

The expenditure under the Immigration and Public Works Acts on the three principal classes of works, in each Island, is as follows:—

North Island.

Railways to 30th June, 1875 ...	... £1,132,064 19 7			
„ during year 1876 ...	... 648,890 19 0			
		£1,780.955 18 7		
Roads to 30th June, 1875 ...	... £467,991 10 6			
„ during year 1876 ...	... 23,644 14 6			
		£491,636 5 0		
Water Races to 30th June, 1875...	... £40,492 9 6			
„ during year 1876 ...	... 18,144 6 3			
		£58,636 15 9		
Total, North Island ...	... ...			£2,331,228 19 4

Middle Island.

Railways to 30th June, 1875 ...	... £2,443,297 3 5			
„ during year 1876 ...	... 960,241 13 3			
		£3,403,538 16 8		
Roads to 30th June, 1875 ...	... £178,150 1 7			
„ during year 1876 ...	... 16,571 10 4			
		£194,721 11 11		
Water Races to 30th June, 1875 ...	... £166,241 17 6			
„ during year 1876 ...	... 56,041 2 10			
		£222,283 0 4		
Total, South Island	...			£3,820,543 8 11
General Railway Material to 30th June, 1876	... ...	... ...		£29,881 15 6
General Railway unapportionable to 30th June, 1875	... ...	... ...		641 9 7
Total	... ...	... ...		£6,182,295 13 4

PROPOSED EXPENDITURE ON RAILWAYS FOR THE CURRENT YEAR.

The amount we propose to ask for expenditure during the current year on Railway works in progress, and to cover contract and other liabilities falling due during that period, on the

	£
Kawakawa Railway	20,000
Kaipara–Puniu	161,000
Napier–Manawatu	47,000
Wellington–Masterton	137,000
Waitara–Patea	37,000
Patea–Manawatu	114,000
Nelson–Foxhill	7,700
Picton–Blenheim	4,500
Greymouth–Brunnerton	19,000
Westport–Ngakawau	49,000
Amberley–Waitaki	79,700
Waitaki Bridge	1,300
Waitaki–Invercargill and Lawrence Branch	324,400
Winton–Kingston	53,000
	£1,054,600

The Government do not propose to ask the House to make appropriations for any large additional extensions this year; and those I am now about to name will not be put in hand until the Government are assured that the necessary means are available.

The new works consist of—

1st. The extension of the railway from Riverhead to Kaipara, from the present temporary station at Helensville for about half a mile, and the erection of a wharf at which vessels can with ease discharge their cargoes. The cost of this extension will be about £15,000.

2nd. A new wharf at Onehunga in connection with the railway. The cost of this will be £14,000.
3rd. A vote of £20,000 for the extension of the main south line from New Plymouth towards Patea and Wanganui.
4th. A vote of £10,000 for the extension of the main line from Napier towards Wellington.
5th. A vote of £8,000 to extend the Nelson and Foxhill line into the port.
6th. A further vote of £25,000 to meet present liabilities at Greymouth on the Brunner Railway, and to provide funds to continue the harbour works at a moderate speed.
7th. A further vote of £30,000 for works at Westport.
8th. A further vote of £16,000 to complete the Picton and Blenheim Railway into Seymour Square, in the centre of Blenheim.
9th. A vote of £8,000 for connecting the Kaiapoi and Eyreton Railway with the Oxford and Rangiora Railway.

These, Sir, with an addition of £10,000 for new surveys, are all the works in connection with railways for which it is proposed to ask votes during this year, and together they amount to £156,000.

I have before referred to the roads North of Auckland, and the Government, considering how small an amount of work has been done there, and that it would be unsatisfactory to leave the main trunk road in its present condition, propose to ask for a vote of £10,000, which, together with the balance remaining on the old votes, will, it is estimated, provide sufficient funds to enable all the necessary bridges to be built on the main trunk road to the Bay of Islands, and the formation of such portions of the road as may be found necessary to open them up for dray traffic—together with a main cross road from Wangarei Heads westward.

My honorable colleague has already in the Financial Statement, referred to the question of the taking over the responsibility of the management of all the railways constructed out of public moneys.

He has alluded to some of the reasons which exist for this action, and I wish to point out that there are now three systems of management, three entirely distinct tariffs of charges, and as many Audit Departments.

The rates of remuneration to the same classes of officers are on very different scales, a circumstance which causes a constantly increasing difficulty in the management in the different districts, and must lead to a higher rate of pay generally than there is any occasion for.

I have no doubt whatever that very considerable saving can be made in the management by placing the railways under one system, with respect to those now open; and when the railway is complete between Timaru and Oamaru, the necessity for the establishment of a clearing-house system will be avoided. Many other reasons might be urged, and not the least of them is the saving in outlay for rolling stock. Under a combined management, the whole rolling stock on all the lines which are connected will be available to meet any emergency in any part of the system.

I have purposely omitted making any comparison between the systems of management now in force, as it must be admitted that, on the one hand, no matter who works these lines, the public convenience will have to be consulted, and, on the other hand, the Government, watched by this House, will insist on their being economically worked.

I have only to add that the experience of the past year confirms the opinion I have previously expressed, that, with prudent management, the railways will yield, taken as a whole, a very considerable contribution towards the interest on their cost.

The estimated revenue on lines at present worked by the Government is stated at £132,200, and that on the Canterbury and Otago lines at £185,000, and £127,800 respectively, making a total of £445,000.

If the estimates I have had laid before me should prove to be correct, the railways open for traffic ought to yield next year about 3 per cent. on their capitalized cost.

In 1871 the first Minister for Public Works announced in his Statement the appointment of the late Dr. Featherston to the office of Agent-General under the Immigration and Public Works Act. It is with the deepest regret I mention the loss the Public Works Department, as well as the colony, has sustained by his recent death. This is not the time to allude further to the services of that officer. I last year bore testimony to the faithful manner in which his duties connected with this department were performed, and I feel that any further reference now would be superfluous, if not out of place.

I thank you, Sir, and the House for the patient indulgence you have accorded to me this evening, which has rewarded me for the exertion I have made to present this statement to the House at an earlier period than hitherto.

SKETCH MAP
OF THE
NORTH ISLAND
OF
NEW ZEALAND
Public Works Department
1876.

JOHN CARRUTHERS. M.I.C.E.
ENGINEER IN CHIEF.

Drawn by A. Koch.

REFERENCE.

- Railways open for traffic
- Railways in course of construction
- Railways surveyed
- Railways proposed
- Roads made
- Water Races

SCALE OF MILES.

0 5 10 20 30 40 50 60 70 80 90 100

SKETCH MAP
OF THE
SOUTH ISLAND
OF
NEW ZEALAND
Public Works Department
1876.

JOHN CARRUTHERS. M.I.C.E.
ENGINEER IN CHIEF.

Drawn by A. Koch.

REFERENCE.

- Railways open for traffic
- Railways in course of construction
- Railways surveyed
- Railways proposed
- Roads made
- Water Races

SCALE OF MILES.

0 5 10 20 30 40 50 60 70 80 90 100

No. 1.—ROADS AND TRAMWAYS NORTH ISLAND.

RETURN of Classified Expenditure for Survey and Construction from 1st July, 1875, to 30th June, 1876.

Lines of Road.	By Contract and Piece-Work.			By Day Labour.			Exploration, Survey, Cutting Tracks and Lines, Supervision, Tools, Materials and Contingencies.	Totals.	Lines of Road.
	Colonial Forces.	Natives.	Others.	Colonial Forces.	Natives.	Others.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
AUCKLAND.									**AUCKLAND.**
Bay of Islands	...	...	...	...	...	...	129 3 4	129 3 4	Bay of Islands.
Waikato	...	...	...	...	...	...	18 1 0	18 1 0	Waikato.
Bay of Plenty:—									Bay of Plenty:—
Tauranga—East Cape	...	...	312 7 9	...	...	...	...	312 7 9	Tauranga—East Cape.
Horohoro—Te Whetu ...	...	13 0 0	...	...	...	...	...	13 0 0	Horohoro—Te Whetu.
Rotorua—Tarawera	...	120 0 0	138 4 4	...	...	...	32 9 6	290 13 10	Rotorua—Tarawera.
Tauranga—Ohinemuri... ...	...	75 0 0	606 0 9	...	...	...	59 13 11	740 14 8	Tauranga—Ohinemuri.
Tauranga—Tapuaeharuru ...	...	21 5 0	15 0 0	...	...	...	25 15 3	62 0 3	Tauranga—Tapuaeharuru.
Opotiki—Table Land	...	...	...	...	...	3 8 0	...	3 8 0	Opotiki—Table Land.
Whakatane—Te Teko	...	...	53 4 0	..	...	....	25 0 1	78 4 1	Whakatane—Te Teko.
Opotiki—Gisborne	...	129 10 0	2,432 2 0	...	...	113 0 9	284 19 7	2,959 12 4	Opotiki—Gisborne.
Whakatane Valley	...	100 0 0	...	...	...	...	3 12 6	103 12 6	Whakatane Valley.
Ohinemutu Branch	...	2 10 0	...	...	...	...	...	2 10 0	Ohinemutu Branch.
Cambridge—Atiamuru ...	...	...	...	...	...	...	47 10 0	47 10 0	Cambridge—Atiamuru.
Richmond—Galatea	...	...	52 17 0	...	...	...	4 8 3	57 5 3	Richmond—Galatea.
Galatea—Ahikereru	...	...	...	...	...	...	18 12 6	18 12 6	Galatea—Ahikereru.
Galatea—Opepe	...	321 5 0	...	...	...	...	...	321 5 0	Galatea—Opepe.
Bay of Plenty	...	...	...	...	...	...	909 2 0	909 2 0	Bay of Plenty.
	...	782 10 0	3,609 15 10	...	...	116 8 9	1,411 3 7	5,919 18 2	
Poverty Bay:—									Poverty Bay:—
Mahia—Gisborne	...	...	...	...	...	...	1 5 6	1 5 6	Mahia—Gisborne.
Gisborne—Hicks Bay	...	...	...	...	...	...	58 3 0	58 3 0	Gisborne—Hicks Bay.
Te Kapu—Waikare-Moana ...	...	...	...	...	...	...	0 10 0	0 10 0	Te Kapu—Waikare-Moana.
Te Kapu—Gisborne	...	692 10 0	165 0 0	...	...	1 0 0	127 10 6	986 0 6	Te Kapu—Gisborne.
Poverty Bay	...	...	...	...	...	...	354 13 3	354 13 3	Poverty Bay.
	...	692 10 0	165 0 0	...	...	1 0 0	542 2 3	1,400 12 3	
Taupo:—									Taupo:—
Tarawera—Tapuaeharuru ...	...	...	...	...	...	...	0 6 9	0 6 9	Tarawera—Tapuaeharuru.
Tapuaeharuru—Hot Springs ...	...	...	...	...	...	...	34 15 0	34 15 0	Tapuaeharuru—Hot Springs.
	...	...	...	...	...	...	35 1 9	35 1 9	

(*For continuation see next page.*)

No. 1.—ROADS AND TRAMWAYS—NORTH ISLAND—*continued.*

RETURN of Classified Expenditure for Survey and Construction—*continued.*

Lines of Road.	By Contract and Piece-Work.			By Day Labour.			Exploration, Survey, Cutting Tracks and Lines, Supervision, Tools, Materials, and Contingencies.	Totals.	Lines of Road.
	Colonial Forces.	Natives.	Others.	Colonial Forces.	Natives.	Others.			
HAWKE'S BAY.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	**HAWKE'S BAY.**
Napier—Tarawera	...	...	2,433 7 2	...	...	22 5 0	149 16 6	2,605 8 8	Napier—Tarawera.
Wairoa—Mahia	...	75 0 0	62 6 0	...	...	...	7 13 6	144 19 6	Wairoa—Mahia.
Napier—Patea	...	...	...	...	...	...	80 0 0	80 0 0	Napier—Patea.
	...	75 0 0	2,495 13 2	...	...	22 5 0	237 10 0	2,830 8 2	
Seventy-Mile Bush:									**Seventy-Mile Bush:—**
Takapau Gorge	...	...	475 4 0	...	...	...	12 5 3	487 9 3	Takapau Gorge.
Te Kapu—Wairoa	...	...	...	...	...	14 3 0	0 10 0	14 13 0	Te Kapu—Wairoa.
WELLINGTON.									**WELLINGTON.**
Wanganui—Patea	...	...	...	...	...	...	2 5 0	2 5 0	Wanganui—Patea.
Wanganui—Taupo	...	...	270 0 0	...	...	...	11 12 5	281 12 5	Wanganui—Taupo.
	...	...	270 0 0	...	...	...	13 17 5	283 17 5	
Manawatu:—									**Manawatu:—**
Foxton Gorge	...	...	1,533 1 11	...	...	...	132 8 4	1,665 10 3	Foxton Gorge.
Seventy-Mile Bush:—									**Seventy-Mile Bush:—**
Opaki Gorge	...	20 0 0	8,210 18 9	...	...	1,276 16 5	923 8 0	10,431 3 2	Opaki Gorge.
TARANAKI.									**TARANAKI.**
Patea—Wai-iti	...	...	...	...	...	...	12 6 0	12 6 0	Patea Wai-iti.
New Plymouth—Mount Egmont	...	...	258 12 0	...	...	6 15 0	...	265 7 0	New Plymouth—Mount Egmont.
Hawera—Waitara	...	...	123 0 0	...	...	18 3 0	10 0 9	151 3 9	Hawera—Waitara.
	...	...	381 12 0	...	...	24 18 0	22 6 9	428 16 9	

No. 2.—ROADS AND TRAMWAYS—NORTH ISLAND.

RECAPITULATION of Classified Expenditure for Survey and Construction, to 30th June, 1876.

Districts.	Periods.	By Contract and Piece-Work.			By Day Labour.			Exploration, Survey, Cutting Tracks and Lines, Supervision, Tools, Materials, and Contingencies.	Total to 30 June, 1875.	During Year 1875-76.	Total to 30 June, 1876.	Districts.
		Colonial Forces.	Natives.	Others.	Colonial Forces.	Natives.	Others.					
AUCKLAND.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	AUCKLAND.
Bay of Islands	To 30 June, 1875	...	7,559 16 1	17,402 18 7	...	1,299 1 6	662 2 6	6,035 14 9	32,959 13 5	...	...	Bay of Islands
	Year 1875-76	...	...	...	...	...	...	129 3 4	...	129 3 4	33,088 16 9	
North of Auckland ...	To 30 June, 1875	...	...	10,824 13 6	...	...	154 10 0	3,313 17 3	14,293 0 9	...	14,293 0 9	North of Auckland.
Mangere Bridge ...	To 30 June, 1875	...	...	14,941 5 0	...	...	...	545 2 8	15,486 7 8	...	15,486 7 8	Mangere Bridge.
Thames	To 30 June, 1875	...	...	75 2 9	...	...	...	...	75 2 9	...	75 2 9	Thames.
Waikato	To 30 June, 1875	2,050 2 5	335 10 0	7,488 12 10	245 17 8	39 15 0	2,480 5 7	3,857 14 1	16,497 17 7	...	...	Waikato.
	Year 1875-76	...	...	...	...	...	...	18 1 0	...	18 1 0	16,515 18 7	
Bay of Plenty	To 30 June, 1875	1,513 8 3	13,796 18 2	29,934 3 6	3,524 18 0	294 19 6	691 1 3	11,935 2 0	61,690 10 8	...	...	Bay of Plenty.
	Year 1875-76	...	782 10 0	3,609 15 10	...	...	116 8 9	1,411 3 7	...	5,919 18 2	67,610 8 10	
Poverty Bay	To 30 June, 1875	129 2 11	4,918 16 8	3,773 11 2	204 6 4	3 18 0	299 11 4	4,252 8 3	13,581 14 8	...	...	Poverty Bay.
	Year 1875-76	...	692 10 0	165 0 0	...	...	1 0 0	542 2 3	...	1,400 12 3	14,982 6 11	
Taupo	To 30 June, 1875	1,744 1 11	1,098 14 11	2,636 6 6	515 11 3	1 10 0	1,067 15 7	2,174 2 6	9,238 2 8	...	...	Taupo.
	Year 1875-76	...	...	...	...	...	...	35 1 9	...	35 1 9	9,273 4 5	
Total, Auckland ...	...	5,436 15 6	29,184 15 10	90,851 9 8	4,490 13 3	1,639 4 0	5,472 15 0	34,249 13 5	163,822 10 2	7,502 16 6	171,325 6 8	Total, Auckland.
HAWKE'S BAY.												HAWKE'S BAY.
Napier	To 30 June, 1875	879 11 2	2,902 5 7	6,616 19 8	417 6 3	...	4,430 7 6	5,749 1 11	20,995 12 1	...	...	Napier.
	Year 1875-76	...	75 0 0	2,495 13 2	...	...	22 5 0	237 10 0	...	2,830 8 2	23,826 0 3	
Seventy-Mile Bush ...	To 30 June, 1875	...	614 8 0	37,937 18 2	...	22 4 0	3,723 1 6	3,064 5 3	45,361 16 11	...	...	Seventy-Mile Bush.
	Year 1875-76	...	...	475 4 0	...	...	...	12 5 3	...	487 9 3	45,849 6 2	
Wairoa	To 30 June, 1875	3 5 0	409 13 4	379 12 3	37 8 0	...	75 10 0	218 6 7	1,123 15 2	...	...	Wairoa.
	Year 1875-76	...	...	...	...	...	14 3 0	0 10 0	...	14 13 0	1,138 8 2	
Total, Hawke's Bay	...	882 16 2	4,001 6 11	47,905 7 3	454 14 3	22 4 0	8,265 7 0	9,281 19 0	67,481 4 2	3,332 10 5	70,813 14 7	Total, Hawke's Bay.

No. 2.—ROADS AND TRAMWAYS—NORTH ISLAND—*continued.*

RECAPITULATION of Classified Expenditure for Survey and Construction, to 30th June, 1876—*continued.*

Districts.	Periods.	By Contract and Piece-Work.			By Day Labour.			Exploration, Survey, Cutting Tracks and Lines, Supervision, Tools, Materials, and Contingencies.	Total to 30 June, 1875.	During Year 1875-76.	Total to 30 June, 1876.	Districts.
		Colonial Forces.	Natives.	Others.	Colonial Forces.	Natives.	Others.					
WELLINGTON.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	**WELLINGTON.**
Wanganui-Patea ...	To 30 June, 1875	65 12 6	99 8 0	25,132 18 9	5,157 13 7	22 0 6	1,251 1 8	4,615 5 4	36,344 0 4	...	...	Wanganui-Patea.
	Year 1875-76	...	...	...	...	...	...	2 5 0	...	2 5 0	36,346 5 4	
Wanganui-Taupo ...	To 30 June, 1875	...	400 0 0	2,267 5 0	...	...	467 12 6	1,739 12 3	4,874 9 9	...	...	Wanganui-Taupo.
	Year 1875-76	...	...	270 0 0	...	...	...	11 12 5	...	281 12 5	5,156 2 2	
Seventy-Mile Bush ...	To 30 June, 1875	...	235 0 0	34,301 1 9	...	7 10 0	7,275 1 1	3,024 17 10	44,843 10 8	...	...	Seventy-Mile Bush.
	Year 1875-76	...	20 0 0	8,210 18 9	...	...	1,276 16 5	923 8 0	...	10,431 3 2	55,274 13 10	
Manawatu	To 30 June, 1875	...	2,834 0 9	27,469 10 0	...	23 19 0	7,093 11 6	5,287 19 6	42,709 0 9	...	...	Manawatu.
	Year 1875-76	...	...	1,533 1 11	...	...	...	132 8 4	...	1,665 10 3	44,374 11 0	
Hutt-Lowry Bay ...	To 30 June, 1875	...	...	290 0 0	...	...	...	...	290 0 0	...	290 0 0	Hutt-Lowry Bay.
Manawatu Tramway ...	To 30 June, 1875	...	858 4 9	22,713 17 6	...	119 8 3	4,446 18 4	2,742 0 10	30,880 9 8	...	30,880 9 8	Manawatu Tramway.
Total, Wellington	...	65 12 6	4,446 13 6	122,188 13 8	5,157 13 7	172 17 9	21,811 1 6	18,479 9 6	159,941 11 2	12,380 10 10	172,322 2 0	Total, Wellington.
TARANAKI.												**TARANAKI.**
Patea-Wai-iti	To 30 June, 1875	1,133 9 6	4,919 9 7	32,432 16 4	5,107 13 9	1,505 5 6	7,191 17 7	6,450 8 6	58,741 0 9	...	...	Patea-Wai-iti.
	Year 1875-76	...	...	...	...	...	...	12 6 0	...	12 6 0	58,753 6 9	
New Plymouth — Mount Egmont	To 30 June, 1875	...	...	2,240 5 11	...	...	489 7 9	486 10 7	3,216 4 3	...	...	New Plymouth — Mount Egmont.
	Year 1875-76	...	...	258 12 0	...	...	6 15 0	...	...	265 7 0	3,481 11 3	
Hawera-Waitara ...	To 30 June, 1875	...	...	1,643 18 6	28 13 0	4,170 0 0	5,469 16 2	1,729 0 11	13,041 8 7	...	...	Hawera-Waitara.
	Year 1875-76	...	...	123 0 0	...	...	18 3 0	10 0 9	...	151 3 9	13,192 12 4	
Total, Taranaki ...		1,133 9 6	4,919 9 7	36,698 12 9	5,136 6 9	5,675 5 6	13,175 19 6	8,688 6 9	74,998 13 7	428 16 9	75,427 10 4	Total, Taranaki.
SUMMARY.												**SUMMARY.**
Auckland	...	5,436 15 6	29,184 15 10	90,851 9 8	4,490 13 3	1,639 4 0	5,472 15 0	34,249 13 5	163,822 10 2	7,502 16 6	171,325 6 8	Auckland.
Hawke's Bay ...	...	882 16 2	4,001 6 11	47,905 7 3	454 14 3	22 4 0	8,265 7 0	9,281 19 0	67,481 4 2	3,332 10 5	70,813 14 7	Hawke's Bay.
Wellington	...	65 12 6	4,446 13 6	122,188 13 8	5,157 13 7	172 17 9	21,811 1 6	18,479 9 6	159,941 11 2	12,380 10 10	172,322 2 0	Wellington.
Taranaki	...	1,133 9 6	4,919 9 7	36,698 12 9	5,136 6 9	5,675 5 6	13,175 19 6	8,688 6 9	74,998 13 7	428 16 9	75,427 10 4	Taranaki.
	...	7,518 13 8	42,552 5 10	297,644 3 4	15,239 7 10	7,509 11 3	48,725 3 0	70,699 8 8	466,243 19 1	23,644 14 6	489,888 13 7	

No. 3—ROADS AND TRAMWAYS—NORTH ISLAND.

RETURN of Expenditure and Liabilities for Survey and Construction to 30th June, 1876.

Locality.	No. of Miles Constructed or in Progress.	Expenditure. 1869-70.	1870-71.	1871-72.	1872-3.	1873-74.	1874-75.	1875-76.	Totals.	Liabilities on Contracts, 30 June, 1876.	Total Expenditure and Liabilities.	No. of Miles Constructed or in Progress.	Locality.
	Mls. chs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Mls. chs.	
Auckland.													**Auckland.**
Bay of Islands	166 40	...	...	723 7 3	5,779 13 8	16,730 5 6	9,726 7 0	129 3 4	33,088 16 9	...	33,088 16 9	166 40	Bay of Islands.
North of Auckland ...	362 20	...	...	42 0 0	2,705 10 9	9,199 8 10	2,346 1 2	...	14,293 0 9	...	14,293 0 9	362 20	North of Auckland.
Mangere Bridge... ...	...	...	...	...	227 17 8	9,409 15 4	5,848 14 8	...	15,486 7 8	...	15,486 7 8	...	Mangere Bridge.
Thames	20 0	...	...	...	75 2 9	...	...	...	75 2 9	...	75 2 9	20 0	Thames.
Waikato	34 40	303 6 0	340 17 0	1,871 16 11	3,316 9 0	7,451 17 6	3,213 11 2	18 1 0	16,515 18 7	105 3 0	16,621 1 7	34 40	Waikato.
Bay of Plenty	474 0	6,001 1 4	4,327 2 4	11,746 1 8	15,379 15 10	12,713 1 3	11,523 8 3	5,919 18 2	67,610 8 10	6,071 15 8	73,682 4 6	474 0	Bay of Plenty.
Poverty Bay	243 0	...	204 6 4	1,590 7 10	4,403 3 0	4,539 12 10	2,844 4 8	1,400 12 3	14,982 6 11	715 12 0	15,697 18 11	243 0	Poverty Bay.
Taupo	47 0	667 13 11	939 8 2	2,082 18 2	3,667 9 9	1,225 9 10	655 2 10	35 1 9	9,273 4 5	...	9,273 4 5	47 0	Taupo.
Total, Auckland ...	1,347 20	6,972 1 3	5,811 13 10	18,056 11 10	35,555 2 5	61,269 11 1	36,157 9 9	7,502 16 6	171,325 6 8	6,892 10 8	178,217 17 4	1,347 20	Total, Auckland.
Hawke's Bay.													**Hawke's Bay.**
Napier...	30 0	732 0 5	3,416 3 0	6,484 18 0	2,795 10 2	3,645 3 0	3,921 17 6	2,830 8 2	23,826 0 3	...	23,826 0 3	30 0	Napier.
Seventy-Mile Bush ...	37 40	...	4,628 2 6	6,449 8 1	5,559 0 2	23,412 11 6	5,312 14 8	487 9 3	45,849 6 2	...	45,849 6 2	37 40	Seventy-Mile Bush.
Wairoa	43 0	...	335 7 0	403 0 8	152 19 1	124 15 0	107 13 5	14 13 0	1,138 8 2	...	1,138 8 2	43 0	Wairoa.
Total, Hawke's Bay...	110 40	732 0 5	8,379 12 6	13,337 6 9	8,507 9 5	27,182 9 6	9,342 5 7	3,332 10 5	70,813 14 7	...	70,813 14 7	110 40	Total, Hawke's Bay.
Taranaki.													**Taranaki.**
New Plymouth, inland ...	7 40	350 8 0	149 12 0	...	353 14 8	1,025 15 7	984 16 0	265 7 0	3,481 11 3	124 0 0	3,605 11 3	7 40	New Plymouth, inland.
Hawera—Waitara ...	52 0	...	...	...	351 18 0	10,516 19 8	2,524 8 11	151 3 9	13,192 12 4	...	13,192 12 4	52 0	Hawera—Waitara.
Wai-iti—Patea	126 0	6,254 9 7	4,648 2 9	8,511 2 8	16,988 19 1	13,534 14 4	8,803 12 4	12 6 0	58,753 6 9	...	58,753 6 9	126 0	Wai-iti—Patea.
Total, Taranaki ...	185 40	6,604 17 7	4,797 14 9	8,511 2 8	17,694 11 9	25,077 9 7	12,312 17 3	428 16 9	75,427 10 4	124 0 0	75,551 10 4	185 40	Total, Taranaki.
Wellington.													**Wellington.**
Patea—Wanganui ...	38 0	6,791 16 1	2,252 10 9	8,186 8 8	7,457 17 8	9,885 18 11	1,769 8 3	2 5 0	36,346 5 4	194 16 0	36,541 1 4	38 0	Patea—Wanganui.
Wanganui—Taupo ...	34 40	489 13 9	445 17 5	414 9 11	741 17 1	1,968 14 4	813 17 3	281 12 5	5,156 2 2	...	5,156 2 2	34 40	Wanganui—Taupo.
Manawatu	46 0	1,416 3 8	5,596 16 10	11,316 15 8	6,424 9 9	9,376 14 0	8,578 0 10	1,665 10 3	44,374 11 0	...	44,374 11 0	46 0	Manawatu.
Manawatu Tramway ...	25 0	...	278 13 10	8,919 1 6	12,459 4 2	7,748 18 2	1,474 12 0	...	30,880 9 8	...	30,880 9 8	25 0	Manawatu Tramway.
Opaki—Manawatu Gorge...	46 0	...	28 12 1	897 6 10	4,963 17 9	10,331 13 9	28,622 0 3	10,431 3 2	55,274 13 10	2,706 16 0	57,981 9 10	46 0	Opaki—Manawatu Gorge.
Hutt—Lowry Bay ...	...	...	...	...	...	...	290 0 0	...	290 0 0	...	290 0 0	...	Hutt—Lowry Bay.
Total, Wellington ...	189 40	8,697 13 6	8,602 10 11	29,734 2 7	32,047 6 5	39,311 19 2	41,547 18 7	12,380 10 10	172,322 2 0	2,901 12 0	175,223 14 0	189 40	Total, Wellington.
Summary.													**Summary.**
Auckland	1,347 20	6,972 1 3	5,811 13 10	18,056 11 10	35,555 2 5	61,269 11 1	36,157 9 9	7,502 16 6	171,325 6 8	6,892 10 8	178,217 17 4	1,347 20	Auckland.
Hawke's Bay	110 40	732 0 5	8,379 12 6	13,337 6 9	8,507 9 5	27,182 9 6	9,342 5 7	3,332 10 5	70,813 14 7	...	70,813 14 7	110 40	Hawke's Bay.
Taranaki	185 40	6,604 17 7	4,797 14 9	8,511 2 8	17,694 11 9	25,077 9 7	12,312 17 3	428 16 9	75,427 10 4	124 0 0	75,551 10 4	185 40	Taranaki.
Wellington	189 40	8,697 13 6	8,602 10 11	29,734 2 7	32,047 6 5	39,311 19 2	41,547 18 7	12,380 10 10	172,322 2 0	2,901 12 0	175,223 14 0	189 40	Wellington.
Unapportionable, Tools, &c.	...	1,732 18 6	...	...	...	...	...	...	1,732 18 6	...	1,732 18 6	...	Unapportionable, Tools, &c.
Recoveries	...	14 12 11	...	...	...	...	...	...	14 12 11	...	14 12 11	...	Recoveries.
Totals	1,832 60	24,754 4 2	27,591 12 0	69,639 3 10	93,804 10 0	152,841 9 4	99,360 11 2	23,644 14 6	491,636 5 0	9,918 2 8	501,554 7 8	1,832 60	Totals.

No. 4.—ROADS NORTH OF AUCKLAND.

RETURN of EXPENDITURE and LIABILITIES for SURVEY and CONSTRUCTION to 30th June, 1876.

			£ s. d.
Amount Allocated			60,000 0 0
Expenditure to 30th June, 1875,—			
Bay of Islands District	£32,959 13 5		
North of Auckland District	14,293 0 9		
Mangere Bridge	15,486 7 8		
Total	62,739 1 10		
Deduct Mangere Bridge	15,486 7 8		
Net Expenditure out of Public Works Loan			47,252 14 2
Balance, 1st July, 1875			12,747 5 10
Expenditure from 1st July, 1875, to 30th June, 1876,—			
Bay of Islands and North of Auckland Districts, out of Defence and Other Purposes Loan...			3,727 2 2
Balance, 1st July, 1876			9,020 3 8
Liabilities			3,162 1 1
Balance available			£5,858 2 7

No. 5.—ROADS IN NATIVE DISTRICTS.

NORTH ISLAND.

RETURN of EXPENDITURE and LIABILITIES for Repairs and Maintenance to 30th June, 1876.

	£ s. d.	£ s. d.	£ s. d.
Amount Allocated	...	...	10,000 0 0
Expenditure to 30th June, 1876:—			
Bay of Islands District	...	89 0 0	
Mangere Bridge	...	63 0 9	
Waikato District	...	579 4 8	
Bay of Plenty District	...	1,858 1 10	
Poverty Bay District	...	584 10 11	
Taupo District	...	212 15 0	
Napier District	...	568 13 3	
Wairoa District	...	58 11 9	
Seventy-Mile Bush, Hawke's Bay	...	780 3 0	
Patea-Wai-iti District	...	1,722 4 7	
Wanganui District	...	511 18 1	
Manawatu District	...	1,455 6 8	
Opaki Gorge	...	480 11 6	
Total	...		8,964 2 0
Balance, 1st July, 1876	...	...	1,035 18 0
Liabilities on 1st July, 1876:—			
Bay of Plenty District	249 18 1		
Poverty Bay District	252 0 0		
Napier District	120 0 0		
Patea-Wai-iti District	173 5 0		
Wanganui District	351 19 6		
Manawatu District	565 0 0		
Opaki Gorge	1,657 13 0		
Total		...	3,369 15 7

No. 6.—ROADS—MIDDLE ISLAND.

RETURN of Classified Expenditure for Survey and Construction, to 30th June, 1876.

Lines of Road.	Periods.	By Contract, &c.			By Day Labour.			Surveying, &c.	Total to 30th June, 1875.	Total for Year 1875-76.	Total to 30th June, 1876.	Lines of Road.
		Colonial Forces.	Natives.	Others.	Colonial Forces.	Natives.	Others.					
WESTLAND.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	**WESTLAND.**
Greymouth—Okarito ...	To 30 June, 1875	...	...	63,807 8 3	...	...	1,928 2 7	7,970 19 4	73,706 10 2	...	...	Greymouth—Okarito.
	Year 1875-76	...	...	2,624 17 3	...	...	...	144 12 0	...	2,769 9 3	76,475 19 5	
Christchurch Junction ...	To 30 June, 1875	...	...	3,667 0 0	...	...	...	256 9 5	3,923 9 5	...	3,923 9 5	Christchurch Junction.
South Creek Branch—Main Line	To 30 June, 1875	...	...	274 15 0	...	...	...	7 2 6	281 17 6	...	281 17 6	South Creek Branch—Main Line
Greymouth—Arnould ...	To 30 June, 1875	...	...	3,124 10 10	...	...	646 8 10	978 14 8	4,749 14 4	...	4,749 14 4	Greymouth—Arnould.
Greenstone—Lake Brunner ...	To 30 June, 1875	...	...	2,657 0 6	...	...	64 10 0	34 15 0	2,756 5 6	...	2,756 5 6	Greenstone—Lake Brunner.
Marsden—Maori Creek ...	To 30 June, 1875	...	...	2,316 17 0	...	...	16 8 0	204 18 0	2,538 3 0	...	2,538 3 0	Marsden—Maori Creek.
Marsden—Paroa	To 30 June, 1875	...	...	663 5 0	...	...	...	135 3 0	798 8 0	...	798 8 0	Marsden—Paroa.
Still Water—Maori Gully ...	To 30 June, 1875	...	...	1,809 5 0	...	...	18 10 0	41 7 0	1,869 2 0	...	1,869 2 0	Still Water—Maori Gully.
Kanieri Forks—Kanieri Lakes	To 30 June, 1875	...	...	1,435 15 0	...	...	19 16 0	121 0 0	1,576 11 0	...	...	Kanieri Forks—Kanieri Lakes.
	Year 1875-76	...	...	...	...	...	...	1 10 0	...	1 10 0	1,578 1 0	
Hokitika—Blue Spur ...	To 30 June, 1875	...	...	2,292 15 0	...	...	19 11 6	199 1 11	2,511 8 5	...	...	Hokitika—Blue Spur.
	Year 1875-76	...	...	...	...	...	...	8 15 0	...	8 15 0	2,520 3 5	
Kanieri Bridge	To 30 June, 1875	...	...	482 8 0	...	...	...	7 7 0	489 15 0	...	489 15 0	Kanieri Bridge.
Waimea Bridge	To 30 June, 1875	...	...	202 2 0	...	...	...	5 10 6	207 12 6	...	207 12 6	Waimea Bridge.
Westland, General	To 30 June, 1875	...	...	...	...	...	...	2,197 11 2	2,197 11 2	...	2,197 11 2	Westland, General.
		...	...	85,357 18 10	...	...	2,713 6 11	12,314 16 6	97,606 8 0	2,779 14 3	100,386 2 3	
Hokitika—Christchurch ...	To 30 June, 1875	...	...	12,036 15 11	...	...	4,555 15 0	668 2 6	17,260 13 5	...	...	Hokitika—Christchurch.
	Year 1875-76	...	...	7,953 0 6	...	...	345 13 3	962 3 8	...	9,260 17 5	26,521 10 10	
		...	...	19,989 16 5	...	...	4,901 8 3	1,630 6 2	17,260 13 5	9,260 17 5	26,521 10 10	
NELSON.												**NELSON.**
Buller—Arnould	To 30 June, 1875	...	...	34,165 1 3	...	...	13,895 4 10	1,988 9 5	50,048 15 6	...	...	Buller—Arnould.
	Year 1875-76	...	...	314 15 0	...	...	83 12 8	307 3 6	...	705 11 2	50,754 6 8	
Ahaura—Amuri	To 30 June, 1875	...	...	3,545 0 0	...	...	371 2 0	735 13 6	4,651 15 6	...	...	Ahaura—Amuri.
	Year 1875-76	...	...	...	...	...	532 7 6	85 13 3	...	618 0 9	5,269 16 3	
Westport—Nine-Mile Bluff ...	To 30 June, 1875	...	...	5,500 11 0	...	...	238 0 0	203 0 4	5,941 11 4	...	5,941 11 4	Westport—Nine-Mile Bluff.
Westport—Lyell	To 30 June, 1875	...	...	1,221 9 0	...	...	55 12 0	55 1 6	1,332 2 6	...	1,332 2 6	Westport—Lyell.
Boatman's to Larry's... ...	To 30 June, 1875	...	...	290 0 0	...	...	...	...	290 0 0	...	...	Boatman's to Larry's.
	Year 1875-76	...	...	554 10 0	...	...	...	...	...	554 10 0	844 10 0	
Nile Bridge...	To 30 June, 1875	...	...	622 10 0	...	...	...	...	622 10 0	...	...	Nile Bridge.
	Year 1875-76	...	...	469 11 4	...	...	...	...	...	469 11 4	1,092 1 4	
Takaka Valley	To 30 June, 1875	...	...	392 14 10	...	...	...	3 10 6	396 5 4	...	...	Takaka Valley.
	Year 1875-76	...	...	508 10 5	...	...	...	1 19 0	...	510 9 5	906 14 9	
Squaretown—Little Grey Junctn.	Year 1875-76	...	...	1,586 12 6	...	...	...	85 11 0	...	1,672 3 6	1,672 3 6	Squaretown—Little Grey Junctn.
Collingwood Quartz Rango ...	Year 1875-76	...	...	...	...	...	...	0 12 6	...	0 12 6	12 6	Collingwood Quartz Range.
		...	...	49,171 5 4	...	...	15,175 19 0	3,466 14 6	63,283 0 2	4,530 18 8	67,813 18 10	

No. 7.—ROADS—MIDDLE ISLAND.

RETURN of Expenditure and Liabilities for Survey and Construction to 30th June, 1876.

Lines of Road.	Miles. Completed and in Course of Completion.	Expenditure. 1870–71. £ s. d.	1871–72. £ s. d.	1872–73. £ s. d.	1873–74. £ s. d.	1874–75. £ s. d.	1875–76. £ s. d.	Total. £ s. d.	Liabilities on Contracts 30 June, 1876. £ s. d.	Total Expenditure and Liabilities. £ s. d.	Miles. Completed and in Course of Completion.	Lines of Road.
WESTLAND.	Mls. chs.											WESTLAND.
Greymouth—Arnould ...	7 19	...	1,073 7 5	2,768 10 10	907 16 1	...	...	4,749 14 4	268 17 0	5,018 11 4	7 19	Greymouth—Arnould.
Greymouth—Okarito ...	81 30	51 6 3	17,529 12 9	18,513 14 2	22,894 1 0	14,717 16 0	2,769 9 3	76,475 19 5	145 6 6	76,621 5 11	81 30	Greymouth—Okarito.
South Creek—Main Line ...	0 37	...	...	261 17 6	20 0 0	...	...	281 17 6	...	281 17 6	0 37	South Creek—Main Line.
Junction Line	4 65	...	3,817 13 5	105 16 0	...	...	...	3,923 9 5	...	3,923 9 5	4 65	Junction Line.
Greenstone—Lake Brunner ...	8 4	...	...	...	86 14 6	2,669 11 0	...	2,756 5 6	...	2,756 5 6	8 4	Greenstone—Lake Brunner.
Marsden—Maori Creek ...	5 50	...	...	...	2,538 3 0	...	...	2,538 3 0	...	2,538 3 0	5 50	Marsden—Maori Creek.
Marsden—Paroa	0 77	...	...	...	798 8 0	...	...	798 8 0	...	798 8 0	0 77	Marsden—Paroa.
Still Water—Maori Gully ...	6 15	...	...	...	1,250 17 0	618 5 0	...	1,869 2 0	...	1,869 2 0	6 15	Still Water—Maori Gully.
Kanieri Forks—Kanieri Lakes	4 54	...	...	...	83 1 0	1,493 10 0	1 10 0	1,578 1 0	...	1,578 1 0	4 54	Kanieri Forks—Kanieri Lakes.
Hokitika—Blue Spur ...	4 46	...	...	...	505 11 11	2,005 16 6	8 15 0	2,520 3 5	...	2,520 3 5	4 46	Hokitika—Blue Spur.
Kanieri Bridge	0 4	...	...	...	489 15 0	...	...	489 15 0	...	489 15 0	0 4	Kanieri Bridge.
Waimea Bridge	...	...	...	...	5 10 6	202 2 0	...	207 12 6	...	207 12 6	...	Waimea Bridge.
Westland, General	...	...	...	...	501 14 4	1,695 16 10	...	2,197 11 2	...	2,197 11 2	...	Westland, General.
	124 1	51 6 3	22,420 13 7	21,649 18 6	30,081 12 4	23,402 17 4	2,779 14 3	100,386 2 3	414 3 6	100,800 5 9	124 1	
Hokitika—Christchurch ...	11 14	...	...	2,857 10 0	...	14,403 3 5	9,260 17 5	26,521 10 10	1,478 9 2	28,000 0 0	11 14	Hokitika—Christchurch.
NELSON.												NELSON.
Buller—Arnould	48 54	...	9,917 15 0	26,420 14 9	8,630 1 6	5,080 4 3	705 11 2	50,754 6 8	...	50,754 6 8	48 54	Buller—Arnould.
Westport—Nine-Mile Bluff ...	6 40	...	...	104 0 0	5,799 4 4	38 7 0	...	5,941 11 4	...	5,941 11 4	6 40	Westport—Nine-Mile Bluff.
Ahaura—Amuri	27 53	...	...	128 5 0	4,144 18 6	378 12 0	618 0 9	5,269 16 3	581 19 3	5,851 15 6	27 53	Ahaura—Amuri.
Nine-Mile Bluff to Lyell ...	38 43	...	...	...	1,330 18 6	1 4 0	...	1,332 2 6	...	1,332 2 6	38 43	Nine-Mile Bluff to Lyell.
Main Road to Boatman's ...	3 13	...	...	...	...	290 0 0	554 10 0	844 10 0	255 10 0	1,100 0 0	3 13	Main Road to Boatman's.
Nile Bridge	...	...	...	...	...	622 10 0	469 11 4	1,092 1 4	7 18 8	1,100 0 0	...	Nile Bridge.
Takaka Valley	...	...	...	...	...	396 5 4	510 9 5	906 14 9	593 5 3	1,500 0 0	...	Takaka Valley.
Square Town — Little Grey Junction	11 0	...	...	...	...	...	1,672 3 6	1,672 3 6	327 16 6	2,000 0 0	11 0	Square Town—Little Grey Junction.
Collingwood Quartz Range ...	...	...	...	...	...	...	0 12 6	0 12 6	499 7 6	500 0 0	...	Collingwood Quartz Range.
	135 43	...	9,917 15 0	26,652 19 9	19,905 2 10	6,807 2 7	4,530 18 8	67,813 18 10	2,265 17 2	70,079 16 0	135 43	
SUMMARY.												SUMMARY.
Westland	124 1	51 6 3	22,420 13 7	21,649 18 6	30,081 12 4	23,402 17 4	2,779 14 3	100,386 2 3	414 3 6	100,800 5 9	124 1	Westland.
Nelson	135 43	...	9,917 15 0	26,652 19 9	19,905 2 10	6,807 2 7	4,530 18 8	67,813 18 10	2,265 17 2	70,079 16 0	135 43	Nelson.
Hokitika—Christchurch ...	11 14	...	...	2,857 10 0	...	14,403 3 5	9,260 17 5	26,521 10 10	1,478 9 2	28,000 0 0	11 14	Hokitika—Christchurch.
	270 58	51 6 3	32,338 8 7	51,160 8 3	49,986 15 2	44,613 3 4	16,571 10 4	194,721 11 11	4,158 9 10	198,880 1 9	270 58	

No. 8.—RAILWAYS, BRIDGES, PLANT, AND ROLLING STOCK.

Net Expenditure to 30th June, 1876.

Lines of Railway.	Land. Cost.	Land. Expenses.	Surveys—Preliminary and Working.	Construction. Grading.	Construction. Bridges and Culverts.	Construction. Fencing.	Construction. Permanent Way, New Zealand.	Construction. Permanent Way, England.	Rolling Stock. New Zealand.	Rolling Stock. England.	Workshops, Stations, and Wharves.	Engineering and Office.	Incidental.	Total Net Expenditure to 30 June, 1875.	Total Net Expenditure during Year 1875-76.	Total Net Expenditure to 30 June, 1876.	Lines of Railway.
North Island.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	North Island.
Kawakawa—Port... ...	...	...	539 18 4	2,175 0 0	340 0 0	...	2,720 0 0	...	...	1,359 0 6	335 0 0	409 14 10	22 11 2	292 7 4	7,608 17 6	7,901 4 10	Kawakawa—Port.
Kaipara—Auckland ...	...	182 5 8	2,787 18 7	22,449 11 6	4,046 17 11	612 2 4	15,727 10 7	18,330 4 1	647 1 9	6,895 2 6	7,467 15 6	5,146 11 2	281 16 9	71,535 16 10	13,039 1 6	84,574 18 4	Kaipara—Auckland.
Auckland—Puniu ...	26,361 0 11	2,012 4 0	7,935 12 11	170,309 13 3	71,837 17 7	7,582 4 2	84,373 17 3	113,083 18 0	14,123 7 2	53,024 16 8	49,677 16 2	20,030 14 1	4,571 8 2	478,524 0 7	146,400 9 9	624,924 10 4	Auckland—Puniu.
Auckland Workshops ...	...	...	...	...	...	...	...	...	...	...	16,097 13 11	...	...	...	16,097 13 11	16,097 13 11	Auckland Workshops.
Wellington—Masterton ...	6,954 11 0	815 4 11	10,192 0 9	117,208 4 7	43,300 14 8	9,329 3 8	24,120 9 11	57,789 12 4	3,604 8 3	21,098 15 6	20,271 13 8	10,173 10 10	516 13 4	186,334 16 2	139,040 7 3	325,375 3 5	Wellington—Masterton.
Wellington Workshops ...	...	...	...	...	...	...	...	...	...	...	2,728 0 9	...	...	...	2,728 0 9	2,728 0 9	Wellington Workshops.
Patea—Manawatu ...	4,708 2 0	515 9 0	12,823 2 2	58,658 19 1	45,962 3 3	6,248 15 10	18,456 17 5	87,453 10 3	1,026 18 9	16,796 16 4	4,709 4 7	9,286 12 8	997 4 0	111,205 11 6	156,438 3 10	267,643 15 4	Patea—Manawatu.
Manawatu—Foxton ...	113 10 0	...	377 1 11	19,128 3 0	10,730 8 1	19 16 9	10,095 0 5	27,292 11 9	3,594 2 9	471 3 6	3,597 17 1	1,301 14 10	7 14 2	30,568 8 8	46,160 15 7	76,729 4 3	Manawatu—Foxton.
Patea—Waitara	7,415 14 4	371 11 5	3,172 2 0	17,149 6 3	10,422 11 4	2,966 14 2	15,425 16 9	10,077 4 9	1,206 13 6	3,022 10 9	8,132 19 6	2,550 3 5	191 1 7	55,093 8 4	27,011 1 5	82,104 9 9	Patea—Waitara.
Napier—Manawatu ...	1,875 5 0	25 5 2	8,037 0 4	55,731 8 9	52,686 3 11	7,732 17 5	46,381 12 1	55,294 13 4	5,064 9 2	26,576 5 8	19,753 10 2	8,678 8 11	691 15 11	197,247 11 11	91,281 3 11	288,528 15 10	Napier—Manawatu.
Surveys of New Lines :—																	Surveys of New Lines :—
Thames—Waikato ...	...	...	357 5 11	...	...	...	...	...	...	...	...	...	...	350 0 11	7 5 0	357 5 11	Thames—Waikato.
Mercer—Cambridge ...	...	...	528 17 3	...	...	...	...	...	...	...	...	...	...	528 17 3	...	528 17 3	Mercer—Cambridge.
Cambridge—Taupo ...	...	...	346 4 1	...	...	...	...	...	...	...	...	...	...	346 4 1	...	346 4 1	Cambridge—Taupo.
Masterton—Woodville ...	...	...	205 14 3	...	...	...	...	...	...	...	...	...	...	...	205 14 3	205 14 3	Masterton—Woodville.
Tokano—Napier	...	...	20 16 0	...	...	...	...	...	...	...	...	...	...	20 16 0	...	20 16 0	Tokano—Napier.
Waipukurau—Gorge ...	...	...	2,889 4 4	...	...	...	...	...	...	...	...	...	...	17 0 0	2,872 4 4	2,889 4 4	Waipukurau—Gorge.
																	Total Surveys, North Island, £4,348 1s. 10d.
Total, North Island ...	47,428 3 3	3,922 0 2	50,212 18 10	462,810 6 5	239,326 16 9	34,491 14 4	217,301 4 5	369,321 14 6	29,267 1 4	129,244 11 5	132,771 11 4	57,577 10 9	7,280 5 1	1,132,064 19 7	648,890 19 0	1,780,955 18 7	Total, North Island.
South Island.																	South Island.
Nelson—Foxhill	13,436 10 4	1,038 0 0	1,799 8 2	18,128 4 6	13,910 3 0	6,907 3 0	16,232 3 11	21,773 12 4	1,334 19 7	5,331 2 4	8,724 7 0	3,042 5 1	150 18 7	85,339 11 10	26,469 6 0	111,808 17 10	Nelson—Foxhill.
Westport—Mount Rochfort	1,565 0 0	1,886 8 9	4,406 11 9	32,239 17 8	5,875 7 4	...	14,143 9 4	24,187 19 1	580 6 8	14,021 5 6	991 0 4	3,432 15 5	315 3 8	50,419 18 10	53,195 6 8	103,615 5 6	Westport—Mount Rochfort.
Brunner—Greymouth ...	5,684 19 0	962 9 1	1,499 10 2	32,729 1 8	22,905 6 1	547 8 0	7,272 2 9	4,882 0 5	724 15 4	18,381 19 3	14,213 1 4	4,356 16 7	264 6 9	89,137 1 9	25,286 14 8	114,423 16 5	Brunner—Greymouth.
Picton—Blenheim ...	7,711 16 10	885 0 8	1,759 12 3	52,178 19 0	28,427 10 5	822 15 8	16,949 10 1	21,336 18 11	2,197 18 7	6,603 2 2	9,787 13 11	4,139 5 1	187 3 8	107,458 6 5	45,529 0 10	152,987 7 3	Picton—Blenheim.
Kowai—Waitaki	28,474 2 10	4,135 12 8	6,979 4 5	75,090 6 1	240,496 5 10	23,231 13 2	127,592 12 1	190,977 5 1	6,210 1 1	44,611 1 0	49,422 15 9	25,059 11 2	2,933 11 9	557,664 7 0	267,549 15 11	825,214 2 11	Kowai—Waitaki.
Canterbury Branches ...	9,147 7 1	1,096 3 2	3,787 15 4	21,235 4 4	18,790 9 9	15,653 7 5	73,579 4 2	95,943 12 9	2,315 5 3	31,656 13 3	31,184 14 8	4,050 4 4	435 7 5	269,587 1 4	39,288 7 7	308,875 8 11	Canterbury Branches.
Waitaki Bridge	...	...	...	...	75,903 10 5	...	...	...	...	...	...	...	...	58,188 14 10	17,714 15 7	75,903 10 5	Waitaki Bridge.
Waitaki—Invercargill ...	41,306 8 0	5,862 17 4	18,472 15 5	435,088 4 6	131,837 8 6	31,403 2 9	161,137 16 7	233,836 18 10	12,507 18 5	101,161 3 7	158,938 2 0	41,168 3 4	5,443 14 6	1,055,759 7 7	322,405 6 2	1,378,164 13 9	Waitaki—Invercargill.
Workshops at Dunedin	...	...	...	...	...	...	...	...	...	...	11,052 19 11	...	...	...	11,052 19 11	11,052 19 11	Workshops at Dunedin.
Tokomairiro—Lawrence ...	1,978 14 11	279 12 0	1,880 4 1	59,756 15 1	14,739 14 10	8,434 3 10	11,603 15 4	23,415 4 4	1,916 2 9	11,656 3 5	5,907 17 11	3,675 19 0	181 3 4	71,990 3 1	73,435 7 9	145,425 10 10	Tokomairiro—Lawrence.
Winton—Kingston ...	440 0 0	157 13 0	2,624 0 6	22,346 19 11	2,104 2 2	1,449 2 7	38,886 4 5	74,870 7 6	2,489 11 9	12,524 19 7	3,312 8 5	3,463 3 4	356 3 11	88,827 1 6	76,197 15 7	165,024 17 1	Winton—Kingston.
Surveys of New Lines :—																	Surveys of New Lines :—
Foxhill—Brunner ...	...	...	2,872 19 1	...	...	...	...	...	...	...	...	...	...	2,869 6 7	3 12 6	2,872 19 1	Foxhill—Brunner.
Foxhill—Southwards ...	...	...	448 6 8	...	...	...	...	...	...	...	...	...	...	346 6 8	102 0 0	448 6 8	Foxhill—Southwards.
Greymouth—Christchurch...	...	...	798 0 9	...	...	...	...	...	...	...	...	...	...	795 18 3	2 2 6	798 0 9	Greymouth—Christchurch.
Hokitika—Christchurch ...	...	...	34 16 8	...	...	...	...	...	...	...	...	...	...	...	34 16 8	34 16 8	Hokitika—Christchurch.
Greymouth—Hokitika ...	...	...	2,631 5 11	...	...	...	...	...	...	...	...	...	...	1,561 18 11	1,069 7 0	2,631 5 11	Greymouth—Hokitika.
Hokitika—Malvern ...	...	...	468 0 3	...	...	...	...	...	...	...	...	...	...	468 0 3	...	468 0 3	Hokitika—Malvern.
Hokitika Survey Office ...	...	...	550 0 0	...	...	...	...	...	...	...	...	...	...	...	550 0 0	550 0 0	Hokitika Survey Office.
Blenheim—Hurunui ...	...	...	347 6 5	...	...	...	...	...	...	...	...	...	...	...	347 6 5	347 6 5	Blenheim—Hurunui.
Oamaru—Waireka ...	...	...	493 6 9	...	...	...	...	...	...	...	...	...	...	493 6 9	...	493 6 9	Oamaru—Waireka.
Dunedin—Moeraki ...	...	...	2,175 2 4	...	...	...	...	...	...	...	...	...	...	2,175 2 4	...	2,175 2 4	Dunedin—Moeraki.
Clutha—Mataura... ...	...	...	115 9 6	...	...	...	...	...	...	...	...	...	...	115 9 6	...	115 9 6	Clutha—Mataura.
Waipihi—Cromwell ...	...	...	100 0 0	...	...	...	...	...	...	...	...	...	...	100 0 0	...	100 0 0	Waipihi—Cromwell.
Miscellaneous	...	...	7 11 6	...	...	...	...	...	...	...	...	...	...	...	7 11 6	7 11 6	Miscellaneous.
																	Total Surveys, South Island, £11,042 5s. 10d.
Total, South Island ...	109,744 19 0	16,303 16 8	54,251 7 11	748,793 12 9	554,989 18 4	88,448 16 5	467,366 18 8	691,223 19 3	30,276 19 5	245,947 10 1	293,535 1 3	92,388 3 4	10,267 13 7	2,443,297 3 5	960,241 13 3	3,403,538 16 8	Total, South Island.
SUMMARY.																	SUMMARY.
Railways, North Island ...	47,428 3 3	3,922 0 2	50,212 18 10	462,810 6 5	239,326 16 9	34,491 14 4	217,301 4 5	369,321 14 6	29,267 1 4	129,244 11 5	132,771 11 4	57,577 10 9	7,280 5 1	1,132,064 19 7	648,890 19 0	1,780,955 18 7	Railways, North Island.
Railways, South Island ...	109,744 19 0	16,303 16 8	54,251 7 11	748,793 12 9	554,989 18 4	88,448 16 5	467,366 18 8	691,223 19 3	30,276 19 5	245,947 10 1	293,535 1 3	92,388 3 4	10,267 13 7	2,443,297 3 5	960,241 13 3	3,403,538 16 8	Railways, South Island.
Totals.... ...	157,173 2 3	20,225 16 10	104,464 6 9	1,211,603 19 2	794,316 15 1	122,940 10 9	684,668 3 1	1,060,545 13 9	59,544 0 9	375,192 1 6	426,306 12 7	149,965 14 1	17,547 18 8	3,575,362 3 0	1,609,132 12 3	5,184,494 15 3	Totals.

NO. 9.—RAILWAYS, BRIDGES, PLANT, AND ROLLING STOCK.

RETURN of Expenditure and Liabilities for Survey and Construction, to 30th June, 1876.

Lines of Railway.	Total Length.	Open for Traffic.	Under Construction.	Not yet begun.	Expenditure. 1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	Total.	Liabilities on June 30, 1876.	Total Expenditure and Liabilities.	Lines of Railway.
NORTH ISLAND.	Mls. chs.	Mls. chs.	Mls. chs.	Mls. chs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	**NORTH ISLAND.**
Kawakawa–Port	8 19	...	2 67	5 32	...	...	105 0 0	...	187 7 4	7,608 17 6	7,901 4 10	15,181 9 0	23,082 13 10	Kawakawa–Port.
Kaipara–Auckland	38 36	15 68	...	22 48	...	10,565 10 6	7,781 10 5	23,125 5 8	30,063 10 3	13,039 1 6	84,574 18 4	28,197 13 6	112,772 11 10	Kaipara–Auckland.
Auckland–Puniu	105 36	45 56	51 0	8 60	1,057 10 2	19,451 14 1	102,992 16 3	146,997 1 8	208,899 19 9	162,498 3 8	641,897 5 7	43,649 19 11	685,547 5 6	Auckland–Puniu.
Napier–Manawatu	58 36	28 23	30 13	...	707 7 5	1,708 5 1	21,560 18 9	46,947 10 0	126,340 10 8	94,153 8 3	291,418 0 2	31,968 7 8	323,386 7 10	Napier–Manawatu.
Wellington–Masterton	68 39	19 9	24 58	24 52	1,788 18 9	1,517 4 10	30,912 15 1	79,748 13 3	72,367 4 3	141,768 8 0	328,103 4 2	151,378 8 1	479,481 12 3	Wellington–Masterton.
Patea–Manawatu	67 56	...	65 48	2 8	741 15 7	2,505 3 1	1,845 7 6	23,728 10 5	82,384 14 11	156,438 3 10	267,643 15 4	109,473 18 2	377,117 13 6	Patea–Manawatu.
Manawatu–Foxton	24 73	24 73	...	...	...	...	...	...	30,568 8 8	46,160 15 7	76,729 4 3	2,341 12 8	79,070 16 11	Manawatu–Foxton.
Waitara–Patea	19 73	11 13	8 60	...	163 7 0	798 4 10	492 14 5	24,122 12 1	29,516 10 0	27,011 1 5	82,104 9 9	26,020 6 0	108,124 15 9	Waitara–Patea.
Preliminary Surveys:—														Preliminary Surveys:—
Thames–Waikato	...	...	...	...	...	...	279 1 2	67 9 9	3 10 0	7 5 0	357 5 11	...	357 5 11	Thames–Waikato.
Mercer–Cambridge(1)	...	...	...	...	...	...	...	...	...	...	...	...	...	Mercer–Cambridge.
Cambridge–Taupo(1)	...	...	...	...	...	...	...	...	...	...	...	...	...	Cambridge–Taupo.
Masterton–Woodville	...	...	...	...	...	...	...	...	...	205 14 3	205 14 3	...	205 14 3	Masterton–Woodville.
Tokano–Napier	...	...	...	...	...	...	...	20 16 0	...	...	20 16 0	...	20 16 0	Tokano–Napier.
Waipukurau–Gorge(2)	...	...	...	...	...	...	...	...	...	...	...	...	...	Waipukurau–Gorge.
Totals, North Island...	391 48	145 2	183 6	63 40	4,458 18 11	36,546 2 5	165,970 3 7	344,757 18 10	580,331 15 10	648,890 19 0	1,780,955 18 7	408,211 15 0	2,189,167 13 7	Totals, North Island.
SOUTH ISLAND.														**SOUTH ISLAND.**
Nelson–Foxhill	20 11	19 10	...	1 1	60 0 0	546 19 6	3,293 19 4	34,802 15 5	46,635 17 7	26,469 6 0	111,808 17 10	6,939 1 3	118,747 19 1	Nelson–Foxhill.
Westport–Mount Rochfort ...	19 19	...	19 19	...	...	...	...	1,126 3 2	49,293 15 8	53,195 6 8	103,615 5 6	79,868 2 9	183,483 8 3	Westport–Mount Rochfort.
Brunner–Greymouth	7 40	7 40	...	...	...	1,401 4 4	5,493 4 1	34,384 7 6	47,858 5 10	25,286 14 8	114,423 16 5	10,802 3 5	125,225 19 10	Brunner–Greymouth.
Picton–Blenheim	18 52	17 10	...	1 42	...	1,182 18 8	31,954 16 3	40,997 14 5	33,322 17 1	45,529 0 10	152,987 7 3	3,575 18 2	156,563 5 5	Picton–Blenheim.
Kowai–Waitaki	147 17	120 22	26 75	...	664 13 11	106,090 3 10	106,959 11 0	143,020 7 11	200,929 10 4	267,549 15 11	825,214 2 11	45,557 0 0	870,771 2 11	Kowai–Waitaki.
Canterbury Branches	101 49	97 11	4 38	...	120 0 0	1,140 12 0	34,228 8 8	148,742 0 7	85,356 0 1	39,288 7 7	308,875 8 11	4,264 19 7	313,140 8 6	Canterbury Branches.
Waitaki Bridge	0 57	0 57	...	...	153 17 6	10,106 3 8	20,475 9 7	8,745 15 8	18,707 8 5	17,714 15 7	75,903 10 5	1,264 0 0	77,167 10 5	Waitaki Bridge.
Waitaki–Invercargill	232 79	112 31	89 1	31 47	6,702 17 3	47,069 7 0	233,051 19 5	248,880 19 4	522,344 16 5	333,458 6 1	1,391,508 5 6	349,353 1 9	1,740,861 7 3	Waitaki–Invercargill.
Tokomairiro–Lawrence... ...	22 0	...	22 0	...	...	122 4 11	525 10 8	35,204 19 10	36,137 7 8	73,435 7 9	145,425 10 10	17,782 12 1	163,208 2 11	Tokomairiro–Lawrence.
Winton–Kingston	68 36	30 50	37 66	...	...	851 6 4	1,796 4 3	5,917 0 10	80,262 10 1	76,197 15 7	165,024 17 1	55,460 9 7	220,485 6 8	Winton–Kingston.
Preliminary Surveys:—														Preliminary Surveys:—
Foxhill–Brunner	...	...	...	...	...	...	...	2,417 3 8	452 2 11	3 12 6	2,872 19 1	...	2,872 19 1	Foxhill–Brunner.
Foxhill–Southwards	...	...	...	...	...	...	...	...	346 6 8	102 0 0	448 6 8	...	448 6 8	Foxhill–Southwards.
Greymouth–Christchurch ...	...	...	...	...	...	...	...	...	795 18 3	2 2 6	798 0 9	...	798 0 9	Greymouth–Christchurch.
Hokitika–Christchurch... ...	...	...	...	...	...	...	...	...	...	34 16 8	34 16 8	...	34 16 8	Hokitika–Christchurch.
Greymouth–Hokitika	...	...	...	...	...	...	...	...	1,561 18 11	1,069 7 0	2,631 5 11	...	2,631 5 11	Greymouth–Hokitika.
Hokitika–Malvern	...	...	...	...	...	...	...	468 0 3	...	...	468 0 3	...	468 0 3	Hokitika–Malvern.
Hokitika Survey Office ...	...	...	...	...	...	...	...	...	...	550 0 0	550 0 0	50 0 0	600 0 0	Hokitika Survey Office.
Blenheim–Hurunui	...	...	...	...	...	...	...	...	...	347 6 5	347 6 5	124 16 0	472 2 5	Blenheim–Hurunui.
Oamaru–Waireka	...	...	...	...	...	...	474 1 4	...	19 5 5	...	493 6 9	...	493 6 9	Oamaru–Waireka.
Dunedin–Moeraki(3)	...	...	...	...	...	...	...	...	...	...	...	...	...	Dunedin–Moeraki.
Clutha–Mataura(3)	...	...	...	...	...	...	...	...	...	...	...	...	...	Clutha–Mataura.
Waipihi–Cromwell	...	...	...	...	...	...	100 0 0	...	...	...	100 0 0	...	100 0 0	Waipihi–Cromwell.
Miscellaneous	...	...	...	...	...	...	...	...	...	7 11 6	7 11 6	...	7 11 6	Miscellaneous.
Totals, South Island...	638 40	404 71	199 39	34 10	7,701 8 8	168,511 0 3	438,353 4 7	704,707 8 7	1,124,024 1 4	960,241 13 3	3,403,538 16 8	575,042 4 7	3,978,581 1 3	Totals, South Island.
SUMMARY.														**SUMMARY.**
North Island	391 48	145 2	183 06	63 40	4,458 18 11	36,546 2 5	165,970 3 7	344,757 18 10	580,331 15 10	648,890 19 0	1,780,955 18 7	408,211 15 0	2,189,167 13 7	North Island.
South Island	638 40	404 71	199 39	34 10	7,701 8 8	168,511 0 3	438,353 4 7	704,707 8 7	1,124,024 1 4	960,241 13 3	3,403,538 16 8	575,042 4 7	3,978,581 1 3	South Island.
Totals	1030 8	549 73	382 45	97 50	12,160 7 7	205,057 2 8	604,323 8 2	1,049,465 7 5	1,704,355 17 2	1,609,132 12 3	5,184,494 15 3	983,253 19 7	6,167,748 14 10	Totals.
General.														**General.**
Material	...	...	...	...	...	...	...	...	...	29,881 15 6	29,881 15 6	...	29,881 15 6	Material.
Unapportionable	...	...	...	...	...	641 9 7	...	...	...	...	641 9 7	...	641 9 7	Unapportionable.
	1030 8	549 73	382 45	97 50	12,160 7 7	205,698 12 3	604,323 8 2	1,049,465 7 5	1,704,355 17 2	1,639,014 7 9	5,215,018 0 4	†983,253 19 7	6,198,271 19 11	

(1) Included in Auckland–Punui. (2) Included in Napier–Manawatu. (3) Included in Waitaki–Invercargill. † This amount includes liabilities for all existing contracts, some of which extend into the year 1878, and for payment of material ordered from Home.

No. 10.—ROLLING STOCK AND PLANT.

PARTICULARS of ROLLING STOCK ordered to 30th June, 1876.

—	Locomotives.														Carriages.										Trucks.					Wagons, &c.					Wagon Ironwork.
		Fairlies.				Bogies.									1st Class.			Composite.			2nd Class.			Passenger Brakes.											
	Special for Fell's Central Rail System.	23 tons. 9-in. cyl. 8 wheels.	32 tons. 8 wheels.	10-in. cyl. 8 wheels.	25 tons. 10½-in. cyl. 8 wheels.	17 tons. 10½-in. cyl. 6 wheels.	12 tons. 9½-in. cyl. 6 wheels.	25 tons. 14-in. wheels.	17 tons. 10½-in. cyl. wheels, coupled.	28 tons. 13-in. cyl. wheels, coupled.	12 tons. 8-in. cyl. wheels, coupled.	12 tons. 9½-in. cyl. wheels, coupled.	8 tons. 8-in. cyl. wheels, coupled.	8 tons. 8-in. cyl. wheels, coupled.	6 wheels.	4 wheels.	4-wheel Saloon.	6 wheels.	4 wheels.	Cross-seated.	6 wheels.	4 wheels.	4-wheel Saloon.	Special.	4 wheels.	Carriage.	Timber.	Cattle.	Sheep.	Horse Boxes.	Covered Goods.	High Side.	Low Side.	Iron Hopper.	Goods Brakes.	Sets.
North Island, Colonial Government Stock	4	1	...	3	...	...	4	...	21	...	...	8	2	3	9	8	...	20	26	...	22	35	...	2	22	...	32	20	20	15	43	119	126	50	10	250
South Island, Colonial Government Stock	...	...	1	3	2	4	3	1	28	...	...	8	12	...	28	6	...	62	16	20	75	21	...	...	37	...	52	58	114	24	206	129	82	332	23	500
South Island, Canterbury Provincial Stock	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	2	...	...	...	4	...	...	...	...	200
South Island, Otago Provincial Stock ...	...	...	...	...	...	...	...	...	...	4	3	...	...	...	...	...	4	...	...	...	...	...	3	...	...	...	...	...	...	...	87	...	...	...	...
Total	4	1	1	6	2	4	7	6	49	4	3	16	14	3	37	14	4	82	42	20	102	56	3	2	59	2	84	78	134	39	253	335	208	382	33	950

PARTICULARS of ROLLING STOCK received up to 30th June, 1876.

NORTH ISLAND.

Auckland–Kaipara	...	...	...	1	...	...	1	...	...	...	...	1	...	...	1	1	...	1	2	...	2	3	...	...	...	...	6	2	2	...	8	21	...	...	2	...
Auckland–Puniu	...	1	...	...	...	...	...	...	9	...	...	...	...	...	5	3	...	7	...	...	8	8	...	...	5	...	26	10	4	2	30	90	48	20	7	...
Napier–Takapau	...	...	...	...	...	...	1	...	2	...	...	3	...	...	1	1	...	5	2	...	5	5	...	...	4	...	5	2	...	...	3	59	26	...	2	...
Wellington–Masterton	...	...	1	...	...	...	2	...	...	...	...	2	...	...	1	...	...	2	2	...	2	4	...	2	2	...	12	...	...	...	13	30	21	...	1	...
Manawatu–Foxton	...	...	...	...	...	...	...	...	1	...	...	...	...	3	...	...	...	1	...	...	...	6	...	...	...	...	4	...	...	...	...	52	10	...	1	...
Wanganui–Manawatu	...	...	1	...	...	...	...	...	2	...	...	...	...	...	1	1	...	1	...	...	2	2	...	...	1	...	...	...	...	...	...	15	...	...	2	...
Waitara–New Plymouth	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	1	...	...	2	...	...	...	...	...	...	4	2	...	...	...
Total North Island	...	1	...	3	...	...	4	...	14	...	...	6	2	3	9	6	...	17	8	...	19	29	...	2	14	...	53	14	6	2	54	271	107	20	15	...

SOUTH ISLAND.

Brunner–Greymouth	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	8	50	2	...
Westport–Mount Rochfort	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	61	2	...
Nelson–Foxhill	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	2	...	...	2	...	...	2	...	4	...	...	...	...	10	10	...	...	...
Picton–Blenheim	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	1	...	...	...	2	...	4	...	...	...	3	6	20	...	...	...
Canterbury Branch Railways	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	1	...	...	10	...	...	10	...	...	...	...	...	...	...	...	100	...	50	10	...
Christchurch–Waitaki	...	...	...	...	...	4	...	6	1	...	...	1	...	...	7	...	...	15	...	...	20	...	...	...	4	2	8	...	...	4	3	277	4	...	5	...
Waitaki–Moeraki	...	...	...	...	...	...	...	...	3	...	1	...	...	...	4	...	2	6	...	...	14	...	...	...	4	...	...	4	...	...	...	34	20	...	...	...
Moeraki–Mataura	...	...	1	3	2	...	...	...	7	...	...	1	...	...	5	...	...	8	...	20	8	...	...	...	6	...	7	...	...	24	163	90	62	3	...
Mataura–Kingston	...	...	...	...	...	...	1	...	4	4	...	1	...	...	3	2	...	6	...	...	6	4	...	...	7	...	22	...	...	3	106	63	20	...	...	...
Total South Island	...	...	1	3	2	4	3	6	15	4	1	10	12	...	19	6	2	37	14	20	49	19	...	...	25	2	45	4	...	4	33	696	215	243	22	...

No. 10.—ROLLING STOCK AND PLANT—*continued.*

PARTICULARS OF MISCELLANEOUS STOCK ORDERED TO 30TH JUNE, 1876.

	Turntables.		Wagon Traversers.	Cranes.							Weighbridges.		Weighing Machines.		Platform Trucks.	Drilling Machines.	Sleeper-dressing Machines.	Rail Presses.
	40 Feet.	13 Feet.		12-ton Steam Travelling.	10-ton Overhead Travelling.	10-ton Hand Wharf.	5-ton Breakdown.	2-ton Hand Wharf.	2-ton, with vertical Boiler on Trolly.	1½-ton Warehouse.	Wagon.	Cart.	5 cwt.	3 cwt.				
North Island	...	9	7	...	1	2	13	12	6	42	9	10	20	10	102	8	...	...
South Island	2	14	8	2	1	2	3	3	2	10	7	3	20	10	24	...	5	3
Total	2	23	15	2	2	4	16	15	8	52	16	13	40	20	126	8	5	3

PARTICULARS OF MISCELLANEOUS STOCK RECEIVED TO 30TH JUNE, 1876.

North Island	...	9	7	...	1	2	13	...	6	42	9	10	20	10	102	8	...	...
South Island	2	14	8	2	1	2	3	3	2	10	7	3	20	10	24	...	5	3
Total	2	23	15	2	2	4	16	3	8	52	16	13	40	20	126	8	5	3

No. 10.—ROLLING STOCK AND PLANT—*continued.*

SCHEDULE of PERMANENT WAY MATERIAL.

ORDERS.

Lines.	Order. Memo.	Order. Date.	Miles.	Weight per Yard.	Rails.	Fang Bolts.	Spikes.	Sole Plates.	Top Clips.	Steel Joints.	Points and Crossings.
					Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Sets.
*Auckland–Kaipara ...	27/76	June 1/76	24	40 lb.	1,509	...	38	...	...	56	...
Kaipara–Riverhead ...	28/73	June 2/73	18	„	1,132	44	21	47	33	47	10
Auckland–Mercer ...	53/71	Nov. 25/71	10	„	629	25	12	26	19	26	...
Ditto ...	123/72	Oct. 25/72	25	„	1,572	61	30	65	46	65	...
Ditto ...	129/72	Nov. 23/72	...	„	...	...	...	...	...	...	25
Mercer–Newcastle ...	1/74	Jan. 10/74	25	„	1,572	61	30	65	46	65	20
Waitara–New Plymouth	24/72	Jan. 23/72	10	„	629	25	12	26	19	26	...
Ditto ...	28/73	June 2/73	2	„	126	5	3	5	4	5	...
*Waitara–Patea ...	27/76	June 1/76	10	„	629	...	16	...	...	23	...
Wellington-Masterton...	53/71	Nov. 25/71	10	„	629	25	12	26	19	26	...
Ditto ...	24/72	Jan. 23/72	11	„	692	27	13	29	20	29	...
Ditto ...	129/72	Nov. 23/72	...	„	...	...	...	...	...	...	25
Napier–Waipukurau ...	24/72	Jan. 23/72	12	„	754	30	15	31	22	31	...
Ditto ...	28/73	June 2/73	35	„	2,200	85	42	91	65	91	20
Manawatu–Wanganui...	28/73	June 2/73	15	„	943	37	18	39	28	39	10
Ditto ...	1/74	Jan. 10/74	15	„	943	37	18	39	28	39	10
Westport–Mt. Rochfort	1/74	Jan. 10/74	20	„	1,257	50	24	51	38	51	10
Brunner–Greymouth ...	53/71	Nov. 25/71	8	„	503	20	10	21	15	21	...
Nelson–Foxhill ...	138/73	Jan. 18/73	21	„	1,321	51	25	55	39	55	12
*Ditto ...	27/76	June 1/76	1	„	63	...	2	...	...	3	...
*Picton–Blenheim ...	27/76	June 1/76	0¾	„	47	...	1¼	...	...	2¼	...
Ditto ...	53/71	Nov. 25/71	12	„	754	30	15	31	22	31	...
Ditto ...	53/71	Nov. 25/71	3	Steel	188	8	4	8	6	8	...
Ditto ...	28/73	June 2/73	8	40 lb.	503	20	9	22	15	22	10
Rakaia–Timaru ...	24/72	Jan. 23/72	15	„	943	37	18	39	28	39	...
Ditto ...	123/72	Oct. 25/72	30	„	1,886	74	36	78	56	78	...
Ditto ...	129/72	Nov. 23/72	...	„	...	...	...	...	...	...	25
Ditto ...	28/73	June 2/73	20	„	1,258	49	24	52	37	52	40
Waitaki–Moeraki ...	28/73	June 2/73	41	„	2,578	100	46	105	77	105	20
Moeraki–Dunedin ...	1/74	Jan. 10/74	25	„	1,572	62	30	65	46	65	20
Dunedin–Clutha ...	68/71	May 27/71	6	„	377	15	7	15	11	15	10
Ditto ...	26/71	Aug. 31/71	10	„	629	24	12	26	19	26	10
Ditto ...	53/71	Nov. 25/71	3	Steel	188	8	4	8	6	8	...
Ditto ...	123/72	Oct. 25/72	25	40 lb.	1,572	62	30	65	46	65	...
Ditto ...	129/72	Nov. 23/72	...	„	...	...	...	...	...	...	25
Clutha–Mataura ...	1/74	Jan. 10/74	25	„	1,572	62	30	65	46	65	10
Tokomairiro–Lawrence	28/73	June 2/73	23	„	1,447	56	25	59	44	59	40
Invercargill–Mataura ...	53/71	Nov. 25/71	12	„	754	30	15	31	22	31	...
Ditto ...	28/73	June 2/73	28	„	1,741	68	33	73	52	72	...
Winton–Kingston ...	28/73	June 2/73	23	„	1,447	56	25	59	44	59	30
Ditto ...	1/74	Jan. 10/74	27	„	1,698	67	32	70	51	70	10
TO BE DELIVERED AT—											
Auckland	39/74	Feb. 26/74	60	„	3,975	63	87	...	...	138	...
The Bluff	39/74	Feb. 26/74	62	„	4,025	64	89	...	...	142	...
Lyttelton	60/74	Sept. 28/74	45½	„	3,000	48	67	...	...	105	...
Auckland	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	30
Wellington	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	30
Lyttelton	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	60
Port Chalmers	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	30
The Bluff	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	50
*Auckland	12/76	Mar. 10/76	...	„	...	...	27	...	...	...	...
*Lyttelton	12/76	Mar. 10/76	...	„	...	...	9½	...	...	...	...
*Port Chalmers	12/76	Mar. 10/76	...	„	...	...	7	...	...	...	...
*The Bluff	12/76	Mar. 10/76	...	„	...	...	16½	...	...	...	...
*Auckland	32/76	June 29/76	...	„	...	...	...	...	...	...	75
*Wellington	32/76	June 29/76	...	„	...	...	...	...	...	...	35
Colonial Made	...	...	...	„	...	...	...	...	...	...	343
	...	...	776¼	...	49,257	1,586	1,067¼	1,487	1,069	1,955½	1,045

Orders marked with asterisk are not yet completed.

No. 10.—ROLLING STOCK AND PLANT—*continued.*

SCHEDULE of PERMANENT WAY MATERIAL.

ORDERS.

Lines.	Order. Memo.	Order. Date.	Miles.	Weight per yard.	Rails.	Fang Bolts.	Spikes.	Sole Plates.	Steel Joints.	Fish Plates.	Bolts and Nuts.	Wood Keys.	Chairs.	Points and Crossings.
					Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	No.	Tons.	Sets.
Canterbury Branch Lines	11/72	Jan. 20/72	20	30 lb.	944	...	29	...	34	...	...	...	...	10
Ditto ...	78/72	June 8/72	92	„	4,340	...	132	...	155	...	...	...	...	30
Ditto ...	63/75	Aug. 31/75	...	„	...	...	...	...	20	...	...	...	...	...
Picton–Blenheim ...	24/72	Jan. 23/72	12	„	566	...	17	...	20	...	...	...	...	...
			124	...	5,850	...	178	...	229	...	...	...	...	40
Manawatu Tramway ...	27/71	Sept. 2/71	3	25 lb.	121	...	4	...	...	...	...	...	...	2
Addington–Rangiora ...	...	Mar. 2/71	6	70 lb.	767	...	28	...	...	39	...	28,581	274	...
Ditto ...	...	...	13	„	1,438	...	48	...	3	54	14	70,269	431	30
			19	...	2,205	...	76	...	3	93	14	98,850	705	30
Rangiora–Kowai ...	138/73	Jan. 18/73	14	56 lb.	1,252	26	18	...	...	48	13	...	...	10
Selwyn–Rakaia ...	9/71	Mar. 15/71	13	„	1,144	58	28	74	...	54	...	...	...	...
Auckland ...	...	...	6½	„	1,372	and fastenings		...	...	...	...	...	...	41
Kawakawa ...	...	...	3	...	268	„	„	...	...	...	...	...	...	...
			36½	...	4,036	...	...	...	...	...	...	...	...	51
To be Delivered at—														
Wellington	59/74	Sept. 26/74	89	52 lb.	7,500	92	128	...	...	244	69	...	...	...
Ditto ...	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	...	...	...	80
*Ditto ...	27/76	June 11/76	5	„	410	...	7	...	...	15	4	...	...	...
*Ditto ...	32/76	June 29/76	...	„	...	...	10	...	...	...	...	...	...	80
*Auckland ...	27/76	June 1/76	6	„	492	...	8	...	...	17	5	...	...	...
*Ditto ...	32/76	June 29/76	...	„	...	...	...	...	...	...	...	...	...	20
Port Chalmers ...	59/74	Sept. 26/74	11	„	1,000	11	16	...	...	29¾	8½	...	...	...
Ditto ...	61/74	Sept. 30/74	...	„	...	...	...	...	...	...	...	...	...	50
*Ditto ...	27/76	June 1/76	28½	„	2,337	...	39	...	...	86	23	...	...	...
*The Bluff	27/76	June 1/76	9	„	738	...	12	...	...	26	7	...	...	...
	...	...	148½	...	12,477	103	220	...	...	417¾	116½	...	...	230
Wellington–Masterton (Summit Incline)	30/74	May 2/74	3	Steel 70 lb.	596	and fastenings		...	...	...	...	...	...	...

Orders marked with asterisk are not yet completed.

No. 11.—ROLLING

ESTIMATE of Cost of Various Classes of Rolling Stock, compiled from English Advices and actual Import Freights, with average Colonial Charges, 30th June, 1876.

—		Locomotives.								Carriages.								Trucks.				Wagons, etc.					
		Fairlies.		Bogies.						1st Class.		Composite.			2nd Class.												
		10-in. cyl. 8 wheels.	23 tons. 9-in. cyl. 8 wheels.	17 tons. 10½-in. cyl. 6 wheels.	12 tons. 9½-in. cyl. 6 wheels.	25 tons. 14-in. cyl. 8 wheels.	17 tons. 10½-in. cyl. 6 wheels, coupled.	12 tons. 9½-in. cyl. 4 wheels, coupled.	8 tons. 6-in. cyl. 4 wheels, coupled.	6 wheels.	4 wheels.	6 wheels.	4 wheels.	Cross-seated.	6 wheels.	4 wheels.	Passenger Brakes, 4-wheel.	Timber.	Cattle.	Sheep.	Horse Boxes.	Covered Goods.	High Side.	Low Side.	Iron Hopper.	Goods Brakes.	Tarpaulins.
		£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Home Charges ...	Cost Price F.O.B. material in England	2,815	2,750	1,395	1,091	2,125	1,145	1,012	682	349	244	324	259	...	269	189	234	*31	*35	*40	*56	*35	*36	*35	*64	110	...
	Freight on „ „	200	200	130	130	275	130	130	130	63	37	59	37	...	56	36	24	2	2	2	3	3	2	3	14	24	...
	Cost price F.O.B. Wheels	...	...	...	...	...	...	...	...	26	17	26	17	...	26	17	17	17	17	17	17	17	17	17	17	17	...
	Freight on „	...	...	...	...	...	...	...	...	6	4	6	4	...	6	4	4	4	4	4	4	4	4	4	4	4	...
	Insurance, Commission, Shipping Charges, Contingencies	150	147	76	61	120	64	57	41	22	15	21	16	...	18	12	14	3	3	3	4	3	3	3	5	8	...
Colonial Charges ...	Lighterage and Wharfage	30	30	25	15	30	25	15	8	5	3	5	3	...	5	3	3	†	†	†	†	†	†	†	2	2	...
	Erection	50	50	25	20	50	25	20	20	16	14	16	14	...	16	14	14	20	50	50	115	50	25	23	12	12	...
	Contingencies	16	15	8	7	13	7	6	5	2	2	2	2	...	2	2	2	2	2	2	2	2	2	2	1	2	...
Total cost in Colony, erected at principal Ports ...		3,261	3,192	1,659	1,324	2,613	1,396	1,240	886	489	336	459	352	‡	398	277	312	79	113	118	201	114	89	87	119	179	4

* Ironwork only. † Being very small Lighterage, is included under Contingencies. ‡ Dunedin–Port Chalmers stock, reliable details not available.

No. 12.—WATER RACES.

RETURN showing Expenditure and Liabilities for Survey, Construction of, and Subsidies for Water Races on Gold Fields, to 30th June, 1876.

Locality and Name of Company.	Distance.	Expenditure. Survey and Construction, 1870–75.	Subsidies, 1870–75.	Survey and Construction. 1875–76.	Subsidies. 1875–76.	Totals.	Liabilities. Contracts.	Engineer's Estimate of additional Work during Year.	Subsidies.	Totals.	Total Expenditure and Liabilities.	Locality and Name of Company.
NORTH ISLAND.	Mls. chs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	**NORTH ISLAND.**
AUCKLAND :—												AUCKLAND :—
Thames	11 70	40,492 9 6	...	18,144 6 3	...	58,636 15 9	6,484 17 10	500 0 0	...	6,984 17 10	*65,621 13 7	Thames.
SOUTH ISLAND												**SOUTH ISLAND.**
WESTLAND :—												WESTLAND :—
Hohonu	4 65	3 7 0	2,521 12 11	...	...	2,524 19 11	...	...	...	...	2,524 19 11	Hohonu.
Hibernian	4 36	9 13 2	2,000 0 0	...	...	2,009 13 2	...	...	...	...	2,009 13 2	Hibernian.
New River ...	4 52	18 12 6	3,502 10 3	...	...	3,521 2 9	...	...	1,500 0 0	1,500 0 0	5,021 2 9	New River.
Vaimea	15 75	78,004 7 2	...	20,113 19 7	...	98,118 6 9	3,409 19 4	8,471 13 11	...	11,881 13 3	110,000 0 0	Waimea.
Mikonui	15 0	343 14 0	...	1,099 18 5	...	1,443 12 5	...	...	...	...	1,443 12 5	Mikonui.
Kanieri	...	1 5 6	9,766 14 6	...	794 3 10	10,562 3 10	...	...	...	...	10,562 3 10	Kanieri.
NELSON :—												NELSON :—
Nelson Creek ...	19 15	15,530 19 10	...	17,433 9 10	...	32,964 9 8	40,623 9 8	8,912 0 8	...	49,535 10 4	82,500 0 0	Nelson Creek.
Napoleon Hill ...	47 40	256 11 7	...	1 5 0	...	257 16 7	...	...	...	...	257 16 7	Napoleon Hill.
Charleston, Four-Mile	...	...	...	98 8 0	...	98 8 0	...	...	...	...	98 8 0	Charleston, Four-Mile.
OTAGO :—												OTAGO :—
Mount Ida ...	64 44	35,391 2 9	...	14,163 5 6	...	49,554 8 3	4,646 14 6	...	...	4,646 14 6	54,201 2 9	Mount Ida.
Arrow	3 30	...	612 10 0	...	...	612 10 0	...	...	...	...	612 10 0	Arrow.
Beaumont and Tuapeka	60 0	...	640 0 0	...	...	640 0 0	...	...	1,360 0 0	1,360 0 0	2,000 0 0	Beaumont and Tuapeka
Carrick Range ...	17 20	...	2,250 0 1	...	1,290 9 0	3,540 9 1	...	...	4,459 11 0	4,459 11 0	8,000 0 1	Carrick Range.
Waipori	...	11,368 8 6	...	...	...	11,368 8 6	...	...	...	...	11,368 8 6	Waipori.
Mount Pisgah ...	...	...	200 0 0	...	...	200 0 0	...	...	800 0 0	800 0 0	1,000 0 0	Mount Pisgah.
DEPARTMENTAL :												DEPARTMENTAL :—
Salaries, Travelling, Advertising, &c.	...	3,820 7 9	...	1,046 3 8	...	4,866 11 5	200 0 0	...	...	200 0 0	5,066 11 5	Salaries, Travelling, Advertising, &c.
Total	...	185,240 19 3	21,493 7 9	72,100 16 3	2,084 12 10	280,919 16 1	55,365 1 4	17,883 14 7	8,119 11 0	81,368 6 11	362,288 3 0	Total.

* Credit—Unused Ironwork, £4,800.

RETURN showing the Amount of Subsidies, Payments of Interest on Sums Advanced, Refunds, &c.

——	Amount of Subsidy.	Payments on Subsidy.	Balance.	Payments of Interest.	Amount Refunded.	——
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Hohonu	2,494 12 11	2,494 12 11	...	271 16 9	547 1 4	Hohonu.
Hibernian	2,000 0 0	2,000 0 0	...	408 11 5	...	Hibernian.
New River	5,000 0 0	3,502 10 3	1,497 9 9	639 14 8	...	New River.
Kanieri	10,560 18 4	10,560 18 4	...	560 18 4	...	Kanieri.
Arrow	612 10 0	612 10 0	...	116 3 9	...	Arrow.
Beaumont and Tuapeka	2,000 0 0	640 0 0	1,360 0 0	...	...	Beaumont and Tuapeka.
Carrick Range	7,594 7 4	3,884 16 5	3,709 10 11	171 19 11	...	Carrick Range.
Mount Pisgah	1,000 0 0	200 0 0	800 0 0	3 10 0	...	Mount Pisgah.
Total	31,262 8 7	23,895 7 11	7,367 0 8	2,172 14 10	547 1 4	Total.

No. 13.—COAL MINES.

RETURN of EXPENDITURE and LIABILITIES for PROSPECTING for and DEVELOPING, to 30 JUNE, 1876.

PROVINCE.	EXPENDITURE.						LIABILITIES.	TOTALS.	PROVINCE.
	Prospecting and Developing.					Totals.			
	1871–72.	1872–73.	1873–74.	1874–75.	1875–76.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
AUCKLAND	24 3 9	150 0 0	943 5 2	135 0 0	...	1,252 8 11	...	1,252 8 11	AUCKLAND.
NELSON	233 4 2	459 16 6	1,040 7 5	2,500 15 1	2,255 3 3	6,489 6 5	1,070 12 1	7,559 18 6	NELSON.
WESTLAND	...	359 16 0	220 8 3	30 0 0	...	610 4 3	...	610 4 3	WESTLAND.
CANTERBURY	92 8 0	53 0 2	100 0 0	...	...	245 8 2	...	245 8 2	CANTERBURY.
OTAGO	193 9 9	44 0 0	83 10 0	...	...	320 19 9	...	320 19 9	OTAGO.
GENERAL EXPENSES	...	...	18 2 0	4 1 0	...	22 3 0	...	22 3 0	GENERAL EXPENSES.
TOTALS	543 5 8	1,066 12 8	2,405 12 10	2,669 16 1	2,255 3 3	8,940 10 6	1,070 12 1	10,011 2 7	TOTALS.

No. 14.—RAILWAY TRAFFIC RETURNS.

CANTERBURY.

EARNINGS and EXPENDITURE for the YEAR ending 31st MARCH, 1876.

MONTH ENDING	EARNINGS.	EXPENDITURE.		
		Engineer's Department.	Traffic Department.	Total.
1875.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
April	15,988 7 11	4,910 12 10	4,795 15 5	9,706 8 3
May	11,183 5 4	5,199 0 3	4,706 11 5	9,905 11 8
June	12,261 12 5	5,237 13 4	5,291 8 6	10,529 1 10
July	10,669 18 4	5,750 6 2	4,754 13 3	10,504 19 5
August	12,202 2 2	5,204 18 0	4,271 14 8	9,476 12 8
September	15,159 0 8	5,562 3 6	4,370 16 9	9,933 0 3
October	14,964 10 1	5,780 14 8	4,503 19 6	10,284 14 2
November	14,729 1 10	5,659 7 8	4,544 14 8	10,204 2 4
December	17,293 2 3	6,646 9 3	4,984 12 9	11,631 2 0
1876.				
January	17,471 9 4	5,713 0 2	4,633 17 6	10,346 17 8
February	18,090 12 2	6,063 9 10	4,592 8 6	10,655 18 4
March	25,793 14 11	6,539 4 11	4,795 15 4	11,335 0 3
Total	185,806 17 5	68,267 0 7	56,246 8 3	124,513 8 10

Excess of Earnings over Expenditure, £61,293 8s. 7d.; Working Expenses, 67·01 per cent.

NOTE.—The Renewal Fund of £4,335 11s. 9d. is not deducted from the net earnings.

OTAGO.

[Extracted from the Report of the Railways in the Province of Otago.]

CENTRAL DIVISION.—DUNEDIN and PORT CHALMERS, CLUTHA, and GREEN ISLAND BRANCH RAILWAYS, for Year ending 31st March, 1876.

TABLE No. 1. Description.		FORWARDED TONNAGES. 1876.	Corresponding Period, 1875.	TABLE No. 2. Description.	1876. No.	1876. Value.	CORRESPONDING PERIOD. No.	Corresponding Period. Value.	INCREASE.	DECREASE.
						£ s. d.		£ s. d.	£ s. d.	£ s. d.
Merchandise ...	Tons	49,977	81,917	Passengers		31,632 8 11	93,774	9,210 7 9	22,422 1 2	
Flax	„	7		I Single / II Single / I Return / II Return	279,873					
Iron, &c.... ...	„	1,259		Season Tickets	653	692 11 9	...	...	692 11 9	
Coal	„	29,172		Parcels ...	17,290	984 3 1	...	...	984 3 1	
Other Mineral ...	„	10,743		Cloak Room ...	...	68 14 1	...	...	68 14 1	
Grain—Wheat ...	„	2,973		Excess Luggage	...	335 2 0	...	...	335 2 0	
„ Oats ...	„	2,666		Live Stock ...	...	57 19 3	...	...	57 19 3	
„ Barley ...	„	62		Merchandise ...	...	30,018 4 10	...	11,967 6 2	18,050 18 8	
Flour	„	2,119		Storage ...	...	106 17 0	...	...	106 17 0	
Other Produce ...	„	1,589		Wharfage ...	...	211 12 4	...	...	211 12 4	
Firewood... ...	Trucks			Labour ...	...	...	...	...	...	
Heavy Timber ...	Tons	124		Rent	...	72 15 0	...	376 2 8	...	*303 7 8
Sawn Timber ...	100 ft.	as 10,943 tons, 524,467		Jetty Dues ...	...	...	...	...	...	
Wool	Bales	as 4,278 tons 28,517		Weighbridge ...	...	124 0 6	...	...	124 0 6	
Live Stock ...	Trucks	51		Express License Fees ...	...	20 0 0	...	...	20 0 0	
Carriages ...	„	as 260 tons 1		Unclaimed moneys found...	...	7 3 6	...	...	7 3 6	
				Advertising space	...	5 0 0	...	...	5 0 0	
		115,722	81,917			64,336 12 3		21,553 16 7	†42,782 15 8	303 7 8

JAMES BARR, Auditor and Accountant.

* Instead of a decrease as above, this item would exhibit only a decrease of 12s. 8d., but for amounts conceded in compensation.

† *Sic* in original.—The column as printed adds to £43,086 3s. 4d.

NORTHERN DIVISION.—OAMARU and AWAMOKO and WAITAKI RAILWAYS for Year ending 31st March, 1876.

TABLE No. 1. Description.		FORWARDED TONNAGES. 1876.	Corresponding Period, 1875.	TABLE No. 2. Description.	1876. No.	1876. Value.	CORRESPONDING PERIOD. No.	Corresponding Period. Value.	INCREASE.	DECREASE.
						£ s. d.		£ s. d.		
Merchandise ...	Tons	729		Passengers						
Flax	„			I Single ... / II Single ... / I Return ... / II Return ...	5,235	1,026 17 9	...	Line not opened.		
Iron, &c.... ...	„	59		Season Tickets ...	1	2 0 0				
Coal	„	574		Parcels	...	33 19 3				
Other Mineral ...	„			Cloak Room ...	...	0 12 11				
Grain—Wheat ...	„	2,066		Excess Luggage ...	...	17 18 10				
„ Oats ...	„	1,387		Live Stock ...	...	3 13 0				
„ Barley ...	„	218		Merchandise ...	...	2,926 11 9				
Flour	„	939		Storage	...	34 6 0				
Other Produce ...	„	414		Wharfage	...					
Firewood ...	Trucks	862		Labour	...	6 9 8				
Heavy Timber ...	Tons			Rent						
Sawn Timber ...	100ft.	as 7,315 tons 36,574		Jetty Dues						
Wool	Bales	as 1,377 tons 9,180		Haulage	...	222 10 3				
Live Stock ...	Trucks	9½		Sundries	...	10 10 0				
Carriages ...	„	1		Express License Fees	...	5 0 0				
		15,992 tons				4,290 9 5				

JAMES BARR, Auditor and Accountant.

EARNINGS AND EXPENDITURE—*continued.*

SOUTHERN DIVISION.—BLUFF and WINTON and MATAURA RAILWAYS for Year ending 31st March, 1876.

TABLE No. 1.		FORWARDED TONNAGES.		TABLE No. 2.	1876.		CORRESPONDING PERIOD.		INCREASE.	DECREASE.
Description.		1876.	Corresponding Period, 1875.	Description.	No.	Value.	No.	Value.		
						£ s. d.		£ s. d.	£ s. d.	£ s. d.
Merchandise ...	Tons	36,532		Passengers ...	...	12,066 6 11	50,296	7,165 3 6	4,901 3 5	
Flax	,,	28		I Single						
Iron, &c. ...	,,	267		II Single						
Coal	,,	195		I Return	70,170	...	...	...	19,874	
Other Mineral ...	,,	1,392		II Return						
Grain—Wheat ...	,,	542		Season Tickets	...	...	...	...		
,, Oats ...	,,	370		Parcels ...	706	101 0 11	...	...	101 0 11	
,, Barley ...	,,	121		Cloak Room ...	...	...	...	...		
Flour	,,	200		Excess Luggage	...	...	...	...		
Other Produce ...	,,	185		Live Stock ...	...	67 19 3	...	...	67 19 3	
Firewood ...	Trucks	275		Merchandise ...	...	24,181 9 11	...	14,904 11 1		
Heavy Timber ...	Tons	...		Storage ...	...	2 18 0	...	6 2 3	...	3 4 2
Sawn Timber ...	100ft.	as 27,044 ts 13,522,006		Wharfage ...	...	...	...	...		
Wool	as 3 cwt Bales	23,419		Labour ...	...	...	...	...		
				Rent ...	...	...	...	...		
Live Stock ...	Trucks	88½		Jetty Dues ...	...	57 15 6	...	67 12 6	...	9 17 0
Carriages ...	,,			Workshops Account ...	...	23 16 1	...	...	23 16 1	
		...		Advertising ...	...	8 0 0	...	...	8 0 0	
				Sundry Accounts	...	...	...	20 7 0	...	20 7 0
		70,664	44,132			36,509 6 7		22,163 16 4	14,378 18 6	33 8 2

JAMES BARR,
Auditor and Accountant.

(9.)—BALANCE SHEET of EXPENDITURE for Year ending 31st March, 1876.

WORKING EXPENSES.

To Amount per Appropriation Ordinance, 1875-76	£ s. d. 69,509 18 0	By General Charges ...	£ s. d. ...	£ s. d. 1,710 0 0
		Traffic Department—		
		Northern Division ...	1,429 0 2	
		Central ,, ...	18,460 5 11	
		Southern ,, ...	7,769 2 9	27,658 8 10
		Locomotive Department—		
		Northern Division ...	1,764 1 11	
		Central ,, ...	10,881 9 2	
		Southern ,, ...	7,787 19 8	20,433 10 9
		Maintenance of Way—		
		Northern Division ...	920 16 5	
		Central ,, ...	7,750 15 9	
		Southern ,, ...	8,134 2 3	16,805 14 5
		Amount Contracted (outstanding since 1873-74)		244 8 2
				66,852 2 2
		Amount not expended		2,657 15 10
	£69,509 18 0			£69,509 18 0

STOCK AND CAPITAL.

To Amount applied for—	£ s. d.	By Expenditure—	£ s. d.	£ s. d.
Bluff Engines		Bluff Engines	8,389 16 11	
Do. Wagons	21,500 0 0	Do. Wagons	10,177 12 6	
Do. Alteration of Gauge		Alteration of Gauge ...	2,345 16 9	20,913 6 2
		Amount not expended		586 13 10
	£21,500 0 0			£21,500 0 0

JAMES BARR,
Auditor and Accountant.

RECEIPTS DURING APRIL, MAY, AND JUNE, 1876.

Canterbury.	£ s. d.	*Otago.*	£ s. d.
Receipts.—April	21,886 8 3	Receipts.—April	12,546 2 1
,, May	25,397 13 11	,, May	11,772 9 4
,, June (not received).		,, June	9,887 7 3
Total	£47,284 2 2	Total	£34,205 18 8

(Expenditure not furnished.)

No. 15.—TELEGRAPH EXTENSION.

RETURN showing the AMOUNT EXPENDED for TELEGRAPH PURPOSES out of the IMMIGRATION and PUBLIC WORKS LOAN, from the 1st July, 1875, to the 30th June, 1876.

No. of Miles of Poles.	No. of Miles of Wire.	Locality.	Amount. £ s. d.
		Christchurch to Hokitika, reconstruction, 146 miles ...	4,618 18 9
		Tokomairiro to Queenstown, reconstruction, 140 miles ...	837 15 9
		Greymouth to Hokitika, reconstruction, 30 miles	4,180 3 7
		Blenheim to Christchurch, reconstruction, 206 miles ...	4,732 17 5
118	236	Nelson to Lyell	14,724 15 9
	82	Greymouth to Lyell, second wire	1,678 13 10
	158	Christchurch to Dunedin, fourth and fifth wires, and Dunedin to Bluff, third and fourth wires (completion of)... ...	1,095 6 9
	34	Tokomairiro to Lawrence, second wire	194 14 6
14	14	Otago Heads Line	894 5 11
6	6	Kaitangata Line	398 2 1
21	21	Rangiora to Oxford	956 17 2
7	14	Outram Line	298 9 6
	18	Waipukurau to Porangahau, fourth wire	893 1 2
	32	Wellington to Wanganui, second wire (completion of ...	1,492 6 9
2	6	Ohinemutu Line	141 1 0
		Rangiriri to Mercer, reconstruction, 9 miles	93 13 9
168	621		37,231 3 8
		New Stations, also sundry material lying in stock, and expenditure on lines in course of construction not yet brought to charge	3,568 1 2
168	621		40,799 4 10

SUMMARY of TELEGRAPH EXPENDITURE out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1876.

Period.	Miles.		Amount.
	Poles.	Wire.	£ s. d.
To 30th June, 1872	801	1,260	58,297 8 9
„ „ 1873	170	559	32,998 3 3
„ „ 1874	270	704	34,442 18 4
„ „ 1875	404	1,384	61,746 15 3
„ „ 1876	168	621	40,799 4 10
Totals	1,813	4,528	228,284 10 5

No. 16.—PUBLIC WORKS.

TOTAL Expenditure and Liabilities, 30th June, 1876.

As per Return No.	——	Expenditure to 30th June, 1875.	Expenditure during Year ending 30th June, 1876.	Total Expenditure to 30th June, 1876.	Liabilities on 30th June, 1876, extending over a Period of Years.	Total Expenditure and Liabilities.	——
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
3	Roads—North Island	467,991 10 6	23,644 14 6	491,636 5 0	9,918 2 8	501,554 7 8	Roads—North Island.
7	Roads—Middle Island	178,150 1 7	16,571 10 4	194,721 11 11	4,158 9 10	198,880 1 9	Roads—Middle Island.
9	Railways, Bridges, Plant and Rolling Stock ...	3,576,003 12 7	1,639,014 7 9	5,215,018 0 4	983,253 19 7	6,198,271 19 11	Railways, Bridges, Plant and Rolling Stock.
12	Water Supply on Gold Fields	206,734 7 0	74,185 9 1	280,919 16 1	81,368 6 11	362,288 3 0	Water Supply on Gold Fields.
	Advance—Thames Deep-Sinking Association ...	15,000 0 0	30,908 0 0	45,908 0 0	4,092 0 0	50,000 0 0	Advance—Thames Deep-Sinking Association.
13	Coal Exploration and Mine Development	6,685 7 3	2,255 3 3	8,940 10 6	1,070 12 1	10,011 2 7	Coal Exploration and Mine Development.
15	Telegraph Extension	187,485 5 7	40,799 4 10	228,284 10 5	...	228,284 10 5	Telegraph Extension.
	Greymouth Protective Works	4,000 0 0	...	4,000 0 0	...	4,000 0 0	Greymouth Protective Works.
	Payments to Provinces and Road Boards	150,000 0 0	...	150,000 0 0	...	150,000 0 0	Payments to Provinces and Road Boards.
	Departmental	66,600 12 5	16,001 14 10	82,602 7 3	1,640 15 2	84,243 2 5	Departmental.
	Refunds of Stamp Revenue	377 7 0	...	377 7 0	...	377 7 0	Refunds of Stamp Revenue.
	Refunds—Interest on Deposits	88 4 4	...	88 4 4	...	88 4 4	Refunds—Interest on Deposits.
	Unauthorized	530 11 4	...	530 11 4	...	530 11 4	Unauthorized.
	TOTAL	4,859,646 19 7	1,843,380 4 7	6,703,027 4 2	1,085,502 6 3	7,788,529 10 5	TOTAL.

APPENDICES TO THE PUBLIC WORKS STATEMENT, 1876.

APPENDIX A.

ANNUAL REPORT ON RAILWAYS BY THE ENGINEER-IN-CHIEF.

The Engineer-in-Chief to the Hon. the Minister for Public Works.

Sir— Public Works Office, Wellington, 21st July, 1876.

I have the honor to submit my annual Report on Railways under Construction by the Public Works Department.

The expenditure on railways up to the end of the financial year 1874–75 was... £3,575,362
During the past year 1875–76, it was 1,609,132

Total expenditure to date £5,184,494

Of the total expenditure during the year, £476,089 was for rails and rolling stock in England, the balance, £1,133,043, being expended in New Zealand. The estimated expenditure during the coming year is £1,054,000, of which £183,000 is for materials from England, leaving £871,000 to be spent in the colony, or £262,000 less than during the year 1875–76.

The Table herewith shows the lengths of the several lines authorized, opened for traffic, and under construction; also the details showing how the above sum of £1,054,000 has been arrived at.

I would also recommend the expenditure of £88,000 for further rolling stock. This item has already cost £648,342, which is much more than would have been sufficient for the originally estimated traffic; the latter is, however, so much larger than was expected, that the increased quantity of stock will be required.

I also recommend a further sum of £126,500 for stations, should the Government propose to give as much accommodation on the lines not yet opened as has been hitherto given. Exclusive of the above sum, the stations already built and to be built will cost, including sidings, £786,000, or about £780 a mile. The increase asked for will certainly be required sooner or later, and even if you do not approve of the above large addition at once, I trust you will approve of not less than £50,000 to be expended during the next three years.

It would facilitate the working of the lines if houses for the men were erected, and I would recommend a sum of not less than £17,000 for this purpose.

Name of Railway.	Expenditure to 30 June, 1876.	Estimated Expenditure during 1876–77.	Total Length.	Open for Traffic.	Under Construction.	Not yet begun.
	£	£	Mls. chs.	Mls. chs.	Mls. chs.	Mls. chs.
Kawakawa	7,901	20,000	8 19	...	2 67	5 32
Auckland—Kaipara	84,575	161,000	38 36	15 68	...	22 48
Auckland—Puniu	641,022		105 36	45 56	51 0	8 60
Napier—Manawatu	288,529	47,000	58 36	28 23	30 13	...
Wellington—Masterton	328,103	137,000	68 39	19 9	24 58	24 52
Waitara—Patea	82,104	37,000	19 73	11 13	8 60	...
Patea—Manawatu	344,373	114,000	92 49	24 73	65 48	2 8
Total North Island ...	1,776,607	516,000	391 48	145 2	183 6	63 40
Nelson—Foxhill...	111,809	7,700	20 11	19 10	...	1 1
Picton—Blenheim	152,987	4,500	18 52	17 10	...	1 42
Greymouth—Brunnerton... ...	114,424	19,000	7 40	7 40	...	...
Westport—Ngakawau	103,615	49,000	19 19	...	19 19	...
Amberley—Waitaki	1,134,090	79,700	248 66	217 33	31 33	...
Waitaki Bridge	75,904	1,300	0 57	0 57	...	...
Waitaki, Invercargill, and Lawrence Branch	1,534,643	324,400	254 79	112 31	111 1	31 47
Winton—Kingston	165,024	53,000	68 36	30 50	37 66	...
Total, South Island ...	3,392,497	538,600	638 40	404 71	199 39	34 10
Summary.						
North Island	1,776,607	516,000	391 48	145 2	183 6	63 40
South Island	3,392,497	538,600	638 40	404 71	199 39	34 10
Total	5,169,104	1,054,600	1,030 8	549 73	382 45	97 50

Surveys.

The country between the Napier and Takapau Railway and the Manawatu Gorge has been thoroughly explored, and trial lines run. The Gorge itself has still to be surveyed before any estimate of the cost of connecting Napier and Wellington by rail can be made; and I recommend that this be undertaken during the present year.

In the South Island explorations have been continued between Canterbury and Nelson and Blenheim. I attach Mr. Foy's reports, from which it will be seen that a fairly good line has been found between Canterbury and Blenheim, by way of the coast. I do not think it is yet quite beyond doubt that a better cannot be got by way of the Waipara Plains, and recommend that Mr. Foy be instructed to explore farther in this direction.

The line by way of the Rai Valley, between Nelson and Picton, seems to be quite impracticable for a railway.

I would strongly recommend that surveys be put in hand between the East and West Coast of the South Island, over both the Amuri and Hurunui Passes. This country is so difficult that three or four years will be required to survey it, and a great loss will be incurred if work should be undertaken before proper surveys have been made.

Lines open for Traffic.

The results of the workings for the year are fairly satisfactory.

The Auckland and Mercer Railway has paid 1 per cent., in spite of the low rates which were adopted. These were too low, and have now been raised.

The Napier–Manawatu line has paid 2¾ per cent. The rates also here were too low, and have been raised.

The Waitara and New Plymouth, and the Kaipara Railways have been worked at a small loss; but this was always expected. If the termini of the latter line were improved, I think the traffic would increase, and that a small profit would be earned.

The Wellington and Masterton line has paid 3·4 per cent., and when completed to Featherston will certainly pay the full interest on its cost.

The Nelson and Foxhill, and the Picton and Blenheim Railways have both earned a small profit, which, considering that they have not been long opened, is as much as could reasonably have been expected.

In Canterbury and Otago the lines are worked by the Provincial Governments, but not being under the control of the Public Works Department, I cannot state the profits.

NORTH ISLAND.

Kawakawa Railway.

The railway constructed by the Coal Company has been purchased, and contracts let for changing the gauge to the standard 3 feet 6 inches, and doing other work necessary on this length.

Kaipara to Puniu Railway.

Kaipara to Riverhead.—The section from Kaipara to Riverhead was opened for traffic on the 29th October, 1875. In my last report I suggested that new terminal stations would be required, and I think they should now be undertaken, as the existing ones are very inconvenient and insufficient. I would recommend the expenditure of £15,000 for this purpose.

Riverhead to Auckland.—Work has not been commenced on this section. Inquiries have been made of landowners to ascertain the probable price of land, which appears to be so high that it would be well to defer the commencement of the works until a survey can be made through cheaper land, with the view of lessening the first cost of this line, which will otherwise be one of the most expensive in the colony, while the traffic it will get will be scarcely sufficient to pay working expenses, if it will do so much.

Auckland to Mercer.—This section was opened for public traffic before my last annual report. Serious floods occurred in December, which did some damage to the works, traffic being stopped for seven days. It will be necessary to raise the banks in a few places.

Mercer to Newcastle.—The formation of this section is nearly completed, and tenders have been called for ballasting and plate-laying of the whole length. The bridge over the Waikato is nearly finished.

Newcastle to Ohaupo.—The formation is nearly finished, but plate-laying cannot be gone on with until the Newcastle Section is completed.

Napier to Manawatu Railway.

Napier to Te Aute.—This length is now open for traffic. Heavy floods occurred during January, which injured the line so that traffic was stopped for four days. One of the bridges over the Ngararoro River was slightly injured, and the foundations scoured away for several feet. The damage has been made good, and rockwork placed in the bed of the river, which will protect the bridge in future floods. The same has been done at the Waitangi Bridge, where considerable scour had also taken place.

Te Aute to Takapau.—The plate-laying and ballasting of this section is now in progress. The contractor for the first part of the work having failed to carry on the works with sufficient energy, they have been taken out of his hands, and are being carried on at his cost by the Government.

This line will be completed during the ensuing year.

Waitara to Patea Railway.

Waitara to New Plymouth.—Was opened for public traffic in October. No injury to any of the works has occurred.

Sentry Hill to Inglewood.—The formation is under contract, and will be ready for plate-laying during the coming year.

Patea to Manawatu.

Kai-Iwi to Wanganui.—The formation is under contract, and will be finished by the end of September.

Wanganui Bridge.—Three out of the four piers are completed. A bed of quicksand under the fourth pier has given trouble and caused delay. One cylinder of this pier still has to be sunk to the hard bottom below the quicksand. The superstructure is nearly ready for erection.

Wanganui to Wangaehu.—The rails are laid over 10 miles in length, and are now being laid on the second length of 10 miles.

Wangaehu to Palmerston.—The formation of this length is all under contract, except a little over 2 miles, which have been reserved for employing immigrants, should it be found necessary to do so under the agreement with the Emigrant and Colonist's Aid Corporation. The rails are linked in between Feilding and Palmerston, and the ballasting is in progress.

Palmerston to Foxton.—Iron rails have been laid throug hout, but the bridges, which were designed for horse traffic only, require strengthing for locomotives. This work is in progress.

The present terminus at Foxton is very inconvenient, and I would recommend the expenditure of £15,000 in making a new terminal station and wharf at Foxton.

Wellington to Masterton Railway.

Wellington to Upper Hutt.—This section was opened for traffic in February, from the Lower to the Upper Hutt. The line was not ready at the time, but the public road having been washed away, the railway was opened to meet the urgency of the case.

A profit at the rate of 3·4 per cent. above working expenses has been earned.

A short piece of the river protection was injured by floods, otherwise the works have stood well.

Upper Hutt to Featherston.—The inaccessibility of the line on this section has made it difficult to get workmen to remain, but the contractors have now a good force of men, and if they continue at present rate of working, the formation will be sufficiently advanced to allow plate-laying to be begun during the ensuing year.

All the tunnels in this length have proved to require lining, as the rock, although hard, weathers when exposed to the air. As materials cannot be brought in to the Summit and other tunnels until the formation is completed, there will be delay from this cause, and the line cannot be open for public traffic in less than eighteen months.

SOUTH ISLAND.

Greymouth to Brunnerton Railway

Was opened for public traffic on 7th April. Long continued heavy rains caused some slips, which delayed the traffic for a few hours.

The bridge across the Grey River will be ready in a few weeks, which will place the railway in communication with the coal mines on both sides of the river.

Westport to Ngakawau Railway.

The line is completed for 10 miles to near the Waimangaroa River. A short line along the river bank would enable the mines to be connected with the railway, and coal to be brought to Westport. A private company has commenced to construct this line, and there is every prospect of the mines being opened out shortly.

A contract for the river protection works, wharves, coal staiths, &c., at Westport has been let.

A stop-bank was erected to prevent the Buller River from flooding into the Orowaiti. This suffered some damage from the heavy floods which occurred here as in nearly every part of New Zealand. No other damage occurred.

The alignment of the railway was changed so as to bring it close under the hills, instead of along the beach as originally proposed. This will largely increase the cost of works; but it would have been very impolitic to have carried the line so far from all the intermediate coal mines, especially as all branch lines would have had to cross some miles of swamp, and would have been very costly indeed.

Nelson to Foxhill Railway

Was opened for public traffic on 31st January. Some slight damage was done by floods on this line also, but not sufficient to stop traffic.

The present terminus is at the Town of Nelson. I would recommend extending it to the port, which will cost £8,037.

Picton to Blenheim Railway

Was opened for public traffic on 18th November, 1875. The floods caused two days' stoppage of the traffic in April. The whole district is very liable to floods, and it is likely that occasional stoppage to the traffic will occur for a day or two at a time, but the expense of high embankments and of a large addition to the already very large amount of bridging, which would be necessary to avoid this, would be so great, that I do not recommend its being incurred.

Amberley and Waitaki Railway

Is now open for public traffic to St. Andrews, 3 miles south of the Paeora. The total length opened, including provincial lines and branches, is 255 miles, being by far the longest connected railway system in New Zealand now opened.

From Pareora southwards to the Waitaki, the formation is completed, and the plate-laying in progress.

The most important works on this section are the Ashburton and Rangitata Bridges, both of which were completed during the past year, in a very creditable manner, by Mr. Wright.

No damage was caused to any of the numerous bridges by the floods which occurred during the year.

WAITAKI AND INVERCARGILL RAILWAY.

Waitaki Bridge.—This important structure was completed on the 29th February, and has since been open both for road and railway traffic.

Waitaki to Oamaru.—Was opened for public traffic on the 25th September, 1875, and has since been regularly worked by the Provincial Government of Otago.

Oamaru to Moeraki Junction.—The rails are laid throughout, except for about 4 miles. The line is expected to be ready for opening in September or October next.

Moeraki Branch.—Will be completed about the same time as the rest of the works.

Moeraki to Port Chalmers.—The whole of this work is under contract, except about 9½ miles, near Waikouaiti, for which tenders will be invited during July or early in August.

The Deborah Bay Tunnel will require lining throughout a great part of its length. Work was brought to a standstill for some weeks, owing to a dispute with the contractors, which was, however, amicably settled, and work was resumed and has since been carried on with energy.

The whole of the works of this section will be completed by the end of 1878, if the contractors carry out their contracts, which there is every reason to suppose they will do.

The increasing traffic at Port Chalmers renders necessary a further extension of the wharves, and I recommend an expenditure of £30,000 for this purpose.

At Dunedin also an extension of station and workshops should be made, at an estimated cost of £15,500.

Port Chalmers to Clutha.—Was opened for traffic on 1st September, 1875, and has stood satisfactorily, although tested by very heavy rains and floods.

Clutha Bridge.—The contractor for this work failed to carry out his contract, and the works were re-let. Unfortunately, the second contracter has been seriously ill, which has caused still further delay. Sinking the cylinders has now been commenced, one cylinder having been sunk to full depth.

Clutha to Clinton.—The question of the alignment of this section has not been long settled. The Four-Mile Creek line has been adopted, and is now being set out.

Clinton to Mataura.—Formation is under contract, and 11 miles are nearly ready for platelaying. The remainder will be ready in about a year.

The original contractor for this work failed, and the work was re-let.

Mataura to Invercargill.—Was opened for public traffic on 30th August, 1875, and has since been worked by the Provincial Government of Otago. The cutting at Edendale has given trouble by slips, and the temporary loop-line round the cutting has been maintained in case the slips should become serious. The other works on the line have not given any trouble.

Lawrence Branch.—Except the Round Hill Tunnel, the formation is completed. This work was delayed by slips, which forced in a portion of the side walls, and otherwise caused delay. It will be completed in a few weeks

Four miles of rails are laid. Owing to the steep gradients, I think it would be better not to try to open any portion of the line until the rails are laid through to Lawrence. Unless an expensive temporary terminus were made, there would be great risk of accidents occurring.

WINTON TO KINGSTON RAILWAY.

Winton to the Elbow.—This length of 30 miles was opened for public traffic in February last. The works have stood well, and require no special mention.

Ten miles farther will be ready for opening in a few months.

The remaining works of this line are under contract, and the line will be ready for opening early in 1878.

JOHN CARRUTHERS,
Engineer-in-Chief.

The Hon. the Minister for Public Works.

ENCLOSURES TO THE ENGINEER-IN-CHIEF'S ANNUAL REPORT.

Enclosure No. 1.

REPORT ON SURVEY OF LINE OF RAILWAY FROM AMBERLEY TO BLENHEIM, *VIA* HURUNUI AND KAIKOURAS.

Mr. T. M. FOY to the ENGINEER-IN-CHIEF.

SIR,— Nelson, 22nd June, 1876.

I have now the honor to forward you plan, section, and report of an examination of the country for a line of railway lying north from Amberley Road Station, the present terminus of the North Canterbury Railway, and passing through the Hurunui, Waiau, and Kaikoura townships; thence by way of the East Coast and Flaxbourne to Blenheim, the present terminus of the Picton and Blenheim Railway; together with that of an alternative line passing through the Waipara Plains, Motunau, Cheviot Hills, and Hawkswood Runs to a point on the Conway River. Also of an extension line from Tuamarina, a station on the Picton and Blenheim Railway, by way of the Kaituna, Pelorus, Rai, Wangamoa, and Happy Valleys to Nelson.

The first of these lines you will find shown upon the sketch map by a defined red line. I have also shown by a similar line two alternative lines, branching from off the above-mentioned main trunk line to the West Coast, both of which have already been reported upon, but will again be referred to at the end of this report.

I shall, as before in my former reports, first describe the nature of the country through which the line passes, and then remark upon the grades as shown upon the section.

From Amberley Road Station the line will follow the same direction as shown upon my former plan, and upon the accompanying sketch map, as far as the Hurunui township.

From this point the line crosses the Hurunui River representing the same site for a bridge as before shown, as I am still of opinion that it is the best the locality affords.

There is nothing to prevent the line, after the river is crossed, from taking a straight direction to the Waiau township, passing near to St. Leonards Station, instead of following the track of the dray road, which falls with a rapid descent when it reaches Isolated Hill, following the circuitous course of that hill to the Waiau township.

To cross the Waiau River a bridge of not less than 20 chains in length will be required, the exact site of which cannot be determined upon until several sections shall have been taken to determine the best crossing. However, there are no engineering difficulties in the case, and I have reason to believe that a good crossing can be obtained in the immediate vicinity of the township.

The line then passes the township to the Mason River, which it will have to cross at a point about two and a half miles from its junction with the Waiau, as the bank of the river on the south side from this point is very broken and precipitous. Here a bridge of 6 to 8 chains will be required, after which it ascends a terrace on the north side, over which it passes for three or four miles, and crossing a narrow part of the Lottery River to the valley of the Wandell.

Here the line enters the Sherwood Forest, where excellent black birch is to be had in abundance for sleepers, &c. The forest is also interspersed with good timber for other building purposes.

The scarcity of timber in these districts makes this forest not only an important auxiliary, relative to the production of material for construction purposes, but will also be a source of revenue to the line when constructed; and, when viewed in these respects, it becomes a weighty recommendation in favour of this route, as the forest is of considerable extent.

After passing through the valley of the Wandell, the line still traverses the forest, and by recrossing the Mason River, where a short bridge only will be required, reaches the summit, a low saddle, forming part of the dividing ridge of the Waiau and Conway Rivers.

A cutting of between 30 and 40 feet is all that will be required at this saddle. After the summit is passed, the line descends the valley of Campbell Creek to the Conway River, which will have to be crossed by a high bridge, as the banks are perpendicular and of rock formation. The height is not less than 150 feet, and the distance across about the same.

This being the case, a suspension bridge will be the best, and, I imagine, the only form that will be found adapted for the purpose.

The line, from the crossing of this river, passes over an undulating and open country to another summit, or dividing ridge, between the Conway and Charwell Rivers, to the Green Hills Station.

From Green Hills the line will pass north of Green Burn Station, so as to avoid the crossing of the Kahautara River, where the east bank rises to a considerable height.

The line will then pass as near to the hills and as far up the rivers, shown upon the sketch map, as the grade will permit, thereby crossing them at the narrowest parts, and passing about half a mile south of Captain Keene's house to the crossing of the Kowai River.

This river, at the crossing-place, is from 8 to 10 chains wide, but from appearances a very shallow one, even at the time of heavy floods.

From this point I observed that a line had been cut in a straight direction to the Hapuka River, evidently with the view of constructing a road along it, but from some reason or another it has never been carried out. However, the railway line will probably have to be located a little higher up, so as to obtain a uniform grade to the above river.

You will see by the sketch map that the line passes a considerable distance from the Kaikoura township; but as the whole of this valley, which is of considerable extent, is dotted with houses and a considerable quantity of land already under cultivation, and as no permanent buildings, of any value, have as yet been erected in the township, a town will most probably, in the course of time, be built in the vicinity of the railway station.

At the Hapuka River a bridge of from 5 to 6 chains in length will be required. This river, from the point where it issues from the hills, widens out very considerably, until it reaches a width, near its junction with the sea, of at least half a mile.

From the crossing of this river, the line will pass through timber land, along the base of the hills, to a point shown upon the sketch map where the coast line commences.

At about one and a half miles from the last-mentioned point, along the coast and at the 89th mileage upon the map, the hills rise perpendicular from the beach, and it is at this point where the line will have to be constructed on timber framing for a distance of about 40 chains. This work when erected will be entirely free from the effects of the sea, as the beach at this place is at least 20 feet above the level of the sea, or high water-mark, and I have been credibly informed, by several persons who have used the beach road for several years and at all seasons, that even at the time of a severe south-east gale the road is passable and free of danger from the sea.

When this is passed, the line again passes over favourable ground, curving round Half-moon Bay, until within about half a mile of the Ohau River. Here the edge of the beach, where the line would have to pass, is covered with large boulders and huge pieces of rock; and, in rounding the point near the above river, the rock will have to be tunnelled through for a distance of about two chains.

I think this would be a cheaper and better way of passing this point than blasting the outer part of the rock to form a roadbed.

There is another place similar to the above about the 95th mileage, and about a mile south of the Maori Pa, shown upon the sketch map, and about the same length—namely, half a mile. But by a judicious location of the line, and a few well-arranged curves, these large fragments of rock might be avoided altogether, and the cost of the work reduced considerably.

From this place to the crossing of the Clarence River the ground is very favourable, with no difficulties in the way of getting a good roadbed, and the line along this length should be built at a moderate cost.

The line will require to curve round to the Clarence River crossing as shown upon the sketch map, as the present ford presents the only site for a bridge that can be constructed, with due regard to safety and comparative length of bridging.

We have now passed over the only difficult and expensive portions of the line that constitutes the coast line, and, when they are taken into consideration, I do not consider they present any great objection to this part of the line. They are the only portions that I had reason to believe (from what I had previously heard) that engineering difficulties were to be met with, and this may be considered more as a matter of cost than difficulty of construction.

From the Clarence to the Ure River, the point where the line leaves the coast, there is no difficulty whatever, and I feel certain that a moderately cheap line can be constructed between these two points.

The length of bridging at the Clarence will be from 7 to 8 chains, with 2 or 3 chains more over an opening which appears, at the present time, to be caused by back or an overflow of water from the main river; or it may be part of an old channel of the river which might be effectually closed up at its opening higher up the river, thereby saving this length of bridging.

The line from the bridge will have to curve round the base of Pigeon Hill until it again reaches the coast.

The next bridge will be over the Briny Brook, which is but a stream requiring about two spans of 30 feet each.

The Kekerangu River will have to be crossed within a short distance of its junction with the sea, where there is a good site for a bridge, as the high hills that form the south bank of this river prevents the line from being carried further up. The length of bridging will be between 4 and 5 chains.

The Flags River is comparatively narrow, requiring about the same length of bridging as that of Briny Brook—namely, two spans of 30 feet each.

The Ure River is a very wide but shallow river, with apparently but little water in it at any time of the year. It was perfectly dry on both occasions of our crossing it. It will be a low bridge, but of not less than 20 chains in length.

After crossing the Ure River, the line immediately commences the ascent of the undulating plains of the Flaxbourne Run, over which it traverses for several miles, passing about one and a half miles west of the Flaxbourne Station, also Lake Elterwater to the valley of the Grasmere Lake; and although I have shown the line as passing through this valley, yet I have reason to believe that the summit shown upon the section between this lake and Black River can be approached by curving round the hills, thereby avoiding the low ground of this valley, and at the same time improving the grade shown upon the section.

From the above-mentioned summit the line descends into the valley of the Black River, crossing a tributary thereto, called Deep Creek; and from thence, by curving round the hills, reaches a low saddle near the woolshed belonging to the Starborough Run Station.

It then descends to the crossing of the River Awatere. The best crossing that I could perceive is that shown upon the sketch map. The banks are well defined at this place, nor does the water appear to overflow them at the time of floods.

You will observe, as shown upon the section, two terraces not far from each other and within a short distance of the river, the upper one being very high above the bed of the river.

The dray road from Starborough Station, after crossing the river, follows the course of a gully up which it ascends on to the terrace. This gully will also be of assistance to the railway line, but how to overcome this steep ascent to the higher terrace cannot be ascertained, until a correct survey has been made for 20 or 30 chains on either side of the river crossing.

From the river the line crosses the Awatere Flat, in a straight direction to Dashwood's Pass, the ascent and descent of which will be referred to in the remarks upon the section.

From the bottom of the pass the line passes over level ground the whole of the way to Blenheim.

The Section.

The first part of the section—namely, from the Amberley Road Station to the Hurunui River—has already been reported upon.

From the crossing of the Hurunui River to the valley of the Wandell, the grades may be considered satisfactory.

From this point, I have shown upon the section a continuous grade of 1 in 100 to the saddle at the Campbell Creek. This traverses a distance of about 10 miles, and shows the relative heights of these two points, and there is no doubt but this grade can be maintained throughout. But when this part of the line is under survey, I have every reason to believe that the distance will be increased, and that an improved grade can be obtained by following up the River Wandell to a higher point, and by the several curves that will in places be required.

I took several intermediate heights between these two points; but they all led to the same conclusion, by giving a uniform grade of about 1 in 100. We must, therefore, look to the lengthening of the distance for an improvement in this grade.

I have also shown upon the section the grades that are obtainable by following the course of the track over the Whale's Back, which plainly indicates the advantage of the line by Campbell Creek, as the grade of 1 in 7 from the top of the Whale's Back to the Conway River could not be improved, there being no available ground by which the distance can be lengthened.

By a cutting of from 30 to 40 feet at the saddle, and a probable lengthening of the lines by curves from the saddle to the Conway, this grade may be slightly improved; but I do not expect any great difference can be made, and, should this eventually be the case, a grade of about 1 in 50 in overcoming the descent of the Conway River may be regarded as being satisfactory.

These remarks will, to a certain degree, also apply to the rise from the Conway to the dividing ridge between this river and the Charwell. Still, in this case, I have greater hopes of improvement, as the distance is sure to be increased, because that shown upon the section represents a direct line between these two points, whereas from the very nature of the ground there must be considerable curving.

The grade of 1 in 98 between the dividing ridge and Green Hills will also be subject to alteration, as there is every likelihood of the height of Green Hills being reduced so as to help the improvement of the steep grade of 1 in 34 from Green Hills to the stream shown upon the section.

This, as you will perceive, is the steepest gradient upon the whole line, but this part of the country will require to be minutely surveyed before the best line it affords can be discovered.

I have shown the line as crossing the Charwell River high up under the hills, which gives the advantage to the crossing, as lower down the river is much wider, and the banks very high. It will therefore be a matter of consideration between the crossing of the river and improvement in the grade; and as the latter is, especially in this case, by far the most important, this object will have to be kept in view at the time the surveys are being made.

By continuing the line at the higher elevation, the rivers between the stream with high banks shown upon the section and the Kowai River, are all crossed at their narrowest parts, and a continuous and uniform fall is obtained, giving a grade of about 1 in 100.

This portion will also require careful surveying, with the view of obtaining the best gradient, and keeping the length of bridging to its shortest limit.

The broken and irregular form of the hills in this locality is the cause of so many watercourses, the currents of which must be very rapid, especially after heavy rains, as their fall is very great; and this accounts for their shallowness, which in effect will reduce the height of the bridges, and thereby in a measure compensate for their lengths.

The gradient between the Kowai River and the coast will most probably remain the same, as I do not anticipate that any material alteration can be made in it.

I have assumed the grade along the coast to be about 30 feet above sea level, or high water-mark, as this will, I imagine, be found to be the average height where a firm roadbed can be had. It is, however, most likely that in two or three cases along the coast it will be found necessary to introduce a grade of say 1 in 100, with the view of saving cost in construction.

The "high water-mark" along the coast is well defined, as also the flood line, the great flood of 1868 having left its mark in very many places along the whole coast, the *débris* still remaining where the water left it.

The grade of 1 in 40, shown upon the section from the Ure River to the summit, is unavoidable, as the valley at this place affords the only practicable means of reaching the level of the land on the Flaxbourne Run. This may be slightly improved when the height of the bridge and a cutting of 30 to 40 feet at the saddle shall have been considered, but a steep incline at this place will be found to be indispensable. The grade of 1 in 60 at the 138th mileage is shown in connection with the low lands near the Grasmere Lake, but I think it will be found, during the survey, that this depression in the line can be avoided, and that an improved line can be had by curving round the undulating hills in this locality, thereby maintaining the height of 187 feet, as shown upon the section, and at the same time making a considerable improvement in the above-mentioned grade. The only remaining grades for consideration are those of the ascent and descent over Dashwood's Pass. This pass, which I have now had an opportunity of examining, is in every respect far preferable to either that of Taylor's or Maxwell's, so much so that not only are better grades to be had, but the form and angles of the hills are better adapted for the construction of a line of railway. No sharp curves will be required, as a line as nearly straight as possible, from the commencement of the incline on the one side to the bottom on the other, can be had without any difficulty. There is but one place, and that is on the Blenheim side of the pass, where the angle of the line is rather steep; but this is but a short distance, and will not be so bad should the grade take the line higher up the hill.

To overcome a high range of hills, such as the one under consideration, by a grade of 1 in 40, when compared with Taylor's Pass, on the same range, and where the dray road has been made, and where the best grade that can be had is 1 in 50, must, I consider, be regarded as very satisfactory.

From the bottom of the incline to Blenheim the grade will be nearly level.

Branch Line to the West Coast.

In connection with this report of a further exploration of the country, it may be considered necessary to make some remarks upon the West Coast line.

It will be seen, by reference to the sketch map, that there are two lines that will have to be considered under this heading, both of which have been already reported upon; but the alteration in the junction of the northern one with this new route causes an additional length thereto of about 17 miles. The relative lengths of these two lines from their respective points of junction with this new line to the junction of the Tutikiri with the Ahaura River, a point common to both lines, are as represented upon the sketch-map—namely,—

The Northern line, *viâ* the Waiau River, 60 miles.

The Southern line, *viâ* the Hurunui River, 64 miles.

As these distances are only approximately correct, and as the difference is so small, their lengths need scarcely form a matter for consideration.

These distances only refer to construction, but there is another consideration which may be taken as being in favour of the Southern line, and that is, that the Northern line, in addition to the above distance, will have to pass over the main line for a distance of 16 miles; this being the distance between the two points of junction on the main line.

From the point of junction of the northern with the main line there is a good dray road leading to the Hanmer Plains; also for several miles in a westerly direction along the south bank of the Waiau River, from the junction of the Waiau and Hanmer Rivers. There is also a good bridle-road from the junction of the southern with the main line, passing over Jack's Pass, for a distance of about 20 miles, and along the remainder of the distance there is a good dray road leading to the stations at Lakes Taylor and Sumner. This being the case, there already exists means of communication on both lines, with the line of railway by horse and dray roads, by which the produce from their respective localities is brought down to the plains.

It therefore appears to me that the choice between these two lines should be left to that which produces the best section and altogether the best line, which cannot be determined upon until a trial survey has been made of both routes.

General and Comparative Remarks.

With the addition of the plan and section now forwarded, you will have before you an examination and report of every "practicable route" that the country affords between the present terminus of the North Canterbury Line and Blenheim.

By reference to my former reports it will be seen that, of the routes then examined, preference was given to the Acheron and Awatere, before that of the Clarence and Wairau Valleys. But after an examination of the coast line and its connections north and south with the present termini of the two constructed lines, as shown upon the sketch map, the contrast in favour of this line is so great, that the other two above-mentioned lines appear to me to be altogether out of the question when brought into comparison with it.

The grades of this new line, as shown upon the accompanying section, between the 44th and 75th miles are undoubtedly heavy, and will consequently be expensive in working, but still, believing in the probability of their improvement when surveyed, and taking into consideration that they will not cause any alteration to work them from the ordinary rolling stock now in use, they may be taken as infinitely superior in every respect to those of the other two lines.

It was my intention to have shown upon the sketch map the extent of available lands for agricultural purposes, thereby giving an idea, from the plan, of the probable amount of population that could be supported contiguous to this line of railway; but being unable to procure this information for the purpose, I am obliged to supply the omission by embodying the information in the report.

In the first place, by a station a little north of the crossing of the Waipara River, railway accommodation will be afforded to the whole of the district known as the Waipara Plains.

In the next place, the Waikari Valley, the Hurunui and the Waiau Plains, which are capable of supporting a large population, will be brought into immediate connection with this line; whilst the branch line to the West Coast, if the Northern line be taken, will give railway accommodation to the large districts of the Hanmer Plains and the inland Amuri, and with improved inland communication, by means of a dray road over Jollie's Pass, the whole of the Clarence, Acheron, and Upper Awatere runs will partake of its benefits.

The next source of revenue to the line may be looked for from the productions of the Sherwood Forest, where a supply of timber may be depended upon for some time to come. I have been informed that a tin mine has been discovered somewhere in the valley of the Waiau, and I do not think it would be considered too imaginative were I to predict further discoveries of minerals, together with other sources of industry, when this main trunk line, with its branch to the West Coast, shall have been constructed.

This line, after crossing the Conway River, passes over a large tract of country, comprising the valley of the Charwell, the Green Hills Run, and the lands in the vicinity of the Kaikoura Township, capable of supporting large populations, when brought into a state of cultivation, by being apportioned out and disposed of to intending settlers.

Along the coast, from the Hapuka to the Clarence Rivers, there does not appear to be any land fit for cultivation, and the only case that attention may be brought to is the annual shipment of a quantity of wool from the Waipapa landing-place, from the runs in the vicinity of the Clarence River. From the Clarence to the Ure River there is a belt of land between the beach and the hills, varying from 20 to 30 chains wide, capable of cultivation; also some land bordering the Kekerangu River, and in the valleys of smaller streams along this length, together with an abundance of excellent limestone.

The undulating plains the whole of the way from the Ure to the Awatere River, especially in the vicinity of the Flaxbourne Station (though not as good, yet equal in extent to the Cheviot Hills district), comprise an immense area of country that would doubtless be brought under cultivation if a railway traversed the district.

The lower part of the Awatere Valley contains excellent land for agricultural purposes, and the same may be said of this valley, for a considerable distance up the river, from the point where the railway would cross it; and when the Avon and Wairau Valleys are considered in connection with this line, the population that will at some future day be settled down along its route, the entire distance between the two present termini of constructed lines, is, I think, sufficient to give an earnest for the future support of the line that cannot be overlooked, and which, I feel certain, cannot be equalled in its prospective advantages by any other "explored route" between the two coasts.

This line, which I look upon as incomparably superior in every respect to the other two, will nevertheless cost beyond the average of railways already constructed in this country.

I must draw your attention to the long length of bridging that will be required upon this line, notably from Amberley Road to the Kaikoura Township, which will form a considerable item in the estimated cost of the line. I am scarcely in a position to make any comparison between this and any other line, but it appears to me to be lengthy. However, there will be but little, if any, side-hill cuttings upon it, and I consider that this line, when once constructed, will be neither difficult nor costly to maintain. Relative to the earth-work upon the line, I have considered that there will be about 25 per cent, or about 40 miles, more or less difficult and beyond the average cost, and the remaining 75 per cent, or 120 miles, within the average.

The comparative lengths of the three lines are about as follows:—

From Amberley Road *viâ* the Waiau Township, the East Coast, and Flaxbourne, to Blenheim ... ... 161 miles.

From Amberley Road *viâ* Jollie's Pass, the Acheron and Awatere Valleys, to Blenheim ... ... 164 miles.

From Amberley Road *viâ* Jollie's Pass, the Acheron, Taradale, and the Wairau Valleys, to Blenheim ... ... 178 miles.

You will perceive a difference in point of distance between the plan and section. This has arisen from the distance for the plan having been scaled from the sketch map, whereas the section has been plotted from distances taken from tracings on a larger scale, with a view of obtaining greater accuracy between certain points shown thereon. However, I have taken the greatest distance for the line, which is represented by the plan, namely, 161 miles.

The coast will certainly afford facilities for the reception of plant and material for the purposes of construction, as sailing vessels can approach within easy distance of the beach for nearly the whole length of the coast line.

In conclusion, I beg to remind you that the survey of the main trunk line, with its branch to the West Coast, together with the several alternative lines, will take a considerable time to perform, and that the success or otherwise of their proper location will, in a great measure, depend upon the amount of time devoted to the purpose. Surveys properly conducted, with a sufficient staff of men, as a rule are not costly undertakings, but in their results they are very often known to be the means of saving large sums of money in the original cost of a line.

I would therefore respectfully submit the necessity of an early commencement of this work, so that the plans may be in a forward state of preparation by the time the Government may find themselves in a position to order their construction.

Cheviot Hills Route.

In obedience to instructions, I also made an examination of the country north from the Amberley Road Station and passing through the Waipara Plains and Cheviot Hills District, which I have shown upon the sketch map by an elongated red dotted line.

I have not prepared a section of this line, as the grades are favourable enough to the point marked A upon the sketch map, with the exception of a rather steep incline to reach the high ground at Hawkswood Station, with a corresponding descent to the River Conway.

In my examination of this line I found that the course of the dray road to the Cheviot Hills District passed over a rather high range of hills, then through the Motonau Run by the valley of the Greta to the Hurunui River.

There are one or two serious objections to following this route for a line of railway. The first is the steep incline that would be required on both sides of the above-mentioned range of hills; and the second, a more serious one still, namely the crossing of the Greta River.

From the peculiar character of the hills in this locality, there is no choice of crossings at this place. You are therefore confined to one spot, that would require a viaduct of not less than from 7 to 8 chains in length and 150 feet high, and by following the course of the telegraph line, even worse ground is to be met with, for the line spans a chasm, the length of which cannot be less than 20 chains, and the height 200 feet.

By far the best line is the one marked upon the sketch map going in the direction of the Glenmark Station, and passing over a much lower ridge of hills into the valley of the Waikari River, thence by this river to its junction with the Hurunui.

Here the line would cross the Hurunui and along its northern bank, until a point is reached where I understand a section of this river has been taken; thence by the route as shown upon the sketch map through the Cheviot Hills and Hawkswood Runs to the point marked A.

From this point, at the end of the dotted line, and following the mail and telegraph line, the hills at once become broken and irregular, and the further you proceed in this direction, the worse they become; and where the telegraph line leaves the Conway River, the physical aspect of the country presents a series of steep ascents and rugged declivities, until the top of Riley's Hill is reached, whose height is about the same as that of Green Hills, namely 1,450 feet, and not far from the sea, with a rapid descent into the valley of the Kahautara River.

A railway line over such a country could not possibly be made without doing so regardless of cost both as to construction and maintenance.

A line by the coast is equally impossible, for no surer indication could be afforded than by the fact of the telegraph line having been taken over so rugged a country as it has been. But the telegraph line having been brought as far as the Conway River, there was no alternative but to follow the course it has taken.

The hilly nature of the country on both sides of the Conway River, from the point marked A, may easily be inferred from the fact that, whether you take the direction of the coast or proceed up the river until a point near Campbell Creek is reached, there is no other road for either horse or dray, but the bed of the river, and consequently the road is impassable during the heavy rains, and for some considerable time afterwards. When I found this to be the case, I turned my attention to the valley of the Leader River and the country between it and the Gelt.

The valley of the Leader is favourable enough for some distance up the river, but the dividing ridge between the two rivers is high and broken, and the valley of the Gelt exceedingly rough; but were it otherwise, the line could not possibly proceed up the Conway from its junction with the Gelt, as the banks of the river are nearly perpendicular, and forming a series of gorges, with banks ranging from 100 to 500 feet in height, so that it would be impossible to connect the line with the district about Green Hills.

It is, therefore, demonstrably certain that the main trunk line can never pass through the Cheviot Hills District; and I must confess that I view it, to a certain extent, as a matter of regret that such is the case, for there is a large tract of country belonging to this run that would, if brought into cultivation, support a numerous population. But it is of no use attempting to fight against nature, and it may with truth be said of the two competing lines, that whilst the one is just practicable, the other is undeniably impracticable.

By scaling, from the sketch map, I find the distance of this line, from Amberley Road Station, by way of the red dotted line on the sketch map, and then by following the route of the telegraph line to a point common to both lines, namely, the Hapuka River, to be five miles longer than the line by the Waiau Township and the Whale's Back.

SKETCH PLAN
TO ACCOMPANY
MR FOY'S REPORT
ON
Survey of Line of Railway from
AMBERLEY TO BLENHEIM
via
HURUNUI AND KAIKOURAS
AND BETWEEN
BLENHEIM & NELSON

Dated 22nd June - 1876 -

SCALE

SECTION Line on Plan shewn thus +++
of line from AMBERLEY ROAD STATION via HURUNUI RAIAU KAIKOURA Township and FLAXBOURNE to BLENHEIM

SCALES
Horizontal
Vertical

SECTION Line on Plan shewn thus ——
of line from TUAMARINA to HAVELOCK & RAE WANGAMOA & HAPPY Valleys to NELSON

SCALES
Horizontal
Vertical

I am, therefore, of opinion, taking the whole matter into consideration, that the Cheviot Hills District cannot be connected with the main trunk line, otherwise than as a "branch line;" and I am further of opinion that we shall have to look for the undertaking of this work to private enterprise, as the only effectual means of accomplishment, at all events for the present.

I have, &c.,

The Engineer-in-Chief, Wellington. THOMAS M. FOY.

Enclosure No. 2.

REPORT ON SURVEY OF LINE OF RAILWAY BETWEEN BLENHEIM AND NELSON.

Mr. T. M. FOY to the ENGINEER-IN-CHIEF.

SIR,— Nelson, 22nd June, 1876.

I have the honor to forward plan, section, and report of an examination of the country for a line of railway between Blenheim and Nelson, by way of the Are Are, Kaituna, Pelorus, Rai, Wangamoa, and Happy Valleys.

For the commencement of this line, I have placed the junction at the Tuamarina Station, on the Picton and Blenheim Railway, so as to avoid a second crossing of the Wairau River. This line would, therefore, traverse the north bank of the Wairau River, as far as the Are Are Valley.

Along this portion of the line there are several places where the water washes close beneath the river bank, which rises in places to a considerable height, and where the bridle road has been obliged to be taken over the hill, there being no dray road on that side of the river.

As the line by this route would be very expensive, and involve in places steep inclines, or in lieu thereof heavy cuttings, I have shown upon the plan an "alternative line," starting from a point near the present temporary terminus and crossing the Opawa, Spring Creek, and Wairau Rivers. Both of these lines would have to be surveyed, and their comparative cost ascertained; so that at the very outset there are serious difficulties attending this line.

Are Are Valley.—The road from Blenheim to Havelock passes along the west side of the Are Are Valley, occupying in several places the only available ground for a road of any description. The railway line would, therefore, have to be built along the opposite or east side, as shown upon the sketch map. The whole of the low-lying lands in this valley may be considered a swamp, as there is no visible watercourse flowing through it. However, there is plenty of room for a railway line on the east side, by curving round the base of the hills. There is but a small extent of clearing in this valley, and but two or three houses, until you reach the head of the valley. There are several houses at this place, but very little cultivation apparently going on. The rise to the summit between the two valleys is so imperceptible, that it is not until you reach the head water of the Kaituna River that you are made aware of having passed over the dividing ridge.

The Kaituna Valley offers no obstacles to a line of railway passing through it, and the fall in the river is very gradual. This valley is very different in every respect to the Are Are, as it is much wider, a far better soil, more thickly populated, and the further you proceed in the direction of Havelock the better it becomes.

At the lower end of this valley there are three steam saw-mills in actual operation and employing a considerable number of hands, and as the timber is felled and removed, the land appears to be taken up for cultivation by intending settlers. The lower saw-mill, within a short distance of Havelock, has a railway attached to it worked by locomotives, and the road appears to be kept in a good state of repair. This railway, after passing for a considerable distance through the valley, enters another, and extends in the direction of a tributary stream for at least three miles. The Kaituna Valley when cleared of its timber will support a considerable population. But whether a line of railway through a country that connects two seaports, and within so short a distance of each other, would be likely to pay, is a matter for consideration.

Pelorus Valley.—The next valley, that of the Pelorus, has been surveyed with the view of constructing a tramway through it. The surveyor, I consider, has shown good judgment in selecting the north side of the river for the line, although the few inhabitants of the valley have located themselves on the south side; but this is doubtless, owing to the dray road having been constructed on that side.

The length of the surveyed line is 12½ miles, 10 of which passes through the Pelorus, and the remaining 2½ through through the Rai Valley. I have shown the railway line as following the course of the surveyed line, as it would be out of the question to attempt to build one on the other or the south side of the river, for what with the bends in the river, the swampy nature of the ground in the valley, the protruding hills with their steep spurs in some places overhanging the river, and the sharp curves that would be required, a railway along such a tract of country would be both expensive in construction and difficult of maintenance.

Rai Valley.—From the end of the surveyed line the railway would continue up the Rai Valley, following in about the same direction until it crosses the river and enters the valley of the Brown, that leads up to the saddle and forms the dividing ridge of the Rai and Wangamoa Rivers. The line, after crossing the saddle, proceeds down the Collins to its junction with the Wangamoa River. There is no available land in the valley of the Collins River for cultivation.

Wangamoa Valley.—The valley of the Wangamoa is very narrow, the hills in most places sloping down to the river banks, leaving but little level land, the whole of which is occupied by the river. There are a few exceptional places, but not of sufficient importance to base any calculations upon as regards contributing support to the line. The line, in leaving this valley, passes over the saddle and enters the valley of the Bluff Rock River. The river in this valley is very tortuous, and it would be both difficult and expensive to construct a line of railway through it. Very sharp curves would be required, and an unavoidable necessity of crossing the river many times, with, as its name applies, rocky bluffs that form its bank on the south side the whole of the way up the river.

Happy Valley.—When the line enters Happy Valley, through which the Lud River flows, it may be said to leave the timbered country. This valley contains some good agricultural land, a considerable quantity of which is under cultivation, but I scarcely think it capable of supporting a larger population than it at present contains. The line, after passing over the saddle that divides the Happy Valley from the coast, passes along a side hill on the north side of the road to the low-lying lands at Wakapuaka, curving round to the beach road that leads to Nelson. There will be no difficulty in constructing a line of railway from Wakapuaka to Nelson, as there is plenty of room inside the beach road for that purpose.

The Section.

The grades, as you will perceive by the section, are favourable enough as far as the first saddle that divides the Rai and Wangamoa Valleys.

I should here remark that the scales of this section, both horizontal and vertical, differ from those that I usually plot the sections from.

To ascend this saddle by the track on the east side, and descend it by the bridle road on the other, is altogether impracticable.

I have therefore shown upon the section what I consider to be the only way this saddle can be overcome, and that is by following up the course of the streams on both sides, and with a tunnel of about 20 chains in length. This tunnel, though short, will be expensive, and the approaches, especially on the east side, will also be expensive, as the course of the stream is over rocky and broken ground. However, there is no other practicable way of grading this portion.

No better grade than that of about 1 in 60 can be had along the Collins River.

The next difficult point is the saddle between the Wangamoa and Bluff Rock Valleys.

To construct a line over this saddle is, I consider, altogether impracticable, as tunnelling is of no assistance whatever to the grades, especially upon the south side; and for the line to follow the contour of the country from the junction of the Bluff Rock and One Tree Rivers to the top of the saddle is, as the section shows, entirely out of the question. Nor would a line from the junction of Bluff Rock and Teal Rivers to the top of the saddle be found practicable, as such a line would have to pass over the rocky and high bluffs that form the banks of the Bluff Rock River on that side; and even were the localization of this line practicable, the grade of 1 in 20 would be objectionable.

I therefore cannot see any practicable means by which this saddle can be passed, except at a sacrifice of money which the very nature and object of this line would not for a moment justify.

There is another saddle or summit to pass over near the 59th mileage that will require a steep gradient, such as that shown upon the section; and I am certain that a better one cannot be had except by following the hills round on the other side of the road, by which the line would be very considerably lengthened.

When we consider the object of this line, the very rough portions of country through which it would have to pass, its present population and the poor prospects of any material increase thereto, together with its probable enormous comparative cost, I am of opinion that the undertaking will have to remain a long time before the Government will find either the means or the necessity for constructing it.

My own impression is, from what I have seen of the country through which it would pass that, for the present, the only and greatest benefit that can be conferred, at least upon a portion of it, is to carry out the scheme that I understand has already been under consideration, and that is, the formation or building of the tramway from Havelock to the Rai Valley, for the purpose of getting at the fine timber that is growing in the Rai and adjacent valleys.

This is the only scheme that I can conceive of that can at present be practically carried out, with advantage to that locality and with any chance of remuneration for the outlay of capital.

As a railway undertaking by the Government, or as a commercial scheme for private enterprise, I fear the day is far distant when it will be considered either desirable or prudent to carry it out.

I have, &c.,

The Engineer-in-Chief, Wellington. THOMAS M. FOY.

APPENDIX B.

The ENGINEER-IN-CHIEF to the Hon. the MINISTER for PUBLIC WORKS.

SIR,— Wellington, 25th July, 1876.

In my Annual Report, dated 21st instant, I omitted to allude to the surveys of the line of railway proposed between Greymouth and Hokitika. The line has been staked out and an estimate formed, showing the probable cost to be £221,000.

I have directed a deviation to be surveyed, which will probably reduce this figure somewhat; but until the survey is completed, I cannot positively state that any saving will be made.

I take this opportunity of suggesting that the gauge of the Canterbury broad gauge lines should be changed to 3 feet 6 inches, if possible, during the present year, and that the Christchurch and Lyttelton Stations should be re-arranged, and a large store erected on the Gladstone Wharf.

I have no data for forming any estimate of the cost of these works, but think that, with the necessary rolling stock, it will be about £60,000.

I have, &c.,

JOHN CARRUTHERS,

The Hon. the Minister for Public Works. Engineer-in-Chief.

APPENDIX C.

ANNUAL REPORT ON ROADS, BY ASSISTANT ENGINEER-IN-CHIEF.

The Assistant Engineer-in-Chief to the Hon. the Minister for Public Works.

Sir,— Public Works Office, Wellington, 30th June, 1876.

I have the honor to forward my annual report on road work executed in New Zealand during the past year, under "The Public Works and Immigration Act, 1870," up to the 31st May.

There has been no great length of new roads completed, the principal works being confined to the repairs and maintenance of those already made, and their improvement where required; nevertheless several of the roads in the interior in Native and other districts have been pushed forward steadily, if slowly, and the internal means of communication is being improved from year to year.

With the view of reducing the cost of the maintenance on the several roads, and of increasing the usefulness of a strong active body of men, it was arranged that the services of the Armed Constabulary should be called into requisition more generally for this work than has before been the case. Accordingly, in October last, the first steps were taken in this direction, and gradually since that time bodies of Armed Constabulary have been distributed over the several districts in actual working parties, and have accomplished a large amount of useful work in road making as well as road repairing, under the direction of the several District Engineers.

The actual strength of the working parties according to the last return were as follows:—*Waikato*, in five parties, 53; *Taranaki*, between White Cliffs and Mimi, 15; *Taupo*, in seven parties, 36; *Turanganui*, on Ormond Road, 18; *Wairoa*, in four parties, 24; *Tauranga* to Napier, and to Katikati, 37; *Opotiki* and Ormond Road, 31; *Patea, Hawera, Opunake*, &c., 13; *Ohinemuri* to Katikati, 12; Total, 239.

The roads in each district will be found described below, each under its proper heading, the information in each case having been furnished by the different District and Road Engineers.

ROADS NORTH OF AUCKLAND.

(T. Heale in charge.)

The works now under contract and those which have been completed during the current year are as follows, viz.:—

1. Works on the portion of the North Road from Whangaroa towards Mongonui, about 3¾ miles. These make the road from the Bay of Islands to Mongonui fairly passable for horsemen.

2. Works performed chiefly by Natives on the extension of the Bay of Islands and Hokianga Road; in detached pieces, about 3 miles in all. Completing the distance of about 13 miles between Kaikohe and Taheke.

3. The large bridge over the Waiaruhe River (to replace what was formerly called the "Black Bridge," which was destroyed by a flood). This consists of one span of 41 feet trussed, and four spans of 20 feet each, plain—total, 121 feet; the two main piers are bedded on the solid rock which forms the bottom of the river. The work is expected to be finished by next October.

4. Some small works to complete the road from Ahipara to Kaitaia, contracted for with Natives last year, and finished in September last, extending over a length of about 7 miles.

5. Section No. 1a, on the Mahurangi and Port Albert Road, the completion of which has been delayed by the opposition of one of the landowners; length 1¾ miles.

6. Section No. 5, on the same road, about 2½ miles, being its extension to the town at Port Albert, which is situated on the Oruawharo, an arm of Kaipara Harbour.

Surveys.—In addition to works, the following surveys of roads still required to complete the main through road from Auckland to the North have been made, viz.:—

1. *From Kawakawa to join the main road at Waimate, about 14 miles.*—This is a most necessary work, being a part of the through main road; it will enable produce to be conveyed direct from the country districts to Kawakawa, instead of by land to Waitangi, and thence round by sea.

The proprietors through whose land this road will pass have made liberal offers in reference to the land that will be required, being anxious to facilitate its construction.

2. *From Albertland to Waipu, about 25 miles.*—This road would open some of the best land in the North, hitherto unsettled for want of a road; the line presents no great difficulties or bad gradients, but several long bridges and a number of smaller ones will be required in its construction.

3. *From Warkworth (Mahurangi) to the North Shore at Auckland.*—The portion of this yet to be made is from Warkworth to Te Weiti (where it would join a provincial road), a distance of about 15 miles, in which there are no serious natural difficulties. The line according to the new survey would shorten the distance by at least 25 miles.

The present track is very dangerous, even in summer; very steep in many places, and very wet and swampy in others.

Mr. Marsden Clarke, who is in local charge of the road and bridge works in and around Waimate district, recommends the following works for execution, viz.:—He describes the main road between Waitangi and Okaihu as in good order, excepting one section of about two or three miles, which would cost only £300 or £400 to make it a really passable road.

Also, the road from Waitangi to Taheke is described as finished to Ohaewai, and all the streams, excepting four or five between Ohaewai and Taheke, as being bridged. What is further required to make it a tolerable road is about quarter of a mile of side cuttings, a few bridge culverts, the part in the forest cleared of stumps, and about a mile of drainage; the cost of these works being estimated at about £500 or £600. This is an important line of communication, joining the east and west coasts, and opening up a fine district lately purchased by the Government.

It is to be hoped that means will shortly be found to complete the remaining links in the line of the Main North Road, as well as those last mentioned. Sufficient evidence has been given of the very beneficial effect of the works already executed, although detached and scattered, and only parts of the whole scheme, which when completed cannot fail to stimulate the settlement of this part of the country, and arouse the present settlers from the state of inaction and stagnation into which they had fallen for want of any road communication between the various settlements.

BAY OF PLENTY AND WAIKATO.

(A. C. Turner in charge.)

Tauranga–Taupo.—The only works executed on this line have been for maintenance—viz., South pier of Awahou Bridge protected against floods; 4½ chains of corduroy in Mangorewa Forest, one culvert repaired, and 5 feet bridge now under repair. A portion of the Armed Constabulary Force, under Captain Gascoigne, has been employed on general repairs and improvements in the Mangorewa Forest since December last; and their services in this work will be continued, as the Native contracts for maintenance will expire 30th June.

Four cottages are being erected at intervals along this road for the use of the working parties. The road generally is in as good order as can be expected, only 75½ chains of the whole length (66½ miles) being metalled.

Ohinemutu Branch Road.—This is in good order, and has been maintained by the Armed Constabulary during the year.

Tauranga–Katikati.—Length about 35½ miles. On the first division, the Armed Constabulary have finished the repairs to the Wairoa Mill-dam, which involved earthwork to the extent of 1,633 cubic yards, and have fascined the sides of the embankment for 13 chains, to protect it against action of water; they have also maintained the road for 19½ miles to Aongatete.

Thence to Katikati the road has been improved by carrying embankments across swamps and making side and other cuttings:—Earthwork in face and side cuttings, 8,257 cubic yards; ditto in ditches, 159 cubic yards; 10 chains of manuka scrub cleared, 1½ chains of road fascined, and 9 large and 7 small box culverts erected. On this work fifteen of the Armed Constabulary Force have been engaged. The road as far as Aongatete is in good order; beyond that, the works being incomplete, the road on the proper line is yet impassable.

Maketu–Rotorua.—About 36 miles. In bad order throughout; Natives not inclined to work except at prohibitive prices.

Rotorua–Tapapa Horse Road.—The survey of this has not yet been made; Natives still in opposition.

Horo Horo and Te Whetu Horse Road.—Still incomplete; only slight repairs have been made on this road, and consequently it is not in good order.

Galatea and Ahikereru Horse Road.—About 19½ miles, the greater portion through forest. This line has been laid off during the year, without opposition from the Natives. It is now ready to let by contract, and the Natives appear anxious to be engaged on it. It will form a very important link in the system of roads in this district, penetrating, as it does, into the heart of the Urewera country.

Matata and Te Teko.—This road, about 15 miles, has been maintained by the Armed Constabulary, and is now in good order for traffic.

Opotiki and Otara.—This road has been maintained in good order by the local Highway Board.

Maketu and Whakatane Horse Road.—This road is in fair travelling order, but the proposed deviation and other improvements have not been executed, the Natives still asking too much for their labour.

Opotiki and Ohiwa Road.—At date of last year's report this was being converted into a dray-road 18 feet wide; the work has been completed, and includes 128 chains of road widened, excavation of 2,494 cubic yards of earthwork, five culverts lengthened 6 feet, and five new culverts erected. A heavy flood in November last carried away the smaller Waioeka Bridge and a portion of the larger one; they have not yet been replaced or repaired, but, with these exceptions, the road is in good order.

Ohiwa and Waimana Horse Road.—This, although the repairs were undertaken by a Native chief, still remains in bad order, as he has neglected his work.

Tauranga and Tapapa Road.—This remains in same state as last year; the portion then formed, 8¾ miles, is in good order.

Tauranga and Judea Road.—Three-quarters of a mile. This, after being improved in the grades, is in good serviceable repair; it has been maintained by the Highway Board.

Opotiki and Waioeka Road.—Five miles long, but only 2¾ miles formed, as reported last year; this is in good order.

Whakatane and Ohope Horse Road.—Three and three-quarter miles long. The November floods carried away about 3 chains of side-cutting, and one culvert under the Whakatane Redoubt. The necessary repairs and ordinary maintenance were executed by the Armed Constabulary. The former included excavation of 105 cubic yards of solid rock.

Matapihi and Maketu.—This remains generally in good repair.

Ohineroa Horse Road.—Natives still object to this, and no work has been done.

Te Teko and Galatea Road.—During the year 86 chains have been formed by the Armed Constabulary, making a total of 13 miles 6 chains properly formed and graded 20 feet wide; the remaining 18 miles 34 chains being roughly formed.

Earthwork, 2,926 cubic yards. The bridges erected on this road by the military in the first instance are now becoming decayed, and timber is being prepared to repair them.

Galatea and Opepe Road.—A continuation of the above. During last year 166 chains have been formed, including 13,860 cubic yards of earthwork—total length now properly formed, 7 miles; the erection of a 20-feet bridge will make this serviceable for dray traffic.

Whakatane and Te Teko.—The work on this line has been carried on by Natives, and amounts to 35 chains of embankment 20 feet wide, making 10 miles 46 chains formed; two bridges, each of 25 feet span, have been erected by the bridge carpenter, assisted by the Armed Constabulary. Earthwork by Natives, 8,890 cubic yards; and by Armed Constabulary for bridge approaches, 339 cubic yards.

The portion of road formed, although in good order, cannot be used to advantage, there being still 2½ miles to complete.

Rotorua and Tarawera Road.—Nine and a half miles. During the year 2 miles have been properly formed by the Ngatiwhakaue, making 8 miles; and 1½ miles roughly formed by the Tohourangi; when the latter is finished, the whole line will be complete. The latter Natives also erected, under proper supervision, the stone abutments under Nos. 1 and 2 bridges, about 76½ cubic yards of dry rubble. These bridges are respectively 19 and 24 feet long. The Armed Constabulary, under Captain Gascoigne, excavated 17,346 cubic yards of heavy side-cutting at Tikitapu Lake. This road is in good order, and even the unfinished portion is quite passable.

Opotiki Table-land Road.—Two and three-quarter miles long, with a proposed extension of 90 chains to the beach, for which survey has been made, but no work done. Old road in good repair.

Cambridge and Taupo (Atiamuri).—The survey of this, reported on last year as being incomplete, has not yet been finished.

Kaiteriria and Tarawera Horse Road.—Three miles has been kept in good repair.

Opotiki and Torere Horse Road, and on to East Cape.—No work has been done on this line, and, although nominally maintained by the Natives, is not in good order, as they do not work regularly.

Whakatane Valley Road.—Since last report, the Ureweras have formed 3 miles 70 chains, 8 feet wide, making a total of 6 miles 47 chains, of which 60 chains are formed 18 feet wide.

Tauranga and Cambridge Horse Road.—About 55 miles. Survey reported on last year as being stopped by Natives, still remains incomplete.

Road Work at Tauranga, joining Inland Roads to Beach.—This has been maintained by the local Highway Board, and is in excellent order. About 2 miles 12 chains.

Opotiki and Poverty Bay Horse Road—About 80 miles. Since last annual report about 5 miles 77 chains have been formed through forest at the Opotiki end, by the Armed Constabulary under Captain Bluett, including excavation of 11,503 cubic yards in side cuttings, 40 cubic yards of rock, 4 chains of corduroy, and general repair and maintenance of 26 miles of road. Mr. Penny, contractor for rock excavation, has moved 7,213 cubic yards of solid rock from side-cuttings.

Total length now formed at Opotiki end 32 miles; at the Poverty Bay end, on the deviation surveyed last year, 11 miles 10 chains have been formed (2¾ miles through forest), including 5,035 cubic yards of rock excavations, and a number of small bridges erected.

The Armed Constabulary have formed 34½ chains of new road, including 1,753 cubic yards of earthwork and the erection of two bridges 20 feet and 16 feet long. Total deviation now completed, 20 miles 10 chains, 9 of which are in forest, leaving 7 miles 36 chains yet to complete. Total work done for the year, 17 miles 7 chains; and total now complete, 77 miles 37 chains. The Opotiki end of the road is in good order; but the southern end is in bad repair owing to heavy rains, and the fact of the Armed Constabulary having been recalled after having worked only a short time.

Thames and Katikati Line, through the Ohinemuri Gold Field.—Approximate distance from Te Puke Landing on the Thames to Katikati, 23½ miles. From the landing to Mackaytown, 5½ miles, has been well formed as a dray road, but will require metalling; thence to the turn-off to the Waitekauri diggings, 3½ miles, has also been formed, but not under proper supervision. The grades are therefore not suited for dray traffic, and the line will require a new survey.

From the turn off to Katikati the line is under survey, and a distance of about 9 miles is finished. On this length 45 chains of road have been formed by the Armed Constabulary, under Sub-Inspector Newell, 18 feet wide (11 chains through forest), earthwork, 802 cubic yards. Total work, 9½ miles.

Grahamstown to Hikutaia.—This has been kept in repair by the Provincial Government.

Katikati and Grahamstown, and Tauranga and Maketu Line.—The necessary work on these has been executed by the Telegraph Inspector.

Cemetery Breakwater, Tauranga.—The northern extension of this wall (116 feet) has been completed, and the new base in front of the wall, 420 feet, has been built; they include 405 cubic yards of masonry, and 165 cubic yards of excavation. The southern extension of 45 feet is under construction by Armed Constabulary and one civilian mason.

Public Buildings erected under Mr. Turner's supervision, viz., Ohinemutu Telegraph and Post Office and out-buildings, District Schoolmaster's residence; also under construction, addition to Maketu Telegraph and Post Office, and Lock-up at Opotiki.

Provincial Works supervised, viz. excavations of cutting, formation of embankment and erection of culvert at Waioeka and Otara roads junction, embankment and cutting and erection of bridge on cross road and embankment, and cutting and erection of bridge at east end of cross road.

Waikato Great South Road.—Mercer to Newcastle, 36 miles. No work has been done during the year.

Newcastle to Hamilton.—No new works have been done during past year; road is in fair order.

Hamilton to Cambridge.—One stone culvert has been erected at Martyn's Creek by artisans and labour furnished by Armed Constabulary. The approaches are being graded, and the excavated material used in forming embankments over culvert. To present time, 933 cubic yards of earth have been moved.

Patrol Road.—Cambridge to Rotorangi. A party of Armed Constabulary, under Sub-Inspector Watts, has been employed on this portion of the line, which at present is in fair order. Seven culverts

have been replaced, one box culvert 26 feet long and 9 in. x 9 in. has been made, 5 chains of road formed 28½ chains fascined, and 1,644 cubic yards of earth excavated to cover fascines.

Rotorangi to Orakau.—A party of Armed Constabulary, under Sub-Inspector Smith, has been employed on this section. Twenty-one chains of old embankment over the Mangahoe Swamp have been fascined and covered with clay, and one culvert erected; earthwork, 754 cubic yards.

Rangiawhia to Kihikihi.—Another party of Armed Constabulary, under same supervision, has been engaged on a heavy cutting on this section; earthwork, 910 cubic yards.

Cambridge and Rangiawhia.—No work has been done on this line during last year, and it is not in good order. The Waikato Bridge at Cambridge was carried away by a flood in November last, and arrangements have been made for the erection of a new one, the Provincial and General Governments each supplying half of the cost.

Cambridge and Ohaupo.—This line is impassable at present for wheel traffic, as the bridge over Walker's Gully has been carried away, and that over Rich's Creek damaged by the late heavy floods.

Hamilton and Alexandra.—A party of Armed Constabulary has completed a side-cutting between Ohaupo and Alexandra; earthwork, 710 cubic yards.

Te Awamutu and Alexandra.—This road is in fair order, but no work has been done by the General Government.

Waipa Road, Newcastle to Alexandra.—A party of Armed Constabulary is at work on this road, between Newcastle and Whatawhata; they have completed one side cutting, 544 cubic yards of earthwork, and are engaged on another cutting, having taken out 572 cubic yards of earthwork. A second party has been employed, between Heather's Creek (Mangaotama) and Te Rore, reforming the road for 2 miles 79 chains, also clearing 3 miles 16 chains of fern and manuka, 33 feet wide; fascining 17⅓ chains earthwork in ditches, and forming 822 cubic yards. The road between Newcastle and Whatawhata is impassable for wheel traffic, the Ohote Bridge having been seriously damaged by floods; the other part of the road is passable.

Te Rore Bridge.—This work, proposed last year, has not been carried out.

Whatawhata to Raglan.—This track is in very bad order.

Raglan and Otea.—Plans prepared; no work done.

Waikato and Thames Line, from Confiscated boundary to the Waihou River.—Beyond a partial survey, nothing has been done on this road.

Alexandra Bridge across the Waipa.—The November floods nearly destroyed this structure, which is being repaired by the local Road Board, part of the necessary funds being supplied by the General Government—viz. £190.

NAPIER TO TAUPO, TAUPO TO ATIAMURI (WAIKATO); ALSO WAIROA, POVERTY BAY, AND EAST COAST DISTRICT.

(E. H. Bold in charge.)

Kaiwhaka-Taupo.—Eighty miles. Although much wet weather and many very severe storms have been experienced during the year, this road has been maintained in fair order for coach traffic. Up to the end of November the maintenance was effected by an average number of eight day-labourers, occasionally assisted by the men of the Armed Constabulary; since that time the men of the latter force alone have maintained it. For their accommodation, small houses have been erected along the road at suitable intervals.

The cart bridge over the Mohaka River, reported as being under construction last year, has been completed; it consists of five trussed spans of 40 feet each, and four plain spans, making up a total length of 270 feet; the piers consist of piles driven through the loose shingle into the papa rock.

Improvements have been effected at sundry places by widening the road where too narrow. List of works by day labour (besides maintenance for six months):—52 culverts, 255 cubic yards of rock, 2,000 cubic yards earth, 700 lineal feet of parapet fence, and 5 chains of road metalled. By Armed Constabulary labour: 10 chains of approaches to Mohaka Bridge, two houses for roadmen erected, three bridges repaired, besides six months' maintenance.

Atiamuri-Taupo.—Twenty-four miles. This road suffered much damage during the December and January rains, but it is now in a good state for traffic, having been well maintained by a detachment of the Armed Constabulary. Hand-rails have been added to the Tapuaeharuru Bridge, and fences erected at the approaches.

Bridle Track, Taupo to Tokaanu.—As before described, this was surveyed and prepared for contract, and offered to the Natives at a fair price, which, however, they still decline to accept.

Tapuaeharuru to Hot Springs.—Three miles. The construction of this was intrusted to the Armed Constabulary; but as the force has been much engaged in necessary repairs on other lines not much work has been done.

Napier-Patea, inland.—This remains as described last year, survey executed and estimates prepared, but no work done. It is probable that further survey will be required to improve the line.

WAIROA DISTRICT.

Wairoa-Opoiti.—This road suffered considerable damage from heavy rains in January, and has been maintained, repaired, and improved by the Armed Constabulary. It is fairly passable for wheel traffic to within a mile of Opoiti where a bridge is required.

Bridle Road, Te Kapu-Waikare-Moana.—This road has also been much damaged by heavy rain, and the repairs have only been partially effected, several small bridges having yet to be rebuilt. The necessary apparatus has been supplied for the establishment of a ferry across the Waikare-Taheke, which was much needed. The Armed Constabulary execute the necessary work on this line.

Wairoa-Putere and Upper Waiau.—Blocks of land having been recently purchased in this district, which lies between Wairoa and Lake Waikare-Moana, the country has been cursorily examined for the

purpose of determining the best line of road; the information however yet acquired, is not sufficient to determine this point.

Wairoa-Gisborne, Bridle Track via *Coast.*—Native contractors have kept this open for horse traffic. Two miles are under construction by the Armed Constabulary at the Wairoa end—the work includes formation and drainage. A cart bridge will be required across the Awatere Stream.

Wairoa-Gisborne, inland.—The work completed on this road amounts to 17 miles of bridle track 8 feet wide, 1 horse bridge 70 feet long and 7 feet wide, also 25 miles of road repaired. A distance of 5 miles is yet to be constructed; 3 miles of that already constructed is blocked up by slips, and great difficulty has been experienced in inducing the Natives to work at their removal. For greater part of its length this road could easily be made into a cart road; the grades between Te Reinga and Poverty Bay are good, and the work has been well done; the whole is in fair order for horse traffic.

Roads, Poverty Bay District.—These have been maintained by the District Highway Board, assisted in some cases near Ormond by the Armed Constabulary, who have also opened the road temporarily over Kaitaratahi Hill, towards Mangatu. Grants in aid to the Board have been made from the Public Works Department to the extent of £1,000; of this, £250 were expended in improving outfall drainage—the remainder applied to repairs rendered necessary by the January floods, some of which are still in hand.

A large quantity of useful work has been executed by the Armed Constabulary under Captain Gudgeon, on the road leading to the Oil Springs and Opotiki.

Mr. Bold draws attention to the importance of certain works much needed in this district; amongst others, bridges across the Turanganui (at Gisborne), the Waipaoa, and Te Arai; also the excavation of the main drain from the Patutahi Flat through the Pipiwhaka Bush.

Bridle Road, Gisborne, Hicks' Bay.—The repair and maintenance of this has been intrusted to the Armed Constabulary, but their number (only two) has been quite insufficient, and the road is generally in a bad state from slips and the action of heavy rain. It will require at least other six men to maintain this line in a passable state.

The Natives have constructed a track on their own account between Waiapu and East Cape.

The ferries at Pakara, Uawa, and Orutua have been maintained as usual.

Other works connected with the Colonial Architect's Branch, Native, and Telegraph Departments have also occupied a share of Mr. Bold's time and supervision, as well as a considerable amount of survey work conducted in the Patutahi Block and the Waikare-Moana Block, including, in the latter, the Waitara, the Tongoro, and Tarawera Reserves.

MANAWATU DISTRICT, EAST OF GORGE.

F. H. Geisow in charge.

Road Seventy-Mile Bush, Manawatu Gorge to Takapau.—Length, about 30 miles. This, after being completed, was maintained until August, 1875, and then handed over to the province (Hawke's Bay).

Road, Gorge towards Opaki.—Three miles seventy chains. A contract for metalling this section was let on 3rd March, and progressed satisfactorily until about end of May, when the weather became too bad to work to advantage; the work is therefore suspended until more favourable weather.

Norsewood Road.—This branches from the main road in the Seventy-Mile Bush near Norsewood, and crosses the forest in an easterly direction, following the course of the valley of the Mangarangiora River till it meets the line of railway; its whole length being about 3¾ miles. One hundred and fifty-seven and a half chains have been formed, and 269½ chains of bush felled and cleared, 40 feet wide. This work, as well as that described under the next headings, has been executed by immigrant labour.

Road leading to proposed Railway Station at end of Takapau Tramway.—About 3¼ miles in length, and nearly parallel with the last described. One hundred and twenty-eight and three-quarter chains of bush have been felled and cleared 50 feet wide.

Branch Roads.—Two hundred and forty-nine chains of bush have been felled and cleared 20 feet wide. The first of these leaves the main road at Norsewood, proceeding eastward for about 1¼ miles, where it joins the second, which is at right angles to it, and is about 1½ miles long, stretching between the Mangarangiora River and a branch of the Upper Manawatu, and lying parallel with the main road.

MANAWATU DISTRICT.

(J. T. Stewart, in charge.)

There have been no new road works undertaken in this district since last year's report. The road between Foxton and the Gorge has been maintained, the principal outlay being required in the Gorge itself, to keep the road clear of slips which occur frequently, the hill side being so steep. The maintenance men also have been employed in widening the narrow places and improving the sharp turns. This part of the road is in good order.

A ferry has been established at the lower crossing of the Manawatu River, but a larger and more substantial punt is required than the one now in use, or, considering the importance of this as a main line of road, a bridge would be better suited to meet future requirements, this would probably cost £8,000.

Between this point and Palmerston, the road being well metalled has been maintained in good order at a small cost.

That portion, however, between Palmerston and Oroua has not yet been metalled, and is therefore, in winter, unsuited for traffic; it is probable that it will be found necessary to metal it to insure good communication between the local and private roads and the several stations on the railway.

Small repairs have been executed between Oroua and Foxton. The road is chiefly used as a cattle driving and horse road, the heavy traffic now being carried by the railway.

MASTERTON, TOWARDS MANAWATU GORGE.

(Alexander Munro in charge.)

This piece of road is about 40½ miles in length, of which, at the date of last annual report, 26 miles had been formed and bridged. Since that time the formation of the road has been completed, and all the bridges (with the exception of the three largest) have been built; the total number of these is 93, varying from 20 to 80 feet long, four of them being truss bridges of 35 feet spans. The number of culverts exceeds 300, varying in size from 10 inches to 12 feet square. Very heavy side and other cuttings have been necessary on this line, involving the removal of about 268,000 cubic yards of earth and rockwork, besides 16 miles of level formation double-ditched. About 3¼ miles of the side cuttings are in limestone and hard shale rock, some of it very difficult of removal. The road has been well graded and drained throughout.

The work was sufficiently advanced towards completion on 23rd December, 1875, as to allow Hastwell's four-horse coach to travel through from Masterton to Palmerston, as well as other vehicles; and, since then, the road has been considerably used for general traffic.

Contracts as follow have been let for gravelling over the worst portions of the road to the extent of about 8¾ miles, but the lateness of the season has prevented the contractors finishing their work, which will be resumed next spring. List of contracts—Nos. 1, 2, 3, 4, respectively 60, 180, 60, and 80 chains: of these 1, 3, and 4, and 58 chains of No. 2 have been completed—in all 258 chains. No. 5 contract, 160 chains, of which 65½ chains are completed. No. 6, 160 chains, not let. No. 7, 165 chains, all completed. Total of metalling completed, 488½ chains; and, including 190 chains formerly executed from Opaki northwards, 678½ chains, or about 8½ miles.

The three large bridges above referred to are the Makakahi upper crossing, Makakahi lower crossing, and the Mangatainoko: these should be bridged, if possible, next season; meanwhile easy cuttings have been made to their respective fords. The cost of these works will be about £700, £1,200, and £2,500 respectively, including approaches.

The northern end of this piece of road terminates at the Manawatu River, which to make the road system complete should also be bridged: this will probably cost (with approaches) about £8,000. Should the bridge not be built, a good serviceable punt should be established. The resident Natives at present undertake the necessary ferrying, but are under no proper regulations as to charges.

The road just described begins at Opaki, at the entrance to Seventy-Mile Bush, and about 9 miles from Masterton. Of this distance about one-half (that next Masterton) has been formed by the Provincial Government, the remaining half not having been touched or even properly laid off; the track now used passes, in many places, through private lands, and, the owners being desirous to fence, instructions have lately been given to have this part of the road laid off and roughly formed, so as to be serviceable as quickly as possible. A good ford has been chosen across the Ruamahunga River, and the work will include the cutting of the necessary approaches to it. A site for a bridge has been selected on the proposed future railway line, and it will probably be found desirable to erect the bridge as a combined road and railway bridge, as only one good available site appears to present itself.

Wanganui to Patea, and Wanganui to Taupo.

(J. Rees in charge.)

Main North Road.—This was taken over by the Provincial Government in July, 1875, since which time Mr. Rees's supervision has only extended to the Waitotara Bridge. This structure has been thoroughly overhauled and screwed up, and a tender has been accepted for painting it.

Horse Road, Wanganui-Taupo.—The only work done on this during the past year is the completion of No. 9 contract, or about one mile of track—making a total of about 34 miles of completed horse-track.

To reach the open country there still remains a length of about 10 miles of track to be felled and cleared. It is desirable that this piece should be undertaken and opened next summer.

No labour has been employed on this track for maintenance since November last, and the track has in consequence become obstructed in places by slips.

West Coast Road, Patea to Pukearuhe; also Mountain Road.

(O. Carrington in charge.)

Pukearuhe to New Plymouth.—No General Government work has been done on this section during the last twelve months.

Inland Road.—Between New Plymouth and Mountain Road, one small contract has been completed and taken over.

New Plymouth to Umuroa.—On this section the painting of the Kaihihi, Mataneuneu, and Werekino Bridges has been completed, under contract 116.

Umuroa to Waingongoro.—Bridge-painting: Part of the above contract has been completed, and 24 chains of road formed by day labour, previous to the employment of the Armed Constabulary. Five of those stationed at Opunake have been employed for about three and a half months in general repairs and maintenance of the road over a length of about 4 miles. Important repairs have also been effected by a small party of the Armed Constabulary, brought from Patea for the purpose, on the road over the Waimate Plain and near Kaupokonui.

Waingongoro to Southern Boundary of Province.—A party of Armed Constabulary, to the number of seven, has been employed in maintaining the worst portions of the road on this section.

Bridges.—The Patea and Whenuakura Bridges have been thoroughly overhauled and well screwed up; and a contract for painting them (including also the Waitotara Bridge) has been let to Mr. Louisson, of Nelson, who is using his hematite paint for the purpose: this material, as far as our experience extends, appears to be well adapted for such work. The Patea Bridge is completed, and the Whenuakura Bridge nearly so.

A contract for gravelling 94 chains of road near Carlyle has been completed; this extends over a sandy portion of the road.

The Manawapou Hill should have been gravelled if suitable material could have been found; failing this, it has been maintained by using coarse sand instead.

Mountain Road.—On this road 117 chains have been formed, and 88 chains gravelled; the latter is through the Township of Hawera. A contract for gravelling a further portion of 69 chains has been let, but considerable difficulty has been experienced in obtaining suitable material, and no work has yet been done.

State of Roads for Traffic.—Between Pukearuhe and Waitara there is no properly-formed road. On the inland line, through Tikorangi to Waitara, patches were formed (about five years since), but not kept in repair, and are consequently now unfit for cart traffic; the seaward track is generally used, although bad for carts.

From Waitara to Stony River is in good order, except about 4 miles through the Oakura district, now being formed and metalled. From Stony River to Waiorongamai the road is good where it has been gravelled, but the other portions are impassable in winter. Between Waiorongamai and Umuroa only a track exists; from thence to Waingongoro the road is in good order at present, but the unmetalled portions will be heavy during winter.

From Waingongoro to the southern boundary of the province the road is metalled and in good order.

Besides the works under the Public Works Act, Mr. Carrington has executed surveys and supervised a considerable amount of road work undertaken by the Provincial Government, as follows:—

1. A complete examination and survey to decide on the best road line from Waitara to Urenui, inland and seaward, with report and plans. The latter was adopted by the Provincial Government, and four contracts have been let for portions of this road.

2. On the inland road, before mentioned, to the upper crossing of the Waiwakaiho, deviations have been laid off to improve the grades, and the work on several of these has been done by immigrant labour in small contracts. From the Waiwakaiho to Inglewood (or junction with the Mountain Road) the road has been bridged, cleared, and formed, under small contracts, in all about 4½ miles, 20 to 24 feet wide throughout, excepting the eastern approach to the Waiwakaiho Bridge (about 3 chains). Very little gravelling has yet been done: this, as well as felling the bush wider on each side, will be necessary to make the road serviceable at all seasons.

3. South Main Road, between Oakura and Katikara (Okato Block): Five contracts have been let—two for formation, 143 chains; two for gravelling, 139 chains; and one for metalling, 70 chains.

Summary of work executed under "The Public Works Act, 1870":—

Lines of road surveyed, 78½ miles; bridges erected, 32; culverts of wood, 244; culverts of stone, 32; roads formed and metalled (or gravelled), 33 miles 32½ chains; roads formed only, 56 miles 36½ chains.

ROADS IN WESTLAND.

C. Y. O'Connor in charge.

As scarcely any new works have been executed in this district during the past year, it will only be necessary to make a few general remarks.

During the operation of the Public Works Act the total amounts of work executed are as follows, namely,—

	Miles.	chains.
Dray roads, first-class	52	20
Dray roads, second-class	20	7
Horse roads (including portions in progress), first-class	66	75
Total...	139	22

Of this distance, the whole of the first-class dray roads, with the exception of 34 chains, have been completed, maintained for twelve months, and then handed over to the province; the whole of the second-class dray roads have been completed and handed over to the province immediately on completion; and of the horse roads, 39 miles 47 chains have been completed and the road was then handed over to the province.

Dray Road, Greymouth to Arnould.—The 34 chains of first-class road mentioned above is a deviation of the Greymouth and Arnould Road rendered necessary by the construction of the Brunner Railway. Its estimated cost is £500, one-half of which will be subscribed by the Greymouth Coal Company, as the work will benefit their property. The survey and plans are complete, and tenders will be called for in a few days. The work consists of 34 chains of clearing, 2,730 cubic yards of earthwork, 34 chains metalling, 90 lineal feet of 2-feet culverts, and 194 lineal feet of box drains.

Dray Road, Greymouth to Marsden.—The twelve months' maintenance of this road by the General Government expired on 23rd June, 1875, but not being handed over by the Contractor in a fit condition, further work was required, which was finally completed on 27th July, 1875, and the road was then handed over to the province.

Dray Road, Marsden to Maori Creek.—This road was reported as completed in last annual report. It was divided into two sections, which, when completed, were handed over to the province.

Horse Road, Pounamu to Lake Brunner, and Horse Road, Waimea Right-hand Branch.—These were reported as completed in last annual report, but were not finally handed over to the province until 14th July, 1875.

Horse Road, Bowen-Okarito, North End.—Sections 1, 2, and 3. These were reported as completed last year, with exception of one bridge, and Sections 1 and 2 had then been handed over to the province. Since then the bridge referred to has been completed, and the Section No. 3 handed over to the province.

Horse Road, Bowen-Okarito, South End.—Sections 3, 4, 5. These were reported as completed last year, but were not finally handed over to the province till 14th July, 1875.

The formation of this road has been commenced from both ends; 13 miles 15 chains have been made at the north end, and 12 miles 37 chains at the south end, leaving a portion in the middle yet to be constructed, of 27 miles 28 chains. The estimated cost of this is £14,300.

An extension of the southern portion of this road, northwards, as far as the River Wateroa, a distance of about 2½ miles, is proposed, and instructions have been given for its survey and preparation for contract.

Christchurch Road.—The deviations on this line of road, described last year as being undertaken to avoid future danger from floods, are now all completed, with the exception of about 17 chains on Section No. 8. The total length of the deviations is 11 miles 13·84 chains.

NELSON SOUTH-WEST GOLD FIELDS.

(A. D. Dobson in charge.)

The works executed in this district during the past year are as follows, viz.,—

Dray Roads.—In Buller Valley, from Big Ohika River to Little Ohika River, 1 mile 6 chains; in Little Grey Valley, Squaretown to Devery's Terrace, 3 miles 49 chains; Inangahua Main Road to Boatman's, 3 miles 13 chains.

These works have been executed by the Provincial authorities under Mr. Dobson's supervision; half the cost being borne by the Provincial Government and half by the General Government.

Horse Roads.—In the Ahaura Valley, a bush track cut from the Ahaura Saddle to Haupiri, to avoid the river bed, 20 miles; this is used principally as a driving track for stock brought from the Amuri.

Bridge.—A suspension bridge has been erected over the River Nile, on the main road from Westport and immediately north of Charleston. The bridge has a span of 180 feet, and is constructed of black birch timber framing and galvanized-iron wire ropes. The cost of this, £2,184 2s. 8d., was equally borne by the Provincial and General Governments.

Works in Progress.

Dray Road.—Inangahua to Boatman's, 1 mile, being extension of that described above. The work is nearly completed.

Horse Road.—East of Ahaura Saddle, extending towards the Amuri. The sum of £500 has been devoted to the improvement of this, and a party of men, under an overseer, is now engaged in cutting tracks through the bush at various places, to avoid the river bed.

Summary of work executed in this district, under the Public Works Act, is as follows:—

Dray Roads.—Buller Valley: Westport to Nine-Mile, 6 miles 38 chains; between Ohika Rivers, 1 mile 6 chains; Christie's to Hughes', 7 miles 20 chains—total, 14 miles 64 chains. In Inangahua Valley: Christie's to Reefton, 19 miles 67 chains; Boatman's, 3 miles 13 chains—total, 22 miles 67 chains. In Grey Valley: Reefton to Squaretown, 8 miles; Squaretown to Devery's Terrace, 3 miles 49 chains; Arnould to Ahaura, 12 miles; Ahaura to Little Grey, 9 miles improved—total, 32 miles 49 chains. Total dray roads made and improved, 79 miles 20 chains.

Horse Roads.—In Buller Valley, Hawkscrag, 15 chains; Ohika Hill, 1 mile 52 chains. On Amuri Road, Starvation Point, 1 mile 70 chains; at Saddle, 2 miles 46 chains—total, 6 miles 23 chains. Improved in Buller Valley, 20 miles; in Ahaura Valley, 30 miles. Total made and improved, 56 miles 23 chains.

Works Required.

In the Little Grey Valley an unfinished portion of the main road still remains (about 6½ miles long). It is of importance for the efficient and economical conduct of the traffic that this gap should be filled up. The cost will probably be about £4,000.

GENERAL SUMMARY.

The summary of works completed and in progress in both islands under "The Public Works Act, 1870," will now stand as follows, viz.,—

In North Island, 1,749 miles; being 1,195 miles of dray road and 554 miles of horse road opened or in progress.

In Nelson South-West Gold Fields, 79 miles 20 chains of metalled dray road completed and improved, and 56 miles 23 chains of horse road completed and improved.

In Westland, 72 miles 27 chains of metalled dray road and 66 miles 75 chains of horse road completed and in progress.

Totals for both islands, about 1,346 miles of dray road and 677 miles of horse road, or 2,023 in all.

I have, &c.,

John Blackett,

Assistant Engineer-in-Chief.

The Hon. the Minister for Public Works.

APPENDIX D.

REPORT ON CONSTRUCTED RAILWAYS BY THE SUPERINTENDING ENGINEER.

The SUPERINTENDING ENGINEER to the ENGINEER-IN-CHIEF.

Public Works Office (Constructed Railways)
Wellington, 11th July, 1876.

SIR,—

I have the honor to report on the progress and position of the various railways up to the end of the financial year ending 30th June, 1876.

The lines open for traffic are—

I.—Riverhead to Kaipara.
II.—Auckland to Mercer, and branch to Onehunga.
III.—Napier (Spit) to Te Aute.
IV.—Wellington to Upper Hutt.
V.—Foxton to Palmerston Tramway.
VI.—New Plymouth to Waitara.
VII.—Picton to Blenheim.
VIII.—Nelson to Foxhill.
IX.—Brunner Railway.

In connection with some of the above lines, we have wharves worked by the department as under—

I.—Riverhead.
II.—Helensville.
III.—Foxton.
IV.—Waitara.
V.—Picton.
VI.—Greymouth.

The above system represents 205 miles of railway, with 73 stations and 6 wharves.

The receipts have, I regret to say, fallen short of the estimate as prepared by me last year; but, on the other hand, the expenditure has been lower than was estimated. I attach to this report a statement showing the estimated and actual earnings and expenditure.

The excess of earnings over expenditure amounts to £11,561 0s. 11d., and after deducting the loss made on the Kaipara and New Plymouth Railways and Foxton Tramway, leaves a net balance of £10,125 11s. 1d.

The past year has enabled me to ascertain the requirements of the different railways; and a few experiments I have made are not, I think, without interest.

I have instituted a series of experiments to test the value of the Beuther's axle-box as compared with the ordinary axle-box. The result is very satisfactory, and shows greatly in favour of the Beuther box. The experiment was tried on four-wheeled vehicles, each axle being fitted with one Beuther and one ordinary box, and placed so that the same boxes were at opposite corners. The object of this was to give each box exactly the same work in going backwards and forwards over our severe curves.

One experiment showed 20,738 miles run, the Beuther box using 1½ pints oil, the ordinary box, 4 pints. Of the above distance, the Beuther box ran 14,400 miles without being examined, whereas in the same distance the ordinary box had to be examined six times. This shows not only considerable saving in oil, but also very large saving in labour.

Several experiments have been made in Auckland with the Waikato coal, with a view to test its relative merits when compared with coal imported from New South Wales.

The trials have, however, not been of sufficient duration to enable a definite opinion to be formed as to the exact amount of gain; but I am quite justified in saying that there is a saving in favour of the local coal. The coal is, however, very light, and in order to use it, we are obliged to use spark-arresting chimneys, and, after several experiments we have been able to design one that is quite effectual in preventing sparks escaping from the engine.

The two sets of Westinghouse continuous air-brake gear that were imported for trial have been fitted up and tried. I tried the first experiment on the Wellington and Masterton Railway, between Silver Stream and the Upper Hutt.

The result of the experiment was to my mind quite satisfactory; but I did not make fuller trials as I was obliged to leave Wellington, and as I intended giving the air-brake a much more severe trial on the Auckland and Mercer Railway.

Enclosure 11 will give a full report of the trials made both at Wellington and Auckland, but I shall confine my remarks to the latter, as it is self-evident that what applies to the use of the brake on heavy gradients will of course apply to grades that are less severe.

The trials at Auckland are, as far as I can learn, the most severe to which the air-brakes have yet been subjected in any country. It is true that in England higher speeds were attained, but that is a small matter when the difference in gradients is considered.

At the trial at Wellington, I had omitted to have the cars loaded to represent a full complement of passengers. In Auckland, each car was loaded with 2 tons of iron.

The pipes for conducting the air to the cylinders had to be purchased locally, and were of very inferior quality. This interfered with the working of the air-brake, as there was a good deal of leakage.

From the Enclosure 11, it will be observed that Trials 3 and 6 are the same. The former with air-brake, and the latter with only hand-brakes. The speed was 4 miles an hour less in Trial 3, but we pulled up in 1,887 yards less space. Most of the trials were made over the same ground, so as to allow of better comparison; and a section of the line at this point accompanies the report. It will be observed from this section, that the brake was applied in all experiments tried on this grade at the same spot, viz. at the 4-mile post. This enabled the best results to be obtained both with air and hand-brakes, as the driver and guard both knew the exact spot where the signal would be given for brakes to be applied, and were therefore ready to act with the greatest promptness. Trials 9 and 10 show how completely the train is under the control of both engine-driver and guard. It must be borne in mind that the air-brake was worked by men quite inexperienced in its use; this shows clearly that no special knowledge or training is required to insure good results.

The advantages of a brake that gives such entire control of the train to the driver and guard on railways with such heavy grades as are common in this country cannot be over estimated.

The experiment to test the relative value of steel tyres as against cast-iron chilled disc wheels has not been in operation sufficiently long to enable any comparison to be made.

I have prepared tabulated statements similar to those presented last year, giving all the information that can, I think, be required, marked as under:—

Statement of Expenses on each Line of Railway. Enclosure 1.
Statement showing Mileage, and Expenditure and Receipts, and Proportion of each Class of Expenses to Mileage and Receipts, &c. Enclosure 2.
Statement of Passenger Receipts, &c. Enclosure 3.
Statement of Goods Earnings, &c. Enclosure 4.
Statement of Wharf Earnings, &c. Enclosure 5.
Statement of Accounts. Enclosure 6.
Statement showing Estimated and Actual Earnings and Expenditure. Enclosure 7.
Estimate of Probable Receipts on each Railway. Enclosure 8.
Statement showing Quantity and Condition of Rolling Stock on Opened Railways. Enclosure 9.
Statement of Accidents to Life and Limb. Enclosure 10.
Report of Trial of Westinghouse Continuous Air Brake. Enclosure 11

I am happy to state that during the year there has been no accident on any of the lines whereby any passengers were killed or injured, and the number of accidents to servants of the department or contractors are remarkably small, as will be seen by reference to the Enclosure 10.

Kaipara to Riverhead (Helensville to Riverhead, 16½ Miles).

This railway was opened for traffic on the 29th October, 1875.

In December last there was a heavy flood, which covered the line in some places to a depth of 3 feet 6 inches. A great deal of damage was consequently done.

During the year three rails have broken, in each case showing inferior quality and flaw in the working of the iron.

Great inconvenience has been caused by want of sufficient wharf accommodation, and I have no doubt we have lost considerable business through being unable to give vessels proper despatch.

Auckland to Mercer and Branch to Onehunga (46 Miles).

The maintenance of the portion of this line, Penrose to Mercer, was taken over from the contractor on the 7th August, 1875.

During the year several heavy floods did considerable damage to the line, necessitating very considerable expenditure in maintenance.

During the year, 13 heavy and 55 light rails have been taken out as unserviceable, and 3 light rails have been turned.

The traffic on this railway has not come up to my expectation. In this district it appears that but a small proportion of the land is under cultivation, and but little produce is carried on the line. The rates were fixed very low for the purpose of encouraging trade and agriculture; but they have been found too low, as the railway does not meet with the encouragement that it was expected it would.

Napier to Waipukurau (Spit to Te Aute, 28¼ Miles).

The extension of this line, Pakipaki to Te Aute, was opened on the 16th February, 1876. Since the opening the traffic has improved.

On the 20th January there were some very heavy floods on this line. At 9 miles, the Ngaruroro River made a clean breach over our line, carrying away over 6 chains of fencing, formation, and permanent way. At this point there is a bend in the river, and the stream rushes right across our line. The traffic was stopped for three days.

You will, I think, find the financial results of this line satisfactory.

We have no heavy grades to contend with, and the only sharp curves are between Spit and Napier. The country districts are prosperous, and the Maoris bring a considerable but fluctuating traffic.

Wellington to Masterton (Wellington to Upper Hutt, 19¼ Miles).

On the 1st February, the line was opened to the Upper Hutt.

During the year, 5 stock rails were split and have been replaced, and we have had to renew 32 of the 40-lb. rails.

Foxton to Manawatu—(Foxton Tramway, 24 Miles).

The substitution of iron for wooden rails, which in my last yearly report I mentioned as being proceeded with, was continued without intermission. The traffic was carried on under great disadvantages, and the high rates for carriage had to be maintained, but these will be reduced when the line is completed and in good order.

During the second and third week in December, there were some heavy floods in the Oroua River. In places between 14 and 16 miles, the line was 2½ feet under water. Considerable damage was also done to the banks between 2 and 4 miles. The formation was washed away and the rails and sleepers were left hanging. On the 27th April, trains commenced to run regularly between Foxton and Palmerston.

Waitara to New Plymouth (11½ Miles).

This railway was opened for passenger traffic on the 15th October, and for goods traffic on 25th October, 1875. The maintenance was taken over from the contractor on the 17th January, 1876. The traffic on this line is not encouraging: there are no exports, except a small number of stock.

In order to induce traffic to go over the line the wharf rates at Waitara were reduced, although before such reduction the total charge for wharfage and railway carriage was less than by surf boat, in addition to the certainty of delivery with despatch and in good order. This reduction has not however been taken advantage of. This railway is working at a loss, although no expense that can possibly be avoided is incurred.

Picton to Blenheim (18 Miles).

This line was opened on the 18th November, 1875.

At the beginning of December, a heavy flood in the Opawa washed away some of the piles of the road bridge, which prevented traffic from coming to the railway for several days.

This line is subject to heavy floods, and there has been consequently considerable outlay in maintenance throughout the year.

During the past twelve months an additional siding has been put in at Para.

On 25th January, the wharf at Picton was taken over by my department.

Nelson to Foxhill (20 Miles).

This railway was opened on the 31st January, 1876.

On the 17th to the 24th April, there were some very heavy rains, and the district round Wairoa was flooded.

The traffic on the line is tolerably satisfactory, but I have no doubt the business of the line would be considerably increased if the railway went to the port. At present we lose a great deal of traffic, owing to the high rate of carriage between the town and port, as it is found cheaper, when once on the dray, to take it direct to its destination.

Brunner to Greymouth (7½ Miles.)

This railway was opened for traffic on the 8th April, 1876.

On the 9th April, there was a very heavy flood in the river. It rose to within 5 inches of the highest flood of 1872 at the town, but at the Gorge it was some 6 feet lower than it was in 1872.

The maintenance was taken over on the 22nd May.

In this locality the rates of wages are very high, and the working expenses will consequently show an increase over a line of similar length elsewhere; but it is hoped that when the coal traffic gets into regular swing, we shall be able to show a considerable margin of profit.

The number of miles run by the engine on the different railways varies considerably, according to the requirements of the traffic. On some of the longer lines, engines have run between 15,000 and 19,000 miles each.

In my last year's report I mentioned that arrangements had been made for the establishment of a Railway Audit Office, which has been carried out successfully during this year. In this office the whole of the accounts of the railways, both revenue and disbursements, as well as statistical information, is examined and recorded.

In concluding my report, I have much pleasure in bearing testimony to the cordial co-operation generally shown by the Managers of the various lines, who had no small difficulties to contend with, especially on newly opened lines, where a large portion of their time hasne cessarily been occupied in the detailed arrangements for the public convenience.

The conduct of the railway servants during the year has on the whole been very satisfactory, and complaints on the part of the public have been very few.

I have, &c.,

Frank B. Passmore,

Superintending Engineer for Constructed Railways.

The Engineer-in-Chief.

Enclosure 1.

STATEMENT of CLASSIFIED EXPENDITURE on RAILWAYS open for TRAFFIC for Year ending 30th June, 1876.

	KAIPARA.			AUCKLAND AND MERCER.			NAPIER AND WAIPUKURAU.		
	From 29 October, to 31 December, 1875.	From 1 January, to 30 June, 1876.	Total.	From 1 July, to 31 December, 1875.	From 1 January, to 30 June, 1876.	Total.	From 1 July, to 31 December, 1875.	From 1 January, to 30 June, 1876.	Total.
A.—MAINTENANCE OF WAY AND WORKS:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Permanent Way,—									
1 Wages	177 5 1	934 0 7	1,111 5 8	3,000 10 4	2,936 16 5	5,937 6 9	1,377 6 6	1,397 9 1	2,774 15 7
2 Materials	...	0 16 3	0 16 3	58 15 11	191 19 10	250 15 9	27 8 3	18 8 10	45 17 1
Workshop Commission	...	...	...	...	8 14 11	8 14 11	...	...	...
3 Repairs of Roads, Bridges, Signals, and Works	...	...	...	4 3 6	5 11 11	9 15 5	0 3 6	...	0 3 6
Workshop Commission	...	...	...	...	0 9 9	0 9 9	...	...	...
4 Repairs of Stations and Buildings	...	...	...	0 16 9	25 4 8	26 1 5	...	...	...
Workshop Commission	...	...	...	...	10 17 9	10 17 9	...	...	...
Total	177 5 1	934 16 10	1,112 1 11	3,064 6 6	3,179 15 3	6,244 1 9	1,404 18 3	1,415 17 11	2,820 16 2
B.—LOCOMOTIVE POWER:—									
Running Expenses,—									
1 Wages for Working Locomotives	55 9 0	174 19 6	230 8 6	1,146 7 3	1,171 2 11	2,317 10 2	330 8 0	488 16 11	819 4 11
2 Fuel and Water Supply	38 12 9	134 6 8	172 19 5	975 3 5	712 10 6	1,687 13 11	308 7 9	548 7 11	856 15 8
3 Oil, Tallow, and other Stores	26 10 2	42 17 3	69 7 5	197 17 0	206 5 5	404 2 5	70 11 3	98 10 9	169 2 0
Renewals and Repairs,—									
4 Wages	...	12 18 2	12 18 2	437 3 6	247 5 11	684 9 5	...	0 8 8	0 8 8
5 Materials	...	6 10 6	6 10 6	194 9 1	85 12 0	280 1 1	0 7 6	16 13 4	17 0 10
Workshop Commission	...	2 4 0	2 4 0	...	28 2 0	28 2 0	...	0 4 1	0 4 1
Total	120 11 11	373 16 1	494 8 0	2,951 0 3	2,450 18 9	5,401 19 0	709 14 6	1,153 1 8	1,862 16 2
C.—REPAIRS AND RENEWALS OF CARRIAGES AND WAGONS:									
Carriages,—									
1 Salaries and Wages	...	...	...	294 4 5	292 7 9	586 12 2	76 8 6	125 3 9	201 12 3
2 Materials	...	0 9 0	0 9 0	231 3 11	104 15 0	335 18 11	18 8 6	16 13 11	35 2 5
Workshop Commission	...	0 1 10	0 1 10	...	48 15 2	48 15 2	...	...	...
Wagons,—									
3 Salaries and Wages	...	...	...	196 9 2	130 10 11	327 0 1	...	0 10 8	0 10 8
4 Materials	...	...	...	212 16 5	74 2 11	286 19 4	10 15 10	18 5 6	29 1 4
Workshop Commission	...	...	...	...	19 2 4	19 2 4	...	...	...
Total	...	0 10 10	0 10 10	934 13 11	669 14 1	1,604 8 0	105 12 10	160 13 10	266 6 8
D.—TRAFFIC EXPENSES:—									
1 Salaries and Wages	103 13 10	262 2 8	365 16 6	1,998 16 5	1,936 10 0	3,935 6 5	778 12 2	1,055 0 3	1,833 12 5
2 Fuel, Lighting, and General Stores	8 19 1	5 14 8	14 13 9	111 9 7	104 18 7	216 8 2	50 5 3	65 10 1	115 15 4
3 Printing, Stationery, and Tickets	9 10 7	61 16 4	71 6 11	181 8 0	211 15 7	393 3 7	72 2 11	92 1 3	164 4 2
4 Miscellaneous Expenses	...	1 10 9	1 10 9	9 14 1	46 17 6	56 11 7	2 6 0	2 15 0	5 1 0
Total	122 3 6	331 4 5	453 7 11	2,301 8 1	2,300 1 8	4,601 9 9	903 6 4	1,215 6 7	2,118 12 11
E.—GENERAL CHARGES:—									
1 General Government Expenses	63 0 0	217 6 9	280 6 9	520 0 0	511 15 3	1,031 15 3	248 0 0	272 6 9	520 6 9
2 Salaries of Manager, Accountant, &c.	45 4 4	98 13 3	143 17 7	249 11 1	222 10 5	472 1 6	152 1 6	161 11 10	313 13 4
3 Office and Incidental Expenses	...	...	...	17 15 1	4 9 11	22 5 0	...	...	...
4 Special Expenditure	...	4 19 3	4 19 3	...	17 1 8	17 1 8	...	...	...
Total	108 4 4	320 19 3	429 3 7	787 6 2	755 17 3	1,543 3 5	400 1 6	433 18 7	834 0 1
F.—SUNDRIES:—									
Law Costs	...	...	...	6 12 0	8 16 10	15 8 10	...	...	...
Compensation	...	...	...	...	6 7 4	6 7 4	...	...	...
Rates and Taxes	...	...	...	...	...	...	...	...	...
Total	...	...	...	6 12 0	15 4 2	21 16 2	...	...	...
Grand Total	528 4 10	1,961 7 5	2,489 12 3	10,045 6 11	9,371 11 2	19,416 18 1	3,523 13 5	4,378 18 7	7,902 12 0

Enclosure 1.—*continued.*

STATEMENT of CLASSIFIED EXPENDITURE on RAILWAYS open for TRAFFIC for Year ending 30th June, 1876—*continued.*

	Wellington and Masterton.			Foxton and Palmerston.			New Plymouth and Waitara.		
	From 1 July, to 31 December, 1875.	From 1 Jan., to 30 June, 1876.	Total.	From 1 July, to 31 December, 1875.	From 1 Jan., to 30 June, 1876.	Total.	From 15 Oct., to 31 December, 1875.	From 1 Jan., to 30 June, 1876.	Total.
A.—MAINTENANCE OF WAY AND WORKS:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Permanent Way,—									
1 Wages	618 13 5	1,160 3 9	1,778 17 2	498 6 10	533 14 6	1,032 1 4	...	541 19 0	541 19 0
2 Materials	13 1 5	15 2 11	28 4 4	909 0 4	447 4 10	1,356 5 2	...	16 11 8	16 11 8
Workshop Commission	...	...	...	...	...	...	...	0 5 2	0 5 2
3 Repairs of Roads, Bridges, Signals, and Works	18 12 7	7 1 7	25 14 2	8 9 6	...	8 9 6	...	...	...
Workshop Commission	...	...	...	...	...	...	...	...	...
4 Repairs of Stations and Buildings	14 16 0	11 1 8	25 17 8	2 6 0	13 18 0	16 4 0	...	0 16 0	0 16 0
Workshop Commission	...	...	...	...	...	...	...	...	...
Total	665 3 5	1,193 9 11	1,858 13 4	1,418 2 8	994 17 4	2,413 0 0	...	559 11 10	559 11 10
B.—LOCOMOTIVE POWER:—									
Running Expenses,—									
1 Wages for Working Locomotives	261 17 2	498 2 2	759 19 4	2,303 6 5	1,646 19 10	3,950 6 3	63 13 0	157 4 3	220 17 3
2 Fuel and Water Supply	195 10 8	414 7 7	609 18 3	333 19 2	713 2 9	1,047 1 11	36 14 9	122 2 0	158 16 9
3 Oil, Tallow, and other Stores	44 0 3	118 16 5	162 16 8	25 4 2	138 6 11	163 11 1	12 18 7	26 12 3	39 10 10
Renewals and Repairs,—									
4 Wages	82 16 3	116 2 4	198 18 7	7 3 9	66 4 11	73 8 8	...	0 8 8	0 8 8
5 Materials	28 6 2	119 2 5	147 8 7	7 4 0	18 4 11	25 8 11	0 3 2	7 4 1	7 7 3
Workshop Commission	...	0 4 1	0 4 1	...	0 4 1	0 4 1	...	0 4 1	0 4 1
Total	612 10 6	1,266 15 0	1,879 5 6	2,676 17 6	2,583 3 5	5,260 0 11	113 9 6	313 15 4	427 4 10
C.—REPAIRS AND RENEWALS OF CARRIAGES AND WAGONS:									
Carriages,—									
1 Salaries and Wages	76 6 0	54 9 6	130 15 6	...	113 4 3	113 4 3	...	1 17 6	1 17 6
2 Materials	3 19 6	42 14 10	46 14 4	12 5 0	...	12 5 0	...	6 17 3	6 17 3
Workshop Commission	...	...	...	...	...	...	...	0 6 1	0 6 1
Wagons,—									
3 Salaries and Wages	...	...	...	...	8 10 6	8 10 6	...	4 10 2	4 10 2
4 Materials	...	...	...	26 1 9	37 13 0	63 14 9	...	9 6 10	9 6 10
Workshop Commission	...	...	...	...	...	...	...	0 4 5	0 4 5
Total	80 5 6	97 4 4	177 9 10	38 6 9	159 7 9	197 14 6	...	23 2 3	23 2 3
D.—TRAFFIC EXPENSES:—									
1 Salaries and Wages	501 19 6	963 1 8	1,465 1 2	826 6 10	453 5 6	1,279 12 4	100 1 5	229 19 8	330 1 1
2 Fuel, Lighting, and General Stores	32 15 5	38 12 6	71 7 11	154 11 11	47 6 3	201 18 2	29 14 2	11 7 6	41 1 8
3 Printing, Stationery, and Tickets	18 6 8	168 12 11	186 19 7	76 14 6	34 11 0	111 5 6	121 17 8	39 4 5	161 2 1
4 Miscellaneous Expenses	10 19 8	30 19 7	41 19 3	...	7 12 6	7 12 6	...	16 4 6	16 4 6
Total	564 1 3	1,201 6 8	1,765 7 11	1,057 13 3	542 15 3	1,600 8 6	251 13 3	296 16 1	548 9 4
E.—GENERAL CHARGES:—									
1 General Government Expenses	156 0 0	223 18 3	379 18 3	90 0 0	168 6 3	258 6 3	90 0 0	165 17 0	255 17 0
2 Salaries of Manager, Accountant, &c.	73 17 7	148 15 9	222 13 4	80 11 2	149 10 9	230 1 11	76 9 0	156 1 6	232 10 6
3 Office and Incidental Expenses	1 1 7	3 8 6	4 10 1	2 11 0	43 12 7	46 3 7	...	1 10 0	1 10 0
4 Special Expenditure	...	...	...	...	...	...	...	...	...
Total	230 19 2	376 2 6	607 1 8	173 2 2	361 9 7	534 11 9	166 9 0	323 8 6	489 17 6
F.—SUNDRIES:—									
Law Costs	...	...	...	...	...	...	...	...	...
Compensation	...	5 11 11	5 11 11	7 11 0	26 19 4	34 10 4	...	...	...
Rates and Taxes	...	...	...	...	...	...	...	...	...
Total	...	5 11 11	5 11 11	7 11 0	26 19 4	34 10 4	...	...	...
Grand Total	2,152 19 10	4,140 10 4	6,293 10 2	5,371 13 4	4,668 12 8	10,040 6 0	531 11 9	1,516 14 0	2,048 5 9

Enclosure 1.—*continued.*

STATEMENT of CLASSIFIED EXPENDITURE on RAILWAYS open for Traffic, for the Year ending 30th June, 1876.—*continued.*

	Picton and Blenheim.			Nelson and Foxhill.			Brunner.		
	From 18 Nov., to 31 Dec., 1875.	From 1 January, to 30 June, 1876.	Total.	—	From 1 February, to 30 June, 1876.	Total.	—	From 8 April, to 30 June, 1876.	Total.
A.—MAINTENANCE OF WAY AND WORKS:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Permanent Way,—									
1 Wages	...	980 19 6	980 19 6	...	801 13 6	801 13 6	...	141 0 0	141 0 0
2 Materials	...	6 0 9	6 0 9	...	4 15 1	4 15 1	...	...	...
Workshop Commission	...	...	...	...	...	...	...	...	...
3 Repairs of Roads, Bridges, Signals, and Works	...	...	...	...	7 0 7	7 0 7	...	...	...
Workshop Commission	...	...	...	...	...	...	...	...	...
4 Repairs of Stations and Buildings	...	...	...	...	13 19 10	13 19 10	...	...	...
Workshop Commission	...	...	...	...	...	...	...	...	...
Total	...	987 0 3	987 0 3	...	827 9 0	827 9 0	...	141 0 0	141 0 0
B.—LOCOMOTIVE POWER:—									
Running Expenses,—									
1 Wages for Working Locomotives	44 5 0	229 19 10	274 4 10	...	220 1 9	220 1 9	...	149 12 5	149 12 5
2 Fuel and Water Supply	39 19 6	266 13 1	306 12 7	...	281 14 3	281 14 3	...	56 8 1	56 8 1
3 Oil, Tallow, and other Stores	15 4 11	25 5 2	40 10 1	...	87 2 4	87 2 4	...	30 15 10	30 15 10
Renewals and Repairs,—									
4 Wages	14 5 0	39 18 8	54 3 8	...	11 12 8	11 12 8	...	11 10 9	11 10 9
5 Materials	0 8 10	3 9 9	3 18 7	...	0 11 11	0 11 11	...	0 11 11	0 11 11
Workshop Commission	...	0 4 1	0 4 1	...	0 4 1	0 4 1	...	0 4 1	0 4 1
Total	114 3 3	565 10 7	679 13 10	...	601 7 0	601 7 0	...	249 3 1	249 3 1
C.—REPAIRS AND RENEWALS OF CARRIAGES AND WAGONS:									
Carriages,—									
1 Salaries and Wages	0 10 0	9 2 6	9 12 6	...	49 18 0	49 18 0	...	...	...
2 Materials	...	0 17 1	0 17 1	...	3 19 8	3 19 8	...	...	...
Wagons,—									
3 Salaries and Wages	5 17 6	22 15 0	28 12 6	...	...	...	...	...	...
4 Materials	...	14 11 7	14 11 7	...	...	...	...	...	...
Total	6 7 6	47 6 2	53 13 8	...	53 17 8	53 17 8	...	...	...
D.—TRAFFIC EXPENSES,—									
1 Salaries and Wages	86 2 4	315 8 11	401 11 3	...	273 11 0	273 11 0	...	113 2 8	113 2 8
2 Fuel, Lighting, and General Stores	0 17 0	5 10 0	6 7 0	...	19 7 5	19 7 5	...	5 19 11	5 19 11
3 Printing, Stationery, and Tickets	127 6 4	52 10 4	179 16 8	...	162 19 11	162 19 11	...	156 18 9	156 18 9
4 Miscellaneous Expenses	...	1 12 6	1 12 6	...	...	...	...	...	...
Total	214 5 8	375 1 9	589 7 5	...	455 18 4	455 18 4	...	276 1 4	276 1 4
E.—GENERAL CHARGES:—									
1 General Government Expenses	56 0 0	257 3 3	313 3 3	...	238 9 3	238 9 3	...	100 10 3	100 10 3
2 Salaries of Manager, Accountant, &c.	46 0 8	190 14 11	236 15 7	...	125 0 7	125 0 7	...	78 15	78 15 7
3 Office and Incidental Expenses	...	...	...	...	1 15 11	1 15 11	...	...	...
4 Special Expenditure	...	...	...	...	...	...	...	...	...
Total	102 0 8	447 18 2	549 18 10	...	365 5 9	365 5 9	...	179 5 10	179 5 10
F.—SUNDRIES:—									
Law Costs	...	...	...	...	...	...	...	...	...
Compensation	...	...	...	...	...	...	...	...	...
Rates and Taxes	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	...	...
Grand Total	436 17 1	2,422 16 11	2,859 14 0	...	2,303 17 9	2,303 17 9	...	845 10 3	845 10 3

Enclosure 2.

CLASSIFIED STATEMENT showing RECEIPTS and EXPENDITURE, and Proportion of each Class of EXPENDITURE to MILEAGE and RECEIPTS, for Year ending 30th June, 1876.

NAME OF RAILWAY.	DATE.	TOTAL TRAIN MILEAGE.	RECEIPTS.			CLASSIFIED EXPENDITURE.						PROPORTION OF EACH CLASS OF EXPENDITURE TO MILEAGE AND GROSS RECEIPTS.																				
												Maintenance of Way.			Locomotive Power.			Carriage and Wagon Repairs			Traffic Expenses.			General Charges.			Sundries.			Total.		
			Total Receipts.	Receipts per Mile of Railway per Annum.	Receipts per Train Mile.	Maintenance of Way.	Locomotive Power.	Repairs of Carriages and Wagons.	Traffic Expenses.	General Charges.	Sundries.	Total.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.			
			£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			D.			D.			D.			D.			D.			D.			D.
Kaipara	From 29th Oct. to 31st Dec., 1875 ...	2,014	390 11 5	119 9 3	3 10½	177 5 1	120 11 11	...	122 3 6	108 4 4	...	528 4 10	45·38	54·21	21·12	30·88	36·89	14·37	...	...	...	31·28	37·37	14·56	27·71	33·10	12·89	...	...	...	135·25	161·57	62·94
	From 1st Jan. to 30th June, 1876...	6,212	1,742 8 7	204 19 11	5 7½	934 16 10	373 16 1	0 10 10	331 4 5	320 19 3	...	1,961 7 5	53·65	109·98	36·11	21·45	43·98	14·44	0·03	0·06	0·02	19·01	38·96	12·79	18·42	37·76	12·40	...	...	...	112·56	230·74	75·77
	Total ...	8,226	2,133 0 0	181 4 7	5 2½	1,112 1 11	494 8 0	0 10 10	453 7 11	429 3 7	...	2,489 12 3	52·15	94·50	32·44	23·17	42·00	14·42	0·02	0·04	0·01	21·25	38·52	13·23	20·12	36·46	12·53	...	...	...	116·71	211·52	72·63
Auckland and Mercer	From 1st July to 31st Dec., 1875	51,450	10,600 19 3	460 18 3	4 1½	3,064 6 6	2,951 0 3	934 13 11	2,301 8 1	787 6 2	6 12 0	10,045 6 11	28·91	133·23	14·29	27·83	128·31	13·77	8·82	40·63	4·36	21·71	100·06	10·74	7·42	34·24	3·67	0·06	0·28	0·03	94·75	436·75	46·86
	From 1st Jan. to 30th June, 1876...	50,952	11,165 7 7	485 9 0	4 5	3,179 15 3	2,450 18 9	669 14 1	2,300 1 8	755 17 3	15 4 2	9,371 11 2	28·48	138·25	14·98	21·95	106·56	11·55	6·00	29·12	3·15	20·60	100·00	10·83	6·77	32·86	3·56	0·13	0·66	0·07	83·93	407·45	44·14
	Recoveries ...	...	21,766 6 10 706 17 2																														
	Total ...	102402	22,473 4 0	488 10 10	4 4½	6,244 1 9	5,401 19 0	1,604 8 0	4,601 9 9	1,543 3 5	21 16 2	19,416 18 1	27·79	135·75	14·63	24·05	117·43	12·66	7·14	34·88	3·76	20·47	100·03	10·78	6·86	33·54	3·62	0·09	0·47	0·05	86·40	422·10	45·50
Napier and Waipukurau	From 1st July to 31st Dec., 1875 ...	18,454	5,049 4 4	531 10 0	5 5¾	1,404 18 3	709 14 6	105 12 10	903 6 4	400 1 6	...	3,523 13 5	27·82	147·89	18·27	14·05	74·71	9·24	2·10	11·12	1·37	17·89	95·08	11·74	7·92	42·11	5·20	...	...	...	69·78	370·91	45·82
	From 1st Jan. to 30th June, 1876...	27,820	7,345 12 4	558 8 9	5 3¾	1,415 17 11	1,153 1 8	160 13 10	1,215 6 7	433 18 7	...	4,378 18 7	19·28	107·63	12·22	15·70	87·66	9·95	2·18	12·21	1·38	16·55	92·39	10·48	5·90	32·99	3·74	...	...	...	59·61	332·88	37·77
	Total ...	46,274	12,394 16 8	547 2 10	5 4¼	2,820 16 2	1,862 16 2	266 6 8	2,118 12 11	834 0 1	...	7,902 12 0	22·76	124·52	14·63	15·03	82·23	9·66	2·15	11·75	1·38	17·09	93·53	10·99	6·72	36·81	4·32	...	...	...	63·75	348·84	40·98
Wellington and Masterton	From 1st July to 31st Dec., 1875 ...	15,137	3,111 18 10	709 14 9	4 1½	665 3 5	612 10 6	80 5 6	564 1 3	230 19 2	...	2,152 19 10	21·39	151·72	10·54	19·69	139·69	9·71	2·59	18·30	1·27	18·13	128·65	8·95	7·42	52·67	3·66	...	...	...	69·22	491·03	34·13
	From 1st Jan. to 30th June, 1876...	26,528	6,314 11 7	651 10 0	4 9	1,193 9 11	1,266 15 0	97 4 4	1,201 6 8	376 2 6	5 11 11	4,140 10 4	18·91	123·14	10·80	20·06	130·70	11·46	1·53	10·04	0·88	19·03	123·94	10·86	5·96	38·80	3·40	0·08	0·57	0·05	65·57	427·19	37·45
	Recoveries ...	...	9,426 10 5 4 8 0																														
	Total ...	41,665	9,430 18 5	671 0 4	4 6½	1,858 13 4	1,879 5 6	177 9 10	1,765 7 11	607 1 8	5 11 11	6,293 10 2	19·71	132·04	10·71	19·92	133·51	10·83	1·90	12·60	1·02	18·72	125·41	10·18	6·43	43·12	3·48	0·05	0·39	0·03	66·73	447·07	36·25
Foxton and Palmerston	From 1st July to 31st Dec., 1875 ...	12,592	3,038 11 1	253 4 4	4 10	1,418 2 8	2,676 17 6	38 6 9	1,057 13 3	173 2 2	7 11 0	5,371 13 4	46·67	118·18	27·03	88·09	223·08	51·02	1·26	3·20	0·73	34·81	88·13	20·16	5·73	14·42	3·30	0·24	0·62	0·14	176·80	447·63	102·38
	From 1st Jan. to 30th June, 1876...	14,040	4,355 8 2	362 13 7	6 2¾	994 17 4	2,583 3 5	159 7 9	542 15 3	361 9 7	26 19 4	4,668 12 8	22·86	82·90	17·01	59·35	215·26	44·16	3·66	13·29	2·72	12·33	44·74	9·18	8·31	30·12	6·18	0·62	2·24	0·45	107·13	388·55	79·70
	Recoveries ...	...	7,393 19 3 960 12 6																														
	Total ...	26,632	8,354 11 9	348 2 0	6 3¾	2,413 0 0	5,260 0 11	197 14 6	1,600 8 6	534 11 9	34 10 4	10,040 6 0	28·88	100·54	21·74	62·96	219·17	47·40	2·37	8·25	1·77	19·15	66·68	14·45	6·39	22·27	4·81	0·42	1·43	0·31	120·17	418·34	90·48

Enclosure 2.—*continued.*

CLASSIFIED STATEMENT showing RECEIPTS and EXPENDITURE, and Proportion of each Class of EXPENDITURE to MILEAGE and RECEIPTS, for Year ending 30th June, 1876—*continued.*

Name of Railway.	Date.	Total Train Mileage.	Receipts.			Classified Expenditure.							Proportion of each Class of Expenditure to Mileage and Gross Receipts.																				
			Total Receipts.	Receipts per Mile of Railway per Annum.	Receipts per Train Mile.	Maintenance of Way.	Locomotive Power.	Repairs of Carriages and Wagons.	Traffic Expenses.	General Charges.	Sundries.	Total.	Maintenance of Way.			Locomotive Power.			Carriage and Wagon Repairs			Traffic Expenses.			General Charges.			Sundries.			Total.		
													Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.
			£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ d.	£ s. d.			D.			D.			D.			D.			D.			D.		
New Plymouth and Waitara	From 15th October to 31st Dec., 1875	3,216	458 6 11	165 10 3	2 10½	...	113 9 6	...	251 13 3	166 9 0	...	531 11 9	...	...	...	24·75	40·98	8·47	...	...	...	54·91	90·88	18·78	36·31	60·10	12·42	...	...	...	115·97	191·96	39·67
	From 1st January to 30th June, 1876	7,927	1,258 13 11	209 15 7	3 2	559 11 10	313 15 4	23 2 3	296 16 1	323 8 6	...	1,516 14 0	44·45	93·27	16·94	24·92	52·29	9·51	1·84	3·85	0·69	23·58	49·47	8·98	25·70	53·90	9·80	...	...	...	120·49	252·78	45·92
	Total ...	11,143	1,717 0 10	195 16 6	3 1	559 11 10	427 4 10	23 2 3	548 9 4	489 17 6	...	2,048 5 9	32·59	63·82	12·06	24·88	48·72	9·20	1·35	2·63	0·49	31·94	62·54	11·81	28·53	55·86	10·55	...	...	...	119·29	223·57	44·11
Picton and Blenheim	From 18th Nov. to 31st Dec., 1875 ...	2,753	616 0 8	269 3 10	4 5¾	...	114 3 3	6 7 6	214 5 8	102 0 8	...	436 17 1	...	...	...	18·53	49·89	9·95	1·03	2·79	0·56	34·79	93·63	18·67	16·56	44·58	8·89	...	...	...	70·91	190·89	38·07
	From 1st January to 30th June, 1876	12,002	2,511 18 6	295 10 5	4 2½	987 0 3	565 10 7	47 6 2	375 1 9	447 18 2	...	2,422 16 11	39·30	116·12	19·74	22·51	66·54	11·30	1·88	5·56	0·95	14·93	44·12	7·50	17·83	52·70	8·95	...	...	...	96·45	285·04	48·44
			3,127 19 2																													
	Recoveries ...	...	30 8 4																													
	Total ...	14,755	3,158 7 6	292 15 1	4 3½	987 0 3	679 13 10	53 13 8	589 7 5	549 18 10	...	2,859 14 0	31·25	91·49	16·05	21·51	62·99	11·09	1·70	4·97	0·87	18·63	54·64	9·56	17·41	50·97	8·94	...	...	...	90·50	265·06	46·51
Nelson and Foxhill	From 1st February to 30th June, 1876	13,910	2,526 13 6	298 12 0	3 7½	827 9 0	601 7 0	53 17 8	455 18 4	365 5 9	...	2,303 17 9	32·75	97·78	14·28	23·80	71·07	10·38	2·13	6·36	0·93	18·04	53·88	7·86	14·46	43·18	6·30	...	...	...	91·18	272·27	39·75
Brunner	From 8th April to 30th June, 1876...	3,960	661 16 9	330 18 3	3 4	141 0 0	249 3 1	...	276 1 4	179 5 10	...	845 10 3	21·31	70·51	8·55	37·64	124·57	15·10	...	...	...	41·72	138·03	16·73	27·08	89·64	10·86	...	...	...	127·75	422·75	51·24

Enclosure 3.

STATEMENT of PASSENGER TRAFFIC for the Year ending 30th June, 1876.

NAME OF RAILWAY.	DATE.	NUMBER OF PASSENGERS.				AMOUNT.	PARCELS, DOGS, &c.	SEASON TICKETS.	ADVERTISING	TOTAL.	TOTAL LAST YEAR.
		Single.		Return.							
		First.	Second.	First.	Second.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Kaipara	From 29th October to 31st December, 1875	230	764	14	48	159 3 3	13 4 6	...	...	172 7 9	...
	From 1st January to 30th June, 1876 ...	734	2,710	29	143	539 6 6	34 15 0	...	...	574 1 6	...
	Total	964	3,474	43	191	698 9 9	47 19 6	...	...	746 9 3	...
Auckland and Mercer...	From 1st July to 31st December, 1875 ...	4,771	27,177	3,623	23,348	6,060 9 7	102 19 7	150 17 6	38 15 10	6,353 2 6	1,359 12 9
	From 1st January to 30th June, 1876 ...	5,764	28,345	3,381	17,755	6,218 8 4	120 0 5	161 18 2	38 15 10	6,539 2 9	4,143 3 7
	Total	10,535	55,522	7,004	41,103	12,278 17 11	223 0 0	312 15 8	77 11 8	12,892 5 3	5,502 16 4
Napier and Waipukurau	From 1st July to 31st December, 1875 ...	3,408	11,121	2,712	7,467	2,602 19 4	53 19 9	53 17 0	53 0 8	2,763 16 9	963 2 4
	From 1st January to 30th June, 1876 ...	5,078	11,882	2,872	7,715	3,394 4 8	76 19 3	48 18 6	50 0 0	3,570 2 5	2,882 12 7
	Total	8,486	23,003	5,584	15,182	5,997 4 0	130 19 0	102 15 6	103 0 8	6,333 19 2	3,845 14 11
Wellington and Masterton	From 1st July to 31st December, 1875 ...	4,131	12,739	5,090	11,480	2,136 14 11	42 7 8	85 16 10	...	2,264 19 5	1,707 15 5
	From 1st January to 30th June, 1876 ...	4,575	19,394	4,800	14,389	3,884 3 7	69 5 1	122 18 8	51 12 0	4,127 19 4	2,296 11 6
	Total	8,706	32,133	9,890	25,869	6,020 18 6	111 12 9	208 15 6	51 12 0	6,392 18 9	4,004 6 11
Foxton and Palmerston	From 1st July to 31st December, 1875 ...	...	1,600	...	...	375 8 3	15 9 6	...	...	390 17 9	...
	From 1st January to 30th June, 1876 ...	...	2,941	...	...	630 19 3	19 18 8	...	...	650 17 11	...
	Total	...	4,541	...	...	1,006 7 6	35 8 2	...	...	1,041 15 8	...
New Plymouth and Waitara	From 15th October to 31st December, 1875	190	1,173	187	958	316 12 9	3 19 5	14 10 0	...	335 2 2	...
	From 1st January to 30th June, 1876 ...	365	3,718	367	3,183	861 1 3	21 3 4	14 6 6	...	896 11 1	...
	Total	555	4,891	554	4,141	1,177 14 0	25 2 9	28 16 6	...	1,231 13 3	...
Picton and Blenheim ...	From 18th November to 31st December, 1875	451	957	334	1,204	380 18 6	8 8 8	49 0 0	...	438 7 2	...
	From 1st January to 30th June, 1876 ...	1,607	4,107	488	2,118	1,063 17 0	56 1 1	24 10 0	5 6 0	1,149 14 1	...
	Total	2,058	5,064	822	3,322	1,444 15 6	64 9 9	73 10 0	5 6 0	1,588 1 3	...
Nelson and Foxhill	From 1st February to 30th June, 1876 ...	2,203	5,839	1,772	5,008	1,862 18 0	28 10 2	27 13 0	...	1,919 1 2	...
Brunner	From 8th April to 30th June, 1876 ...	326	1,179	1,636	665	442 1 11	12 8 6	42 15 10	...	497 6 3	...

Enclosure 4.

SUMMARY of Goods and Cattle carried and Amount earned for the Year ending 30th June, 1876.

Name of Railway.	Date.	Weight.	Horses.	Carriages.	Cattle.	Sheep.	Pigs.	Bales Wool.	Bushels Grain.	Wagons Coal.	Feet Timber.	Total.	Totals Last Year.
		Tons cwt. qrs.										£ s. d.	£ s. d.
Kaipara	From 29th October to 31st December, 1875	467 2 2	...	...	2	35	9	142	...	...	89,250	218 3 8	...
	From 1st January to 30th June, 1876 ...	1,639 0 0	...	...	2	103	28	35	...	...	1,128,970	1,172 19 5	...
	Total	2,106 2 2	...	...	4	138	37	177	...	...	1,218,220	1,391 3 1	...
Auckland and Mercer	From 1st July to 31st December, 1875 ...	11,203 5 0	5	15	11	1,095	944	368	24,686	117	1,252,012	4,751 10 2	324 8 0
	From 1st January to 30th June, 1876 ...	9,365 14 0	24	5	15	5,719	640	738	16,510	238	979,797	4,235 9 2	1,890 15 11
	Total	20,568 19 0	29	20	26	6,814	1,584	1,106	41,196	355	2,231,809	8,986 19 4	2,215 3 11
Napier and Waipukurau	From 1st July to 31st December, 1875 ...	6,925 19 2	...	12	2	265	103	4,507½	...	...	913,167	2,603 14 0	151 4 11
	From 1st January to 30th June, 1876 ...	8,357 11 0	8	19	4	1,865	120	5,003	...	...	1,060,757	3,479 9 2	1,507 16 4
	Total	15,282 10 2	8	31	6	2,130	223	9,510½	...	...	1,973,924	6,083 3 2	1,659 1 3
Wellington and Masterton ...	From 1st July to 31st December, 1875 ...	3,132 7 2	...	3	5	201	...	615	...	...	1,764,387	909 14 9	266 9 11
	From 1st January to 30th June, 1876 ...	5,933 2 0	...	37	5	210	2	2,832	...	...	372,464	2,122 3 9	411 2 1
	Total	9,065 9 2	...	40	10	411	2	3,447	...	...	2,136,851	3,031 18 6	677 12 0
Foxton and Palmerston	From 1st July to 31st December, 1875 ...	1,461 10 1	...	...	...	...	...	...	...	...	934,488	3,001 10 2	...
	From 1st January to 30th June, 1876 ...	2,294 19 3	...	...	...	1	...	33	...	...	749,296	3,663 7 2	...
	Total	3,756 10 0	...	...	...	1	...	33	...	...	1,683,784	6,664 17 4	...
New Plymouth and Waitara ...	From 15th October to 31st December, 1875	265 6 2	...	...	...	...	16	...	...	...	84,989	126 3 4	...
	From 1st January to 30th June, 1876 ...	1,061 14 0	...	3	...	1	33	17	12,554	...	131,357	372 1 7	...
	Total	1,327 0 2	...	3	...	1	49	17	12,554	...	216,346	498 4 11	...
Picton and Blenheim	From 18th November to 31st December, 1875	179 12 3	...	1	...	160	...	...	...	...	274,482	181 3 7	...
	From 1st January to 30th June, 1876 ...	1,902 5 3	2	4	1	126	9	23	...	...	1,805,472	1,358 14 4	...
	Total	2,081 18 2	2	5	1	286	9	23	...	...	2,079,954	1,539 17 11	...
Nelson and Foxhill	From 1st February to 30th June, 1876 ...	1,578 8 2	1	...	...	160	61	243	...	...	194,080	612 2 11	...
Brunner	From 8th April to 30th June, 1876 ...	282 8 2	...	...	...	...	...	...	...	...	92,333	165 6 5	...

Enclosure 5.

SUMMARY of Goods and Cattle passed over, and Amount earned on, Railway Wharves, for Year ending 30th June, 1876.

Name of Wharf.	Date.	Goods.	Tonnage Dues.	Horses and Cattle.	Carriages.	Sheep, Pigs, and Goats.	Bales, Wool and Tow.	Bricks.	Feet Timber.	Amount.
		Tons. cwt. qr.	Tons. cwt. qr.							£ s. d.
Kaipara	From 29th October to 31st December, 1875 ...	450 0 0	...	...	...	36	...	...	1,600	66 10 0
	From 1st January to 30th June, 1876 ...	1,574 3 0	...	1	...	98	...	...	292,817	293 16 5
	Total	2,024 3 0	...	1	...	134	...	...	294,417	360 6 5
Foxton	From 1st July to 31st December, 1875 ...	2,637 10 0	...	...	...	...	...	...	585,540	611 0 4
	From 1st January to 30th June, 1876 ...	3,313 2 0	...	...	...	...	...	...	398,489	667 5 2
	Total	5,950 12 0	...	...	...	...	...	...	984,029	1,278 5 6
Waitara	From 15th October to 31st December, 1875 ...	122 18 0	...	...	2	230	...	...	89,139	56 8 0
	From 1st January to 30th June, 1876 ...	305 7 0	...	1	1	5	...	...	43,996	47 6 1
	Total	428 5 0	...	1	3	235	...	...	133,135	103 14 1
Picton	From 24th January to 30th June, 1876 ...	783 16 0	...	62	5	8	10	...	1,639,361	357 15 8
Brunner	From 12th April to 30th June, 1876 ...	2,766 9 0	4,551 0 0	21	...	172	...	8,000	50,000	400 16 0

Enclosure 6.

Statement of Accounts.

Note.—The expenditure marked thus (*) will not be found to agree with the Treasury books. The expenditure in this statement is larger than that shown by the Treasury, owing to the fact that the advances on Imprest for payment of wages, &c., during last month have not been received from the Imprestees and passed through the Treasury before the annual accounts of the colony were closed.

KAIPARA RAILWAY AND WHARVES.

Dr.	£ s. d.	Cr.	£ s. d.
To Gross Earnings,—		By Amount paid into Public Account to 30th June, 1876, Railway	2,133 0 0
Passengers, Parcels, &c., from 29th October, 1875, to 30th June, 1876	746 9 3	Ditto, ditto, Wharves	359 5 3
Goods and Cattle, ditto, ditto ...	1,391 3 1	Amount outstanding on Goods, Railway ...	4 12 4
Wharves, ditto, ditto ...	360 6 5	„ „ „ Wharves ...	1 1 2
	£2,497 18 9		£2,497 18 9
Amount paid into Public Account to 30th June, Railway	2,133 0 0	By Expenditure to 30th June, 1876, Railway*	2,489 12 3
Ditto, ditto Wharves	359 5 3	„ „ „ Wharves*	149 4 0
Amount outstanding on Goods, Railway ...	4 12 4		
„ „ „ Wharves ...	1 1 2		
Loss	140 17 6		
	£2,638 16 3		£2,638 16 3

AUCKLAND AND MERCER RAILWAY.

Dr.	£ s. d.	Cr.	£ s. d.
To Gross Earnings,—		By Amount paid into Public Account, being amount of last year's outstandings, and Cash in hand on 1st July	356 17 3
Amount of Cash in hands of Manager on 1st July, 1875	128 5 8	Amount paid into Public Account to 30th June, 1876	21,524 15 0
Amount outstanding on Goods, ditto ...	228 11 7	Amount of Cash in hands of Manager, ditto	13 0 3
Passengers, Parcels, &c., to 30th June, 1876	12,892 5 3	Ditto outstanding on Goods, ditto	243 4 5
Goods and Cattle, ditto ...	8,986 19 4	Ditto ditto written off during year, being charge made for carriage of material for working railway, which should have been carried free of charge ...	98 4 11
	£22,236 1 10		£22,236 1 10
To Amount paid into Public Account to 30th June, 1876	21,524 15 0	By Expenditure to 30th June, 1876* ...	19,416 18 1
Amount in hands of Manager, ditto ...	13 0 3	Balance towards payment of Interest on Capital	3,070 18 9
Ditto outstanding on Goods, ditto ...	243 4 5		
Recoveries	706 17 2		
	£22,487 16 10		£22,487 16 10

NAPIER AND WAIPUKURAU RAILWAY.

Dr.	£ s. d.	Cr.	£ s. d
To Gross Earnings,—		By Amount paid into Public Account, being amount of Outstandings and Cash in hand on 1st July, 1875	134 3 0
Amount in hands of Managers on 1st July, 1875	21 2 4	Ditto, paid into Public Account to 30th June, 1876	12,240 0 4
Ditto, outstanding on Goods, ditto ...	113 0 8	Ditto, in hands of Manager, ditto ...	41 15 8
Passengers, Parcels, &c., to 30th June, 1876	6,333 19 2	Ditto, outstanding on Goods, ditto ...	135 6 4
Goods and Cattle, ditto ...	6,083 3 2		
	£12,551 5 4		£12,551 5 4
To Amount paid into Public Account to 30th June, 1876	12,240 0 4	By Expenditure to 30th June, 1876* ...	7,902 12 0
Ditto in hands of Manager, ditto... ...	41 15 8	Balance towards payment of Interest ...	4,514 10 4
Ditto, outstanding on Goods, ditto ...	135 6 4		
	12,417 2 4		£12,417 2 4

WELLINGTON AND MASTERTON RAILWAY.

Dr.	£ s. d.	Cr.	£ s. d.
To Gross Earnings,—		By Amount paid into Public Account, being amount of Outstandings and Cash in hand 1st July, 1875	31 6 0
Amount in hands of Manager on 1st July, 1875	9 16 5	Ditto paid into Public Account to 30th June, 1876	9,352 3 11
Ditto, outstanding on Goods, ditto ...	21 9 7	Ditto, in hands of Manager, ditto ...	52 16 11
Passengers, Parcels, &c., to 30th June, 1876	6,392 18 9	Ditto, outstanding on Goods, ditto ...	19 16 5
Goods and Cattle, ditto ...	3,031 18 6		
	£9,456 3 3		£9,456 3 3
To Amount paid into Public Account to 30th June, 1876	9,352 3 11	By Expenditure to 30th June, 1876* ...	6,293 10 2
Ditto, in hands of Manager, ditto ...	52 16 11	Balance towards payment of Interest ...	3,135 15 1
Ditto, outstanding on Goods, ditto ...	19 16 5		
Recoveries	4 8 0		
	£9,429 5 3		£9,429 5 3

FOXTON TRAMWAY AND WHARF.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Gross Earnings,—				By Amount paid into Public Account, being amount of Cash in hand on 1st July, 1875	11	1	11
Amount in hands of Manager on 1st July, 1875	11	1	11	By Amount paid into Public Account to 30th June, 1876, Tramway	7,392	19	3
Passengers, Parcels, &c., to 30th June, 1876	1,041	15	8	Ditto ditto Wharf	1,245	19	4
Goods and Cattle, ditto ...	6,664	17	4	Ditto, in hands of Manager, ditto, Tramway	1	0	0
Wharf, ditto ...	1,278	5	6	Ditto, outstanding on Goods, ditto, ditto ...	304	4	9
				Ditto ditto Wharf	29	15	1
				Ditto charged in error for Carriage of Railway Material	11	0	1
	£8,996	0	5		£8,996	0	5
To Amount paid into Public Account to 30th June, 1876, Tramway	7,392	19	3	By expenditure to 30th June, 1876, Tramway*	10,040	6	0
Ditto ditto Wharf	1,245	19	4	Ditto ditto Wharf*	837	19	5
Ditto, in hands of Manager ditto, Tramway	1	0	0				
Ditto, outstanding on Goods, ditto, ditto ...	304	4	9				
Ditto ditto Wharf	29	15	1				
Recoveries	966	14	5				
Loss	937	12	7				
	£10,878	5	5		£10,878	5	5

NEW PLYMOUTH AND WAITARA RAILWAY AND WHARF.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Gross Earnings,—				By Amount paid into Public Account to 30th June, 1876, Railway	1,717	0	10
Passengers, Parcels, &c., from 15th October, 1875, to 30th June, 1876	1,231	13	3	Ditto ditto Wharf	100	16	4
Goods and Cattle, from 25th October, 1875, to 30th June, 1876	498	4	11	Ditto, outstanding on Goods, ditto, Railway	12	17	4
Wharf, ditto ...	103	14	1	Ditto ditto Wharf	2	17	9
	£1,833	12	3		£1,833	12	3
To Amount paid into Public Account to 30th June, Railway	1,717	0	10	By Expenditure to 30th June, 1876, Railway*	2,048	5	9
Ditto ditto Wharf	100	16	4	Ditto ditto Wharf*	142	6	3
Ditto, outstanding on Goods, ditto, Railway	12	17	4				
Ditto ditto Wharf	2	17	9				
Loss	356	19	9				
	£2,190	12	0		£2,190	12	0

PICTON AND BLENHEIM RAILWAY AND WHARF.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Gross Earnings,—				By Amount paid into Public Account to 30th June, 1876, Railway	3,112	6	4
Passengers, Parcels, &c., from 18th November, 1875, to 30th June, 1876 ...	1,588	1	3	Ditto ditto Wharf	355	6	6
Goods and Cattle, ditto	1,539	17	11	Amount in hands of Manager, ditto, Railway	15	12	10
Wharf, from 24th January to 30th June, 1876	357	15	8	Ditto ditto Wharf	2	9	2
	£3,485	14	10		£3,485	14	10
To Amount paid into Public Account to 30th June, Railway	3,112	6	4	By Expenditure to 30th June, 1876, Railway*	2,859	14	0
Ditto ditto Wharf	355	6	6	Ditto ditto Wharf*	223	15	6
Ditto, in hands of Manager, Ditto, Railway	15	12	10	Balance towards payment of Interest ...	432	13	5
Ditto ditto Wharf	2	9	2				
Recoveries	30	8	4				
	£3,516	3	2		£3,516	3	2

NELSON AND FOXHILL RAILWAY.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Gross Earnings,—				By Amount paid into Public Account to 30th June, 1876	2,526	13	4
Passengers, Parcels, &c., from 1st February to 30th June, 1876	1,919	1	2	Ditto, in hands of Manager, ditto ...	0	0	2
Goods and Cattle, ditto	612	2	11	Ditto, outstanding on Goods, ditto ...	4	10	7
	£2,531	4	1		£2,531	4	1
Amount paid into Public Account to 30th June, 1876	2,526	13	4	By Expenditure to 30th June, 1876* ...	2,303	17	9
Ditto, in hands of Manager, ditto ...	0	0	2	Balance towards payment of Interest ...	227	6	4
Ditto, outstanding on Goods, ditto ...	4	10	7				
	£2,531	4	1		£2,531	4	1

BRUNNER RAILWAY AND WHARF.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Gross Earnings,—				By Amount paid into Public Account to 30th June, 1876, Railway	661	16	9
Passengers, Parcels, &c., from 8th April to 30th June, 1876	497	6	3	Ditto ditto Wharf ...	400	16	0
Goods and Cattle, ditto	165	6	5	Ditto, outstanding on Goods, Railway ...	0	15	11
Wharf, ditto	400	16	0				
	£1,063	8	8		£1,063	8	8
To Amount paid into Public Account to 30th June, 1876, Railway	661	16	9	By Expenditure to 30th June, 1876, Railway*	845	10	3
Ditto ditto Wharf	400	16	0	Ditto ditto Wharf*	38	1	5
Ditto, outstanding on Goods, ditto, Railway	0	15	11	Balance towards payment of Interest ...	179	17	0
	£1,063	8	8		£1,063	8	8

STATEMENT showing ESTIMATED and ACTUAL EARNINGS and EXPENDITURE for Year ending 30th June, 1876. **Enclosure 7.**

—	EARNINGS.			EXPENDITURE.			PROFIT.			
	Estimated.	Actual.	Less than Estimate.	Estimated.	Actual.	Less than Estimate.	Estimated.	Actual.	More than Estimate.	Less than Estimate.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	(11 months.)	(8 months.)								
		2,137 12 4			2,489 12 3					
		†360 6 5			†149 4 0					
Kaipara	6,881 0 0	2,497 18 9	4,383 1 3	6,601 6 6	2,638 16 3	3,962 10 3	279 13 6	Loss.	...	140 17 6
		21,780 19 8								
		*706 17 2								
Auckland and Mercer ...	27,580 0 0	22,487 16 10	5,092 3 2	23,511 8 0	19,416 18 1	4,094 9 11	4,068 12 0	3,070 18 9	...	997 13 3
Napier and Waipukurau ...	15,436 0 0	12,417 2 4	3,018 17 8	12,022 8 0	7,902 12 0	4,119 16 0	3,413 12 0	4,514 10 4	1,100 18 4	...
		9,424 17 3								
		*4 8 0								
Wellington and Masterton ...	12,817 0 0	9,429 5 3	3,387 14 9	9,738 12 0	6,293 10 2	3,445 1 10	3,078 8 0	3,135 15 1	57 7 1	...
Wanganui and Manawatu ...	5,775 0 0	Not opened.	5,775 0 0	4,970 15 10	Not opened.	4,970 15 10	804 4 2	Not opened.	...	...
		(8 months.)								
		1,729 18 2			2,048 5 9					
		†103 14 1			†142 6 3					
	(10 months.)									
New Plymouth and Waitara	6,576 0 0	1,833 12 3	4,742 7 9	5,964 11 8	2,190 12 0	3,773 19 8	611 8 4	Loss.	...	356 19 9
		(7½ months.)								
		3,127 19 2								
		†357 15 8								
		3,485 14 10			2,859 14 0					
		*30 8 4			†226 15 9					
	(12 months.)									
Picton and Blenheim ...	9,818 0 0	3,516 3 2	6,301 16 10	9,136 6 0	3,083 9 9	6,052 16 3	681 14 0	432 13 5	...	249 0 7
	(9 months.)	(5 months.)								
Nelson and Foxhill ...	7,449 0 0	2,531 4 1	4,917 15 11	6,991 14 6	2,303 17 9	4,687 16 9	457 5 6	227 6 4	...	229 19 2
		(3 months.)								
		662 12 8			845 10 3					
		†400 16 0			†38 1 5					
	(9 months.)									
Brunner Railway	7,793 0 0	1,063 8 8	6,729 11 4	6,875 15 6	883 11 8	5,992 3 10	917 4 6	179 17 0	...	737 7 6
Total	100,125 0 0	55,776 11 4	44,348 8 8	85,812 18 0	44,713 7 8	41,099 10 4	14,312 2 0	11,561 0 11	1,158 5 5	2,711 17 9
							Less Loss ...	497 17 3		
								11,063 3 8		
		7,698 4 0								
		†1,275 14 5								
		8,973 18 5			10,040 6 0					
		*966 14 5			†837 19 5					
Foxton Tramway	12,948 0 0	9,940 12 10	3,007 7 2	11,501 8 0	10,878 5 5	623 2 7	1,446 12 0	Loss.	...	937 12 7

NOTE.—Sums marked thus † are earnings and expenditure on Wharves, and sums marked thus * are Recoveries.

Enclosure 8.

ESTIMATE of RECEIPTS on the various RAILWAYS open and expected to be opened during the next Financial Year, 1876–77.

	£	£
KAIPARA,—		
Passengers, parcels, &c.	2,184	
Goods and cattle	4,940	
Wharf	936	
		8,060
AUCKLAND AND MERCER,—		
Passengers, parcels, &c.	16,012	
Goods and cattle	12,168	
		28,180
NAPIER AND WAIPUKURAU,—		
Passengers, parcels, &c.	8,614	
Goods and cattle	11,960	
		20,574
WELLINGTON AND MASTERTON,—		
Passengers, parcels, &c.	10,108	
Goods and cattle...	5,720	
		15,828
FOXTON AND MANAWATU,—		
Passengers, parcels, &c.	2,964	
Goods and cattle	10,661	
Wharf	1,716	
		15,341
WANGANUI AND MANAWATU,—		
Passengers, &c. ...	9,100	
Goods and cattle	2,210	
		11,310
NEW PLYMOUTH AND WAITARA,—		
Passengers, parcels, &c. ...	3,328	
Goods and cattle	2,456	
Wharf	312	
		6,096
PICTON AND BLENHEIM,—		
Passengers, parcels, &c. ...	3,978	
Goods and cattle	3,744	
Wharf	858	
		8,580
NELSON AND FOXHILL,—		
Passengers, parcels, &c. ...	5,990	
Goods and cattle	1,685	
		7,675
BRUNNER,—		
Passengers, parcels, &c. ...	2,516	
Goods and cattle	1,040	
Coal	7,000	
		10,556
Total...		£132,200

[Enclosure 9 on page 66.]

Enclosure 10.

RETURN of the NUMBER and NATURE of the ACCIDENTS and INJURIES to LIFE and LIMB which have occurred on each of the several LINES of NEW ZEALAND RAILWAYS from 1st July, 1875 to 30th June, 1876.

NAME OF RAILWAY.	Date of Accident.	Passengers killed or injured.				Servants of the Department, or of the Contractors, killed or injured.				Persons killed or injured while crossing at Level crossings.		Trespassers.		Workshops.		Miscellaneous.		Nature and Cause of Accident.
		From causes beyond their own control.		From their own misconduct or want of caution.		From causes beyond their own control.		From their own misconduct or want of caution.										
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
Auckland and Mercer	18th August ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	Picking up brake of ballast wagons. In contractor's employ.
Napier and Waipukurau	20th November	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	Accidentally shot by fellow-clerk.
Wellington and Masterton	29th November	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	Simple fracture of thigh. Rail slipped whilst loading wagons.
Wellington and Masterton	13th December	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	Leg broken, shunting ballast wagons.
Foxton and Manawatu	22nd March ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	Rail falling off truck.

Enclosure 9.

STATEMENT showing QUANTITY and STATE of ROLLING STOCK on the Railways open for Traffic on 30th June, 1876.

—	LOCOMOTIVES.										CARRIAGES.						BRAKES.			WAGONS.							CRANES.				
	8 tons, 8-in. cyl., 4 whls., cpld.	23 tons, 9-in. cyl., Fairlie.	12 tons, 9½-in. cyl., 4 whls., cpld.	12 tons, 9½-in. cyl., 6 whls., Bogie.	10-in. cyl., Fairlie.	17 tons, 10½-in. cyl., 6 whls., cpld.	17 tons, 10½-in. cyl., Bogie.	Centre-rail System.	25 tons, 14-in. cyl., 8 wheels.	1ST CLASS 6 wheels.	1ST CLASS 4 wheels.	COMPOSITE. 6 wheels.	COMPOSITE. 4 wheels.	COMPOSITE. Cross-seated.	2ND CLASS 6 wheels.	2ND CLASS 4 wheels.	Passenger, 4 wheels.	Goods, 4 wheels.	Special for Centre Rail.	Horse Box.	Cattle Truck.	Sheep Truck.	Covered Goods.	High-sided.	Low-sided.	Timber Truck.	Iron Hopper.	12-ton Steam, Travelling.	10-ton Hand, Wharf.	5-ton Break-down.	2-ton Steam Vert. Boiler.	TARPAULINS.
KAIPARA.																															
In good order	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	2	10	...	4	...	...	...	...	2	8
Undergoing light repairs	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	1	1	1	...	...	...	...	...	1	...	2	...	...	3	...	1	...	...	...	...	2	10	...	4	...	...	...	2	8
AUCKLAND.																															
In good order	...	1	...	...	...	5	...	...	...	5	3	5	...	...	8	7	2	3	...	...	10	...	9	72	20	14	...	...	...	1	1	56
Undergoing heavy repairs	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	2	...	...	13	14	...	4	...	...	...	...	...
Total	...	1	...	...	...	8	...	...	...	5	3	7	...	...	8	7	3	7	...	2	10	...	22	86	20	18	...	...	...	1	1	56
NAPIER.																															
In good order	...	...	2	1	...	1	...	...	...	1	...	3	...	...	3	...	2	2	...	...	2	...	3	59	6	...	...	...	...	1	...	19
Undergoing light repairs	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	4
In course of erection ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	18	...	...	...	...	...	...	...
Total	...	...	3	1	...	2	...	...	...	1	...	4	...	...	3	...	2	2	...	...	2	...	3	64	26	...	...	...	...	1	...	23
WELLINGTON.																															
In good order	...	...	1	2	1	...	...	...	...	...	...	2	2	...	2	4	2	1	2	...	...	...	3	22	21	12	...	...	...	...	...	32
Undergoing light repairs	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...
Total	...	...	2	2	1	...	...	...	...	1	...	2	2	...	2	4	2	1	2	...	...	...	3	28	21	12	...	...	...	...	...	32
FOXTON.																															
In good order	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	4	4	...	...	...	1	...	12
In hands of contractors ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...
Total	*3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	8	4	...	...	...	1	...	12
NEW PLYMOUTH.																															
In good order	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	2	...	...	...	...	...	...	4	2	...	...	...	...	1	...	4
Total	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	2	...	...	...	...	...	...	4	2	...	...	...	...	1	...	4
PICTON.																															
In good order	...	...	2	...	...	...	...	...	...	...	...	2	...	...	1	...	2	...	...	...	...	...	3	6	14	4	...	...	...	1	...	11
Undergoing light repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...
Total	...	...	2	...	...	...	...	...	...	...	...	2	...	...	1	...	2	...	...	...	...	...	3	6	20	4	...	...	...	1	...	11
NELSON.																															
In good order	...	...	...	1	...	...	...	...	...	...	1	...	2	...	...	1	...	2	...	...	...	...	...	7	9	4	...	...	...	1	...	12
Undergoing light repairs	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...
Total	...	...	...	2	...	...	...	...	...	...	2	...	2	...	...	2	...	2	...	...	...	...	...	10	10	4	...	...	...	1	...	12
BRUNNER.																															
In good order	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	1	...	2	...	...	...	...	...	...	...	25	...	...	...	...	...	...
Undergoing light repairs	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	2	...	...	...	...	...
Total	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	1	...	2	...	...	...	...	...	...	...	50	2	...	...	...	...	...
Grand Total ...	5	1	10	6	2	10	...	...	...	7	6	15	10	...	14	20	11	15	2	2	12	...	33	208	107	46	50	2	...	6	3	158

* 7-in. cylinder.

Enclosure 11.

REPORT of TRIALS made with the WESTINGHOUSE CONTINUOUS AIR-BRAKE on the WELLINGTON and MASTERTON RAILWAY, 25th March, 1876.

The train upon which the trials were made consisted of a Tank Engine (4 wheels coupled), a Guard's Van and three Passenger Cars (6-wheeled), the total weight being estimated as follows:—

	Tons.	cwts.	qrs.	lbs.
1 Engine	13	0	0	0
1 Van	4	16	2	0
3 Cars	19	5	2	0
Passengers	0	10	0	0
Total	37	12	0	0

The length of train without Engine was 133 feet.

The Engine and Guard's Van had the air-brake mechanism, connected to the ordinary hand-brake fitted with wooden blocks. The Cars had cast-iron blocks. The brakes on Engine and Van were so arranged that they could be worked by hand in the usual way, independently of the air-brake.

The air-brake fittings were such that the blocks could be controlled by the Driver or Guard on every wheel in the train. The compressed air, for the application of the brake-power by the Guard, was stored in a reservoir under the Van.

The following are particulars of the various experiments devised to test the application of the brake under the varied circumstances attending trains in motion, as taken by several persons; in some cases a slight difference of time was reported, and in such cases the mean time was adopted:—

No. and Nature of Test.	State of Rails.	Speed in Miles per Hour.	Gradient.	Time of stop from application of Brake to absolute rest.	Distance run from application of Brake to absolute rest.	Wind.
				Seconds.	Yards.	
1. Ordinary Station Stop with air-brake applied by Driver, steam being first shut off	Dry	30	...	17	108	calm.
2. Ordinary Station Stop, hand-brake applied on Engine and Van, steam being first shut off	,,	32	...	40	127	,,
3. Air-brake applied from Engine, steam shut off, and Engine reversed, but no steam applied	,,	26	1 in 166 down	16	133	,,
4. Air-brake applied from Engine, Engine reversed and steam applied	Greasy	30	1 in 227 down	20	181	,,
5. Brake applied from Engine, full steam on. Engine in third notch	Damp	33·32	1 in 440 down	18	222	,,
6. Stop made at given point as if for water	Exactly opposite.					
7. Time disconnecting and connecting Cars with air-brake attached	Disconnecting, 6 secs.; connecting, 10 secs.					
8. Time ditto without air-brake	,, 5 ,, ,, 7 ,,					
9. Time taken by pump to restore pressure in reservoir (of Engine only) after brake had been used	Pressure raised from zero to 50 lbs. in 44 secs. ,, ,, 60 ,, 52 ,, ,, ,, 70 ,, 62 ,, ,, ,, 80 ,, 76 ,, ,, ,, 90 ,, 92 ,, ,, ,, 100 ,, 124 ,,					

REPORT

Of Trials made with the Westinghouse Continuous Air-brake

On the Auckland and Mercer Railway, 12th and 15th May 1876.

The train upon which the trials were made consisted of a Tank Engine (6 wheels coupled), a Guard's Van and four Passenger Cars (6-wheeled). The Guard's Van and Cars were each weighted with two tons of rails to represent a full load of passengers. The total weight being estimated as follows:—

	Tons.	cwts.	qrs.	lbs.
1 Engine	18	0	0	0
4 Cars	25	14	0	0
1 Van	4	16	2	0
Iron rails	10	0	0	0
Passengers	0	12	0	0
Weight of train	59	2	2	0

The length of the train without Engine was 156 feet.

The Engine and Guard's Van had the air-brake mechanism connected to the ordinary hand-brake fitted with wooden blocks. The Cars had cast-iron blocks. The brakes on Engine and Van were so arranged that they could be worked by hand in the usual way, independently of the air-brake.

The air-brake fittings were such that the blocks could be controlled by the Driver or Guard on every wheel of the train. The compressed air, for the application of the brake-power by the Guard, was stored in a reservoir under the Van.

The following are particulars of the various experiments devised to test the application of the brake under the varied circumstances attending trains in motion, as taken by several persons; in some cases a slight difference of time was reported, and in such cases the mean time was adopted. Most of the trials were made on a down grade of 1 in 47·78; but as one passed through several grades, a section of the line is attached, which will speak for itself:—

No. and Nature of Test.	State of Rails.	Speed in Miles per Hour.	Gradient.	Time of stop from application of Brake to absolute rest.	Distance run from application of Brake to absolute rest.	Wind.
				Seconds.	Yards.	
1. Ordinary Station Stop with Air-brake applied, steam being first shut off	Dry	30	level	10	105	Calm
2. Same as No. 1, but on heavier grade ...	„	36	1 in 47·78 down	21	208	„
3. Steam shut off, Air-brake applied, and Engine reversed, but no steam applied...	„	38	1 in 47·78 down	24	290	„
4. Steam shut off, Air-brake applied, Engine reversed, and steam applied in back gear	„	37	1 in 47·78 down	27	306	„
5. Hand-brakes applied on Engine and Guard's Van by signal of whistle from Engine, steam being shut off	„	28	level 105 yds., 1 in 136 up 111 yds.	26	226	„
6. Hand-brakes applied on Engine and Guard's Van by signal of whistle from Engine, steam being shut off and Engine reversed, but no steam applied	„	42	various. See Section of Line	135	2177	„
7. Hand-brakes applied on Engine and Guard's Van by signal of whistle from Engine, steam being shut off and Engine reversed, and steam applied in back gear	„	37·5	1 in 47·78 down	66	637	„
8. Air-brake applied by Guard in Rear Van. The Driver on feeling brake, shut off steam and applied brake from the Engine also	„	36	1 in 47·78 down	21	245	„
9. Air-brake applied from Engine, and Engine left in full forward gear, with steam on (120 lbs. ℔ square inch). Engine in third notch	„	36	level	15	146	„
*10. Air-pipe disconnected between Engine and first Car, steam shut off on Engine, and brake applied from Van on signal of whistle from Engine; Engine wheels not braked. This trial to show what command Guard has over Train in case of a break away	„	37	1 in 47·78 down	44	460	„

* Air pressure in Van Reservoir reduced 28 lbs

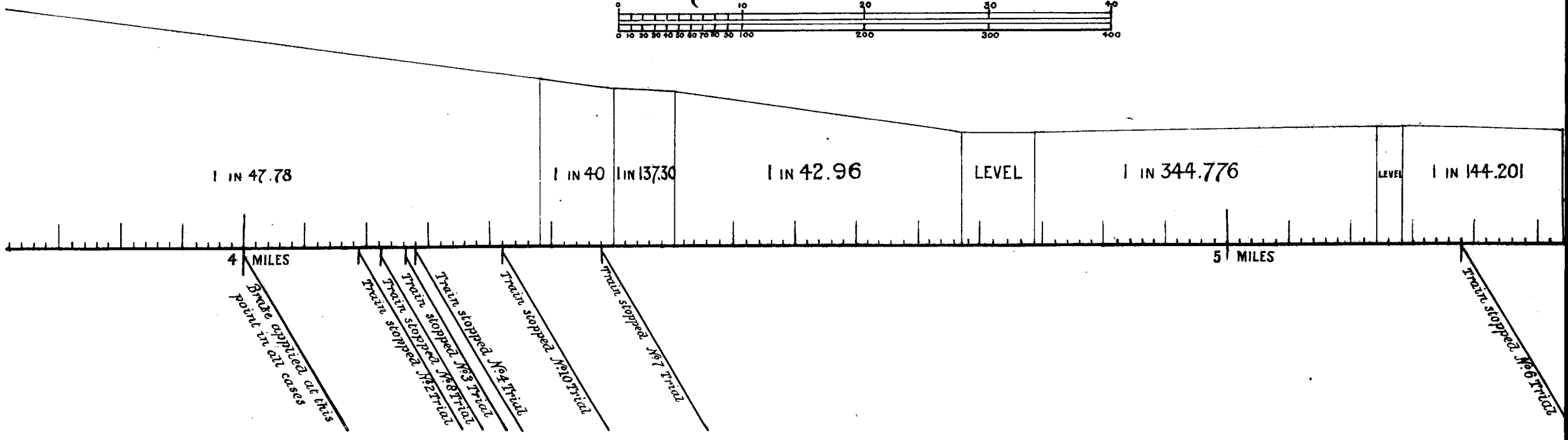
TRIAL OF WESTINGHOUSE AIR BRAKE

(To Accompany Appendix J, Mr Passmore's Report)

AUCKLAND & MERCER RAILWAY

Section of Line where Trials Nos 2, 3, 4, 6, 7, 8, 10 were made

Scale { *10 Chains = 1 Inch Horizontal*
100 Feet = 1 Inch Vertical



Frank B. Passmore

11. Steam shut off and Air-brake applied as if slackened by signals, brakes released, and steam reapplied	Rails dry.	Operation conducted with perfect ease; wind calm.
12. Steam shut off and Air-brake applied, Train brought to a stand, brakes released, and Train moved backwards; brakes again applied, Train brought to a stand; brakes released, steam reapplied, and Train again moved forward, showing the action of brake as regards quickness of release, &c.	...	Train entirely under control of Driver.
13. Air-brake Stop by driver at a fixed point as if for water	Dry	Exactly opposite; wind calm.
*14. Time disconnecting and connecting Car, with Air-brake attached	Disconnecting, 9 secs.; connecting, 12 secs.	
*15. Time ditto without Air-brake ...	„ 7 „	„ 7 „

†16. Time taken by pump to restore pressure in reservoir after brake had been used

	Both Reservoirs.	Engine only.
Pressure raised from zero to	10 lbs., 20 secs.;	9 secs.
„ „	20 „ 35 „	15 „
„ „	30 „ 44 „	21 „
„ „	40 „ 59 „	31 „
„ „	50 „ 80 „	42 „
„ „	60 „ 107 „	55 „
„ „	70 „ 143 „	73 „
„ „	80 „ 212 „	97 „
„ „	90 „ ...	122 „

* In each of the trials, 14 and 15, the man stood three yards from the side of the Car and walked leisurely up to the couplings. The connection of Air-pipe worked a little stiff.

† Pressure in Boiler 120 lbs. per square inch.

Although the Train was pulled up in so short a space of time by means of the Air-brake, no unpleasant sensation was caused to the occupants of the Cars during the application of the brake.

APPENDIX E.

ANNUAL REPORT ON PUBLIC BUILDINGS AND OTHER WORKS BY THE COLONIAL ARCHITECT.

SIR,— Colonial Architect's Office, Wellington, 7th July, 1876.

I have the honor to report, for your information, relative to the works that I have been engaged upon during the year 1875-76.

Several large and important buildings have been designed, finished, or commenced, during the year. Chief among them are the Government Departmental Offices in Wellington, which have made great progress, and promise to be entirely completed before the contract time expires. The north wing was finished and occupied in June. The work generally is of a very satisfactory character, the materials used being Tasmanian hardwood framing, kauri outside boarding, plastered walls and ceilings, and galvanized iron roofing.

Large additions have also been made to the Colonial Museum, which is now a complete and roomy structure. This building is also constructed of wood, with iron roofs.

Working drawings and specifications have also been prepared for a new fire-proof Parliamentary Library, the estimated cost of which is £14,000, and tenders may be invited whenever it is deemed desirable to do so.

Fresh designs and working drawings for a Telegraph Office at Dunedin, to be built of brickwork, stuccoed with Portland cement, have passed out of the office, and the building is now in the course of erection at a cost of £9,018 5s. The roof will be covered with slates, the contractor having the option of using slates from the Otago quarries. This building, when finished, will provide ample accommodation for the Telegraph Department in that city.

A portion of the design for Public Offices at Invercargill has been erected during the year at a cost, including fittings, of £7,478 18s. 10d., and the Postal and Telegraph Departments are located therein, as also the Resident Magistrate's Court. It is erected of brickwork, tuck pointed, with cement dressings.

At Lyttelton, new Public Buildings, of brick, tuck pointed, with cement dressings, have been erected, and the Customs, Postal, Telegraph, and Harbour Master's Departments have been transferred to them for some time. The total cost has been £5,258 14s. 7d., including cost of a four-dial illuminated clock, which was partially paid for by the Province of Canterbury.

A sketch design for Public Offices has also been prepared for Christchurch; but the site not being quite settled upon, the working drawings are held in abeyance. I estimate that a building capable of providing the accommodation asked for by the Customs, Postal, Telegraph, and Marine Departments, will cost about £10,000. The materials proposed to be used are bricks, with cement dressings, and slated roof.

A complete design has also been made for a Supreme Court House at Timaru, which, if the plan be eventually carried to completion, will also contain a Resident Magistrate's Court. Tenders are invited to be sent in on the 27th instant, for the Supreme Court House only. I propose concrete as the material for the walls, stuccoed with Portland cement, and the roof to be covered with slates, the contractor having the option of using slates from the Otago quarries.

Designs and working drawings have also been issued for a Central Prison at New Plymouth, and tenders are invited to be sent in on the 26th instant. A portion only of this building will be included in the first contract—viz., part of the reception offices, one prison wing capable of holding 102 prisoners in separate cells, the chapel, Governor's house, and gaol wall. When the whole is completed, there will be four radiating wings capable of holding 408 prisoners. These plans required a large amount of study; and in anticipation that the time was not far distant when such a prison would be required, I invited you, about two years ago, to procure, through the Agent-General, all the information obtainable in England and elsewhere. This application resulted in my receiving Blue Books with the plans and details of nearly all the prisons in England and Ireland, from which I have gathered (as I believe) such information as will enable me to erect an establishment as complete as any of its class in other parts of the world. The estimated total cost is about £20,000.

Extensive Post and Telegraph Offices have been erected at Napier, Hokitika, and Greymouth. At the latter place, the old Hospital was altered for those departments, and although having no architectural pretensions externally, the internal arrangements are admitted to be very good.

The above list comprises the larger and more important buildings erected during the year, but, in addition, there have been forty Post and Telegraph Offices built, finished, altered, added to, or in course of erection, at Ohaewai, Hokianga, Wangarei, Waipu, Warkworth, Helensville, Riverhead, Te Awamutu, Ohinemutu, Porangahau, Wairoa, Wanganui, Turakina, Marton, Bull's, Foxton, Masterton, Kekerangu, Nelson, Cable Company's offices and cottages, Cable Company's test house, Foxhill, Tophouse, Kaiapoi, Oxford, Malvern, Ashburton, Geraldine, Timaru, Waimate, Westport, Naseby, Queenstown, Alexandra S., Mosgiel, St. Bathan's, Outram, Kaitangata, Clinton, and Riverton.

Fifteen Court Houses, either for District Judges' or Resident Magistrates' Courts, have also been altered, added to, commenced, or finished, at the following places:—Mangapai, Hokianga, Waipu, Ahipara, Whangaroa, Auckland, Opotiki, Carlyle, Picton, Hokitika, Greymouth, Queenstown, Milton, Naseby, and Riverton.

Three Immigration Depôts have also been finished, at Greymouth, Hokitika, and Westport.

The Government Houses at Wellington and Auckland have been renovated, and the Admiralty House at Auckland has been put in fair repair.

Two schoolmasters' residences attached to Native schools have been designed, and contracts entered into; one for Riverton, and the other for Ahipara.

Since my report of last year, I have made a tour of the Middle Island, and inspected nearly all the Government buildings in that part of the colony, and the sites of proposed future buildings, which will facilitate my operations when designs are required, local knowledge being of great value in that respect.

The total expenditure during the year has been on—

	£	s.	d.
Post and Telegraph Offices	24,939	1	11
Offices for Public Departments	36,555	8	6
Court Houses	4,318	18	11
Immigration	2,337	12	6
Customs	444	2	3
Miscellaneous	27,429	2	9
Total	£96,024	6	10

I have received great assistance, by way of inspection, from the Engineers attached to the Public Works Department in the several districts.

I have, &c.,
W. H. Clayton,
Colonial Architect.

The Honorable the Minister for Public Works.

APPENDIX F.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF MACHINERY.

The Chief Inspector to the Hon. the Minister for Public Works.

Office of the Chief Inspector of Machinery, Wellington,
17th July, 1876.

Sir,—

I have the honor to submit the following report on the working of the inspection of machinery department, for the year ended 30th June, 1876.

In my first report I described the steps that were taken in order to carry out the Inspection of Machinery Act, and explained the arrangement which had been made to enable the Inspectors to undertake their duties. I am glad to be able to report that these arrangements have worked well.

The Inspection of Machinery Acts are working satisfactorily, considering how the boilers and machinery required to be inspected are scattered over the country, and the time it takes the Inspectors to visit them.

The amended Act of last year is of especial importance in providing penalties for carrying greater pressure of steam than that allowed by the Inspector's certificate. Notwithstanding this Act, I regret to state that, through the tying down of the safety-valve, a locomotive field boiler exploded on the 22nd May at the Waiereka railway works (about two miles from Oamaru), causing the deaths of two persons,—the driver of the engine and the contractor's clerk,—and seriously injuring the fireman. The boiler in question was made in Dunedin, in September last, and was then tested and inspected by Mr. Crawford, the Inspector of Machinery at Dunedin, who granted a certificate for a working pressure of 65 lbs. per square inch; but from the evidence taken at the Coroner's inquest, and at the Resident Magistrate's Court, Oamaru, it appears that the boiler was being worked at a much greater pressure than that allowed on the certificate. It was a practice of those in charge to increase the pressure by hanging heavy weights on the end of the valve lever, and at the time of the explosion it was tied down with rope and twitch. From the appearance of the different parts of the boiler after the explosion, I think the pressure at the time must have been at least six times that of the pressure allowed.

The other accidents to men employed about machinery that have occurred during the year, were not preventible by fencing, or by inspection.

Numerous instances still occur in which signs of weakness in boilers are discovered, but in nearly all cases the owners (or other persons in charge) have readily complied with the suggestions of the Inspectors.

I forward herewith returns showing the number of boilers and of the different kinds of machinery inspected during the year, the amount of fees collected, and the cost of working the department.

I have, &c.,
J. Nancarrow,
Chief Inspector.

The Hon. the Minister for Public Works,
Wellington.

Enclosure No. 1.

Return showing the Number of Boilers Inspected during the Financial Year ended 30th June, 1876.

Name of District.	No. of Portable Boilers.			No. of Stationary Boilers.			Totals.
	Under 5 H.P.	5 to 10 H.P.	Over 10 H.P.	Under 5 H.P.	5 to 10 H.P.	Over 10 H.P.	
Otago	36	107	16	46	37	42	284
Canterbury	88	41	9	58	11	27	234
Auckland	17	16	20	50	18	104	225
Wellington	7	21	5	21	22	34	110
Marlborough	2	11	3	2	4	17	39
Taranaki	...	3	1	2	1	1	8
Nelson North	2	16	8	7	7	3	43
Nelson South	...	2	3	...	...	5	10
Westland	1	1	2	2	4	8	18
Totals	153	218	67	188	104	241	971

Enclosure No. 2.

RETURN showing MACHINERY INSPECTED during the Financial Year ended 30th June, 1876.

NAME OF DISTRICT.	DESCRIPTION OF MACHINERY.																				TOTALS.
	Steam Phormium Dressing.	Water Phormium Dressing.	Steam Printing.	Steam Flour Mills.	Steam and Water Flour Mills.	Water Flour Mills.	Steam and Wind Flour Mills.	Wind Flour Mills.	Steam Saw Mills.	Steam and Water Saw Mills.	Water Saw Mills.	Steam Bone-crushing Mills.	Wind Bone-crushing Mills.	Steam Woollen Mills.	Steam Foundries.	Steam Planing Machines.	Water Planing Machines.	Steam Quartz-crushing Machines.	Steam and Water Quartz-crushing Machines.	Water Quartz-crushing Machines.	Steam Threshing Machines.	
Otago ...	...	1	4	10	3	17	...	...	63	1	5	3	...	2	12	35	1	2	...	...	98	257
Canterbury ...	...	1	3	3	2	10	1	1	28	2	...	...	1	1	14	5	...	...	...	...	88	160
Auckland ...	3	...	3	4	3	...	...	...	50	...	2	3	...	...	11	1	...	19	4	8	8	119
Wellington ...	...	...	4	3	...	1	...	...	34	2	...	1	...	...	5	2	...	...	...	...	5	57
Marlborough	...	1	...	...	...	2	...	...	14	1	...	...	...	...	...	...	...	...	...	...	7	25
Taranak ...	...	...	...	1	...	1	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...	6
Nelson North	...	...	...	2	1	5	...	...	22	...	1	2	...	1	2	...	...	...	...	2	4	42
Nelson South	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	4	...	1	...	9
Westland ...	...	...	1	...	...	...	...	...	7	...	...	...	...	...	2	...	...	...	...	...	...	10
Totals ...	3	3	15	23	9	36	1	1	225	6	8	9	1	4	47	43	1	25	4	11	210	685

Enclosure No. 3.

RETURN showing the AMOUNT of FEES collected in the INSPECTION of MACHINERY DEPARTMENT, during the Financial Year ended 30th June, 1876.

Name of District.	Amount Collected.
Otago	£513
Canterbury	369
Auckland	452
Wellington	211
Marlborough	80
Taranaki	12
Nelson North	142
Nelson South	29
Westland	41
Total	£1,849

Enclosure No. 4.

RETURN showing the APPROXIMATE COST of WORKING the INSPECTION of MACHINERY DEPARTMENT, during the Financial Year ended 30th June, 1876.

Nature of Expenditure.	Amount Expended.
Salaries	£1,050 19 4
Travelling expenses	483 8 11
Advertising and sundries	93 19 6
Total	£1,628 7 9

APPENDIX G.

CONTRACTS FOR CONSTRUCTION OF RAILWAYS.

RETURN MADE IN COMPLIANCE WITH CLAUSE 96, "IMMIGRATION AND PUBLIC WORKS ACT, 1870."

SCHEDULE of CONTRACTS for the CONSTRUCTION of RAILWAYS under "The Immigration and Public Works Act, 1870," from 1st July, 1875, to 30th June, 1876.

PROVINCE OF AUCKLAND.

	£ s. d.	£ s. d.
KAWAKAWA:—		
William Foughy, Kawakawa contract No. 1, permanent way, &c., 2 m. 67 ch. 50 l., sidings 26 ch.	5,909 0 0	
		5,909 0 0
KAIPARA-AUCKLAND:—		
John Cornwall, erection of 2 platelayers' cottages	166 6 0	
„ additions to above contract	3 10 0	
H. P. Kavanagh, erection of closets at Riverhead	325 0 0	
D. McIntyre, conveyance of 1 locomotive from Wellington to Kaipara, ex "Teviotdale"	92 0 0	
T. W. Pilcher, conveyance of 1 Fairlie engine from Wellington to Kaipara, ex "Omega"	150 0 0	
Daniel Fallon, additions Riverhead contract	6,253 3 1	
		6,989 19 1
AUCKLAND-PUNUI:—		
William Cameron, store and other works at Newmarket Station	916 0 0	
„ additions to above contract	155 5 5	
William Cameron, 1-stall engine shed, including carriage, siding, sinking well, and erecting pump	538 13 0	
William Cameron, additions to above contract	6 7 0	
Thomas Jones, forming road to Otahuhu Railway Station ...	429 15 0	
„ additions to above contract	54 8 8	
John Brogden, and Sons, fixing points and crossings on Auckland-Mercer section	1,645 2 6	
Jones and Vare, Beach Road contract	1,479 6 10	
„ additions to above contract	100 0 0	
William Cameron, additions to Auckland Station	96 9 6	
Samuel Parker, erection of engine house, and fixing pumping machinery at Mercer Station	145 0 0	
Samuel Parker, additions to above contract	37 11 0	
Thomas Edmond Evans, completion of earthworks between Rangiriri and Newcastle	2,654 0 0	
Thomas Edmond Evans, additions on above contract	879 3 4	
W. Price, Taupiri ballast station works	529 0 0	
„ additions on above contract	32 6 6	
W. Price, erection of ballast hoppers at Taupiri	1,255 0 0	
John Duce, Hamilton contract, including five bridges ...	1,993 10 0	
„ additions to above contract	78 19 6	
Masefield and Co., cast ironwork for Waikato Bridge ...	269 2 6	
Fraser and Tinne, making 26 cast-iron raining blocks (being part of contract for 126)	89 19 4	

AUCKLAND-PUNUI—*continued.*		£	s.	d.	£	s.	d.
S. C. Schofield, petty contract No. 1		341	18	8			
W. J. Smyth „ „ 2		169	10	6			
Michael Morrissy „ „ 3		404	14	8			
William Goulton „ „ 4		529	7	3			
John Thos. Faulknor „ „ 5		220	6	4			
S. Gardiner and party „ „ 6		39	13	4			
W. J. Smyth „ „ 7		442	16	6			
William Goulton „ „ 8		821	0	11			
Michael Morrissy „ „ 9	*	694	7	8			
Samuel Gordon „ „ 10		376	15	8			
S. C. Schofield „ „ 11		742	4	6			
S. Gardiner „ „ 12		423	12	5			
Edward Black „ „ 13		97	13	9			
William Goulton „ „ 14		433	6	8			
Singleton Gardiner „ „ 15		134	6	8			
S. C. Schofield „ „ 16		66	12	0			
S. C. Schofield „ „ 17		245	11	0			
Ross, Wells, and Kellars, Hamilton culverts		825	0	11			
J. Brogden and Sons, additions to Auckland-Mercer contract		26,692	5	10			
Martin and Briton, additions to Mercer contract		6,120	17	10			
John Briton, additions to Rangiriri Bridges contract... ...		549	14	3			
Martin and Briton, additions to Taupiri Bridges contract ...		916	9	6			
Martin and Briton, additions to Coal Mines contract... ...		219	6	6			
John Taylor, additions to Waikato Bridge contract		860	6	10			
John Briton, additions to Timber Wharf at Newcastle ...		62	9	0			
					55,815	9	3

PROVINCE OF HAWKE'S BAY.

NAPIER-MANAWATU:—	£	s.	d.
Tracey and Allen, Pakipaki-Waipawa, permanent-way contract, 22 m. 72 ch., sidings 41 ch. 50 l.	7,989	6	8
Tracey and Allen, additions to above contract	446	5	6
Miller, Murray, and Walker, (Waipawa-Takapau) permanent way contract, 17 m. 18 ch. 54 l., sidings 1 m. 9 ch. 50 l. ...	6,490	17	4
McLeod and Reed, repairing bridges and culverts at 7 m. and 10m.	295	0	0
P. McLeod and Co., sinking wells at Te Aute, Kaikora Waipukurau, and Takapau	246	0	0
William Anderson, strengthening and repairing bridges at 7 m. and 10 m.	158	15	0
Richard Trestrail, erection of station-masters' houses at Spit and Farnden Stations	385	0	0
McLeod and Co., erection of fifth-class station-masters' houses at Te Aute, Kaikora, and Waipukurau Stations; also, outside loading platform at Te Aute	1,056	0	0
James Carty, erection of carriage repairing shed at Napier ...	258	0	0
Joseph Sowry, erection of railway station at Te Aute ...	195	0	0
Joseph Sowry, erection of goods shed at Kaikora	469	0	0
Allen and Kingstreet, erection of fifth-class railway station at Takapau	231	2	6
Joseph Sowry, erection of goods shed at Te Aute, 40 ft. x 30 ft.	485	0	0
McLeod and Co., additional supports to platforms at Napier ...	150	0	0
Richard Phillips, erection Waipawa Station buildings ...	866	0	0
„ additions to above contract	40	18	0
Justin McSweeney, erection of store at Napier Station ...	500	0	0
Justin McSweeney, making solid ballast platform at Kaikora ...	74	0	0
Joseph Sowry, erection of water tanks at Te Aute, Kaikora, Takapau, and Waipukurau Stations	220	0	0
Levin and Co., conveyance per s.s. "Kiwi" of 25 tons fang-bolts from Wellington to Napier	21	5	0
D. McIntyre and Co., conveyance of 1 locomotive from Wellington to Napier	92	0	0
D. McIntyre and Co., conveyance of carriages, &c., ex "Commonwealth," from Wellington to Napier	219	0	0
D. McIntyre and Co., conveyance of 2 locomotives ex "Fernglen," from Wellington to Napier	163	10	0
Peebles and Rose, carting sleepers from Norsewood and Danniverk to Waipukurau	824	9	0
William Smith, erection of 1 six-wheeled first-class and 2 six-wheeled second-class carriages, and 2 four-wheeled goods break vans	90	0	0

* These contracts are for earthworks and outfall drains, and comprise the formation between Newcastle and Ohaupo, 19 miles 60 chains.

NAPIER-MANAWATU—*continued.*	£	s.	d.	£	s.	d.
G. Faulknor, erection of 30 high-side goods wagons	1,000	0	0			
„ additions to above contract	64	10	0			
P. Loughran, formation of roads to goods sheds at Spit and Napier	158	1	2			
J. McSweeney, shifting ladies' waiting-room	73	0	0			
— Renouf, alterations to Farndon Station	59	10	0			
C. Stuart, erection of weighbridge	136	0	0			
J. Brogden and Sons, additions, Napier–Pakipaki contract ...	8,499	16	9			
J. Brogden and Sons, additions, Waipawa contract	1,814	11	8			
Charles McKirdy, additions, Pakipaki contract	884	7	6			
Allen and Co., additions, Takapau contract	325	0	1			
Donald Ross, additions, Waipukurau contract	3,424	15	9			
Charles McKirdy, additions, stop bank at Roy's Hill... ...	50	0	0			
Allen and Kingstreet, additions, Waipukurau Station ...	21	19	9			
				38,478	1	8

PROVINCE OF TARANAKI.

WAITARA-PATEA:—						
John Henderson, Waiongona contract, formation only, 8 m. 60 ch., sidings 24 ch.	13,707	7	9			
Gibbs and Sealey, Inglewood Station buildings, comprising erection of fifth-class station, and fifth-class station-master's house	397	11	7			
Douglass and Veale, erection of goods shed at Sentry Hill, 40 ft. x 30 ft.	379	1	4			
Berry and Newman, erection of No. 2 station buildings, comprising fifth-class station-master's house at Waitara ...	249	14	2			
J. Brogden and Sons, additions Waitara contract	5,299	0	1			
				20,032	14	11

PROVINCE OF WELLINGTON.

PATEA-MANAWATU:—						
James Lockie and Co., Rangitikei contract, formation only (including Rangitikei Bridge of 9 spans of 60 ft. each, length of contract 2 m. 42 ch. 80 l., sidings 10 ch.) ...	14,955	0	0			
Charles Stewart, Marton contract, formation only, 13 m. 67 ch., sidings 30 ch.	19,957	11	11			
Henry Harris, completion of Wangaehu Bridges contract ...	1,395	11	2			
Pierce Lanigan, Kai Iwi contract, formation only, 1 m., sidings 20 ch.	2,460	0	0			
W. H. Topham, Wangaehu contract, permanent way, 10 m. 25 ch., sidings 36 ch.	5,277	19	8			
Nathan and Wilkie, Rangitawa contract, formation only, 5 m. 29 ch., sidings 36 ch.	9,958	6	8			
G. M. Chalmers, erection of store at Wanganui Bridge ...	90	0	0			
„ additions to above contract	5	0	0			
J. and C. Bull, erection of Feilding Station buildings, comprising fifth-class station and platform, goods shed, privies, and urinals	710	0	0			
J. and C. Bull, additions to above contract	21	18	0			
A. Macfarlane, station buildings contract	977	14	6			
George Thomas, conveyance of 7 carriages from Wellington to Wanganui	204	15	0			
George Thomas, conveyance of 299 tons 6 cwts. 3 qrs. 10 lbs. iron rails, and 46 tons 11 cwts. 1 qr. 14 lbs. bridge material, ex "Howrah," from Wellington to Wanganui	312	13	1			
George Thomas, conveyance of 223 tons 3 cwts. 1 qr. 25 lbs. iron rails, and 18 tons fish-plates, ex "Collingwood," from Wellington to Wanganui	235	5	4			
Plimmer, Reeves, and Co., conveyance of 324 tons rails ex "Hurunui," from Wellington to Wanganui	264	12	0			
Plimmer, Reeves, and Co., conveyance of 434 tons rails, 25 tons spikes, and 29 tons fish-plates, ex "Ocean Beauty," "Penshaw," and "Fernglen," from Wellington to Wanganui ...	406	13	4			
Cuff and Graham, conveyance of bridge material from Lyttelton to Wanganui	42	0	0			
D. McIntyre and Co., conveyance of 66 tons of fastenings, ex "St. Andrew's Castle" and "Fernglen," from Wellington to Wanganui	54	9	0			
G. M. Kebell, conveyance of fish-plates from Wellington to Foxton	14	17	6			

PATEA–MANAWATU—*continued.*	£	s.	d.	£	s.	d.
Fraser and Tinne, 42 cast-iron straining blocks (being part of contract for 126)	145	6	8			
E. W. Mills, 60 wrought-iron thrust blocks for Wanganui Bridge	322	10	0			
George Thomas, conveyance of 1 Fairlie engine from hulk "Omega," Wellington to Wanganui	78	0	0			
W. Bishop, conveyance of 220 tons rails, ex "Pym," to Foxton	187	0	0			
Wilkie and Denby, additions, Wanganui permanent-way contract	535	1	3			
Peter Stewart, additions, Palmerston contract	1,738	12	3			
Walton Pell, additions, Wangaehu contract	5,702	11	11			
Emigrants and Colonist's Aid Company, additions, Oroua and Junction contract	781	1	5			
James Bull, additions, Oroua Bridge	38	19	10			
Pierce Lanigan, additions, Brunswick contract	777	2	6			
				67,650	13	0
MANAWATU–FOXTON:—						
Wilkie and Denby, Karere contract (relaying tramway with iron rails), 8 m. 22 ch. 25 l., sidings 8 ch.	4,872	11	8			
Wilkie and Denby, additions to above contract	724	0	2			
A. H. Ihle, Palmerston Flat contract, formation and permanent way, 2 m. 2 ch. 50 l., sidings 30 ch.	1,991	8	8			
A. H. Ihle, additions to above contract	275	11	9			
James O'Mara, Oroua Sand Hills contract	396	0	0			
,, additions to above contract	37	2	3			
James O'Mara, formation 30 c. road at Palmerston Station	165	0	0			
Thomas Symonds, Kawau Swamp contract	134	0	0			
E. W. Mills, casting and boring 12 truck wheels	37	17	3			
John Charles Richter, erecting 5 sets of water tanks, viz. 1 set at Palmerston, Oroua Bridge, Foxton, Sley's Shunt, and Carnarvon	107	10	0			
Johan Andressen, erection of goods shed at Sley's Shunt ...	84	16	0			
W. J. Roberts, erection of No. 1 station buildings, comprising station-masters' houses, coal stores, one-stall engine sheds, fourth-class stations, and timber platforms, &c., at Foxton and Palmerston	2,344	0	0			
W. J. Roberts, additions to above contract	397	5	0			
Robertson and Co., making 300 sets fish-plates	37	19	5			
Thomas Goodesson, carting 80 tons rails	30	0	0			
George Thomas, conveyance of 350 tons rails and 29 tons fastenings, ex "Warwick," from Wellington to Foxton ...	326	12	9			
George Thomas, conveyance of 12 tons fastenings and 40 tons points and crossings from Wellington to Foxton ...	52	0	0			
George Thomas, additions to above contract	14	12	4			
Cuff and Graham, conveyance of 140 tons rails and fastenings from Lyttleton to Foxton	192	3	9			
Cuff and Graham, conveyance of wheels, axles, and rails, ex "Avalanche," "Commissary," and "Pleiades," from Wellington to Foxton	694	12	2			
D. McIntyre and Co., conveyance of 850 tons rails and fastenings from Port Chalmers to Foxton	1,147	10	0			
D. McIntyre and Co., additions to above contract	125	11	6			
				14,188	4	8
WELLINGTON–MASTERTON:—						
Charles McKirdy, Silver Stream plate-laying contract (schedule rates), 4 m.	3,080	14	5			
Charles McKirdy, Incline contract, formation only, 8 m. 76 ch. 83 l., including 3 tunnels, sidings 40 chs. ...	49,029	1	8			
Messrs. Krull and Co., supplying jarrah piles and timber for railway wharf at Wellington	7,936	8	6			
W. Ridler, erection of loading platforms at Pipitea and Petoni	239	0	0			
A. R. Wallis, erection of station-master's house at Cross's Creek	386	0	0			
W. Ridler, making solid ballast platform at Hayward's ...	59	10	0			
Nash and Upton, erecting temporary engine shed at Pipitea Station	133	0	0			
Ridler and Ames, Silver Stream Station works, comprising formation of road, erection of bridge and fifth-class station, and sundries	868	10	0			
Samuel Brown, Upper Hutt Station buildings, comprising erection of goods shed, coal store, and two-stall engine shed ...	1,640	0	0			
Ridler and Ames, erection of an additional office at Pipitea Station	124	14	0			
W. J. Ridler, erection of store and fencing at Petoni ...	2,169	0	0			
Richard Morris, erection of 3 plate-layers' cottages at Upper Hutt	255	0	0			
Richard Morris, erection of 2 plate-layers' cottages at Upper Hutt Station	191	0	0			

	£	s.	d.	£	s.	d.
WELLINGTON–MASTERTON—*continued.*						
G. McIntosh, water supply to Upper Hutt Station	447	4	6			
" additions to above contract	39	2	6			
W. R. Welsh, levelling and forming ground for workshops at Petoni	605	0	0			
Samuel Brown, erection of 2 additional water tanks at Hutt Station	95	0	0			
Campbell Bros., erection of 8 timber trucks and 15 low-side wagons	682	0	0			
Campbell Bros., additions to above	76	6	0			
Leech Bros., erection of 2 carriages and 1 brake van... ...	31	16	0			
" additions to above contract	5	0	0			
Leech Bros., erection of 2 goods break vans	16	0	0			
Leech Bros., making and erecting 2 meat trucks	77	16	0			
W. Black and Co., erection of 1 first-class carriage and repairing damaged composite carriage, ex "Commonwealth" ...	130	13	0			
W. Neil, metalling road diversion at Petoni	538	0	0			
Charles McKirdy, additions, River contract...	1,474	8	7			
Charles McKirdy, additions, Hutt permanent way	826	5	6			
Charles McKirdy, additions, Mungaroa contract	1,105	9	9			
W. F. Oakes, additions Pakuratahi contract	74	10	0			
				72,336	10	5

PROVINCE OF NELSON.

NELSON–FOXHILL :—						
Leech Brothers, erection of rolling stock	119	17	4			
" additions to above contract	6	7	0			
George Fleming, replacing damaged carriage fittings ...	57	18	0			
John Scott, additions to Richmond station-master's house ...	270	0	0			
Joseph Gilbertson, additions, Wairoa and 88 bridges contract ...	1,244	1	0			
John Scott, additions, No. 1 station buildings	1,226	17	4			
John Scott, additions, Nelson to Foxhill permanent way ..	1,300	11	9			
				4,225	12	5
WESTPORT–MOUNT ROCHFORT :—						
W. H. Topham, Waimangaroa permanent-way contract, 3 m. 60 ch., sidings 10 ch.	2,181	0	0			
John Henderson, Ngakawau formation and permanent-way contract, 8 m. 20 ch., sidings 20 ch.	33,573	10	0			
John Henderson, additions to above contract	166	3	7			
John Walker, felling, clearing, and grubbing, at Westport Station ground	180	0	0			
G. Rowley, erection of platelayer's cottage at Waimangaroa ...	82	11	10			
Reuben Carne, rivetting 17 ballast wagons	66	6	0			
A. C. Campbell, erection of 20 rock wagons	546	0	0			
D. McIntyre and Co., conveyance of 3 locomotives, ex "Teviotdale" and "Dilawur," from Wellington to Westport ...	276	0	0			
George Thomas, conveyance of 2 carriages from Wellington to Westport	98	10	0			
Cuff and Graham, conveyance of 11 hopper wagons, ex "Otaki," from Lyttleton to Westport	169	0	0			
William Smith, Westport Station works, including construction of a viaduct, coal staiths, wharves, river-bank protective works, felling, clearing, grubbing, embankment, excavation, and general preparation of ground, ballasting, platelaying, and sundry station buildings, &c.	33,970	17	11			
Kirkpatrick and McDonnell, additions to Waimangaroa contract	1,633	7	7			
John Maher and Co., additions to Buller River stop bank ...	628	0	0			
John McLean, additions to Westport contract	5,413	3	1			
				78,984	10	0

PROVINCE OF WESTLAND.

BRUNNER–GREYMOUTH :						
T. W. Hungerford, Coal Gorge platelaying contract, 7 m. 6 ch., sidings 45 ch.	8,985	16	5			
T. W. Hungerford, additions to above contract	364	0	0			
Sweetman and Brown, raising and moving transit shed ...	135	0	0			
" additions to above contract	2	18	0			
Robertson and Co., making sling lifts for coal wagons (schedule rates)	96	17	0			
G. Thomas, conveyance of sundry ironwork and weighbridge material from Wellington to Greymouth (about 20 tons) ...	30	0	0			
Duff and Graham, conveyance of crane from Lyttleton to Greymouth	125	10	0			

	£ s. d.	£ s. d.
BRUNNER–GREYMOUTH—*continued.*		
Edward Butler, erection of steam cranes at Greymouth Wharf	107 0 0	
Davidson and Conyers, making 20 sets of points and crossings (being portion of agreement for 32)	400 0 0	
R. S. Sparrow and Co., making 12 sets of points and crossings...	228 0 0	
D. McIntyre and Co., conveyance of locomotive, ex "St. Leonard's," from Wellington to Greymouth	148 10 0	
G. Thomas, conveyance of 2 carriages from Wellington to Greymouth	99 0 0	
T. W. Hungerford, additions, Coal Gorge contract	19,149 17 6	
E. B. Garven, additions, Grey Gorge Bridge contract ...	2,038 16 3	
Edward Butler, additions, Greymouth Wharf	656 9 10	
T. W. Hungerford, additions, Coal Gorge platelaying ...	686 19 0	
		33,254 14 0

PROVINCE OF MARLBOROUGH.

PICTON–BLENHEIM:		
J. Brogden and Sons, extra railway ballast	2,842 7 11	
J. Brogden and Sons, additions, Picton–Blenheim contract ...	14,039 11 2	
Joseph Jay, building 1 brick culvert	310 0 0	
		17,191 19 1

PROVINCE OF CANTERBURY.

KOWAI–WAITAKI:		
Richard Evans, planting willows and erecting fencing on Ashburton Bridge protective works	517 11 0	
Allan and Stumbles, contract for altering sleepers near rail joints along the line by Timaru and Young's Creek	350 0 0	
William Stevenson, Seadown siding contract	263 0 0	
Daniel Reese, No. 2 stations contract, comprising erection of refreshment room at Ashburton	534 19 0	
Daniel Reese, No. 3 stations contract, comprising erection of goods shed 40 by 30, and station-master's house... ...	729 8 0	
Allan and Stumbles, contract for various station works at Timaru	734 3 0	
Derby and Philps, erection of Waihi and Orari Stations buildings	1,480 0 0	
Ogilvie and Jones, erection of Waihi and Orari goods sheds ...	1,490 10 0	
„ additions to above contract	212 9 10	
Daniel Reese, erection of goods shed at South Rangitata ...	467 0 0	
Samuel Wates, erection of station at North Waitaki Bridge ...	901 17 6	
Ogilvie and Jones, No. 1 stations contract, comprising fifth-class station and station-master's house, goods shed 60 by 30, 2 platforms, road to station, and sundries	1,837 0 0	
John Anderson, supply and erection of tanks to Ashburton Bridge	164 8 0	
John Anderson, additions to above contract...	5 0 0	
Scott Brothers, erection of 50 narrow-gauge wagons (being portion of contract for 100)	1,137 10 0	
E. G. Wright, various works, Ashburton sidings	324 4 8	
James Mills, conveyance of about 315 tons of rails, &c., ex "Conflict," from Lyttleton to Oamaru (including wharfage)	366 15 8	
W. Hogg, erection of 18 hopper wagons and 8 timber trucks ...	574 14 0	
Edward Rowland, erection of gatekeeper's house at north end of Waitaki Bridge	285 9 0	
E. G. Wright, additions, Ashley–Amberley contract	3,654 15 1	
„ additions, Kowai Bridges contract	438 11 8	
„ additions, Ashburton Bridge contract... ...	4,763 4 11	
„ additions, Ashburton–Rangitata contract ...	1,467 7 7	
„ additions, Rangitata contract	3,273 11 10	
Walter Fuller, additions, Orari contract	2,625 5 7	
E. G. Wright, additions, Orari revised contract ...	2,172 10 2	
„ additions, Temuka contract	3,627 4 4	
Allan and Stumbles, additions, Pareora contract	1,422 7 0	
George Pratt, additions, Southern contract...	333 0 2	
David Proudfoot, additions, Hook contract...	491 0 1	
		36,644 18 1
CANTERBURY BRANCHES:		
George Pratt, Waimate Branch, formation and permanent-way contract, 4 m. 41 ch. 62 l., sidings 40 ch.	4,831 8 3	
Daniel Reese, No. 4 stations contract, comprising erection of fifth-class station-master's house at Bluff Road Station ...	279 18 0	

CANTERBURY BRANCHES—*continued.*	£ s. d.	£ s. d.
England Brothers, No. 3 stations contract, comprising erection of fifth-class station-master's house, goods shed 40′ x 30′, and removing engine shed from Junction to White Cliffs terminus	965 0 0	
England Brothers, erection of timber platform at Wilson's Mill	91 2 4	
„ erection of urinals at Sefton and Balcairn ...	66 14 0	
Scott Brothers, erection of 50 narrow-gauge wagons (being portion of contract for 100)	1,137 10 0	
Scott Brothers, additions to above contract	119 4 6	
Joseph Taylor, additions, Oxford contract	3,830 12 8	
E. G. Wright, additions, Kaiapoi–Eyreton contract	4,620 5 5	
Joseph Taylor, additions, White Cliffs contract	561 16 7	
George Holden, additions, White Cliffs platelaying contract ...	916 8 6	
W. White, additions, platelaying contract	2,162 6 11	
		19,582 7 2

PROVINCES OF CANTERBURY AND OTAGO.

WAITAKI BRIDGE:		
G. McGavin and Co., additions, Waitaki Bridge	3,229 10 0	
		3,229 10 0

PROVINCE OF OTAGO.

WAITAKI–INVERCARGILL:		
Allen and Kingstreet, completion of Port Chalmers contract, 2 m. 70 ch., sidings 4 ch. 44 l.	32,700 0 6	
Allen and Kingstreet, additions to above contract	565 16 3	
Munro and Culling, Kartigi formation and permanent-way contract, 17 m. 58 ch., sidings 36 ch. 41 l.	58,747 5 10	
D. Proudfoot, extension of Port Chalmers Wharf	2,100 0 0	
„ additions to above contract	1,045 0 0	
James McKay, completion of Clutha Bridge contract, length 13 ch. 10½ l., 7 spans of timber and iron, 1 span of concrete	17,668 17 6	
Lewis Litton, completion of Mataura contract, 25 m. 32 ch. 30 l., at schedule rates (estimated)...	11,000 0 0	
David Proudfoot, Blueskin formation and permanent-way contract, 7 m., sidings 20 ch., including 1 tunnel, lined throughout	45,000 0 0	
Munro and Given, building water softening works at Oamaru...	386 8 6	
J. Brogden and Sons, additions to Moeraki deviation contract ...	2,462 1 6	
„ additions, Oamaru–Moeraki contract ...	11,581 16 3	
Job Wain, erection of fifth class station at Murchiston, Blueskin	265 0 0	
„ additions to above contract	35 0 0	
Reignald McDonald, erection of goods shed at Stirling ...	680 0 0	
G. Wilson, erection of fourth-class station-master's house at Stirling	427 0 0	
G. Wilson, additions to above contract	55 9 6	
Peter Day, erection of station-master's house at Lovell's Flat ...	300 0 0	
Meikle and Campbell, erection of latrines and urinals at Dunedin	183 0 0	
Peter Gunn, erection of station-master's house at Greytown ...	310 0 0	
James Davidson, 3 turntables	375 0 0	
Peter Day, erection of station buildings	522 0 0	
Campbell Brothers, erection of 7 timber trucks, ex "Oxford"...	178 10 0	
„ erection of 19 wagons	503 10 0	
„ erection of 25 wagons...	662 10 0	
„ erection of 30 low-side wagons... ...	570 0 0	
Fraser and Tinne, 58 cast-iron straining blocks, for Clutha Bridge (portion of contract for 126)	200 14 0	
Frederick Jenkins, conveyance of 201 tons of rails, ex "Hudson" from Lyttelton to Oamaru	190 5 8	
Cuff and Graham, conveyance of 341 tons of rails and 19 tons of rail joints from Lyttleton to Moeraki, and 15 tons rail joints, Lyttelton to Oamaru, ex "Star of China" and "Marmion"	427 7 0	
McKenzie & Co., completion of Deborah Bay Tunnel contract, 1 m. 13 ch.	54,527 7 2	
Cargills, Gibbs, and Co., conveyance 700 tons rails, at 20s. per ton, from Bluff to Port Chalmers	700 0 0	
E. Rowlands, erection of Herbert Station buildings	1,283 0 0	
J. Brogden and Sons, additions to Kakanui and Island Creek Bridges contract	2,185 5 6	

	£ s. d.	£ s. d.
WAITAKI–INVERCARGILL—*continued.*		
Job Wain, additions, Purakanui contract	2,684 4 0	
D. Proudfoot, additions, extension of Port Chalmers Wharf contract	1,045 0 0	
J. Brogden and Sons, additions, Taieri contract	26,809 18 0	
A. J. Smythe, additions, Clutha platelaying contract ...	683 7 4	
J. Brogden and Sons, additions, Invercargill and Mataura contract	10,883 17 0	
		289,944 13 6
TOKOMAIRIRO–LAWRENCE:		
D. McLeod, erection of station at Havelock	225 0 0	
„ additions on above contract	176 0 10	
Day and Archibald, completion of Tokomairiro Bridges ...	350 0 0	
Wain and Smyth, laying permanent way from Clarksville Station to end of Glenore section, 6 m. 70 ch., sidings, 30 ch. ...	2,900 0 0	
Wain and Smyth, additions to above contract	52 19 10	
John Hollick, erection of Tokomairiro wayside stations ...	1,790 0 0	
J. and N. Campbell, additions, Tokomairiro contract ...	4,596 2 2	
Goodfellow and Co., additions, Waitahuna contract ...	2,010 10 11	
„ additions, Tuapeka contract	2,086 19 1	
Irvine and Morrisson, additions, Round Hill contract ...	9,706 0 0	
A. J. Smythe and Co., additions, Glenore completion contract ...	230 12 3	
		24,124 5 1
WINTON–KINGSTON:		
W. H. Topham, Winton No. 2 permanent-way contract, comprising elbow platelaying, 13 m. 20 ch., sidings, 40 ch. ...	2,761 15 6	
W. H. Topham, additions to above contract	285 8 4	
J. B. Blair, Winton No. 3 contract, formation only, 18 m. 36 ch.	13,679 7 0	
Graham and Co., erection of fifth-class station and goods shed, 30′ x 60′, at Macdaniel's crossing	815 11 9	
Graham and Co., additions to above contract	101 10 7	
Joseph Sykes, erection of goods shed at Elbow	557 14 4	
Robert Burns, erection of station-master's house at Athol ...	423 0 0	
Strang and Gilchrist, painting and varnishing carriages ...	249 10 0	
R. Burns, erection of station buildings	1,197 10 0	
J. M. Watson, additions, No. 1 Winton contract	1,379 10 10	
M. H. L. Bennett and Co., additions, No. 2 Winton contract ...	842 6 5	
Procter and Whittaker, additions, No. 1 platelaying	1,461 12 2	
		23,754 16 11

GENERAL RAILWAY ACCOUNT.

James Davidson and Co., making 10 distance and 20 semaphore station signals	900 0 0	
Davidson and Conyers, making 12 sets points and crossings (being portion of contract for 32 sets)	240 0 0	
D. McIntyre, conveyance of two locomotives ex "Dilawur," from Wellington to Lyttelton	184 0 0	
James Saunders, receiving and delivering material in Wellington at 1s. 3d. per ton weight, packages over two tons by agreement		
		1,324 0 0
		£833,661 19 3

SLEEPERS.

PROVINCE OF AUCKLAND.

	£ s. d.	£ s. d.
Henry Palmer, 30,000 at 3s. each	4,500 0 0	
		4,500 0 0

PROVINCE OF HAWKE'S BAY.

H. R. Russell (for Natives), 2,500 at 3s. 3d. each	406 5 0	
Beck and Tonks, 10,000 at 21s. per 100 superficial feet sawn, or 3s. 6d. each hewn, less 2½ per cent.	2,400 0 0	
		2,806 5 0

PROVINCE OF TARANAKI.

John Beaton, 10,000 at 2s. 4d. each	1,166 13 4	
		1,166 13 4

PROVINCE OF WELLINGTON.

	£ s. d.	£ s. d.
Beck and Tonks, 26,419 at 3s. 6d. each for hewn, or 21s. per 100 superficial feet sawn	5,626 1 9	
G. M. Snelson, 10,000 at 3s. 9d. each	1,875 0 0	
Richter, Hannestadt, and Co., 1,000 at 3s. 11d. each	195 16 8	
		7,696 18 5

PROVINCE OF NELSON.

William and John Marris, 10,000 at 2s. 10d. each	1,416 13 4	
		1,416 13 4

PROVINCE OF CANTERBURY.

Cusden and Bowman, 1,000 at 4s. 9d. each	237 10 0	
„ 991 extra	156 19 9	
John Lee, 2,000 at 4s. 9d. each	475 0 0	
Luers and Woodfield, 1,500 at 4s. 9d. each	356 5 0	
John E. Thacker, 4,000 at 3s. 6d. each	700 0 0	
Hamilton Brothers, 1,000 at 4s. 9d. each	237 10 0	
„ 1,000 at 3s. each	150 0 0	
D. Sladden, 1,500 at 4s. 9d. each	356 5 0	
James Bruce, 5,000 at 4s. 3d. each	1,062 10 0	
Alpheus Hayes, 10,000 at 4s. 5d. each	2,208 6 8	
E. G. Wright, 10,000 at 4s. 4d. each	2,166 13 4	
W. L. Crowther, 10,000 at 3s. 10d. sawn, or 3s. 8d. split ...	1,875 0 0	
Jackson and Gibson, 15,000 at 4s. 2d. each	3,125 0 0	
		13,106 19 9

PROVINCE OF OTAGO.

Guthrie and Larnach, 4,000 at 18s. per 100 superficial feet ...	735 0 0	
„ 63 additional	28 1 5	
		763 1 5
		£31,456 11 3

SUMMARY.

	£ s. d.	£ s. d.	£ s. d.
AUCKLAND:—			
Kawakawa: Construction	5,909 0 0		
Kaipara-Auckland: Construction	6,989 19 1		
Auckland-Punia: Construction	55,815 9 3		
		68,714 8 4	
Sleepers...		4,500 0 0	
			73,214 8 4
HAWKE'S BAY:—			
Napier-Manawatu: Construction	38,478 1 8		
		38,478 1 8	
Sleepers...		2,806 5 0	
			41,284 6 8
TARANAKI:—			
Waitara-Patea: Construction	20,032 14 11		
		20,032 14 11	
Sleepers...		1,166 13 4	
			21,199 8 3
WELLINGTON:—			
Patea-Manawatu: Construction	67,650 13 0		
Manawatu-Foxton: Construction	14,188 4 8		
Wellington-Masterton: Construction ...	72,336 10 5		
		154,175 8 1	
Sleepers...		7,696 18 5	
			161,872 6 6
NELSON:			
Nelson-Foxhill: Construction	4,225 12 5		
Westport-Mt. Rochfort: Construction ...	78,984 10 0		
		83,210 2 5	
Sleepers...		1,416 13 4	
			84,626 15 9

WESTLAND:—			
Brunner–Greymouth: Construction... ...	33,254 14 0		
		33,254 14 0	
Sleepers...		...	
			33,254 14 0
MARLBOROUGH:—			
Picton–Blenheim: Construction	17,191 19 1		
		17,191 19 1	
Sleepers...		...	
			17,191 19 1
CANTERBURY:—			
Kowai–Waitaki: Construction	36,644 18 1		
Canterbury Branches: Construction... ...	19,582 7 2		
		56,227 5 3	
Sleepers...		13,106 19 9	
			69,334 5 0
PROVINCES of CANTERBURY and OTAGO:—			
Waitaki Bridge	3,229 10 0		
		3,229 10 0	
			3,229 10 0
OTAGO:—			
Waitaki–Invercargill: Construction ...	289,944 13 6		
Tokomairiro–Lawrence: Construction ...	24,124 5 1		
Winton–Kingston: Construction	23,754 16 11		
		337,823 15 6	
Sleepers...		763 1 5	
			338,586 16 11
GENERAL RAILWAY ACCOUNT	... ...	... ...	1,324 0 0
Total: Construction, &c. ...	813,661 19 3		
Sleepers	31,456 11 3		
	£845,118 0 6		£845,118 0 6

APPENDIX H.

CONTRACTS FOR CONSTRUCTION OF ROADS.

RETURN MADE IN COMPLIANCE WITH CLAUSE 96, "IMMIGRATION AND PUBLIC WORKS ACT, 1870."

SCHEDULE of CONTRACTS for the CONSTRUCTION of ROADS under "The Immigration and Public Works Act, 1870," from 1st July, 1875, to 30th June, 1876.

NORTH ISLAND.

PROVINCE OF AUCKLAND.

Bay of Islands.

	£ s. d.	£ s. d.
KERIKERI-MONGONUI,—		
Samuel Dixon, contract for section No. 2, for construction of about 100 ch. of road	234 0 0	
Extra authorized on do. for extension of culverts	42 0 0	
		276 0
MAHURANGI-PORT ALBERT ROAD,—		
H. Palmer, extras authorized on contract section No. 2, 429 ch. road formation	627 12 0	
H. Palmer, extra on Hoteo Bridge contract, for altering gradient of bridge approach	76 12 0	
Robert Fenall and Co., contract for construction of section No. 1A, 142 ch. of road, repair of 5 small bridges, and re-formation of 15 chains of road in its continuation through Mr. Bowman's property	419 18 0	
Becroft, contract for section No. 5, 164 ch. road formation and side cutting, 5 bridges, and 16 culverts	423 0 0	
		1,547 2 0
WAITANGI-HOKIANGA ROAD,—		
J. A. and W. H. Bedggood, contract for the construction of a cart bridge over the Waiaruhe River (Black Bridge) ...	713 10 0	
		713 10 0

Bay of Plenty.

TAURANGA-TAPUAEHARURU ROAD,—		
Ngatiwarangi Tribe, contract No. 38, for repairing 6 miles of road	30 0 0	
Maintenance, per annum	12 0 0	
		42 0 0
TAURANGA-EAST CAPE ROAD,—		
Joseph Thompson, extras authorized on contract No. 4, for forming and widening road	129 14 5	
		129 4 5
ROTORUA-TARAWERA ROAD,—		
Ngatiwakone, contract No. 5, for forming road through open country, side cutting, and formation	95 0 0	
		95 0 0
WHAKATANE-TE TEKO ROAD,—		
Rangi te Kehu, authorized deviation on contract No. 1 (£1,300)	151 10 0	
		151 10 0
OPOTIKI-GISBORNE ROAD,—		
C. S. Abbott, contract No. 5, for construction of Motu Truss Bridge	327 0 0	
		327 0 0

Poverty Bay.

GISBORNE-HICKS BAY ROAD,—		
Trimmer, contract for keeping ferry at Tolago Bay, at Uawa River, for 2 years at £20	40 0 0	
		40 0 0

TE KAPU-GISBORNE ROAD,—		
Tuatini Tipoki, contract for completion of contracts sections Nos. 6 and 7, seven miles of road, comprising fern and scrub clearing, side cutting, removal of rock and slips, and restoring portions of road destroyed by floods in January, 1876 ...	180 0 0	
		180 0 0

PROVINCE OF HAWKE'S BAY.

NAPIER-TARAWERA ROAD,—		
G. McAuley, extras authorized on Mohaka Bridge contract, to secure 6th and 7th piers	191 15 0	
G. McAuley, extras authorized on Mohaka Bridge contract, 2 extra piles	23 5 0	
		215 0 0

PROVINCE OF WELLINGTON.

WANGANUI-PATEA ROAD,—		
T. B. Louisson, contract for painting Patea, Whenuakura, and Waitotara Bridges (one-third of this contract is chargeable against Patea-Waiiti Road)	480 0 0	
		480 0 0
FOXTON GORGE ROAD,—		
H. McNeil, authorized extras on Manawatu Bridge contract ...	853 13 1	
Thomas Symons, contract for cutting a drain from the Kawau Swamp, £134 (moiety charged to railway)	67 0 0	
		920 13 1
OPAKI GORGE ROAD,—		
T. Price, authorized additions to contract No. 37B (£131 19s.) ...	16 5 0	
R. Campbell, contract No. 42B, for 595 ft. of plain bridges at 22s. per foot	654 10 0	
T. McLennan, contract No. 43B, for 9,527 ft. timber, at 15s. ...	71 8 9	
Ludwig Hyer, extra on contract No. 44, 3½ chains of road, at 100s.	17 10 0	
G. Harris, extra on contract No. 40B (£111 16s.)	35 15 0	
T. J. Allen, extras on contract No. 68 (£1,871 10s.)	214 19 0	
H. Thompson, contract No. 44B, constructing 195 ft. bridges ...	633 15 0	
J. Wilkin, contract No. 45B, constructing 64 ft. bridges ...	240 0 0	
R. Campbell, extra on contract 42B (£654 10s.)	36 6 0	
Heron and Quain, contract for metalling section 1, 60 chains ...	255 0 0	
" " " " 2, 180 " ...	945 0 0	
" " " " 3, 60 " ...	240 0 0	
" " " " 4, 80 " ...	320 0 0	
Charles Mabey, contract for metalling section 7, 165 chains at 80s.	660 0 0	
Murdoch McKenzie, contract for metalling section 5, 160 chains	1,152 0 0	
Charles Lloyd, contract for metalling section Woodville to Manawatu River, 310 chains	1,147 0 0	
		6,639 8 9

ROAD CONTRACTS IN TARANAKI PROVINCE, CHARGED AGAINST CONFISCATED LANDS VOTE.

Thomas Twigg, contract No. 118, for forming 88 chains of road through Hawera township, from Waihi	350 0 0	
J. Stevenson, contract No. 120, for gravelling first 88 chains of road, Hawera township, at £9 7s. 6d. per chain	825 0 0	
T. Jenkins, contract No. 119, for gravelling 94 chains of road, between Kakaramea and Carlyle	890 0 0	
J. Stevenson, contract for gravelling 69 chains of mountain road near Hawera, at £9 17s. 6d. per chain	681 7 6	
		2,746 7 6

MIDDLE ISLAND.

HOKITIKA—CHRISTCHURCH.

Road.

Charles McKeigan, contract section 2, Otira Gorge, for completion of 3,260 links of road, including metalling, and two bridges, less work done by F. McKennon, the former contractor ...	1,627 17 10	
Morgan and Taylor, contract for subsections Nos. 21, 22, and 23, deviation No. 6, metalling 84 chains of road	163 16 0	
		1,791 13 10

APPENDIX I.

REPORT ON SURVEY OF BULLER COAL FIELD BY THE ASSISTANT GEOLOGIST.

The Assistant Geologist to the Director of Geological Survey.

Sir,— Wellington, 13th June, 1876.

I have the honor, in accordance with your instructions, dated 2nd May, 1876, to make the following report on the progress of the survey of the Buller coal field during the past year:—

The coast line has been surveyed from Westport to the Waimangaroa, a line has been carried on from there to Nikau Creek, and some of the spurs have been traversed from the higher to the lower levels, showing what facilities exist for the transport of coal.

That area which has hitherto been known as the "Cascade Creek Area," but which Mr. Cooper has re-named "Todea Creek," finding that the creek in which the coal occurs is one which has been hitherto unnamed, and which falls into the Buller at a point nearer Westport than Cascade Creek, has been surveyed. Mount Rochfort and the Rochfort plateau, from Coalbrookdale to the sea, has also been completed, and the Upper Orikaka country is now nearly finished.

It will thus be seen that the survey of the principal coal areas of the Buller coal field is now almost completed between Westport and Ngakawau, the country between the Ngakawau and Mokihinui Rivers not having as yet been touched, save that a north and south line has been started connecting the Upper Orikaka with the Mokihinui River.

Mr. Denniston has followed Mr. Cooper in his work, plotting the coal outcrops, and to him I am indebted for the sections which accompany this report. I shall have to speak of the various areas which have been surveyed separately, and in so doing I shall mention them in the following order;—

I. Todea Creek (Overhagen's Cascade lease).
II. Mount Rochfort and plateau.
III. Sea Slopes, with slip coal.
IV. Upper Orikaka country.

I.—Todea Creek (Cascade Area).

Coal has been traced in this area, showing a greater extent than would be expected from the appearance of the country, as seen from the edge of the break forming the boundary of Coalbrookdale. At the head of Todea Creek, S.W. from the Mount William summit, slates appear at the surface, but descending the creek coal 3 feet thick is first seen, interstratified with bands of blaze, and on passing southwards from this point it thickens out to 25 feet and 30 feet, and is lying at comparatively low angles.

The following sections show the thickness of the coal at various points down the creek:—

Head of Todea Creek.—Section No. 211.

	Ft.	in.
Surface	...	
Fine sandy grits	35	0
Soft dark flaky sandstone, with dark partings	6	0
Dark sandstone	4	0
Coal (lower seam)	3	0
Dark flaky sandstone	3	0
Soft grey shaly stone	2	0
Coarse hard grits	20	0
Slate to bed of creek	220	0
	293	0

Dip, S. to S.E. 5°.

South from above.—Section No. 210.

	Ft.	in.
Upper measures same as Section No. 211.		
Coal (lower seam)	8	0

South of Section No. 210, *about* 14 *Chains.—Section No.* 213.

	Ft.	in.
Surface	...	
Fine sandstone, with dark partings	8	0
Fine sandy grits	30	0
Dark flaky sandstone	10	0
Coal (lower seam)	20	0
Soft grey shaly stone	10	0
Coarse hard grits, with fragments of sandstone	80	0
Slate to bed of creek	140	0
	298	0

Dip, S. to S.E. 10°.

These sections are in the terrace face, and the measures appear to hold solid back to the face of the break, as seen in the tributaries of Todea Creek. It is therefore probable that this seam of coal holds over the whole of this area until reaching traverse peg 93, which is the boundary of a second break of which I shall have to speak further on.

Farther down the creek the coal thickens out to 40 feet, and then commences to thin again, the dip still being S. to S.E., until on reaching a point about 4 chains south of peg 87, on the traverse line; when the traverse line down Overhagen's Spur joins the V. 4 line, the coal is lying flat, close to the bed of the creek, showing the following section:—

Section No. 201.

	Ft.	in.
Fine soft yellow sandstone	50	0
Soft flaky sandstone	1	0
Coal (lower seam)	20	0
Hard grits to creek	20	0
	91	0

And after passing this point the dip changes to the northward, the coal again rising above the bed of the creek. At the mouth of Overhagen's Creek the following section is seen:—

Section No. 205.

	Ft.	in.
Surface	...	
Coal (lower seam)	30	0
Fine hard grits	25	0
Granite to bed of creek	45	0
	100	0

Dip, N. to N.E. 15°.

And about 15 chains farther south still, the coal has been raised to a considerable elevation above the bed of the creek, and the following section is exposed:—

Section No. 207.

	Ft.	in.
Surface	...	
Fine sandstone	12	0
Soft flaky sandstone	1	0
Coal (lower seam)	25	0
Soft grey shaly stone	3	0
Hard grits	38	0
Granite to bed of creek	732	0
	811	0

Dip, N. to N.E.

South of this point the country becomes very rough, the coal thins out, and ultimately no signs of it are seen, the last remnants having been denuded, and the granite which forms the Rochfort Ridge appearing at the surface; while to the westward of the above sections the country is also very gorgy, the crowns of the spurs showing at places the lower coarse hard grits, at others the slate coming to the surface.

The general formation of the Todea Creek area is as follows:—

A slip has occurred from the face of the Coalbrookdale break, bringing the coal contained in the area from traverse peg 93, north, exposed in sections 210, 211, 213, and also that farther south exposed in section 207 to their present level. Subsequently another slip has taken place along a line of break running north and south, about 10 chains to the eastward of that forming the boundary of Coalbrookdale, which has brought the coal contained in the area from traverse peg 93, south to Overhagen's Creek, exposed in sections 201, 205, &c., to a still lower level, giving an area of coal from 20 feet to 30 feet thick, as seen in the above sections, and about 5 chains in width.

Along the east banks of the creek, opposite sections 201 and 205, small patches of coal also occur at the same level, being shortly cut off again by the slates and granite.

The height of the first slip, that containing the coal, at the two extremities of the Todea Creek area is 400 feet to 450 feet, between the coal on the plateau and that in the slip; while the drop in the second slip is 850 feet from that in Coalbrookdale.

In the upper of these two areas the coal is as sound as that in Coalbrookdale, while the lower, though slightly shaken, is still a good marketable article.

The thin upper seam does not appear to occur in this area at all, having most probably been removed by denudation.

After passing the Mount Rochfort ridge no further sign of coal is seen down the creek until reaching the Buller River, and the country is very rough, consisting of slate and granite ridges traversed by steep gullies.

II.—Mount Rochfort and Plateau.

A continuance of the Coalbrookdale seam, mentioned in my last year's report, has been traced westward through the country in which the River Whareatea takes its rise. Sections of the coal have been obtained on both the eastern and western sides, in the heads of certain branches of Todea Creek and near where Trent's line crosses the Whareatea River, as follow:—

Section No. 113.

	Ft.	in.
Soft sandstone	12	0
Coal (lower seam)	18	0
Blaze	4	0
Crushed grits	20	0
	54	0

Dip, N.E. 20°, resting upon slates, the coal being much crushed.

Section No. 118.

	Ft.	in.
Blaze	2	0
Quartz grits	30	0
Soft sandstone	20	0
Coal (lower seam)	6	0
Dark grey stone (crushed)	10	0
	68	0

Dip irregular but northerly, resting upon slates.

There is no doubt that coal extends through the intermediate area, holding a thickness of from 6 feet to 18 feet, thickening towards the eastern boundary and thinning westward, as in Coalbrookdale.

This coal is cut out to the westward by the slates which come to the surface near the centre of the plateau, and from there to the western edge of the plateau no coal of any value has been traced.

In the vicinity of the bore-hole which has been put down near the edge of the Waimangaroa break, the following sections are obtained:—

Section No. 124.

	Ft.	in.
White quartz grits	50	0
Blaze, with bands of stone	10	0
Coal (crushed)	4	0
Dark shale and soft sandstone	8	0
	72	0

Dip, W. 15°, resting upon hard sandy grits.

Section No. 125.

	Ft.	in.
White quartz grits	20	0
Blaze	6	0
Coal (crushed)	3	0
Blaze, shale, &c.	8	0
Sandy grits	20	0
Blaze	5	0
Soft sandstone grits	30	0
Blaze	2	0
Coarse grits	120	0
Blaze	4	0
Hard coarse grits	35	0
Blaze	2	0
	255	0

Dip, W. 15°, resting upon hard coarse grits.

South from this point no sections have been obtained holding coal, but the following section is seen in a tributary of the Whareatea:—

Section No. 128.

	Ft.	in.
Blaze	1	6
Sandy grits	25	0
Blaze	1	0
Red grits	30	0
Blaze	1	0
Fine to coarse grit	20	0
Blaze	3	0
	81	0

Dip, W. 15°.

The Whareatea itself has cut deeply into the coal measures, but no outcrops of coal are seen. Bands of blaze appear from time to time; and to the eastward, up the Waimangaroa Gorge, sections of the strata are obtained from the surface down to the slate—not, however, exposing coal of any value.

The following section is typical:—

Section No. 130.

	Ft.	in.	Ft.	in.
Surface (edge of plateau)			...	
Soft sandy grits			28	0
Blaze			2	0
Grits			4	0
Blaze			4	0
Soft sandstone, with partings of blaze			30	0
Grit			4	0
Soft red sandstone			20	0
Blaze	1	0		
Grits	1	0		
Blaze	1	0		
Coal	0	6		
Blaze	0	6		
			4	0
Soft dark sandstone, with shaly partings			18	0
Soft red grit			18	0
Dark sandstone			10	0
Quartz grits			14	0
Blaze	0	9		
Coal	0	3		
Blaze	2	0		
			3	0
Hard grits			12	0
Coarse hard grits			24	0
Coarse stone, with angular fragments of quartz			40	0
			235	0

Dip, N.W. 12°, resting upon slate.

The crops of the various beds have been run out to the surface eastward of this point, and show that no coal, other than the thin seams appearing in the sections, may be looked for in the plateau between the Waimangaroa and Whareatea Rivers, lying to the westward of the slate ridge previously mentioned.

South of the Whareatea, until passing the summit of Mount Rochfort, patches only of crushed coal near the edge of the break are seen, the country generally presenting the appearance of a vast area of denudation.

From the Orawaiti River to the Buller, along the higher levels, small patches of crushed sooty coal are seen, until the granite, through which the lower gorge of the Buller is cut, comes to the surface.

To sum up the results obtained by the survey of this district, it appears that south of the Waimangaroa River the coal which appears on the high levels west of the slate ridge is of very limited extent and thickness; in addition to which, such coal as does occur is of so crushed and sooty a character as to be worthless, and the area may be looked upon, from a practical point of view, as being non-coaliferous.

III.—Sea Slopes, with Slip Coal.

Coal has been traced from L. 116, near the edge of the Mount Frederick plateau, to the head of Sims's Spur, north side of the Waimangaroa, sections being seen on both sides of the spur, as follow:—

Section No. 142.

	Ft.	in.	Ft.	in.
Yellow sandy grits			18	0
Soft sandstone, with shaly partings	2	0		
Sandy grits	1	6		
Sandstone, with shaly partings	3	6		
Dark shaly sandstone	4	0		
Yellow sandstone	1	0		
			12	0
Blaze			2	0
Coal			25	0
			57	0

Dip, N.W. 15°, resting upon slate.

Section No. 143.

	Ft.	in.	Ft.	in.
Yellow sandy grits			25	0
Soft sandstone, with shaly partings	1	0		
Sandy grits	3	0		
Sandstone, with shaly partings	3	0		
Dark sandstone	4	0		
Hard yellow sandstone	3	0		
			14	0
Blaze			1	0
Coal			20	0
			60	0

Dip, N.W. 5°.

The coal of this area is of the same superior quality as that generally found through the plateau heights, and it holds steadily throughout the area until cut off by a fault crossing the spur in a N. and S. direction, near peg 15 of Sims's Spur traverse line.

Below this an area of crushed coal occurs, about 15 chains in length, and it has been exposed by grit pits till near peg 23 on the same traverse.

From this point the spur forks, that known as Organ's Spur, running in a N.W. direction, while Sims's Spur runs to the S.W.; and down these spurs a denuded area is first met with, showing, on Organ's, slate exposed to the surface till coming to the edge of the main break, while on Sims's Spur broken grits and slate are seen until reaching peg 30.

At the edge of the main break a small area of soft coal is met with, which has been exposed by trenches on the slopes, the following sections being seen:—

Section No. 135.

	Ft.	in.	Ft.	in.
Blaze			10	0
Coal (good)	15	0		
Blaze, with band of coal	14	0		
Coal (soft)	16	0		
			45	0
Shale			2	0
			57	0

Dip, N.W. 25°.

Section No. 138.

	Ft.	in.	Ft.	in.
Surface			3	0
Soft dark sandstone			6	0
Coal (good)	16	0		
Blaze, with band of coal	10	0		
Coal (soft)	4	0		
			30	0
Soft brown sandstone			35	0
			74	0

Dip, N.W. 30°.

Section No. 139.

	Ft.	in.
Blaze		...
Coal (good)		16 0
Shale and coal, with band of blaze		14 0
Coal (soft)		16 0
		46 0

Dip, N.W. 20°.

The coal here is of good quality, but soft; and it remains to be seen whether it will improve on driving.

Below the break on Organ's Spur a face of crushed coal is seen, probably dipping N.W. No other outcrops can be traced here, the surface being covered by débris from the heights above.

On Sims's Spur the crushed coal has been exposed near the surface by cutting trenches; and in Sims's drive at the Waimangaroa the following section is seen:—

Section in Sims's Drive.

	Ft.	in.	Ft.	in.
Surface			2	6
Dark, soft marly sandstone			90	0
Fine grits and sandstone			80	0
Dark sandstone			60	0
Coal			0	6
Dark broken grits			40	0
Dip, W. 40°.				
Shale	2	0		
Shale and broken sandstone, with grits	40	0		
Shale	4	0		
Dip, W. 60°.			46	0
Shale and sandstone, with grits	20	0		
Shale	2	0		
Dark sandstone	4	0		
			26	0
			345	0

Dip, E. 70°.

And at a distance of 120 feet from this point coal has been cut 18 feet thick; dip, W. to N.W. at an angle of 60°.

This coal is soft in character where first struck, but on being driven upon appears materially to improve, and will very likely prove of better quality when it gets under the hill. The dip also decreases as the drive is put forward, and the coal is now lying at an angle of from 35° to 40°.

It is probable that this coal extends from Organ's Spur on the north to Sims's Spur on the south, so that, if the quality of the coal improves, this area will be of considerable value.

On the south side of the Waimangaroa, in Roche's drive, a seam of crushed coal, 18 feet thick, dip W. 40°, has been struck. This seam has been traced to the southward, with the following results:—

About 10 chains S.E. from Roche's drive the following section is seen:—

Section No. 122.

	Ft.	in.	Ft.	in.
Surface			3	0
Fine grits			10	0
Blaze			1	0
Coal	1	0		
Blaze	1	0		
Coal	6	0		
			8	0
			22	0

Dip, W. 50°, resting upon dark shale.

About 4 chains east from Section No. 122, loose crushed coal is seen occurring in the sideling of the spurs; and continuing up the spur from here coal may be seen at places on the surface until reaching Section No. 131, where a trench has been cut, exposing a seam of crushed coal, 18 feet thick, without any solid roof, the quality being the same as at Roche's drive.

At Section No. 127½ another trench has been cut, and the following section exposed:—

Section No. 127½.

	Ft.	in.	Ft.	in.	
Clay marls					
Dark sandstone					
Grits			20	0	(seen).
Blaze			2	0	
Sandstone			4	0	
Coal and blaze			1	0	
Fine grits			20	0	
Dark sandstone			80	0	
Band of grits	6	0			
Soft sandstone	8	0			
			14	0	
Coal	1	0			
Blaze	1	0			
			2	0	
Grey shaly grits			1	0	
Fine sandy grit			30	0	
Blaze			4	0	
Fine grit			35	0	
Dark sandstone			40	0	
			253	0	

Dip, W. 40°.

About 20 chains south from this point the following section is seen in Rapid Creek:—

Section No. 126.

	Ft.	in.
Coal (crushed)	3	0
Dark brown sandstone	14	0
Soft red sandstone	12	0
Coal	2	0
	31	0

Dip, W. 40°.

And going still further south, in a tributary of the Whareatea we find the beds as follow:—

Section No. 128.

	Ft.	in.
Blaze	1	6
Sandy grits	25	0
Blaze	1	0
Red sandy grits	30	0
Coarse grits	30	0
Blaze	1	0
Fine to coarse grits	80	0
Blaze	3	0
	171	6

From the above sections it will be seen that not only does this area not hold coal of a marketable quality, but that, on going south from Roche's drive, what coal there is rapidly thins out, or passes into blaze; so that practically, I am afraid, this area is of little value.

South from the Whareatea until reaching the Orawaiti, a belt of auriferous wash occurs, flanking the ranges. This is resting upon a sandy bottom, which is followed by a coarse wash, resting upon black marls, containing nodules of clay-band ironstone.

From information gathered from miners, Mr. Denniston reports that this wash has been driven into for a distance of 2,000 feet, and the slopes to the eastward of this are so covered by débris as to render it impossible to obtain reliable information from them. However, from what can be seen, it is extremely improbable that any coal of value will be found in this area, and the same remarks apply to the country between the Orawaiti and Buller Rivers.

North of Nikau Creek, until reaching Granity Creek, no explorations have been carried on; the country presents a very rugged and broken appearance, consisting of long, narrow spurs, the slate coming to the surface.

It is probable that patches of coal, similar in quality to that on Sims's and Organ's Spurs, might be found on the lower levels; and as these spurs may form the outlet for some of the best coal, I think some work should be expended upon them with this object in view.

IV.—Upper Orikaka Country.

The survey of this part of the country, which is situated on the eastern side of the Mount William Range, is at present being carried on—indeed, by this time, should be nearly completed.

Both seams of coal occur in this area, the upper seam being thin, as at most other parts of the field. The lower one varies in thickness from 4 feet up to 25 feet, and is of good quality.

On the eastern slopes of the Mount William Range, the western side of Tio Valley (Upper Orikaka), small hillocks occur containing coal, varying in thickness from 1 foot to 3 feet, the lower coarse grit appearing at the surface in the creeks; schists and slates also appearing.

At the base of the ridge, coal occurs abutting against the lower grit, and standing on end in a tributary of Tio Creek; while north of this, at Section No. 7, the following sequence is seen:—

Section No. 7.

	Ft.	in.	
Black marls'	350	0	(judged).
Micaceous sandstone, with fossil oysters	30	0	
Soft band of blue shaly stone	1	0	
Coal (upper seam)	1	0	
	382	0	

Dip, E. to N.E. 15°.

Farther north still, the lower seam crops at a distance of about 20 chains from Section No. 7, thus:—

Section No. 6.

	Ft.	in.	
Surface coal, lower seam	10	0	(shown).
Soft sandstone	12	0	
Coarse hard grits	...		

Dip, E. 8°.

Coal has not been traced farther north than this; but to the east, across the valley, the measures are lying almost flat, dipping, however, slightly to the north, and, farther across the valley, it changes to a north-west or westerly dip, and the coal appears to basin. The black marls there cap the measures and overlap them, nothing but the lower grits appearing below them on the eastern boundary of the field.

I am unable to show the extent of the coal beds, as the maps are not at present far enough advanced; but Mr. Denniston's sections, which are appended to this report, give a fair idea of the lay of the coal, and the extent may be classified in the following manner:—

1. Along the eastern face of the Mount William Ridge, coal occurs in patches.
2. In the Orikaka Valley, from the divide of the Orikaka and Ngakawau Rivers, south, coal is also seen in patches, but probably does not hold throughout the area.
3. From the divide, north as far as has at present been seen—namely, to the Long Terrace—it is probable that both the upper and lower seams hold, but would have to be worked by shallow shafts, which would place this area at a disadvantage as compared with the other parts of the Buller coal field.

Above the upper seam a belt of micaceous sandstone occurs, in which large oysters have been found, these being overlaid again by black marls, as seen in Section No. 7, which cover a considerable area here, flanking the slate ranges still further east.

The sandstone in which the fossils occur is similar to that which overlies the upper seam of coal in Sims's drive. It is highly sulphurous in character, owing probably to the decomposition of pyrites.

Facilities for Transport of Coal.

I have further to point out certain points relative to the working of the coal. I mentioned in my last year's report that the coal of Cable and Drummond's area would best be worked by a tramway from the face of the coal to the Ngakawau. Another route also presents itself by which this coal could be taken, viz. down Granity Creek; but although this would be a cheaper means of exit as far as first expense is concerned, the other route would, I believe, be the best for a permanent way.

Any company that made a tramway here would have to act as common carriers for the greater part of the coal field, and it would certainly be to their advantage to make such a tramway of as permanent a character as possible.

BULLER COAL FIELD

TODEA CREEK

Mag: North

Coal Measures

Areas holding Coal

Areas not holding Coal

Slate Granite etc

SCALE

10 5 4 3 2 1 50 40 30 20 10 0 50 Chains

Mt William Cairn

COALBROOK DALE

Main Track

Todea

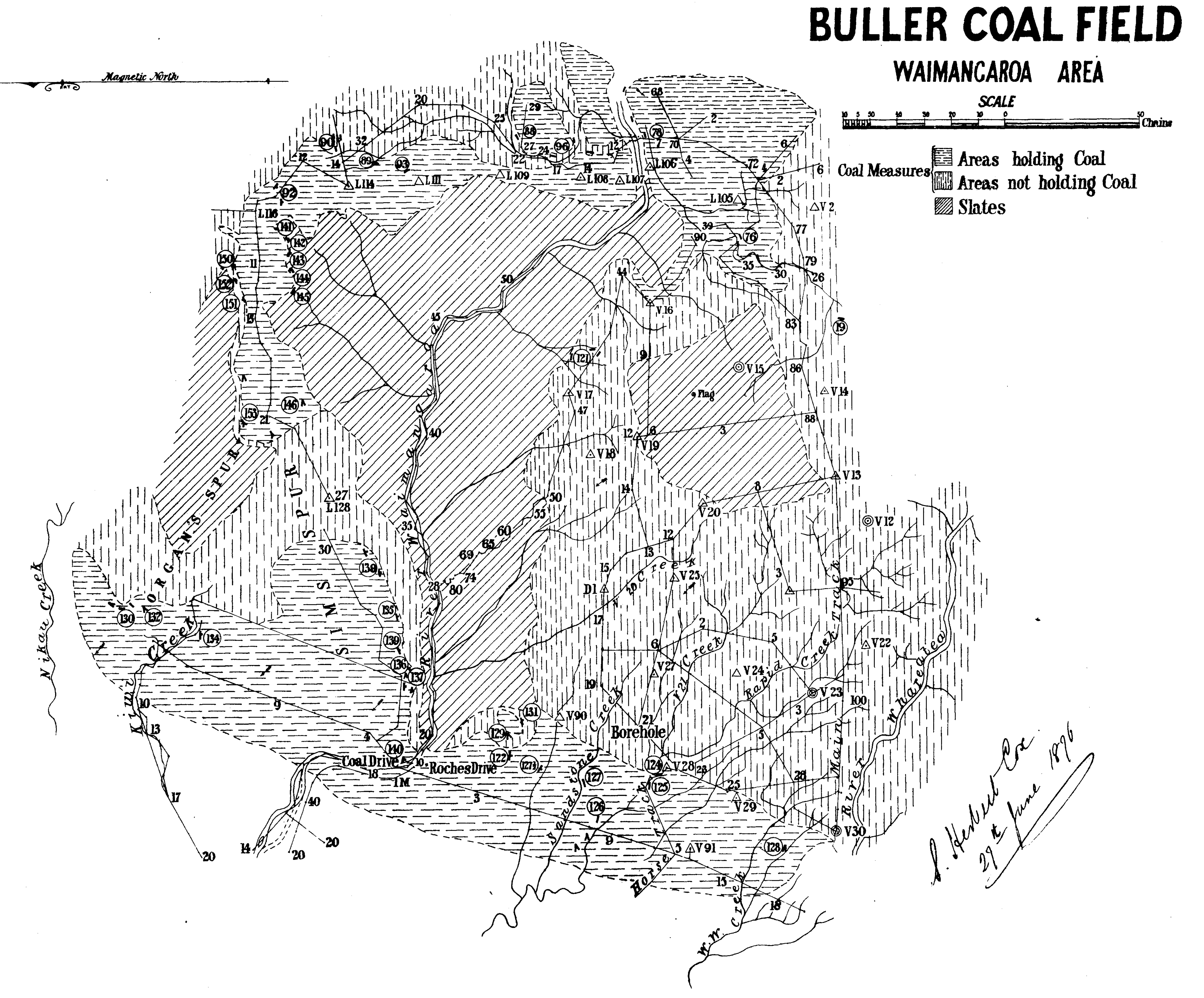
Youngs Camp

Todea Creek

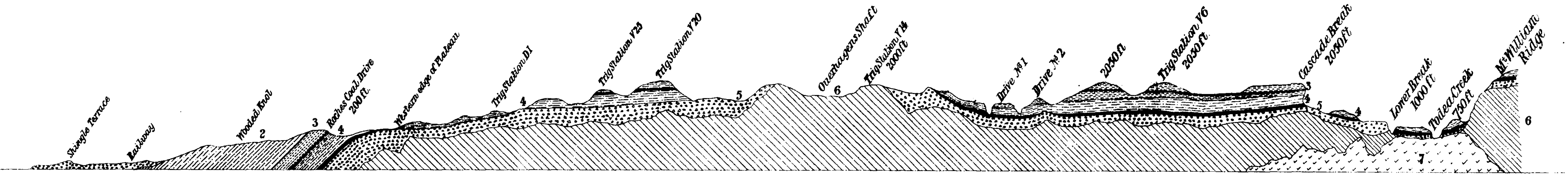
Camp 9

V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 V35 V36

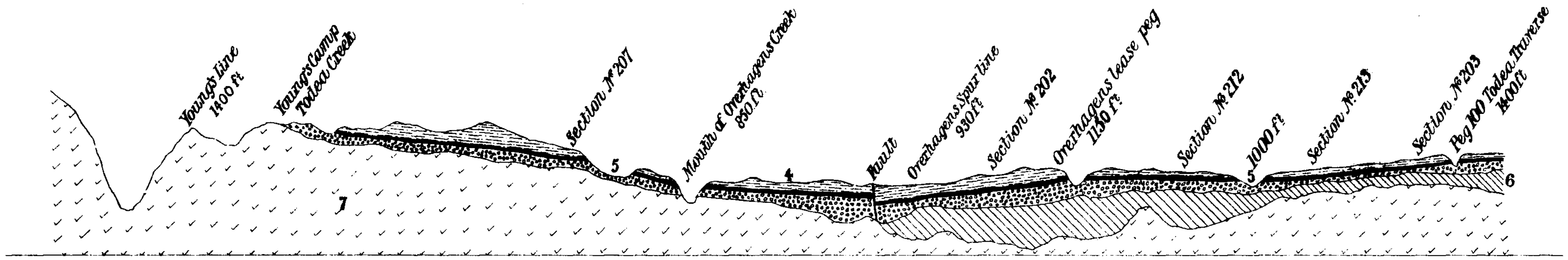
J. Herbert Cox
27th June 1876.



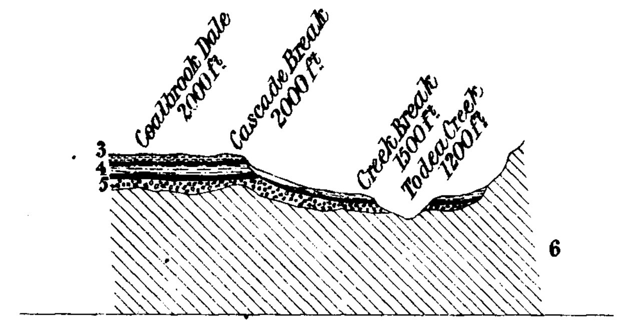
BULLER COAL FIELD
WAIMANGAROA AREA
SCALE
Chains
Coal Measures
Areas holding Coal
Areas not holding Coal
Slates
Magnetic North
Nikau Creek
Kiwi Creek
ORGAN'S SPUR
SIMS SPUR
Waimangaroa River
N. 20 Creek
V 21 Creek
Rapid Creek
Sandstone Creek
Horse Track
Main Track
Main River
W. W. Creek
Waimangaroa
Borehole
Coal Drive
Roches Drive
Flag
S. Herbert Cox
27th June 1896



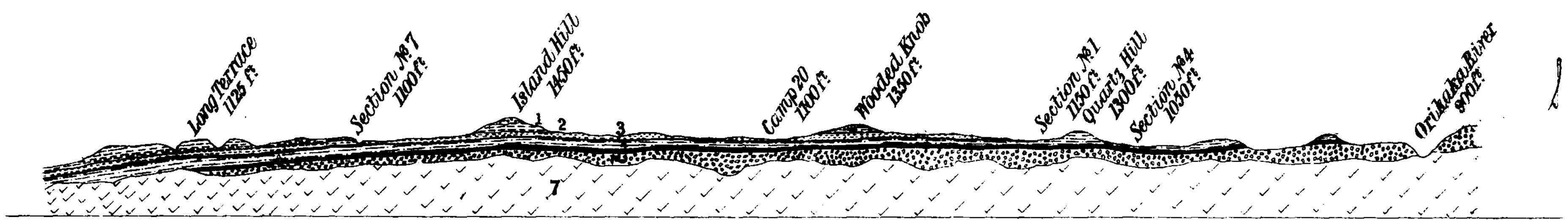
Ideal Section from Sea Face to Coalbrookdale



Ideal Section down Todea Creek



Ideal Section down V4 Line. Todea Creek



Ideal Section through Orikaka Valley N.S.

BULLER COAL FIELD

IDEAL SECTIONS

1 Alluvial Wash
2 Black Marls
3 Brown to Grey Sandstone *(fossil oysters)*
4 Sandstone & Sandy Grits
5 Coarse Grits
6 Slate & Schist
7 Granite
Coal

SCALE

Chains

The coal of Mulholland's lease, which is about to be worked by a Wellington company, simply requires a branch line along the banks of the Waimangaroa to connect it with the main line, but whether this should be constructed on the north or south side of the river is a matter for consideration.

Should the north bank be chosen, the necessity for a bridge across the river opposite the mine would be obviated; while, on the other hand, if Messrs. Roche and Co.'s lease be worked, one line from the railway depôt up the south side of the river would suffice for the working of the two mines.

Beyond the working of these two leases the south bank possesses but few advantages over the north, as the Coalbrookdale area could not be conveniently connected with this line, whereas the Koranui Company would probably bring their tram down close to Sims's drive if the branch line be constructed, so that the question of on which side of the river the line should be laid simply resolves itself into one of the natural advantages which present themselves for the construction of a line.

The Koranui Company's lease, which is situated at the head of Sims's Spur and contains coal of a superior quality and hardness, may readily be worked by self-acting trams from the face of the coal in the Waimangaroa break, to the railway; down Sims's Spur from L. 128, and between there and the face of the coal along gently sideling ground.

If this company push their work on as they profess it is their intention to do, they will in all probability be the first to have genuine hard coal in the market, for although the coal in Mulholland's lease shows signs of improvement on being driven on, still it is not equal to that of the high levels, nor do I think it will ever prove of as good quality.

I understand that it is proposed by the Coalbrookdale Company to lay a permanent way across the Mount Rochfort plateau to the head of Roche's Spur, and self-acting tramways from there to the railway depôt at the Waimangaroa, down the south side of the spur; and Mr. Denniston informs me that such a tramway could be constructed without any very great difficulty. There will, however, of necessity, be a great expense incurred in the construction of a tramway of this length, but I can see no other means by which this area can be worked at all.

The coal here is of the best quality upon the field, and will be worked at a minimum cost irrespective of the transport, so that there is an encouragement for the speculators to incur a large first expense.

The Todea Creek coal is dependent upon Coalbrookdale for its means of egress, the difficulties of a tramway down Todea Creek, as pointed out by Mr. Denniston, being too great to warrant construction.

Should the line be laid across the plateau as proposed, this coal would probably be worked as cheaply as almost any in the field, and would simply involve the erection of a winding engine to draw the trucks from the coal in Todea Creek to the level of the plateau.

A good line for this could readily be constructed down the V. 4 line at a small expense; and when it is considered that the whole area could be worked level-free, that the coal could be put in the market very shortly after opening the mine, added to which there is a good supply of timber which would serve for the construction of the line and also for timbering the workings, I think the prospects of this area may be looked upon as encouraging.

The Coalbrookdale area is almost devoid of timber, and they would probably have to get what they required from Todea Creek, so that they also would benefit by the construction of a tramway to work the coal here.

With regard to the Koranui Company's tramway, a good supply of timber exists along the proposed line, which would serve for construction and also for subsequent workings; and the same remarks apply to that down Roche's Spur where the Coalbrookdale tramway would pass.

The Upper Orikaka country is very badly situated as regards means of egress for the coal, and I fear it will be many years before any attempt is made to work it.

Further Prosecution of the Survey.

As mentioned in the early part of this report, the survey of the principal coal areas between Westport and the Ngakawau is now completed, with the exception of the spurs between Nikau and Granity Creeks. A line is now in progress connecting the Upper Orikaka country with the Mokihinui, and Mr. Cooper informs me that he hopes to have this through in another month. This will give a better idea of what may be looked for between the Ngakawau and Mokihinui, of which block of country little is at present known.

When this line is through I think that the spurs between Nikau and Granity Creeks should have some work expended upon them with a view of determining what is the best means of exit of some of the high-level coals, which may possibly be better worked this way than any other. When this is completed I do not think any further field work should be carried on in this district until the maps are as far advanced as is possible from the information which is at present to hand, unless the Mokihinui presents favourable indications from the preliminary work attendant upon cutting the line through from the Upper Orikaka to the Mokihinui River, in which case it would be advisable to continue a survey of this block as rapidly as possible.

I have, &c.,
S. Herbert Cox, F.C.S., F.G.S.,
Assistant Geologist.

Director of Geological Survey.
