1879.

NEW ZEALAND.

PUBLIC WORKS STATEMENT,

BY THE MINISTER FOR PUBLIC WORKS, THE HON. JAMES MACANDREW, THURSDAY, 7TH AUGUST, 1879.

SIR,—

Under existing circumstances I do not propose to occupy the time of the House with any lengthened or elaborate Public Works Statement; nor is this necessary, inasmuch as the various departmental reports which are now in the printer's hands, and which I hope will be laid upon the table before the session closes, contain very clear and full details.

It seems to me that an authoritative summarized account of the progress which has been made during the past financial year ought to accompany the Loan Act, otherwise I should have deemed it unnecessary to make any Statement at present.

With regard to railway construction, I would say generally that the progress which has been made during the past year has been as great as could have been reasonably expected. It has been fully as much as could possibly have been attained without enlarging the Public Works staff to an extent which to my mind was not expedient.

In addition to the large works authorized in previous sessions, out of the list of new railways placed on the Schedule last year, eighteen have been commenced, and the works are progressing.

Among the authorized lines which have not been commenced are included Waimea to Switzer's, Amberley to Cook Strait, Wellington to Foxton, Kawakawa Extension, and Te Awamutu to New Plymouth.

As regards Waimea to Switzer's, it was not deemed advisable to proceed with this work until the line from Gore to Lumsden, of which it will form a branch, is further advanced towards completion.

Amberley to Cook Strait.—It will be recollected that it was no part of the original proposals of the Government last year to have undertaken this work—in the meantime at least—and that it was out of deference to the strong feeling of alleged injustice manifested by the whole of the Nelson members, and to the desire of members of the House generally, that this line was placed upon the Schedule, and £60,000 appropriated towards its commencement.

I confess that, amid the many conflicting opinions which were expressed with regard to this line, and in the absence of any reliable data upon which to arrive at a satisfactory conclusion on the subject, it was with considerable reluctance that I consented to the proposal to place it on the Schedule. Having done so, however, I felt bound to see that the necessary steps should be taken to enable the work to be proceeded with, and, accordingly, for several months past, a survey has been going on, with a view of deciding upon the proper course for the line to be taken.

It appears that the country beyond Foxhill is exceedingly difficult, and much more time and labour than was anticipated have been found necessary in order to ascertain the most practical and economical route. Hence the delay which has occurred.

A very carefully-considered and exhaustive report upon the proposed lines in the northern part of the Middle Island has been laid upon the table, from which

it will be seen that there are greater difficulties in the way of railway operations in that part of the colony than probably were anticipated.

Kawakawa Extension.—The work of surveying this line has been very difficult and tedious. It is now ready for inviting tenders, and only waits the fulfilment by the Bay of Islands Coal Company of certain conditions entered into on their part in order to be put in hand.

Wellington to Foxton.—This line is part of the main trunk line from Wellington to the Waikato, *via* the West Coast. The land through which it passes is now being purchased by the Government, and at least one million of acres contiguous to it will be shortly available for settlement purposes. Considerable pains have been bestowed upon ascertaining the most suitable route from Wellington to Waikanae, this being the most difficult and expensive portion of the line. It has been found that the best outlet from Wellington is by Kaiwarawara and Johnsonville, by which route a very fair grade can be secured. The working plans are now finished, and tenders can be called for the works almost immediately.

The total sum expended on railway construction works during the past year has been—

	£	s.	d.
In the North Island	343,861	7	1
In the Middle Island	462,812	3	4
	£806,673	10	5
Surveys not included in above, being charged to Votes 81 and 82	12,607	3	8
Total	£819,280	14	1

The total contract liabilities on railway construction works on 30th June last were—

	£	s.	d.
In the North Island	537,951	2	5
In the Middle Island	539,580	14	8
Rails not yet arrived or apportioned	100,000	0	0
	£1,177,531	17	1
Surveys not included in above, being charged to Votes 81 and 82	1,308	3	3
Total	£1,178,840	0	4

Since 30th June additional tenders have been let—

	£	s.	d.
In the North Island	12,202	6	10
In the Middle Island	24,977	18	10

It may be interesting to show the amount of expenditure and obligations incurred since 30th June, 1878, on railways works in the different divisions of the colony :—

——	Expenditure, 1878–79.			Liabilities on 30th June, 1879.		
	£	s.	d.	£	s.	d.
NORTH ISLAND.						
Auckland	83,395	19	8	231,586	9	4
Hawke's Bay	48,167	11	0	28,626	15	8
Taranaki	35,679	15	10	34,776	3	7
Wellington	176,618	0	7	242,961	13	10
Total	£343,861	7	1	£537,951	2	5
MIDDLE ISLAND.						
Otago	223,607	13	9	320,494	8	0
Canterbury	177,314	14	2	172,966	13	7
Westland	553	1	2	4,935	19	9
Nelson	57,337	6	10	*32,229	10	8
Marlborough	3,999	7	5	8,954	2	8
Total	£462,812	3	4	£539,580	14	8

* To this sum of £32,229 10s. 8d. a further sum of £12,000 may be added in respect of a section of railway, Brunnerton to Stillwater, tenders for which are about to be dealt with.

I shall now shortly allude to the Department of Working Railways. In the Middle Island, during the past year, 59 additional miles of railway have been opened for traffic, making a total, at 30th June last, of 809 miles, the total cost of construction of which amounts to £5,757,188. The gross receipts have been £601,281 6s. 1d. The working charges and maintenance have been £428,498 19s. 1d., leaving a balance of £172,682 7s. available towards payment of interest on cost of construction, being at the rate of 3 per cent. for the year. The number of passengers carried during the year was 2,018,871. I may here observe that several causes have contributed to diminish considerably the profits of the year—namely, the great deficiency in the grain crop of Canterbury, the serious loss which accrued from floods, and the want of rolling-stock sufficient to meet the enormous traffic which is being continuously developed. I am glad to say, however, that the last-named evil is being successfully diminished, and that the further risk from flood damage is being lessened by the protective and other works which have been constructed during the year.

In the North Island, during the past year, 27 additional miles have been opened for traffic, making a total on the 30th June last of 336 miles; the total cost of construction of which amounts to £2,300,000. The gross receipts have been £156,762 1s. 4d., and the working charges and maintenance £116,879 15s. 11d.; leaving a balance of £39,935 6s. 2d. available towards payment of interest and cost of construction, being at the rate of nearly $1\frac{3}{4}$ per cent. for the year. The number of passengers carried during the year was 703,869.

I feel assured that these results must be regarded as satisfactory, and cannot but afford matter for congratulation to us all. They augur well, in my opinion, as to what may be looked forward to as population increases, and they amply justify the additional loan which it has been resolved to raise, in order to the prosecution of those new railway works which have been commenced during the past year—railways which I feel persuaded will upon the whole be not only more productive than, but will greatly increase the traffic upon, those lines which have been already constructed.

I may say that it was the intention of the Government to have applied for power to lay off small-farm settlements along the various new lines, and to dispose of the same upon such terms as might be deemed best to secure the permanent location on the soil of those employed in the construction of the works. I venture to hope that no time may be lost, after the assembling of the new Parliament, in legislating in this direction.

I could have wished to have gone more fully into what I conceive to be the best course of action for the future in respect of our Public Works and Railway policy; as it is, the position in which the Government has been placed in this House precludes me from so doing. I should hope, however, that the House will agree with me in thinking that, in the public interest, it is well that the Loan Bill should be accompanied with an authoritative and condensed statement showing the results of the Railway policy for the past year, such as I have now endeavoured to submit—a statement which will be found to be fully borne out by the various official reports and returns for the year.

I have carefully abstained from saying anything debatable; and shall conclude by expressing a hope that, into whatever hands the future administration of the Public Works Department may fall, the Railway policy which I had the honor to enunciate last session may be earnestly and vigorously prosecuted.

INDEX TO TABLES.

TABLE No. 1.

SUMMARY showing TOTAL EXPENDITURE and LIABILITIES on PUBLIC WORKS out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

Number of Table containing details.	Works.	Expenditure to 30th June, 1878 (see last year's Table No. 1).	Deduct Amounts recovered since 30th June, 1878, but which are for Services prior to that date	Total Net Expenditure to 30th June, 1878.	Expenditure during Year ended 30th June, 1879.	Total Expenditure to 30th June, 1879.	Liabilities, Authorities, Contracts, &c., 30th June, 1879.	Total Expenditure and Liabilities.	Works.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
2	Railways	*6,843,499 5 7	24,645 13 11	6,818,853 11 8	819,280 14 1	7,638,134 5 9	1,178,840 0 4	8,816,974 6 1	Railways.
9	Roads	703,870 12 3	44 3 0	703,826 9 3	46,725 15 6	750,552 4 9	41,459 12 8	792,011 17 5	Roads.
11 of 1877	Payments made to Road Boards	225,000 0 0	...	225,000 0 0	...	225,000 0 0	...	225,000 0 0	Payments made to Road Boards.
8 and 9	Opening up Roads and constructing Bridges through lands recently purchased (Vote 88, item 2)	...	...	...	500 0 0	500 0 0	11,575 13 6	12,075 13 6	Opening up Roads and constructing Bridges through lands recently purchased (Vote 88, item 2).
10 of 1878	Coal Exploration and Mine Development	10,835 8 0	...	10,835 8 0	...	10,835 8 0	...	10,835 8 0	Coal Exploration and Mine Development.
10	Water Supply on Gold Fields ...	394,709 6 5	47 16 0	394,661 10 5	20,964 18 1	415,626 8 6	12,562 12 7	428,189 1 1	Water Supply on Gold Fields.
11 of 1877	Aiding Works on Thames Gold Field	50,000 0 0	...	50,000 0 0	...	50,000 0 0	...	50,000 0 0	Aiding Works on Thames Gold Field.
15	Telegraphs	299,652 0 6	1,693 13 10	297,958 6 8	30,261 10 7	328,219 17 3	2,500 0 0	330,719 17 3	Telegraphs.
12	Public Buildings	283,635 11 7	4 9 0	283,631 2 7	166,045 4 8	449,676 7 3	71,299 15 1	520,976 2 4	Public Buildings.
14	Lighthouses	71,673 3 6	...	71,673 3 6	9,566 19 8	81,240 3 2	2,125 0 0	83,365 3 2	Lighthouses.
13	Miscellaneous Public Works ...	47,324 5 3	...	47,324 5 3	168,070 8 8	215,394 13 11	125,119 3 9	340,513 17 8	Miscellaneous Public Works.
	Departmental	117,016 11 5	39 10 0	116,977 1 5	‡15,969 16 10	132,946 18 3	...	132,946 18 3	Departmental.
	TOTAL	9,047,216 4 6	26,475 5 9	9,020,740 18 9	†1,277,385 8 1	10,298,126 6 10	1,445,481 17 11	11,743,608 4 9	TOTAL.

* This amount does not include the expenditure on railways of the late Provinces of Canterbury and Otago, which were valued at £731,759 and £372,522 respectively, and were not paid for out of Immigration and Public Works Loan, but were taken in reduction of the provincial debts.

† If the amount ‡£15,969 16s. 10d. (Departmental) be deducted from this amount it will leave £1,261,415 11s. 3d., which will be found to agree with the Audited Statement of Expenditure on Public Works (*vide* Appendix A).

TABLE No. 2.

STATEMENT showing the TOTAL EXPENDITURE and LIABILITIES on RAILWAYS out of IMMIGRATION and PUBLIC WORKS LOAN to 30th June, 1879.

LINES OF RAILWAY.	Total Net Expenditure to 30th June, 1878, as per Table No. 3.	EXPENDITURE DURING 1878-79. On Votes 66 to 80 for Railways.	EXPENDITURE DURING 1878-79. On Votes 81 and 82 for Surveys.	Total Expenditure to 30th June, 1879, as per Table No. 3.	Liabilities on Authorities, Contracts, &c., 30th June, 1879, as per Table No. 4.	Total Expenditure and Liabilities.	LINES OF RAILWAY.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
NORTH ISLAND (as per particulars below) ...	2,471,607 9 9	343,861 7 1	2,124 12 11	2,817,593 9 9	538,289 9 3	3,355,882 19 0	NORTH ISLAND (as per particulars below).
MIDDLE ISLAND (as per particulars below) ...	4,346,410 8 7	462,812 3 4	10,482 10 9	4,819,705 2 8	540,550 11 1	5,360,255 13 9	MIDDLE ISLAND (as per particulars below).
MISCELLANEOUS SURVEYS ...	470 17 11	...	...	470 17 11	...	470 17 11	MISCELLANEOUS SURVEYS.
UNAPPORTIONABLE ...	364 15 5	...	...	364 15 5	100,000 0 0	100,364 15 5	UNAPPORTIONABLE.
TOTAL ...	6,818,853 11 8	806,673 10 5	12,607 3 8	7,638,134 5 9	1,178,840 0 4	8,816,974 6 1	TOTAL.
NORTH ISLAND.							NORTH ISLAND.
Kawakawa ...	26,603 19 4	526 9 11	...	27,130 9 3	411 2 6	27,541 11 9	Kawakawa.
Kaipara-Puniu ...	875,369 14 5	79,030 14 7	...	954,400 9 0	161,512 15 8	1,115,913 4 8	Kaipara-Puniu.
Napier-Manawatu ...	354,850 3 11	48,167 11 0	...	403,017 14 11	28,626 15 8	431,644 10 7	Napier-Manawatu.
Wellington-Woodville ...	535,794 8 2	92,892 17 5	...	628,687 5 7	107,248 19 0	735,930 4 7	Wellington-Woodville.
Waitara-Patea ...	136,835 15 4	35,679 15 10	...	172,515 11 2	34,776 3 7	207,291 14 9	Waitara-Patea.
Patea-Manawatu ...	536,497 3 9	81,604 14 10	...	618,101 18 7	106,212 18 3	724,314 16 10	Patea-Manawatu.
Wellington-Foxton ...	...	1,534 10 1	...	1,534 10 1	14,505 16 7	16,040 6 8	Wellington-Foxton.
Waitotara River-Upper Patea ...	...	585 18 3	...	585 18 3	10,000 0 0	10,585 18 3	Waitotara River-Upper Patea.
Te Awamutu-New Plymouth ...	...	...	...	...	...	...	Te Awamutu-New Plymouth.
Masterton-Papatu ...	...	...	...	...	5,000 0 0	5,000 0 0	Masterton-Papatu.
Waikato-Thames ...	...	3,016 1 9	...	3,016 1 9	53,772 19 2	56,789 0 11	Waikato-Thames.
Branch line to Hamilton ...	...	822 13 5	...	822 13 5	2,382 2 1	3,204 15 6	Branch line to Hamilton.
Helensville-Kaukapakapa River ...	...	...	...	...	...	...	Helensville-Kaukapakapa River.
Whangarei-Kamo ...	...	...	...	...	13,507 9 11	13,507 9 11	Whangarei-Kamo.
PRELIMINARY SURVEYS—							PRELIMINARY SURVEYS—
Thames-Waikato ...	1,151 15 7	...	381 0 0	1,532 15 7	...	1,532 15 7	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.
Hutt-Waikanae ...	223 6 8	...	1,494 9 9	1,717 16 5	...	1,717 16 5	Hutt-Waikanae.
Tokano-Napier ...	20 16 0	...	...	20 16 0	...	20 16 0	Tokano-Napier.
Waipukurau-Gorge ...	3,179 11 0	...	...	3,179 11 0	...	3,179 11 0	Waipukurau Gorge.
Waitara-Waitotara ...	...	...	87 10 0	87 10 0	...	87 10 0	Waitara-Waitotara.
Mountain Road-Opunaki ...	...	...	161 13 2	161 13 2	338 6 10	500 0 0	Mountain Road-Opunaki.
TOTAL, NORTH ISLAND ...	2,471,607 9 9	343,861 7 1	2,124 12 11	2,817,593 9 9	538,289 9 3	3,355,882 19 0	TOTAL, NORTH ISLAND.

MIDDLE ISLAND.																		MIDDLE ISLAND.
Nelson–Foxhill	...	117,938	13	11	9,726	17	3	...			127,665	11	2	3,037	17	1	130,703	8	3	Nelson–Foxhill.
Picton–Blenheim	...	159,309	8	6	3,999	7	5	...			163,308	15	11	8,954	2	8	172,262	18	7	Picton–Blenheim.
Brunner–Greymouth	...	163,247	5	8	26,897	16	11	...			190,145	2	7	9,071	11	1	199,216	13	8	Brunner–Greymouth.
Westport–Ngakawau	...	186,353	0	2	19,556	8	8	...			205,909	8	10	6,669	0	3	212,578	9	1	Westport–Ngakawau.
Amberley–Waitaki	...	1,368,242	2	4	177,012	8	10	...			1,545,254	11	2	125,358	18	5	1,670,613	9	7	Amberley–Waitaki.
Waitaki–Bluff	...	2,086,059	13	4	163,574	13	2	...			2,249,634	6	6	205,232	3	2	2,454,866	9	8	Waitaki–Bluff.
Winton–Kingston	...	227,357	10	2	11,559	9	2	...			238,916	19	4	773	7	9	239,690	7	1	Winton–Kingston.
Western Railways	...	12,245	8	9	44,370	7	0	...			56,615	15	9	38,266	14	5	94,882	10	2	Western Railways.
Otago Central	...	...			1,939	18	3	...			1,939	18	3	50,059	1	3	51,998	19	6	Otago Central.
Amberley–Brunnerton	...	...			59	10	5	...			59	10	5	1,082	5	0	1,141	15	5	Amberley–Brunnerton.
Greymouth–Hokitika	...	...			553	1	2	...			553	1	2	9,871	19	6	10,425	0	8	Greymouth–Hokitika.
Canterbury Interior Main Line	...	...			...			...			...			8,106	16	1	8,106	16	1	Canterbury Interior Main Line.
Main Line–Upper Ashburton	...	...			...			...			...			9,879	2	6	9,879	2	6	Main Line–Upper Ashburton.
Opawa Branch Extension	...	...			135	12	0	...			135	12	0	7,983	4	4	8,118	16	4	Opawa Branch Extension.
Waipahi–Heriot Burn	...	...			...			...			...			250	0	0	250	0	0	Waipahi–Heriot Burn.
Edendale–Toitois	...	...			133	10	4	...			133	10	4	9,835	11	10	9,969	2	2	Edendale–Toitois.
Otautau–Nightcaps	...	...			45	11	3	...			45	11	3	4,968	19	6	5,014	10	9	Otautau–Nightcaps.
Clutha–Catlin's River	...	...			333	11	2	...			333	11	2	5,298	10	10	5,632	2	0	Clutha–Catlin's River.
Waimea–Switzer's	...	...			...			...			...			...			...			Waimea–Switzer's.
Lumsden–Mararoa	...	...			42	3	10	...			42	3	10	75	8	2	117	12	0	Lumsden–Mararoa.
Palmerston–Waihemo	...	...			1,490	14	3	...			1,490	14	3	4,642	7	1	6,133	1	4	Palmerston–Waihemo.
Oamaru–Livingston	...	...			107	16	0	...			107	16	0	1,092	4	0	1,200	0	0	Oamaru–Livingston.
Main Line–Shag Point	...	...			9	19	4	...			9	19	4	...			9	19	4	Main Line–Shag Point.
Amberley–Cook Strait	...	...			1,096	13	7	...			1,096	13	7	28,576	9	9	29,673	3	4	Amberley–Cook Strait.
Little River–Akaroa	...	...			166	13	4	...			166	13	4	495	0	0	661	13	4	Little River–Akaroa.
PRELIMINARY SURVEYS—																				PRELIMINARY SURVEYS—
Foxhill–Brunner	...	2,872	19	1	...			...			2,872	19	1	...			2,872	19	1	Foxhill–Brunner.
Foxhill–Southwards	...	454	11	8	...			...			454	11	8	...			454	11	8	Foxhill–Southwards.
Greymouth–Christchurch	...	798	0	9	...			...			798	0	9	...			798	0	9	Greymouth–Christchurch.
Greymouth–Hokitika	...	2,734	5	7	...			19	11	6	2,753	17	1	17	16	3	2,771	13	4	Greymouth–Hokitika.
Hokitika–Christchurch	...	34	16	8	...			...			34	16	8	...			34	16	8	Hokitika–Christchurch.
Hokitika–Malvern	...	468	0	3	...			...			468	0	3	...			468	0	3	Hokitika–Malvern.
Hokitika Office	...	1,200	0	0	...			...			1,200	0	0	...			1,200	0	0	Hokitika Office.
Greymouth–Amberley	...	8,828	2	9	...			1,954	19	3	10,783	2	0	765	19	1	11,549	1	1	Greymouth–Amberley.
Amberley–Hurunui	...	151	16	8	...			416	18	9	568	15	5	...			568	15	5	Amberley–Hurunui.
Hurunui–Blenheim	...	726	12	11	...			...			726	12	11	...			726	12	11	Hurunui–Blenheim.
Ashburton–Alford Forest	...	172	7	7	...			56	15	0	229	2	7	...			229	2	7	Ashburton–Alford Forest.
Waimate–Hakateramea	...	109	0	0	...			98	2	10	207	2	10	...			207	2	10	Waimate–Hakateramea.
Duntroon–Hakateramea	...	...			...			1,300	0	0	1,300	0	0	...			1,300	0	0	Duntroon–Hakateramea.
Waimate Extension	...	...			...			...			...			...			...			Waimate Extension.
Orari–Hilton, *viâ* Geraldine	...	124	16	0	...			177	15	2	302	11	2	...			302	11	2	Orari–Hilton, *viâ* Geraldine.
White Cliffs–Rakaia Gorge	...	52	19	6	...			165	13	4	218	12	10	...			218	12	10	White Cliffs–Rakaia Gorge.
Albury–Fairlie Creek	...	105	10	6	...			192	6	2	297	16	8	...			297	16	8	Albury–Fairlie Creek.
Oamaru–Waiareka	...	493	6	9	...			...			493	6	9	...			493	6	9	Oamaru–Waiareka.
Waiareka–Livingstone	...	8	2	6	...			...			8	2	6	...			8	2	6	Waiareka–Livingston.
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.
Taieri, *viâ* Strath Taieri–Clyde	...	2,684	3	8	...			2,668	8	7	5,352	12	3	...			5,352	12	3	Taieri *viâ* Strath Taieri–Clyde.
Taieri River, *viâ* Brighton	...	3	0	0	...			...			3	0	0	...			3	0	0	Taieri River *viâ* Brighton.
Carried forward	...	4,345,066	7	6	462,812	3	4	7,050	10	7	4,814,929	1	5	540,364	10	0	5,355,293	11	5	

TABLE No. 2—*continued.*

STATEMENT showing the TOTAL EXPENDITURE and LIABILITIES, &c.—*continued.*

LINES OF RAILWAY.	Expenditure to 30th June, 1878, as per Table No. 3.	EXPENDITURE DURING 1878-79.		Total Expenditure to 30th June, 1879, as per Table No. 3.	Liabilities on Authorities, Contracts, &c., 30th June, 1879, as per Table No. 4.	Total Expenditure and Liabilities.	LINES OF RAILWAY.
		On Votes 66 to 80 for Railways.	On Votes 81 and 82 for Surveys.				
MIDDLE ISLAND—*continued.*	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	MIDDLE ISLAND—*continued.*
Brought forward ...	4,345,066 7 6	462,812 3 4	7,050 10 7	4,814,929 1 5	540,364 10 0	5,355,293 11 5	
Green Island Extension ...	7 11 0	...	85 11 0	93 2 0	...	93 2 0	Green Island Extension.
Clutha River Survey ...	0 18 6	...	...	0 18 6	...	0 18 6	Clutha River Survey.
Waipahi-Cromwell ...	100 0 0	...	...	100 0 0	...	100 0 0	Waipahi-Cromwell.
Waipahi-Tapanui ...	442 5 7	...	0 10 6	442 16 1	...	442 16 1	Waipahi-Tapanui.
Riverton-Orepuki ...	251 8 7	...	415 0 2	666 8 9	...	666 8 9	Riverton-Orepuki.
Gorge-Elbow ...	454 12 0	...	723 6 2	1,177 18 2	...	1,177 18 2	Gore-Elbow.
Otautau, Waiu, and Nightcaps ...	39 13 11	...	575 6 10	615 0 9	0 17 7	615 18 4	Otautau, Waiau, and Nightcaps.
Lyttleton Station Ground ...	40 0 0	...	...	40 0 0	...	40 0 0	Lyttelton Station Ground.
Lumsden-Mararoa ...	...	...	111 6 0	111 6 0	...	111 6 0	Lumsden-Mararoa.
Edendale-Fortrose ...	...	...	48 13 6	48 13 6	...	48 13 6	Edendale-Fortrose.
Edendale-Toitois ...	...	...	156 9 0	156 9 0	...	156 9 0	Edendale-Toitois.
Glen Tunnel-Rakaia Gorge ...	...	...	32 9 8	32 9 8	...	32 9 8	Glentunnel-Rakaia Gorge.
Malvern Branch ...	...	...	6 12 8	6 12 8	...	6 12 8	Malvern Branch.
Oxford-Malvern ...	...	...	22 16 0	22 16 0	...	22 16 0	Oxford-Malvern.
Aorere Tramway ...	...	...	5 15 0	5 15 0	...	5 15 0	Aorere Tramway.
Little River and Akaroa ...	...	...	137 15 4	137 15 4	...	137 15 4	Little River and Akaroa.
Malvern Ferry Bridge ...	...	...	19 16 0	19 16 0	...	19 16 0	Malvern Ferry Bridge.
Opawa Branch ...	...	...	54 18 2	54 18 2	...	54 18 2	Opawa Branch.
Oxford-Temuka ...	...	...	147 13 7	147 13 7	...	147 13 7	Oxford-Temuka.
Christchurch-Sumner ...	...	...	36 19 0	36 19 0	...	36 19 0	Christchurch-Sumner.
Oamaru-Livingston ...	...	...	33 15 0	33 15 0	...	33 15 0	Oamaru-Livingston.
Winchester-Hilton ...	...	...	4 9 0	4 9 0	...	4 9 0	Winchester-Hilton.
Amberley-Cook Strait ...	...	...	58 8 4	58 8 4	...	58 8 4	Amberley-Cook Strait.
Amberley Extension ...	...	...	7 11 8	7 11 8	...	7 11 8	Amberley Extension.
Sheffield-Kowai Pass ...	...	...	94 15 9	94 15 9	...	94 15 9	Sheffield-Kowai Pass.
Otago Central ...	...	...	652 1 10	652 1 10	0 5 0	652 6 10	Otago Central.
Incidental, general, &c. ...	7 11 6	...	...	7 11 6	184 18 6	192 10 0	Incidental, general, &c.
TOTAL, MIDDLE ISLAND ...	4,346,410 8 7	462,812 3 4	10,482 10 9	4,819,705 2 8	540,550 11 1	5,360,255 13 9	TOTAL, MIDDLE ISLAND.

TABLE No. 3.

STATEMENT showing the TOTAL EXPENDITURE on RAILWAYS out of IMMIGRATION and PUBLIC WORKS LOAN to 30th JUNE, 1879.—CLASSIFIED.

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.	EXPENDITURE TO 30TH JUNE, 1878, (*Vide* page 5 of P.W. Statement, 1878.)	DEDUCT CREDITS ON ACCOUNT OF EXPENDITURE, made prior to 30 June, 1878, but only received during 1878-79.	TOTAL NET EXPENDITURE TO 30 JUNE, 1878.	TOTAL NET EXPENDITURE DURING YEAR 1878-79.	TOTAL NET EXPENDITURE TO 30 JUNE, 1879.	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.	£ s. d.	£ s. d.	NORTH ISLAND.
Kawakawa ...	...	...	672 4 9	3,022 12 0	2,281 10 11	...	3,184 18 0	10,640 2 2	903 13 11	3,672 13 1	930 9 9	1,787 13 1	34 11 7	26,603 19 4	...	26,603 19 4	526 9 11	27,130 9 3	Kawakawa.
Kaipara—Puniu ...	40,700 8 9	3,254 2 6	11,457 9 10	220,955 6 7	98,718 0 9	13,111 7 8	133,005 9 9	154,797 6 1	32,254 16 1	83,401 17 5	112,992 11 4	44,028 1 0	5,723 11 3	876,966 14 5	1,597 0 0	875,369 14 5	79,030 14 7	954,400 9 0	Kaipara—Puniu.
Napier—Manawatu ...	4,920 6 0	543 2 11	9,008 16 3	75,729 3 1	67,378 19 6	11,529 7 1	62,435 15 5	86,336 14 0	7,263 18 3	31,044 4 8	30,940 5 4	15,312 17 10	574 4 7	355,388 19 5	538 15 6	354,850 3 11	48,167 11 0	403,017 14 11	Napier—Manawatu.
Wellington—Woodville ..	22,312 1 2	1,445 11 5	11,622 15 6	207,502 16 2	77,728 15 4	12,365 12 9	57,398 0 9	95,298 0 1	8,413 8 7	53,164 0 1	56,543 0 11	24,251 12 0	641 10 10	538,093 0 3	2,298 12 1	535,794 8 2	92,892 17 5	628,687 5 7	Wellington—Woodville.
Waitara—Patea ...	7,624 6 10	762 19 4	4,813 10 8	36,555 10 1	27,369 16 0	3,727 10 10	30,805 13 11	29,567 7 4	2,987 12 2	7,208 0 2	13,462 5 10	7,250 11 8	380 6 4	137,035 3 10	199 8 6	136,835 15 4	35,679 15 10	172,515 11 2	Waitara—Patea.
Patea—Manawatu (with Foxton Branch)	24,567 5 5	1,551 19 3	15,393 2 8	129,187 17 11	89,960 11 5	23,577 16 3	71,311 19 2	141,477 10 9	14,292 19 4	39,402 6 3	40,594 15 9	25,502 7 11	1,281 6 6	538,352 17 11	1,855 14 2	536,497 3 9	81,604 14 10	618,101 18 7	Patea—Manawatu (with Foxton Branch).
Wellington to Foxton by West Coast	...	...	1,424 4 0	...	110 6 1	...	...	...	...	...	...	...	...	...	...	...	1,534 10 1	1,534 10 1	Wellington to Foxton by West Coast.
Waitotara River to Upper Patea Crossing	...	...	585 18 3	...	...	...	...	...	...	...	...	...	...	...	...	...	585 18 3	585 18 3	Waitotara River to Upper Patea Crossing.
Te Awamutu to New Plymouth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Te Awamutu to New Plymouth.
Masterton to Papatu *vid* Woodville	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Masterton to Papatu *vid* Woodville.
Waikato to the Thames ...	...	...	480 18 6	2,308 0 0	...	...	69 3 0	...	...	...	...	128 5 9	29 14 6	...	...	...	3,016 1 9	3,016 1 9	Waikato to the Thames.
Branch line to Hamilton ...	...	...	20 19 3	711 0 0	...	...	90 14 2	...	...	...	...	...	...	...	...	...	822 13 5	822 13 5	Branch Line to Hamilton.
Helensville to Kaukapakapa River	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Helensville to Kaukapakapa River.
Whangarei to Kamo ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Whangarei to Kamo.
PRELIMINARY SURVEYS—																			PRELIMINARY SURVEYS—
North Island (for details *see* Table No. 2)	...	...	7,780 17 9	...	...	...	...	...	...	...	...	...	...	5,656 4 10	...	5,656 4 10	2,124 12 11	7,780 17 9	North Island (for details *see* Table No. 2).
TOTAL, NORTH ISLAND ...	100,124 8 2	7,557 15 5	63,260 17 5	675,972 5 10	363,548 0 0	64,311 14 7	358,301 14 2	518,117 0 5	66,116 8 4	217,893 1 8	255,463 8 11	118,261 9 3	8,665 5 7	2,478,097 0 0	6,489 10 3	2,471,607 9 9	345,986 0 0	2,817,593 9 9	TOTAL, NORTH ISLAND.
MIDDLE ISLAND.																			MIDDLE ISLAND.
Nelson—Foxhill ...	15,437 17 0	1,166 8 8	2,135 5 8	24,051 3 3	15,046 7 3	6,917 16 0	16,435 16 6	22,142 0 10	1,744 14 8	7,591 14 3	10,223 11 6	4,532 12 7	240 3 0	117,967 3 7	28 9 8	117,938 13 11	9,726 17 3	127,665 11 2	Nelson—Foxhill.
Picton—Blenheim ...	8,205 19 10	1,209 14 10	2,110 12 3	53,340 1 7	30,005 12 3	952 5 8	17,142 8 8	22,165 5 3	2,807 9 7	8,805 16 5	11,618 5 5	4,735 1 11	210 2 3	159,337 0 9	27 12 3	159,309 8 6	3,999 7 5	163,308 15 11	Picton—Blenheim.
Brunner—Greymouth ...	8,055 9 0	1,196 3 7	2,091 17 7	68,819 1 5	29,844 14 0	599 19 0	10,830 6 8	10,898 16 10	3,745 10 6	14,396 3 0	27,704 19 4	11,477 0 4	485 1 4	163,247 18 8	0 13 0	163,247 5 8	26,897 16 11	190,145 2 7	Brunner—Greymouth.
Westport—Ngakawau ...	4,805 15 3	3,159 5 11	6,273 8 5	54,423 4 2	13,567 7 9	117 0 0	22,016 15 6	27,446 12 6	3,323 19 7	19,228 5 10	43,029 12 11	8,089 10 11	428 10 1	186,435 8 2	82 8 0	186,353 0 2	19,556 8 8	205,909 8 10	Westport—Ngakawau.
Amberley—Waitaki (with Branch Lines and Waitaki Bridge)	43,652 15 8	6,201 10 7	11,240 2 1	114,401 0 5	329,302 17 9	41,287 12 6	235,061 16 3	314,851 3 3	44,123 18 7	163,071 16 7	200,102 2 1	38,840 0 0	3,117 15 5	1,378,831 16 7	10,589 14 3	1,368,242 2 4	177,012 8 10	1,545,254 11 2	Amberley—Waitaki (with Branch Lines and Waitaki Bridge).
Waitaki—Bluff and Branches ...	63,880 16 5	12,093 7 10	21,929 4 1	704,670 7 8	230,294 3 9	69,423 10 9	280,691 11 0	302,296 4 3	32,388 17 2	197,444 7 7	252,843 8 2	74,914 17 2	6,763 10 8	2,091,045 15 5	4,986 2 1	2,086,059 13 4	163,574 13 2	2,249,634 6 6	Waitaki—Bluff and Branches.
Winton—Kingston ...	2,390 11 3	190 12 2	2,812 12 0	41,905 14 8	9,347 19 3	2,822 7 0	54,999 9 1	73,736 16 6	3,188 11 1	24,744 2 4	12,334 0 2	9,873 5 3	570 18 7	228,780 10 6	1,423 0 4	227,357 10 2	11,559 9 2	238,916 19 4	Winton—Kingston.
Western Railways ...	2,548 17 11	734 12 0	131 11 0	8,642 2 11	5,854 4 0	1,682 16 5	11,137 17 11	10,664 9 8	1,556 12 4	8,729 12 0	2,328 0 4	2,546 12 4	58 6 11	13,263 12 10	1,018 4 1	12,245 8 9	44,370 7 0	56,615 15 9	Western Railways.
Otago Central, Dunedin to Albert Town, Lake Wanaka	...	11 0 0	1,471 17 7	...	...	...	...	...	...	...	300 0 0	69 3 2	87 17 6	...	...	...	1,939 18 3	1,939 18 3	Otago Central, Dunedin to Albert Town, Lake Wanaka.
Amberley to Brunnerton ...	...	...	...	...	...	...	...	...	...	...	...	54 16 8	4 13 9	...	...	...	59 10 5	59 10 5	Amberley to Brunnerton.
Greymouth to Hokitika ...	...	...	223 7 10	109 3 0	...	...	...	...	...	...	...	161 6 6	59 3 10	...	...	...	553 1 2	553 1 2	Greymouth to Hokitika.
Canterbury Interior Main Line, Oxford to Temuka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Canterbury Interior Main Line, Oxford to Temuka.
Main Line to Upper Ashburton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Main Line to Upper Ashburton.
Opawa Branch Extension ...	...	...	135 12 0	...	...	...	...	...	...	...	...	...	...	...	...	...	135 12 0	135 12 0	Opawa Branch Extension.
Waipahi to Heriot Burn ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Waipahi to Heriot Burn.
Edendale to Toitois ...	...	...	101 7 4	...	...	...	...	...	...	...	...	...	32 3 0	...	...	...	133 10 4	133 10 4	Edendale to Toitois.
Otautau to Nightcaps ...	...	...	43 19 9	...	...	...	...	...	...	...	...	...	1 11 6	...	...	...	45 11 3	45 11 3	Otautau to Nightcaps.
Clutha to Catlin's River ...	...	...	226 14 2	90 0 0	...	...	...	...	...	...	...	...	16 17 0	...	...	...	333 11 2	333 11 2	Clutha to Catlin's River.
Waimea to Switzer's ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Waimea to Switzer's.
Lumsden to Mararoa ...	...	...	42 3 10	...	...	...	...	...	...	...	...	...	...	...	...	...	42 3 10	42 3 10	Lumsden to Mararoa.
Palmerston to Waihemo ...	1,260 12 0	...	227 2 3	...	...	...	...	...	...	...	...	...	3 0 0	...	...	...	1,490 14 3	1,490 14 3	Palmerston to Waihemo.
Oamaru to Livingston ...	...	...	107 16 0	...	...	...	...	...	...	...	...	...	...	...	...	...	107 16 0	107 16 0	Oamaru to Livingston.
Main Line to Shag Point ...	...	...	...	...	...	...	...	...	...	...	...	...	9 19 4	...	...	...	9 19 4	9 19 4	Main Line to Shag Point.
Amberley to Cook Strait ...	...	...	799 14 10	...	...	...	225 0 0	...	...	...	...	59 10 0	12 8 9	...	...	...	1,096 13 7	1,096 13 7	Amberley to Cook Strait.
Little River and Akaroa ...	...	...	166 13 4	...	...	...	...	...	...	...	...	...	...	...	...	...	166 13 4	166 13 4	Little River and Akaroa.
PRELIMINARY SURVEYS—																			PRELIMINARY SURVEYS—
Middle Island (for details *see* Table No. 2)	...	...	36,139 16 6	...	...	...	...	...	...	...	...	...	...	25,657 5 9	...	25,657 5 9	10,482 10 9	36,139 16 6	Middle Island (for details *see* Table No. 2).
TOTAL, MIDDLE ISLAND	150,238 14 4	25,962 15 7	88,410 18 6	1,070,451 19 1	663,263 6 0	123,803 7 4	648,541 1 7	784,201 9 1	92,879 13 6	444,011 18 0	560,483 19 11	155,353 16 10	12,102 2 11	4,364,566 12 3	18,156 3 8	4,346,410 8 7	473,294 14 1	4,819,705 2 8	TOTAL, MIDDLE ISLAND.
SUMMARY.																			SUMMARY.
NORTH ISLAND— Railways ...	100,124 8 2	7,557 15 5	63,260 17 5	675,972 5 10	363,548 0 0	64,311 14 7	358,301 14 2	518,117 0 5	66,116 8 4	217,893 1 8	255,463 8 11	118,261 9 3	8,665 5 7	2,478,097 0 0	6,489 10 3	2,471,607 9 9	345,986 0 0	2,817,593 9 9	NORTH ISLAND— Railways.
MIDDLE ISLAND— Railways ...	150,238 14 4	25,962 15 7	88,410 18 6	1,070,451 19 1	663,263 6 0	123,803 7 4	648,541 1 7	784,201 9 1	92,879 13 6	444,011 18 0	560,483 19 11	155,353 16 10	12,102 2 11	4,364,566 12 3	18,156 3 8	4,346,410 8 7	473,294 14 1	4,819,705 2 8	MIDDLE ISLAND— Railways.
MISCELLANEOUS SURVEYS— UNAPPORTIONABLE ...	...	...	470 17 11	...	...	...	...	...	...	...	...	...	...	470 17 11	...	470 17 11	...	470 17 11	MISCELLANEOUS SURVEYS. UNAPPORTIONABLE.
TOTAL ...	250,363 2 6	33,520 11 0	152,142 13 10	1,746,424 4 11	1,026,811 6 0	188,115 1 11	1,006,842 15 9	1,302,318 9 6	158,996 1 10	661,904 19 8	816,312 4 3	273,615 6 1	20,767 8 6	6,843,499 5 7	24,645 13 11	6,818,853 11 8	819,280 14 1	7,638,134 5 9	TOTAL.

TABLE No. 4.

STATEMENT showing the LIABILITIES on RAILWAYS out of IMMIGRATION and PUBLIC WORKS LOAN to 30th June, 1879.—CLASSIFIED.

LINES.	RAILWAYS UNDER CONSTRUCTION.			ADDITIONS TO WORKING RAILWAYS.			ROLLING-STOCK.				MISCELLANEOUS PLANT.	Permanent Way on English Contracts.	TOTAL LIABILITIES.	LINES.
	On Authorities.	On Contracts.	Total.	On Authorities.	On Contracts.	Total.	On Authorities.	On Colonial Contracts.	On English Contracts.	Total.	On English Contracts.			
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.	NORTH ISLAND.
Kawakawa ...	119 2 6	292 0 0	411 2 6	...	...	...	...	...	...	...	...	...	411 2 6	Kawakawa.
Kaipara–Puniu ...	24,903 7 9	196,357 4 4	131,160 12 1	234 18 1	...	234 18 1	3,868 3 8	5,969 4 2	4,929 19 9	14,767 7 7	...	15,249 17 11	161,512 15 8	Kaipara–Puniu.
Napier–Manawatu ...	6,949 2 6	6,919 19 8	13,869 2 2	...	...	...	561 4 10	6,568 1 1	6,007 18 0	13,137 3 11	...	1,620 9 7	28,626 15 8	Napier–Manawatu.
Wellington–Woodville ...	8,462 13 10	70,599 6 9	79,062 0 7	38 1 5	...	38 1 5	1,399 1 0	8,163 1 3	12,876 14 8	22,438 16 11	1,168 12 2	4,535 7 11	107,242 19 0	Wellington–Woodville.
Waitara–Patea ...	4,617 9 1	16,410 4 0	21,027 13 1	...	...	...	135 15 6	5,978 13 1	5,960 0 0	12,074 8 7	...	1,674 1 11	34,776 3 7	Waitara–Patea.
Patea–Manawatu ...	14,114 15 10	67,254 8 3	81,369 4 1	2 12 9	...	2 12 9	1,360 17 9	8,324 10 10	8,599 6 9	18,284 15 4	...	6,556 6 1	106,212 18 3	Patea–Manawatu.
Wellington–Foxton ...	805 16 7	...	805 16 7	...	...	...	...	...	9,000 0 0	9,000 0 0	4,700 0 0	...	14,505 16 7	Wellington–Foxton.
Waitotara–Upper Patea ...	...	...	...	...	...	...	...	...	10,000 0 0	10,000 0 0	...	...	10,000 0 0	Waitotara–Upper Patea.
Te Awamutu–New Plymouth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	Te Awamutu–New Plymouth.
Masterton–Papatu ...	...	...	...	...	...	...	...	...	5,000 0 0	5,000 0 0	...	...	5,000 0 0	Masterton–Papatu.
Waikato–Thames ...	117 19 10	26,654 19 4	26,772 19 2	...	...	...	...	...	27,000 0 0	27,000 0 0	...	...	53,772 19 2	Waikato–Thames.
Branch Line to Hamilton ...	113 6 7	2,268 15 6	2,382 2 1	...	...	...	...	...	...	...	...	...	2,382 2 1	Branch Line to Hamilton.
Helensville–Kaukapakapa ...	...	...	...	...	...	...	...	...	...	...	...	...	...	Helensville–Kaukapakapa.
Whangarei–Kamo ...	1,250 0 0	2,257 9 11	3,507 9 11	...	...	...	...	...	10,000 0 0	10,000 0 0	...	...	13,507 9 11	Whangarei–Kamo.
Surveys ...	338 6 10	...	338 6 10	...	...	...	...	...	...	...	...	...	338 6 10	Surveys.
Total, North Island ...	61,792 1 4	299,014 7 9	360,806 9 1	275 12 3	...	275 12 3	7,325 2 9	35,003 10 5	99,373 19 2	141,702 12 4	5,868 12 2	29,636 3 5	538,289 9 3	Total, North Island.
MIDDLE ISLAND.														MIDDLE ISLAND.
Nelson–Foxhill ...	748 12 6	1,762 18 6	2,511 11 0	526 6 1	...	526 6 1	...	...	...	...	...	...	3,037 17 1	Nelson–Foxhill.
Picton–Blenheim ...	365 15 2	8,360 14 0	8,726 9 2	207 13 6	...	207 13 6	20 0 0	...	...	20 0 0	...	...	8,954 2 8	Picton–Blenheim.
Brunner–Greymouth ...	8,419 11 1	626 10 0	9,046 1 1	25 10 0	...	25 10 0	...	...	...	...	...	...	9,071 11 1	Brunner–Greymouth.
Westport–Ngakawau ...	6,472 16 5	...	6472, 16 5	1 17 0	...	1 17 0	194 6 10	...	...	194 6 10	...	...	6,669 0 3	Westport–Ngakawau.
Amberley–Waitaki ...	1,012 10 8	10,353 0 0	11,365 10 8	32,467 17 11	...	32,467 17 11	1,324 1 7	6,685 12 6	57,064 5 7	65,073 19 8	3,580 12 10	12,870 17 4	125,358 18 5	Amberley–Waitaki.
Waitaki–Bluff ...	14,964 18 7	94,396 5 9	109,361 4 4	13,210 4 8	...	13,210 4 8	4,224 7 9	6,685 12 6	57,083 2 3	67,993 2 6	1,796 14 1	12,870 17 7	205,232 3 2	Waitaki–Bluff.
Winton–Kingston ...	402 19 9	292 16 3	695 16 0	61 5 6	...	61 5 6	16 6 3	...	...	16 6 3	...	...	773 7 9	Winton–Kingston.
Western Railways ...	4,451 13 3	32,825 0 6	37,276 13 9	...	...	...	...	536 8 0	...	536 8 0	...	453 12 8	38,266 14 5	Western Railways.
Otago Central ...	1,053 0 5	49,006 0 10	50,059 1 3	...	...	...	...	...	...	...	...	...	50,059 1 3	Otago Central.
Amberley–Brunnerton ...	1,082 5 0	...	1,082 5 0	...	...	...	...	...	...	...	...	...	1,082 5 0	Amberley–Brunnerton.
Greymouth Hokitika ...	1,431 19 6	8,440 0 0	9,871 19 6	...	...	...	...	...	...	...	...	...	9,871 19 6	Greymouth–Hokitika.
Oxford–Temuka ...	...	8,106 16 1	8,106 16 1	...	...	...	...	...	...	...	...	...	8,106 16 1	Oxford–Temuka.
Main Line–Upper Ashburton ...	20 5 0	9,858 17 6	9,879 2 6	...	...	...	...	...	...	...	...	...	9,879 2 6	Main Line–Upper Ashburton.
Opawa Branch Extension ...	104 9 4	7,878 15 0	7,983 4 4	...	...	...	...	...	...	...	...	...	7,983 4 4	Opawa Branch Extension.
Waipahi–Heriot Burn ...	250 0 0	...	250 0 0	...	...	...	...	...	...	...	...	...	250 0 0	Waipahi–Heriot Burn.
Edendale–Toitois ...	112 2 10	9,723 9 0	9,835 11 10	...	...	...	...	...	...	...	...	...	9,835 11 10	Edendale Toitois.
Otautau–Nightcaps ...	131 19 6	4,837 0 0	4,963 19 6	...	...	...	...	...	...	...	...	...	4,968 19 6	Otautau–Nightcaps.
Clutha–Catlin's River ...	...	5,298 10 10	5,298 10 10	...	...	...	...	...	...	...	...	...	5,298 10 10	Clutha–Catlin's River.
Waimea–Switzer's ...	...	...	...	...	...	...	...	...	...	...	...	...	...	Waimea–Switzer's.
Lumsden–Mararoa ...	75 8 2	...	75 8 2	...	...	...	...	...	...	...	...	...	75 8 2	Lumsden–Mararoa.
Palmerston–Waihemo ...	19 17 9	4,622 9 4	4,642 7 1	...	...	...	...	...	...	...	...	...	4,642 7 1	Palmerston–Waihemo.
Oamaru–Livingston ...	1,092 4 0	...	1,092 4 0	...	...	...	...	...	...	...	...	...	1,092 4 0	Oamaru–Livingston.
Main Line–Shag Point ...	...	...	...	...	...	...	...	...	...	...	...	...	...	Main Line–Shag Point.
Amberley–Cook Strait ...	614 8 7	27,962 1 0	28,576 9 9	...	...	...	...	...	...	...	...	...	28,576 9 9	Amberley–Cook Strait.
Little River and Akaroa ...	495 0 0	...	495 0 0	...	...	...	...	...	...	...	...	...	495 0 0	Little River and Akaroa.
Surveys ...	969 16 5	...	969 16 5	...	...	...	...	...	...	...	...	...	969 16 5	Surveys.
Total, Middle Island ...	44,291 14 1	284,351 4 7	328,642 18 8	46,500 14 8	...	46,500 14 8	5,779 2 5	13,907 13 0	114,147 7 10	133,834 3 3	5,377 6 11	26,195 7 7	540,550 11 1	Total, Middle Island.
SUMMARY.														SUMMARY.
NORTH ISLAND ...	61,792 1 4	299,014 7 9	360,806 9 1	275 12 3	...	275 12 3	7,325 2 9	35,003 10 5	99,373 19 2	141,702 12 4	5,868 12 2	29,636 3 5	538,289 9 3	NORTH ISLAND.
MIDDLE ISLAND ...	44,291 14 1	284,351 4 7	328,642 18 8	46,500 14 8	...	46,500 14 8	5,779 2 5	13,907 13 0	114,147 7 10	133,834 3 3	5,377 6 11	26,195 7 7	540,550 11 1	MIDDLE ISLAND.
ADDITIONAL RAILS ...	...	...	...	...	...	...	...	...	...	...	...	100,000 0 0	100,000 0 0	ADDITIONAL RAILS.
RAILS ...	...	...	...	...	...	...	...	...	...	...	...	...	...	RAILS.
TOTAL ...	106,083 15 5	583,365 12 4	689,449 7 9	46,776 6 11	...	46,776 6 11	13,104 5 2	48,911 3 5	213,521 7 0	275,536 15 7	11,245 19 1	155,831 11 0	1,178,840 0 4	TOTAL.

TABLE No. 5.

STATEMENT showing the LIABILITIES on ROADS (General), out of IMMIGRATION and PUBLIC WORKS LOAN, to the 30th June, 1879.*

——	AUTHORITIES.	CONTRACTS.	GRANTS.	TOTAL.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
North of Auckland	1,107 14 2	1,728 18 0	1,380 9 9	4,217 1 11
North Island	482 7 1	416 1 6	853 0 0	1,751 8 7
Nelson South-West Gold Fields	119 7 1	13 15 0	...	133 2 1
Westland	4,591 5 9	272 4 9	...	4,863 10 6
Hokitika-Christchurch	1,047 12 4	156 4 9	...	1,203 17 1
TOTAL	7,348 6 5	2,587 4 0	2,233 9 9	12,169 0 2

* For Roads to open up Lands before Sale, and for Roads through Lands recently Purchased, *see* Tables 8 and 9.

TABLE No. 6.

STATEMENT showing the EXPENDITURE and LIABILITIES on ROADS (General), NORTH ISLAND, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

LOCALITY.	EXPENDITURE. 1869–78.	EXPENDITURE. 1878–79.	EXPENDITURE. Total.	Total Liabilities on Authorities and Contracts, 30th June, 1879.	Total Expenditure and Liabilities.
AUCKLAND PROVINCIAL DISTRICT.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
North of Auckland	*31,544 11 9	7,255 1 7	38,799 13 4	4,217 1 11	43,016 15 3
Bay of Islands	33,151 6 9	...	33,151 6 9	600 0 0	33,751 6 9
Mangere Bridge	15,486 7 8	...	15,486 7 8	...	15,486 7 8
Thames	75 2 9	...	75 2 9	...	75 2 9
Waikato	16,583 18 7	1,509 5 5	18,093 4 0	160 13 4	18,253 17 4
Bay of Plenty	70,570 17 10	1,837 10 2	72,408 8 0	672 0 10	73,080 8 10
Poverty Bay	†16,317 8 2	...	16,317 8 2	318 14 5	16,636 2 7
Taupo	9,273 4 5	...	9,273 4 5	...	9,273 4 5
TOTAL	161,458 6 2	3,346 15 7	164,805 1 9	1,751 8 7	166,556 10 4
HAWKE'S BAY PROVINCIAL DISTRICT.					
Napier	23,826 0 3	68 14 2	23,894 14 5	...	23,894 14 5
Seventy-Mile Bush	45,750 18 2	...	45,750 18 2	...	45,750 18 2
Wairoa	1,212 7 8	...	1,212 7 8	...	1,212 7 8
TOTAL	70,789 6 1	68 14 2	70,858 0 3	...	70,858 0 3
TARANAKI PROVINCIAL DISTRICT.					
New Plymouth—Inland	3,760 17 3	...	3,760 17 3	...	3,760 17 3
Hawera—Waitara	13,907 6 6	...	13,907 6 6	...	13,907 6 6
Wai-iti—Patea	58,566 6 9	...	58,566 6 9	...	58,566 6 9
TOTAL	76,234 10 6	...	76,234 10 6	...	76,234 10 6
WELLINGTON PROVINCIAL DISTRICT.					
Patea—Wanganui	36,246 5 4	...	36,246 5 4	...	36,246 5 4
Wanganui—Taupo	5,156 2 2	...	5,156 2 2	...	5,156 2 2
Manawatu	44,522 19 0	...	44,522 19 0	...	44,522 19 0
Opaki—Manawatu Gorge	58,003 7 5	60 0 0	58,063 7 5	...	58,063 7 5
Hutt—Lowry Bay	290 0 0	...	290 0 0	...	290 0 0
TOTAL	144,218 13 11	60 0 0	144,278 13 11	...	144,278 13 11
SUMMARY.					
AUCKLAND PROVINCIAL DISTRICT ...‡	193,002 17 11	10,601 17 2	203,604 15 1	5,968 10 6	209,573 5 7
HAWKE'S BAY „ „ ...	70,789 6 1	68 14 2	70,858 0 3	...	70,858 0 3
TARANAKI „ „ ...	76,234 10 6	...	76,234 10 6	...	76,234 10 6
WELLINGTON „ „ ...	144,218 13 11	60 0 0	144,278 13 11	...	144,278 13 11
UNAPPORTIONABLE, TOOLS, ETC. ...£1,732 18 6					
Less recovery ... 13 8 0					
	1,719 10 6	...	1,719 10 6	...	1,719 10
RECOVERIES	14 12 11	...	14 12 11	...	14 12 11
TOTAL	485,979 11 10	10,730 11 4	496,710 3 2	5,968 10 6	502,678 13 8

* Includes £145 16s. 8d., charged as "Unauthorized" in Treasury Table N, Financial Statement, 1878.
† Includes £200, charged as "Unauthorized" in Treasury Table N, Financial Statement, 1878.
‡ Includes £345 16s. 8d., charged as "Unauthorized" in Treasury Table N, Financial Statement, 1878.

TABLE No. 7.

STATEMENT showing the EXPENDITURE and LIABILITIES on ROADS (General), MIDDLE ISLAND, out of IMMIGRATION and PUBLIC WORKS LOAN to 30th June, 1879.

LINES OF ROAD.	EXPENDITURE. 1870-78.	1878-79.	Total.	Total Liabilities on Authorities and Contracts, 30th June, 1879.	Total Expenditure and Liabilities.
NELSON SOUTH-WEST GOLD FIELDS.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Buller-Arnould	56,926 5 8	13,273 3 0	70,199 8 8	133 2 1	70,332 10 9
Main Road-Boatman's	844 10 0	...	844 10 0	...	844 10 0
Westport-Lyell	7,273 13 10	...	7,273 13 10	...	7,273 13 10
Ahaura-Amuri	6,210 13 10	...	6,210 13 10	...	6,210 13 10
Nile Bridge	1,115 16 4	...	1,115 16 4	...	1,115 16 4
Takaka Valley	2,000 0 0	...	2,000 0 0	...	2,000 0 0
Collingwood Quartz Range... ...	507 1 1	...	507 1 1	...	507 1 1
TOTAL	74,878 0 9	13,273 3 0	88,151 3 9	133 2 1	88,284 5 10
WESTLAND PROVINCIAL DISTRICT.					
Greymouth-Arnould	5,058 1 5	...	5,058 1 5	...	5,058 1 5
Greymouth-Okarito £83,247 14 5					
Less Recovery 1 5 0					
	83,246 9 5	11,824 10 11	95,071 0 4	4,863 10 6	99,934 10 10
South Creek-Main Line	281 17 6	...	281 17 6	...	281 17 6
Junction Line	3,923 9 5	...	3,923 9 5	...	3,923 9 5
Greenstone-Lake Brunner	2,756 5 6	...	2,756 5 6	...	2,756 5 6
Marsden-Maori Creek	2,538 3 0	...	2,538 3 0	...	2,538 3 0
Marsden-Paroa	798 8 0	...	798 8 0	...	798 8 0
Stillwater-Maori Gully	1,869 2 0	...	1,869 2 0	...	1,869 2 0
Kanieri Forks-Kanieri Lakes ...	1,578 1 0	...	1,578 1 0	...	1,578 1 0
Hokitika-Blue Spur	2,520 3 5	...	2,520 3 5	...	2,520 3 5
Kanieri Bridge	489 15 0	...	489 15 0	...	489 15 0
Waimea Bridge	207 12 6	...	207 12 6	...	207 12 6
Westland, General	2,613 13 3	...	2,613 13 3	...	2,613 13 3
TOTAL	107,881 1 5	11,824 10 11	119,705 12 4	4,863 10 6	124,569 2 10
HOKITIKA-CHRISTCHUCH.					
Hokitika-Christchurch £35,117 5 3					
Less Recovery 29 10 0					
	35,087 15 3	6,573 6 11	41,661 2 2	1,203 17 1	42,864 19 3
SUMMARY.					
NELSON SOUTH-WEST GOLD FIEIDS ...	74,878 0 9	13,273 3 0	88,151 3 9	133 2 1	88,284 5 10
WESTLAND PROVINCIAL DISTRICT ...	107,881 1 5	11,824 10 11	119,705 12 4	4,863 10 6	124,569 2 10
HOKITIKA-CHRISTCHURCH ...	35,087 15 3	6,573 6 11	41,661 2 2	1,203 17 1	42,864 19 3
TOTAL	217,846 17 5	31,671 0 10	249,517 18 3	6,200 9 8	255,718 7 11

TABLE No. 8.

STATEMENT showing the EXPENDITURE and LIABILITIES on ROADS to "OPEN UP LANDS BEFORE SALE," and "THROUGH LANDS RECENTLY PURCHASED," out of IMMIGRATION and PUBLIC WORKS LOAN, for the Year ended 30th June, 1879.*

No. of Item.	——	Appropriation.	Expenditure.	Liabilities.	Total Expenditure and Liabilities.
	VOTE 87—TO OPEN UP LANDS BEFORE SALE—				
	NORTH ISLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	Takahue to Herekino	2,160 0 0	...	...	...
2	Takahue to Hera Point	2,400 0 0	359 12 5	2,040 7 7	2,400 0 0
3	Purua and Mangakahia Districts ...	840 0 0	37 18 0	1,417 2 0	1,455 0 0
4	Block II., Tangihau	600 0 0	55 5 0	544 15 0	600 0 0
5	Block III., Tangihau	480 0 0	...	...	...
6	Awhitu Block	480 0 0	...	...	...
7	Lake Whangape, Awaroa District ...	800 0 0	192 4 6	725 6 6	917 11 0
8	Waikato River, Awaroa District ...	1,200 0 0	...	...	...
9	Gisborne to Hangaroa Village... ...	320 0 0	3 3 0	316 17 0	320 0 0
10	Wairoa and Waikaraemoana Bridle Track	800 0 0	5 0 0	795 0 0	800 0 0
11	Mountain Road	2,860 0 0	...	...	...
12	Opening up Huiroa Block	828 0 0	147 6 0	...	147 6 0
13	Bridge, Huiroa Block	800 0 0	...	...	...
14	Manganui and Patea Rivers	782 0 0	67 0 0	...	67 0 0
15	Tahoraiti District	2,060 0 0	...	...	...
16	Norsewood District	560 0 0	36 11 5	486 0 0	522 11 5
17	Tukituki to Waipawa	575 0 0	113 0 4	...	113 0 4
18	Waitara Block	800 0 0	91 5 0	708 15 0	800 0 0
19	Woodville District...	745 0 0	33 9 7	842 10 0	875 19 7
20	Puhui District	520 0 0	...	...	...
21	Kairanga Survey District	5,000 0 0	...	1,361 7 6	1,361 7 6
22	Mangaone and Mangaho Districts ...	5,600 0 0	545 0 0	5,055 0 0	5,600 0 0
23	Sandon, Manawatu District, &c. ...	1,400 0 0	...	...	...
24	Wellington Country District	1,500 0 0	46 16 9	3 3 3	50 0 0

* For Roads (General) *see* Table 5.

TABLE No. 8—*continued.*

STATEMENT showing the EXPENDITURE and LIABILITIES on ROADS to "OPEN UP LANDS BEFORE SALE," and "THROUGH LANDS RECENTLY PURCHASED,," &c.—*continued.*

No. of Item.	—	Appropriation.	Expenditure.	Liabilities.	Total Expenditure and Liabilities.
	VOTE 87—TO OPEN UP LANDS BEFORE SALE—				
	MIDDLE ISLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
25	Rai Valley	1,000 0 0	...	...	...
26	Aorere Valley, Collingwood	2,700 0 0	378 16 8	1,321 3 4	1,700 0 0
27	Bridge over Aorere River	2,000 0 0	...	...	...
28	Ahaura to Kopara Flat	2,000 0 0	218 18 2	1,781 1 10	2,000 0 0
29	Road to Upper Ashley	5,000 0 0	25 0 0	5,000 0 0	5,025 0 0
30	Kokatahi River to Hokitika River ...	970 0 0	329 7 0	640 13 0	970 0 0
31	Mount Bonar to Poerua River ...	1,480 0 0	...	1,480 0 0	1,480 0 0
32	Mapourika Lake to Waihou River ...	1,410 0 0	100 0 0	1,310 0 0	1,410 0 0
33	Otara to Waikawa, &c.	1,000 0 0	...	1,000 0 0	1,000 0 0
34	North Taieri to Run No. 75, &c. ...	3,000 0 0	...	...	...
35	Benger District	500 0 0	...	500 0 0	500 0 0
36	Arrowtown to Crown Terrace	1,500 0 0	1,500 0 0	...	1,500 0 0
37	Opening country, Seaward Forest to Coast	2,000 0 0	38 9 6	1,961 10 6	2,000 0 0
		58,590 0 0	4,324 3 4	29,290 12 6	33,614 15 10
	VOTE 88—THROUGH LANDS RECENTLY PURCHASED—				
2	Opening up roads and constructing bridges through lands recently purchased	15,000 0 0	500 0 0	11,575 13 6	12,075 13 6

TABLE No. 9.

STATEMENT showing the EXPENDITURE and LIABILITIES on ROADS in the COLONY, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879, exclusive of VOTES for MISCELLANEOUS WORKS.

—	Expenditure.					Liabilities on Contracts and Authorities, 30th June, 1879.	Total Expenditure and Liabilities.
	To 30th June, 1878 (see Table 9 of P.W. Statement, 1878).	Deduct Recoveries made since 30th June, 1878, on account of services prior to 30th June, 1878.	Net Expenditure to 30th June, 1878.	1878–79.	Total.		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
North Island, as per Table No. 6 ...	485,992 19 10	13 8 0	485,979 11 10	10,730 11 4	496,710 3 2	5,968 10 6	502,678 13 8
Middle Island, as per Table No. 7	217,877 12 5	30 17 0	217,846 17 5	31,671 0 10	249,517 18 3	6,200 9 8	255,718 7 11
Roads to open up lands before sale, as per Table No. 8	...	...	...	4,324 3 4	4,324 3 4	29,290 12 6	33,614 15 10
Opening up roads and constructing bridges through lands recently purchased, as per Table No. 8	...	...	...	500 0 0	500 0 0	11,575 13 6	12,075 13 6
TOTAL	703,870 12 3	44 3 0	703,826 9 3	47,225 15 6	751,052 4 9	53,035 6 2	804,087 10 11

TABLE No. 10.

STATEMENT showing the EXPENDITURE and LIABILITIES for WATER-RACES on GOLD FIELDS, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

LOCALITY AND NAME OF COMPANY.	EXPENDITURE.					LIABILITIES.			TOTAL EXPENDITURE AND LIABILITIES.	LOCALITY AND NAME OF COMPANY.
	Survey and Construction, 1870-78.	Subsidies, 1870-78.	Survey and Construction, 1878-79.	Subsidies. 1878-79.	Totals.	Authorities and Contracts.	Subsidies.	Totals.		
NORTH ISLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	NORTH ISLAND.
AUCKLAND PROVINCIAL DISTRICT:—										AUCKLAND PROVINCIAL DISTRICT:—
Thames	70,018 7 7	...	607 17 8	...	70,626 5 3	6,539 2 0	...	6,539 2 0	77,165 7 3	Thames.
MIDDLE ISLAND.										MIDDLE ISLAND.
WESTLAND PROVINCIAL DISTRICT:—										WESTLAND PROVINCIAL DISTRICT:—
Hohonu	3 7 0	1,955 12 1	...	...	1,958 19 1	...	...	...	1,958 19 1	Hohonu.
Hibernian	12 5 8	1,992 14 8	...	...	2,005 0 4	...	...	...	2,005 0 4	Hibernian.
New River	21 5 0	3,496 0 3	...	...	3,517 5 3	...	377 12 0	377 12 0	3,894 17 3	New River.
Waimea	128,827 9 9	...	12,791 5 6	...	141,618 15 3	3,254 9 1	...	3,254 9 1	144,873 4 4	Waimea.
Mikonui ... £1,729 5 5	1,681 9 5	...	...	...	1,681 9 5	8 0 0	...	8 0 0	1,689 9 5	Mikonui.
Less recovery ... 47 16 0										
Kanieri	1 5 6	10,310 18 4	...	...	10,312 3 10	...	...	...	10,312 3 10	Kanieri.
NELSON PROVINCIAL DISTRICT:—										NELSON PROVINCIAL DISTRICT:—
Nelson Creek	87,339 14 6	...	1,372 19 2	...	88,712 13 8	1,659 18 9	...	1,659 18 9	90,372 12 5	Nelson Creek.
Napoleon Hill	257 16 7	...	...	...	257 16 7	...	...	...	257 16 7	Napoleon Hill.
Charleston Four-Mile	116 0 0	...	5,192 15 9	...	5,308 15 9	723 10 9	...	723 10 9	6,032 6 6	Charleston Four-Mile.
OTAGO PROVINCIAL DISTRICT:—										OTAGO PROVINCIAL DISTRICT:—
Mount Ida	61,166 3 8	...	1,000 0 0	...	62,166 3 8	...	...	...	62,166 3 8	Mount Ida.
Arrow	...	612 10 0	...	...	612 10 0	...	...	...	612 10 0	Arrow.
Beaumont and Tuapeka ...	...	640 0 0	...	...	640 0 0	...	...	...	640 0 0	Beaumont and Tuapeka.
Carrick Range	...	9,249 13 1	...	...	9,249 13 1	...	...	...	9,249 13 1	Carrick Range.
Waipori	11,263 1 0	...	...	...	11,263 1 0	...	...	...	11,263 1 0	Waipori.
Mount Pisgah	...	200 0 0	...	...	200 0 0	...	...	...	200 0 0	Mount Pisgah.
DEPARTMENTAL:—										DEPARTMENTAL:—
Salaries, Travelling, Advertising, &c.	5,495 16 4	...	...	...	5,495 16 4	...	...	...	5,495 16 4	Salaries, Travelling, Advertising, &c.
TOTAL	296,185 14 5	28,457 8 5	20,357 0 5	...	345,000 3 3	5,645 18 7	377 12 0	6,023 10 7	351,023 13 10	TOTAL.
SUMMARY.										SUMMARY.
NORTH ISLAND	70,018 7 7	...	607 17 8	...	70,626 5 3	6,539 2 0	...	6,539 2 0	77,165 7 3	NORTH ISLAND.
MIDDLE ISLAND	296,185 14 5	28,457 8 5	20,357 0 5	...	345,000 3 3	5,645 18 7	377 12 0	6,023 10 7	351,023 13 10	MIDDLE ISLAND.
TOTAL	366,204 2 0	28,457 8 5	20,964 18 1	...	415,626 8 6	12,185 0 7	377 12 0	12,562 12 7	428,189 1 1	TOTAL.

TABLE No. 11.

STATEMENT showing the LIABILITIES on WATER RACES, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

—	AUTHORITIES.	CONTRACTS.	GRANTS.	TOTAL.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Thames	39 2 0	...	6,500 0 0	6,539 2 0
New River	...	...	377 12 0	377 12 0
Waimea	2,534 9 1	720 0 0	...	3,254 9 1
Mikonui	8 0 0	...	...	8 0 0
Nelson Creek	1,659 18 9	...	...	1,659 18 9
Four-Mile	723 10 9	...	...	723 10 9
TOTAL	4,965 0 7	720 0 0	6,877 12 0	12,562 12 7

TABLE No. 12.

STATEMENT showing the EXPENDITURE and LIABILITIES on PUBLIC BUILDINGS, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

—	Expenditure to 30th June, 1878.	Less amounts Recovered since 1st July, 1878, for services prior to that date.	Expenditure for Year ended 30th June, 1879.	Total Expenditure to 30th June, 1879.	Total Liabilities.	Total Expenditure and Liabilities to 30th June, 1879.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Judicial	21,465 14 5	...	20,492 0 9	41,957 15 2	37,276 8 1	79,234 3 3
Postal and Telegraphic						
Customs	62,222 16 4	...	5,361 9 3	67,584 5 7	12,262 18 9	79,847 4 4
Offices for Public Departments ...	1,460 16 0	...	471 4 3	1,932 0 3	36 13 6	1,968 13 9
	128,969 16 0	4 9 0	15,758 10 8	144,728 6 8	200 0 0	144,928 6 8
Lunatic Asylums ...	4,478 8 7	...	13,154 12 2	17,633 0 9	17,485 17 1	35,118 17 10
School Buildings ...	51,950 0 0	...	105,000 0 0	156,950 0 0	3,000 0 0	159,950 0 0
Hospitals ...	3,252 17 11	...	5,802 18 7	9,055 16 6	1,037 17 8	10,093 14 2
Miscellaneous ...	9,835 2 4	...	...	9,835 2 4	...	9,835 2 4
TOTAL ...	283,635 11 7	4 9 0	166,040 15 8	449,676 7 3	71,299 15 1	520,976 2 4

TABLE No. 13.

STATEMENT showing the EXPENDITURE and LIABILITIES on MISCELLANEOUS PUBLIC WORKS, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

—	Expenditure to 30th June, 1878.	Expenditure during Year ended 30th June, 1879.	Total Expenditure.	Liabilities.	Total Expenditure and Liabilities.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Road, Whangarei to Port Albert ...	...	792 0 0	792 0 0	2,208 0 0	3,000 0 0
Road, Raglan to Waikato	500 0 0	1,500 0 0	2,000 0 0	...	2,000 0 0
Road, Thames to Ohinemuri ...	3,500 0 0	972 19 0	4,472 19 0	527 1 0	5,000 0 0
Road, Tauranga to Opotiki ...	...	74 7 0	74 7 0	1,450 0 0	1,524 7 0
Road, Taupo to Tauranga	...	38 12 0	38 12 0	211 8 0	250 0 0
Road, Gisborne to East Cape ...	...	257 12 0	257 12 0	742 8 0	1,000 0 0
Road, Ormond to Opotiki	...	...	...	1,000 0 0	1,000 0 0
Road, Gisborne to Wairoa	...	500 0 0	500 0 0	500 0 0	1,000 0 0
Waipoa River Bridge and Approaches	2,438 7 8	1,692 2 6	4,130 10 2	50 0 0	4,180 10 2
Drainage, Patutahi Block	31 19 5	476 0 6	501 19 11	507 18 6	1,015 18 5
Road from Pukekohe Railway Station to Waiuku	...	1,832 14 8	1,832 14 8	1,167 5 4	3,000 0 0
Road from Pukekohe Railway Station through East Pukekohe District to Bombay	...	235 2 4	235 2 4	764 17 8	1,000 0 0
Wharf at Pollock, Manukau Harbour	...	150 0 0	150 0 0	...	150 0 0
Road from Papakura Railway Station to Wairoa (improvement of)	...	929 12 4	929 12 4	100 0 0	1,029 12 4
Coromandel Public Works,—					
Road, Thames to Hastings ...	...	...	...	500 0 0	500 0 0
Road to Tokatea Range ...	1,000 0 0	...	1,000 0 0	...	1,000 0 0
Road, Coromandel to Hastings ...	800 0 0	...	800 0 0	200 0 0	1,000 0 0
Road, Mackaytown to Waikato ...	500 0 0	500 0 0	1,000 0 0	...	1,000 0 0
Portage Road, Riverhead to Kaipara	...	250 0 0	250 0 0	...	250 0 0
Clearing Snags, Waikato	96 10 1	53 9 11	150 0 0	...	150 0 0
Pukekaroro Bridge, destroyed by flood	60 0 0	...	60 0 0	...	60 0 0
Contribution towards Bridge over Waikato at the Narrows	...	300 0 0	300 0 0	...	300 0 0

TABLE No. 13—*continued.*

STATEMENT showing the EXPENDITURE and LIABILITIES on MISCELLANEOUS PUBLIC WORKS, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879—*continued.*

—	Expenditure to 30th June, 1878.	Expenditure during Year ended 30th June, 1879.	Total Expenditure.	Liabilities.	Total Expenditure and Liabilities.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Road, Mangaturoto to Waikiekie ...	...	500 0 0	500 0 0	...	500 0 0
Opening Road at Ruatangata ...	137 0 0	13 0 0	150 0 0	...	150 0 0
Wharf at Whangarei Heads ...	...	600 0 0	600 0 0	...	600 0 0
Road at Maungakaramea	250 0 0	250 0 0	500 0 0	...	500 0 0
Tramway at Kamo	85 1 0	1,042 5 11	1,127 6 11	872 13 1	2,000 0 0
Matakana Wharf	...	260 11 3	260 11 3	272 15 0	533 6 3
Main Road, Mahurangi to Whangarei	...	400 0 0	400 0 0	1,600 0 0	2,000 0 0
Bridge over Waikato at Hamilton (contribution)	...	...	...	3,000 0 0	3,000 0 0
Drainage Lagoon, Mount Eden ...	...	348 12 0	348 12 0	...	348 12 0
Clearing Snags, Wairoa River ...	...	76 6 11	76 6 11	23 13 1	100 0 0
Mangere Bridge (repairs)	...	...	...	...	...
Tamaki Bridge (repairs)	...	827 19 0	827 19 0	672 1 0	1,500 0 0
Bridge over Ahuriri Harbour ...	13 10 0	...	13 10 0	...	13 10 0
Road, Napier to Taupo	...	...	...	...	...
Road, Wairoa to Waikaremoana ...	...	766 11 4	766 11 4	733 8 8	1,500 0 0
Mountain Road, Taranaki	1,893 1 7	6,035 16 5	7,928 18 0	5,246 3 8	13,175 1 8
Opening Mountain Road to Patea ...	1,805 13 10	2,194 6 2	4,000 0 0	...	4,000 0 0
Main Road, Stony River to Waitotara	...	370 0 0	370 0 0	1,130 0 0	1,500 0 0
Road, Wainui to Waipukurau ...	...	2,000 0 0	2,000 0 0	...	2,000 0 0
Road, Wainui to Inland Settlement ...	...	500 0 0	500 0 0	...	500 0 0
Road, Seventy-Mile Bush, Opaki, to Kopua, including Manawatu Gorge Road	32 0 0	4,894 10 7	4,926 10 7	73 9 5	5,000 0 0
Ruamahunga Bridge, Opaki Road ...	...	4 5 9	4 5 9	...	4 5 9
Road, Rangitumau	...	715 4 6	715 4 6	284 15 6	1,000 0 0
Road, Mungaroa to Waikanae ...	500 0 0	3,000 0 0	3,500 0 0	...	3,500 0 0
Road, Rangitikei to Murimoto or Inland Patea	...	500 0 0	500 0 0	500 0 0	1,000 0 0
Road, Taueru	...	1,000 0 0	1,000 0 0	...	1,000 0 0
Road in Manchester Block ...	...	884 0 0	884 0 0	16 0 0	900 0 0
Road, Foxton to Otaki (inland) ...	...	367 2 4	367 2 4	2,632 17 8	3,000 0 0
Road, Masterton to Castlepoint ...	1,500 0 0	685 0 0	2,185 0 0	815 0 0	3,000 0 0
Road, Karere, Manawatu	...	...	...	300 0 0	300 0 0
Manawatu Bridge Approaches ...	74 4 5	110 2 2	184 6 7	15 13 5	200 0 0
Bridge over Ruamahunga, at Hurinuioranga	...	55 3 4	55 3 4	2,944 16 8	3,000 0 0
Continuation of Kimbolton Road through Sandon Block (Kiwitea)	250 0 0	750 0 0	1,000 0 0	...	1,000 0 0
Trunk Roads, County Wanganui ...	1,084 18 6	415 1 6	1,500 0 0	...	1,500 0 0
Wanganui and Taupo Road ...	...	...	...	...	...
Road, Oromoko to Stanley Brook ...	300 0 0	27 0 0	327 0 0	673 0 0	1,000 0 0
Road, Takaka to Motueka, and Approach to Wharf, Waitapu	...	...	...	1,200 0 0	1,200 0 0
Bridge over Wairoa in Waimea District	100 1 9	1,410 6 4	1,510 8 1	2,506 5 8	4,016 13 9
Wakamarina Road, County of Marlborough	...	...	...	600 0 0	600 0 0
Rai Road, County of Marlborough ...	300 0 0	...	300 0 0	400 0 0	700 0 0
Rai Road, County of Waimea ...	...	...	...	500 0 0	500 0 0
Bridge over Clarence River ...	...	20 0 0	20 0 0	5,080 0 0	5,100 0 0
Bridge over Arnould River... ...	1,500 0 0	...	1,500 0 0	...	1,500 0 0
Road, Nelson to Tophouse and Tarndale	202 3 3	392 0 0	594 3 3	805 16 9	1,400 0 0
Bridge over Ahaura River	...	3,446 5 4	3,446 5 4	6,990 19 0	10,437 4 4
Bridge over Nelson Creek	...	253 14 0	253 14 0	4,746 6 0	5,000 0 0
Road, Westport to Lyell, including Bridge over Ohika River	2,000 0 0	383 14 0	2,383 14 0	4,616 6 0	7,000 0 0
Road, Nelson to Westport and Greymouth	2,562 12 6	4,624 3 4	7,186 15 10	1,711 11 8	8,898 7 6
Road, Motupiko to the Lyell, by the Hope	...	..	...	...	...
Hokitika Harbour Improvement ...	...	10,938 18 9	10,938 18 9	4,061 1 3	15,000 0 0
Bridge over Teremakau, Kumara ...	5 17 0	4,756 8 4	4,762 5 4	3,103 15 5	7,866 0 9
Bridge over Hokitika at Kanieri ...	32 10 0	3,938 17 3	3,971 7 3	3,254 2 4	7,225 9 7
Road by Coast from Hokitika to Haast Pass	...	1,203 3 6	1,203 3 6	1,796 16 6	3,000 0 0
Main Road near Longford	...	1,500 0 0	1,500 0 0	500 0 0	2,000 0 0
Buller Valley, Completion Orawaiti, destroyed by flood	210 18 3	700 0 0	910 18 3	1,089 1 9	2,000 0 0
Removal of Rock, &c., Martin's Bay, &c.	5 0 0	...	5 0 0	...	5 0 0
Bridge over Buller on Nelson to Reefton Road	...	2,500 0 0	2,500 0 0	3,500 0 0	6,000 0 0
Compensation to A. Stitt, Buller Road Contract	620 0 0	...	620 0 0	...	620 0 0
Jetty at Port Levy	...	250 0 0	250 0 0	...	250 0 0
Road, Purau to Port Levy	...	...	...	500 0 0	500 0 0
Road, Port Levy to Pigeon Bay ...	...	...	...	500 0 0	500 0 0
Hurunui, Greta Bridge	...	2,898 4 7	2,898 4 7	...	2,898 4 7
Purchase, Beaumont Bridge ...	...	3,000 0 0	3,000 0 0	2,000 0 0	5,000 0 0

TABLE No. 13—*continued.*

STATEMENT showing the EXPENDITURE and LIABILITIES on MISCELLANEOUS PUBLIC WORKS, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879—*continued.*

—	Expenditure to 30th June, 1878.	Expenditure during Year ended 30th June, 1878.	Total Expenditure.	Liabilities.	Total Expenditure and Liabilities.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Purchase, Bridge over Clutha at Clyde	5,000 0 0	...	5,000 0 0	...	5,000 0 0
Purchase of Victoria Bridge over Kawarau	4,000 0 0	...	4,000 0 0	...	4,000 0 0
Kawarau Bridge at Junction, Arrow River	...	62 9 0	62 9 0	7,937 11 0	8,000 0 0
Portobello Road	0 6 0	282 4 6	282 10 6	217 9 6	500 0 0
Jetty at Toitois	...	1,000 0 0	1,000 0 0	...	1,000 0 0
Road, Toitois (inland)	...	986 16 0	986 16 0	13 4 0	1,000 0 0
Road, Wyndham to Toitois ...	...	1,415 12 6	1,415 12 6	84 7 6	1,500 0 0
Road, Gore to Switzer's	...	3,495 9 0	3,495 9 0	504 11 0	4,000 0 0
Road, Lawrence to Roxburgh ...	5,000 0 0	...	5,000 0 0	...	5,000 0 0
Road, Roxburgh to Clyde	2,500 0 0	...	2,500 0 0	...	2,500 0 0
Removal of Rocks, Catlin's River ...	...	...	...	...	...
Road, Waipori to Lawrence *viâ* Bungtown	...	400 0 0	400 0 0	...	400 0 0
Road, Fitzgerald to Dalhousie ...	...	500 0 0	500 0 0	...	500 0 0
Duthies to Tuapeka Mouth *viâ* Tuapeka River	...	500 0 0	500 0 0	...	500 0 0
Main Road, Otago, Palmerston to Houndburn	2,500 0 0	...	2,500 0 0	...	2,500 0 0
Jetty at Balclutha	250 0 0	...	250 0 0	...	250 0 0
Manuherikia Bridge, St. Bathans ...	250 0 0	250 0 0	500 0 0	...	500 0 0
Macrewhenua Railway Bridge ...	...	1,628 17 6	1,628 17 6	771 2 6	2,400 0 0
Main Road, Glenomaru to Catlin's River	750 0 0	250 0 0	1,000 0 0	...	1,000 0 0
Erection of Jetty and Shed at Catlin's River	...	80 0 0	80 0 0	420 5 0	500 0 0
Completion of Road from Maori Kaika to Taiaroa Head Lighthouse	54 8 0	196 13 6	251 1 6	247 16 5	498 17 11
Bridge over Oreti, Elbow	...	2,216 6 2	2,216 6 2	3,783 13 10	6,000 0 0
Protective Works, Dipton	...	500 0 0	500 0 0	...	500 0 0
Gore Bridge (liability)	...	1,254 16 7	1,254 16 7	...	1,254 16 7
Beacon at Queenstown	...	35 0 0	35 0 0	...	35 0 0
Bannockburn Bridge	2,500 0 0	...	2,500 0 0	...	2,500 0 0
T. Mackay's salary	128 2 0	...	128 2 0	...	128 2 0
Compensation to E. H. Bold on abolition of office	...	345 18 10	345 18 10	...	345 18 10
Compensation to H. Deverill on abolition of office	...	400 0 0	400 0 0	...	400 0 0
Compensation to T. McDonnell for loss of office	...	400 0 0	400 0 0	...	400 0 0
Allowance in lieu of salary to O'Carrington	...	62 10 0	62 10 0	...	62 10 0
Harbour Defences	...	6,410 9 5	6,410 9 5	28,000 0 0	34,410 9 5
Roads in "Deferred-payment Blocks" disposed of prior to 1st Jan., 1878	...	9,610 0 0	9,610 0 0	360 0 0	9,970 0 0
For Loans to be made to Local Governing Bodies to enable them to repair damages caused by recent floods	...	48,135 0 0	48,135 0 0	1,550 0 0	49,685 0 0
Railway Material, Gisborne to Ormond	...	4,963 7 4	4,963 7 4	...	4,963 7 4
Straightening Waiuku Channel ...	...	325 11 6	325 11 6	32 0 0	357 11 6
Total	47,324 5 3	168,070 8 8	215,394 13 11	125,119 3 9	340,513 17 8

TABLE No. 14.

STATEMENT showing the EXPENDITURE and LIABILITIES on LIGHTHOUSES, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

—	Expenditure to 30th June, 1878.	Expenditure for Year ended 30th June, 1879.	Total Liabilities.	Total Expenditure and Liabilities on 30th June, 1879.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Expenditure on sundry works prior to 30th June, 1878	71,673 3 6	...	...	71,673 3 6
Expenditure on following works during 1878-79, viz.:—	...	...	...	...
Puysegur Point Lighthouse ...	...	239 14 8	...	239 14 8
Mokohinau „	...	36 10 0	...	36 10 0
Cape Maria Van Diemen Lighthouse ...	...	1,456 15 2	...	1,456 15 2
Centre Island „ ...	...	161 13 10	...	161 13 10
Moeraki „ ...	...	78 14 10	...	78 14 10
Akaroa „ ...	...	3,107 11 6	300 0 0	3,407 11 6
Cape Saunders „ ...	...	3,645 13 9	1,700 0 0	5,345 13 9
Timaru „ ...	...	47 0 0	...	47 0 0
Hokitika „ ...	...	578 9 8	100 0 0	678 9 8
Sundries and contingencies	...	214 16 3	25 0 0	239 16 3
TOTAL...	71,673 3 6	9,566 19 8	2,125 0 0	83,365 3 2

TABLE No. 15.

STATEMENT showing the TOTAL EXPENDITURE and LIABILITIES for TELEGRAPH PURPOSES, out of IMMIGRATION and PUBLIC WORKS LOAN, to 30th June, 1879.

Period.	Miles of		Expenditure to 30th June, 1878, as per Table 14 of last Year.	Deduct Amounts Recovered since 30th June, 1878, but for Services prior to that Date.	Net Expenditure and Liabilities.
	Poles.	Wire.	£ s. d.	£ s. d.	£ s. d.
Expenditure, &c., to 30th June, 1878	2,119	5,364	299,652 0 6	1,693 13 10	297,958 6 8
Expenditure, &c., from 1st July, 1878, to 30th June, 1879	109	409	...	...	30,261 10 7
Total Expenditure, &c., to 30th June, 1879	2,228	5,773	...	...	328,219 17 3
Liabilities on 30th June, 1879	...	...	...	...	2,500 0 0
Total Expenditure and Liabilities ...	...	...	...	...	330,719 17 3

TABLE No. 16.

STATEMENT showing the EXPENDITURE for TELEGRAPH PURPOSES out of the IMMIGRATION and PUBLIC WORKS LOAN, from the 1st July, 1878, to the 30th June, 1879.

Number of Miles of Poles.	Number of Miles of Wire.	Locality.	Amount.
			£ s. d.
...	206	Fourth wire, Blenheim to Christchurch	7,278 11 6
...	...	Katikati to Tauranga, reconstruction	421 17 1
24	24	Nuggets to Catlin's River	762 12 5
...	60	Fifth wire, Wellington to Masterton	874 9 11
...	30	Fourth wire, Masterton to Te Nui	835 10 11
22	22	Duntroon Line...	935 1 9
...	...	Hokitika to Ross, reconstruction	523 19 11
24	24	Port Albert	507 8 2
...	...	Reefton to Ahaura, reconstruction	2,016 7 6
...	...	Nelson to Blenheim, reconstruction	1,536 13 1
5	4	Portobello	219 16 7
4	8	Wyndham	127 10 5
31	31	Lowther to Kingston	870 6 8
			£16,910 5 11
		New Stations; expenditure on lines in course of construction, not yet brought to charge; also sundry material lying in stock	13,351 4 8
109	409	TOTAL	£30,261 10 7

INDEX TO APPENDICES.

APPENDICES TO THE PUBLIC WORKS STATEMENT, 1879.

APPENDIX A.

AUDITED STATEMENT OF EXPENDITURE ON PUBLIC WORKS OUT OF THE IMMIGRATION AND PUBLIC WORKS LOAN FOR THE YEAR 1878–79.

Prepared in compliance with Section 9 of "The Public Works Act, 1876."

The Hon. J. Macandrew to the Commissioners of Audit, Wellington.

Gentlemen,— Public Works Office, 1st August, 1879.

In compliance with the 9th section of "The Public Works Act, 1876," I enclose a statement of the expenditure during the preceding financial year upon all Government works authorized by Parliament under "The Immigration and Public Works Appropriation Act, 1878."

I have, &c.,
J. Macandrew,
Minister for Public Works.

The Commissioners of Audit, Wellington.

Statement of Net Expenditure for the Year 1878–79, out of Immigration and Public Works Loan, to be forwarded to the Audit in compliance with Section 9 of "The Public Works Act, 1876."

Class.	Summary.		Net Expenditure.
			£ s. d.
III.	Railways—		
	Authorized Expenditure	£806,364 1 3	
	Unauthorized „	309 9 2	
			806,673 10 5
IV.	Surveys	... ...	12,607 3 8
V.	Roads—		
	Authorized Expenditure	£46,152 8 7	
	Unauthorized „	573 6 11	
			46,725 15 6
VI.	Land Purchases	... ...	500 0 0
VII.	Waterworks on Gold Fields	... ...	20,964 18 1
VIII.	Telegraph Extension	... ...	30,261 10 7
IX.	Public Buildings	... ...	166,045 4 8
X.	Lighthouses	... ...	9,566 19 8
XI.	Miscellaneous Public Works—		
	Authorized Expenditure	£167,744 17 2	
	Unauthorized „	325 11 6	
			168,070 8 8
	Total Net Expenditure on Works out of Immigration and Public Works Loan		1,261,415 11 3

Examined and found correct.
James Edward FitzGerald,
Comptroller and Auditor-General,
4th August, 1879.

W. A. Thomas,
Accountant, Public Works,
1st August, 1879.

Enclosure in Appendix A.

Public Works Net Expenditure, 1878-79.

Vote.	Item.	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
		Class III.—Railways.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
66		Kawakawa	...	10,000 0 0	...	526 9 11	...	526 9 11
67		Kaipara-Puniu	...	143,000 0 0	...	79,030 14 7	...	79,030 14 7
68		Napier-Manawatu	...	72,000 0 0	...	48,167 11 0	...	48,167 11 0
69		Wellington-Woodville	...	150,000 0 0	...	92,892 17 5	...	92,892 17 5
70		Waitara-Patea	...	55,000 0 0	...	35,679 15 10	...	35,679 15 10
71		Patea-Manawatu	...	130,000 0 0	...	81,604 14 10	...	81,604 14 10
72		Nelson-Foxhill	...	25,000 0 0	...	9,726 17 3	...	9,726 17 3
73		Picton-Blenheim	...	20,000 0 0	...	3,999 7 5	...	3,999 7 5
74		Brunner-Greymouth	...	39,000 0 0	...	26,897 16 11	...	26,897 16 11
75		Westport-Ngakawau	...	23,000 0 0	...	19,556 8 8	...	19,556 8 8
76		Amberley-Waitaki	...	225,000 0 0	...	177,012 8 10	...	177,012 8 10
77		Waitaki-Bluff	...	235,500 0 0	...	163,574 13 2	...	163,574 13 2
78		Winton-Kingston	...	11,250 0 0	...	11,250 0 0	309 9 2	11,559 9 2
79		Western Railways	...	64,750 0 0	...	44,370 7 0	...	44,370 7 0
80	1	Wellington-Foxton	15,000 0 0	...	1,534 10 1	...	...	...
	2	Waitotara-Upper Patea	40,000 0 0	...	585 18 3	...	...	...
	3	Te Awamutu-New Plymouth	12,000 0 0	...	...	...	...	...
	4	Masterton-Papatu	15,000 0 0	...	...	...	...	...
	5	Waikato-Thames	30,000 0 0	...	3,016 1 9	...	...	...
	6	Branch Line to Hamilton	2,000 0 0	...	822 13 5	...	...	...
	7	Helensville-Kaukapakapa	2,000 0 0	...	...	...	...	...
	8	Whangarei-Kamo	5,000 0 0	...	...	...	...	...
	9	Otago Central	55,000 0 0	...	1,939 18 3	...	...	...
	10	Amberley-Brunnerton	30,000 0 0	...	59 10 5	...	...	...
	11	Greymouth-Hokitika	15,000 0 0	...	553 1 2	...	...	...
	12	Canterbury Interior Main Line	15,000 0 0	...	...	...	...	...
	13	Main Line-Upper Ashburton	10,000 0 0	...	...	...	...	...
	14	Opawa Branch Extension	10,000 0 0	...	135 12 0	...	...	...
	15	Waipahi-Heriot Burn	5,000 0 0	...	...	...	...	...
	16	Edendale-Toitois	10,000 0 0	...	133 10 4	...	...	...
	17	Otautau-Nightcaps	5,000 0 0	...	45 11 3	...	...	...
	18	Clutha-Catlin's River	5,000 0 0	...	333 11 2	...	...	...
	19	Waimea-Switzer's	5,000 0 0	...	...	...	...	...
	20	Lumsden-Mararoa	5,000 0 0	...	42 3 10	...	...	...
	21	Palmerston-Waihemo	5,000 0 0	...	1,490 14 3	...	...	...
	22	Oamaru-Livingstone	5,000 0 0	...	107 16 0	...	...	...
	23	Main Line-Shag Point	8,000 0 0	...	9 19 4	...	...	...
	24	Amberley-Cook Strait	60,000 0 0	...	1,096 13 7	...	...	...
	25	Little River-Akaroa	30,000 0 0	...	166 13 4	...	...	...
	26	Additional Rails	101,000 0 0	...	...	...	...	...
		Total Appropriation and Expenditure, Vote 80, Item 1 to 26		500,000 0 0		12,073 18 5	...	12,073 18 5
		Total Appropriation and Expenditure, Class III.	...	1,703,500 0 0	...	806,364 1 3	309 9 2	806,673 10 5

Public Works Net Expenditure, 1878-79—*continued.*

Vote.	Item.	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
		Class IV.—Surveys.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
81		Survey New Lines, North Island	...	6,000 0 0	...	2,124 12 11	...	2,124 12 11
82		Survey New Lines, Middle Island	...	14,500 0 0	...	10,482 10 9	...	10,482 10 9
		Total Appropriation and Expenditure Class IV.	...	£20,500 0 0	...	£12,607 3 8	...	£12,607 3 8
		Class V.—Roads.						
83		North Island	...	17,522 8 11	...	10,730 11 4	...	10,730 11 4
84		Nelson South-West Gold Fields	...	13,500 0 0	...	13,273 3 0	...	13,273 3 0
85		Westland	...	12,000 0 0	...	11,824 10 11	...	11,824 10 11
86		Hokitika–Christchurch	...	6,000 0 0	...	6,000 0 0	573 6 11	6,573 6 11
87		*Roads to open up Lands before Sale:—*						
		Auckland,—						
	1	Takahue to Herekino	2,160 0 0	...	...	...	...	...
	2	Takahue to Hera Point	2,400 0 0	...	359 12 5	...	...	...
	3	Purua and Mangakahia District	840 0 0	...	37 18 0	...	...	...
	4	Block II., Tangihau	600 0 0	...	55 5 0	...	...	...
	5	Block III., Tangihau	480 0 0	...	...	...	...	...
	6	Awhitu Block	480 0 0	...	...	...	...	...
	7	Lake Whangape, Awaroa	800 0 0	...	192 4 6	...	...	...
	8	Waikato River–Awaroa	1,120 0 0	...	...	...	...	...
	9	Gisborne–Hangaroa	320 0 0	...	3 3 0	...	...	...
	10	Wairoa–Waiau	800 0 0	...	5 0 0	...	...	...
		Taranaki,—						
	11	Mountain Road to Blocks under Survey	2,860 0 0	...	...	...	...	...
	12	Opening Huiroa Block	828 0 0	...	147 6 0	...	...	...
	13	Bridge over Manganui	800 0 0	...	...	...	...	...
	14	Manganui and Patea Rivers	782 0 0	...	67 0 0	...	...	...
		Hawke's Bay,—						
	15	Taharaite District, Puketoi Block	2,060 0 0	...	...	...	...	...
	16	Norsewood District, Ngamoto Block	560 0 0	...	36 11 5	...	...	...
	17	Tukituki–Waipawa	575 0 0	...	113 0 4	...	...	...
	18	Waitara Block	800 0 0	...	91 5 0	...	...	...
	19	Woodville District, Ahuaturanga Block	745 0 0	...	33 9 7	...	...	...
	20	Puhui District	520 0 0	...	...	...	...	...
		Wellington,—						
	21	Kairanga Survey District	5,000 0 0	...	...	...	...	...
	22	Mangaone District	5,600 0 0	...	545 0 0	...	...	...
	23	Sandon, Kiwitea Block	1,400 0 0	...	...	...	...	...
	24	Blocks IV., X., and XIII., Wellington Country District	1,500 0 0	...	46 16 9	...	...	...
		Marlborough,—						
	25	Rai Valley	1,000 0 0	...	...	...	...	...
		Carried forward	35,030 0 0	49,022 8 11	1,733 12 0	41,828 5 3	573 6 11	42,401 12 2

Public Works Net Expenditure, 1878–79—*continued.*

Item.	Item	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
		Brought forward	35,030 0 0	49,022 8 11	1,733 12 0	41,828 5 3	573 6 11	42,401 12 2
		Nelson,—						
87	26	Aorere Valley–Collingwood	2,700 0 0	...	378 16 8	...	...	...
	27	Bridge, Aorere River	2,000 0 0	...	...	...	...	...
	28	Ahaura–Kopara Flat	2,000 0 0	...	218 18 2	...	...	...
		Canterbury,—						
	29	Road, Upper Ashley	5,000 0 0	...	25 0 0	...	...	...
		Westland,—						
	30	Kokatahi River to Hokitika River	970 0 0	...	329 7 0	...	...	...
	31	Mount Bonar to Poerua River	1,480 0 0	...	...	...	...	...
	32	Mapourika Lake, Waihou River...	1,410 0 0	...	100 0 0	...	...	...
		Otago,—						
	33	Otara to Waikawa, and Bridge over Tokanui	1,000 0 0	...	...	...	...	...
	34	North Taieri to Boyd's Run, No. 75	3,000 0 0	...	...	...	...	...
	35	Benger District, from Minyion Burn Bridge	500 0 0	...	...	...	...	...
	36	Arrowtown to Crown Terrace	1,500 0 0	...	1,500 0 0	...	...	...
		Southland,—						
	37	Seaward Forest and Coast Line	2,000 0 0	...	38 9 6	...	...	...
		Total Appropriation and Expenditure, Vote 87, Items 1 to 37		58,590 0 0		4,324 3 4	...	4,324 3 4
		Total Appropriation and Expenditure, Class V.—Roads ...	...	107,612 8 11	...	46,152 8 7	573 6 11	46,725 15 6
		Class VI.—Land Purchases.						
88	2	Opening up Roads and constructing Bridges through lands recently purchased. (This is the only item in this class that is for works) ...	...	15,000 0 0	...	500 0 0	...	500 0 0
		Class VII.—Waterworks on Gold Fields.						
89		Water-races, North Island...	...	9,350 5 0	...	607 17 8	...	607 17 8
90		Water-races, Middle Island	...	50,000 0 0	...	20,357 0 5	...	20,357 0 5
		Total Appropriation and Expenditure, Class VII.	...	£59,350 5 0	...	£20,964 18 1	...	£20,964 18 1
		Class VIII.—Telegraph Extension.						
91		Telegraph Extensions	...	36,700 0 0	...	30,261 10 7	...	30,261 10 7

Public Works Net Expenditure, 1878-79—*continued.*

Vote.	Item.	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
		Class IX.—Public Buildings.						
92		Judicial	...	60,675 0 0	...	20,492 0 9	...	20,492 0 9
93		Postal and Telegraph	...	19,620 0 0	...	5,361 9 3	...	5,361 9 3
94		Customs	...	1,150 0 0	...	471 4 3	...	471 4 3
95		Offices for Public Departments	...	15,830 0 0	...	15,762 19 8	...	15,762 19 8
96		Lunatic Asylums	...	45,700 0 0	...	13,154 12 2	...	13,154 12 2
97		Schools	...	105,000 0 0	...	105,000 0 0	...	105,000 0 0
98		Hospitals	...	6,745 0 0	...	5,802 18 7	...	5,802 18 7
		Total Appropriation and Expenditure, Class IX.	...	254,720 0 0	...	166,045 4 8	...	166,045 4 8
		Class X.—Lighthouses.						
99		Lighthouses	...	19,600 0 0	...	9,566 19 8	...	9,566 19 8
		Class XI.—Miscellaneous Public Works, North Island.						
100	1	Road, Whangarei to Port Albert	3,000 0 0	...	792 0 0	...	...	...
	2	Road, Raglan to Waikato	1,500 0 0	...	1,500 0 0	...	...	...
	3	Road, Thames to Ohinemuri	1,500 0 0	...	972 19 0	...	...	...
	4	Road, Tauranga to Opotiki	1,500 0 0	...	119 18 0	...	...	...
	5	Road, Taupo to Tauranga	1,500 0 0	...	38 12 0	...	...	...
	6	Road, Gisborne to East Cape	1,000 0 0	...	257 12 0	...	...	...
	7	Road, Ormond to Opotiki	1,000 0 0	...	...	...	...	...
	8	Road, Gisborne to Wairoa	1,000 0 0	...	500 0 0	...	...	...
	9	Waipoa River Bridge and Approaches	1,785 0 0	...	1,692 2 6	...	...	...
	10	Drainage, Patutahi Block	768 0 7	...	476 0 6	...	...	...
	11	Road from Pukekohe Railway Station to Waiuku	3,000 0 0	...	1,787 3 8	...	...	...
	12	Road from Pukekohe Railway Station through East Pukekohe District to Bombay	1,000 0 0	...	235 2 4	...	...	...
	13	Wharf at Pollock, Manukau Harbour	150 0 0	...	150 0 0	...	...	...
	14	Road from Papakura Railway Station to Wairoa (improvement of) ...	1,000 0 0	...	929 12 4	...	...	...
	15	Coromandel Public Works, Road Thames to Hastings	500 0 0	...	...	...	...	...
	16	Ditto, Road, Coromandel to Hastings	200 0 0	...	...	...	...	...
	17	Road, Mackaytown to Waikato	500 0 0	...	500 0 0	...	...	...
	18	Portage Road, Riverhead to Kaipara	250 0 0	...	250 0 0	...	...	...
	19	Clearing Snags, Waikato	53 9 11	...	53 9 11	...	...	...
	20	Contribution towards Bridge over Waikato at the Narrows	300 0 0	...	300 0 0	...	...	...
	21	Road, Mangaturoto to Waikiekie	500 0 0	...	500 0 0	...	...	...
	22	Opening Road at Ruatangata	13 0 0	...	13 0 0	...	...	...
	23	Wharf at Whangarei Heads	600 0 0	...	600 0 0	...	...	...
	24	Road at Maungakaramea	250 0 0	...	250 0 0	...	...	...
	25	Tramway at Kamo	1,914 19 0	...	1,042 5 11	...	...	...
		Carried forward	24,784 9 6	...	12,959 18 2	...	...	...

Public Works Net Expenditure, 1878–79—*continued.*

Vote.	Item.	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
			£ s. d.	£ s. d.	£ s. d.	£ d.	£ s. d.	£ s. d.
		Brought forward	24,784 9 6	...	12,959 18 2	...	...	...
100	26	Matakana Wharf	500 0 0	...	260 11 3	...	...	...
	27	Main Road, Mahurangi to Whangarei	2,000 0 0	...	400 0 0	...	...	...
	28	Bridge over Waikato at Hamilton (contribution)	3,000 0 0	...	...	...	...	...
	29	Drainage Lagoon, Mount Eden	345 0 0	...	345 0 0	...	3 12 0	...
	30	Clearing Snags, Wairoa River	100 0 0	...	76 6 11	...	...	...
	31	Mangere Bridge (repairs)	1,800 0 0	...	...	...	...	...
	32	Tamaki Bridge (repairs)...	1,500 0 0	...	827 19 0	...	...	...
	33	Bridge over Ahuriri Harbour	11,986 10 0	...	...	...	...	...
	34	Road, Napier to Taupo	1,500 0 0	...	...	...	...	...
	35	Road, Wairoa to Waikaremoana	1,500 0 0	...	766 11 4	...	...	...
	36	Mountain Road, Taranaki	11,282 0 1	...	6,035 16 5	...	...	...
	37	Opening Mountain Road to Patea	2,194 6 2	...	2,194 6 2	...	...	...
	38	Main Road, Stony River to Waitotara	3,000 0 0	...	370 0 0	...	...	...
	39	Road, Wainui to Waipukurau	2,000 0 0	...	2,000 0 0	...	...	...
	40	Road, Wainui to Inland Settlement...	500 0 0	...	500 0 0	...	...	...
	41	Road, Seventy-Mile Bush, Opaki, to Kopua, including Manawatu Gorge Road	4,968 0 0	...	4,894 10 7	...	...	...
	42	Ruamahunga Bridge, Opaki Road	6,000 0 0	...	4 5 9	...	...	...
	43	Road, Rangitumau	1,000 0 0	...	715 4 6	...	...	...
	44	Road, Mungaroa to Waikanae	3,000 0 0	...	3,000 0 0	...	...	...
	45	Road, Rangitikei to Murimoto or Inland Patea	1,000 0 0	...	500 0 0	...	...	...
	46	Road, Taueru	1,000 0 0	...	1,000 0 0	...	...	...
	47	Road in Manchester Block	900 0 0	...	884 0 0	...	...	...
	48	Road, Foxton to Otaki (inland)	3,000 0 0	...	367 2 4	...	...	...
	49	Road, Masterton to Castlepoint	1,500 0 0	...	685 0 0	...	...	...
	50	Road, Karere, Manawatu	300 0 0	...	...	...	...	...
	51	Manawatu Bridge Approaches	125 15 7	...	110 2 2	...	...	...
	52	Bridge over Ruamahunga, at Hurinuioranga	3,000 0 0	...	55 3 4	...	...	...
	53	Continuation of Kimbolton Road through Sandon Block (Kiwitea) ...	750 0 0	...	750 0 0	...	...	...
	54	Trunk Roads, County Wanganui	415 1 6	...	415 1 6	...	...	...
	55	Wanganui and Taupo Road	500 0 0	...	...	...	...	...
	56	Road, Oronoko to Sandy Brook	700 0 0	...	27 0 0	...	...	...
	57	Road, Takaka to Motueka, and Approach to Wharf, Waitapu	1,200 0 0	...	...	...	...	...
	58	Bridge over Wairoa in Waimea District	4,899 18 3	...	1,410 6 4	...	...	...
	59	Wakamarina Road, County of Marlborough	600 0 0	...	...	...	...	...
	60	Rai Road, County of Marlborough	400 0 0	...	...	...	...	...
	61	Rai Road, County of Waimea	500 0 0	...	...	...	...	...
	62	Bridge over Clarence River	5,000 0 0	...	20 0 0	...	...	...
	63	Road, Nelson to Tophouse and Tarndale	1,197 16 9	...	392 0 0	...	...	...
	64	Bridge over Ahaura River	10,500 0 0	...	3,446 5 4	...	...	...
	65	Bridge over Nelson Creek	5,000 0 0	...	253 14 0	...	...	...
	66	Road, Westport to Lyell, including Bridge over Ohika River	5,000 0 0	...	383 14 0	...	...	...
	67	Road, Nelson to Westport and Greymouth	7,437 7 6	...	4,624 3 4	...	...	...
	68	Road, Motupiko to the Lyell, by the Hope	1,400 0 0	...	...	...	...	...
	69	Hokitika Harbour Improvement	15,000 0 0	...	10,938 18 9	...	...	...
	70	Bridge over Teremakau, Kumara	9,500 0 0	...	4,756 8 4	...	...	...
		Carried forward	163,786 5 4	...	66,369 9 6	...	3 12 0	...

Public Works Net Expenditure, 1878–79—*continued.*

Vote.	Item.	Particulars.	Items of Appropriation.	Appropriation.	Items of Expenditure.	Expended out of Appropriation.	Expended in Excess of Appropriation.	Total Expenditure.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
		Brought forward	163,786 5 4	...	66,369 9 6	...	3 12 0	...
100	71	Bridge over Hokitika at Kanieri	7,967 10 0	...	3,938 17 3	...	...	...
	72	Road by Coast from Hokitika to Haast Pass	3,000 0 0	...	1,203 3 6	...	...	...
	73	Main Road near Longford	2,000 0 0	...	1,500 0 0	...	...	..
	74	Buller Valley, Completion Orawaiti, destroyed by flood	1,789 1 9	...	700 0 0	...	...	...
	75	Removal of Rock, &c., Martin's Bay, &c.	195 0 0	...	...	...	...	...
	76	Bridge over Buller on Nelson to Reefton Road	4,000 0 0	...	2,500 0 0	...	...	...
	77	Compensation to A. Stitt, Buller Road Contract	180 0 0	...	...	...	...	...
	78	Jetty at Port Levy	250 0 0	...	250 0 0	...	...	...
	79	Road, Purau to Port Levy	500 0 0	...	...	...	...	...
	80	Road, Port Levy to Pigeon Bay	500 0 0	...	...	...	...	...
	81	Hurunui, Greta Bridge	2,794 8 4	...	2,794 8 4	...	103 16 3	...
	82	Purchase, Beaumont Bridge	5,000 0 0	...	3,000 0 0	...	...	...
	83	Kawarau Bridge at Junction, Arrow River	8,000 0 0	...	62 9 0	...	...	...
	84	Portobello Road	499 14 0	...	282 4 6	...	...	...
	85	Jetty at Toitois	1,000 0 0	...	1,000 0 0	...	...	...
	86	Road, Toitois (inland)	1,000 0 0	...	986 16 0	...	...	...
	87	Road, Wyndham to Toitois	1,500 0 0	...	1,415 12 6	...	...	...
	88	Road, Gore to Switzer's	4,000 0 0	...	3,495 9 0	...	...	...
	89	Removal of Rocks, Catlin's River	1,000 0 0	...	...	...	...	...
	90	Road, Waipori to Lawrence *viâ* Bungtown	400 0 0	...	400 0 0	...	...	...
	91	Road, Fitzgerald to Dalhousie	500 0 0	...	500 0 0	...	...	...
	92	Duthies to Tuapeka Mouth *viâ* Tuapeka River	500 0 0	...	500 0 0	...	...	...
	93	Manuherikia Bridge, St. Bathans	250 0 0	...	250 0 0	...	...	...
	94	Maerewhenua Railway Bridge	5,000 0 0	...	1,628 17 6	...	...	...
	95	Main Road, Glenomaru to Catlin's River	250 0 0	...	250 0 0	...	...	...
	96	Erection of Jetty and Shed at Catlin's River	500 0 0	...	80 0 0	...	...	...
	97	Completion of Road from Maori Kaika to Taiaroa Head Lighthouse ...	445 12 0	...	196 13 6	...	...	...
	98	Bridge over Oreti at Elbow	6,000 0 0	...	2,216 6 2	...	...	...
	99	Protective Works, Dipton	500 0 0	...	500 0 0	...	...	...
	100	Gore Bridge	1,254 16 7	...	1,254 16 7	...	...	...
	101	Beacon at Queenstown	35 0 0	...	35 0 0	...	...	...
	102	Compensation, E. H. Bold	345 18 10	...	345 18 10	...	...	...
	103	„ H. Deverill	400 0 0	...	400 0 0	...	...	...
	104	„ Colonel McDonnell	400 0 0	...	400 0 0	...	...	...
	105	Allowance to O. Carrington	62 10 0	...	62 10 0	...	...	...
	106	Harbour Defences	44,000 0 0	...	6,410 9 5	...	...	...
	107	Roads in Deferred-payment Blocks disposed of prior to 1st January, 1878...	10,000 0 0	...	9,610 0 0	...	...	...
	108	Loans to Local Bodies to repair Damages by recent Floods	50,000 0 0	...	48,135 0 0	...	...	...
	109	Railway Material, Gisborne to Ormond	4,950 0 0	...	4,963 7 4	...		
		Total Appropriation and Expenditure, Vote 100, Miscellaneous Public Works		334,755 16 10		167,637 8 11	107 8 3	167,744 17 2
		Charged unauthorised,— Straightening Waiuku Channel...	...	...	...	...	...	325 11 6
		Total Expenditure, Class XI., Miscellaneous Public Works ...	...	...	...	...	...	£168,070 8 8

APPENDIX B.

"RAILWAYS CONSTRUCTION ACT, 1878," SECTION 3.

STATEMENT showing Dates of Submission to, and Approval by, the Governor in Council, of Plans, Estimates, and Certificates of Engineers in Charge of North and Middle Islands, in connection with Railways authorized by "The Railways Construction Act, 1878," prepared in compliance with section 3 of the said Act.

Railways.	Plans and Estimates, with Certificate of Engineers in Charge, submitted to, and approved by, Governor in Council.	
	Date of Submission.	Date of Approval.
NORTH ISLAND.		
Waikato to the Thames { Grahamstown Section / Shortland „ }	1 July, 1879	5 July, 1879.
Branch Line to Hamilton, Hamilton Branch „	1 „ „	5 „ „
Whangarei to Kamo, Kamo Section	1 „ „	5 „ „
MIDDLE ISLAND.		
Otago Central—Dunedin to Albert Town, Lake Wanaka—Wingatui Section ...	12 „ „	15 „ „
Amberley to Brunnerton, Stillwater Section	14 „ „	15 „ „
Greymouth to Hokitika, Greymouth Section	12 „ „	15 „ „
Greymouth to Hokitika, Paroa Section	12 „ „	15 „ „
Greymouth to Hokitika, Hokitika Section	12 „ „	15 „ „
Greymouth to Hokitika, Hampden Street Section	14 „ „	15 „ „
Canterbury Interior Main Line—Oxford to Temuka, Northern portion, including Eyre Bridge ...	12 „ „	15 „ „
Canterbury Interior Main Line—Oxford to Temuka, Southern portion, including Temuka Bridge...	12 „ „	15 „ „
Main Line to Upper Ashburton, Ashburton Section	27 May, 1879, plan and estimate 1 July, 1879, Engineer's certificate	27 May „ 5 July „
Opawa Branch Extension, Albury Section	12 July, 1879	15 „ „
Edendale to Toitois, Wyndham „	3 „ „	5 „ „
Otautau to Nightcaps, Opio „	3 „ „	5 „ „
Clutha to Catlin's River, Invertiel „	12 „ „	15 „ „
Lumsden to Mararoa, Lumsden „	3 „ „	5 „ „
Palmerston to Waihemo, Palmerston „	12 „ „	15 „ „
Oamaru to Livingston, Windsor „	29 „ „	29 „ „
Main Line to Shag Point	4 Aug. „	5 Aug. „
Amberley to Cook Strait, Waipara Section	12 July „	15 July „
Amberley to Cook Strait, Bellgrove „	4 Aug. „	5 Aug. „
Little River to Akaroa, Ellesmere „	3 July „	5 July „

JOHN KNOWLES,
Under Secretary for Public Works.

APPENDIX C.

ANNUAL REPORT ON RAILWAYS IN THE NORTH ISLAND BY THE ENGINEER IN CHARGE.

The Engineer in Charge, North Island, to the Hon. the Minister for Public Works.

Sir,— Public Works Office, Wellington, 30th June, 1879.

I have the honor to forward annual report on railway works executed during the last year.

	£	s.	d.
The total expenditure on railways in the North Island up to the 30th June, 1879, was, exclusive of preliminary surveys	2,809,812	12	0
The total amount of contracts let and other liabilities	537,951	2	5
Total expenditure and liabilities	£3,347,763	14	5

The table below shows the total length of the lines and the number of miles opened for traffic in the North Island, with expenditure and liabilities; and the second table at end of report gives a list of railways and all contracts, completed or in progress, with the times of completion, &c. The number of miles opened for traffic during the year is 27 miles 43 chains.

Name of Railway.	Expended to 30th June, 1879.	Liabilities on 30th June, 1879.	Length.	Open for Traffic.
North Island.	£ s. d.	£ s. d.	M. Ch.	M. Ch.
Kawakawa	27,130 9 3	411 2 6	8 28	2 68
Whangarei-Kamo	...	13,507 9 11	8 0	...
Kaipara-Puniu	954,400 9 0	161,512 15 8	146 45	112 17
Waikato-Thames	3,016 1 9	53,772 19 2	61 0	...
Hamilton Branch	822 13 5	2,382 2 1	1 1	...
Napier-Manawatu	403,017 14 11	31,126 15 8	101 66	64 4
Wellington-Woodville*	628,687 5 7	114,742 19 0	121 74	44 79
Wellington-Foxton	1,534 10 1	14,505 16 7	67 40	...
Patea-Manawatu†	618,394 17 8	111,212 18 3	140 14	95 8
Waitara-Patea	172,808 10 4	34,776 3 7	65 56	19 73
Te Awamutu-New Plymouth	...	...	125 0	...
Total	2,809,812 12 0	537,951 2 5	847 4	339 9

* Includes Greytown Branch, 3 miles 7 chains. † Includes proposed Carlyle Branch, 3 miles 26 chains.

Kawakawa Railway.

Since last year's report no works of construction have been executed, except a stationmaster's house, to be used as an engineer's office and head-quarters; but a complete new contract survey of section No. 2, 2 miles 70 chains, has been made, and the plans are now being prepared for the purpose of letting the work by contract.

A trial survey line is also being made of section No. 3, 2 miles 50 chains, which traverses a very rough piece of country.

Whangarei Railway.

Kamo Contract (2 miles 54 chains).—This was begun on the 15th March last. The works have not progressed with such speed as they should have done, considering the fine weather. The plans for the second contract have been received, and are now being considered and revised with the view of preparing the work for contract. The whole length of the line, terminating in a wharf in deep water, 21 feet at low water, will be about 8 miles.

Kaipara-Puniu Railway.

Only one portion of railway formation has been completed on this line during the year—namely, Onehunga Wharf. This was finished and opened for traffic in February last.

Helensville Contract.—This work was made the subject of a second contract in February last, and fair progress is being made, although much work is not yet apparent, owing to the large quantity of timber necessary to be cut and delivered. The contract time expires 30th October, 1879.

Auckland Contract (9 miles 61 chains).—The contract time for this work expired on the 11th May. Contrary to expectation expressed last year, this contract still remains incomplete, and the contractor, in spite of all urging, does not seem capable of carrying on the work with a proper degree of energy; consequently it is difficult to name a time when it will be completed. The delay has been so serious that instructions have been given to execute certain works at contractor's expense, such as fencing, level-crossings, &c., the want of which is loudly complained of by the adjacent landowners.

Intimately connected with the Auckland contract is the Newmarket Junction Station, that being the point where the Kaipara line of railway joins the Waikato line. The ground is generally unfavourable for making a commodious station, and more than one design for the station has been made and revised. The plans, however, are now in such a forward state that tenders will shortly be called for the work.

Waitakerei Contract (inland line, 12 miles 65 chains).—This was commenced in the end of April last, and is being prosecuted in a satisfactory manner. Since the contract was let it has been found possible to improve the line without extra cost by the substitution of 10- and 15-chain curves in place of two of 8 chains, and the lowering of the summit about 5 feet. The time for completion is the 11th September, 1880.

Auckland Reclamation Contract.—This work was let on the 11th February, 1879, but as yet the contractor is making very slow progress, and very little show of work. The District Engineer is, in consequence, urging him to proceed with more system and energy. Time for completion, 3rd December, 1880.

Ohaupo Contract (6 miles 20 chains).—This is in a very fair way to be completed before contract time, 18th September, 1879, and the works have been carried on from the first with systematic energy. The heavy swamp embankment at 1 mile 75 chains is most backward, but is rapidly approaching completion. The works are standing well, and the lake drainage has been effectual in drying the swamp, as intended.

Newcastle Wharf Contract.—It was found necessary to make considerable alterations and additions to this contract after the work had been let, principally with a view to increased convenience for working, and also for increased stability in the structure. Delay has occurred in consequence, but the work will now be pushed on to completion. The contract time expired 30th May, 1879, but the alterations will require extended time.

Hamilton Branch Contract (1 mile 1 chain).—The earthworks on this are all but finished, and the side drains nearly so; the line is fenced in for about 50 chains; and there is every reason to believe that the contract will be completed within the time allowed, 12th September, 1879.

Railway Workshops.—A piece of ground has been purchased at Newmarket on which it is proposed to build workshops. The ground is not especially favourable for the purpose, and will require very considerable expenditure to form and drain it for the purpose of erecting buildings. Sections and plans of the ground have been taken with a view of preparing the work of formation as a first contract.

Waikato-Thames Railway.

Hamilton Division.—The line is staked out eastward of the Waikato River, from 1 mile 41 chains, which is the site of Hamilton East Station, to 14 miles 40 chains. The works on this length will consist mostly of forming and ditching. The plans for this contract are nearly ready for transmission to the head office for approval.

Grahamstown Contract.—This is a work of reclamation for station purposes, and about one-third of the work is completed. It will most probably be finished within contract time, 18th November, 1879.

Shortland Contract.—This is also a work of reclamation adjoining the above, and reaching as far as the Kauaeranga River. Not much work executed yet, as contractor has been preparing tramways, &c., for conveyance of material. Contract time ends 26th December, 1879.

State of Surveys.—Plans are nearly ready for the next contract for formation, which may extend to about Puriri, at 9 miles. The line is staked out as far as Hikutaia, 13 miles 63 chains.

No. 10, *Station Buildings Contract.*—This refers to the stations on the Auckland Contract, and it is expected that all the works will be finished before the line is ready. Contract time expired 11th May, 1879.

No. 11, *Station Buildings Contract, Green Lane.*—This contract is well advanced, and will probably be finished before contract time, viz., 16th June, 1879.

No. 12, *Station Buildings Contract.*—This work includes sundry sixth-class stations, and is well advanced; three are finished, two with timber on ground, one not yet begun. The time for completion of contract is 29th July, 1879.

Napier-Manawatu Railway.

Papatu Section (extending 5 miles 37 chains beyond Kopua, which is 64 miles 4 chains).—The formation of the line on this section has all been let out in small contracts to parties of labouring men, chiefly settlers from Norsewood, Danevirk, Ormondville, and Makaretu. The lighter portions of the work have been completed, the heavy cuttings are still in hand. Between Kopua and the Manawatu River the ground was found to be very treacherous, and a deviation of the line was made so as to secure solid ground. This has proved successful, and no more trouble has arisen from slipping.

Papatu Bridges Contract.—The contract time expires on the 15th July next, but the works will not be completed within the time. The difficulties of obtaining timber, and of transporting it over very rough and difficult country, may account for portion of the delay. Two of the bridges, the Manawatu and the Makatoko, have been completed, with the exception of the ballasting. The third, that over the Mangarangiora, has been begun.

These are all large and lofty structures, and would, perhaps, be more properly called viaducts than bridges.

Surveys.—From 69 miles 65 chains to 72 miles 65 chains the line is now permanently pegged out, ready for bush-felling, and from the latter point to 83 miles one survey party is now engaged in permanently laying out the line, and beyond that another party is exploring and contouring the country in advance. The nature of the country is such as to render surveys very tedious. The country is covered with dense bush, and is intersected with very deep and wide river-beds, which are very tortuous and irregular in their course and features. This demands the most careful and exhaustive survey to make sure of obtaining the best available line.

Workshops, Napier.—Land has been acquired on which to erect these. The work of formation will be commenced almost immediately, and the building of the workshops has been let by contract.

Working Railways, Napier to Kopua.—Two private sidings have been laid down, and a further portion of fencing erected. It is complete on both sides up to 20 miles 65 chains, beyond which only portions of fence are erected in detached pieces. The question of completing the fencing throughout is now under consideration.

Patea-Manawatu Railway.

Brunswick Contract, Plate-laying.—By this the line has been extended northwards to Kai-iwi, 9 miles 15 chains. The completion of this contract took place the 22nd May, and a few weeks after it was opened for traffic.

Kai-iwi and Brunswick Contract for Station Buildings.—This contract was for the various station buildings and water-supply, &c., for the above, and was completed in due time for the opening.

Waitotara Contract (from Kai-iwi to Waitotara Station, 12 miles 70 chains, including formation and plate-laying).—The time for completion of this expires the 5th December, 1879, and about three-fourths of the earthworks are completed. The masonry culverts and pipes are completed, three-fifths of the fencing erected, most of the bridge timber delivered, and some portions of the bridges erected. About 200 men are employed on this contract.

Wanganui Wharf and Reclamation Contract.—This was let by contract on the 16th April, and the contract time will expire 16th April, 1880. The contractor is preparing plant and material.

Working Railways.—Six private sidings have been laid, and nine other sidings, to increase the facilities for traffic. Foxton Wharf has been extended 160 feet, and numerous additions to station buildings have been made, giving increased accommodation. Additional water-supply has also been provided at several of the stations.

Surveys: Waitotara-Waverley.—The survey of the railway line from Waitotara to Waverley, 7 miles 5 chains, has been completed, and is now being plotted and the work prepared for contract. The latter work, however, has been delayed by the survey of an alternative line proposed for the purpose of bringing the Waitotara Station nearer to the present small centre of population.

The result of the survey is that the alternative line will be 18¾ chains longer, having a grade of 1 in 35 as against 1 in 81·7, and that it will cost £3,000 more than the line originally laid out.

Bunnythorpe to Upper End of Manawatu Gorge (11 miles 70 chains).—This has been completed up to 7 miles 50 chains, and the remainder is in progress in the field.

Waitara-Patea Railway.

Ngatoro Section (8 miles 60 chains to 13 miles 40 chains).—The permanent way has been laid on this section by contract, and station buildings are now in progress.

Waipuku Section (13 miles 40 chains to 17 miles 52 chains).—The formation, logging, and timber culverts upon this section have been done by petty contracts and day labour, and the bridges and masonry culverts by contract, as well as the laying of permanent way, which is now complete.

Stratford Section (17 miles 52 chains to 22 miles 20 chains).—This contract was begun in January last, and the contract time expires on the 11th July. The work includes permanent way and station buildings. Strenuous efforts are being made to complete the work, which it is expected will be finished about the middle of August.

Workshops, Sentry Hill.—The erection of these is now being advertised for contract.

Surveys.—South of Stratford Section—that is, from 22 miles 40 chains to 29 miles—the line has been levelled and pegged out for contract plans, which are now being prepared; and from 29 miles (which is 30 chains north of Mangawhero River) to Normanby, 36 miles 40 chains, a line has been cut, and is now being pegged out for contract plans.

Branch to Carlyle (3 miles 26 chains).—A preliminary survey has been made of this branch.

Working Railways.—Two sixth-class stations, one coal store, and 136 chains of fencing have been erected.

Wellington-Masterton Railway.

Permanent Way, Kaitoke-Featherston (27 miles to 45 miles).—This work, which included the laying of 18 miles of permanent way, and the formation and permanent way at the Summit, Cross's Creek, and Pigeon Bush Stations, and permanent way at Featherston Station, was carried out by day labour under the supervision of the Resident Engineer, and was opened for public traffic on the 16th October, 1878.

The working of the incline, which forms part of this section, by means of the "Fell" engines, has proved, as was expected, quite successful.

Featherston Station Contract (43 miles 68 chains to 45 miles).—This included levelling the ground for Featherston Station, fencing line and yard, erection of passenger station buildings, &c., also goods shed and engine shed, and was completed so that the line could be opened for traffic as above stated, but was not finally taken over till the 28th December.

Summit Water-Supply and Station Buildings Contract.—This included dam and pipe services and tanks, two-stall engine shed, and two cottages, and was finished the 22nd September, 1878.

Cross's Creek Station Buildings Contract.—Completed by end of October; includes four-stall engine shed, coal store, two cottages, dam and pipe service and tanks, besides blacksmiths' shop and other sundries.

Station Buildings Contracts.—No. 1 included four-roomed house on Summit, two cottages at Cross's Creek, station-house, &c., at Pigeon Bush, and cattle-pens at Featherston, and was completed January, 1879. Contract No. 2 included stationmaster's house at Woodside, and a cottage at Fernside, finished in April. Another contract, finished in April, was for a stationmaster's house at Carterton, to be used as an engineer's office, and head-quarters for Resident Engineer.

Carterton Contract (20 miles 41 chains).—From the time this contract was let, the 6th April, 1878, up to April, 1879, the works were carried on in a very languid and unsatisfactory manner. The contractor was then served with a formal notice to employ more men and display more energy. After this better progress was made and a better system of working adopted.

Unfortunately, however, on the 14th May, the contractor, Mr. Richard Dickson, was accidentally killed at Patea Harbour Works, and the result of his death has been that the works have been taken over by the Government, and every means will be used to push them on vigorously to completion. The contract time ends the 22nd March, 1880.

Wellington Railway Wharf Contract.—The work on this was begun on the 16th April, and is being pushed on in a very energetic manner. The time for completion is 26th December, 1879.

Petoni Workshops Contract.—This includes a carpenters' shop, machine shop, fitting shop, and engine shop. Work commenced in last week in April. As yet the progress has not been very brisk, but large quantities of timber are now on the ground, and better progress may be expected. The contract time expires 14th November, 1879.

A contract for a main drain through the workshops ground has also been let.

Greytown Branch Contract (3 miles 7 chains).—This work has been surveyed and prepared for contract for formation only, and is now advertised for public tender.

Working Railways.—Several new engines have been erected, amongst them some of the single Fairlie type, adapted for sharp curves and steep grades. As far as the trials of these latter have been made they promise to be a success, and to be well adapted for the kind of traffic for which they were ordered.

Temporary workshops have been fitted up at Petoni pending the completion of the permanent buildings, and machinery and smiths' hearths erected; these enable the General Manager to keep the stock in repair.

Three new sidings have been laid down in Wellington Station-yard to meet the increased traffic; and all the bridges have been well tarred during the year.

Wellington–Foxton Railway.

Surveys.—The explorations and surveys for the Wellington end of the above line have taken considerable time, owing to the number of routes which have been examined.

It was necessary to examine all the routes recommended as being the best, as well as those which were previously known to be practicable, so that the question of route might be set at rest satisfactorily. Four distinct lines were examined—viz., one starting from the Upper Hutt; one from a point between the Silver Stream and Upper Hutt; one from a point a little south of Hayward's; and one by way of Kaiwara Valley and Porirua. A report on the first three of these was appended to last year's Annual Report, which showed that they were unsuitable for a line of railway; the country being excessively rough, involving enormous cost of construction and obtaining very bad gradients.

It was therefore found necessary to revert to the fourth line (the one first examined)—the character of which was known to be favourable, and which had been reported on by the Resident Engineer at the same time as he reported on the three above-mentioned—viz., the one starting from Wellington Railway Station, and rising on the southern slope of Kaiwara Valley to a saddle near Johnsonville, crossing the main road there, and running down the northern slope of the Porirua Valley, crossing the Porirua Harbour at Paramatta Point, and thence through Pukerua Bush to the sea-coast, thence at the base of the Cliffs to Paikakariki, a short distance west of which it reaches the level country. This line was found to be quite practicable; several trial lines were therefore made over it with the view of setting out the first portions for contract, and about 6 miles have accordingly been set out. It is expected that a portion of this, including the proposed reclamation for station purposes at Pipitea, will be ready for tender in a few weeks.

The preliminary survey on this line has been extended to about 33 miles from Wellington, and at the Foxton end the following surveys are in hand, viz.:—

Foxton to Horowhenua (10 miles 40 chains).—Of this survey, 8 miles 30 chains is completed and partly plotted; the remainder is in progress.

Palmerston–Horowhenua (26 miles 40 chains).—This survey has just been commenced. From explorations already made it is expected a very fair line will be obtained.

Architect's Branch.

The Report of the Architect on the work of this branch of the Public Works for the past year is forwarded herewith.

Map.

A new map of the North Island, showing the extent of railways to date, is attached to this report.

I have, &c.,
John Blackett,
Engineer in Charge, North Island.

The Hon. the Minister for Public Works.

Enclosure 1 in Appendix C.

ANNUAL REPORT ON PUBLIC BUILDINGS AND OTHER WORKS,

(ARCHITECT'S BRANCH), NORTH ISLAND, FOR THE YEAR ENDING 30TH JUNE, 1879.

SIR,—

I have the honor to report for your information upon the various buildings designed, added to, altered, or completed, during the financial year 1878–1879, in connection with the Architect's Branch of the Public Works Department.

Designs have been made for a number of new buildings for various departments of the public service; the chief among them being a new Supreme Courthouse and new Chief Post Office for Wellington. A contract has been let for the former building, and the work is to be completed on the 20th February, 1881.

The building is to be erected in brickwork, on concrete-pile foundations; the fronts stuccoed, and the roof covered with slates.

It has also been proposed that the Chief Post Office should be erected of similar materials; the working drawings for this have been prepared, and tenders may be invited whenever thought desirable.

For the Postal and Telegraph Departments, ten new buildings have either been erected, or are in course of erection at the following places: Pahi, Port Albert, Newton, Auckland (brick building), Ohaupo, Takapau, Woodville, Masterton, Raleigh, Patea, and Otaki. Increased accommodation has also been provided by adding to the offices at Russell, Whangarei, Drury, Hamilton, Kihikihi, Waipawa, Waipukurau, Opunaki, Hawera, Greatford, Foxton, and Featherston.

Police buildings have been erected at Port Albert, Papakura, Napier, Port Ahuriri, Hastings, Clive, New Plymouth, Whanganui, Waverley, Masterton, Marton, and Palmerston North; whilst many repairs and minor additions have been effected to various other offices for this department.

New courthouses have been erected at Papakura, Te Awamatu, Alexandra, and Feilding.

A contract for extensive additions to the Whau Lunatic Asylum, Auckland, has been let during the year, and the works are in a forward and satisfactory state. This is being carried out under the supervision of a private architect. A new wing, capable of accommodating fifty patients, has also been built at the Mount View Lunatic Asylum, Wellington; besides which, both water and gas services have been provided, and many urgently-required repairs executed to both buildings.

New offices at Napier for the Survey Department are in course of erection, and will be completed on 12th September, 1879.

Besides the above-named buildings, a sheep-dip and quarantine station have been erected at Kaiwara, Wellington; and a contract has also been let for a similar building at Onehunga, Auckland.

A great number of alterations, additions, repairs, &c., have been effected or are in progress to various buildings, the chief being additions to lodges to Government House and Parliament Buildings, additions to Government Printing Office, additions to Provincial Buildings, Wellington, additions to old Hospital, Wellington, gas service to Wellington Gaol, repairs to ministerial residences, &c.

In the early part of the year orders were received to erect buildings at various places in the South Island, and I prepared designs for the following: Courthouse, at Waimate, Post Office, &c., at Timaru, Courthouse at Christchurch, Courthouse at Hyde, Courthouse at Mataura, Courthouse at Alexandra, as also a Post Office at Dunedin North; fittings for public buildings at Christchurch, &c. It having been deemed advisable that the Engineer in Charge of the South Island should undertake all work south of Wellington, I handed them over to Mr. Blair, together with all papers relating thereto.

The total expenditure in the Architect's Branch, North Island, during the year has been,—

	£	s.	d.
Judicial	8,741	6	2
Postal and Telegraph	2,129	5	9
Customs	143	15	6
Offices for Public Departments	2,009	3	4
Lunatic Asylums	8,948	11	6
Hospitals	27,675	6	4
Miscellaneous	16,378	16	10
	£66,026	5	5

I have, &c.,
P. F. M. BURROWS,
Architect.

The Engineer in Charge, North Island.

Enclosure 2 in Appendix C.

TABLE of Lengths of Government Lines Authorized, Constructed, and Surveyed, up to 30th June, 1879.

NORTH ISLAND.

Appropriation.	Name of Line.	Mileage.	Sub-division.	Main Line.	Sidings.	Total.	State of Line.										
							Surveyed.	Under Formation.	Under Plate-laying	Opened.							
										Date.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79	Total.
		M. chs. lks.		M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.		M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.
Kawakawa ...	Kawakawa ...	8 28 0	Kawakawa No. 1 ...	2 68 0	0 30 0	3 18 0	...	...	...	22 Feb., 1877	...	...	...	2 68 0	...	...	2 68 0
			„ No. 2 ...	2 70 0	...	2 70 0	2 70 0	...	...	...	...	...	...	...	...	...	...
			„ No. 3 ...	2 50 0	0 30 0	3 0 0	2 50 0	Prelim.	...	...	...	...	...	...	...	...	...
Whangarei-Kamo	Whangarei-Kamo ...	8 0 0	Kamo ...	2 54 0	...	2 54 0	...	2 54 0	...	...	...	...	...	...	...	...	...
			Whangarei ...	5 26 0	0 60 0	6 6 0	5 26 0	...	...	...	...	...	...	...	...	...	...
Kaipara-Puniu ...	Kaipara-Auckland ...	41 36 0	Kaukapakapa Helensville	2 40 0	...	2 40 0	Estimated	...	...	...	...	...	...	...	...	...	...
			Helensville Terminus	0 43 0	0 70 0	1 33 0	...	...	0 43 0	...	...	...	...	...	...	...	...
			Kaipara-Riverhead	15 68 0	0 65 12	16 53 12	...	...	...	29 Oct., 1875	...	...	15 68 0	...	...	...	15 68 0
			Waitakerei ...	12 64 0	1 45 0	14 29 0	...	...	12 64 0	...	...	...	...	...	...	...	...
			Auckland ...	9 61 0	1 28 0	11 9 0	...	...	9 61 0	...	...	...	...	...	...	...	...
	Onehunga Branch ...	2 73 0	Onehunga Branch ...	2 53 0	1 32 26	4 5 26	...	...	...	24 Dec., 1873	2 53 0	...	...	...	...	...	2 53 0
			„ Wharf ...	0 20 0	0 20 0	0 40 0	...	...	...	28 Nov., 1878	...	...	...	...	...	0 20 0	0 20 0
	Waikato ...	102 16 0	Auckland Wharf ...	...	0 55 0	0 55 0	...	...	...	...	...	...	...	...	...	...	...
			Auckland-Mercer ...	42 54 0	5 51 54	48 25 54	...	...	...	20 May, 1875	...	42 54 0	...	...	...	...	42 54 0
			Mercer-Newcastle ...	31 2 0	3 50 0	34 52 0	...	...	...	13 Aug., 1877	...	...	...	...	31 2 0	...	31 2 0
			Newcastle-Hamilton	10 33 0	0 60 0	11 13 0	...	...	...	19 Dec., 1877	...	...	...	...	10 33 0	...	10 33 0
			Hamilton-Ohaupo ...	9 27 0	...	9 27 0	...	...	...	4 June, 1878	...	...	...	...	9 27 0	...	9 27 0
			Ohaupo-Te Awamutu	6 20 0	0 60 0	7 0 0	...	...	6 20 0	...	...	...	...	...	...	...	...
			Te Awamutu South	2 40 0	...	2 40 0	2 40 0	Prelim.	...	...	...	...	...	...	...	...	...
Hamilton Branch	Hamilton Branch ...	1 1 0	Hamilton Branch ...	1 1 0	0 65 0	1 66 0	...	...	1 1 0	...	...	...	...	...	...	...	...
Waikato-Thames	Waikato-Thames ...	61 0 0	Hamilton ...	30 44 0	...	30 44 0	30 44 0	...	...	...	...	...	...	...	...	...	...
			Thames ...	29 23 0	...	29 23 0	29 23 0	Prelim.	...	...	...	...	...	...	...	...	...
			Shortland ...	0 73 0	...	0 73 0	...	0 73 0	...	...	...	...	...	...	...	...	...
			Grahamstown ...	0 20 0	...	0 20 0	...	0 20 0	...	...	...	...	...	...	...	...	...
Napier-Manawatu	Napier-Manawatu ...	101 66 0	Spit ...	2 0 0	4 0 0	62 21 0	...	...	...	25 Nov., 1874	...	2 0 0	...	...	...	...	2 0 0
			Napier-Pakipaki (pt.)	12 0 0						12 Oct., 1874	...	12 0 0	...	...	...	...	12 0 0
			„ „	4 13 0						1 Jan., 1875	...	4 13 0	...	...	...	...	4 13 0
			Pakipaki (part) ...	10 10 0						17 Feb., 1876	...	...	10 10 0	...	...	...	10 10 0
			„ „ ...	3 26 0						28 Aug., 1876	...	...	...	3 26 0	...	...	3 26 0
			Waipawa ...	8 70 0						28 Aug., 1876	...	...	...	8 70 0	...	...	8 70 0
			Waipukurau ...	4 63 0						1 Sept., 1876	...	...	...	4 63 0	...	...	4 63 0
			Takapau ...	12 79 0						12 Mar., 1877	...	...	...	12 79 0	...	...	12 79 0
			Kopua ...	5 63 0	0 35 0	6 18 0	...	...	...	25 Jan., 1878	...	...	...	...	5 63 0	...	5 63 0
			Papatu ...	5 14 0	0 20 0	5 34 0	...	5 14 0	...	...	...	...	...	...	...	...	...
			Papatu-Woodville ...	29 48 0	...	29 48 0	29 48 0	Prelim.	...	...	...	...	...	...	...	...	...
			Woodville-Gorge ...	3 0 0	...	3 0 0	3 0 0	Prelim.	...	...	...	...	...	...	...	...	...
Waitara-Patea ...	Waitara-New Plymouth	11 13 0	Waitara-New Plymouth	11 13 0	...	11 13 0	...	...	...	14 Oct., 1875	...	...	11 13 0	...	...	...	11 13 0
	Waitara-Patea ...	57 69 0	Waiongona ...	8 60 0	0 24 0	9 4 0	...	...	...	30 Nov., 1877	...	...	...	...	8 60 0	...	8 60 0

			Ngatoro ...	4 60 0	0 30 0	5 10 0	...	...	4 60 0	...	...	...	...	...	...	...	...
			Waipuku ...	4 12 0	0 20 0	4 32 0	...	...	4 12 0	...	...	...	...	...	...	...	...
			Stratford ...	4 48 0	0 65 0	5 33 0	...	...	4 48 0	...	...	...	...	...	...	...	...
			Stratford-Normanby	14 40 0	...	14 40 0	14 40 0	Prelim.	...	...	...	...	...	...	...	...	...
			Normanby-Patea ...	17 63 0	...	17 63 0	17 63 0	Prelim.	...	...	...	...	...	...	...	...	...
Nil (unauthorized)	...	...	Carlyle Branch ...	3 26 0	...	3 26 0	3 26 0	Prelim.	...	...	...	...	...	...	...	...	...
Patea-Manawatu	Patea-Wanganui ...	39 21 0	Patea-Waverley ...	9 0 0	...	9 0 0	9 0 0	Prelim.	...	...	...	...	...	...	...	...	...
			Waverley-Waitotara	8 0 0	...	8 0 0	8 0 0	Prelim.	...	...	...	...	...	...	...	...	...
			Waitotara ...	12 70 0	0 65 0	13 55 0	...	...	12 70 0	...	...	...	...	...	...	...	...
			Kai Iwi ...	1 0 0	...	1 0 0	...	...	...	28 June, 1879	...	...	...	...	...	1 0 0	1 0 0
			Brunswick ...	8 31 0	0 50 0	9 1 0	...	...	...	28 June, 1879	...	...	...	...	...	8 31 0	8 31 0
	Wanganui-Manawatu	97 47 0	Wanganui Town Branch	2 71 50	0 38 0	3 29 50	...	...	...	21 Jan., 1878	...	...	...	...	2 71 50	...	2 71 50
			Wanganui Bridge ...	0 14 50	...	0 14 50	...	...	...	17 May, 1877	...	...	...	0 14 50	...	...	0 14 50
			Wanganui ...	10 0 0	0 67 0	10 67 0	...	...	...	17 May, 1877	...	...	...	10 0 0	...	...	10 0 0
			Wangaehu ...	10 18 0	0 60 0	10 78 0	...	...	...	17 May, 1877	...	...	...	10 18 0	...	...	10 18 0
			Marton (part) ...	9 10 0	0 40 0	14 23 0	...	...	...	4 Feb., 1878	...	...	...	...	9 10 0	...	9 10 0
			" " ...	4 53 0						20 May, 1878	...	...	...	...	4 53 0	...	4 53 0
			Halcombe (part) ...	6 27 0	1 22 0	11 21 0	...	...	...	20 May, 1878	...	...	...	...	6 27 0	...	6 27 0
			" " ...	3 52 0						22 April, 1878	...	...	...	...	3 52 0	...	3 52 0
			Oroua	5 1 0	1 19 0	10 20 0	...	...	...	20 Oct., 1876	...	...	...	5 1 0	...	...	5 1 0
			Junction	4 0 0						20 Oct., 1876	...	...	...	4 0 0	...	...	4 0 0
			Palmerston ...	4 72 0	0 9 0	5 1 0	...	...	...	20 Oct., 1876	...	...	...	4 72 0	...	...	4 72 0
			Foxton Branch ...	24 58 0	1 54 0	26 32 0	...	...	...	27 April, 1876	...	...	24 58 0	...	...	...	24 58 0
			Bunnythorpe-Gorge	11 70 0	...	11 70 0	11 70 0	Prelim.	...	...	...	...	...	...	...	...	...
Nil (unauthorized)	Bull's Branch ...	3 79 0	Bull's Branch ...	3 79 0	...	3 79 0	3 79 0	Prelim.	...	...	...	...	...	...	...	...	...
Wellington-Woodville	Wellington-Woodville	118 67 0	Thorndon Reclamat'n	0 52 0	...	0 52 0	...	...	0 52 0	...	...	...	...	...	...	...	...
			Wellington ...	8 9 0	1 51 75	20 60 75	...	...	...	14 April, 1874	8 9 0	...	...	...	...	...	8 9 0
			Hutt	5 75 0						15 Dec., 1875	...	...	5 75 0	...	...	...	5 75 0
			River (part) ...	2 5 0						15 Dec., 1875	...	...	2 5 0	...	...	...	2 5 0
			" " ...	3 0 0						1 Feb., 1876	...	...	3 0 0	...	...	...	3 0 0
			Mungaroa (part) ...	0 35 0	0 20 0	8 18 0	...	...	...	1 Feb., 1876	...	...	0 35 0	...	...	...	0 35 0
			" " ...	7 43 0						1 Jan., 1878	...	...	...	...	7 43 0	...	7 43 0
			Pakuratahi ...	6 50 0	...	6 50 0	...	...	...	12 Oct., 1878	...	...	...	...	...	6 50 0	6 50 0
			Summit	1 12 0	0 20 0	1 32 0	...	...	...	12 Oct., 1878	...	...	...	...	...	1 12 0	1 12 0
			Incline	8 78 0	0 40 0	9 38 0	...	...	...	12 Oct., 1878	...	...	...	...	...	8 78 0	8 78 0
			Featherston Station	1 12 0	0 20 0	1 32 0	...	...	...	12 Oct., 1878	...	...	...	...	...	1 12 0	1 12 0
			Carterton ...	20 41 0	1 40 0	22 1 0	...	...	20 41 0	...	...	...	...	...	...	...	...
			Masterton - Ruamahanga	5 55 0	...	5 55 0	5 55 0	Prelim.	...	...	...	...	...	...	...	...	...
			Ruamahanga-Woodville	47 0 0	...	47 0 0	47 0 0	Prelim.	...	...	...	...	...	...	...	...	...
	Greytown Branch ...	3 7 0	Greytown Branch ...	3 7 0	...	3 7 0	3 7 0	...	...	...	...	...	...	...	...	...	...
Wellington-Foxton	Wellington-Foxton	67 40 0	Wellington-Johnsonville	6 40 0	...	6 40 0	6 40 0	...	...	...	...	...	...	...	...	...	...
			Johnsonville - Waikanae	29 0 0	...	29 0 0	29 0 0	Prelim.	...	...	...	...	...	...	...	...	...
			Waikanae-Foxton ...	32 0 0	...	32 0 0	32 0 0	Prelim.	...	...	...	...	...	...	...	...	...
Te Awamutu-New Plymouth	Te Awamutu - New Plymouth	125 0 0	Te Awamutu - New Plymouth	125 0 0	...	125 0 0	Estimated	...	...	...	...	...	...	...	...	...	...
Totals ...	...	851 3 0	...	851 3 0	39 11 67	890 14 67	297 41 0	9 1 0	77 72 0	...	10 62 0	60 67 0	73 24 0	67 11 50	99 41 50	27 43 0	339 9 0

APPENDIX D.

ANNUAL REPORT ON ROADS IN THE NORTH ISLAND, INCLUDING OTHER MISCELLANEOUS WORKS, BY THE ENGINEER IN CHARGE.

The Engineer in Charge, North Island, to the Hon. the Minister for Public Works.

Sir,— Public Works Office, Wellington, 30th June, 1879.

I have the honor to forward annual report on roads, including other miscellaneous works, for the year ending 31st May, 1879.

AUCKLAND.

Great South Road.—The portion of this in charge of the Public Works Department extends from the boundary of the Borough of Auckland to Whangamarino Bridge, and includes also the road from Mount St. John to the Borough of Onehunga.

The ordinary maintenance-work, and the removal of seven small rocky projections to give greater width, have been performed. A bridge at Slippery Creek has been carried away in a flood. It is now nearly re-erected on a higher level and with a wider waterway.

The Whangamarino Bridge has been renewed during the year, in a substantial manner, by the Waikato County Council, Government paying one-half of the cost.

Panmure Bridge.—The repairs to this work were let by contract, but on opening up the work many more defective points were discovered than were before visible, which will increase the time and cost necessary for its restoration.

Pukekohe and Waiuku Road.—The repairs on this as well as on the road leading from Pukekohe to the Great South Road, at Bombay, have been extended, mostly by piecework, under careful supervision, the metalling for the purpose being obtained from Auckland. The work performed was as follows: Two miles forming, 24 feet wide; boxing and clearing logs; 1¼ miles of metalling, 12 feet wide and 9 inches deep; 2¼ miles drained on upper side, with cross and outfall drains. The bridge-work for Waitangi Stream is all prepared, and in readiness for erection when the cutting is more advanced.

Pukekohe and Bombay Road.—The works have comprised clearing bush, stones and logs, stumping and forming; also five stone culverts and fencing, the latter being done by the proprietors along the road at a fixed rate.

Papakura and Wairoa Road.—One mile 5 chains have been cut and formed, the principal cutting being in Kirikiri Hill, where a great improvement has been made; 1 mile 40 chains have been metalled, the total length over which work extends being 1 mile 70 chains, all completed.

Hunua Road.—The work in this district consisted of formation only, over very mountainous ground, some of the natural grades being 1 in 4½. One piece of 69 chains has been cut and formed, and a second contract has been arranged for.

Cambridge and Taupo Road.—All the Constabulary have been withdrawn from this work. It is now passable for wheeled vehicles for 13 miles from its commencement, or for 18 miles from Cambridge. Formation has been executed in a regular manner for 7 miles, and, in places beyond that, to within 30 chains of the Waipa Bridge, attention having been given to the worst spots. At the Waipa River 30 chains of approaches have been cut, including a good deal of rock-cutting, and the bridge has been erected. It consists of two spans of 25 feet and two of 20 feet; total, 90 feet.

To complete the road to Waipa there will be required two 4-feet culverts, two 3-feet, and one 2-feet; also about 6 miles of light formation.

Waiuku Channel Improvement.—This work has been completed in a satisfactory manner, but the maintenance term has not yet expired.

Matakana Wharves.—The one at the sandspit is about half completed; the one at the upper landing is not begun. Contract time expired on the 7th May.

Mangapai Wharf.—The contract was signed about a month ago.

Matakohe Bridge.—The contract was signed about a month ago.

Hamilton Borough Bridge.—The contractors have all the piers piled and the concrete abutment finished. Two piers are erected, and the third waiting for timber.

BAY OF PLENTY.

Tauranga-Taupo Road.—The ordinary maintenance-work has been carried on during the year. The culverts and bridges demand great attention, and the removal of some of the latter is in hand. The part of the road through the forest will demand a considerable amount of work for repairs, and general re-forming and widening, as it is only metalled in places, and the surface cuts up very quickly in wet weather.

Rotorua–Tarawera Road.—This road has been maintained in good order. The rock-work mentioned in last year's report was only finished in May.

Wairoa–Tarawera Road.—Eighty-five chains of road have been laid off on this line.

Opotiki–Ohiwa Road: Waioeka Bridges.—The smaller bridge, 120 feet long, has been completed. Four thousand cubic yards of earthwork have been placed in the embankment between the bridges. The Otara Bridge is progressing favourably under contract.

Whakatane–Te Teko Road.—Thirty chains of embankment, containing 3,500 cubic yards, have been formed, and 2,700 superficial feet of timber drawn for bridges, &c.

Tauranga–East Cape Road.—Twelve miles of this road have been maintained during the year.

TAUPO–ATIAMURI; NAPIER–TAUPO.

Kaiwhaka–Runanga.—This section has been kept in fair repair by a party of the Armed Constabulary, about twenty in number.

Runanga–Atiamuri.—This section, as a rule, requires very little attention, and has been kept in good order by occasional labour.

Taupo–Hot Springs.—This piece of road was completed last July, and has been in good order since.

The work on these roads has consisted mainly of ordinary maintenance-works and the repair of sundry bridges, which require considerable attention.

EAST COAST.

The only road-work performed during the year has been the felling, clearing, and forming about 12 chains of road, forming an approach to the Makatoko Railway Station from the Norsewood Road; the felling being 1 chain wide and formation 16 feet. The metalling is not yet done.

Waipaoa Cart Bridge.—This work has been completed, as well as the protection work described as being necessary last year.

Patutahi Drain.—1 mile 70 chains in length. This work has been let by contract, and is now nearly finished.

MANAWATU DISTRICT.

Manawatu Gorge Road.—This and the bridge have been maintained in good order during the year.

Kairanga Survey Block, near Palmerston North.—Fourteen miles of road have been put under contract for felling and clearing the bush.

WELLINGTON DISTRICT.

Reclaimed Land, Wellington.—This contract has been completed during the year.

I have, &c.,
JOHN BLACKETT,
Engineer in Charge, North Island.

The Hon. the Minister for Public Works.

APPENDIX E.

ANNUAL REPORT ON THE PUBLIC WORKS OF THE MIDDLE ISLAND.

The ENGINEER in CHARGE to the Hon. the MINISTER for PUBLIC WORKS.

SIR,— Public Works Office, Dunedin, 1st July, 1879.

I have the honor to submit the following report on the various works completed and in progress in the Middle Island during the past financial year:—

In order to facilitate reference I propose adhering generally to the arrangement of the subjects and method of giving information adopted in former reports, and under the following heads—1st, railways; 2nd, roads and bridges; 3rd, water-races; 4th, miscellaneous works; 5th, buildings; 6th, surveys; 7th, general remarks.

RAILWAYS.

GENERAL.

As the past year has seen the completion of the original public works scheme in the Middle Island I intended in this report to have given a full description of the lines and works embraced by it, and also to have considered the objects and principles of the scheme itself, and seen how far they have worked out and answered. A press of other work has, however, prevented me from carrying out my intentions in this matter, so I can only set myself the task for a future occasion. In the meantime I would submit to the Government the desirability of seeing that the present railways are only required to do the work for which they were intended, and that generally the same class of line be adhered to in the new railways.

In order that the whole country should participate in the benefits of railway communication it was judiciously decided that the lines should be made as lightly and cheaply as possible, consistent with the requirements of the traffic. Even now, when every one's ideas of the traffic are extended, I adhere to my original opinion, that the railways as originally designed will meet all the reasonable requirements of the traffic for fifteen or twenty years. They will not, however, do this, if an attempt is made to satisfy the unreasonable demands of the public for high speed and heavy loads.

I would also like to point out that the New Zealand railways are not so very much inferior to those of many other countries. They cannot of course be compared with the first-class English and Victorian lines, but they are equal to most of the American and many of the Continental railways. The ruling gradients and curves on the main lines in the Middle Island are easier than on the latter, and even in England there are occasional gradients and curves worse than those we have here. Comparisons are frequently made between the 1 in 50 gradients in Otago and perfectly level lines: it is pointed out that the same locomotive will pull six times as much on the level as it does on a gradient of 1 in 50; but these are not correct premises to start from. A perfectly level railway is like a mathematical line—something to reason from, but nothing more; it is never met in practice. Of late years the limit of steepness that seems to be adopted on first-class English lines is 1 in 70. The difference between this and the 1 in 50 of Otago is simply that five locomotives do the work of six. I think that with our sparse population we may be well satisfied in thus getting five-sixths of what is required on the railways that connect the main centres of population in England.

There is also considerable misapprehension as to the speed of railway trains. It is popularly supposed that 45 or 50 miles an hour is a common rate. There is no ground for this belief. There are only five or six trains in the world that attain anything like those speeds. Nearly all the American and perhaps three-fourths of the European traffic is carried at much the same speed as the ordinary New Zealand trains, although the former lines are on the broad gauge and all their works are correspondingly heavier.

There are, of course, many minor improvements that can be introduced on the new railways, chiefly in the direction of making the works somewhat heavier, more particularly the permanent way; but I think the general principle of light lines should be confirmed.

The following table shows the lengths of railways authorized and open, together with the expenditure and liabilities to and on the 30th June, 1879, inclusive of the lines taken over from the Provincial Governments of Canterbury and Otago:—

Name of Railway.	Total Length authorized.	Open for Traffic.	Expenditure to 30th June, 1879.	Liabilities on 30th June, 1879.
Authorized by "The Public Works Act, 1876:"—	M. C.	M. C.	£ s. d.	£ s. d.
Nelson–Foxhill	20 11	19 10	127,665 11 2	3,037 17 1
Picton–Blenheim	18 32	17 10	163,308 15 11	8,954 2 8
Brunner–Greymouth	7 50	7 50	190,145 2 7	9,071 11 1
Westport–Ngakawau	19 63	19 19	205,909 8 10	6,669 0 3
Amberley–Waitaki	316 30	309 65	1,545,254 11 2	125,358 18 5
Waitaki–Bluff and Branches	339 53	338 31	2,249,634 6 6	205,232 3 2
Winton–Kingston	68 35	68 35	238,916 19 4	773 7 9
Western Railways	37 37	17 77	56,615 15 9	38,266 14 5
Total	827 71	797 57	4,777,450 11 3	397,363 14 10
Authorized by "The Immigration and Public Works Appropriation Act, 1878," Section 17:—	Approximate.			
Otago Central—Dunedin to Albert Town, Lake Wanaka	160	...	1,939 18 3	50,059 1 3
Amberley to Brunnerton	110	...	59 10 5	1,082 5 0
Greymouth to Hokitika	26	...	553 1 2	9,871 19 6
Canterbury Interior Main Line, Oxford to Temuka	85	...	...	8,106 16 1
Main Line to Upper Ashburton	20	...	...	9,879 2 6
Opawa Branch Extension	20	...	135 12 0	7,983 4 4
Waipahi to Heriot Burn	25	...	...	250 0 0
Edendale to Toitois	26	...	133 10 4	9,835 11 10
Otautau to Nightcaps	16	...	45 11 3	4,968 19 6
Clutha to Catlin's River	18	...	333 11 2	5,298 10 10
Waimea to Switzers	15	...	...	...
Lumsden to Mararoa	35	...	42 3 10	75 8 2
Palmerston to Waihemo	12	...	1,490 14 3	4,642 7 1
Oamaru to Livingston	16	...	107 16 0	1,092 4 0
Main Line to Shag Point	1 67	1 67	9 19 4	...
Amberley to Cook Strait	145	...	1,096 13 7	28,576 9 9
Little River and Akaroa	41	...	166 13 4	495 0 0
Totals	771 67	1 67	6,114 14 11	142,216 19 10
General Totals	1,599 58	799 44	4,783,565 6 2	539,580 14 8

The following table shows the rate at which the several railways in the Middle Island have been completed during each financial year, further details being given in Table A hereto appended:—

——	Miles of Railway opened during Financial Year							Total.
	Up to 30th June, 1872.	1872–73.	1873–74.	1874–75.	1875–76.	1876–77.	1877–78.	1878–79.	
	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.	M. C.
Middle Island ...	58 51	22 42	11 11	127 43	243 64	184 4	94 13	58 20	799 44

NELSON–FOXHILL RAILWAY.

Port Line.—The contract for the formation of the extension of this line, from its present terminus to the Port, was completed in April, and another contract, for the platelaying, has just been let. The whole of the works are expected to be finished and the line ready for opening about the end of September.

Harbour Works.—These works are now so intimately connected with the railway that they may be considered part of it. They are all completed, except the connection with the railway, which is included in the platelaying contract.

Extension of Railway to Bellgrove.—A contract for the extension of the Nelson–Foxhill Railway from its present inland terminus at Foxhill, to Bellgrove, has just been let to Mr. Peter Dey for £8,159. The length of the section is three miles. The works include a large bridge over the Wai-iti River.

PICTON–BLENHEIM RAILWAY.

A contract was let in January for the extension of this line from its present inland terminus at Opawa, to Blenheim, a distance of 1¼ miles. The works, which are somewhat heavy, include 580 feet of bridging over the Opawa River. The contract time expires in April next, but the works will probably be finished before then.

WESTPORT–NGAKAWAU RAILWAY.

General.—With the exception of the finishing of the Westport Station there have been no construction works in progress during the past year. The railway is now complete, except half a mile at the Ngakawau end, which has been postponed from year to year pending the commencement of mining operations by the Albion Coal Company.

Buller Stop-Bank.—Instead of constructing a heavy and expensive bank to stop the encroachment of the Buller, as was originally intended, an experiment has been tried during the year of cutting a relief channel on the south side of the river. So far as can be judged at present, it is likely to be a success. If the anticipations regarding it are realized the whole work will be done for £8,000, instead of the £30,000 originally estimated. Under any circumstance, the relief channel is well worth what it will cost.

GREYMOUTH–BRUNNERTON RAILWAY.

Stations.—The only works done on the main line during the past year are the erection of various station buildings and the improvement of the stations generally.

Harbour Works.—The principal works done during the year just ended consist of the placing of 22,600 tons of rock and 47,900 tons of shingle in the training-wall and reclamation. Until June, 1878, this work was done by contract, at 4s. 2d. per ton for rock, and 1s. 8d. per ton for shingle; but since that date it has been done by day labour and piecework, at a cost of 3s. 8d. per ton for rock, and 11¼d. per ton for shingle. In the case of the shingle, this result is due entirely to the employment of a small dredge, which serves the double purpose of keeping deep-water berths at the wharf, and reducing the cost of the filling. The dredge, which was built by Messrs. Kincaid, McQueen, and Co., of Dunedin, at a cost of £2,500, is working most satisfactorily. It does considerably more work than what was stipulated for in the contract with the builders.

Hitherto the annual vote for the Greymouth harbour works has been too small to admit of the works being carried out to the greatest advantage and in the most economical manner. There is necessarily a constant scour at the end of the training-wall; consequently it must be pushed on rapidly, otherwise a great quantity of rock-filling will be absorbed uselessly; and, again, under the present arrangement the locomotive and other plant are not fully employed. For these reasons, I think the amount appropriated yearly should be £30,000 or £40,000, instead of, as hitherto, half those amounts.

So far as can be judged from their present condition, the Greymouth harbour works are going to fulfil the purposes for which they are intended.

AMBERLEY–WAITAKI RAILWAY, WITH BRANCHES.

Main Line.—With the exception of the erection of workshops, and alterations and extensions of stations, there have been no new construction works in progress on the main line during the past year.

Malvern Branch Extension.—A contract for the extension of the Malvern branch line to the Springfield Coal Mine, 6½ miles, was let in April, to be finished in four months. The work is somewhat behind time, but not to a serious extent. With the exception of the last half-mile, where there is some little cutting, the works are particularly light. The gradients and curves on the line are easy. The only steep gradient is leaving the mine, where there is a short piece of 1 in 50: it is, however, in favour of the heavy traffic, so can scarcely be considered an objection.

WAITAKI–INVERCARGILL RAILWAY, AND BRANCHES.

General.—At the end of the last financial year two sections of this line remained unfinished—9 miles between Waikouaiti and Palmerston, and 20½ between Balclutha and Clinton. The former was opened on the 6th September, and the latter on the 22nd January last; railway communication was thus completed between Amberley and the Bluff and Kingston.

Main Line.—In addition to the completion of the sections above referred to, and numerous minor works at stations, contracts are in progress for large works at Dunedin and Port Chalmers. At Dunedin they consist chiefly of the reclamation of 42 acres for a new station, and the extension of present siding and shed accommodation. The works at Port Chalmers, which were much needed, comprise a new station and wharf. The station is being entirely remodelled; and the wharf is an instalment of a general scheme intended to meet the requirements of the port for many years to come. The contract now let includes a double wharf 66 feet wide, in line with George Street, and a single cross-piece at the inner end connecting it with the Bowen Pier. Altogether provision is made for 1,650 feet berthage for vessels. The main portion is 700 feet long, but it can be extended to almost any length, as required. The wharf contract was only let in May, but the works have made a satisfactory commencement.

Awamoko Branch.—The only work in progress during the past year is the Marewhenua Bridge, which is now all but completed. The works have been carried out in a very satisfactory manner.

Green Island Branch Extension.—This line, originally constructed for coal traffic by the Provincial Government, has been extended to the Brighton Road, a distance of half a mile. It is now intended to convey passengers as well. With the exception of the station arrangements the works are practically finished.

Tapanui Branch.—This contract embraces all the works required in the completion of the railway, including the supply of permanent-way materials. The local works are in a forward state, and the rails and fastenings have arrived. The formation through the lower Pomahaka Gorge is finished, also a small tunnel that occurs at this place. Plate-laying on the first portion will commence immediately. Altogether, I think the works will be completed in contract time.

Winton-Kingston Railway.

The last section of this railway from Fairlight to Kingston, a distance of 9 miles, was opened on the 10th July, 1878, and the few works that remained unfinished at the end of last year have now been completed. They comprised the pier at Kingston and some minor station works.

Western Railways.

Riverton Branch.—After innumerable delays this line was opened for traffic on the 9th June. It is laid with the 28-lb. rails originally imported for this purpose by the Provincial Government. They are altogether too weak for anything but the lightest traffic carried at the lowest speed. It would be advisable to make arrangements for replacing them with 40-lb. rails at the earliest convenience.

Otautau Branch.—The time for the completion of this line expired on the 26th May, but it will still take about three months to finish. The earthwork and bridging are done, and also 7½ miles of platelaying; but the ballasting and station works are behind time. The contractor has pushed on the works vigorously in the face of considerable difficulties; and, as the original time was altogether too short, he is entitled to some little consideration.

Riverton-Orepuki Branch.—A contract for the completion of this line has just been entered into It is one of the branch railways commenced by the Provincial Government of Otago.

Rolling-stock.

Large quantities of rolling-stock of all kinds have arrived in the colony during the past year, and further orders are being fulfilled. I believe these will meet the requirements of the present lines for some years.

Railways authorized in 1878.

General.—Your instructions to proceed with the works on these lines were not received till December; but since that time surveys have been made and contracts prepared for twenty-one sections. Contracts are entered into for fifteen of these, and four are being done by piecework; the remaining two are now advertised for tender. As the annual list of contracts gives the necessary details, I need not repeat them here. The statements attached to the general plan sent with each contract give a description of the lines and works. From these it will be seen that the new lines are in every respect equal to, if not better than, the present ones. In no case has the ruling gradient been made steeper than 1 in 50.

The time that has elapsed since the great majority of the contracts were entered into is so short that little work has yet been done on the new lines, the following being the only exceptions worth noting:—

Hokitika-Greymouth Railway.—Hampden Street Contract and Paroa (piecework) Section nearly finished. Greymouth Contract progressing favourably.

Amberley-Cook Strait Railway—Waipara Contract.—The length of this section is 7 miles, out of which the formation on 3½ miles—the lightest half—is finished. The other works are all in progress, though somewhat behindhand.

Shag Point Branch.—Although included among the Government railways, this is in reality a private one. It is a mineral line, belonging to the Shag Point Coal Company. It connects the coal mine with the Main Trunk Railway, its length being 1¾ miles. The works have been finished under the direction of the Company's engineer in a very satisfactory manner. The line was opened for traffic in June.

Palmerston-Waihemo Branch.—Although only begun in May, good progress has been made with the works on this line.

Clutha-Catlin's River Branch.—Exactly in the same position as the preceding one.

Otago Central Railway, Wingatui Contract.—A vigorous commencement has been made with the works, a large number of men being employed.

Edendale-Toitois Branch, Wyndham Contract.—About 6,000 cubic yards of earthwork are done, and large quantities of materials are provided.

ROADS AND BRIDGES.

Nelson District.

Motueka Bridge and Approaches.—These works were finished early in the year.

Road, Tophouse to Tarndale.—This work is now almost completed. It consisted of repairing an old road or track, and making diversions extending over a distance of twenty miles.

Wairoa Bridge.—Progressing favourably; should be finished about the end of September.

Westland District.

Road, Bowen to Okarito.—This road is now finished and open for traffic, the last eleven miles having been done during the past year.

Haast Pass Track.—A section of this track at the Haast Pass end, six and a half miles long, is in course of construction by piecework. It is expected to be finished in about a month.

Ohika Bridge.—It was found impossible to build a bridge over the Ohika River at a level to clear the highest flood for anything like the sum voted, consequently a much cheaper bridge is being constructed at a lower level. It will be covered in extreme floods, but this is not a serious objection, for other portions of the road are equally impassable under those circumstances. The bridge has been specially designed to meet the peculiarities of the situation. Its cost will be exactly one-fourth of that of a bridge at the high level.

Bridge over Grey River at Junction.—This bridge and the approaches were finished and open for traffic in April. It has been necessary to incur a large amount for extras in lengthening the bridge and strengthening the piers, in consequence of the river shifting its bed. This result was to a certain extent anticipated, for the site, which was originally selected by the local authorities, is by no means a suitable one, the permanency of the river bed being very uncertain.

Bridge over Ahaura River.—The contract time for this work expired in March, but considerable difficulties have been experienced in driving the piles; consequently it will not be finished before September.

Greymouth to Cobden.—The southern approach and the wire cables for this bridge are made, but further progress has been suspended, pending a reconsideration of the whole question of building a bridge at this place, and whether it is to be a foot, horse, or dray bridge.

Teremakau Bridge.—This work also should have been completed in March last, but the almost continuous state of flood in the river during spring and summer retarded its progress very much; it is, however, expected to be finished next month. The works have been carried out in a very satisfactory manner.

Bridge over Hokitika River.—This work is exactly in the same position as the one just described, only that the delay has occurred from want of timber. The contractor elected to substitute kauri for local timber, and there was a difficulty in getting vessels to take it to Hokitika. The advantage of getting the timber in long lengths compensates for the delay in completing the work.

Christchurch to Hokitika Road.

The estimate for maintenance last year, which was larger than the actual vote, has been barely sufficient to keep the road open for traffic. It was not sufficient to make certain deviations in the Otira and Bealey Valleys that are very much required. If the Government is going to continue to maintain this road I would strongly recommend the bridging of some of the rivers, and the construction of such deviations as will remove the road from the influence of ordinary floods. At present a comparatively small flood causes a complete interruption to the traffic. The construction of the works mentioned, which will probably cost altogether about £40,000 or £50,000, would reduce the maintenance to a minimum, but a much less expenditure would make a considerable saving and be a great boon to the public generally.

Canterbury District.

Hagley Park Road.—Up till May these roads were maintained by Government, but they were then handed over to the Selwyn County Council.

Hurunui-Greta Bridge.—The bridge was finished in April, but the approaches are not yet made.

WATER-RACES.

In accordance with the usual custom I enclose Mr. O'Connor's report on the West Coast Water-races in full. It gives a full and clear description of the various works executed and in progress, so it is unnecessary for me to allude to them further.

MISCELLANEOUS WORKS.

The only works of importance under this head for the past year have been executed in the Otago District. They comprise the temporary protection of the banks of the Clutha River at Balclutha, the erection of small jetties at the Quarantine Island and Catlin's River, the building of the dredge for Greymouth already referred to, and the manufacture of sundry articles of railway plant. All the works are complete or in progress. The Clutha protective works have answered admirably.

BUILDINGS.

The total expenditure on public buildings in the Middle Island during the past financial year is as follows:—

	£	s.	d.
Customs	327	8	9
Judicial	11,751	9	7
Postal and Telegraph...	3,232	3	6
Offices for Public Departments	13,753	16	4
Lunatic Asylums	4,206	0	8
Hospitals	3,127	12	3
Miscellaneous	15,727	6	10
Total	£52,125	17	11

The state of the various works is shown in the following table:—

Nelson District—

Courthouse and Lock-up, Motueka	Finished.
Stable at police station, and repairs to old building at Collingwood	Finished.
Police Station and Lock-up at the Port, Nelson	Work in progress.
Sheep-dip and quarantine yards at the Port, Nelson	Drawings being prepared.
Government Buildings, Nelson, minor repairs	Finished.
Nelson Gaol, concrete wall, and new carpenters' shed	Finished.
Lunatic Asylum, Nelson, small improvements	Finished.
Courthouse and Police Station at Picton	Work in progress.
Lock-up at Blenheim	Work in progress.

Westland District—

Survey Office, Reefton	Finished.
Post and Telegraph Office, Reefton	Finished.
Police Buildings, Greymouth	Finished.
Police Buildings, Stafford	Finished.
Police Buildings, Ross	Finished.
Residence for Inspector of Police, Hokitika	Finished.
Police Buildings, Kanieri	Finished.
Fencing Post and Telegraph Office, Reefton	Finished.
Residence for Warden's Clerk, Ahaura	Finished.
Police Station, Reefton	Finished.
Courthouse at Greymouth	Work in progress.
Lunatic Asylum, Hokitika	Work in progress.
Post and Telegraph Office at Kumara	Work in progress.
Lineman's Station, Longford	Finished.
Police Station, Westport, repairs	Finished.
Police Station, Charleston	Finished.
Courthouse, Westport, repairs	Finished.
Customhouse, Westport, repairs	Finished.
Cottages, Orawaiti Road, repairs	Finished.
Government Buildings, Westport	Finished.
Police Station, Lyell	Finished.
Courthouse, Charleston	Finished.
Customs Transit Shed, Westport	Finished.
Gravelling round Government Buildings, Westport	Finished.

Christchurch District—

Government Buildings, Christchurch	Finished.
Lyttelton Gaol, additions	Work in progress.
Additions and repairs, Christchurch Hospital	Work in progress.
Mortuary at Police Station, Christchurch	Work in progress.
Courthouse at Waimate	Work in progress.
Courthouse at Christchurch	Work in progress.
Government Buildings at Timaru	Tenders called for.
Repairs, Sunnyside Asylum	Work in progress.
New wing, Sunnyside Asylum	Work in progress.
Lock-up at Addington and Sydenham	Work in progress.
Lock-up at Rangiora, additions	Work in progress.
Lock-up at Ashburton, additions	Work in progress.
Removal of Police Barracks, Stables, &c., Bealey	Work in progress.
Post and Telegraph Office, Leeston	Work in progress.
Fencing Courthouse, Timaru	Work in progress.
Courthouse, Akaroa	Work in progress.
Post and Telegraph Office, Devauchelle's Bay	Work in progress.

Dunedin District—

Alterations to Post Office and Supreme Court, Dunedin	Finished.
Lock-up at Port Chalmers	Finished.
Post and Telegraph Office, North Dunedin	Finished.
Ministers' and Registrar's Office, Dunedin	Finished.
Bush-clearing, Seacliff Asylum Reserve	Finished.
Courthouse at Hyde	Finished.
Post and Telegraph Office at Duntroon	Finished.
Additions to Telegraph Office at Oamaru	Finished.
Temporary Lunatic Asylum, Seacliff	Work in progress.
Fencing Police Reserve, Cromwell	Work in progress.
Fencing Police Reserve, Clyde	Work in progress.
Post and Telegraph Office, Catlin's River	Work in progress.
Fittings for Courthouse at Hyde	Work in progress.
Courthouse at Roxburgh	Work in progress.
Courthouse at Tapanui	Work in progress.
Fencing Courthouse at Alexandra	Work in progress.
Permanent Lunatic Asylum at Seacliffe	Tenders called for.

Invercargill District—

Police Station and Lock-up, Lumsden	...	... Work in progress.
Home for Natives at the Bluff	...	... Tenders called for.
Strong Room, Invercargill Survey Office	...	... Work in progress.
Customhouse at Bluff	...	... Finished.
Repairs to Customhouse at Riverton	...	... Finished.
Courthouse, Invercargill	...	... Drawings being prepared.
Post and Telegraph Office, Gore	...	... Work in progress.
Post and Telegraph Office, Wyndham	...	... Work in progress.

The Courthouses at Christchurch, Waimate, and Invercargill, the Lunatic Asylums in Canterbury and Otago, and the Public Offices at Timaru were designed by local architects, and are being carried out by the officers of this department. In all other cases the latter are doing the work from the beginning.

Beyond the information given in the above statement there is nothing special to notice. The works generally are progressing favourably.

SURVEYS.

General.—The time at our disposal being so short it was utterly impossible to make detailed surveys of the whole of each line before the first contract was let. A reconnaissance survey was however made, and in every case where I was not already intimately acquainted with the country, I examined the line personally. I am, therefore, tolerably confident that the sections in hand are properly located.

Working Surveys.—The more important working surveys now in progress are the continuation of the Nelson–Foxhill line towards the Buller Valley, the line from Amberley to the Waiau Plain through the Weka Pass, and the Otago Central.

The extension of the Foxhill line is over very difficult country, requiring careful exploration. The only chance of getting a 1-in-50 gradient seems to be by the Blue Glen and Tophouse route.

The survey of the Amberley extension is made through the Weka Pass, the most difficult portion. A gradient of 1 in 50, with 8-chain curves, has been got without very heavy works.

A working survey has been made of 71 miles of the Otago Central: 25 miles between the commencement of the line and the Strath Taieri Plain, and 46 from the Maniototo Plain to Clyde. I am glad to say that the works are turning out at least as light as ever was expected, and that the minimum curves and gradients are easier than on the main line.

Reconnaissance Surveys.—I personally made reconnaissance surveys and reports on the Canterbury Interior Main line, the Oamaru–Livingston Branch, and the proposed railways in the northern districts of the Middle Island. The report on the latter, with a map of the routes, is forwarded herewith. The subject embraces one of the most important railway schemes that has ever come before the country. I hope the report will be of some little service in bringing the question to a satisfactory conclusion.

GENERAL REMARKS.

The work of the department for the last six or seven months has been particularly heavy; the time given to get out the new contracts was so short that every one's energies had to be taxed to the utmost. During last year the works in progress and contracted for in the Middle Island comprise about 160 regular contracts, 80 task-work contracts, and a great number of piecework jobs. There was also a large amount of survey work. I have much pleasure in testifying to the hearty manner in which the officers of the department met the extra work imposed on them, and the zeal and ability they at all times display in performing their duties.

The usual map of the Middle Island, showing the state of the works and surveys, is hereto appended.

I have, &c.,
W. N. Blair,
Engineer in Charge, Middle Island.

Enclosure 1 in Appendix E.

WESTLAND DISTRICT.—ANNUAL REPORT ON WATER-RACES.

Sir,— District Engineer's Office, Hokitika, 31st May, 1879.

I have the honor to report on the water-races in this district, with which the General Government are connected. They are as follows:—

Nelson South-West Gold Fields—
- Four-Mile Water-race, Charleston District.
- Nelson Creek Water-race, Grey Valley District.

Westland Gold Fields—
- New River Water-race, Marsden District.
- Hibernian Water-race. Marsden District.
- Hohonu Water-race, Greenstone District.
- Waimea Water-race, Waimea District.
- Waimea Extension to Kumara, Kumara District.
- Kanieri Lake Water-race, Kanieri District.
- Mikonui Water-race, Totara District.

Four-Mile Water-race.—The project comprehended under the title "Four Mile Water-race," as set forth in previous annual reports, comprised—(1.) The purchase of the Argyle Water-race Company's reservoir, service-dams, and water-races (except only their race known as Race No. 2) at

Charleston; (2) the improvement and enlargement of said reservoir and works; and (3) the construction of a further supply race from the Four-Mile River to the said reservoir, with headworks at Four-Mile River.

Of this project the first item has already been carried out, and surveys and working plans and specifications for the carrying out of the other two items are just now completed.

In the carrying out of the first item—namely, the purchase from the Argyle Company of their property above mentioned—the following have come into the possession of the Government: The main reservoir, commonly known as Haines's Dam, supply races to same to extent of 2 miles 63 chains, and three small reservoirs, and some small dams in creeks in connection therewith; a main-service race, having a length of 3 miles 61 chains, and branch-service races to extent of 1 mile 43 chains, together with seven small service dams belonging thereto. The amount paid for all these was £3,000, and a deed of transfer was duly executed accordingly on the 23rd April last, but as the purchase-money was not paid till the 17th May the Company were allowed to resume possession, and collect and retain the revenues up to the latter date.

With regard to the second item, then—namely, the improvement and enlargement of the reservoirs, and works so purchased—the detail surveys and estimates now to hand show probable cost of this work to be £3,500; and, with regard to the third item—namely the construction of a further supply-race from the Four-Mile River to reservoir known as "Haines's Dam"—the length of this race as now surveyed would be 7 miles 30 chains, and its cost about £7,500.

The total cost of completing the project, therefore, over and above the amount spent upon it to date, would be about £11,000; and, should the work be undertaken accordingly, everything is now in readiness to enable it to be carried out, as, in addition to the plans and specifications which have been prepared for contract, a good pack track has been made from a point on the main road near Four-Mile River Crossing, up said river, for a distance of 4 miles 30 chains, by which access can readily be got to all parts of the race line.

As already stated before, however, on several occasions, I think it is very doubtful if the expenditure referred to would prove remunerative, and I should recommend that if the Government were inclined to go to any further expenditure upon this project at all it should be confined to the expenditure required for improvement and enlargement of the existing reservoir and water-races—namely, £3,500.

Should this recommendation be adopted, the track above referred to would not, of course, be fulfilling the primary object for which it is constructed; but it will nevertheless be fully worth the money that it has cost in opening up to prospecting a large area of ground hitherto practically inaccessible, and also in opening up a considerable area of good agricultural land existing along the Four-Mile River Valley, while at the same time it will always be ready and available for the purpose for which it was primarily intended in the event of the supply-race above referred to being at any time hereafter constructed.

Nelson Creek Water-race.—Length, 16 miles 24 chains; capacity, 60 statute-heads, with headworks at Lake Hochstetter, branch races, waste-water channels, and foot tracks, &c. This work is all fully completed as stated in report for last year, and it was handed over to the Gold Fields Department in April, 1878. For the year just ended the value of water sold has been £1,850, while the working expenses have been £1,500.

New River Water-race.—Capacity, 16 statute heads; length contemplated, 8 miles 70 chains; length completed, 6 miles 53 chains. This work was undertaken in 1872 under a Government subsidy of £5,000, of which only £3,500 has been paid to date; but the work has been practically abandoned by the projectors, so that it is not probable that any further advances will be asked for from the Government, and neither is it probable that any further interest on the amount already advanced will be paid by the Company.

Hibernian Water-race.—Capacity, 10 statute-heads; length, 5 miles 51 chains; undertaken in 1872 under a Government subsidy of £2,000. This work was completed several years ago, but it is now abandoned, so that no further payment of interest on the Government advance can with any reasonable probability be anticipated.

Hohonu Water-race.—Capacity, 50 statute heads; length, 5 miles 41 chains of main race, with reservoir and branch races, &c., as detailed in last year's report; cost, £12,500, of which £2,500 was obtained from the Government. This work was completed several years ago, but it is now entirely abandoned.

Waimea Water-race.—Kawhaka Creek to Ballarat Hill, with branch race near Goldsborough and headworks at Kawhaka Creek. Length of main race, 15 miles 75 chains; capacity, 40 statute-heads; and length of branch race, 59 chains; capacity, 30 statute-heads. Of this work the whole of the main race and 47 chains of the branch race were completed at date of last annual report, and the remainder of the branch race, together with the headworks at Kawhaka Creek, have been completed during the year just ended.

Waimea Water-race (continued): Extension to Kumara.—This work, including the supply race from Kawhaka Creek, consists of 7 miles 60 chains of main race and 3 miles 76 chains of distribution races, varying in capacity from 5 statute-heads to 50 statute-heads, as detailed in report for last year, together with a reservoir in Kapitea Valley and headworks at Kawhaka Creek. All these works were completed before date of last annual report, and they have been in full operation since then.

In addition to these works it has been advocated by the miners in the district that a further reservoir should be constructed in the Kapitea Valley, for the reason that the supply of water during dry weather is at present sometimes inadequate to the demand, and that the demand will go on increasing in proportion as the present system of paddocking gives way to ground-sluicing. Should this representation be concurred in, the site in question will be found to be a good one, and a very large storage reservoir could be constructed there for £8,000.

The necessity for a main sludge channel at Kumara has also been strongly advocated by the miners there, and a section and report upon it have already been got out. The cost of its construction would be about £4,000.

Enclosure 2 in Appendix E.

TABLE of LENGTHS of GOVERNMENT LINES AUTHORIZED, CONSTRUCTED, and SURVEYED up to 30th June, 1879.

MIDDLE ISLAND.

Appropriation.	Name of Line.	Mileage.	Subdivision.	Main Line.	Sidings.	Total.	State of Line.											
							Surveyed.	Under Formation	Under Plate-laying	Opened.								
										Date.	To June, 1872.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	Total.
		M. chs. lks.		M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.		M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks.	M. chs. lks
Nelson–Foxhill ...	Nelson–Foxhill ...	23 11 50	Port Extension ...	1 1 50	0 21 0	1 22 50	...	...	1 1 50	...	...	...	...	...	...	...	...	...	...
			Nelson–Foxhill ...	19 10 0	0 66 0	19 76 0	...	...	...	31 Jan., 1876	...	...	...	...	19 10 0	...	...	...	19 10 0
			Bellgrove	3 0 0	0 40 0	3 40 0	...	3 0 0	...	...	...	...	...	...	...	...	...	...	...
	Nelson–Foxhill Extension	30 0 0	Surveyed	14 0 0	...	14 0 0	14 0 0	...	...	...	...	...	...	...	...	...	...	...	...
			Under survey ...	16 0 0	...	16 0 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Westport–Ngakawau	Westport–Ngakawau	19 63 0	Station	0 29 0	1 73 0	2 22 0	...	...	...	17 Dec., 1878	...	...	...	...	...	...	...	0 29 0	0 29 0
			Westport	6 20 0	1 55 0	7 75 0	...	...	...	5 Aug., 1876	...	...	...	...	...	6 20 0	...	...	6 20 0
			Waimangaroa ...	3 60 0	0 10 0	3 70 0	...	...	...	5 Aug., 1876	...	...	...	...	...	3 60 0	...	...	3 60 0
			Ngakawau ...	8 70 0	0 20 0	9 10 0	...	...	...	26 Sept., 1877	...	...	...	...	...	...	8 70 0	...	8 70 0
			Extension of Survey	0 44 0	...	0 44 0	0 44 0	...	...	...	...	...	...	...	...	...	...	...	...
Picton–Blenheim ...	Picton–Blenheim ...	18 32 46	Picton–Blenheim ...	17 10 0	0 75 50	18 5 50	...	...	...	18 Nov., 1875	...	...	...	...	17 10 0	...	...	...	17 10 0
			Blenheim ...	1 22 46	0 50 0	1 72 46	...	...	1 22 46	...	...	...	...	...	...	...	...	...	...
Greymouth-Brunnerton	Greymouth–Brunnerton	7 50 17	Greymouth–Brunnerton	7 50 17	3 14 0	10 64 17	...	...	...	7 April, 1876	...	...	...	...	7 50 17	...	...	...	7 50 17
Amberley – Brunnerton	Greymouth–Brunnerton Extension	0 63 0	Stillwater ...	0 63 0	...	0 63 0	...	0 63 0	...	...	...	...	...	...	...	...	...	...	...
Greymouth–Hokitika	Greymouth–Hokitika	23 60 0	Greymouth ...	3 51 0	...	3 51 0	...	3 51 0	...	...	...	...	...	...	...	...	...	...	...
			Paroa	2 44 0	...	2 44 0	...	2 44 0	...	...	...	...	...	...	...	...	...	...	...
			Hokitika... ...	3 0 0	...	3 0 0	...	3 0 0	...	...	...	...	...	...	...	...	...	...	...
			Hampden Street ...	0 16 0	...	0 16 0	...	0 16 0	...	...	...	...	...	...	...	...	...	...	...
			Surveyed	14 29 0	...	14 29 0	14 29 0	...	...	...	...	...	...	...	...	...	...	...	...
Canterbury Provincial District	Main Lines ...	28 65 67	Lyttelton–Christchurch	6 16 57	20 18 43	26 35 0	...	...	...	9 Dec., 1867	6 16 57	...	...	...	...	...	...	...	6 16 57
			Christchurch–Addington	1 30 40	3 17 90	25 67 0	...	...	...	7 Oct., 1867	1 30 40	...	...	...	...	...	...	...	1 30 40
			Addington–Selwyn ...	21 18 70						7 Oct., 1867	21 18 70	...	...	...	...	...	...	...	21 18 70
Amberley–Cook Strait	Amberley–Cook Strait	6 77 0	Waipara	6 77 0	0 35 0	7 32 0	...	...	6 77 0	...	...	...	...	...	...	...	...	...	...
Amberley – Brunnerton	Amberley – Brunnerton	5 3 0	Weka Pass ...	4 0 0	...	4 0 0	...	4 0 0	...	...	...	...	...	...	...	...	...	...	...
			Surveyed	1 3 0	...	1 3 0	1 3 0	...	...	...	...	...	...	...	...	...	...	...	...
Amberley–Waitaki ...	Selwyn–Rakaia ...	12 61 28	Selwyn–Dunsandel ...	1 77 0	...	1 77 0	...	...	...	15 Feb., 1873	...	1 77 0	...	...	...	...	...	...	1 77 0
			Dunsandel–Rakaia ...	10 64 28	...	10 64 28	...	...	...	29 May, 1873	...	10 64 28	...	...	...	...	...	...	10 64 28
	Rakaia–Ashburton ...	18 7 92	Rakaia–Ashburton ...	17 6 0	1 16 0	18 22 0	...	...	...	24 Aug., 1874	...	...	...	17 6 0	...	...	...	...	17 6 0
			Ashburton (South end of Bridge)	1 1 92	...	1 1 92	...	...	...	31 May, 1875	...	...	...	1 1 92	...	...	...	...	1 1 92
	Ashburton–Temuka	34 20 54	Ashburton–Rangitata	18 28 79	1 12 0	19 40 79	...	...	...	31 May, 1875	...	...	...	18 28 79	...	...	...	...	18 28 79
			Rangitata Bridge ...	2 26 75	...	2 26 75	...	...	...	24 Aug., 1875	...	...	...	...	2 26 75	...	...	...	2 26 75
										Tempor. Bridge									
			Orari	13 45 0	0 24 0	13 69 0	...	...	...	4 Feb., 1876	...	...	...	...	13 45 0	...	...	...	13 45 0
	Timaru–Temuka ...	11 74 17	Temuka	3 14 0	1 4 0	4 18 0	...	...	...	26 Oct., 1875	...	...	...	...	3 14 0	...	...	...	3 14 0
			Young's Creek ...	8 60 17	...	8 60 17	...	...	...	26 Oct., 1875	...	...	...	...	8 60 17	...	...	...	8 60 17
	Timaru–Waitaki ...	38 2 27	Pareora	6 65 6						1 July, 1876	...	...	...	...	...	6 65 6	...	...	6 65 6
			Hook (part) ...	3 44 50						1 July, 1876	...	...	...	...	...	3 44 50	...	...	3 44 50
			„ „ ...	3 66 0						1 Sept., 1876	...	...	...	...	...	3 66 0	...	...	3 66 0
			„ „ ...	3 63 0	1 20 0	39 22 27	...	...	...	30 Oct., 1876	...	...	...	...	...	3 63 0	...	...	3 63 0
			„ „ ...	3 65 5						1 Feb., 1877	...	...	...	...	...	3 65 5	...	...	3 65 5
			Southern (part) ...	15 40 0						1 Feb., 1877	...	...	...	...	...	15 40 0	...	...	15 40 0
			„ „ ...	0 58 66						17 April, 1876	...	...	...	...	0 58 66	...	...	...	0 58 66
	Addington–Kowai ...	32 10 0	Addington–Kaiapoi	11 65 0						1 April, 1872	11 65 0	...	...	...	...	...	...	...	11 65 0
			Kaiapoi–Southbrook	5 18 0	1 42 0	22 22 0	...	...	...	2 Sept., 1872	...	5 18 0	...	...	...	...	...	...	5 18 0
			Southbrook–Rangiora	1 61 0						5 Nov., 1872	...	1 61 0	...	...	...	...	...	...	1 61 0
			Rangiora–Ashley ...	1 76 0						17 April, 1875	...	...	...	1 76 0	...	...	...	...	1 76 0
			Ashley–Amberley (pt.)	7 56 0	1 20 0	12 50 0	...	...	...	3 Nov., 1875	...	...	...	...	7 56 0	...	...	...	7 56 0
			„ „	3 54 0						9 Feb., 1876	...	...	...	...	3 54 0	...	...	...	3 54 0
Canterbury Branches	Canterbury Branches	135 20 22	Rangiora–Oxford (pt.)	11 65 0						1 Dec., 1874	...	...	...	11 65 0	...	...	...	...	11 65 0
			„ „	5 55 0	2 5 0	23 56 0	...	...	...	26 April, 1875	...	...	...	5 55 0	...	...	...	...	5 55 0
			„ „	4 11 0						21 June, 1875	...	...	...	4 11 0	...	...	...	...	4 11 0
			Kaiapoi–Eyreton ...	14 40 0	1 30 0	17 13 28	...	...	...	27 Dec., 1875	...	...	...	...	14 40 0	...	...	...	14 40 0
			Junction on Main Line	...	1 23 28														
			Eyreton Extension...	5 59 0	0 20 0	5 79 0	...	...	...	1 Feb., 1878	...	...	...	...	...	...	5 59 0	...	5 59 0
			Racecourse–Southbride (part)	14 6 22	2 0 0	27 28 22	...	...	...	26 April, 1875	...	...	...	14 6 22	...	...	...	...	14 6 22
			Racecourse–Southbridge (part)	11 22 0						13 July, 1875	...	...	...	...	11 22 0	...	...	...	11 22 0
			Rolleston–Sheffield ...	24 12 0	2 59 0	38 31 0	...	...	...	1 Dec., 1874	...	...	...	24 12 0	...	...	...	...	24 12 0
			White Cliffs Branch	11 40 0						3 Nov., 1875	...	...	...	...	11 40 0	...	...	...	11 40 0
			Waimate Branch ...	4 45 0	0 42 0	5 7 0	...	...	...	19 Mar., 1877	...	...	...	...	...	4 45 0	...	...	4 45 0
Main Line to Upper Ashburton	Canterbury Branches ...		Ashburton ...	10 60 0	0 30 0	11 10 0	...	...	10 60 0	...	...	...	...	...	...	...	...	...	...
Canterbury Branches			Springfield ...	6 45 0	0 40 0	7 5 0	...	...	6 45 0	...	...	...	...	...	...	...	...	...	...
Opawa Branch Extension			Albury	1 28 0	...	1 28 0	...	1 28 0	...	...	...	...	...	...	...	...	...	...	...
Canterbury Provincial District	Branch Lines ...	42 51 79	Surveyed	9 12 0	...	9 12 0	9 12 0	...	...	...	...	...	...	...	...	...	...	...	...
			Point Contract ...	9 6 79	0 55 0	9 61 79	...	...	...	24 Dec., 1875	...	...	...	...	9 6 79	...	...	...	9 6 79
			Opawa Extension ...	16 45 0	0 60 0	17 25 0	...	...	...	1 Jan., 1877	...	...	...	...	...	16 45 0	...	...	16 45 0
Little River, Akaroa	Branch Lines ...	...	Ellesmere ...	17 0 0	...	17 0 0	...	17 0 0	...	...	...	...	...	...	...	...	...	...	...
Canterbury Interior Main Line, Oxford to Temuka	Canterbury Interior	85 0 0	Eyre Bridge ...	0 13 0	...	0 13 0	...	0 13 0	...	...	...	...	...	...	...	...	...	...	...
			Temuka Bridge ...	0 14 61	...	0 14 61	...	0 14 61	...	...	...	...	...	...	...	...	...	...	...
			Surveyed	15 40 0	...	15 40 0	15 40 0	...	...	...	...	...	...	...	...	...	...	...	...
			Reconnaissance ...	69 12 39	...	69 12 39	Approximate.			...	...	...	...	...	...	...	...	...	...
Waitaki Bridge ...	Waitaki Bridge ...	0 56 60	Waitaki Bridge ...	0 56 60	...	0 56 60	...	...	...	17 April, 1876	...	...	...	...	0 56 60	...	...	...	0 56 60
Waitaki–Invercargill	Waitaki–Moeraki ...	39 34 0	Waitaki–Oamaru ...	13 20 0	1 56 0	14 76 0	...	...	...	25 Sept., 1875	...	...	...	...	13 20 0	...	...	...	13 20 0
			Oamaru–Moeraki ...	24 39 0	2 53 0	27 12 0	...	...	...	4 Nov., 1876	...	...	...	...	...	24 39 0	...	...	24 39 0
			Moeraki Branch ...	1 55 0	0 22 0	1 77 0	...	...	...	15 Feb., 1877	...	...	...	...	...	1 55 0	...	...	1 55 0
	Moeraki–Dunedin ...	46 42 0	Moeraki Junction Station	0 27 0	0 46 0	0 73 0	...	...	...	4 Nov., 1876	...	...	...	...	...	0 27 0	...	...	0 27 0
			Kartigi (part) ...	12 65 0	1 11 0	18 69 0	...	...	...	22 May, 1878	...	...	...	...	...	...	12 65 0	...	12 65 0
			„ „ ...	4 73 0						6 Sept., 1878	...	...	...	...	...	...	...	4 73 0	4 73 0
			Waikouaiti (part) ...	4 4 0	0 60 0	10 27 0	...	...	...	6 Sept., 1878	...	...	...	...	...	...	...	4 4 0	4 4 0
			„ „ ...	5 43 0						7 May, 1878	...	...	...	...	...	...	5 43 0	...	5 43 0
			Blueskin	7 0 0	0 40 0	7 40 0	...	...	...	7 May, 1878	...	...	...	...	...	...	7 0 0	...	7 0 0
			Purakanui (part) ...	1 74 0	...	1 74 0	...	...	...	7 May, 1878	...	...	...	...	...	...	1 74 0	...	1 74 0
			„ „ ...	5 73 0	0 20 0	6 13 0	...	...	...	20 Dec., 1877	...	...	...	...	...	...	5 73 0	...	5 73 0
			Deborah Bay ...	1 13 0	...	1 13 0	...	...	...	20 Dec., 1877	...	...	...	...	...	...	1 13 0	...	1 13 0
			Port Chalmers ...	2 70 0	0 10 0	3 0 0	...	...	...	20 Dec., 1877	...	...	...	...	...	...	2 70 0	...	2 70 0
	Dunedin–Port Chalmers	8 0 0	Dunedin–Port Chalmers	8 0 0	1 25 0	9 25 0	...	...	...	9 April, 1873	...	8 0 0	...	...	...	...	...	...	8 0 0
	Dunedin–Clutha ...	51 35 0	Dunedin Station ...	0 30 0	2 40 0	2 70 0	...	...	...	1 July, 1874	...	...	...	0 30 0	...	...	...	...	0 30 0
			Dunedin Section ...	1 53 0						1 July, 1874	...	...	...	1 53 0	...	...	...	...	1 53 0
			Caversham Section ...	1 57 0						1 July, 1874	...	...	...	1 57 0	...	...	...	...	1 57 0
			Kaikorai Section ...	2 25 0	4 10 0	55 15 0	...	...	...	1 July, 1874	...	...	...	2 25 0	...	...	...	...	2 25 0
			Taieri	34 55 0						1 Sept., 1875	...	...	...	...	34 55 0	...	...	...	34 55 0
			Clutha	10 55 0						1 Sept., 1875	...	...	...	...	10 55 0	...	...	...	10 55 0
	Clutha–Mataura ...	47 64 0	Clutha Bridge ...	0 18 0						22 Jan., 1878	...	...	...	...	...	...	0 18 0	...	0 18 0
			Balclutha... ...	1 22 0						22 Jan., 1878	...	...	...	...	...	...	1 22 0	...	1 22 0
			Toiro Section ...	4 0 0						22 Jan., 1879	...	...	...	...	...	...	...	4 0 0	4 0 0
			Clinton Section ...	16 31 0						22 Jan., 1879	...	...	...	...	...	...	...	16 31 0	16 31 0
			Clinton Station ...	0 7 0	2 8 0	49 72 0	...	...	...	1 Nov., 1877	...	...	...	...	...	...	0 7 0	...	0 7 0
			Waipahi Extension...	9 60 0						1 Nov., 1877	...	...	...	...	...	...	9 60 0	...	9 60 0
			Waipahi	15 64 0						21 June, 1877	...	...	...	...	...	15 64 0	...	...	15 64 0
			Mataura Bridge ...	0 22 0						30 Aug., 1875	...	...	...	...	0 22 0	...	...	...	0 22 0
	Tapanui Branch ...	15 45 0	Waipahi–Tapanui ...	15 45 0	1 26 0	16 71 0	...	15 45 0	...	...	...	...	...	...	...	...	...	...	...
	Tokomairiro–Lawrence	22 0 0	Tokomairiro ...	5 54 0						22 Jan., 1877	...	...	...	...	...	5 54 0	...	...	5 54 0
			Glenore	1 16 0						22 Jan., 1877	...	...	...	...	...	1 16 0	...	...	1 16 0
			Round Hill ...	3 22 0						22 Jan., 1877	...	...	...	...	...	3 22 0	...	...	3 22 0
			Waitahuna ...	4 68 0	1 70 0	23 70 0	...	...	...	22 Jan., 1877	...	...	...	...	...	4 68 0	...	...	4 68 0
			„ ...	1 0 0						2 April, 1877	...	...	...	...	...	1 0 0	...	...	1 0 0
			Tuapeka	6 0 0						2 April, 1877	...	...	...	...	...	6 0 0	...	...	6 0 0
	Invercargill–Mataura	39 56 0	Invercargill-Woodlands	11 11 0						11 Feb., 1874	...	...	11 11 0	...	...	...	...	...	11 11 0
			Woodlands–Mataura Bridge	20 79 0	3 0 0	42 56 0	...	...	...	7 June, 1875	...	...	...	20 79 0	...	...	...	...	20 79 0
			Mataura Bridge–Gore	7 46 0						30 Aug., 1875	...	...	...	...	7 46 0	...	...	...	7 46 0
Winton–Kingston ...	Winton–Kingston ...	68 35 0	No. 1 Contract ...	22 18 0	1 64 0	24 2 0	...	...	...	20 Oct., 1875	...	...	...	...	22 18 0	...	...	...	22 18 0
			Plate-laying Contract	8 32 0	0 40 0	8 72 0	...	...	...	7 Feb., 1876	...	...	...	...	8 32 0	...	...	...	8 32 0
			Lowther Contract ...	6 10 0	0 20 0	6 30 0	...	...	...	15 Jan., 1877	...	...	...	...	...	6 10 0	...	...	6 10 0
			Athol Contract ...	13 27 0	0 20 0	13 47 0	...	...	...	28 Jan., 1878	...	...	...	...	...	...	13 27 0	...	13 27 0
			Kingston Contract (part)	9 20 0	0 12 0	18 30 0				29 April, 1878	...	...	...	...	...	...	9 20 0	...	9 20 0
			Kingston Contract (part)	8 78 0						10 July, 1878	...	...	...	...	...	...	...	8 78 0	8 78 0
			„ Wharf ...	0 10 0	0 10 0	0 20 0	...	...	...	14 Dec., 1878	...	...	...	...	...	...	...	0 10 0	0 10 0
Otago Provincial District	Main Lines ...	37 0 0	Invercargill–Bluff ...	18 0 0	1 50 0	19 50 0	...	...	...	5 Feb., 1867	18 0 0	...	...	...	...	...	...	...	18 0 0
			Invercargill–Winton	19 0 0	0 45 0	19 45 0	...	...	...	22 Feb., 1871	19 0 0	...	...	...	...	...	...	...	19 0 0
Otago Central, Dunedin to Albert Town, Lake Wanaka	Otago Central ...	140 0 0	Wingatui ...	6 65 0	...	6 65 0	...	6 65 0	...	...	...	...	...	...	...	...	...	...	...
			Surveyed	64 15 0	...	64 15 0	64 15 0	...	...	...	...	...	...	...	...	...	...	...	...
			Under survey ...	49 0 0	...	49 0 0	...	...	...	...	...	...	...	...	...	...	...	...	...
			Unsurveyed ...	20 0 0	...	20 0 0	Approximate.			...	...	...	...	...	...	...	...	...	...
	Branch Lines ...	154 54 0	Awamoko ...	21 32 0	0 21 65	21 53 65	...	...	...	1 Dec., 1875	...	...	...	...	21 32 0	...	...	...	21 32 0
			Waiareka ...	14 72 0	0 25 0	15 17 0	...	...	...	2 April, 1877	...	...	...	...	...	14 72 0	...	...	14 72 0
			Green Island ...	2 17 0	0 13 22	2 30 22	...	...	...	1 July, 1874	...	...	...	2 17 0	...	...	...	...	2 17 0
			„ ...	0 40 0	0 5 0	0 45 0	...	0 40 0	...	...	...	...	...	...	...	...	...	...	...
			Outram–Mosgiel ...	8 79 0	0 67 0	9 66 0	...	...	...	1 Oct., 1877	...	...	...	...	...	...	8 79 0	...	8 79 0
			Wallacetown ...	11 74 0	0 30 0	12 24 0	...	...	...	9 June, 1879	...	...	...	...	...	...	...	11 74 0	11 74 0
			Orepuki (part) ...	6 0 0	0 30 0	6 30 0	...	...	6 0 0	...	...	...	...	...	...	...	...	...	...
			Otautau (part) ...	11 30 0	0 40 0	18 33 0	...	...	11 30 0	...	...	...	...	...	...	...	...	...	...
			„ „ ...	6 3 0	0 40 0		...	...	...	9 June, 1879	...	...	...	...	...	...	...	6 3 0	6 3 0
Omaru–Livingston ...	Branch Lines ...	...	Windsor	2 0 0	...	2 0 0	...	2 0 0	...	...	...	...	...	...	...	...	...	...	...
			Under survey ...	14 40 0	...	14 40 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Clutha–Catlin's River			Invertiel	2 40 0	...	2 40 0	...	2 40 0	...	...	...	...	...	...	...	...	...	...	...
			Surveyed	2 0 0	...	2 0 0	2 0 0	...	...	...	...	...	...	...	...	...	...	...	...
			Reconnaissance ...	13 0 0	...	13 0 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Edendale–Toitois ...			Wyndham	3 70 0	...	3 70 0	...	3 70 0	...	...	...	...	...	...	...	...	...	...	...
			Reconnaissance ...	19 10 0	...	19 10 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Otautau–Nightcaps			Opio	3 10 0	...	3 10 0	...	3 10 0	...	...	...	...	...	...	...	...	...	...	...
			Reconnaissance ...	9 30 0	...	9 30 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Main Line to Shag Point			Shag Point ...	1 67 0	0 15 0	2 2 0	...	...	...	27 June, 1879	...	...	...	...	...	...	...	1 67 0	1 67 0
	Branch Lines ...	21 13 50	Seaward Bush ...	11 8 0	...	11 8 0	11 8 0	...	...	...	...	...	...	...	...	...	...	...	...
			Palmerston–Waynes	10 5 50	...	10 5 50	7 5 50	3 0 0	...	...	...	...	...	...	...	...	...	...	...
Lumsden–Mararoa ...	Lumsden – Mararoa (part)	30 0 0	Lumsden	6 0 0	...	6 0 0	6 0 0	...	...	...	...	...	...	...	...	...	...	...	...
			Reconnaissance ...	24 0 0	...	24 0 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ..	...	1,296 69 9		1,296 69 9	87 42 98	1,384 32 7	144 76 50	73 19 61	43 75 96		77 50 67	27 60 28	11 11 0	127 42 93	249 30 14	153 60 61	94 60 0	58 49 0	800 44 63

From the Waimea Race, including extension to Kumara, the value of water sold during year just ended has been £4,550, while the working expenses have been £2,000.

Kanieri Lake Water-race.—Capacity, 60 statute-heads; length, 12 miles 21 chains; total cost, £23,800, of which Government have contributed £10,000. This work was completed in 1875, but it has now been entirely abandoned by the promoters, so that no further payment of interest on Government advance is probable.

Mikonui Water-race.—Length contemplated, 15 miles; capacity contemplated, 40 statute-heads; estimate, £81,000. An appropriation of £20,000 was taken for this work last year, with a view to subsidizing a company to that extent, in event of any such being got up to undertake the work. No practical issue has, however, as yet resulted in connection with it.

Water-races generally.—With reference to water-races generally, but more particularly with regard to the Nelson Creek and Waimea Water-races, which are the only ones in this district hitherto constructed and worked by the Government themselves, there is a subject which is worthy of some consideration, and upon which some hitherto unattainable data has been collected during the last few months—namely, the collateral advantages derived from water-races over and above any net revenue which they may yield towards paying interest on their cost.

To get some idea of this, the managers of the two races in question were instructed some considerable time back to endeavour to ascertain by every means in their power the actual number of men kept at work in the mines by the use of Government race-water, and the number of ounces of gold thus obtained, and, after experimenting upon various methods of acquiring this information, they have succeeded since November last in getting it with a close approach to accuracy, and the average for the year deduced from this information is as follows:—

Nelson Creek Race.—Number of men employed daily throughout the year, 70; number of ounces of gold so obtained, 4,400.

Waimea Race.—Number of men employed daily throughout the year, 617; number of ounces of gold so obtained, 21,400.

From this, then, it will be seen that, while the direct net revenue of the races in question is £2,900 per annum, they at the same time maintain in continuous employment as many as 687 men, and yield to each of these an income of £145 per annum; and, as this is considerably in excess of the cost of living of the men in question, it is a reasonable deduction, as it is also the fact, that capital is thus accumulated by at any rate some of the men engaged, and that this capital is afterwards applied in developing more permanent industries in other parts of the country.

The collateral results arising from the construction of water-races, therefore, appear to be very great, the gross receipts derived from the two races above mentioned, which cost in all about £230,000, being about £100,000 per annum, and involving the maintenance of 687 working miners, equivalent to a population of, say, 3,000 souls, who each contribute a considerable amount to the Customs revenue.

I have, &c.,

C. Y. O'Connor,

The Engineer in Charge, Middle Island, Dunedin. District Engineer.

APPENDIX F.

SCHEDULE of Railway Contracts Current on the 1st July, 1878, and Contracts Entered into during the Financial Year ended the 30th June, 1879.

NORTH ISLAND.

Date of Contract.	Line of Railway.	Name of Contract.	Particulars.	Length of Contract.	Length of Sidings in Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract.	Remarks.
				M. ch. lk.	M. ch. lk.				£ s. d.	
	Kawakawa	Stationmaster's House ...	...	...	...	T. Constable	...	...	292 0 0	
May 17, 1877	Kaipara-Puniu ...	Auckland	F. and P. L.	9 61 0	0 60 0	Larkins and O'Brien ...	May 11, 1879	...	16,933 0 0	
May 28, „	„ „ ...	Helensville	F. and P. L.	0 43 0	0 70 0	Alex. Smith	Feb. 22, 1878	...	807 10 8	Contract determined: this amount is under offer to contractor in full of all demands.
Feb. 2, „	„ „ ...	Onehunga Wharf	F. and P. L.	0 20 0	0 20 0	Sutherland and Smith ...	Feb. 2, 1878	Nov. 28, 1878	9,409 19 7	
Feb. 13, 1878	„ „ ...	1,200 yards Rough Stone ...	...	...	...	F. Scherff	Oct. 4, „	Nov. 5, 1878	865 0 0	
May 1, „	„ „ ...	No. 9, Station Buildings ...	...	...	...	D. Henderson ...	May 23, „	July 5, „	229 10 6	
April 15, „	„ „ ...	Auckland Station Water Supply	...	...	...	W. J. Marks	Aug. 12, „	Aug. 1, „	1,040 0 0	
May 1, „	„ „ ...	No. 8, Station Buildings ...	...	...	...	Butterwick and Wishart	June 26, „	July 5, „	640 0 0	
May 11, „	„ „ ...	Mercer Wharf	...	...	...	J. Duce	Aug. 2, „	Sept. 11, „	474 2 4	
April 12, „	„ „ ...	Points and Crossings ...	...	...	...	Gilchrist and Waters ...	6 months from	acceptance ...	740 0 0	
Oct. 7, „	„ „ ...	20 High-side Wagons ...	...	...	...	Campbell Bros. ...	Cannot be stated	Mar. 3, 1879	340 0 0	
Nov. 9, „	„ „ ...	Ohaupo	F. and P. L.	6 21 0	0 60 0	Daniel Fallon ...	Feb. 5, 1880	...	25,972 5 6	
Oct. 18, „	„ „ ...	Rolling-stock, No. 2 ...	...	...	...	Guthrie and Larnach Co.	½ Jan. 10, ½ A	pril 10, 1880	5,931 9 2	
Jan. 7, 1879	„ „ ...	No. 10, Station Buildings ...	...	...	...	John Duce	May 11, 1879	...	2,927 15 0	
Feb. 7, „	„ „ ...	Newcastle Wharf Extension ...	...	...	...	J. S. Smith	May 30, „	...	2,707 4 11	
Feb. 8, „	„ „ ...	Helensville Wharf and Permanent Way	...	...	...	Sheehan and Foughy ...	Oct. 30, „	...	10,104 16 4	
Feb. 11, „	„ „ ...	Auckland Harbour Reclamation	...	...	...	James Dempsey ...	Dec. 3, 1880	...	32,710 5 0	
Mar. 21, „	„ „ ...	Waitakerei	F., P. L. and Bdgs.	12 64 0	1 45 0	Taylor and Danaher ...	Sept. 11, „	...	36,601 5 2	
Mar. 24, „	„ „ ...	No. 11, Station Buildings ...	...	...	...	William Cameron ...	June 16, 1879	...	797 0 0	
Mar. 31, „	„ „ ...	No. 12, „ ...	...	...	...	H. P. Kavanagh ...	July 29, „	...	245 0 0	
June 6, „	„ „ ...	No. 13, „ ...	...	...	...	Henry Shailer ...	Sept. 3, „	...	489 16 6	
Jan. 26, „	Napier-Manawatu ...	Papatu Bridges (3)	F.	0 21 12	...	Proudfoot and McKay ...	July 15, 1879	...	15,195 4 8	
April 12, 1878	„ „ ...	Points and Crossings ...	...	...	...	Gilchrist and Waters ...	6 months from	acceptance ...	250 0 0	
Oct. 7, „	„ „ ...	25 High-side Wagons ...	...	...	...	Campbell Bros. ...	Cannot be stated	...	475 0 0	
Oct. 18, „	„ „ ...	Rolling-stock, No. 4... ...	...	...	...	Guthrie and Larnach Co.	½ Jan. 10, ½ A	pril 10, 1880	6,493 1 1	
Sept. 16, „	„ „ ...	Freight on Wagon Ironwork ...	...	...	...	Ellaby and Callis ...	6 weeks from receipt of material	Oct. 12, 1878	34 8 0	Part of contract, remainder charged to Waitara-Patea Railway.
Mar. 24, „	„ „ ...	Carting and Stacking Sleepers	...	...	..	William Ebbett ...	July 1, 1879	...	368 15 0	
Oct. 5, 1875	Wellington-Woodville	Incline	F.	8 76 83	0 40 0	Charles McKirdy ...	July 5, 1877	Aug. 17, 1878	49,029 1 8	
April 6, 1878	„ „	Carterton	F. and P. L.	20 41 0	1 40 0	Richard Dickson ...	Mar. 22, 1880	...	51,954 0 0	
Feb. 4, „	„ „	Featherston Station... ...	...	...	...	J. Sutherland ...	May 1, 1878	Dec. 21, 1878	3,549 3 0	
April 12, „	„ „	200 sets Points and Crossings	...	...	...	Gilchrist and Waters ...	6 months from	acceptance ...	620 0 0	
May 13, „	„ „	Summit Water Supply ...	...	...	...	W. J. Ridler ...	Sept. 20, 1878	Sept. 25, 1878	828 17 6	
June 11, „	„ „	Cross Creek Station Buildings	...	...	...	„ ...	Aug. 17, „	Jan. 4, 1879	1,297 1 9	
Sept. 17, „	„ „	Station Buildings	...	...	...	„ ...	Oct. 22, „	Jan. 25, „	660 12 0	
Oct. 10, „	„ „	50 Low-side Wagons ...	...	...	...	Hausmann and Co. ...	Cannot be stated	Mar. 10, „	562 10 0	
Oct. 29, „	„ „	No. 1, Carterton Station Buildings	...	...	...	W. J. Ridler ...	Jan. 18, 1879	Mar. 22, „	522 6 0	

SCHEDULE of Railway Contracts Current, &c.—*continued.*

NORTH ISLAND—*continued.*

Date of Contract.	Line of Railway.	Name of Contract.	Particulars.	Length of Contract.	Length of Sidings in Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed	Amount of Contract.	Remarks.
				M. ch. lk.	M. ch. lk.				£ s. d.	
Oct. 7, 1878	Wellington–Woodville	10 High-side Wagons ...	...	...	...	Campbell Bros. ...	Cannot be stated	Mar. 3, 1879	210 0 0	Part of contract for wagons, Kaipara–Puniu.
Nov. 14, „	„ „	Stationmaster's House, Featherston	...	...	...	Alex. Reese	Dec. 25, 1878	Jan. 27, „	249 6 0	
Nov. 12, „	„ „	Additions to Goods Shed ...	...	...	...	„ ...	Dec. 6, „	Dec. 6, 1878	194 0 0	
Oct. 18, „	„ „	Rolling-stock, No. 3 ...	...	...	...	Guthrie and Larnach Co.	½ Jan. 10, ½ A	pril 10, 1880	8,088 1 3	
No formal contract	„ „	2 Fell Brakes	...	...	...	E. W. Mills	...	June 6, 1879	371 0 0	
Feb. 26, 1879	„ „	Freight on Locomotives, &c. ...	...	...	...	W. H. Levin ...	4 weeks from receipt of material	Mar. 13, „	75 0 0	
Jan. 24, „	„ „	No. 2, Station Buildings ...	...	...	...	Alex. Reese	Mar. 18, 1879	April 22, „	513 0 0	
Mar. 19, „	„ „	Petone Workshops	...	...	...	W. J. Ridler ...	Nov. 14, „	...	2,360 0 4	
Mar. 31, „	„ „	Railway Wharf	...	...	...	James Lockie ...	Dec. 26, „	...	16,758 17 5	
July 26, 1878	„ „	Rails and Fastenings ...	...	...	...	McPherson and Co.	½ Oct. 26, „ ½ Jan. 26, 1880	April 5, „	6,464 3 0	
May 13, 1879	„ „	Petone Drain	...	...	...	Webber and Lenoury ...	Sept. 12, 1879	...	190 13 6	
June 3, „	„ „	No. 3, Station Buildings ...	...	...	...	Swanston and Nelson ...	Oct. 4, „	...	810 0 0	
Feb. 7, 1878	Waitara–Patea ...	No. 2, Masonry Culverts ...	...	...	...	A. McDonald ...	Aug. 2, 1878	Jan. 31, „	979 8 0	
April 12, „	„ „ ...	Points and Crossings ...	...	...	...	Gilchrist and Waters ...	6 months from	acceptance ...	250 0 0	
July 16, „	„ „ ...	Waipuku Bridge	...	...	...	D. Glendinning ...	Mar. 2, 1879	May 2, 1879	1,998 0 0	
Oct. 7, „	„ „ ...	20 High-side and 10 Low-side Wagons	...	...	...	Campbell Bros. ...	Cannot be stated	Feb. 28, „	525 0 0	
Oct. 7, „	„ „ ...	Ngatoro	P. L.	4 61 50	0 30 0	David Wilkie ...	Dec. 11, 1878	Mar. 7, „	2,212 8 6	
Nov. 25, „	„ „ ...	Freight on Rails	...	...	...	McIntyre and Co. ...	Feb. 15, 1879	Mar. 10, „	569 0 11	
Sept. 17, „	„ „ ...	No. 1, Buildings	...	...	...	Berry and Newman ...	Oct. 18, 1878	Within contract time	92 0 0	
Oct. 18, „	„ „ ...	Rolling-stock, No. 5 ...	...	...	...	Guthrie and Larnach Co.	½ Jan. 10, ½ A	pril 10, 1880	4,500 0 0	Part of contract, remainder charged to Patea–Manawatu Railway.
Nov. 25, „	„ „ ...	Freight on Railway Material ...	...	...	...	McKenzie and Ross ...	4 weeks from date of receipt of material	Jan. 25, 1879	172 14 0	
Jan. 23, 1879	„ „ ...	Stratford	F. and P. L.	4 48 0	...	Hursthouse and Berry...	July 11, 1879	...	16,446 13 7	
Feb. 22, „	„ „ ...	Coal Store, Sentry Hill ...	...	...	...	D. Glendinning ...	April 14, „	April 12, „	231 11 0	
Feb. 22, „	„ „ ...	Waipuku	P. L.	4 11 0	0 20 0	David Wilkie... ...	May 14, „	June 30, „	1,730 0 0	
May 21, „	„ „ ...	Freight on Rails, &c. ...	...	...	...	C. H. Ellaby... ...	24 weeks from	receipt of	1,519 11 0	
May 9, „	„ „ ...	Sentry Hill Workshops ...	...	...	...	Alex. Reese	material Oct. 8, 1879	...	1,445 0 0	
Mar. 25, „	„ „ ...	Three 6th Class Stations ...	...	...	...	Hursthouse and Berry...	May 2, „	...	255 18 0	
June 11, „	„ „ ...	Freight on 12,300 Sleepers ...	...	...	...	C. E. Capper... ...	24 weeks from	receipt of	666 5 0	
June 16, „	„ „ ...	Freight on Carriage and Van...	...	...	...	„	material 3 weeks from	receipt of	55 10 0	
Oct. 18, 1878	„ „ ...	Rolling-stock, No. 4 ...	...	...	...	Guthrie and Larnach Co.	material ½ Jan. 10, ½ Ap	ril 10, 1880 ...	1,345 3 1	Part of contract, remainder charged to Napier–Manawatu Railway.
June 7, „	Patea–Manawatu ...	Waitotara	F. and P. L.	12 70 0	0 65 0	Collie, Scott, and Wilkinson (assigned to E. W. Mills)	Dec. 5, 1879	...	39,791 14 3	

SCHEDULE of Railway Contracts Current, &c.—*continued.*

NORTH ISLAND—*continued.*

Date of Contract.	Line of Railway.	Name of Contract.	Particulars.	Length of Contract.	Length of Sidings in Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract.	Remarks.
				M. ch. lk.	M. ch. lk.				£ s. d.	
No formal contract	Patea–Manawatu ...	35 Low-side Wagons ...	...	...	...	Campbell Bros. ...	...	Completed ...	648 15 0	To be constructed same as wagons for Amberley–Waitaki.
May 13, 1878	„ „ ...	Freight on Rails	...	...	...	Plimmer, Reeves, and Co.	Cannot be stated	Nov. 16, 1878	330 17 0	
Sept. 10, „	„ „ ...	Store, East Town	...	...	...	William Rowe ...	Dec. 6, 1878	Jan. 31, 1879	920 0 0	
June 14, „	„ „ ...	Freight on Rails	...	...	...	C. H. Ellaby ...	Cannot be stated	Oct. 11, 1878	1,034 12 8	
Sept. 10, „	„ „ ...	Brunswick	P. L.	9 6 0	0 40 0	Alex. Tawse	Feb. 6, 1879	May 22, 1879	3,559 17 0	
June 17, „	„ „ ...	Foxton Wharf Additions ...	...	...	...	J. Andressan	Oct. 17, 1878	Dec. 10, 1878	690 0 0	
Sept. 17, „	„ „ ...	5th Class Stationmaster's House	...	...	...	David Wilkie ...	Nov. 19, „	Nov. 12, „	292 12 6	
Oct. 10, „	„ „ ...	25 High-side and 40 Low-side Wagons	...	...	...	J. A. Hausmann and Co.	Cannot be stated	June 30, 1879	772 10 0	
April 12, „	„ „ ...	Points and Crossings ...	...	...	...	Gilchrist and Waters ...	6 months from	acceptance ...	620 0 0	
Feb. 12, „	„ „ ...	Greatford and Halcombe Station Buildings	...	...	...	Nathan and Wilkie ...	April 23, 1878	Aug. 5, 1878	693 7 4	
Mar. 1, „	„ „ ...	Engine-shed, &c., Halcombe ...	...	...	...	„ ...	May 10, „			
Aug. 8, „	„ „ ...	Freight on Rails	...	...	...	McIntyre and Co. ...	Cannot be stated	Oct. 8, „	160 0 0	
Nov. 15, „	„ „ ...	Ladies' Room, Feilding ...	...	...	...	W. D. Nicholas ...	Dec. 5, 1878	Dec. 21, „	110 0 0	
Nov. 25, „	„ „ ...	Freight on Railway Material...	...	...	...	McKenzie and Ross ...	Not stated ...	Jan. 25, 1879	130 12 7	
Nov. 21, „	„ „ ...	Goods-shed, Palmerston N. ...	...	...	...	R. McLean	Feb. 5, 1879	Mar. 19, „	311 1 0	
Oct. 18, „	„ „ ...	Rolling-stock, No. 5 ...	...	...	...	Guthrie and Larnach Co.	½ Jan. 10, ½ April 10, 1880		7,936 0 10	
Dec. 19, „	„ „ ...	Kai-iwi and Brunswick Station Buildings	...	...	...	Alex. Tawse	Mar. 18, 1879	May 22, 1879	2,069 19 8	
Jan. 23, 1879	„ „ ...	Additions to Engine Shed at East Town	...	...	...	W. G. Bassett ...	April 20, „	June 2, „	795 0 0	
Feb. 24, „	„ „ ...	Freight on 1 Locomotive ...	...	...	...	W. Bishop	Feb. 27, „	Feb. 28, „	95 0 0	
Mar. 14, „	„ „ ...	Freight on Rails, &c. ...	...	...	...	„	June 3, „	...	408 19 2	
April 17, „	„ „ ...	Wanganui Wharf and Reclamation	...	...	...	J. Saunders	April 16, 1880	...	23,514 8 3	
April 22, „	„ „ ...	Freight on 1 Locomotive, &c....	...	...	...	G. M. Kebbell ...	4 weeks from receipt of material	May 31, „	105 0 0	
May 22, „	„ „ ...	„ „ ...	...	...	...	R. S. Martin	„	...	90 0 0	
June 11, „	„ „ ...	„ „ ...	...	...	...	„	„	...	75 0 0	
June 19, „	„ „ ...	Wanganui Workshops ...	...	...	...	Gibbs and Pinches ...	Dec. 16, 1879	...	1,436 13 10	
Feb. 26, „	Waikato–Thames ...	Grahamstown Reclamation ...	...	...	...	William Souter ...	Nov. 18, „	...	7,538 13 0	
April 5, „	„ „ ...	Shortland	F. and Reclamation	0 73 0	...	J. J. O'Brien ...	Dec. 25, „	...	8,393 1 4	
Mar. 22, „	Hamilton Branch ...	Hamilton Branch	F., P. L., and Bdgs.	1 1 0	0 65 0	John Briton	Sept. 12, „	...	2,979 15 6	
Mar. 10, „	Whangarei–Kamo ...	Kamo	F.	1 70 0	...	Thomas Jones ...	Oct. 31, „	...	2,257 9 11	Balance of contract, £1,678 14s. 7d., charged to Miscellaneous Public Works.

SCHEDULE of Railway Contracts Current, &c.—*continued.*

MIDDLE ISLAND.

Date of Contract.	Line of Railway.	Name of Contract.	Particulars	Length of Contract.	Length of Sidings in Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract.	Remarks.
				M. ch. lk.	M. ch. lk.				£ s. d.	
June 7, 1878	Nelson–Foxhill ...	Port	F.	0 65 0	...	E. O'Malley	Mar. 5, 1879	April 2, 1879	6,229 8 10	
„ „	„ „ ...	No. 2, Port	...	...	...	W. Patterson ...	...	...	1,762 18 6	
Jan. 7, 1879	Picton–Blenheim ...	Blenheim	F. and P. L.	1 22 46	1 0 0	Henderson and Fergus	Mar. 27, 1880	...	9,969 4 0	
	Brunner–Greymouth ...	Steam Dredge	...	...	...	Kincaid, McQueen, & Co.	...	Completed	2,414 0 0	
„ „	„ „ ...	No. 1, Station Buildings ...	...	...	...	Seabrook Bros. ...	...	...	626 10 0	
June 28, 1876	Westport–Ngakawau ...	Westport Station	F. and P. L.	...	...	W. Smith	Mar. 13, 1878	Dec. 17, 1878	30,070 17 11	
Nov. 21, 1877	Amberley–Waitaki ...	150 High-side Wagons ...	...	...	...	Campbell Bros. ...	...	Completed	2,340 0 0	Date not given in certificate
Nov. 13, „	„ „ ...	100 Low-side Wagons ...	...	...	...	W. Langdown ...	...	„	1,185 0 0	„ „
„ „	„ „ ...	50 Wagons	...	...	...	„ ...	...	„	887 15 0	„ „
Feb. 23, 1878	„ „ ...	No. 2, Bridge Painting ...	...	...	...	James Cragie ...	Oct. 23, 1878	July 14, 1878	1,862 15 5	
April 10, „	„ „ ...	100 sets Points and Crossings	...	...	...	Sparrow and Co. ...	Oct. 9, „	Oct. „	1,400 0 0	
May 16, „	„ „ ...	No. 1, Painting Bridges ...	...	...	...	Murdoch and Phelps ...	Nov. 7, „	Nov. 22 „	2,583 0 0	
Oct. 31, „	„ „ ...	No. 1, Rolling-stock ...	...	...	...	J. Anderson	½ Jan. 10, ½ April 10, 1880		6,685 12 6	Remainder of contract, £6,685 12s. 6d., charged to Waitaki – Bluff Railway.
Nov. 25, „	„ „ ...	Freight on Railway Material ...	...	...	...	McKenzie and Ross ...	4 weeks from receipt of material.	Jan. 5, 1879	56 16 10	
April 4, 1879	„ „ ...	Springfield	F., P. L., and Bdgs.	6 45 0	0 40 0	F. Benham	18 Aug., 1879	...	10,353 0 0	
Jan. 4, 1878	Waitaki–Bluff ...	Mount Stuart, Stationmaster's House	...	...	...	J. Hollick	Feb. 28, 1878	July 11, 1878	256 0 6	
Feb. 19, „	„ „ ...	No. 6, Station Buildings ...	...	...	...	W. Mills	May, „	July 25, „	935 10 0	
April 10, „	„ „ ...	50 sets Points and Crossings ...	...	...	...	Sparrow and Co. ...	Oct. 9, „	June 10, 1879	700 0 0	
Jan. 5, „	„ „ ...	Cattle-pens	...	...	...	Menzies and Hughes ...	Mar. 16, „	July 20, 1878	436 0 0	
May 25, „	„ „ ...	Glendermid, Stationmaster's House	...	...	...	Blair and Stevens ...	Aug. 10, „	Aug. 10, 1878	435 17 8	
Sept. 25, „	„ „ ...	Green Island Extension ...	F. and P.L.	0 40 50	0 6 0	James Innes	Mar. 21, 1879	...	1,990 16 1	
July 30, „	„ „ ...	Tapanui Branch	...	15 40 0	...	Proudfoot and McKay ...	May 30, 1880	...	61,500 0 0	No payments to be made until contract finished.
Oct. 31, „	„ „ ...	No. 1, Rolling-stock	...	...	...	John Anderson ...	½ Jan. 10, ½ April 10, 1880		6,685 12 6	Remainder of contract, £6,685 12s. 6d., charged to Amberley-Waitaki Railway.
Dec. 2, „	„ „ ...	Port Chalmers Reclamation ...	...	...	...	James Innes	Jan. 22, 1879	Feb. 4, 1879	415 15 10	
Dec. 5, „	„ „ ...	Station Buildings, Clinton Sec.	...	...	...	D. A. McLachlan ...	Feb. 6, „	Mar. 22, „	1,828 3 1	
Sept. 13, „	„ „ ...	Freight on Rails	...	...	...	Cuff and Graham ...	Oct. 18, 1878	Oct. 22, 1878	322 1 9	
Jan. 11, 1876	„ „ ...	Kartigi	F. and P. L.	17 58 0	0 36 41	Munro and Culling (assigned to McKenzie, Paisley, and Co.)	Jan. 5, 1878	Mar. 20, 1879	58,747 5 10	
Mar. 27, 1876	„ „ ...	Blueskin	F. and P. L.	7 0 0	0 20 0	David Proudfoot ...	Nov. 27, 1878	Within contract time	45,000 0 0	Exact date not given in certificate.
Sept. 5, 1877	„ „ ...	Clinton	F. and P. L.	16 31 0	0 30 0	Proudfoot and McKay ...	July 4, „	Jan. 20, 1879	37,600 0 0	
Feb. 19, 1879	„ „ ...	Engine Shed at Clinton ...	...	...	...	J. M. Watson ...	May 3, 1879	...	489 0 0	
Feb. 22, „	„ „ ...	Goods Shed at Goodwood ...	...	...	...	Mercer and Low ...	May 12, „	April 8, 1879	497 9 4	
Mar. 22, „	„ „ ...	Cattle Pens at Clinton and Waiwera	...	...	...	D. A. McLachlan ...	June 19, „	...	609 18 9	

SCHEDULE of RAILWAY CONTRACTS CURRENT, &c.—*continued.*

MIDDLE ISLAND—*continued.*

Date of Contract.	Line of Railway.	Name of Contract.	Particulars.	Length of Contract.	Length of Sidings in Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract.	Remarks.
				M. ch. lk.	M. ch. lk.				£ s. d.	
Mar. 25, 1879	Waitaki–Bluff ...	Additional Stations and Platforms	...	...	...	Meikle and Campbell ...	June 19, 1879	June 6, 1879	314 2 0	
Mar. 29, „	„ „ ...	Waiting-room at Waihola ...	...	...	...	Thomas Finlay ...	April 29, „	April 29, „	65 10 0	
May 3, „	„ „ ...	Steamer Wharf and Reclamation at Port Chalmers	...	...	...	McGill and Forrest ...	July 24, 1880	...	26,698 7 8	
June 6, „	„ „ ...	Removing Carriage Shed, &c., Dunedin Station	...	...	...	Meikle and Campbell ...	Aug. 4, 1879	...	887 0 0	
	„ „ ...	Painting Clutha Bridge ...	...	...	...	J. M. Watson and Co....	...	...	250 0 0	
	„ „ ...	Painting Bridges	...	...	...	Smith and Smith ...	...	...	240 10 0	
June 17, „	„ „ ...	Dunedin Station Reclamation...	...	...	...	E. Pritchard and Co. ...	Mar. 11, 1882	...	58,487 10 0	
	„ „ ...	Port Chalmers Station ...	...	...	...	R. Martin	...	...	3,377 5 0	
April 10, 1878	Winton–Kingston ...	50 sets Points and Crossings ...	...	...	...	Sparrow and Co. ...	Oct. 9, 1878	June 10, 1879	700 0 0	
April 24, „	„ „ ...	Kingston Wharf	...	...	...	J. Whittaker ...	Aug. 23, „	Dec. 14, 1878	2,668 3 1	
May 14, „	„ „ ...	No. 8, Station Buildings ...	...	...	...	H. Jaggers ...	July 1, „	Aug. 31, „	724 15 0	
Jan. 4, „	„ „ ...	Kingston, Plate-laying ...	P. L.	18 17 50	0 12 0	Topham and Angus ...	May 21, 1878	July 9, 1878	7,322 13 11	
Dec. 1, 1877	Western Railways ...	Private Crossings	...	...	...	J. R. Stuck	Jan. 8, „	Nov. 30, „	678 15 0	
Dec. 11, „	„ „ ...	Rolling-stock	...	...	...	Menzies and Hughes ...	Not stated* ...	...	1,492 8 0	* Depends upon time when material is handed to Contractor.
Sept. 19, 1878	„ „ ...	Freight on Rails	...	...	...	Henry Guthrie ...	Oct. 10, 1878	Completed	156 19 10	
Dec. 5, „	„ „ ...	No. 2, Otautau Branch ...	F. and P. L.	10 75 0	0 30 0	D. Robertson ...	May 26, 1879	...	10,600 0 0	
Aug. 3, 1877	„ „ ...	Wallacetown Branch ...	F. and P. L.	11 74 0	1 20 0	Miller, Murray, and Walker	May 1, 1878	...	11,358 18 0	
Jan. 5, 1878	„ „ ...	No. 1, Otautau Branch ...	F. and P. L.	6 3 0	0 40 0	James Murray ...	May 1, 1878	June 7, 1879	4,512 9 6	
Feb. 21, 1879	„ „ ...	No. 1, Station Buildings ...	...	...	...	D. McLeod	April 9, 1879	June 30, „	861 18 0	
Feb. 17, „	„ „ ...	No. 2, „ ...	...	...	...	„	April 1, „		690 0 0	
Mar. 19, „	„ „ ...	No. 3, „ ...	...	...	...	D. Bonthron	May 17, 1879	May 31, „	499 0 0	
June 23, „	„ „ ...	Riverton	F. and P. L.	6 0 0	0 30 0	D. Robertson	Feb. 29, 1880		21,700 0 0	
May 5, „	„ „ ...	No. 4, Station Buildings, &c. ...	...	...	...	D. Bonthron	June 14, 1879		687 15 6	
April 19, „	Otago Central ...	Inspector's House, N. Taieri ...	...	...	...	John Hollick... ...	July 5, 1879	...	466 13 0	
May 19, „	„ „ ...	Wingatui	F.	6 65 0	...	D. McKenzie ...	Jan. 16, 1881	...	48,839 7 10	
...	Greymouth–Hokitika...	Greymouth	...	...	...	W. Rowe	...	...	8,440 0 0	
Jan. 6, 1879	„ „ ...	Hokitika, Hampden Street ...	...	...	...	G. O'Connor... ...	March 6, 1879	...	130 2 3	
June 25, „	Canterbury Interior Main Line Oxford–Temuka	River Temuka Bridge ...	...	...	...	Henderson and Fergus...	Feb. 23, 1880	...	4,318 6 1	
June 25, „	„ „ ...	River Eyre Bridge	...	...	...	„ ...	Feb. 23, „	...	3,788 10 0	
April 18, „	Main Line to Upper Ashburton	Ashburton	F. and P. L.	10 60 0	0 30 0	John Fraser	Jan. 16, „	...	9,858 17 6	
June 2, „	Opawa Branch Extension	Albury	F. and Bridge.	1 28 0	...	William Paisley ...	Feb. 29, „	...	7,878 15 0	
May 12, „	Edendale–Toitois ...	Wyndham	F.	3 70 0	...	James Shirley ...	Jan. 6, „	...	9,723 9 0	
June 20, „	Otautau–Nightcaps ...	Opio	F.	3 10 0	...	James Innes	Feb. 13, „	...	4,837 0 0	
April 28, „	Clutha–Catlin's River...	Invertiel	F.	2 40 0	...	George Mackie ...	Dec. 21, 1879	...	5,388 10 10	
May 8, „	Palmerston – Waihemo	Palmerston	F.	3 0 0	...	Jesse Coates	Jan. 7, 1880	...	4,622 9 4	
May 26, „	Amberley–Cook Strait	Bellgrove	F.	3 0 0	...	P. Dey	May 26, „	...	8,159 0 0	
Mar. 26, „	„ „ ...	Waipara	F. P. L. and Bdgs.	6 77 0	0 35 0	P. McGrath	Dec. 18, 1879	...	21,493 1 0	
...	Little River–Akaroa ...	Ellesmere	...	...	...	„	...	...	14,704 4 8	

APPENDIX G.

SCHEDULE of Sleeper Contracts Current on the 1st July, 1878, and Contracts Entered into during the Financial Year ended 30th June, 1879.

NORTH ISLAND.

Date of Contract or Agreement.	Contractor's Name.	Address.	No. of Sleepers contracted for.	Rate per Sleeper.	To be delivered at	Rate per Month.	To be Completed.	Total delivered to date.	Remarks.
				s. d.					
AUCKLAND.									
12 November, 1878	W. H. Hill	Mauku	2,000	3 9½	Pukekohe Station	One-fifth each month	12 May, 1879	2,000	Completed.
19 September, „	J. Moore	Patumahoe	2,000	3 0⅞	Auckland Station, or any Station between Auckland and Ohaupo	One-fifth the first two months, and one-fifth during each succeeding month	12 March, „	2,000	Completed.
19 „ „	Thos. Pollock	Pukekohe	1,000	3 7	„	„ „	12 „ „	1,000	Completed.
19 „ „	H. Aspden	Mauku	1,000	3 9½	„	„ „	12 „ „	1,000	Completed.
19 „ „	C. Kavanagh	„	1,000	3 9½	„	„ „	12 „ „	1,000	Completed.
13 „ „	J. McLennan	Auckland	25,000	2 11	„	„ „	20 „ „	1,007	
15 January, 1879	John Moore	Patumahoe	3,000	3 9	„	„ „	13 June „	3,000	Completed.
Agreement ...	Thomas Cox	Auckland	500	...	...	... ...	...	290	
14 March, 1879	F. Mander	Auckland	5,000 split puriri	3 9½	Drury and Pokeno, for Waikato–Thames	One-eighth first two months, one-eighth each succeeding month	3 December, „	...	
9 June, „	Gibbons and Darrow ...	Grahamstown ...	100,000 kauri	2 5	Shortland, Kirikiri, and Puriri	One-tenth first six months, one-twentieth each succeeding month	3 June, 1881	...	
WELLINGTON.									
20 July, 1877	Richter Nannestead & Co.	Palmerston North ...	10,000	2 4	Alongside line Wellington–Upper Hutt, and Mungaroa Flat	One-fifth of the total number tendered for within two months, remainder in equal monthly instalments	9 April, 1878	10,000	Completed.
18 „ „	C. E. Zohrab	Wellington	5,000	2 8	„	„	9 „ „	5,000	Completed.
1 May, 1878	William Booth and Co...	Taratahi	25,000	2s. 3d. & 2s. 6d.	Railway line, 57 m. 5 ch., near Featherston and Carterton Station	One-third of the whole in first six months, one-ninth during every succeeding month	27 April, 1879	17,300	
1 „ „	William Booth and Co...	Taratahi	10,000	3 5	Between 39 m. 20 ch. and 44m. 30 ch., Wellington and Masterton Railway	One-fourth of the whole during first month, balance in equal monthly instalments	27 August, „	10,000	Completed.
21 June, „	W. W. Corpe... ...	Taratahi	10,000	2 1	Railway crossing, Cemetery Road, Taratahi	One-third during first six months, one-ninth each following month	11 June, „	14,600	
			5,000	2 3					
14 „ „	George Stewart ...	Carterton	5,000	2 3	Carterton Station	One-third during first six months, one-ninth each following month	11 „ „	5,000	Completed.
29 „ „	William Booth and Co...	Carterton	5,000	2 5	Carterton Station	One-third during first six months, one-ninth each following month	11 „ „	5,000	Completed.
11 March, 1879	J. Cotter and Co. ...	...	10,000 black pine	2 9	Featherston Station, Wellington–Woodville	One-eighth first two months; one-eighth each succeeding month	3 December, „	4,100	
10 April, „	Price and Potts ...	...	15,000 totara	2 11	Featherston Station: 15,000 for Foxton–Wellington; 10,000 for Wellington–Woodville	About three thousand	7 January, 1880	3,200 totara	
			10,000 matai	2 10				600 matai	
31 January, „	W. L. Crowther* ...	Tasmania	25,000	3 6	Wellington	...	31 „ „	15,859	

* W. L. Crowther to supply 50,000 Tasmanian hardwood sleepers—25,000 for P.W.D., North Island, and 25,000 to Working Railways, South Island.

SCHEDULE of Sleeper Contracts Current, &c.—*continued.*

NORTH ISLAND—*continued.*

Date of Contract or Agreement.	Contractor's Name.	Address.	No. of Sleepers contracted for.	Rate per Sleeper.	To be delivered at	Rate per Month.	To be Completed.	Total delivered to date.	Remarks.
				s. d.					
NEW PLYMOUTH.									
...	Miscellaneous per J. R. Rees	New Plymouth ...	...	1 3	...	...	...	4,787	
27 January, 1879	F. James	Inglewood	2,500	2 0	Waipuku Section, between 13 m. 45 ch. and 16 m. 45 ch.	One-third first month, one-third each succeeding month	11 April, 1879	2,500	Completed.
...	Fisher and Caddy ...	„	2,500 rimu (red pine)	2 0	Waipuku Section	One-half first month, one-half succeeding month	11 March, „	2,500	Completed.
3 February, „	David Wilkie	„	10,000	2 11½	Waitara Wharf, or alongside line between Waitara, New Plymouth, Inglewood, and Stratford Stations	One-fifth first two months, and one-fifth during each successive month	1 August, „	10,000	Completed.
26 April, „	David Wilkie	„	10,000 red pine	2 1	Between Waipuku and Stratford	One-fifth first month, and one-fifth during each successive month	...	4,360	
WANGANUI.									
20 July, 1877	Richter Nannestead & Co.	Palmerston North ...	23,000	2 7	Wanganui Railway Wharf ...	One-eighth of the contract number each month	9 April, 1878	20,30	
18 „ „	C. E. Zohrab	Wellington	5,000 also 763	2 7	„ ...		9 „ „	5,763	Completed.
14 May, 1878	W. H. Lash	Halcombe	30,000	1 9	Halcombe	One-eighth in first two months, one-eighth of remainder in each following month	27 January, 1879	2,753	
13 March, 1879	Johan Andreason ...	...	300 totara	2 6	Awapuni	...	3 December, „	600	Completed.
			300 matai	2 6					
13 „ „	Randolph and Walker ...	Palmerston North ...	300 totara	2 11	Long Bush Station, Foxton-Wanganui Railway	One-eighth first two months	3 December, „	...	
			300 matai	2 11					
24 „ „	G. M. Snelson ...	Palmerston North ...	4,000 matai	2 6	Palmerston North	One-eighth first two months one-eighth each succeeding month	18 „ „	4,000	Completed.
5 April, „	J. and C. Bull... ...	Rangitikei	5,000 matai	2 9	Oarangi Siding and Greatford Station	One-eighth first month, one-eighth each succeeding month	13 December, „	3,000	
			20,000 totara	3 0					
28 „ „	P. Bartholomew ...	Feilding	3,000 totara	2 10	Fielding Station	...	28 January, 1880	750	
			3,000 matai	2 4					
3 May, „	G. M. Snelson ...	Palmerston North ...	10,000 matai	2 4	Between Awapuni, Palmerston North, and Bunnythorpe	1,500 per month	3 February, „	2,349	
10 „ „	G. Hansen	„ ...	1,000 matai	2 4	Terrace End Siding ...	Not given	10 September, 1879	...	
3 June, „	Harvey and McCall ...	...	3,000 totara	2 9	„ ...	...	3 November, „	1,200	
3 May, „	Freeman and Wylds ...	...	3,000 totara	2 9	Oroua Bridge Station ...	...	3 October, „	...	
6 „ „	Anders Jonsson ...	...	1,000 totara	2 9	Terrace End Siding ...	...	6 August, „	...	
9 June, „	Edward Marsh ...	...	2,000 totara	2 3	„ ...	...	9 November, „	...	
12 „ „	N. Berguist	Palmerston North ...	600 matai	2 0	Awapuni Platform ...	...	12 September, „	...	
12 „ „	Max Voss	„ ...	600 matai	2 0	Karere Station	...	12 „ „	...	
13 „ „	Thomas Pearce ...	Oroua Bridge ...	5,000 totara	2 0	Oroua Bridge	...	13 December, „	...	
14 „ „	A. Grammar	Palmerston North ...	750 totara	2 9	Terrace End Siding ...	...			
			750 matai	2 0			14 November, „	...	
9 May, „	Petter Anderson ...	...	2,000 totara	2 9	Not given	...	9 October, „	...	
13 „ „	A. F. Halcombe ...	...	3,000 totara	2 9	Terrace End Siding ...	...	13 „ „	...	
13 „ „	G. M. Snelson ...	...	3,000 totara	2 9	Bunnythorpe and Palmerston	...	13 „ „	...	
13 „ „	Neils Peterson ...	...	1,000 matai	2 0	Palmerston Station ...	...	13 August, „	...	
16 „ „	Patrick Maxwell ...	...	500 totara	2 9	Awapuni	...	16 „ „	...	
			500 matai	2 0					
13 June, „	G. Richardson ...	Palmerston North ...	250 totara	2 6	Palmerston North	One-eighth first two months, one-eighth each succeeding month	3 December, „	...	
			250 matai						

SCHEDULE of Sleeper Contracts Current, &c.—*continued.*

MIDDLE ISLAND.

Date of Contract or Agreement.	Contractor's Name.	Address.	No. of Sleepers contracted for.	Rate per Sleeper.	To be delivered at	Rate per Month.	To be Completed.	Total delivered to date.	Remarks.
AMBERLEY-COOK STRAIT.									
Agreement ...	H. Baigent	...	3,000	2 3	...	...	...	2,644	
PICTON-BLENHEIM RAILWAY.									
3 June, 1879	Bragge Bros.	Picton	1,000 matai 4,000 b. birch	2 3 2 6	Blenheim	One-third first three months, one-third each succeeding month.	19 October, 1879	157	
Agreement ...	H. Baigent	...	2,000 totara	3 0	Blenheim	...	...		
BRUNNER-GREYMOUTH RAILWAY.									
10 November, 1877	C. Holder and Co. ...	Greymouth ...	5,000	3 0	Greymouth Railway Station, Wharf, or alongside Railway Line.	1,000 per month	26th March, 1878	5,000	Completed.
AMBERLEY-WAITAKI RAILWAY.									
21 November, 1877	John Lee	West Oxford ...	10,000	2 5½	West Oxford Station ...	One-fifth of the whole number to be delivered within two months, one-fifth of the whole number to be delivered each succeeding month	14 May, 1878	10,011	Completed.
26 „ „	John E. Thacker ...	Okain's Bay ...	25,000	2 9	In trucks at Lyttelton ...		14 „ „	11,810	
WAITAKI-BLUFF AND BRANCHES.									
15 November, „	John Murdock and Co. ...	Invercargill... ...	25,000 also 1,007	3 5	Waikouaiti	One-sixth first two months, one-sixth each succeeding month	3 June, 1878	26,007	Completed.
WESTERN RAILWAYS.									
31 August, 1877	R. and A. Tapper Bros.	Invercargill... ...	37,000	2 0	Riverton or Makerewa Junction	One-fifth to be delivered within two months, remainder in equal monthly instalments	31 May, 1878	979	Contract determined.
7 May, „	James Angus	Invercargill... ...	20,000	3 4	Riverton and Makerewa Junction	One-fifth of the total number within two months, balance in equal monthly instalments	7 January, 1879	20,000	Completed.
13 September, „	John Murdock and Co....	Invercargill... ...	10,000	1 11	Invercargill Railway Station...	One-fifth first two months, remainder in equal monthly instalments	28 February, 1878	10,000	Completed.
30 April, 1879	F. Jack	Winton	8,000 totara and matai	3 0	Aparima Junction	One-fourth first month, one-fourth each succeeding month	21 August, 1879	2,800	
28 „ „	Boyd and Edwards ...	Invercargill... ...	2,000 totara	2 11½	„	One-fourth first month, one-fourth each succeeding month	21 „ „	500	

APPENDIX H.

SCHEDULE of CONTRACTS for ROADS and MISCELLANEOUS WORKS Current on the 1st July, 1878, and CONTRACTS entered into during the FINANCIAL YEAR ended 30th June, 1879.

NORTH ISLAND.

Date of Contract.	Line of Road or Work.	Name of Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract.	Remarks.
						£ s. d.	
No formal contract	Roads, North Island	No. 1 Whakatane, Te Teko Road	Rangi te Hika	...	...	970 10 6	
No formal contract	„ „	Deviation, Te Teko Road	„	...	...	151 10 0	
No formal contract	„ „	No. 1 Side-cutting, Galatea-Opepe Road ...	Peraniko te Ngatimanu ...	...	...	500 0 0	
Nov. 19, 1878	„ „	Grading Hunua Road	S. Cossey	May 14, 1879	May 28, 1879	253 6 0	
Oct. 16, „	Roads North of Auckland ...	Section 1, Waiwera, Te Weiti Road	James Clayden	Feb. 16, „	April 19, „	925 0 0	
Oct. 16, „	„ „ ...	Section 2, „ „	Brunton and McCathie ...	Dec. 16, 1878	Dec. 14, 1878	84 5 0	
Oct. 16, „	„ „ ...	Section 3, „ „	W. B. Manning	Nov. 27, „	Nov. 21, „	19 10 0	
Nov. 21, „	„ „ ...	Section 1, North Shore to Te Weiti	William McElroy	Mar. 1, 1879	Mar. 28, 1879	433 15 0	
April 22, 1879	„ „ ...	Section 2, „ „	E. Bond and Co.	July 22, „	...	170 0 0	
May 24, „	„ „ ...	Matakohe Cart Bridge	Richard Smith	Nov. 3, „	...	1,010 18 0	
May 21, „	„ „ ...	Mangapai Wharf	McLean and Ormiston ...	Sept. 6, „	...	548 0 0	
Feb. 3, „	Roads in Native Districts ...	Waioroi and Tautau Bridges	W. J. Bell	April 28, „	...	115 0 0	
April 14, „	Roads to open up lands before sale	Section 1, Purua Road	D. Cleary	July 14, „	...	200 0 0	
April 14, „	„ „	Section 2, „	Finlayson and Campbell ...	July 21, „	...	415 0 0	
April 9, „	„ „	Section 1, Herd's Point to Takahue	William McElroy	Aug. 9, „	...	425 0 0	
April 16, „	„ „	Falling, &c., Road Lines Nos. 2 and 5, Kairanga District	Symons and Cribb	July 12, „	...	563 10 0	
April 15, „	„ „	Falling, &c., Road Line No. 4, Kairanga District ...	Bickle and Stevens	July 12, 1879	...	234 10 6	
April 15, „	„ „	„ „ No. 6, „ ...	Calvey and Co.	July 12, „	...	330 0 0	
June 21, 1878	Miscellaneous Public Works ...	Lagoon, drainage of	Neild and Bowden	Nov. 18, 1878	Nov. 20, 1878	345 0 0	
Nov. 7, „	„ „	Papakura and Wairoa Road	M. Sinclair	April 30, 1879	May 21, 1879	1,000 0 0	
Jan. 7, 1879	„ „	Patutahi Drainage Works	E. Brennan	May 4, „	...	954 19 0	
Jan. 13, „	„ „	Matakana Wharves	D. J. Cruickshank	May 7, „	...	480 0 0	
Feb. 1, „	„ „	Punt at Ohau Ferry	Robert McLean	May 1, „	May 5, 1879	178 0 0	
Feb. 24, „	„ „	Otara Cart Bridge	Abbot and White	Aug. 24, „	...	2,450 0 0	
Feb. 5, „	„ „	Repairs, Panmure Bridge	J. McLean and Son... ...	June 3, „	...	1,308 0 0	
...	„ „	Bridges, Mahurangi-Whangarei Road	M. McKenzie	...	...	488 10 0	
Mar. 10, „	„ „	Kamo	Thomas Jones	Oct. 31, „	...	1,678 14 7	Balance of contract, £2,257 9s. 11d., charged to Whangarei-Kamo Railway.
June 21, 1877	„ „	Waipoa Bridge	William Sims	June 11, 1878	Completed	2,987 15 0	
...	Provincial Liabilities, Wellington	490 chains bush road, Sandon	T. J. Allen	...	...	624 15 0	
...	„ „	Rangitikei Bridge	T. Denby	...	...	5,174 0 0	
Nov. 20, 1874	„ „	Reclamation, Wellington Harbour	E. O'Malley	...	...	55,798 0 0	
...	„ „	Mauriceville Road	J. Haurigan	...	...	545 8 0	
...	„ „	Fencing on Reclamation Works	R. Conlin and Co.	...	...	114 0 0	
Feb. 7, 1878	„ „	Cutting drains, Motoa Swamp	Adin and Evans	April 18, 1878	Jan. 21, 1879	262 10 0	
Mar. 28, 1879	„ „	Forming streets, &c., Thorndon Reclamation ...	R. Duignan	July 26, 1879	...	1,250 0 0	
June 23, „	„ „	Forming footpaths, „ ...	Thomas Stephens	Aug. 23, „	...	500 0 0	
Feb. 8, „	Unauthorized...	Waiuku Channel	George Bennett	May 7, „	May 10, 1879	320 0 0	

SCHEDULE of CONTRACTS CURRENT—*continued.*

MIDDLE ISLAND.

Date of Contract.	Line of Road or Work.	Name of Contract.	Name of Contractor.	Contract to be Completed.	Date Contract was Completed.	Amount of Contract. £ s. d.	Remarks.
July 5, 1878	Roads—Nelson South-West Gold Fields	Bridge over Grey River	M. O'Connor	Mar. 10, 1879	April 15, 1879	4,543 15 0	
July 24, 1877	Roads—Westland	Section 4, Bowen, Okarito Road	John Allen	Nov. 12, 1877	July 5, 1878	949 15 0	
Aug. 24, „	„	Section 5, „	„	Dec. 16, „	Nov. 16, „	829 4 0	
Sept. 13, „	„	Section 6, „	R. O'Donovan	Jan. 12, 1878	Aug. 5, „	834 0 0	
Dec. 26, „	„	Section 8, „	„	...	Jan. 28, 1879	1,472 12 0	
Mar. 4, 1878	„	Section 9, „	James Clarke	Aug. 22, 1878	Jan. 27, „	1,563 10 0	
Mar. 4, „	„	Section 10, „	„	Aug. 22, „	Jan. 24, „	3,164 0 0	
Mar. 4, „	„	Section 11, „	„	Oct. 22, „	April 1, „	2,958 0 0	
Mar. 4, „	„	Section 12, „	„	Aug. 22, „	July 10, 1878	1,391 0 0	
Oct. 15, „	Hokitika–Christchurch Road ...	Erecting roadmen's cottages	Dixon and Spivey	Jan. 18, 1879	June 19, 1879	520 0 0	
April 13, „	Waimea Water-race	Timber dam at Kawhaka	John Maher	Jan. 9, 1879	May 5, 1879,	8,340 0 0	
...	New River Water-race... ...	Subsidy	New River Water-race Co. ...	...	...	377 12 0	
June 24, „	Miscellaneous Public Works ...	Teremakau Bridge	Edward Blake	Mar. 10, „	...	7,383 0 0	
July 11, „	„ „ ...	Hokitika Bridge	W. Smith	Mar. 10, „	...	6,804 4 8	
July 4, „	„ „ ...	Ahaura Bridge	M. O'Connor	Mar. 10, „	...	7,983 0 0	
Aug. 23, 1877	„ „ ...	Hurunui–Greta Bridge	William Sims	Aug. 21, 1878	April 9, 1879	5,120 15 2	
Nov. 27, 1878	„ „ ...	Wairoa Cart Bridge	F. Freeman	Sept. 22, 1879	...	3,228 10 0	
Nov. 2, „	„ „ ...	Maerewhenua Railway Bridge	Allan and Stumbles ...	Mar. 28, „	...	2,077 5 11	
Feb. 10, 1879	„ „ ...	Ohikanui Bridge	Henry Daulby	June 10, „	...	1,998 10 0	
May 9, „	„ „ ...	Jetty and Goods Shed, Catlin's River	William McPhee	July 9, „	...	419 0 0	
Sept. 10, 1878	Provincial Liabilities, Nelson ...	Motueka Bridge	John Briton	Jan. 3, „	Oct. 7, 1878	5,159 5 0	
Mar. 9, „	„ „ ...	Removing old Wharf, Nelson	J. Garrard	Sept., 1878	Aug. 1, „	175 0 0	
Mar. 9, „	„ „ ...	Ironwork for Wharf, „	P. L. Gully	Sept. 5, „	Sept. 28, „	305 9 5	
Mar. 11, „	„ „ ...	Nelson Wharf	J. Gilbertson	Oct. 5, „	Oct. 1, „	1,075 0 0	
Nov. 22, „	„ „ ...	Approaches, Motueka Bridge	T. Riordan	Feb. 15, 1879	Mar. 12, 1879	1,627 8 0	
July 15, „	Repairs, Immigration Depôts ...	Jetty at Goat Island	R. Bauchop and Co. ...	Sept. 8, 1878	Completed in contract time	115 0 0	

APPENDIX I.

ANNUAL REPORT ON LIGHTHOUSE WORKS BY THE MARINE ENGINEER.

The Marine Engineer to the Secretary, Marine Department.

Sir,— Marine Office, Wellington, 30th June, 1879.

I have the honor to forward, for the information of the Minister having charge of the Marine Department, the annual report on works executed for new lighthouses during the year, viz.:—

Centre Island, Foveaux Strait.—This light was first exhibited on the 16th September, 1878. It is of the first order, fixed; with red arcs thrown over the inshore dangers.

Timaru Harbour Light.—This light was first exhibited on the 1st July, 1878. It is a fixed white light of the fifth order, visible in clear weather at a distance of 14½ miles. This light is maintained by the Timaru Harbour Board.

Hokitika Harbour Light.—The tower is now about ready for the reception of the lantern and apparatus, which have been sent to Hokitika for the purpose of being erected. This work will not take many weeks to complete, and I hope to be able to report very soon that the light is ready to be exhibited. This light, being a local light, will be maintained by the Hokitika Harbour Board.

Cape Maria.—The whole of the works at this place have been satisfactorily completed, and the light was first exhibited on the 24th March, 1879. It is of the first order, revolving once a minute. From the lower part of the tower a fixed red light is shown in the direction of Columbia Reef.

Akaroa.—The works here are in a forward state. The construction of the road from the landing-place was a heavy piece of work, very much of it in hard solid rock. A good landing-place and lifting apparatus have been prepared, which have much facilitated the landing of material. In connection with this work I regret to have to report the death of the overseer in charge of it, Mr. William Black, who was found dead on the ranges between the lighthouse and the Town of Akaroa on the 30th March last. The work suffered little or no delay, as another overseer was despatched and placed in charge almost immediately.

Cape Saunders.—The necessary land has been acquired for this lighthouse, and a strong working party is now erecting the buildings, for which all the materials have been landed. Good progress is being made, and it is expected that the buildings will all be completed by middle of September.

Mokohinau, Hauraki Gulf.—The land necessary for this was taken under "The Public Works Act, 1876," and preparations were made to begin the work, when instructions were received that the work should be suspended until further orders.

I have during the year visited the following lighthouses and intended sites for lighthouses:—

1879.
Jan. 8. Stephen's Island.
Jan. 9. Kapiti Island.
Feb. 25. Akaroa.
Feb. 28. Timaru.
June 2. Stephen's Island.
June 2. Cape Farewell Spit.

Although I have twice visited Stephen's Island I have been unable to make a proper examination; it is very rough and precipitous, and cannot be ascended and examined without previously cutting a road. This has been accomplished by a party of men sent for the purpose, and I propose to make an early visit to inspect the site, when a report will be made on it, as well as on Kapiti, which offers good facilities for the erection of a lighthouse.

I have, &c.,
John Blackett,
Marine Engineer.

The Secretary, Marine Department.

APPENDIX J.

ANNUAL REPORT BY THE CHIEF INSPECTOR OF MACHINERY.

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

Office of the Chief Inspector of Machinery,
Sir,— Wellington, 2nd August, 1879.

I have the honor to submit the fifth annual report of the Inspection of Machinery Department for the year ended 30th June, 1879.

There has been an increase of 16 boilers inspected during the year; but, owing to the depression which exists amongst saw-mill owners, the number falls far short of what it would otherwise have been.

I attach tables showing the number of inspections of boilers, and the number and nature of the machinery at work throughout the colony.

It has been found necessary for the better protection of employés in the several works where machinery is used, to issue notice to fence the various parts thereof, as provided for in the Act, and it is satisfactory to state, as showing the willingness of owners of mills to comply with the requirements of the Act, that although eighty-four notices have been given, yet in no case has it been found necessary to resort to arbitration to have the directions of the Inspectors carried out.

The number of boilers inspected during the year was 1,145, of which 135 were found defective, and notices to repair those were accordingly given. The Inspectors report that in all cases the repairs have been satisfactorily executed, and the boilers put in good repair.

There are 978 machines of various descriptions at work in the colony with steam as a motive power.

A boiler explosion took place at Wanganui in May, which, I regret to say, resulted in the death of the engine-driver. From the report of the Inspector of the district (Mr. McGregor), and the evidence given at the Coroner's inquest, it would appear that the accident was occasioned from the shortness of water in the cylindrical part of the boiler, which, from its peculiar construction, allowed a large quantity of water to remain in the side pockets after the cylindrical part had become empty, or, more correctly speaking, had become filled with steam more or less superheated. The result of this would be that, the moment the engine was started, the water remaining in the pockets would prime through the opening into the cylindrical portion of the boiler on the heated plate immediately over the fire, causing it to contract suddenly and tear across. The rent thus caused by the sudden contraction of the plates, independently of any increased pressure there may have been due to the saturation of superheated steam, would, in my opinion, be sufficient to cause the explosion. Had due care, however, been exercised by frequent blowing through the gauge glass-cocks to ascertain if they were working properly, the accident would probably have been prevented.

The boiler was in good order, and well supplied with all necessary mountings, and was quite equal to the pressure allowed by the Inspector—40 lb. per square inch.

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

The Hon. the Minister for Public Works,
Wellington.

Enclosure No. 1 in Appendix J.

Statement showing the Amount of Fees collected in the Inspection of Machinery Department during the Financial Year ending 30th June, 1879.

Name of District.	Amount Collected.
Otago	£559 0 0
Canterbury	457 0 0
Auckland	542 0 0
Wellington	322 0 0
Marlborough	93 0 0
Taranaki	38 0 0
Nelson North	150 0 0
Nelson South	37 0 0
Westland	45 0 0
Hawke's Bay	85 0 0
Total	£2,328 0 0

Office of Chief Inspector of Machinery,
Wellington, 26th July, 1879.

Enclosure No. 2 in Appendix J.

Statement showing the Cost of Working the Inspection of Machinery Department during the Financial Year ended 30th June, 1879.

Nature of Expenditure.	Amount Expended.
Salaries	£1,296 13 4
Travelling expenses	451 6 0
Sundries	15 15 3
Total	£1,763 14 7

Enclosure No. 3 in Appendix J.

Statement showing the Number of Boilers Inspected during the Year ended 30th June, 1879

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	12	73	10	63	38	81	277
Canterbury	12	115	7	58	10	29	231
Auckland	10	30	16	62	42	101	261
Wellington	13	30	14	30	29	44	160
Marlborough	2	8	2	2	10	19	43
Taranaki	2	3	2	2	7	3	19
Nelson North	1	36	10	9	13	4	73
Nelson South	...	1	5	2	...	6	14
Westland	1	1	2	9	5	7	25
Hawke's Bay	...	19	5	8	6	4	42
Totals	53	316	73	245	160	298	1,145

Office of Chief Inspector of Machinery,
Wellington, 26th July, 1879.

Enclosure No. 4 in Appendix J.

STATEMENT showing MACHINERY INSPECTED during the Year ended 30th June, 1879.

NAME OF DISTRICT.	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.	Wind Saw-mills.	Water Saw-mills.	Steam Bone-crushing Mills.	Water Bone-crushing Mills.	Steam Woollen Mills.	Steam Foundries.	Steam Quartz-crushing Mills.	Water Quartz-crushing Mills.	Steam and Water Quartz-crushing Mills.	Steam Threshing Machines.	Steam Soap and Candle Works.	Steam Cordial Manufactories.	Steam Laundries.	Steam Boiling-down Establishments.	Steam Brick-making.	Steam Bakeries.	Steam Chaff-cutters.	Steam Breweries.	Steam Rope-making.	Steam Coach Factories.	Steam Drain Pipe and Tile Factories.	Steam Hoisting Machinery.	Steam Hauling and Winding Machinery.	Steam Dredges.	Steam Glueworks.	Steam Patent Slips.	Steam Pumping Machinery.	Steam Coffee and Spice Mills.	Steam Tanneries.	Steam Tumeries.	Steam Wool Dumping.	Steam Wool Scouring.	Steam Sheep Dipping.	Steam Ice Manufactories.	Steam Boot Manufactories.	Steam Sausage Machines.	Steam Baths.	Steam Road Rollers.	Steam Road Stone Breakers.	Steam Traction Engines.	Steam Gasworks.	Steam Chemical-works.	Steam Kitchen Boilers.	Steam Paper-mills.	Steam Mortar-mills.	Steam Lead-mills.	Steam Assaying.	TOTALS.
Otago	...	...	2	15	5	2	...	...	46	...	...	2	1	2	17	...	3	...	66	5	1	2	4	4	2	7	9	1	1	2	16	10	3	1	...	1	2	...	3	4	5	...	1	...	...	...	1	4	...	2	1	2	3	...	...	...	258
Canterbury	...	...	3	5	1	...	1	...	49	...	...	2	...	1	19	...	...	...	90	2	3	...	7	2	...	11	5	...	...	1	3	...	...	...	...	...	2	3	...	3	2	...	...	1	3	1	2	2	2	1	...	...	...	...	227
Auckland	2	...	2	10	...	1	...	...	68	2	...	5	...	...	12	8	2	1	8	7	5	...	2	1	2	6	10	1	1	3	8	16	1	...	...	9	1	3	1	...	...	...	2	3	...	...	...	2	...	...	...	5	1	1	212
Wellington	...	...	7	9	...	4	...	...	46	...	1	...	...	...	6	...	...	...	14	2	1	1	8	3	1	3	6	...	...	1	11	...	...	1	1	1	1	2	1	1	3	...	1	...	3	1	...	1	...	1	...	...	...	...	...	141
Marlborough	...	3	...	1	...	2	...	...	13	...	...	...	...	...	...	1	...	...	8	...	...	...	6	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	2	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	42
Taranaki	...	...	...	1	...	2	...	...	4	...	...	...	...	...	2	...	...	...	3	1	...	...	2	...	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19
Nelson North	...	...	...	1	...	3	...	...	14	...	1	1	...	...	2	...	...	...	6	...	1	...	...	...	...	...	3	...	...	...	5	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
Nelson South	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Westland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawke's Bay	...	...	...	...	...	...	...	...	10	...	...	...	...	...	2	...	...	...	10	...	...	...	5	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	1	2	2	2	...	...	...	...	...	...	...	...	...	...	...	...	37
Total	2	3	14	42	6	14	1	...	250	2	2	10	1	3	60	9	5	1	205	17	11	3	34	10	5	30	37	2	2	7	44	27	4	2	1	11	6	9	7	13	13	4	3	3	9	1	3	7	2	6	2	3	3	5	1	1	978

Enclosure No. 5 in Appendix J.

STATEMENT showing the NUMBER of ACCIDENTS to PERSONS that have occurred with MACHINERY, as reported to Inspectors, during the Year ended 30th June, 1879.

Date.	District.	Nature of Machine, and Owner's Name.	Remarks.
1878.			
Sept. 23	Dunedin ...	Circular saw; Guthrie and Larnach	Man, named Thomas White, was struck by a piece of timber, and killed.
Oct. 30	Dunedin ...	Confectionery roller; R. K. Murray and Son	James Mulrooney, had four fingers taken off.
Oct. 30	Canterbury ...	Saw-mills; Le Bon's Bay... ...	Man's leg broken.
Dec. 3	Marlborough ...	Flax machine; James Robinson ...	John Wishery, had his arm taken off.
Dec. 15	Dunedin ...	Circular-saw; Findlay and Co. ...	Alfred Hitchmough, four fingers taken off.
Dec. 19	Dunedin ...	Circular-saw; Findlay and Co. ...	William Robertson, left hand severely cut.
1879.			
March 28	Port Chalmers ...	Saw-mill; Beauchop and Co. ...	Charles Mortoe, two fingers cut
April 15	Auckland ...	Moulding machine; Auckland Timber Company	Edward Sargent, hand injured.
April 15	Canterbury ...	Saw-mills; James Bruce	George Gullick, killed.
May 6	Wellington ...	Saw-mills; Duncan and York ...	John Nixon, killed by explosion of boiler.

APPENDIX K.

REPORT ON THE PROPOSED RAILWAYS IN THE NORTHERN DISTRICTS OF THE MIDDLE ISLAND.

The Engineer in Charge, Middle Island, to the Hon. the Minister for Public Works.

Sir,— Public Works Office, Dunedin, 21st June, 1879.

In accordance with your instructions I have the honor to submit the following report on the proposed railways in the northern districts of the Middle Island:—

State of Surveys.

The Provincial Government of Canterbury made reconnaissance and preliminary surveys of several lines to connect the East and West Coasts, and the whole of the country north and west of Amberley has been well explored during the past four years by Mr. Foy and other engineers employed by the General Government. The results of these surveys have from time to time been laid before the Assembly; and all the principal lines are shown on Mr. Foy's map lately issued, and the map attached to my annual report for this year. The following is a list of the various lines that have been examined:—

West Coast Lines—

1. *Browning's Pass Route.*—By the Rakaia and Hokitika or Arahura Rivers.
2. *Taipo Route.*—By the Waimakariri, Taipo, and Teremakau Rivers to the coast, with an alternative line by Lake Brunner.
3. *Arthur's Pass Route.*—By the Waimakariri, Bealey, Otira, and Teremakau Rivers to the coast, with an alternative line by Lake Brunner.
4. *Poulter's Pass Route.*—By the Waimakariri, Poulter, and Teremakau Rivers.
5. *Hurunui Route.*—From Amberley through the Weka Pass; thence by the Hurunui and Teremakau Rivers to the coast; with an alternative line by Lake Brunner.
6. *Hope Route.*—By the Weka Pass to the Hurunui, up the Hurunui to Lake Sumner; thence by the Kiwi, Hope, Tutaekuri, and Ahaura Valleys to Brunnerton; with alternative lines *viâ* Nelson Creek and the Arnold.
7. *Hanmer Plains Route.*—By the Weka Pass and Hurunui Plains to the Waiau River, up the Waiau to the Hope, and up the Hope to the Kiwi, where it merges into the Hope route.
8. *Amuri Pass Route.*—This is an alternative to the Hanmer Plains route. It leaves the latter at the confluence of the Hope with the Boyle, and follows up the Boyle and Doubtful, rejoining at the confluence of the Tutaekuri and the Ahaura.
9. *Cannibal Gorge Route.*—This route is common to the last two until the Doubtful is reached. It then follows the Doyle, Lewis, and Maruia and Grey Rivers, with an alternative line *viâ* Reefton.

Main Trunk Lines from East Coast—

1. *Coast Route.*—By the Omihi or Waikari Valleys to the Hurunui; thence by Cheviot and Hawkeswood to the coast at Oara, along the coast to the Ure River, and by the Dashwood Pass to Blenheim.
2. *Green Hills Route.*—By the Hurunui Plains, Waiau Township, and Green Hills to Kaikoura, where it joins the coast route.
3. *Awatere Route.*—By the Hurunui Plains and Waiau and Awatere Rivers, with one alternative joining the Wairau route through Travellers' Valley, and another reaching Blenheim by the Avon Pass and Waiopai River.
4. *Wairau Route.*—Leaving the Awatere route at the Hanmer Plains, and going by the Upper Clarence and Wairau Rivers to Blenheim, with one alternative from Tophouse to Nelson.

Main Trunk Lines from West Coast—

5. *Maruia Route.*—From Brunnerton by Kopara Lake, the Nancy, Upper Grey, Maruia, Matakitaki, Buller, and Northern Hope Rivers to Foxhill, with one alternative by Tophouse to Foxhill, and another by Tophouse and the Wairau to Blenheim.
6. *Grey Valley Route.*—From Brunnerton by the Grey, Inangahua, and Buller to the Matakitaki Junction, where it merges into the Maruia route.

In addition to the above main routes there are numerous combinations of lines and minor alternatives; but their consideration here will tend to complicate the question, without serving any good purpose, so I shall only refer to them in detail when required.

So far as I am aware, the surveys hitherto have not been made simply with the view of providing communication between certain places. Although this was one of the objects, they are mainly useful in ascertaining where lines can be taken, and thus forming a basis for designing a railway system for the whole of the northern end of the Middle Island.

In order that I might be able to lay the whole subject before you as clearly as possible, you instructed me to make a personal examination of the country, and the various lines proposed. In accordance therewith, I devoted six weeks to the work, being accompanied by Mr. O'Connor, under whose, charge most of the surveys were conducted. We examined all the principal passes in the main range and went generally over the whole of the more likely lines, making particular examination of leading features and special difficulties. Mr. O'Connor and I have considered the whole subject together, both on the ground and in the office, and I believe he concurs with me in all the professional conclusions and recommendations given in this report.

Requirements.

With the view of considering the question intelligibly, it is necessary to enumerate leading requirements and objects, and set down certain propositions that naturally arise. These are as follow:—

1. That the railways be laid out so as to open up the most good country for settlement, and more particularly to open up Crown lands.
2. That the utmost facilities be given for the transport of the West Coast coal and timber to the eastern markets or a shipping port.
3. That the quickest railway communication be provided between the southern settlements and the port on Cook Strait that offers the greatest facility for communicating with the North Island.
4. That, if possible, one railway be made to serve both purposes of connecting the East and West Coasts, and forming the through communication between the Bluff and Cook Strait.
5. That the West Coast, as an integral part of the colony, be connected with Cook Strait and the East Coast.
6. Engineering considerations and carrying capacities of the lines obtainable.

Description and Resources of Country.

One of the first considerations in determining the best line is the character of the country traversed. It is therefore advisable to give a short description here. The main range of mountains that forms the back-bone of the Middle Island extends in an unbroken chain from Otago to Nelson. There are few passes through it, and none of them is lower than 3,000 feet. The range is comparatively narrow and compact between Canterbury and Westland, but north of the Hurunui it breaks into subsidiary ranges running right to the East Coast. In fact, the whole of the north end of the Island is a regular jumble of mountains. The main range is considerably nearer the West than the East Coast, consequently the eastern ascent is easy, but it is quite impossible to get good gradients on the west side. This is unfortunate, for all the heavy traffic must necessarily come from the west.

Nearly all the country on the western side of the range is covered with dense timber, and the good flat land of any kind is comparatively limited. In connection herewith I beg to draw your special attention to a report by Mr. Calcutt, on this subject, published in Parliamentary Paper, E.–8, 1873. So far as my judgment goes I can corroborate all that Mr. Calcutt says as to the indifferent character of the land and its limited area.

The timber is, however, excellent and abundant. I travelled through immense tracts of forest country full of splendid pine and birch trees.

It is from the mineral resources of the West Coast that the principal railway traffic will be derived, so it is necessary to consider their extent and localities. Leaving out gold, which merely augments the general traffic, coal is the only mineral hitherto worked which may be depended on for a large permanent revenue. The quality of the West Coast coal is equal to that of any in the Australian Colonies: it is the only true coal in New Zealand. The supply is practically inexhaustible, and the mines are easily worked. But it should be pointed out that the main deposits occur in a narrow belt along the sea-coast, which entails the maximum length of carriage, right across the country. Coal has been discovered in small quantities up the Buller Valley, to within forty-five miles from Nelson, and this has been urged as a reason for the construction of a railway in that direction. But the deposits are small, and, according to the geological map, there is not much likelihood of a large coal field being found in that or any other locality many miles from the coast at the Grey or Buller, at any rate in the vicinity of the direct lines across the country.

We may therefore sum up the resources of the West Coast that will directly bring traffic to a railway as timber and coal. The timber traffic will begin from the crossing of the range, but the coal must be brought from the extreme end of the line.

On the eastern side of the range the West Coast lines pass through ordinary pastoral country that will give little traffic. With the exception of the Waiau and Hanmer Plains, all the good country is commanded by the railways now open or in progress, and in the case of those plains they are not particularly well accommodated by the lines that have a preponderance of other advantages.

Proceeding northwards along the East Coast, the good country terminates at the Conway, the width inland being about twenty miles. An isolated patch of thirty or forty square miles occurs at Kaikoura, after which there is no agricultural land worth mentioning to the Ure River, a distance of forty-five miles. The mountains then recede from the coast, and there is a large extent of good country all the way to Blenheim, particularly about the Awatere. The valley of the Awatere is rather narrow in proportion to its length, so it will not be opened up to the best advantage by a railway that simply crosses it as proposed; still the line would open up a large portion of agricultural land.

The East Coast lines terminate at Blenheim, which is the centre of the best land in Marlborough. The Wairau Valley is particularly good, and it is of an immense extent, reaching forty or fifty miles towards Tophouse.

With the exception of the Sherwood Forest on the Green Hills route, there is no timber country opened up by the East Coast lines, and the only mineral yet discovered is the Amuri limestone.

All the country above referred to as good and fit for settlement by an agricultural population is in the hands of private individuals. In fact it may be said generally of the lines now under consideration that none of them open up Crown lands fit for agriculture. We thus see that, in any case, it is impossible to meet one of the main requirements.

Lines that least meet Requirements.

Under this head I shall consider the routes that cannot be recommended, giving shortly the reasons for this conclusion.

West Coast Lines—

1. *Browning's Pass Route.*—Geographically this line is well situated. It connects the two coasts near the middle of the Island by the shortest route, but the engineering difficulties are sufficient to preclude its adoption.
4. *Poulter's Pass Route.*—This route partakes generally of the character of the preceding one, and it is rejected for much the same reason.
7. *Hanmer Plains Route.*—This line passes through the most good country of any of the West Coast lines: in this respect it has a decided advantage. The engineering difficulties are also at the minimum, and the gradients are as good as can be got; but the line is very much longer than the other routes further south—for instance, Arthur's Pass and Hope routes, which are respectively thirty-one and twenty-three miles shorter to Christchurch alone.
8. *Amuri Pass Route.*—This line possesses all the advantages of the last one, and is somewhat shorter, but the engineering difficulties are much greater.
9. *Cannibal Gorge Route.*—The same good country is opened up by this line as by the last two, and better gradients and a shorter tunnel are got in crossing the range. But it is objectionable in being twenty miles longer than the Hanmer Plains route, already condemned on account of its length. It will also have exceptionally heavy gradients midway between the range and the West Coast, which is a serious objection in working. The heavy gradients on the other lines can be concentrated into one place at the summit.

Main Trunk Lines—

3. *Awatere Route.*—The good country on this route is confined to the extreme ends, the intervening portion of seventy miles being very rough and unproductive. The engineering difficulties are also great, and there will be exceptional grades at several points.
4. *Wairau Route.*—Geographically this is the best route for a main trunk line. It runs through the middle of the Island in a direct course from Amberley to Nelson. Unfortunately these advantages are overbalanced by other considerations. With the exception of the forty miles at the southern end, which is common to many of the others, this line does not open up any good country whatever. The engineering difficulties are also very formidable: the line rises to an altitude of 4,500 feet, and exceptional grades of 1 in 12 or 15 are required at several places. The alternative line from Tophouse to Blenheim passes through good country; it is easy of construction, and the gradients are comparatively flat; still this is not sufficient to compensate for the objections on the greater portion of the line to which reference has just been made. The section from Tophouse to Blenheim would, however, form a portion of a line to connect Picton with the West Coast, to which I will allude further on.
5. *Maruia Route and* (6) *Grey Valley Route.*—These two lines commence at Brunnerton on the West Coast, and terminate at Nelson or Picton. It is difficult to understand how they came to be considered as main trunk lines that would ultimately connect the southern railway system with the last port of departure for the North Island. Without going into figures, one glance at the map shows the idea to be thoroughly unpractical. It implies that Wellington is to be reached from Christchurch *viâ* Greymouth and Nelson. I shall again refer to this subject in comparing the various routes.

Neither of the West Coast main trunk lines open up good country, and the Maruia one has exceptional grades of 1 in 10 or 15. The Grey Valley route is, however, the most suitable for connecting the Greymouth coal fields with Nelson or Picton.

Lines that most meet Requirements.

The objections given under the preceding head reduce the number of likely lines to the following:—

West Coast Lines.—The Taipo and Arthur's Pass routes, which come in south of Christchurch; and the Hurunui and Hope routes, which come in north of Christchurch.

Main Trunk Lines.—Coast route and Green Hills route.

West Coast Lines—

The leading characteristics of the West Coast lines are shown by the following table:—

STATEMENT showing DISTANCES and GRADES by various Routes.

Route.	Alternative Grades.	Distance: Christchurch to Brunnerton.	Distance: Rolleston to Brunnerton.	Length of Railway to Make.	Summit Level of Dividing Range where Crossed.	Height of Formation at Highest Point.	Length of Summit Tunnel.	Length of 1 in 7 Gradients.	Length of 1 in 15 Gradients.	Length of 1 in 33 Gradients.	Remarks.
		M. Ch.	M. Ch.	M. Ch.	Feet.	Feet.	M. Ch.	M. Ch.	M. Ch.	M. Ch.	
Taipo Route, Lake Brunner Line	A	148 0	133 0	111 0	4,050	3,000	1 50	1 48	...	...	The 1 in 7 would be all on west side of dividing range, and all ascending towards Christchurch.
" " " ...		...	...	...	...	3,000	1 50	...	8 0	...	The 1 in 15 would be all on west side of dividing range, and all ascending towards Christchurch.
" " " ...	C	...	...	...	...	3,000	1 50	...	...	16 0	The 1 in 33 would be all on west side of dividing range, and all ascending towards Christchurch.
Arthur's Pass Route, Lake Brunner Line	A	142 0	127 0	105 0	3,014	2,560	3 10	1 34	...	...	The 1 in 7 would be all on west side of dividing range, and all ascending towards Christchurch.
" " " ...	B	...	...	...	...	3,014	...	...	5 50	...	Of the 1 in 15, 4 miles 25 chains would be on west side of dividing range, and ascending towards Christchurch, and 1 mile 25 chains would be on east side of dividing range, and descending towards Christchurch.
" " " ...	C	...	...	...	...	3,014	...	2 60	...	...	Of the 1 in 7 grade, 2 miles 10 chains would be on west side of dividing range, and ascending towards Christchurch, and 50 chains would be on east side of dividing range, and descending towards Christchurch.
Hurunui Route, Lake Brunner Line	A	151 0	166 0	119 0	3,150	2,470	2 10	1 65	...	...	The 1 in 7 would be all on west side of dividing range, and all ascending towards Christchurch.
" " ...	B	...	...	...	...	2,790	0 47	2 15	...	3 10	The 1 in 7 would be all on west side of dividing range, and all ascending towards Christchurch, while the 1 in 33 would be all on east side of dividing range, and all descending towards Christchurch.
" " ...	C	...	...	...	...	3,100	0 11	...	10 20	...	Of the 1 in 15 grade, 7 miles would be on west side of dividing range, and ascending towards Christchurch, and 3 miles 20 chains would be on east side of dividing range, and descending towards Christchurch.
Hope Route, Nelson Creek Line	A	150 0	165 0	118 0	3,230	2,890	0 79	...	4 20	2 40	The 1 in 15 would be all on west side of dividing range, and ascending towards Christchurch, and the 1 in 33 would be all on east side of dividing range, and descending towards Christchurch.
" " ...	B	...	...	...	...	3,120	0 40	...	5 20	3 40	Of the 1 in 15, 4 miles 60 chains would be on west side of dividing range, and ascending towards Christchurch, and 40 chains would be on east side of dividing range, and descending towards Christchurch, while the 1 in 33 would be all on east side of dividing range, and descending towards Christchurch.
" " ...	C	...	...	...	...	3,230	...	3 40	...	...	Of the 1 in 7, 2 miles 25 chains would be on west side of dividing range, and ascending towards Christchurch, and 1 mile 15 chains would be on east side of dividing range, and descending towards Christchurch.

The difference in the cost of the work and the extent of good country opened up by the various lines is so small that a choice might almost be made on the basis of the information given by the table. The works on the two southern routes are considerably heavier than on the northern ones, particularly on the eastern side of the range, but this will in all probability be balanced by the saving in distance to make, the maximum difference being 13 miles.

The table shows the results obtainable on each route by three distinct classes of railway, viz.:—

(*a.*) Lines with stationary engines and inclines of 1 in 7.

(*b.*) Lines with ruling gradients of 1 in 15, and central rail, worked with Fell locomotives, as at the Rimutaka.

(*c.*) Lines with ruling gradients of 1 in 33, which is practically the limit for locomotive railways.

It will be seen that the Taipo is the only route where 1 in 33 gradients can be obtained, and this only with a continuous incline of 16 miles and a tunnel of 1 mile 50 chains.

The Taipo and the Hope are the only two routes where the 1 in 15 could be concentrated into one incline on the west side of the range. At the Taipo the incline would be 8 miles long, with a tunnel 1 mile 50 chains; at the Hope these lengths would be 4 miles 20 chains and 78 chains respectively. The disposal of the 1 in 15 grades in other cases, and the length of tunnelling required, are as follows:—

Route.	Length of Grade on West Side.		Length of Grade on East Side.		Total.		Length of Summit Tunnel.	
	M.	Ch.	M.	Ch.	M.	Ch.	M.	Ch.
Arthur's Pass	4	25	1	25	5	50	0	0
Hurunui	7	0	3	20	10	20	0	11
Hope (alternative grades)	4	60	0	40	5	25	0	40

The Hope route is not suited for a 1 in 7 grade, consequently it does not come into competition with the others in this particular. The points of comparison between the other three are given in the following statement, the 1 in 7 gradient being in all cases concentrated into one incline on the west side of the range:—

Route.	Length of Incline.		Length of Tunnel.	
	M.	Ch.	M.	Ch.
Taipo	1	48	1	50
Arthur's Pass	1	34	3	10
Hurunui	1	65	2	10
„ (alternative grades)	2	15	0	47

Before instituting a comparison of the four West Coast lines now under discussion it is necessary to consider shortly the nature of the country through which they pass, and the character of the works required. On the west side of the range all the routes are much alike; there are no special difficulties from the coast to the range. The lines generally run over undulating ground or along open valleys favourable to railway construction. The eastern slope of the two northern routes is also comparatively easy; a few rocky points along the Hurunui and Hope Rivers have to be cut through, but there is nothing of a formidable character.

The greatest difficulty on the eastern side occurs in the Lower Waimakariri Valley, on the southern routes. About 8 miles of the gorge, between the Kowai and Broken Rivers, is very rough. There are several rocky cliffs to be cut through or tunnelled, and several ravines to be bridged; still the average gradient is easy, and the gorge is tolerably straight; so I am confident that a careful survey would show a practicable line. Under any circumstances the difficulties are not such as to be considered a barrier to any large scheme of railway construction.

What may, however, be considered a formidable barrier exists at the Southern Alps. It is here that the real difficulties in making a line between the two coasts are met with. They consist chiefly of the height and width of the range, combined with the impossibility of finding good ground on which to run out gradients, and the great cost of tunnelling. To pierce the mountains between the points up to which ordinary gradients (say 1 in 50) could be got on solid ground is altogether out of the question. With the exception of the tunnels through the European Alps, the undertaking would have scarcely a parallel in the world. We are therefore forced to make a selection between gradients of 1 in 33 worked with very heavy locomotives, 1 in 15 with central rail, and 1 in 7 with stationary engines.

As already stated, the Taipo route is the only one that offers any facility for the adoption of the first alternative. This is on account of the excessive steepness and unstable character of the slopes along which the gradients would require to be run out. The chances are that the extensive benching required would cause slips of such magnitude as to extend to the top of the mountains. If to these drawbacks we add the excessive rainfall in the region traversed, the result is an array of difficulties that can only be met by substantial works and a liberal expenditure.

Although a gradient of 1 in 33 could be got on the Taipo route, the grounds can scarcely be called favourable, consequently the works would be very heavy and costly both to make and maintain. Then the result obtainable is by no means commensurate with the outlay. If a flat gradient, 1 in 50 or under, could be got, a considerable expenditure would be justifiable; but the difference in working between 1 in 33 with ordinary locomotives, and 1 in 15 or 1 in 7 with special appliances, is too small to warrant a large increase in first cost. A 40-ton locomotive on the 1 in 33 grade, and with the curves required on the Taipo route, would only pull about 75 tons of paying load, which is far too little for a mineral traffic. Taken altogether, the objections to a 1 in 33 gradient are sufficient to preclude its adoption in preference to a steeper one, so it need not be discussed further.

As already stated, the cost of tunnelling any of the passes will be excessive, no matter how short the tunnel may be. This is in consequence of the loose nature of the material and the immense quantities of water likely to be met with. So far as I can judge, the saddles to a great depth are composed of moraines or similar masses of rock fragments or boulders, very difficult to deal with in tunnelling.

There can be little doubt as to the immense quantity of water. The saddles have high mountains on each side of them covered with perennial snow, and the whole locality is teeming with springs. In some cases large streams flow direct from the boulders exactly over the spot where the tunnels will occur. The only exception to the general rule is at the Taipo: instead of piercing a saddle the line goes right through the solid range. This increases considerably the chance of favourable conditions for tunnelling. I have no doubt the Taipo tunnel would be very much cheaper than any other of equal length on either of the other routes.

The difficulties above referred to show the necessity of reducing to a minimum the length of grading on sidling ground and the amount of tunnelling through the passes. In the same manner economy in working demands that the exceptional gradients be concentrated, and that the inclines be as short as possible. On the basis of having all the incline together the Hope route has decidedly the advantage, with 1 in 15 gradients; but, with the same gradients on both sides of the range, Arthur's Pass is the best: it gives almost the minimum length of incline against the heavy traffic, with no tunnelling whatsoever.

As will be seen from the preceding table, the advantages obtained by the adoption of 1 in 7 gradients are not so great as might have been expected. With the single exception of the Hurunui one, all the tunnels are very long. This is on account of the breadth of the saddles on the top, which necessitates rising through them. As no special survey has been made of the ground over which the 1 in 7 grade will come, it is possible the tunnels might be shortened a little; but this can only be done to a limited extent, unless a corresponding incline is adopted for the eastern side, and this is objectionable, inasmuch as it doubles the working expenses at the range. The main object in adopting the steep incline and stationary engines, in preference to the "Fell system," is that heavy loads are raised more quickly, and the power required to raise the engine itself is entirely saved. I believe that the stationary-engine system is better than the Fell one for the West Coast line, but I fear that it is impossible to get suitable ground for the former, so the latter must be adopted. This reduces the number of lines to choose from to two—viz., the Hope route, with 1 in 15 gradients on both sides and a 40-chain tunnel; and the Arthur's Pass route, with much the same inclines but no tunnel.

MAIN TRUNK LINES—

The leading points of comparison between the two lines that most meet the requirements are as follow:—

——	Unit.	Coast Route.	Green Hills Route.
Distance Christchurch to Picton ...	miles	205	212
Length of railway to make	,,	145	152
Greatest height of range crossed ...	feet	820	1,775
Greatest altitude attained by line ...	,,	500	1,730
Length of summit tunnel	chains	46	nil.
Ruling gradient on new portion ...	...	1 in 50	1 in 25

The Green Hills route has the advantage in going farther inland, and so opening up more country; but the difference in the extent of the good land accommodated is very small; indeed it is a question whether there is any choice between them in this respect. This is accounted for by the fact that they run along two distinct plains separated by a range of high hills. Neither of the lines commands any of the country accommodated by the other.

The foregoing table shows that the Coast line is infinitely superior to the Green Hills one in all the essential characteristics, and it would be quite unnecessary to consider the matter further, only that the latter has been strongly recommended.

So far as can be judged without detailed surveys, there is little to choose between the routes as regards the cost of the work. The country between the Conway and the Kahautera in the one case, and the Mason and the Kahautera in the other, is very rough indeed. Notwithstanding the steepness of the gradients, the trial section of the Green Hills line shows a succession of cuttings and embankments far heavier than anything hitherto encountered in the railway works of New Zealand. In the first 5 miles north of the Whale's Back the line crosses thirteen broad ravines, five of them being from 50 to 90 feet deep, and eight from 90 to 160 feet. Further on, the same section has four banks from 50 to 70 feet deep, and four from 90 to 160 feet. The cuttings are also on the same gigantic scale, several being from 60 to 80 feet deep, and a quarter of a mile long. There is, however, very little tunnelling on the Green Hills route. Ten miles of the Coast route, between the Conway and the mouth of the Oara Creek, is also exceedingly rough. The Okara Saddle at the summit is pierced by a tunnel 46 chains long, and there is another of 66 chains through a low range on the southern side, with several small ones through spurs. The earthworks on this route are also very heavy.

Although the trial sections show little difference in the magnitude of the works on the two routes, I have no doubt the detailed surveys will make a great difference in favour of the Coast line. This is in consequence of the low average gradient in the latter case as compared with that on the Green Hills route. The chances are that the works will be increased in setting out the line on the steep gradients, whereas the contrary effect will be produced with the flat ones. Indeed I am confident that much of the tunnelling on the inclines on the Coast route can be eliminated. But were the cost twice as great, the balance of advantages would still be in favour of the Coast route. The gradient on the Green Hills line and the disposition of the inclines are particularly objectionable. A 1 in 25 grade is too steep for ordinary locomotives and too flat for the Fell system. Then the gradients are not concentrated in such a manner as to be economically worked. In the first 21 miles north of the Whale's Back there are fourteen distinct inclines in both directions of 1 in 25, three of one 1 in 26, and ten varying from 1 in 30 to 1 in 50. Exceptional gradients also occur at the twenty-sixth mile. The main, if not the sole object in making a railway in this direction is to provide the quickest means of transit between the southern settlements and the North Island, and this object will certainly not be attained by the line just described. Altogether, I have not the slightest hesitation in rejecting the Green Hills route in favour of the Coast line.

Conclusions as to Routes.

Having reduced to a minimum the number of direct routes to choose from between the East West Coasts, and between Amberley and Cook Strait, it is now necessary to consider them collectively, and as a part of a general railway system.

Reverting to the question of making one route available for both purposes, I subjoin the following table, showing the distance between Christchurch and Wellington by the different routes :—

Route, &c.	Miles.	Hours.
Viâ Grey Valley and Nelson :—		
Railway, at 17 miles per hour	315	18½
Steamer, at 13 miles per hour	120	9½
Totals	435	28
Viâ Picton :—		
Railway, at 21 miles per hour	205	9¾
Steamer, at 13 miles per hour	60	4¾
Totals	265	14½
By sea direct :—		
Railway to Lyttelton	8	0½
Steamer, at 13 miles per hour	202	15½
Totals	210	16

The only way by which the distance to Nelson could be materially reduced is by making the line *viâ* Cannibal Gorge and the Maruia Valley. This will save 48 miles between Christchurch and Nelson, but it would increase the distance between Brunnerton and Christchurch by 51 miles. It would also avoid the Grey and Inangahua Valleys altogether, and introduce exceptional gradients between the main range and Brunnerton. These objections far outweigh the advantages of the saving that is effected in the distance.

In addition to its excessive length, a line from Amberley to Nelson has the disadvantage of crossing the main range twice, whereas a railway can be taken to Picton without crossing once. Again, the former would end at an indifferent tidal harbour of limited capacity, whereas the latter terminates at one of the best harbours in the Middle Island, accessible in all states of the tide and in any weather, and capable of accommodating in safety the navies of the world. From its natural advantages there is not the slightest doubt that Picton harbour will ultimately become the northern *entrepôt* for the Middle Island, and, it is equally certain that the through line will become a necessity some day, it is therefore as well to recognize the position at once, and work up to it. Any effort to divert the stream of communication from its natural course can only result in failure and disappointment.

Failing to get one line that connects Canterbury with the West Coast and Cook Strait, the next best alternative is to adopt separate lines between those places. So far as the line to Cook Strait is concerned there is no difficulty in making a selection. The coast route terminating at Picton is undoubtedly, and beyond all comparison, the best. There are, however, several points for consideration before a similar conclusion can be arrived at with reference to the West Coast lines. We have already reduced the number from which a choice has to be made to two—viz., the Arthur's Pass and Hope routes. For all practical purposes their carrying capacity and cost may be considered equal, so is also the area of good country accommodated; the decision, therefore, depends entirely on the facility provided for transporting the products of the West Coast to a market. If Christchurch alone were the market, there would still be little to choose between the two routes, for the difference in the distance is only 8 miles. But in order to give the West Coast coal-mining the utmost encouragement it is necessary to extend the market at its command; this can only be done by shortening the distance of carriage to the populous districts south of Christchurch. The distance from Brunnerton to

Rolleston, and all places southwards, is 38 miles shorter by Arthur's Pass route than by the Hope route. If the former route is adopted, I would recommend the construction of a line between the Canterbury Interior Railway, at the south side of the Selwyn, and the Main Trunk line, at the north bank of the Rakaia, which will still further reduce the distance from Brunnerton to the southern districts by 20 miles, or a total of 58 miles. The new line above suggested is all on the plain, and it does not cross any rivers, so its cost will be at the minimum. It will also command a fair amount of local trafic.

The West Coast coal can never bear more than fifteen shillings freight to bring it to any place to which there is water-carriage. At the present railway tariff this makes Christchurch the limit. The native coal, therefore, starts inland on equal terms with the imported article. But if the former can be delivered at Ashburton at Christchurch prices, it has the advantage of saving 50 miles' carriage. If the Arthur's Pass route and the junction to Rakaia are adopted, and if minerals can be carried over the steep gradients at the present rates, I have no doubt the Greymouth coal will command the market well down to Timaru.

In addition to the other advantages above enumerated, the Arthur's Pass route affords facilities for giving railway communication between the Waimakariri and Rakaia watersheds behind the Porter's Pass Range, should it ever be required. It also comes nearest to Hokitika and the southern parts of the West Coast.

Taken altogether, I am of opinion that the Arthur's Pass route combines the greatest advantages in connecting the East and West Coasts by railway.

Having come to a conclusion with reference to the extension of the Main Trunk line to Cook Strait and a connection between the East and West Coasts, I shall now consider how far these lines work in with a general railway system for the northern districts of the Middle Island. In my report of last year I expressed the opinion that ultimately there would be a trunk line on each side of the main range, converging at Invercargill and Cook Strait, the southern crossing of the range being at the Haast Pass. A further acquaintance with the country strengthens this idea. I am confident that in due time those railways will be constructed. On account of the lowness of the Haast saddle, and the supposed absence of other engineering difficulties, the residents of Otago and South Westland are urging the construction of the Haast line first. I do not concur in this proposal, for the reason that its length is an effectual barrier to coal traffic, and there will be little else to carry for many years. Greymouth is to all intents and purposes the middle of the present West Coast settlement; the distance to it from Dunedin and Christchurch by the two routes is as follows :—

	Miles.
Dunedin to Greymouth—	
By Rakaia and Arthur's Arthur's Pass	330
By Otago Central Railway and Haast Pass	390
Christchurch to Greymouth—	
By Malvern and Arthur's Pass	150
By Dunedin, Otago Central Railway and Haast Pass	620

It will thus be seen that the Canterbury route is much the shorter even from Dunedin.

The accompanying plan shows the railway system that I would recommend for the northern districts. They comprise the following lines :—

1. Christchurch to Picton by Coast route.
2. Christchurch and Rakaia to Brunnerton by Arthur's Pass.
3. Greymouth to Tophouse by Grey, Inangahua, and Buller Valleys, with a line to Nelson *viâ* Foxhill, and to Picton *viâ* the Wairau Valley and Blenheim.
4. Westport to Nelson and Picton by Buller Valley, merging into the preceding line at Inangahua Junction.

The Waiau Plains can best be opened up by an independent branch from the Weka Pass to the Waiau Township, and ultimately connected with the main trunk line near Parnassus Station.

The following are the distances between the principal centres embraced by the proposed system :—

	Miles.
Christchurch to Picton	205
Christchurch to Greymouth	150
Greymouth to Nelson	180
Greymouth to Picton	205
Westport to Nelson	135
Westport to Picton	160
Nelson to Picton	120

I shall now give a general description of the four lines above enumerated. The length of railway to make in each case, with probable cost, is as follows :—

	Miles.		£
Christchurch to Picton	145	...	1,200,000
Christchurch and Rakaia to Brunnerton ...	127	...	1,100,000
Greymouth to Nelson and Picton	208	...	1,600,000
Westport to Inangahua	22	...	200,000
Totals	502	...	£4,100,000

The leading characteristics of the two lines first named above have already been discussed in comparing them with others, but it is necessary to add a few particulars here.

The reconnaissance survey of the Christchurch–Picton line shows short gradients of 1 in 40 at the Ure River and Dashwood Pass, but I believe they can easily be worked out, as also the 1 in 37 grade on the present Picton and Blenheim Railway. We shall then have nothing steeper than 1 in 50

from Cook Strait to the Bluff and Orepuki in the extreme south, and Lakes Wakatipu and Wanaka in the interior. Furthermore, it is just possible that the same gradients may be sustained through the Haast Pass to the West Coast, and right back to Picton by Tophouse and the Wairau Valley. This is a great matter, for few countries have such a high standard, and there are many steeper gradients on English railways.

The line between Amberley and Blenheim goes over four main ridges at the following altitudes:—

Weka Pass (avoided on Omihi route)	800 feet high.
Hawkeswood Saddle	400 „
Okara	500 „
Dashwood Pass	480 „

The level is, however, tolerably well sustained between the first and the third, so they are not really ascents to the extent shown.

There are two alternative lines near the Waipara, one by the Omihi, and the other by the Waikari Valley. The former saves the ascent to the Weka Pass, and is 5 miles shorter; but the works will, in all probability, be considerably heavier. The whole question is, however, a mere matter of survey. A similar case occurs between the Awatere and Blenheim. In order to open up more country it would be advisable to go by Taylor's Pass, unless the engineering difficulties and the lengthening of the line outweigh the advantages to be gained.

In addition to the moderate gradients on other parts of the Amberley–Picton line there is one continuous stretch of level 50 miles long, the curves also are good throughout, so there will be no difficulty in keeping up a rate of speed equal to that of the express train now running between Christchurch and Dunedin.

For the first 50 miles the Amberley–Picton line passes through undulating country moderately easy, then comes the 10 miles of very rough ground already described, and after that 7 miles of forming along the foot of the cliffs, 3 miles of which will require heavy rock cuttings, with short tunnels through bluffs. Altogether the works on 13 or 14 out of the 17 miles between the Conway and the Kahautera are very heavy. Still they do not seem to be heavier than those on the railway between Dunedin and Waikouaiti. One great point in favour of the former is that the rocks are all lime or sandstone, the easiest for cutting through and the best to stand. The works on the remainder of the line are comparatively easy.

In connection with this subject I have considered the question of making Port Underwood the terminus of the railway to Cook Strait, instead of Picton; but I do not think the scheme desirable for the following reasons: 1. The distance by rail is not materially shortened, and the line is taken farther away from the good country. 2. The harbour is not as good as the Picton one; and 3. Although the distance by sea to Wellington is 7 miles shorter, the length of rough water is 7 miles longer.

There is one idea with reference to Picton Harbour which deserves some slight consideration. It is to run the railway to the junction of Tory Channel and Queen Charlotte Sound, and make this the terminus for the through-passenger and mail traffic. By this means the sea passage would be reduced by 8 miles, and 16 miles would be saved to the steamers connecting with Wellington, Nelson, and Taranaki. I am afraid, however, that the shore from Picton to Tory Channel is too rough and tortuous to admit of a good line being made at a reasonable cost.

The following are details of the route to the West Coast by Arthur's Pass, the line recommended: It leaves the Malvern Branch at the Waddington Station, and goes by the interior main line and the present bridge to the north bank of the Waimakariri; thence along the north of the river to the confluence of Broken River, the Waimakariri being crossed at this point; thence along Broken River and Sloven's Creek, and *viâ* Goldney's Saddle, to the Waimakariri again; thence along the Waimakariri, Bealey, Otira, and Teremakau Rivers, and west side of Lake Brunner, to the Arnold; then down the Arnold to Brunnerton.

The works on this line have been already described. They are very heavy for 8 miles up the Waimakariri Gorge, but moderate on the remainder of the distance. The gradients and curves are easy, except at the main range, where inclines of 1 in 15 occur on both sides.

The main object in making railways from Greymouth and Westport to Nelson and Picton at present would be to complete the communication between the chief centres of the colony, for, so far as I can judge, there is nothing to make them pay. With the exception of the section from Tophouse to Blenheim, they all pass through very unproductive country. The only sources of traffic that can be relied on are the gold-mining industries in the Grey and Inangahua Valleys, the settlement of the Wairau Valley, and such supplies of Westport coal as are required for local consumption at Blenheim and other places that cannot readily be reached by sea. The comparatively good harbour at Westport, and the facilities that exist for shipping coal, are sufficient to turn the scale in favour of water carriage even to Nelson, the nearest of the larger ports.

As already stated, good workable railways can be made from the West Coast to Picton and Nelson at a moderate cost. The principal difficulties occur between Foxhill and the Buller watershed. The line already surveyed by the Hope has 1 in 35 gradients, and pierces the Spooner Range by a tunnel 900 yards long, the other works being equally heavy. The height of the range at the crossing is 1,500 feet, and there is no lower pass except the one near the Stanley Brook and the Dove and Pigeon Valleys, which is 1,100 feet. There would, however, be no advantage in adopting the latter route, for the line and works will be little improved, and the length is very much increased. The Stanley Brook line leaves the present railway at Wakefield Station, so the portion between that point and the terminus at Foxhill would become a branch. The only chance of getting a good line to the Buller Valley seems to be by Rae's Saddle, the Blue Glen, and Tophouse. This route is strongly objected to by the residents in the Motupiko and Lower Motueka Valleys on the ground that it does not accommodate those districts. I made a special examination of the locality, and found that the statement was correct; but, on the other hand, I noticed that the good country was too limited to afford much support to a railway.

I shall now recapitulate the conclusions arrived at in terms of the propositions set down at the outset and otherwise as they have worked out:—

1. The good country opened up by the proposed lines is comparatively limited, and none of it is in the hands of the Crown.
2. The maximum amount of facilities for transporting the West Coast products to a market is afforded by the Arthur's Pass route.
3. The quickest railway communication between the southern settlements and Cook Strait is afforded by the Coast route, and Picton is the port that offers the greatest facility for communicating with the North Island.
4. One line cannot be got to serve both purposes of connecting the East and West Coasts and forming the through communication between the Bluff and Cook Strait
5. The best railway system for the West Coast is to connect Greymouth and Westport with Nelson and Picton by the Grey, Inangahua, Buller, and Wairau Valleys, and Tophouse.
6. The Waiau Plains can be best accommodated by an independent branch from the Weka Pass.

Traffic.

As it has been proposed to proceed with the construction of the East and West Coast and Main Trunk lines forthwith, it is necessary to consider what prospects there are of a return from them.

West Coast Line.—The supplies of coal and timber of good quality on the West Coast are practically inexhaustible; but hitherto they have been little utilized, and we are importing annually between £300,000 and £400,000 worth of these commodities from other countries. The anomaly of this position is too obvious to require pointing out, and we are led directly to a consideration of its cause, and the means calculated to remove it. There is little difficulty in finding out the reason why the natural resources of the West Coast are still lying dormant. It is simply want of ready communication with a market. It is not, however, easy to indicate by what means this want is to be supplied. The main coal deposits occur on the coast at the Buller and the Grey, consequently the readiest communication is by sea. It is also well known that water carriage is, under ordinary circumstances, and particularly for long distances. the cheapest means of carrying coal. Unfortunately, however, the harbours in the neighbourhood of the coal fields do not favour this mode of transit. Naturally, neither the Grey nor the Buller is a good harbour, and the former is decidedly bad. The Buller is generally accessible to moderate-sized vessels, but the Grey bar can seldom be depended on for more than a few weeks at a time. Coal staiths and wharves, with training walls and other necessary works, have been constructed at Westport, and the whole of the appliances are very complete. The largest-sized vessel frequenting the port can load up at a tide. Although these works were finished about a year ago they have scarcely been used, the coal mines not being in working order. It is now, however, expected that a commencement will soon be made.

About 4,000 tons of coal are exported annually from the Grey, the greater portion being sent by steamer to Wellington. About £40,000 have already been expended on harbour works at Greymouth, and the whole scheme is estimated to cost £600,000. The harbour is expected to be superior to Westport when the works are completed, but the difference is by no means commensurate with the extra cost.

The railway between the East and West Coasts is only intended to accommodate the Grey coal fields, it being quite impossible to send coal by rail from Westport to Christchurch at paying rates. At present the freight, exclusive of towage, on coal by sea from Greymouth to Lyttelton or Port Chalmers, is about 15s. per ton, and with a permanent channel it could be taken for 12s. or 13s. From Westport the figures will be somewhat lower. The present freight from Newcastle to Lyttelton and Port Chalmers is 15s. or 16s.

It is thus seen that the Canterbury market is the only one open to the coal that will be carried by the railway between the coasts. Now this market is very limited. According to the Parliamentary Returns the quantity of Newcastle coal imported into Lyttelton during the year ending 30th June, 1878, was 46,031 tons, and into Timaru 7,584 tons; making a total of 53,615 tons. Although the consumption must necessarily increase it is not likely that the imported article will be shut out altogether; neither can we calculate on supplying all the Timaru district. We may therefore safely assume that at the utmost the railway will not carry more than 40,000 tons per annum for many years to come. At the present tariff this is equal to £30,000. The ordinary working expenses is 70 per cent. of the revenue; but it is well known that the mineral traffic is the least paying, so 80 per cent. is in all probability a low estimate. This makes the total profit amount to £6,000. But it is questionable whether the ordinary rates will pay over the steep gradients on the West Coast lines. The exceptional inclines are equal to 15 or 20 miles extra length on a flat line, and, so far as I can judge, the cost of working them will absorb the small balance above shown. In short, the coal traffic will barely pay the working expenses, leaving nothing for interest on capital. As already shown, the coal cannot pay more than the ordinary rates between Greymouth and Christchurch, so it must be carried without profit to the railway, otherwise it will go by sea.

There is little difficulty in getting correct data from which to estimate the mineral traffic on the West Coast railway, but it is quite different with timber. We have not only to take into account the extent of the market, the competition of water carriage, and other considerations that affect the mineral traffic, but we have also to see how far the present supplies can be supplanted by the West Coast products. The timber has a less distance to come by rail than coal, and it can better afford long carriage, so I have no doubt the market would extend right down to Timaru. The amount of ordinary market timber imported into Canterbury during the past year is about 6,000,000 superficial feet. The greater portion of this is kauri and certain kinds of foreign timber, for which a substitute cannot be got readily in the Middle Island; but in order to be well within the mark we shall assume that half the timber required in Canterbury would come over the range, which will bring a revenue of

£6,000 to the railway. Under ordinary circumstances the profits on this sum would be £1,500, but subject to the extra cost of haulage on the steep gradients it will barely pay itself. We thus see that the two main sources of revenue on the West Coast railway are insufficient to give any return on the outlay.

The estimate of traffic in coal and timber above given is the maximum that may be expected for many years to come, and it will be several years before the maximum is reached. I have also assumed the charges at the ordinary rates, whereas the maintenance must necessarily be above the average. Indeed, I feel confident that the working expenses will absorb the revenues from all sources for some years to come, and that the lines will be worked at a loss for a few years at the beginning.

In sanctioning railways hitherto the Legislature of New Zealand seems to have been satisfied with an assurance that the returns would cover the working expenses, the collateral advantages being considered equivalent to the loss of interest. Tested on the basis of merely paying working expenses, the West Coast railway is entitled to favourable consideration, for I have no doubt it will ultimately fulfil this condition. It would also save the £7,000 or £8,000 annually spent in maintaining the Christchurch and Hokitika Road. But the other collateral advantages are of little value; no good land is opened up for settlement, and the extent to which the general coal and timber industries of the colony are assisted is comparatively limited. At the very utmost the railway could only save one-third of the imports in those articles. It is questionable whether this would pay from any point of view, and it should be borne in mind that, unless a direct return is got from the railway, the country is actually giving a bonus of £1 per ton on all coal sent from the West Coast to Canterbury.

Another question in connection herewith is the construction of the harbour works at Greymouth. As already stated, they will cost about £600,000 when complete. I submit that the time has arrived for the Government to consider whether the railway or harbour is required; also whether both are required, and, if not, which of the two have the preference.

I have already shown that the market for coal commanded by the railway is very limited; and, furthermore, it cannot possibly be extended. If compared solely on this basis the harbour is infinitely the best. All the markets of the colony would be open for the coal if a good harbour were provided. The harbour will also cost much less than the railway. On the other hand, the railway developes the timber trade better than the harbour, and it forms a more complete connection between the two sides of the Island. Again, it is questionable if the railway would save the making of the harbour, but there is a reasonable hope that the harbour would save the railway. Altogether there is little to choose between the two schemes, but I think the balance of advantages, small though it be, is in favour of the harbour.

With reference to the question of making both the railway and the harbour I am clearly of opinion that the two are not required. The cost will be something like one and three-quarter millions, the interest on which comes to about 10s. per ton on all the coal imported into the colony. From any standpoint whatever I can see nothing to warrant such an expenditure for many years to come.

Main Trunk Line.—There is no means of making a trustworthy estimate of the traffic on the Main Trunk railway. For many years it must necessarily be very small, but I have no doubt it will ultimately grow into a considerable traffic. Eighty miles out of the 150 miles between Amberley and Blenheim pass through good agricultural country, capable of supporting a large population. Unfortunately, however, it is all in the hands of private individuals, so the construction of the railway and the settlement of the country cannot be made to assist each other. Beyond increasing the facility for intercommunication the collateral advantages to the colony from this railway would be comparatively unimportant. In addition to the local traffic from the agricultural settlements a railway from Christchurch to Picton would ultimately command a large share of the through-passenger traffic between the two Islands. There would also be a considerable traffic with Kaikoura, which will in all probability become one of the most popular watering-places in New Zealand.

So far as ordinary goods traffic is concerned the railway can never compete with the steamers between Lyttelton and Wellington; but I think it will eventually command the greater portion of the passenger traffic. The saving in time would scarcely do this, but the saving of thirteen hours of rough-water passage is quite sufficient to turn the scale in favour of the railway. When the line is made right through to Picton the mails can be taken from Wellington to the Bluff in thirty-three hours.

Recommendations.

Under the preceding head I have shown—1. That there is little prospect of a direct return from a railway between the East and West Coasts, and that the collateral advantages are not commensurate with the enormous expenditure required. 2. That the extension of the Main Trunk line to Picton may ultimately pay, but the collateral advantages in the immediate future are not commensurate with the outlay. In arriving at these conclusions I have viewed the subject entirely from a professional and commercial point of view. It has still to be considered on the basis of one of the propositions set down at the outset—viz., "That the West Coast, as an integral part of the colony, be connected with Cook Strait and the East Coast." It is scarcely my province to enter minutely into the consideration of every phase of this question, but it is my duty to show the expenditure involved, and give my opinion for what it is worth. I have already described the railway system I consider best adapted for the northern districts of the Middle Island when railways are required; but I cannot say that I think any of them will be required for many years to come. It would undoubtedly be a great advantage to have railway communication completed between the East and West Coasts, and also from end to end of the Island; but, in view of the large expenditure involved, the uncertainty of a return for the capital invested, and the few collateral advantages, I think the whole scheme might be postponed for the present. If the good lands on the main trunk line were still in the hands of the Crown I would have recommended that the line be gone on with gradually from both ends, as it would thus pay its way; but under present circumstances it may well stand over for some years.

In conclusion, I beg to make the following recommendations :—

1. That, beyond the completion of the Greymouth–Hokitika railway, and a section from Brunnerton to Nelson Creek, no railway works be undertaken on the West Coast for the present.
2. That the idea of the East and West Coast railway be abandoned in favour of the Greymouth Harbour; said harbour to be made available for small vessels with the least possible delay, and afterwards adapted for large colliers as required.
3. That, beyond completing the line through the Weka Pass to the Waikari Valley, no part of the main trunk line be undertaken for the present.
4. That, in lieu of railways, the main trunk roads be made or completed from Blenheim to Amberley, Tophouse to Hanmer Plains, Hampden to Ahaura *viâ* the Maruia Plains, and along such leading valleys in Marlborough, Nelson, and Westland as may be necessary for opening up the country.
5. That surveys be made of the main trunk line from Amberley to Picton; and that the survey now in hand of the line from Nelson to the Buller Valley be finished.

Trusting that this report will be of some service to the Government in arriving at a conclusion with reference to the railways in the northern districts of the Middle Island,

I have, &c.,
W. N. Blair,
Engineer in Charge, Middle Island.

APPENDIX L.

ANNUAL REPORT OF WORKING RAILWAYS BY THE COMMISSIONER OF RAILWAYS, NORTH ISLAND.

The Commissioner of Railways, North Island, to the Hon. the Minister for Public Works.

Sir,— Wellington, 31st July, 1879.

I have the honor to report on the working of the North Island railways for the twelve months ending 30th June, 1879.

The following table shows the progress of railway extension in the North Island to date, and also the lines now in course of construction, and likely to be opened during the current financial year.

Section.	Mileage Open for Traffic on 30th June, 1877. M. Ch.	30th June, 1878. M. Ch.	30th June, 1879. M. Ch.	Now under Construction. M. Ch.
Kaipara	15 68	15 68	15 68	0 43
Auckland ...	45 42	96 29	96 29	27 75
Napier	58 21	64 4	64 4	6 0
Wellington ...	19 44	27 7	44 79	23 72
Wanganui ...	59 3	85 27	94 57	12 65
New Plymouth ...	11 13	19 73	19 73	13 40
Totals ...	209 31	308 48	335 70	84 55

Of the lines under construction the greater part is in a forward state, and nearly ready for handing over.

In October last the line from Kaitoke to Featherston (17 miles 72 chains), in the Wellington Provincial District, was opened, giving access to the Wairarapa, previously approachable only by a most difficult and expensive communication over the Rimutaka Range by coach and dray. The opening of this extension has been of great convenience to the settlers, and a very considerable increase of revenue to the department has resulted.

The fragmentary character of the North Island lines naturally induces a higher rate of expenditure than would otherwise be the case if connected, inasmuch as the permanent staff now necessary is capable of conducting a much heavier traffic; and when it is also considered that "extra haulage mileage due to gradients against the load means extra expenditure of fuel," and that "one-fourth of the running expenses consists of cost of fuel," the average percentage of this year's working is well within the revenue, leaving 25½ per cent. (nearly £40,000) towards interest of construction cost, being equal to 1¾ per cent. upon £2,300,000, the approximate cost of opened lines to 30th June, 1879.

Owing to the increasing age of the rolling-stock, bridges, and other maintenance work, the repairs and renewals have been very costly during the past year; and this, coupled with the exceptionally heavy grades and curves on several of the lines, is a still further testimony to the satisfactory result above referred to.

The want of workshops and necessary tools, to effect the locomotive and other repairs, has been a great drawback to economy of working; but this will be remedied during the current year by the erection of workshops at Wellington, Wanganui, Napier, and New Plymouth, all of which are now under contract. Hitherto Auckland has had the only Government workshop in the North Island.

Through the courtesy and willing co-operation of Dr. Lemon, General Manager of the Telegraph Department, great facilities in the working of the trains have been afforded during the past year by connecting many of the principal crossing and other similar important places with each other, and the local head-quarters, by wire; and I trust an extended and complete system will be inaugurated during the current year. Too much importance cannot be attached to this aid in the working of single lines of railway.

During the past exceptionally-dry season many serious fires have occurred, alleged to have been caused by defect in the locomotive spark-arresters. Much attention has been given to this subject throughout the colony, with a view to abate the evil; but, although partially successful, it is felt that a total abatement is incompatible with the working power of the engines.

The question of fencing the railways has excited much severe comment from the sufferers by the destruction of live stock trespassing on the lines through collision with passing trains. Notwithstanding every care and precaution of the drivers, numerous accidents of this kind have occurred during the past year; and as settlement progresses so will these accidents, unless some effectual means are adopted. Fencing is the only cure; but whether this should be done by the owners of adjoining property, by the Government, or jointly, is a matter for your consideration. The very frequent necessity for pulling up the trains to avoid collision with animals on the line, and the consequent loss of time in running, is also a very serious matter. The collisions rarely occur except on the curves and places where the obstruction cannot be seen in time to avoid contact; hence, perhaps, it might be well to abate the evil by fencing such places, and blocking each end by "cattle-stops." The cost even of this partial measure would involve a very large expenditure.

During the latter part of the past year considerable modifications were made in the train services on the Auckland Section, resulting in a saving of train mileage equal to upwards of 90,000 miles per annum. This has been done with some inconvenience to a portion of the travelling public, but without

materially impairing the efficiency of the service; and, bearing in mind the difficulty of curtailing conveniences of this kind once established, thanks are due to the people of the Auckland District for their considerate aid to the management by submitting to these changes, and thereby effecting a saving of several thousands of pounds in working expenses.

Since my last report a contract has been let for improved wharf accommodation at Ngaruawahia (Newcastle), and in a few weeks an arrangement entered into with the Waikato Steam Navigation Company, whereby the river traffic is to be interchanged there instead of Mercer, will be carried into effect. The Company intend to have a daily service of boats on both rivers (Waikato and Waipa) in connection with the goods trains, and I have no doubt the result will be highly satisfactory and beneficial to all concerned. In this arrangement is included a system of through booking, which will be a great convenience to the settlers and merchants. This change will benefit the railway to the extent of 31 miles more freightage.

By the modified live-stock tariff referred to in my last report a very considerable increase of traffic has resulted, amounting to more than 60 per cent. in quantity.

Notwithstanding the still imperfect means of delivering the Waikato coal alongside the wharves, for steamship purposes, at Onehunga and Auckland, the tonnage carried over the line has increased more than twofold during the last five months, as compared with the corresponding period of the previous year. When proper facilities are given I have no doubt this branch of trade will represent a most important feature in the traffic of this section of the railways.

The following comparative statement of receipts, expenditure, &c., of the North Island railways, indicates their progress since 1874–75:—

Year ending	Length Open for Traffic. Miles.	Total Train Mileage. Miles.	Gross Receipts from all Sources. £	Total Working Expenses. £	Net Receipts. £	Percentage of Expenditure to Receipts. Per cent.
30th June, 1875 ...	73	87,569	18,683	17,025	1,658	91·12
„ 1876 ...	146	236,342	58,606	49,321	9,285	84·16
„ 1877 ...	207	167,457	69,722	56,156	13,566	80·54
„ 1878 ...	309	484,607	102,582	83,925	18,657	81·81
„ 1879 ...	336	712,327	156,815	116,880	39,935	74·53

The receipts per mile of railway opened for the latter period were £466; the working expenditure, £347; and the net profit, £118.

The receipts, expenditure, and net profit per train mile being 4s. 4d., 3s. 3d., and 1s. 1d. respectively.

The gross tonnage for the year is 176,025 tons, and number of passengers 703,869.

The quantity of rolling-stock at work for traffic purposes averages as follows:—

Locomotives,	1	for every	8	miles.
Carriages,	1	„	3	„
Wagons,	2½	„	1	„
Brakes,	1	„	9	„

The locomotives belonging to the department in the North Island are, in number and type, as follows:—

12	12 tons,	9½-inch	cylinder,	4-wheel coupled.
7	27 „	12	„	single Fairlie.
4	28 „	10	„	double „
5	17 „	10½	„	4-wheel coupled.
22	17 „	10½	„	6-wheel „
2	8 „	8	„	4-wheel „
2	8 „	8	„	4-wheel „ (colonial make).
4	Fell engines for centre rail (described below).			
Total 58				

Of these, 4 are used on the 2½ miles of 1 in 15 incline, 7 for construction purposes, and 5 under erection, leaving 42 in use for ordinary traffic.

The Fell locomotives have now been at work about eight months on the Rimutaka incline, and the following extract from the Manager's report, descriptive of them and their work, may prove both useful and interesting, being the first of the kind used in the colony:—

"The Fell consists of two pairs of engines fitted to one frame, and is supplied by steam from one boiler; the gross weight is 32 tons; the outside cylinders are 14 inches diameter, and drive 4-coupled wheels 3 feet diameter. The incline on which they run is a grade of 1 in 15 for a distance of 2½ miles.

"The peculiarity of this locomotive consists in the inside engines. These have 12-inch cylinders, driving vertical shafts. To the lower ends of these vertical shafts are fitted discs of steel 22 inches diameter, which are held by a powerful screw, with a pressure of 35 tons against the centre rail; this gives the climbing power to the locomotive.

"The tops of the vertical shafts are kept in due position to each other by steel spur gear.

"Pushing a load in front of the engine, 30 tons net weight can be taken; pulling a load behind the engine, a net weight of 50 tons can be taken.

"As soon as improved brakes and gripping gear can be applied, all the goods trains will be pulled up and the passenger trains will continue to be pushed up, to insure additional safety, and to avoid the inconvenience of smoke and steam in the tunnels.

"The average consumption of fuel is 10 cwt. coals and 15 cwt. coke to each locomotive per ordinary working day."

KAIPARA LINE (15 miles 68 chains).

The total receipts for the year on this section amounted to £4,993, being an increase of £1,068 over the previous year.

The comparatively large and unexpected increase this year is mainly attributable to the improved facilities afforded by the steamship services at both ends of the line. These facilities have recently been still further increased by a through booking arrangement for goods and passengers between Auckland and the Kaipara and Wairoa Districts, the railway between Riverhead and Helensville being the connecting link.

The Manager reports :—

Bridges.—"These continue to be a constant source of extra expenditure, owing to faulty material used in construction.

Rolling-stock.—"Sufficient and in good order.

Riverhead Wharf.—"This has been a continual source of trouble and expense. We have found it extremely inconvenient during the past year, with the increased traffic, especially when we were running a quantity of sawn timber. With our present traffic we require extended facilities, which can best be supplied by building an entirely new wharf."

In reference to this I may state that plans for a new wharf and other accommodation are now under the consideration of the Construction Department.

Permanent Way.—"The road has been considerably improved during the year. A great amount of work has been done in widening and raising the banks, and altogether the line is now in fair working order."

AUCKLAND LINE (96 miles 29 chains).

The total receipts for the year on this section amounted to £52,478, being an increase of £15,156 over the previous year.

This handsome excess, of more than 40 per cent. for an increased length equal to about 15 miles over last year, has, I am sorry to say, been absorbed by equally increased working and other expenditure of an exceptional character, chargeable against revenue. The important changes already alluded to, and others in contemplation, will have the effect of showing a sensible diminution in the current year's percentage of expenditure.

The Manager reports :—

Permanent Way.—"Topham's Swamp, near Ohaupo, has been a source of much anxiety and cost, but, by a considerable amount of filling in, the construction of drains closed with fascines and earth, the substitution of larger-sized sleepers, and other similar works, it is hoped that future trouble will be avoided.

"Considerable improvements have also been effected by renewals, widening banks, ballasting, fascines on the swamp embankments, easing of curves, lowering of grades, &c., and the road is now in fair working order.

Rolling-stock.—"With few exceptions the rolling-stock is in good condition and running order.

Traffic.—"The falling off in general merchandise during the latter portion of the financial year is in some measure made up by increased coal traffic. I am led to believe that, as soon as proper facilities are afforded at Onehunga, 300 to 400 tons of coal per week will be required for the steamers. There also appears to be a trade springing up in Grey coal, landed at Onehunga, and taken thence by rail to Auckland for gas-making."

NAPIER LINE (64 miles 4 chains).

The total receipts for the year on this section amounted to £27,504, being an increase of £2,240 over the previous year.

This section appears to have suffered seriously during the last four months of the financial year. As compared with the corresponding period of the previous year the accounts show a decrease in receipts, equal to 14 per cent.—a result, I am glad to say, quite exceptional in the North Island.

The traffic principally affected is as follows:—

Falling off in tonnage of timber	49	per cent.
„ „ merchandise	44	„
„ „ firewood	30	„
„ passenger receipts	40	„

The increase of receipts for the whole year over the previous year only amounts to 9 per cent., being the lowest figure of all the lines.

The Manager reports :—

Traffic.—"The small increase for the year is accounted for by the severe and prolonged drought, which this district has experienced, and to the general depression of trade during the last few monthsd

Rolling-stock.—"The locomotives, carriages, and wagons have been thoroughly overhauled, anh are in excellent working order.

Permanent Way.—"The permanent way is in good order throughout. Some slight damage, through insufficient water-way, and landslips in cuttings, occurred during the floods. The Ibbotson's joints are failing on the older portions of the line; and I am of opinion that the 40-lb. rails generally are proving too light, occasioning a great deal of extra expense in ordinary maintenance. Two thousand six hundred and eighty-five sleepers have been put in to replace decayed Oregon ones, and a considerable amount of widening and ballasting has been done."

WELLINGTON LINE (44 miles 79 chains).

The total receipts for the year on this section amounted to £30,401, being an increase of £14,301 over the previous year.

The increase of traffic since the extension to Featherston in October last is very satisfactory, and

the result of the year's working shows an excess of 89 per cent. in receipts over the previous year. Very little of this, however, is due to local traffic on the additional mileage opened, as the principal portion of it runs through dense bush, across the Mungaroa and Rimutaka Ranges, and entirely devoid of population.

The Manager reports:—

Traffic.—"I have to report a considerable increase in almost every department, notwithstanding the recent unprecedented stagnation of trade; and I am in a position to compete with a much heavier traffic, with very small increase of expense."

The exceptionally heavy grades on this line make the conditions under which traffic has to be worked very disadvantageous as compared with other lines; and I estimate the extra cost of the Rimutaka incline alone (1 in 15 grade) at £4,000 a year, or equal to 10 miles more of ordinary road. By this I estimate that the public gain, by shorter mileage charges, some £8,000 a year, and, of course, this will be more as the line is extended. It appears to me that the exceptional conditions referred to would make our percentage of expenditure to receipts 10 per cent. more favourable than it is at present.

"Great difficulty is experienced in working the traffic for want of proper station accommodation at Wellington.

Rolling-stock.—"On taking charge in November last I found the stock generally in bad condition, and my expenditure on this account has been unusually heavy. Much more yet remains to be done to place it in thorough working order; and, as the workshops at Petone are approaching completion, I hope to effect this to my satisfaction, and send a more favourable report shortly.

Permanent Way.—"The line is laid as follows: 16 miles, 40-lb. rails; 26 miles, 52-lb.; and 2½ miles, 70-lb. rails, the latter being steel. I have spent a considerable sum in ballasting, for which extra labour had to be employed. On the grade of 1 in 15 (2½ miles) I have had a gang of six men regularly employed, and an extra gang of sixteen men for a fortnight clearing slips, roots of trees, and cutting water-channels."

WANGANUI LINE (94 miles 57 chains).

The total receipts for the year on this section amounted to £35,172, being an increase of £20,131 over the previous year.

The additional mileage between Aramoho Junction and Kai-iwi (9 miles 15 chains) was only opened for traffic a few days before the close of the financial year, so that this excellent result has been accomplished with the mileage in existence on the 20th May, 1878, when the two districts were connected by 18 miles of line. The increase is equal to more than 133 per cent., brought about chiefly by the extraordinary development of the following descriptions of traffic:—

Increase of tonnage in timber	... ...	96 per cent.
„ „ grain	... ...	324 „
„ „ merchandise	... ...	126 „
„ „ firewood	... ...	430 „
„ passenger receipts	... ...	178 „

It is highly satisfactory also to report that the working expenditure is the lowest in the North Island, being only 64·30 per cent. of the receipts; for the previous year this was 99·83 per cent.

The Manager reports:—

Traffic.—"Last year there were only 6 saw-mills at work, and all the timber was exported from the port of Foxton, except what was used for local consumption in the Manawatu District; now there are 17 mills at work and 2 in course of erection. The bulk of the timber has gone over the line to Wanganui for local consumption.

"The tonnage of goods, traffic, and number of passengers show as follows:—

	Tonnage.	Number of Passengers.
This year	38,752	125,570
Previous year	17,058	32,785

"There will be a fair amount of goods and timber on the Kai-iwi extension recently opened, but the passenger traffic will not be much, and I shall feel satisfied if it pays expenses. Of course, when the line is opened to Waitotara, we may look forward to a largely-increased traffic and revenue.

"The results have quite exceeded my expectations; the whole district has pushed ahead considerably during the year. The settlers are now cropping much more land than formerly; and it is merely a question of time for this to become a very large grain-growing as well as a cattle-producing district.

"It would be a great advantage for the railway and the public interest if the proposed wharf and station improvements at Foxton were carried out speedily.

Permanent Way.—"Several landslips have occurred in cuttings; the line between Okoia and Matarawa was flooded, and ballast washed away; 2 miles of line from Oroua Bridge to Tiakitahuna was also flooded to a depth of 2 feet, but fortunately the water went down quickly and repairs effected, so that no serious delay occurred in passing the trains.

"The Rangitikei River was flooded very much in September; some of the concrete blocks were washed away, and the north groin of the bridge damaged This has been made good, and several large blocks put round the piers. The work of relaying the line between Bunnythorpe and Foxton with heavier rails has been attended to during the year, and about 4½ miles have been changed by the ordinary maintenance gangs. Scarcity of rails prevents us progressing faster with this very desirable work. Considerable widening, ballasting, and other improvement work has been done, and the road generally is in fair running order.

Rolling-stock.—"We have been much crippled for engine-power, and subject to serious cost and inconvenience for want of proper appliances and shops to effect repairs. From these two causes the locomotives have been kept longer under repair than they would have been in a good shop, and it is impossible for me to keep the stock going with anything like economy. The carriages and wagons have undergone thorough overhaul, and are now in satisfactory running order."

New Plymouth Line (19 miles 73 chains).

The total receipts for the year on this section amounted to £6,267, being an increase of £1,337 over the previous year.

It is very gratifying to note this satisfactory result. For the first time since the line was opened the accounts show a balance in favour of receipts; and I trust, with the proposed extended and improved wharf accommodation, &c., at the Port of Waitara, and the extension of the line from Inglewood to Stratford (13½ miles), which will shortly be ready for traffic, next year's report will show a still more marked improvement.

The extension of line referred to, in connection with the Mountain Road, will have the effect of giving ready access to the Patea and Wanganui Districts, hitherto a most precarious and difficult communication.

The Manager reports:—

Permanent Way.—"During the past year, in addition to the ordinary maintenance, about 7 miles of formation have been made up to 12 feet in width, and good drains cut on each side; the 10-chain curve at the 2¾ mile-peg has been altered to one of 12 chains radius, and the road widened to 14 feet; the 6-chain curve at 1¾ mile-peg has been altered to one of 10 chains radius, and 1,344 yards of earth placed thereon; a portion of the line (about 550 yards) at the Te Henui River has been lowered 2 feet, and the two curves of 10 and 18 chains radii, which formed this part of the line, have been altered to one curve of 14 chains radius. Considerable ballasting on various parts of the line has also been done, and the road is now in good order.

"The retaining wall at New Plymouth, which has never been in a satisfactory condition, has been repaired at a cost of £281 13s. 10d.

"But for these numerous exceptional calls upon my expenditure, the surplus revenue would have been much more satisfactory.

Rolling-stock.—"Two more locomotives of a heavier class have been added during the year; and, as soon as the Stratford contract is finished, 30 more wagons will be available.

"The want of timber trucks, horse boxes, and carriages is greatly felt on this line. All the carriages and wagons have been lifted and thoroughly overhauled."

In conclusion, I think it right to draw your special attention to the fact that the Railway Department carries free the mails, representatives of the press, police, and the staff of officers and men connected with the Construction Department; and also, at half-rates, the whole of the construction material.

I do this because I understand it is the practice of the neighbouring colonies to credit the railways for such services; and hence, in drawing comparison of results, New Zealand is placed at a disadvantage.

Attached hereto, please find the following tables, viz.:—

Statement of Classified Receipts and Expenditure	Table	1
„ Passenger and Goods Traffic	„	2
„ Accounts for Sections	„	3
General Statement of Accounts for Northern Lines	„	4
Return of Accidents	„	5
„ Locomotives and Rolling-stock	„	6
„ Miscellaneous Stock	„	7
Statement of Receipts, Expenditure, &c., for each year since 1876–77 ...	„	8
„ Dates of Opening Lines	„	9

I have, &c.,
John Lawson,
Commissioner of Railways, North Island.

TABLE No. 1.—Appendix L.

NORTH ISLAND:

CLASSIFIED STATEMENT showing Receipts and Expenditure, and Proportion of each Class of Expenditure to Mileage and Receipts, for Year ending 30th June, 1879.

Section.	Total Train Mileage.	Receipts.			Classified Expenditure.							Proportion of each Class of Expenditure to Mileage and Receipts.															
		Total.	Per Mile of Railway per Annum.	Per Train Mile.	Maintenance of Way.	Locomotive Power.	Repairs of Carriages and Wagons.	Traffic Expenses.	General Charges.	Sundries.	Total.	Total for Year.			Maintenance.		Locomotive.		Carriage and Wagon Repairs.		Traffic Expenses.		General Charges.		Sundries.	
												Per Cent. of Receipts.	Per Mile of Railway.	Per Train Mile.	Per Mile of Railway.	Per Train Mile.	Per Mile of Railway.	Per Train Mile.	Per Mile of Railway.	Per Train Mile.	Per Mile of Railway.	Per Train Mile.	Per Mile of Railway.	Per Train Mile.	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.																
Kaipara ...	15,368	4,992 17 4	312 1 0	6 5¾	2,394 3 11	762 5 8	247 19 7	1,048 6 6	480 12 9	22 10 5	4,955 18 10	99·26	309·75	77·40	149·64	37·39	47·64	11·91	15·50	3·87	65·52	16·37	30·04	7·51	1·41	0·35
Auckland ...	277,307	52,477 18 2	541 0 2	3 9¼	15,415 17 10	12,154 4 6	2,426 7 2	9,163 6 6	2,310 15 6	51 4 7	41,521 16 1	79·12	428·06	35·94	158·93	13·34	125·30	10·52	25·01	2·10	94·47	7·94	23·82	2·00	0·53	0.04
Napier ...	99,699	27,503 15 8	423 2 9	5 6	7,348 8 1	5,443 16 5	1,173 6 3	4,203 8 3	1,076 0 10	11 0 0	19,255 19 10	70·01	296·25	46·35	113·05	17·69	83·75	13·10	18·05	2·82	64·67	10·12	16·56	2·59	0·17	0·03
Wellington ...	128,200	30,401 6 5	764 8 9	4 8¾	5,765 19 6	10,111 18 0	1,895 8 5	1,159 14 10	962 9 10	24 1 0	22,919 11 7	75·39	576·31	42·91	144·99	10·79	254·26	18·93	47·66	3·55	104·60	7·79	24·20	1·80	0·60	0·05
Wanganui ...	153,615	35,171 16 1	408 3 0	4 6¾	8,756 9 3	7,465 3 10	804 14 11	1,366 18 1	1,193 18 6	26 18 0	22,614 2 7	64·30	262·43	35·33	101·61	13·68	86·63	11·66	9·34	1·26	50·68	6·82	13·86	1·27	0·31	0·04
New Plymouth	38,138	6,267 8 5	298 9 0	3 3¼	2,337 8 6	1,498 5 0	81 8 6	1,163 14 2	531 10 10	...	5,612 7 0	89·55	267·25	35·32	111·31	14·71	71·34	9·43	3·88	0·51	55·41	7·32	25·31	3·35	...	...
Totals ...	712,327	156,815 2 1	...	...	...	...	...	...	...	...	116,879 15 11	74·53 average per cent. of receipts for North Island Sections.														

TABLE No. 2.—Appendix L.

NORTH ISLAND.

STATEMENT of Passenger and Goods Traffic for the Year ending 30th June, 1879.

Section.	Passengers.			Goods.							Live Stock.		Receipts.					Total Receipts, 30th June, 1878.
	First Class.	Second Class.	Total.	Wool.	Timber.	Grain.	Merchandise.	Minerals.	Firewood.	Total.	Horses, &c.	Sheep, &c.	Passengers.	Goods.	Total Passengers and Goods.	Recoveries	Total Receipts.	
	No.	No.	No.	T. c. q.	T. c. q.	T. c. q.	T. c. q.	T. c. q.	T. c. q.	T. c. q.	No.	No.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Kaipara ...	3,737	11,470	15,207	41 0 0	4,852 14 2	117 5 0	3,776 19 0	299 16 0	256 0 0	9,343 14 2	8	73	1,786 3 9	3,206 13 7	4,992 17 4	...	4,992 17 4	3,925 3 10
Auckland ...	44,225	204,643	248,868	349 12 0	7,495 6 3	3,620 18 0	17,975 9 1	28,513 10 2	414 5 0	58,369 1 2	9,479	31,087	25,867 6 11	26,606 18 3	52,474 5 2	3 13 0	52,477 18 2	37,321 10 6
Napier ...	29,717	81,807	111,524	2,921 15 1	5,363 9 9	1,633 2 0	7,193 14 0	2,290 2 0	6,045 0 0	25,447 3 0	603	7,966	15,277 7 1	12,225 5 1	27,502 12 2	1 3 6	27,503 15 8	25,263 13 11
Wellington ...	39,124	117,353	156,477	1,278 8 0	9,497 1 0	523 16 0	12,547 16 3	3,023 16 0	7,273 15 0	34,144 12 3	385	23,736	16,611 1 9	13,790 4 8	30,401 6 5	...	30,401 6 5	16,100 3 9
Wanganui ...	28,571	91,999	120,570	864 0 0	14,793 0 0	1,945 2 3	12,287 6 3	591 4 1	8,271 5 0	38,751 18 3	448	2,509	18,356 10 10	16,767 1 0	35,123 11 10	48 4 3	35,171 16 1	15,040 19 1
New Plymouth	5,302	45,921	51,223	17 12 0	3,608 12 2	694 18 0	2,909 10 0	1,051 8 0	1,686 5 0	9,968 5 2	5	229	3,711 18 1	2,555 10 4	6,267 8 5	...	6,267 8 5	4,930 7 3
Totals ...	150,676	553,193	703,869	...	...	...	...	...	...	176,024 16 0	...	...	...	...	156,762 1 4	53 0 9	156,815 2 1	102,581 18 4

TABLE No. 3.—Appendix L.

New Zealand Railways (North Island).

Statement of Accounts for the Year ending the 30th June, 1879.

KAIPARA SECTION.

Dr.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Earnings,—		By Payments into Public Account, 30th June, 1879	4,950 16 10	
Cash in hand and outstanding, 1st July, 1878	49 3 2	Less Refunds of Revenue	6 0 0	
Passengers, Parcels, Goods, &c., to 30th June, 1879	4,992 17 4			4,944 16 10
		Cash in hand and outstandings, 30th June, 1879		97 3 8
	£5,042 0 6			£5,042 0 6
To Amount paid into Public Account, 30th June, 1879	£ s. d. 4,944 16 10	By Expenditure to 30th June, 1879 ...		4,955 18 10
Less Cash in hand and outstanding, 1st July, 1878	49 3 2	Balance towards payment of Interest ...		36 18 6
	4,895 13 8			
Cash in hand and outstandings, 30th June, 1879	97 3 8			
	£4,992 17 4			£4,992 17 4

AUCKLAND SECTION.

Dr.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Cash in hand and outstanding, 1st July, 1878	412 2 3	By Payments into Public Account, 30th June, 1879	52,115 1 9	
Passengers, Parcels, Goods, &c., 30th June, 1879	52,474 5 2	Less Refunds of Revenue	1 7 11	
				52,113 13 10
		Cash in hand and outstandings, 30th June, 1879	785 15 7	
		Less amount of Transfer Vouchers on Treasury Books, but not entered in Railway Departmental Accounts ...	13 2 0	
				772 13 7
	£52,886 7 5			£52,886 7 5
To Amount Paid into Public Account, 30th June, 1879	£ s. d. 52,113 13 10	By Expenditure, 30th June, 1879 ...		41,521 16 1
Less Cash in hand and outstanding, 1st July, 1878	412 2 3	Balance towards payment of Interest ...		10,956 2 1
	51,701 11 7			
Cash in hand and outstandings, 30th June, 1879 ...	785 15 7			
Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	13 2 0			
	772 13 7			
Recoveries to Vote	3 13 0			
	£52,477 18 2			£52,477 18 2

NAPIER SECTION.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Cash in hand and outstandings, July 1, 1878	212 8 2		By Payments into Public Account, June 30, 1879 ...		27,197 14 7
Passengers, Parcels, Goods, &c., June 30, 1879	27,502 12 2		Cash in hand and outstandings, June 30, 1879 ...	530 6 4	
			Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	13 0 7	517 5 9
	£27,715 0 4				27,715 0 4
To Payments into Public Account, June 30, 1879	£ s. d. 27,197 14 7		By Expenditure to June 30, 1879... ...		19,255 19 10
Less Cash in hand and outstanding, July 1, 1878	212 8 2		Balance towards payment of Interest ...		8,247 15 10
		26,985 6 5			
Cash in hand and outstandings, 30th June, 1879	530 6 4				
Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts...	13 0 7				
		517 5 9			
		27,502 12 2			
Recoveries to Vote		1 3 6			
		£27,503 15 8			£27,503 15 8

WELLINGTON SECTION.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.
To Cash in hand and outstanding, July 1, 1878	136 19 6		By Payments into Public Account, June 30, 1879	30,075 17 4
Passengers, Parcels, Goods, &c., June 30, 1879	30,401 6 5		Cash in hand and outstanding, June 30, 1879	462 8 7
	£30,538 5 11			£30,538 5 11
To Payments into Public Account, June 30, 1879	£ s. d. 30,075 17 4		By Expenditure, June 30, 1879	22,919 11 7
Less Cash in hand and outstanding, July 1, 1878	136 19 6		Balance towards payment of Interest ...	7,481 14 10
	29,938 17 10			
Cash in hand and outstandings, June 30, 1879	462 8 7			
	£30,401 6 5			£30,401 6 5

WANGANUI SECTION.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Cash in hand and outstanding, July 1, 1878	248 14 9		By Payments into Public Account to June 30, 1879		34,888 6 5
Passengers, Parcels, Goods, &c., to June 30, 1879	35,123 11 10		Cash in hand and outstanding, June 30, 1879 ...	£ s. d. 504 3 10	
			Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	20 3 8	484 0 2
	£35,372 6 7				£35,372 6 7
To Payments into Public Account, June 30, 1879	£ s. d. 34,888 6 5		By Expenditure to June 30, 1879... ...		22,614 2 7
Less Cash in hand and outstanding, July 1, 1878	248 14 9		Balance towards payment of Interest ...		12,557 13 6
		34,639 11 8			
Cash in hand and outstanding, June 30, 1879 ...	504 3 10				
Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts	20 3 8				
		484 0 2			
Recoveries to Vote		48 4 3			
		£35,171 16 1			£35,171 16 1

NEW PLYMOUTH SECTION.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Cash in hand and outstandings, 1st July, 1878	29	5	8	By Payments into Public Account, 30th June, 1879	6,186	4	4
Passengers, Parcels, Goods, &c., 30th June, 1879	6,267	8	5	Cash in hand and outstanding, 30th June, 1879	110	9	9
	£6,296	14	1		£6,296	14	1
To Payments into Public Account, 30th June, 1879 £6,186 4 4				By Expenditure, 30th June, 1879 ...	5,612	7	0
Less Cash in hand and outstanding, 1st July, 1878 29 5 8				Balance towards payment of Interest ...	655	1	5
	6,156	18	8				
Cash in hand and outstandings, 30th June, 1879	110	9	9				
	£6,267	8	5		£6,267	8	5

TABLE No. 4.—Appendix L.

NORTH ISLAND SECTIONS.

Summary of Accounts for Year ending 30th June, 1879.

Dr.	£	s.	d.	Cr.	£	s.	d.	£	s.	d.
To Cash in hand and outstanding, 1st July, 1878	1,088	13	6	By Payments into Public Account, 30th June, 1879	155,414	1	3			
Passengers, Parcels, Goods, &c., 30th June, 1879	156,762	1	4	Less Refunds of Revenue	7	7	11			
								155,406	13	4
				Cash in hand and outstandings, 30th June, 1879	2,490	7	9			
				Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts	46	6	3			
								2,444	1	6
	£157,850	14	10					£157,850	14	10
To Payments into Public Account, 30th June, 1879	155,406	13	4	By Expenditure, 30th June, 1879 ...				116,879	15	11
Less Cash in hand and outstandings, 1st July, 1878	1,088	13	6	Balance towards payment of Interest* ...				39,935	6	2
	154,317	19	10							
Cash in hand and outstandings, 30th June, 1879 ... ... £ 2,490	s. 7	d. 9								
Less Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts 46	6	3	2,444	1	6					
			156,762	1	4					
Recoveries to Vote	53	0	9							
	£156,815	2	1					£156,815	2	1

* Equal to nearly 25¼ per cent. of gross receipts.

TABLE No. 5.—Appendix L.

Return of the **Number** and **Nature** of the **Accidents** to **Life** and **Limb** which have occurred on each of the several Lines of New Zealand Railways (North Island), from 1st July, 1878.

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.		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.	
	1878.											
Wanganui ...	14 Aug.	...	...	...	...	...	...	1	...	...	...	Whilst shunting railway train.
Auckland ...	20 Sept.	...	...	...	...	...	1	...	...	...	...	Belt of wheel-lathe cut off portion of finger.
Auckland ...	25 „	...	...	...	...	...	1	...	...	...	...	Collision of trains; leg broken.
Napier ...	11 Nov.	...	...	1	...	...	...	...	...	...	...	Fell off carriage while in motion, being intoxicated.
Auckland ...	2 Oct.	...	...	...	1	...	...	...	...	...	...	Arm broken; vaulting over handrail.
Auckland ...	18 „	...	...	...	...	...	..	...	1	...	...	Collar-bone broken; standing on log, fell backwards.
Auckland ...	8 Nov.	...	...	...	...	...	1	...	...	...	...	Right foot and ancle sprained.
Kaipara ...	18 „	...	...	...	...	1	...	...	...		...	Erecting steam crane; tank fell, threw him in the water.
Wanganui ...	18 „	...	...	...	...	1	...	...	...	...	...	Shed blown over and crushed his head.
	1879.											
Auckland ...	2 Jan.	...	...	...	1	...	...	...	...	...	...	Passing from one train to another; intoxicated.
Kaipara ...	24 „	...	...	...	1	...	...	...	...	...	...	Playing with trolly; run over; ribs broken.
Auckland ...	22 Feb.	...	...	...	...	...	1	...	...	...	...	Foot and leg severely crushed by cowcatcher.
Napier ...	1 April	...	...	...	1	...	...	...	...	...	...	Engine knocked down child playing on line.
Auckland ...	3 „	...	...	...	...	...	1	...	...	...	...	Foot severely crushed by cowcatcher.
Kaipara ...	4 „	...	...	...	...	1	...	...	...	...	...	Tank fell on him.
Wellington	21 June	...	...	...	...	...	1	...	...	...	...	Clearing slip; stone fell, struck him on the head.
Auckland ...	30 „	...	...	...	...	...	1	...	...	...	...	Knee crushed whilst shunting.

TABLE No. 6.—Appendix L.

Statement showing Quantity and State of Rolling-Stock on the Railways open for Traffic in North Island on 30th June, 1879.

	Locomotives.																		Carriages.												Brake.			Trucks.						Wagons.				
	Fairlie.			Bogie.														Fell.	1st Class.			Composite.					2nd Class.																		
	28 tons, 10-in. cyl., double.	27 tons, 12-in. cyl., single.	24 tons, 9-in. cyl., double.	American 12-in. cyl., 4-whl., cpld.	25 tons, 14-in. cyl., 6-whl., coupled. Tender.	17 tons, 10½-cyl., 4-whl., cpld. 4-whl. Bogie.	17 tons, 10½-in. cyl., 4-whl., cpld. Bissel Bogie.	12 tons, 9½-in. cyl., 4-whl., cpld.	28 tons, 13-in. cyl., 6-whl., cpld.	17 tons, 10½-in. cyl., 6-whl., cpld.	12 tons, 8-in. cyl., 6-whl., cpld.	12 tons, 9½-in. cyl., 4-whl., cpld.	10 tons, 8½-in. cyl., 4-whl., cpld.	8 tons, 8-in. cyl., 4-whl., cpld.	Centre-rail system.	6 wheels.	4 wheels.	4 wheels, side-door.	6 wheels.	8 wheel bogie.	4 wheels, with Grover's under-frames.	4 wheels.	4 wheels, cross-seated.	6 wheels.	4 wheels.	4 wheels, side-door.	Passenger.	Goods.	Centre-brake for Incline.	Platform, Coal.	Timber.	Cattle.	Sheep.	Horse-boxes.	Covered Goods.	High-side.	Low-side.	Iron Hopper, or Mineral.	Tarpaulins.
Kaipara.																																										
In good order	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	2	...	...	3	...	...	2	...	...	12	...	...	...	4	10	4	...	20
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Auckland.																																										
In good order	...	...	1	...	...	...	3	...	...	5	...	...	...	...	...	3	6	...	6	...	...	...	...	10	6	...	2	11	...	1	25	20	11	6	26	70	18	44	105
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	1	...	...	...	...	...	8	...	...	1	...	1	...	...	...	5	...	1	4	7	16	29	6	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	12	12	...	...
Under erection	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Napier.																																										
In good order	...	...	...	...	...	...	...	...	...	4	...	3	...	...	...	1	1	...	4	...	2	...	...	5	4	...	2	4	...	...	...	2	4	2	3	62	33	...	36
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	7	5	...	2
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington.																																										
In good order	...	1	...	...	...	...	2	1	...	...	...	...	...	...	...	3	1	1	...	1	...	6	...	2	3	...	2	4	1	...	18	4	...	4	16	20	55	...	42
Undergoing heavy repairs	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	3	6	6	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	...	...
Under erection	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	...	...	...	7	...	...	...
Wanganui.																																										
In good order	2	1	...	...	...	...	1	...	...	2	...	...	...	...	...	1	3	...	2	...	...	4	...	5	4	...	...	4	...	...	18	7	...	5	30	52	100	...	24
Undergoing heavy repairs	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...
Under erection	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Plymouth.																																										
In good order	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	5	...	2	...	...	...	...	...	...	4	4	6	...	8
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals... ...	3	7	1	...	...	...	9	6	...	18	...	6	...	4	4	9	12	...	18	1	2	24	...	23	28	...	9	27	2	1	92	35	16	21	93	271	296	50	237

TABLE No. 7.—Appendix L.

Statement showing Quantity and State of Miscellaneous Stock on the Railways Open for Traffic in North Island on 30th June, 1879.

Name of Section.		Turn-tables.				Cranes.						Weigh-bridges.			Weighing Machines.																								
	Wagon Traversers.	15 feet.	16 feet.	13 feet.	11 feet.	10-ton Workshop Overhead Travelling.	10-ton Hand Wharf.	2-ton Hand Wharf.	5-ton Breakdown.	2-ton, with Vertical Boiler in Trolly.	1½-ton Warehouse.	Railway Wagon, 12-tons.	Cart, 7-tons.	Cart, 3-tons.	20-cwt.	15-cwt.	12-cwt.	10-cwt.	8-cwt.	6-cwt.	5-cwt.	4-cwt.	3-cwt.	2-tons 10 cwt.	Platform Trucks.	Platelayers' Trollies.	Rail Presses.	Wheel Presses.	Drilling Machines.	Wheel Lathes.	Lathes.	Band Saw.	Slotting Machine.	Shaping Machine.	Engine and Boiler for Shop.	Shearing and Punching Machine.	Belting, feet.	Smiths' Hearth.	Portable Forge.
Kaipara.																																							
In good order	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	2	...	...	1	3	4	...	...	1	...	...	...	...	...	...	...	...	...	...
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Auckland.																																							
In good order	1	1	...	2	2	1	1	...	1	...	1	1	...	3	...	2	...	2	...	...	9	...	11	...	30	26	2	1	2	...	7	...	...	...	...	...	...	...	...
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Napier.																																							
In good order	...	...	...	5	...	...	...	1	2	...	...	1	...	...	...	1	...	2	...	...	6	...	5	...	13	12	...	...	3	1	1	...	...	...	...	...	...	...	...
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of Engineer ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	1	1	1	1	1	1	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington.																																							
In good order	...	...	...	...	...	...	...	2	1	1	2	...	...	1	...	...	...	2	...	...	2	1	...	...	10	6	1	1	2	...	1	...	...	...	...	...	40	1	2
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wanganui.																																							
In good order	...	...	...	1	...	...	...	2	2	...	6	...	...	...	1	2	2	1	3	2	6	3	...	...	26	17	1	...	4	1	1	...	...	...	...	...	...	...	...
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Plymouth.																																							
In good order	...	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	3	...	1	...	8	3	...	...	1	...	1	...	...	...	...	...	...	...	...
Undergoing heavy repairs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals... ...	1	1	1	8	3	1	1	6	7	4	11	3	...	4	1	5	2	8	3	2	28	4	17	1	91	69	5	3	14	2	12	1	1	1	1	1	40	1	2

TABLE No. 8.—Appendix L.

North Island Sections.

Comparative Statement of Revenue and Expenditure for the Years 1876–77, 1877–78, and 1878–79.

1878–79.

Section.	Receipts. £	s.	d.	Expenditure. £	s.	d.	Expenditure per cent. of Receipts.
Kaipara	4,992	17	4	4,995	18	10	99·26
Auckland	52,477	18	2	41,521	16	1	79·12
Napier	27,503	15	8	19,255	19	10	70·01
Wellington	30,401	6	5	22,919	11	7	75·39
Wanganui	35,171	16	1	22,614	2	7	64·30
New Plymouth	6,267	8	5	5,612	7	0	89·55
Total	156,815	2	1	116,879	15	11	74·53

	1877–78.		
Kaipara	3,925 3 10	4,765 4 1	121·40
Auckland	37,321 10 6	29,133 15 4	78·06
Napier	25,263 13 11	18,216 10 2	72·10
Wellington	16,100 3 9	11,718 15 4	72·78
Wanganui	15,040 19 1	15,015 14 6	99·83
New Plymouth	4,930 7 3	5,075 3 2	102·93
Total	102,581 18 4	83,925 2 7	81·81
	1876–77.		
Kaipara	3,778 4 5	4,296 11 6	113·72
Auckland	21,868 3 9	17,663 8 10	80·77
Napier	21,374 13 10	13,239 19 2	61·94
Wellington	11,518 18 3	9,893 19 2	85·89
Foxton...	8,364 12 2	7,378 13 2	88·21
Wanganui	175 9 6	412 14 4	235·19
New Plymouth	2,641 19 1	3,271 2 2	123·81
Total	69,722 1 0	56,156 8 4	80·54

TABLE No. 9.—Appendix L.

NEW ZEALAND RAILWAYS.—NORTH ISLAND.

Statement of Lengths of Sections Open for Traffic, 30th June, 1879.

Section.	Opened for Traffic.			Total Opened.	Remarks.
	Subsection.	Date.	M. ch.	M. ch.	
Kaipara	River Wharf (old) to Riverhead	October 29, 1875 ...	15 68	15 68	
Auckland ...	Auckland to Onehunga ...	December 24, 1873 ...	8 0		
	Penrose to Mercer	May 20, 1875 ...	37 27		
	Mercer to Ngaruawahia ...	August 13, 1877 ...	31 2		
	Ngaruawahia to Hamilton ...	December 19, 1877 ...	10 33		
	Hamilton to Ohaupo ...	June 4, 1878 ...	9 27		
	Onehunga Wharf	November 28, 1878 ...	0 20	96 29	
Napier	Napier to Hastings	October 12, 1874 ...	12 0		
	Spit to Napier	November 25, 1874...	2 0		
	Hastings to Pakipaki ...	January 1, 1875 ...	4 13		
	Pakipaki to Kaikoura ...	February 17, 1876 ...	10 10		
	Kaikoura to Waipawa ...	August 28, 1876 ...	12 16		
	Waipawa to Waipukurau ...	September 1, 1876 ...	4 63		
	Waipukurau to Takapau ...	March 12, 1877 ...	12 79		
	Takapau to Kopua	January 25, 1878 ...	5 63	64 4	
Wellington ...	Wellington to Lower Hutt ...	April 14, 1874 ...	8 9		
	Lower Hutt to Silverstream ...	December 15, 1875 ...	8 0		
	Silverstream to Upper Hutt ...	February 1, 1876 ...	3 35		
	Upper Hutt to Kaitoke ...	January 1, 1878 ...	7 43		
	Kaitoke to Featherston ...	October 17, 1878 ...	17 72	44 79	
Wanganui ...	Foxton to Palmerston ...	April 27, 1876 ...	23 30		
	Palmerston to Feilding ...	October 20, 1876 ...	11 28		
	Aramoho to Turakina ...	May 17, 1877 ...	20 21		
	Wanganui to Aramoho ...	January 21, 1878 ...	2 60		
	Turakina to Marton	February 4, 1878 ...	9 18		
	Halcombe to Feilding ...	April 22, 1878 ...	7 76		
	Marton to Halcombe	May 20, 1778 ...	10 49		
	Aramoho to Kai-iwi	June 28, 1879 ...	9 15	94 57	
New Plymouth ...	New Plymouth to Waitara ...	October 14, 1875 ...	11 13		
	Sentry Hill to Inglewood ...	November 30, 1877 ...	8 60	19 73	
				335 70	

APPENDIX M.

ANNUAL REPORT ON WORKING RAILWAYS BY THE COMMISSIONER OF RAILWAYS FOR THE MIDDLE ISLAND.

The COMMISSIONER of RAILWAYS, Middle Island, to the Hon. the MINISTER for PUBLIC WORKS.

SIR,— Christchurch, 22nd July, 1879.

I have the honor to submit the following report on the working of the Middle Island Railways for the year ending 30th June, 1879.

The closing of the gap which separated Christchurch from Dunedin, by the opening of the line from Waikouaiti to Palmerston, added 9 miles 3 chains to the line; the opening from Balclutha to Clinton added a further length of 21 miles 3 chains; and the opening of the Riverton Branch added 17 miles 40 chains. The opening of Fairlight to Kingston further increased the mileage by 8 miles 60 chains. To this may be added the Shag Point Branch, 1 mile 67 chains.

The mileage table will therefore now stand as under :—

Section.	1877-78. M.	ch.	Added Since. M.	ch.	Total. M.	ch.
Christchurch	401	23	1	67	403	10
Dunedin	120	50	9	3	129	53
Invercargill	166	49	47	23	213	72
Greymouth	7	20	...		7	20
Westport	18	70	...		18	70
Nelson	19	12	...		19	12
Picton	17	2	...		17	2
Total	750	66	58	13	808	79

Revenue and Expenditure.—The gross revenue for the year was £601,281 6s. 1d., against £467,316 9s. 11d. for the previous year. The total expenditure was £428,598 19s. 1d., against £321,970 11s. 6d. for the previous year.

The following table gives the receipts and expenditure during the year on the several sections :—

Section.	Receipts.	Expenditure.	Expenditure per cent. of Receipts.
Christchurch, Dunedin, and Invercargill	£577,360 9 2	£409,576 14 7	70·94
Greymouth	8,852 7 5	4,724 2 5	53·37
Westport	2,686 13 0	3,427 15 9	127·59
Nelson	7,111 6 0	6,029 3 11	84·78
Picton	5,270 10 6	4,841 2 5	91·85
Total	£601,281 6 1	£428,598 19 1	71·28

The average percentage of expenditure on receipts for the previous year was 68·89.

I had hoped to show more favourable results on the working of the past year, but many circumstances have been against us. The disastrous floods which overspread the country, both in the Christchurch and Dunedin and Invercargill Sections, and wrecked so much of the line and works, have added enormously to the cost of maintenance; and the suspension of traffic consequent on the injuries to the line has, moreover, undoubtedly had an adverse influence upon the revenue. Many works properly chargeable to construction have been debited to maintenance, and this has still further added to the burdens borne by working expenses.

In reference to the floods I would state that the protective works which have been constructed on the Waimakariri, Rangitata, and Ashburton Rivers will, it is to be anticipated, do much to obviate the risk of future disasters from the same cause.

CHRISTCHURCH SECTION.

Maintenance.—The main line and branches of this section have been properly maintained during the year. The total expenditure on maintenance has been £79,331 5s. 9d., equal to £197·33 per mile per annum. This expenditure is heavy, and the excess is due to various causes—an increased number of trains and higher speeds, renewals of rails and sleepers, and the damage caused by frequent and serious floods. Details of the expenditure are given in Table H.

In addition to the ordinary repairs, the drainage has been improved, and a large quantity of ballast put down, which has added much to the stability of the line and the security of the traffic.

The expenditure during the year in renewal of sleepers in this district has been £4,000. The sleepers taken out (near Christchurch, Rakaia, and south of Oamaru, those in the latter case having lasted scarcely three years) were of very inferior and unsuitable timber, chiefly American pine. Better and more durable timber has been substituted.

The cost of rails and fastenings during the year has been £2,000. Besides ordinary renewals throughout the district, 10 miles of 40-lb. rails have been lifted and replaced by 52-lb. iron or steel rails. At the present moment, with the exception of 2 miles shortly to be replaced, the whole line

from Amberley and Lyttelton to Rakaia is laid with 52-lb., or heavier, rails. The 40-lb. rails originally laid down are showing rapid signs of wear, and where these remain it is only by constant attention to the joints that the line is kept in running order. The increased traffic has had no appreciable effect upon the 52-lb. and other heavy rails, and the old fish-joints stand the work well.

The floods have been frequent and severe. The overflow of the Waimakariri has caused a suspension of the traffic on five different occasions, and from six to eight days each time. The north branch of the Rangitata also caused three distinct stoppages of the traffic, of six, seven, and eight days respectively. The damage done necessitated the new piling of 15 out of the 28 piers originally constructed. The last flood carried away the end pier and two others, and two spans of the bridge would probably have been lost had it not been for the energy and courage displayed by the staff. It was found that in the construction of the bridge the piles had been driven to so small and insufficient a depth that the river easily scoured them out. The repairs of this bridge have cost to date £4,422 3s. 8d. This apparently heavy outlay is due to the circumstance that, the traffic having to be maintained during the progress of the repairs, the bulk of the work, including the pile-driving, had to be done at night. The rock-work deposited at the north bank of the Ashburton River has successfully resisted the action of all floods during the year. The approaches of the Temuka, Waitaki, and other rivers suffered from floods, and rock-work groins had to be provided as a measure of protection.

All these extraordinary repairs, which appear in the accounts under the head of "Casualties," have, as before stated, had a large share in raising the cost of maintenance.

The gale of the 25th September also caused considerable damage. The Hawkins Station was completely destroyed, and several goods-sheds, including the large shed on the Gladstone Pier, at Lyttelton, received much injury. The Hawkins Station has been rebuilt, and the goods-sheds repaired and strengthened.

Several new and important works have been executed during the year. The Christchurch Station-yard has been completed, with the exception of the removal of the workshops, which will be effected as soon as the new shops at Addington are ready for occupation. The Lyttelton Station also has had its share of attention: 7½ miles of new sidings have been laid, an engine shed erected, a 50-feet turn-table put in, and a goods shed removed.

The heavy works commenced on the North line with a view to prevent the overflow of the Waimakariri, by which the traffic has been so often and so seriously impeded, have been much retarded by the floods; but they are now approaching completion, and I have no doubt will prove thoroughly effective.

The Rangitata protective works have also suffered from the floods while in progress, but they are now nearly completed.

Five new water services, for the supply of the locomotives, have been provided, and furnished with pumps and windmills. One gravitation service has also been completed. The erection of the windmills (owing to their intermittent action) renders increased storage accommodation necessary, but saves the labour and cost of the pumpers.

A commencement has been made with the work in connection with the improvement of the Timaru Station.

The Oamaru Goods Station-yard has also been much improved, and work there is still in progress.

The very heavy rainfall, with south-east gale, which commenced on Saturday, the 28th June, caused serious damage to the railways in this district, the effect being quite unprecedented. Earthwork and ballast were swept away in many places; several culverts were damaged or entirely destroyed; the Washdyke Bridge had all the piles washed out of one pier. Serious damage also was done to the line, causing the night goods train to Timaru to leave the line near Otaio; four wagons were wrecked, and the tender thrown on its side, the engine being partially submerged. Traffic was almost entirely suspended on Monday, the 30th June, only 57 miles of railway main line and branches being available on that day for the running of trains. Traffic was resumed between Christchurch and Ashburton on the 1st, and between Ashburton and Washdyke on the 2nd July.

A most serious encroachment of the sea, consequent on the recent gale, has occurred a little to the northward of the Timaru Station. The foundations of the Whale's Creek Viaduct were considerably undermined by it, and that portion of the line placed in serious jeopardy. Repairs, which were necessary to save the viaduct and the line, were put in hand at once, and protective works, which will be a source of considerable expense, will have to be resorted to.

Locomotive.—The locomotives in this district, 50 in number, have been maintained in a state of efficiency: 19 have been thoroughly renovated, 11 have received partial repairs, 12 have been repainted, and 9 have been cleaned and the paintwork renewed and revarnished.

Eleven new engines have been received and erected, and put to work. The locomotives generally have done good service. The American engines, received from the Rogers Works, give satisfaction in this district, and do their work well.

The important question of fuel has received special attention. The quantity of fuel consumed during the year is: Of Newcastle coal, 9,096 tons; of native coal, 1,781 tons; and of coke, 262 tons. Every effort is made to encourage the use of native coal, and the engines are being adapted to the consumption of that fuel. The Locomotive Engineer, quoting the report of his foreman upon the Springfield coal, says, "After the men get thoroughly used to this coal I have but little doubt that there will be but a very small quantity more used than of Newcastle coal"; and the Locomotive Engineer further states that he is of opinion that, "before any great lapse of time, we shall be in a position to burn New Zealand coal exclusively." This is a consummation much to be desired, not only in the interests of economy, but also in respect of promoting the industrial resources of the colony. The present contract price of Newcastle coal, delivered at Lyttelton, is 28s. 11d. per ton; and the price of Springfield, at Sheffield, 16s.—a difference of 12s. 11d. per ton—a difference which will be largely augmented when the opening of the line to Kowai Pass enables the Company to reduce the price of the coal.

Admitting, for the sake of argument, that the price of Springfield—or any other equally suitable New Zealand coal—will remain at the present figure, the saving which would be effected by the adoption of the native commodity would amount to some thousands of pounds per annum.

As in some measure connected with the subject of fuel, I may here refer to the numerous fires which devastated the country in the late hot season, which were popularly attributed to sparks from the locomotives setting fire to the grass and weeds, and some of which were undoubtedly due to that cause.

That the sparks and cinders cast from the engines should retain their vitality sufficiently long to admit of the grass and weeds being so often ignited by them, has been attributed to two causes: the absence of spark-catchers, and the use of native coal; but, although it was proved in, I think, one instance, that the engine which was supposed to have caused the mischief, was running without a spark-catcher, and we do in some engines burn native coal, an analysis of an enormous number of cases shows that the engines which caused, or were alleged to have caused, the fires did, with one or two exceptions, carry spark-catchers, and that a large proportion of them were burning Newcastle and not native coal. The Locomotive Engineer is of opinion that the fires "resulted from the hot north-westerly gales carrying sparks of all kinds into the dry grass and weeds along the line." My own impression is that much of the mischief done, for which the department got the blame, was really due to other causes; and I apprehend, from recent law reports, that fires will always be numerous in hot and dry seasons like the last, when the grass and weeds get so much burnt up as to be almost as inflammable as tinder.

In connection with the locomotive service the question of water supply is an important one, and has given a good deal of trouble. During the late dry season many of the wells ran dry, and some of them had to be deepened at considerable cost. For the hand-pumping service we have to pay no less than £2,000 per annum. In Christchurch District, with a view to save this large outlay, we are trying the experiment of doing the pumping by wind-power; and in Dunedin, where also we pay a large sum annually for pumping, by hot-air engine. When the two plans have had a fair trial I propose to select the most economical and effective, and to recommend its adoption by the Government.

Carriages.—The carriage stock generally has been kept throughout the year in good working order. Eighteen carriages have been thoroughly repaired; 142 carriages have been fitted with new brasses and otherwise repaired; 8 carriages have been fitted with bogies on the American principle, the old wheels and axle-boxes being used; 6 carriages have been converted into and fitted up as travelling post offices for the express trains; 1 second-class carriage has been fitted up as a first-class smoking carriage for the Port line; 4 passenger brake-vans have been built; and 2 carriages have been converted into Cleminson's system.

Besides the foregoing, carriage stock from the Dunedin and Invercargill Districts, which came into this district in the ordinary interchange of vehicles, has been dealt with as follows: Nineteen carriages have been thoroughly overhauled, painted, and varnished; and 39 have undergone heavy general repairs.

Wagons.—The wagon stock also has been maintained in a condition of thorough efficiency. Twenty wagons have been rebuilt; 1,017 wagons have been lifted and fitted with new brasses, and side rails and head stocks attended to; 20 wagons from the North Island have been refitted; 27 horse-boxes have received ordinary repairs; 25 goods brake-vans have been overhauled and weighted, two tons of iron having been put into each; and 12 wagons have been fitted with hoppers for ballasting purposes.

Miscellaneous.—Several new machines have been erected in the shops, with reference to which the Locomotive Engineer observes that "the cost of all work has been reduced by this valuable addition to our plant."

Of the steam cranes 4 have been overhauled, and the others have received ordinary repairs; 312 pairs of wheels have been turned up; 1 locomotive has received a new set of tubes, and 5 locomotives have had the tubes drawn, repaired, and replaced.

The following new work has been executed: 33 delivery valves, 18 copying presses, ironwork for 22 trolleys, 264 lamps of various kinds, 22 sets of switches, 18 cylinder lubricators, 2,500 carriage and wagon syphons, and 4 alarm bells; 532 carriage and wagon axle-brasses, weighing 2,993 lb.; and nearly 73 tons of brass castings have been manufactured; 1,450 tarpaulins have been repaired, redressed, and numbered.

Traffic.—In consequence of the opening of the line through to Dunedin on the 7th September, 1878, the railway being thereby rendered a continuous road, it became necessary to work the traffic as a whole instead of by sections, and detailed particulars cannot be given for this or either of the southern sections as was done in my last annual report. The line from Amberley to Kingston and branches, it will be understood, now forms one great whole. A large increase both in the goods and passenger business has resulted from the opening, six additional trains besides the express having had to be put on the road, and the want of increased accommodation at several wayside stations has been greatly felt. The grain carried on this section during the past year was 239,540 tons, as against 145,614 tons for the previous year, showing an increase of 93,926 tons. The tonnage handled at Lyttelton, exclusive of materials and stores for the use of the department, amounted to 326,758 tons, being an increase of 63,922 tons; and 64,390 wagon loads of goods were hauled between Christchurch and Lyttelton, showing an increase over the previous year of 13,798 wagons. A double line of rails is now in full operation between Christchurch and Heathcote, also between Christchurch and Addington, and has proved a decided benefit in facilitating the working of the enormous goods traffic which enters and leaves the Christchurch yard. Several private sidings have been provided at the west end of the Christchurch yard, and have proved a great convenience both to the holders and to the department. Dissatisfaction is still felt and expressed because the same terminals are charged upon goods going into their sidings as upon those handled in the Government sidings. I have already dealt exhaustively with the question of remission of terminals, but, as a partial answer to these complaints, I may here mention that the shunting operations alone which are necessary in placing the wagons in and removing them from these sidings cost this department £1,200 per annum. The working of the traffic of the

Christchurch yard, both in respect of safety and speed, has been much facilitated by the establishment of a perfect system of interlocking signals and points.

DUNEDIN SECTION.

Maintenance.—The main line and sidings, making allowance for casualties, of which I will speak presently, has been maintained in a state of efficiency. The total cost of maintenance for the year was £43,469 10s. 11d., equal to £285·98 per mile.

The opening of the main line through from Christchurch and Invercargill has, by the largely-increased traffic, added much to the wear and tear of the road and to the cost of maintenance.

On the Dunedin to Glendermid Section the iron rails originally put in have entirely failed under the stress of the traffic, and it has been found necessary to replace them with 53-lb. steel rails, of which, to date, 5 miles 17 chains have been laid down—a work of great difficulty, as it had to be carried on without interruption to the traffic; 400 cubic yards of broken-stone ballast have also been laid on this road and 640 sleepers replaced.

The station buildings and other structures on this section have been well maintained during the year. The bridges also have had due attention, and have undergone considerable repairs.

Both the Resident Engineer and the General Manager draw attention to the inconvenience and loss caused by the inadequate accommodation afforded by the Dunedin Station-yard. I have recently submitted to you a report in which this matter is touched upon, and I can fully confirm the statements made by the above-named officers. The yard is badly arranged, cramped, and very incomplete. It is of the most urgent importance that the Station-yard be enlarged and additional sidings laid in, for if the traffic continues to progress at its present rate, it will at no distant date be found impossible to work it with the existing accommodation. I earnestly hope that the Construction Department will push on the reclamation with all speed, and that, on such a plan that, as the work advances from the water line, we may be able to avail ourselves from time to time of the new ground for sidings.

The Resident Engineer again draws attention to the bad arrangement of the Glendermid Station-yard, the sidings in which are so disadvantageously disposed that it is found more convenient to convey goods intended for Port Chalmers into Dunedin, and to return them thence to Port Chalmers, than to shunt them into these sidings. I have it in view to submit for your consideration a proposal to reconstruct the Glendermid Station-yard in connection with laying a second line of rails between that station and Dunedin.

South of Dunedin I have to report much interruption to the traffic from floods. The chief damage done was in the neighbourhood of Balclutha, although the line to the northward was under water for a distance of nearly 9 miles. In the Balclutha Station-yard much damage was done. Six large channels were cut by the water, one of which was no less than 12 feet deep; 40 feet of the station platform also was washed away. Two flood-water openings were wrecked, and a considerable length of embankment carried away; 16,400 cubic yards of rock and ballast and 10,000 superficial feet of timber were used in repairing the damage.

At the present moment the waters are out at the Taieri River, and the flood is 18 inches higher than it has ever before been known to rise. Much damage has been done between Greytown and Owhiro, but the extent of it cannot yet be ascertained. The traffic has been suspended. This is the third time within less than three years that the line has been flooded, and the traffic stopped, by the overflow of the Taieri River.

The work of relaying this portion of the line with the 53-lb. steel rails is being proceeded with vigorously. I have already reported unfavourably upon the Ibbotson's clip-joint. The Resident Engineer, after a long trial of them, utterly condemns them, and has "no hesitation in saying that the life of the 40-lb. rail would have been considerably prolonged if they had been fastened with the ordinary fish-plate and bolt instead of with these clips."

During the year 6,432 new sleepers have been laid, but a much larger number will be required in the current year, the Oregon sleepers with which the line was originally laid being already very rotten, and in a short time they will be unable to carry a train safely.

Ballast to the amount of 2,310 cubic yards has been laid in various places on this section.

The bridges and other structures in this section have been well maintained. The Waihola Bridge, however, is not, and never has been, in a satisfactory condition in respect of camber, and will need special attention.

Section Glendermid to Palmerston: The line between Evansdale and Waikouaiti has required a heavy expenditure to bring it into running order. On 23 miles of line no fewer than 47 platelayers, double the usual number, have been employed ever since the opening. Between Puketeraki and Merton the line had been ballasted with a fine material mixed with clay, which in wet weather worked into a puddle. The result was that the sleepers sank into the formation, and it was found impossible to keep the line at the proper cant in the curves, which caused many vehicles to leave the line—happily without any serious consequences. Most of the defective ballast has been removed, and replaced with shingle (to the extent of 6,000 yards) from the Shag River. The whole of the bad ballast will have to be removed, and shingle deposited instead. Slips in this section have caused much trouble and considerable expenditure. Bridges and other structures have received due attention.

Among the new works executed are the following: A public siding at Mussel Bay, Port Chalmers; a fifty-feet turntable put in in the Dunedin Station-yard, which will be a great convenience in enabling the longest tender-engine to be turned without uncoupling; additional sidings have been laid between Rattray and Jetty Streets; a cattle-pen has been erected at Balclutha; a ladies' waiting-room, telegraph office, verandah, urinals and water-closet have been put up at Caversham, and the platform has been lengthened to 300 feet; and several other public sidings have been put in.

Locomotive.—Under very considerable difficulties, arising from the inadequacy of the locomotive power for the requirements of the traffic, the engines on this section have been maintained in a condition of thorough working efficiency; although painting, which means preservation as much as ornamentation, has, in some cases, had to be deferred owing to the exigencies of the service.

The following engines have been repaired: Eight Class E Fairlies have been thoroughly overhauled, and 2 of the same class have undergone light repairs; 1 Class B Fairlie has been thoroughly overhauled; 2 Class K American have been in for light repairs; and 4 six-coupled F engines have undergone extensive repairs.

One Class R single Fairlie has been erected and put to work; 2 of the same class are now in course of erection, and will soon be available for work; and 1 class O six-coupled engine has been put together.

Carriages.—This class of stock also has been maintained in good condition.

In addition to ordinary repairs, internal and external, 24 carriages have been scraped and varnished all over; 38 have been varnished and done up.

Four new passenger brake-vans have been built and put on to the line.

Wagons.—This class of stock also has received thorough attention. The work of repair has been very heavy during the year. In addition to ordinary repairs, 419 wagons have been painted throughout, and 263 partially painted.

Of new wagons, 310 have been built during the year. All of them have received three coats of paint, which adds considerably to their durability.

Miscellaneous.—In addition to the ordinary work of repairs in connection with the engine, carriage, and wagon stock, a large mass of work of a miscellaneous character has been executed in the shops. The following are a few of the items: In the tinmen's shop—12 semaphore lamps, 6 engine head lamps, 12 side and tail lamps, 36 hand lamps, a number of shed lamps, and 50 oil-cans and feeders have been made. In the brass foundry, about 5 tons of brass castings. In the smiths' shop—Ironwork for Cleminson's carriage bogies, ironwork for bridge repairs, ironwork for 12 semaphore signals, 4 spark-catchers; several new points and crossings and many old points and crossings have been repaired.

Port Chalmers Workshop.—This very useful establishment has been fairly employed during the year. Besides the ordinary work, the following has been turned out: In the forge—A double-throw crank shaft, weighing 30 cwt., which proved a very successful piece of work; some smaller crank shafts, 300 buffers, and 1,000 buffer-plates. In the workshops—Girders and ironwork for new brake vans, a good many switch points and crossings for both Dunedin and Christchurch.

All the machinery is in first-rate condition, and the work turned out has not failed in any case to give satisfaction.

Traffic.—The opening of the line from Waikouaiti to Palmerston on the 7th December, 1878, and of the line Balclutha to Clinton on the 23rd January, 1879, both in the past financial year, have added 30 miles 6 chains to the mileage of this district, and have brought Christchurch in the north, and Invercargill to the south, into direct communication with Dunedin.

It might naturally be expected that the establishment of through communication would largely increase the traffic, both passenger and goods; and the facts have fully justified the anticipation. The road being now one grand trunk line, it would not be possible to exhibit the increase for any particular district or section; but the increase in the earnings of the line generally is abnormally large (as will be shown elsewhere), and each district must take its share of the credit.

The traffic in this district has suffered from a cause which is equally felt in the Christchurch district, *i.e.*, the insufficiency of the wagon stock to cope with the abnormal pressure of the traffic in the grain season, and this raises a question which I have already had occasion to submit for your consideration—namely, whether it will be sound policy to add a sufficient number of wagons to our existing stock to enable us to deal with such extra traffic, with the certainty that, although fully employed during the two or three months of the rush of the grain, the extra vehicles must be idle during the remaining nine or ten months of the year.

I have well considered the point, and I am bound to say that in the interests of the department such a procedure ought not to be adopted. It will be better that the public and the department should suffer some inconvenience in working the grain traffic, than that the department should add wagons to its stock, which for so large a portion of the year would earn no revenue, and only serve to block up the sidings.

The insufficiency of engine-power has also been felt in this district, but that also was chiefly during the grain season. The engines which have lately arrived, and those which are now under order, will amply supply all the normal requirements of the traffic.

Considerable interruption to the traffic has been caused during the pear by floods, and the revenue has undoubtedly suffered thereby. The section Waitati to Waikouaiti was closed in July, 1878, for ten days by a slip consequent on the floods in that locality. In the same year traffic south of Balclutha Bridge was entirely suspended, from 26th September to 29th October, by a flood, which overspread the country and did enormous damage. Large portions of the embankments and much ballast were carried away; flood-water openings and station buildings and platforms were also much damaged. On the 28th June, 1879, and following days, serious floods again occurred, and on the North line as far as Oamaru, the South line as far as Milton, and the Lawrence Branch, traffic was entirely stopped. The Outram Branch also will be unfit for traffic for some time to come, the bridge across the Taieri at Outram having been seriously damaged, and now showing symptoms of settling down.

Invercargill Section.

Maintenance.—The line has been well maintained, and the station and other buildings and appliances are in good condition, with the exception of those at the Bluff, which are in a somewhat dilapidated state.

On the Bluff–Invercargill Section a new siding to the Invercargill jetty has been put in, and another through road to the Bluff Wharf has been laid. The sand embankments are being gradually faced with stone. Water services have been erected at the Bluff and at a point midway between that station and Invercargill.

Invercargill–Kingston Section.—This line was rendered complete by the opening, on the 10th July, of the length Fairlight to Kingston, 8 miles 60 chains. Much damage was done on the Athol–Kingston

line by a flood; and the cost of repair, £2,000, has been debited to maintenance, which has told heavily against working expenses. Considerable damage, which has rendered the construction of a new pier and other work necessary, was also done to the bridge at 56 miles 20 chains. Rock-work protection to the other piers has also been found necessary, the scour of the river having washed out the shingle, to a great extent leaving the piles unprotected.

A seventh-class station has been erected at Harrington.

The station buildings and other structures are generally in good condition.

The Riverton Branch was handed over by the Construction Department and opened for traffic on the 9th June; but the line, in respect of station buildings and appliances, is still in an incomplete condition.

The 28-lb. rails are too light for our ordinary rolling-stock, and, unless light stock specially adapted for these rails is procured, it will be necessary to give effect to the recommendation already submitted to you that these light rails be immediately replaced by 40-lb. rails, a measure which I consider imperative if the branch is to be worked under ordinary conditions of security.

Invercargill–Clinton.—New sidings have been put in at Edendale, Gore, and Clinton. Shelter sheds have been erected at Ellis Road and Morton Mains. Water-services have been established at the 28th mile cutting, Waipahi and Clinton, the former being supplied by gravitation.

The cost of maintenance on this section has been much increased by the heavy ballast trains which have passed over the line for the Construction Department, and by the expenditure for repairs rendered necessary by the floods.

Locomotive.—The engines, carriages, and wagons in this district have been maintained in a condition of perfect efficiency during the year.

Four new engines of D class were received and erected in October, and one of them has since been transferred to Dunedin, as has also one class F engine.

The following engines have been overhauled and extensively repaired: No. 1, class O; Nos. 11 and 12, class F, the latter having been previously working for the Construction Department. Other engines have undergone slight repairs. No. 17, class D, and No. 6, class D, have been and are now employed by the Construction Department.

Five new goods brake vans have been received, and two of them transferred to the Dunedin Section. Eight timber trucks, 4 horse boxes, and 4 cattle trucks also have been received.

Three first-class, 5 composite, and 5 second-class carriages have been scraped and varnished, and all necessary repairs to both carriages and wagons have been executed.

Traffic.—The establishment of through communication with Dunedin and Christchurch by the opening, on the 23rd January last, of the line between Balclutha and Clinton has undoubtedly had a marked effect in respect of increasing the traffic, both through and local, of this district; as has also the opening of the Riverton line on the 10th June. Now that the line is one continuous trunk line from the extreme northern to the extreme southern limit, and the traffic is of necessity worked as a whole, without any distinction of districts, I can only furnish particulars of the aggregate traffic and earnings of the line; but there can be no doubt that each district, in its degree, has a title to take credit for the large increase which is exhibited.

This district, in common with the others, has laboured under the disadvantage of several temporary suspensions of the traffic. Between Elbow and Kingston a heavy fall of snow, which commenced on the 30th June, 1878, caused a flood, which resulted in a prolonged discontinuance of the traffic. Hardly was this difficulty surmounted when communication was again interrupted by floods, which caused another suspension of traffic, and did much damage. No less than 69 miles of railway were closed by this casualty.

Another interruption of the traffic was caused in July, 1878, between Gore and Clinton, by a heavy fall of snow.

That the revenue has suffered by these prolonged suspensions of the business of the railway there can be no doubt, and the cost of repairing damages has largely increased the charge for maintenance.

Several branch lines now in course of construction in this district are expected to prove useful feeders to the main line, and will doubtless in time make a fair return for the cost of construction and working.

During one portion of the year some inconvenience was caused, as in the other districts, by the inadequate supply of trucks, but the pressure proved to be only temporary, and the stock seems to be sufficient for the normal requirements of the line.

At the Gore Station additional siding and general accommodation is required. At Elbow also an extension of station appliances is necessary. Some inconvenience has been caused by the want of a ladies' waiting-room and appliances at Oreti.

Important changes in the arrangement and timing of the trains in this district have been made, and have promoted the convenience of the travelling public.

Greymouth Section.

On the Greymouth–Brunnerton line works of some importance have been executed during the year beyond the actual maintenance. Three miles of embankment, which in some places was not more than 9 feet wide, in some places even less, were made wider. A heavy work also, for the staff employed, involving the alteration of 2 bridges and 4 curves, was executed. The curves which, being only 5 chains radius, were difficult and dangerous to work, have been eased, and the embankment widened. The line also about a mile out of Greymouth has been considerably improved, a stiff gradient having been lowered and the curves eased. For several chains a new and better line has been adopted. A retaining wall 18 feet high, which was showing signs of failure, has been abandoned, and a new rock embankment formed to carry the line. The 40-lb. rails are wearing out rapidly, and many new rails have been put in. The joints used (Ibbotson's) the General Manager reports to be "of very little use." Since the opening of the line 15 curves have been altered and 3 entirely abolished.

The railway wharf is in a state of good repair. The rails have been lifted and relaid in order that the working of the coal-shoots might be conducted with greater economy and despatch. I may mention that since the alterations were completed one vessel took on board 180 tons of coal in six hours, and the steamer "Grafton" took on board 186 tons in three and a half hours.

The crane-shoots and coal-shipping appliances are in efficient condition, but further coal-wharf accommodation is urgently required.

All the additions and improvements executed during the year have been charged against maintenance, although much of the work was properly debitable to construction, and this has told heavily against working expenses. Proper station accommodation is urgently needed, both at Brunner and Greymouth, the line generally having been handed over to this department in a most unfinished condition.

The locomotives have undergone heavy repairs, and are in good running order.

The carriages and wagons have also received careful attention, and all of them are available for work.

This line has carried during the past year 39,427 tons of goods and minerals, as against 36,065 tons during the previous year, showing an increase for the year of 3,362 tons. It is in the best position financially of any railway in New Zealand, the working expenses being only 53·37 per cent. of the receipts.

Westport Section.

A considerable amount of work beyond actual maintenance has been carried out on this section also.

The embankments between Westport and Waimangaroa have been made 2 feet wider. The Westport Station-yard has also been improved. The line between Ngakawau and Waimangaroa, 8 miles 56 chains, the traffic on which was trifling and very unprofitable, has been closed during the whole year, a measure which has been productive of a considerable saving. A workshop has been erected. The 12-ton crane, which was brought from Greymouth, has been profitably employed, among other work, in removing snags from the river, the navigation of which is much improved thereby.

The works of the Westport Colliery Company are being pushed forward. The Koranui Company is also carring on operations to open out its mine; and, if these two undertakings get into successful working, the traffic receipts of the railway will soon show a marked improvement.

The locomotives have been fitted with bogies and cabs, have been thoroughly overhauled, and the boilers tested and painted, &c.

The carriages and wagons also have received due attention, and the whole are in thorough working order.

The traffic over this line has hitherto been very light, the earnings having been insufficient to meet working expenses, notwithstanding that the most rigid economy has been practised. I trust, however, that the opening up of the coal mines above referred to will alter this state of things, and that next year's report will exhibit much more favorable results.

The goods and minerals carried during the year amounted to 5,686 tons, against 5,888 tons in the preceding, showing a decrease of 202 tons. The number of passengers carried shows a large increase.

Nelson Section.

This section has been well maintained during the year. Portions of the embankments have been widened and the line in several places reballasted; the bridges also have undergone heavy repairs, and all of them have been tarred. A loop siding has been put in at Bishopdale, and has proved a great convenience in working the traffic over the incline.

A wheel lathe and a small stationary engine have been erected and are doing good service, but the covering over them is only of a temporary nature. Proper workshop accommodation is urgently needed, and an amount has been placed upon the estimates for the purpose.

The locomotives, carriages, and wagons have been well attended to and are in thorough working order. A third locomotive, similar to those now in use, is about to be shipped to this section from one of the southern ports.

There has been an increase in the traffic, and although not very marked it has been steady, and will no doubt be maintained. The Port extension, which will shortly be ready, may be expected to produce additional revenue.

The number of passengers carried during the year was 65,390, as against 40,811 for the previous year, showing an increase of 24,579.

The goods and minerals carried in the year amount to 13,830 tons, against 8,579 tons carried in the previous year, showing an increase of 5,251 tons.

Picton Section.

This section has been worked with the strictest regard to economy, the result being that for the past year the working shows a balance of profit. Although there has been a considerable reduction in the staff, the line has been well and carefully kept. In addition to the ordinary maintenance, sundry works have been executed. The steep gradients, 2 miles from Picton, have been lowered, so that a much heavier load can now be taken than was formerly possible; and the engine coming to a stand, which was formerly a common occurrence, is now a thing of the past. The embankments, some of which were so narrow that the ends of the sleepers projected over the slope, have been widened. Three curves have been entirely removed, several, which varied from 6 to 8 chains' radius, have been altered to 25 chains, and one sharp curve has been so much improved that it is now 70 chains' radius.

The bridges have been repaired and tarred, and some new sleepers laid.

Each of the four-wheel locomotives has been fitted with a bogie and cab, and generally repaired, and the locomotives are now in a thoroughly efficient condition.

The carriages and wagons have also received proper attention, and, as the former had for some years been exposed to the weather and had become much defaced, no carriage shed having been provided, they are now being painted and varnished.

The number of passengers carried during the year was 25,510, against 18,488 carried the previous year, showing an apparent increase of 7,022; but this increase is subject to a large deduction on account of the different mode in which the return tickets have been dealt with this year.

The tonnage of goods and minerals carried during the year exhibits a considerable decrease.

GENERAL.

A much larger number of trains having been placed upon the road since the opening of the through line, experience has clearly demonstrated the necessity for a complete and independent system of railway telegraphy. The public telegraph, it has been found, affords the department very little assistance in the handling of trains, the time occupied in the transmission and delivery of a message not unfrequently exceeding that occupied in the running of a train over the same distance.

The successful working of a large traffic, even where the service is performed without a hitch, demands special ability and experience. Crossing-places for trains running in opposite directions have to be provided, and the failure of a single engine may cause a complete dislocation of all the arrangements, puts all skill and all experience at fault, and produces a general block throughout the system. In such a case the telegraph, if entirely at the disposal of those who control the traffic, and immediately available, becomes invaluable in enabling the management to ascertain at once the locality of a disabled train, to send prompt assistance, and to rearrange without delay the disorganized trains.

Our Railway Telegraph Department, as established upon my recommendation some months ago, is in the way of supplying this want. It is under the charge of an officer who has had considerable railway telegraph experience in England, and it has so far done good service. I look forward with interest to the time—not far distant, I hope—when the complete establishment of the system will bring all our stations into direct mutual telegraph communication. Young men are being specially trained for the combined railway and telegraph business, and will be competent for the duties whenever their services are required. The absolute block system, wherever introduced, has given excellent results in rendering the difficult portions of the line—as those on either side of Dunedin, and the Lyttelton tunnel—perfectly safe. A more general adoption of the system, which can only be effected when the fixing of the wires is completed, will conduce much to the safe and efficient working of the line.

The through passenger trains proposed in my last report have now been at work several months with good results as regards revenue. They have been fairly patronized, and have kept very good time. The journey between Christchurch and Dunedin occupies 10 hours 55 minutes, and between Dunedin and Invercargill 6 hours 30 minutes, suitable stoppages for refreshment being arranged in both cases. Mail carriages have also been provided, with the necessary conveniences for sorting letters, &c., and a mail officer travels in charge. Eight of the carriages running in these trains have been fitted with double bogies, and, in consequence of the marked superiority in point of comfort in the carriages so improved, over the ordinary carriages, they are in great request by the public.

Although we have carried 2,018,871 passengers during the year accidents have been few. Such casualties as have occurred were mainly, if not entirely, the result of want of caution on the part of the sufferers, and in no case has blame been attributable to the department.

A concrete tank has been provided in the Christchurch yard for the storage of water, to be used in case of fire. It contains 56,000 gallons, and is supplied by four artesian wells. A powerful steam fire-engine is kept ready for immediate use, and an efficient brigade has been organized, the members of which, with a view to encourage *esprit de corps* among them, and to render the service popular, have been provided with uniforms.

The traffic on the Amberley to Bluff system shows a very large increase. The number of passengers carried during the year, counting each return ticket as two passengers, was 1,878,327, and the number carried the previous year was 1,064,920. In the last-named year a return ticket was counted as one passenger. Calculating the figures for 1878–79 on the same basis the number will be reduced to 1,265,708, and the increase for the year will be 200,788.

The goods and minerals carried during the year amount to 889,903 tons, against 679,529 tons carried in the preceding year, or an increase of 210,374 tons. The live stock carried during the year numbers 189,975 head, against 114,872 head in the previous year, showing an increase of 75,103 head.

The amount for compensation paid during the year was only £1,227 7s. 6d.

A few alterations have been made in the tariff during the year, but the changes have all been reductions.

The amount expended to date in the construction of the Middle Island Railways now open for traffic is £5,757,188. The excess of earnings over expenditure on the several sections—the net revenue—is £172,682 7s., which is equivalent to about 3 per cent. on the cost.

I would here beg leave to draw your attention to the large amount of work which is performed by this department gratuitously. We carry the mails free, and the officers and employés of the Public Works Department: the Police Department also travel free; and for the conveyance of the Volunteers during the year we have not had credit, although it was arranged that they should be paid for. Then the large quantities of material which are conveyed over the line for the Public Works Department are carried at half-rates, which do not pay actual working expenses.

As regards the mails, I have already stated in a memorandum which I submitted to you on the 10th June that in the neighbouring colonies this service is paid for, and that, if this department were

remunerated for the carriage of the mails at the lowest rate adopted in Australia, about £10,000 would be added to our revenue on that head alone. Credit is also given for the other items of service referred to above.

I have no certain data to guide me, but, inasmuch as the proceeds of such work if credited to the department would be all clear profit, I have no doubt that a change of system in this respect would exhibit largely-improved results on our working; and I submit that, as our balance-sheet goes forth to the world, and is subject to criticism and comparison at least in the neighbouring colonies, it behoves us to place the matter in the most favourable light.

I have very much pleasure in acknowledging the very valuable and hearty assistance which I have received from the Engineers—Resident and Locomotive—and Managers, and the other officers, and from the employés generally, in carrying on the work of this department.

Attached hereto you will please find the following tables:—

Statement showing Number of Miles Opened for Traffic during the year	Table A.
Statement of Earnings and Expenditure	„ B.
Statement of Passenger and Goods Traffic, &c.	„ C.
Statement of Accounts, Middle Island Railways	„ D.
Statement of Wages paid	„ E.
Statement of Revenue and Expenditure for Wharves	„ F.
Return of Accidents	„ G.
Detailed Statement of Cost of Maintenance, Christchurch Section	„ H.
Report of trial of Native Coal in Locomotives, Christchurch Section	„ I.
Statement showing Quantity and State of Rolling-stock on the Middle Island Railways on 30th June, 1879	„ K.

I have, &c.,
Wm. Conyers,
Commissioner of Railways, Middle Island.

The Hon. the Minister for Public Works.

TABLE A.—Appendix M.

NEW ZEALAND RAILWAYS.—MIDDLE ISLAND.

Statement showing the Number of Miles Opened for Traffic during the Year ending 30th June, 1879.

Designation of Line or Branch.	Date Opened for Traffic.	Length.	Remarks.
		M. ch.	
Christchurch, Dunedin, and Invercargill Section—			
Fairlight to Kingston	16th July, 1878 ...	8 60	
Waikouaiti to Palmerston	7th September, 1878	9 3	
Balclutha to Clinton	23rd January, 1879...	21 3	
Makarewa to Riverton...	10th June, 1879 ...	17 40	
Puki-iviti to Shag Point	19th June, 1879 ...	1 67	
Total opened	...	58 13	

TABLE B.—Appendix M.

NEW ZEALAND RAILWAYS, MIDDLE ISLAND.—Comparative Statement of Earnings and Expenditure, Twelve Months ending 30th June, 1879.

EARNINGS.

Sections.	Miles Open.	Coaching. 1st and 2nd Class Passengers.	Coaching. Season Tickets.	Coaching. Total Passengers.	Coaching. Xs Luggage and Parcels.	Coaching. Total Coaching.	Merchandise. Wharfage.	Merchandise. Rents, &c.	Merchandise. Miscellaneous.	Merchandise. Goods.	Merchandise. Total Merchandise.	Recoveries.	Gross Total.
1878–79.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Christchurch, Dunedin, and Invercargill	747	241,756 7 9	5,494 16 9	247,251 4 6	17,511 9 2	264,762 13 8	...	5,231 13 8	11,588 18 1	295,518 1 3	312,338 13 0	259 2 6	577,360 9 2
Greymouth	8	1,635 19 4	50 4 6	1,686 3 10	61 19 9	1,748 3 7	2,031 3 2	...	377 2 8	4,695 18 0	7,104 3 10	...	8,852 7 5
Westport	19	750 6 9	19 0 0	769 6 9	28 4 6	797 11 3	890 3 3	6 7 6	136 13 7	855 17 5	1,889 1 9	...	2,686 13 0
Nelson	20	4,361 13 7	211 2 0	4,572 15 7	81 17 9	4,654 13 4	...	...	42 12 0	2,414 0 8	2,456 12 8	...	7,111 6 0
Picton	18	1,930 17 0	53 0 0	1,983 17 0	60 18 1	2,044 15 1	778 1 9	...	38 18 11	2,408 14 9	3,225 15 5	...	5,270 10 6
Totals ...	812	250,435 4 5	5,828 3 3	256,263 7 8	17,744 9 3	274,007 16 11	3,699 8 2	5,238 1 2	12,184 5 3	305,892 12 1	327,014 6 8	259 2 6	601,281 6 1
1877–78.													
Christchurch, Dunedin, and Invercargill	689	178,375 0 11	4,740 6 8	183,115 7 7	9,003 12 0	192,118 19 7	...	...	19,136 11 11	226,723 18 0	245,860 9 11	8,010 10 0	445,989 19 6
Greymouth	8	1,304 17 4	75 7 6	1,380 4 10	261 4 3	1,641 9 1	2,415 0 11	...	127 8 1	4,579 3 0	7,121 12 0	...	8,763 1 1
Westport	19	469 12 9	...	469 12 9	12 8 5	482 1 2	277 16 6	...	20 0 0	602 19 3	900 15 9	...	1,382 16 11
Nelson	20	3,984 15 4	150 6 11	4,135 2 3	68 9 0	4,203 11 3	...	...	49 3 9	1,936 10 6	1,985 14 3	...	6,189 5 6
Picton	18	1,939 4 10	62 15 0	2,001 19 10	69 8 6	2,071 8 4	708 12 6	...	...	2,211 6 1	2,919 18 7	...	4,991 6 11
Totals ...	754	186,073 11 2	5,028 16 1	191,102 7 3	9,415 2 2	200,517 9 5	3,401 9 11	...	19,333 3 9	236,053 16 10	258,788 10 6	8,010 10 0	467,316 9 11

EXPENDITURE.

Sections.	Maintenance.	Locomotive Power.	Repairs, &c., Carriages and Wagons.	Traffic Expenses.	General Charges.	Sundries.	Total.
1878–79.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Christchurch, Dunedin, and Invercargill	144,974 2 9	95,540 17 2	25,000 14 5	129,052 8 6	13,781 4 3	1,227 7 6	409,576 14 7
Greymouth	1,205 8 4	864 19 1	226 11 8	1,876 10 0	543 15 2	6 18 2	4,724 2 5
Westport	1,405 9 7	655 16 4	142 0 11	785 19 11	417 5 0	21 4 0	3,427 15 9
Nelson	1,738 8 10	2,036 19 3	426 15 0	1,228 10 11	591 16 1	6 13 10	6,029 3 11
Picton	1,953 6 10	1,239 15 11	122 5 11	911 12 5	614 1 4	...	4,841 2 5
Totals	151,276 16 4	100,338 7 9	25,918 7 11	133,855 1 9	15,948 1 10	1,262 3 6	428,598 19 1
1877–78.							
Christchurch, Dunedin, and Invercargill	94,208 19 1	72,142 13 3	15,082 14 6	109,408 17 3	11,073 16 6	1,588 5 4	303,505 5 11
Greymouth	1,642 3 5	953 18 1	353 9 11	2,195 14 6	592 18 2	...	5,738 4 1
Westport	333 14 2	488 19 9	15 5 6	516 7 2	385 9 0	9 11 4	1,749 6 11
Nelson	2,177 9 10	1,823 8 0	245 19 7	1,103 12 5	547 4 6	6 0 0	5,903 14 4
Picton	2,231 2 8	990 13 6	135 13 7	1,161 7 7	555 2 11	...	5,074 0 3
Totals	100,593 9 2	76,399 12 7	15,833 3 1	114,385 18 11	13,154 11 1	1,603 16 8	321,970 11 6

TABLE C.—Appendix M.

NEW ZEALAND RAILWAYS, MIDDLE ISLAND.

Comparative Return of Passenger and Goods Traffic, Number of Trains Run and Miles Travelled, for Year ended 30th June, 1879.

Sections.	Miles Open.	Passengers.			Season Tickets.	Carriages.	Horses.	Cattle.	Sheep.	Pigs.	Coal.	Other Minerals.	Firewood.	Timber.	Grain.	Wool.	General Merchandise.	Trains.			Miles Travelled by Trains.				Total.
		1st Class.	2nd Class.	Total.														Passenger and Mixed.	Goods.	Total.	Passenger and Mixed.	Goods.	Total Train Miles.	Shunting Ballasting, &c.	
1878-79.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	T.	Tons.	Tons.	Tons of 500 super. feet each.	Tons.	Tons.	Tons.	No.	No.	No.	No.	No.	No.	No.	No.
Christchurch, Dunedin, and Invercargill	747	460,241	1,418,086	1,878,327	4,450	1,691	6,711	6,154	162,520	14,846	..	206,661	29,979	129,834	229,885	35,670	258,374	53,316	15,558	68,874	1,336,207	353,383	1,689,590	536,291	2,225,881
Greymouth ...	8	9,820	25,190	35,010	64	2	...	10	5	3	...	36,357	...	748	...	...	2,322	1,994	...	1,994	15,452	...	15,452	5,524	20,976
Westport ...	19	494	14,140	14,634	2	...	4	18	89	4	...	3,326	...	1,179	...	...	1,181	896	...	896	12,577	...	12,577	2,895	15,472
Nelson ...	20	11,349	54,041	65,390	221	9	6	9	354	38	...	3,354	...	3,465	1,610	146	1,836	1,834	99	1,933	35,733	364	36,097	2,926	39,023
Picton ...	18	6,089	19,421	25,510	45	4	8	4	884	62	...	3,377	...	8,444	922	21	1,065	1,284	...	1,284	22,630	...	22,630	3,577	26,207
Totals ...	812	487,993	1,530,878	2,018,871	4,782	1,706	6,729	6,195	163,852	14,953	...	253,075	29,979	143.670	232,417	35,837	264,778	59,324	15,657	74,981	1,422,599	353,747	1,776,346	551,213	2,327,559
1877-78.																									
Christchurch, Dunedin, and Invercargill	689	252,723	812,197	1,064,920	3,970	963	5,032	2,416	94,435	12,989	...	170,992	...	110,538	166,432	26,340	205,227	30,766	5,014	35,780	1,187,662	151,062	1,338,724	450,114	1,788,838
Greymouth ...	8	6,958	23,240	30,198	49	7	...	...	11	2	...	31,820	...	1,589	...	14	2,642	1,968	...	1,968	15,571	...	15,571	2,603	18,174
Westport ...	19	850	3,880	4,739	...	...	1	3	83	11	...	5,352	...	80	...	...	456	214	...	214	7,184	...	7,184	1,218	8,402
Nelson ...	20	9,142	31,669	40,811	142	7	11	7	135	69	...	2,550	...	2,428	967	178	2,456	1,711	...	1,711	34,006	...	34,006	...	34,006
Picton ...	18	3,924	14,564	18,488	47	...	...	19	618	...	...	2,556	...	9,569	584	18	597	1,476	...	1,476	26,282	...	26,282	4,042	30,324
Totals ...	754	273,597	885,550	1,159,147	4,208	977	5,044	2,445	95,282	13,071	...	213,270	...	124,204	167,983	26,550	211,378	36,135	5,014	41,149	1,270,705	151,062	1,421,767	457,977	1,879,744

TABLE D.—Appendix M.

NEW ZEALAND RAILWAYS (MIDDLE ISLAND).

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING 30TH JUNE, 1879.

CHRISTCHURCH, DUNEDIN, AND INVERCARGILL SECTION.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Earnings,—			By Payments into Public Account, June 30, 1879		633,397 0 7
Cash in hand and outstanding, July 1, 1878	14,217 11 3		Less Refunds for Wharfages, &c.	52,686 18 6	
Passengers, Parcels, Goods, &c., June 30, 1879	577,101 6 8		Less Refunds of Revenue ...	8,540 18 5	
				61,227 16 11	
			Deduct unpaid Balance of Wharfages for year 1877-78 ...	1,186 3 0	
					60,041 13 11
					573,355 6 8
			Cash in hand and outstanding, June 30, 1879	18,042 1 6	
			Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	78 10 3	
					17,963 11 3
	£591,318 17 11				£591,318 17 11
To Amount paid into Public Account, June 30, 1879 ...		633,397 0 7	By Expenditure, June 30, 1879 ...		409,576 14 7
Less Cash in hand and outstandings, July 1, 1878	14,217 11 3		By Balance towards payment of Interest		167,783 14 7
Less Refunds for Wharfages, &c., June 30, 1879	60,041 13 11				
		74,259 5 2			
		559,137 15 5			
Cash in hand and outstanding, June 30, 1879	18,042 1 6				
Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	78 10 3				
		17,963 11 3			
		577,101 6 8			
Recoveries		259 2 6			
		£577,360 9 2			£577,360 9 2

GREYMOUTH SECTION.

Dr.	£ s. d.	Cr.	£ s. d.
To Earnings,—		By Amount paid into Public Account, June 30, 1879	8,781 2 11
Cash in hand and outstandings, July 1, 1878	46 2 5	Cash in hand and outstandings, June 30, 1879	117 6 11
Passengers, Parcels, Goods, &c., June 30, 1879	8,852 7 5		
	£8,898 9 10		£8,898 9 10
To Amount paid into Public Account, June 30, 1879	8,781 2 11	By Expenditure, June 30, 1879	4,724 2 5
Less Cash in hand and outstandings, July 1, 1878	46 2 5	Balance towards payment of Interest ...	4,128 5 0
	8,735 0 6		
Cash in hand and outstanding, June 30, 1879 ...	117 6 11		
	£8,852 7 5		£8,852 7 5

WESTPORT SECTION.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Earnings,—			By Amount paid into Public Account, June 30, 1879 ...		2,621 16 4
Cash in hand and outstandings, July 1, 1878	...		Cash in hand and outstanding, June 30, 1879	83 4 2	
Passengers, Parcels, Goods, &c., June 30, 1879	2,686 13 0		Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	18 7 6	
					64 16 8
	£2,686 13 0				£2,686 13 0

WESTPORT SECTION—*continued.*

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.
To Amount paid into Public Account, June 30, 1879 ...		2,621 16 4	By Expenditure, June 30, 1879 ...	3,427 15 9
Cash in hand and outstanding, June 30, 1879	83 4 2			
Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	18 7 6			
		64 16 8		
To Loss		741 2 9		
		£3,427 15 9		£3,427 15 9

NELSON SECTION.

Dr.	£ s. d.	Cr.	£ s. d.
To Earnings,—		By Amount paid into Public Account, June 30, 1879	7,123 2 8
Cash in hand and outstanding, July 1, 1878	32 19 11	Cash in hand and outstanding, June 30, 1879	21 3 3
Passengers, Parcels, Goods, &c., June 30, 1879	7,111 6 0		
	£7,144 5 11		£7,144 5 11
To Amount paid into Public Account, June 30, 1879	£ s. d. 7,123 2 8	By Expenditure, June 30, 1879	6,029 3 11
Less Cash in hand and outstanding, July 1, 1878	32 19 11	Balance towards payment of Interest ...	1,082 2 1
	7,090 2 9		
Cash in hand and outstanding, June 30, 1879	21 3 3		
	£7,111 6 0		£7,111 6 0

PICTON SECTION.

Dr.	£ s. d.	Cr.	£ s. d.
To Earnings,—		By Amount paid into Public Account, June 30, 1879	5,289 10 3
Cash in hand and outstanding, July 1, 1878	56 10 9	Cash in hand and outstanding, June 30, 1879	37 11 0
Passengers, Parcels, Goods, &c., June 30, 1879	5,270 10 6		
	£5,327 1 3		£5,327 1 3
To Amount paid into Public Account, June 30, 1879	£ s. d. 5,289 10 3	By Expenditure, June 30, 1879	4,841 2 5
Less Cash in hand and outstanding, July 1, 1878	56 10 9	Balance towards payment of Interest ...	429 8 1
	5,232 19 6		
Cash in hand and outstanding, June 30, 1879	37 11 0		
	£5,270 10 6		£5,270 10 6

SUMMARY OF ACCOUNTS FOR THE YEAR ENDING 30TH JUNE, 1879.

Dr.	£ s. d.	£ s. d.	Cr.	£ s. d.	£ s. d.
To Cash in hand and outstandings, July 1, 1878		14,353 4 4	By Payments into Public Account, June 30, 1879 ...	657,212 12 9	
Passengers, Parcels, Goods, &c., June 30, 1879		601,022 3 7	Less Refunds of Revenue and Wharfages ...	60,041 13 11	
					597,170 18 10
			Cash in hand and outstandings, June 30, 1870	18,301 6 10	
			Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	96 17 9	
					18,204 9 1
		£615,375 7 11			£615,375 7 11
To amount paid into Public Account, June 30, 1879 ...	£ s. d. 597,170 18 10		By Expenditure, June 30, 1879 ...		428,598 19 1
Less Cash in hand and outstandings, July 1, 1878	14,353 4 4		Balance towards payment of Interest		172,682 7 0
		582,817 14 6			
Cash in hand and outstandings, June 30, 1879	18,301 6 10				
Less amount of Transfer Vouchers in Treasury Books, but not entered in Railway Departmental Accounts ...	96 17 9				
		18,204 9 1			
		601,022 3 7			
Recoveries to Vote		259 2 6			
		£601,281 6 1			£601,281 6 1

TABLE E.—Appendix M.

NEW ZEALAND RAILWAYS, MIDDLE ISLAND.

Return of the Total Amounts Paid for Wages in the different Branches of the Railway Department, Christchurch to Dunedin and Invercargill Section, for the Year ending 30th June, 1879.

Year.	Traffic Branch.	Year.	Permanent Way Branch.	Year.	Locomotive Branch.
	£ s. d.		£ s. d.		£ s. d.
1879	*110,989 4 6	1879	†104,745 8 5	1879	‡47,371 5 9
1878	97,447 6 0	1878	74,665 6 9	1878	52,361 2 1
	Increase ... 13,541 18 6		Increase ... 30,080 1 8		Decrease ... 4,989 16 4

* Includes traffic and general charges.
† Includes maintenance of way and works.
‡ Includes locomotive running repairs, and carriage and wagon renewals and repairs.

Abstract of the Total Amount Paid for Wages in the Traffic, Permanent Way, and Locomotive Branches, 1878–79.

Year.	Miles Open.	Traffic.	Permanent Way.	Locomoitve.	Total.	Remarks.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	
*1879	747	110,989 4 6	104,745 8 5	47,371 5 9	263,105 18 8	
1878	689	97,447 6 0	74,665 6 9	52,361 2 1	224,473 14 10	
	58	13,541 18 6	30,080 1 8	...	38,632 3 10	Increase.
		...	...	4,989 16 4	...	Decrease.

Return of the Total Amount Paid for Wages in the different Branches of the Railway Department, for the Year ending 30th June, 1879.

Branch.	Amberley–Kingston Section.	Nelson Section.	Westport Section.	Picton Section.	Greymouth Section.	Total.
1879.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
*Traffic	110,989 4 6	1,112 17 1	314 1 5	824 19 10	901 4 9	114,142 7 7
*Permanent Way ...	104,745 8 5	1,685 11 3	1,352 17 2	1,878 18 1	1,173 16 5	110,836 11 4
*Locomotives	47,371 5 9	1,085 3 10	437 12 8	536 10 0	820 15 9	50,251 8 0
	263,105 18 8	3,883 12 2	2,104 11 3	3,240 7 11	2,895 16 11	275,230 6 11
1878.						
Traffic	97,447 6 0	1,235 18 5	156 5 5	753 16 0	1,360 13 3	100,953 19 1
Permanent Way	74,665 6 9	2,024 0 10	333 14 2	2,148 14 9	1,557 9 1	80,729 5 7
Locomotives	52,361 2 1	1,058 18 6	161 2 0	533 16 3	910 14 1	55,025 12 11
	224,473 14 10	4,318 17 9	651 1 7	3,436 7 0	3,828 16 5	236,708 17 7
Increase	38,632 3 10	...	1,453 9 8	...	...	38,521 9 4
Decrease	...	435 5 7	...	195 19 1	932 19 6	...

Abstract of the Total Amount Paid for Wages in the Traffic, Permanent Way, and Locomotive Branches, for the Year ending 30th June, 1879.

Section.	Miles Open.		Traffic.		Permanent Way.		Locomotive.		Total.	
	1879	1878	*1879.	1878.	*1879.	1878.	*1879.	1878.	*1879.	1878.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Amberley–Kingston	747	689	110,989 4 6	97,447 6 0	104,745 8 5	74,665 6 9	47,371 5 9	52,361 2 1	263,105 18 8	224,473 14 10
Nelson ...	20	20	1,112 17 1	1,235 18 5	1,685 11 3	2,024 0 10	1,085 3 10	1,058 18 6	3,883 12 2	4,318 17 9
Westport...	19	19	314 1 5	156 5 5	1,352 17 2	333 14 2	437 12 8	161 2 0	2,104 11 3	651 1 7
Picton ...	18	18	824 19 10	753 16 0	1,878 18 1	2,148 14 9	536 10 0	533 16 3	3,240 7 11	3,436 7 0
Greymouth	8	8	901 4 9	1,360 13 3	1,173 16 5	1,557 9 1	820 15 9	910 14 1	2,895 16 11	3,828 16 5
Total ...	812	754	114,142 7 7	100,953 19 1	110,836 11 4	80,729 5 7	50,251 8 0	55,025 12 11	275,230 6 11	236,708 17 7
Increase ...	...	...	13,188 8 6	...	30,107 5 9	...	...	...	38,521 9 4	...
Decrease...	...	...	...	...	...	...	4,774 4 11	...	...	...

* Proportion of workshops wages chargeable to working expenses is not included in the figures given for 1879.

TABLE F.—Appendix M.

STATEMENT of REVENUE and EXPENDITURE for WHARVES for the Year ending 30th June, 1879.

Wharf.	Revenue.	Expenditure.	Percentage of Receipts.
	£ s. d.	£ s. d.	
Greymouth	2,031 3 2	675 4 1	33·24
Wesport	890 3 3	211 14 10	23·78
Picton	804 1 1	184 16 1	22·98
Totals	3,725 7 6	1,071 15 0	28·76

Year ending 30th June, 1878.

Wharf.	Revenue.	Expenditure.	Percentage of Receipts.
	£ s. d.	£ s. d.	
Greymouth	2,415 0 11	790 9 2	32·73
Westport	277 16 6	80 7 7	28·93
Picton	708 12 6	237 11 10	33·55
Totals	3,401 9 11	1,108 8 7	32·58

TABLE G.—Appendix M.

RETURN of the NUMBER and NATURE of ACCIDENTS to LIFE and LIMB which have occurred during the Year ending 30th June, 1879.

Section.	Passengers Killed or Injured.				Servants of the Department or Contractor Killed or Injured.				Persons Killed or Injured while Crossing at Level Crossings.		Trespassers.		Workshops.		Miscellaneous.	
	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.
Christchurch	...	...	1	3	...	2	2	12	...	1	1	1	...	5	...	...
Dunedin	...	...	1	...	1	4	1	1	1	1	...	...	...	...	...	...
Invercargill ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Greymouth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Westport	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nelson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Picton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	2	3	1	7	3	13	1	2	1	1	...	5	...	...

TABLE H.—Appendix M.

DETAILED STATEMENT of EXPENDITURE Charged to MAINTENANCE of WAY and WORKS, Christchurch Section, New Zealand Railways.

—	—	Proportion to Total Cost.
	£ s. d.	Per Centum.
Cost of Supervision	2,689 17 10	3·4
Repairs of Permanent Way	32,705 18 1	41·2
Ballasting	1,945 10 3	2·4
Sidings and Turntables	247 5 9	0·3
Grading	2,078 2 9	2·6
New Permanent-way Materials	6,987 11 7	8·9
Roads, Paths, &c.	321 7 10	0·4
Bridges, Culverts, &c.	6,163 4 3	7·8
Fences, Cattle-stops, Gates, &c.	3,137 1 2	3·9
Signals	403 2 8	0·5
Cranes, Weighbridges, &c....	244 11 4	0·3
Watering Stations and Pumping Apparatus	1,386 9 8	1·8
Repairs to Stations and Buildings	4,155 19 8	5·2
Tools and Implements	1,984 11 2	2·5
Workshop Commission	238 16 9	0·3
	64,689 10 9	
Casualties as per Schedule attached	6,728 9 4	8·5
Additions and Alterations as per Schedule attached	7,913 5 8	10·0
Total Expenditure	79,331 5 9	100·0

J. HENRY LOWE, Resident Engineer.

SCHEDULE.

STATEMENT of EXPENDITURE under ADDITIONS and ALTERATIONS and CASUALTIES, from 1st July, 1878, to 30th June, 1879.

Order No.		£ s. d.	£ s. d.
	Damages by Floods and Casualties.		
62.	Repairing breach north line made by Waimakiriri	336 14 1	
141.	Repairing damage to north line by flood	481 4 6	
165.	" " "	55 19 3	
365. } 366. }	" " "	131 15 7	
118.	Repairs, Rangitata Bridge	4,422 3 8	
50.	Rockwork, Waitaki Bridge	214 18 10	
69.	Rockwork, Kakanui	60 3 9	
71.	Rockwork to secure south approach, Rangitata	262 12 3	
74.	Rockwork, Temuka Bridge	94 5 7	
85.	Rockwork, Waihoe	31 14 2	
342.	Repairing damage by floods, &c.	168 10 4	
	Miscellaneous casualties	468 7 4	
			6,728 9 4
	Additions to Permanent Way and Works.		
	Relaying main line	246 16 9	
	Renewal of permanent way, Oamaru District	594 17 10	
	Ballast-pits sidings	58 13 8	
	Ballasting Dromore Siding	24 14 0	
	Laying third line rails to Addington	81 6 4	
	Widening crossing, Mount Grey Road	39 11 10	
	New sleeper-adzing machine	140 0 0	
	Ballasting Eyreton Branch where not completed	135 0 0	
	New cattle-stops at level crossings	934 17 0	
	Enlarging Main Albury Branch	56 19 0	
	Alterations, culvert, Temuka	31 17 6	
	Reconstruction, Opawa Bridge	195 19 2	
	Removing gates and erecting cattle-stop, Pigeon's Crossing ...	49 4 4	
	Painting girder bridges, Addington to Rangitata	173 7 2	
	New water openings, Rakaia and Rangitata	160 12 3	
	Reconstructing bridge, Hawkins	266 12 9	
	Raising embankments, north line	406 2 10	
	Additional span, Waimakiriri Bridge	65 9 4	
	Additional spans to bridges, north line	163 6 5	
	New pitching, Moeraki Port	74 6 8	
	Addition to siding, Elderslie	91 18 7	
	Setting back obstructions from main line	118 13 5	
	Rockwork, Rakaia Bridge...	181 3 11	
	Trespass notice-boards	86 11 10	
	Additional waterways	77 0 0	
	Earth-filling, Cust	8 0 0	
	Ballasting Chertsey Siding	7 16 5	
	Relaying siding to goods-shed, Rangiora	4 7 2	
	Roads and drains, Christchurch yard	45 5 8	
			4,520 11 10
	Additions and Improvements to Stations.		
	Ballasting Temuka Station	131 7 0	
	New siding, Ashburton	193 12 3	
	Battery cabinet, Addington signal-box	16 3 11	
	Two signal-boxes, Christchurch	137 10 8	
	Covering in tank stands	80 17 8	
	Erecting cranes, Lincoln and Leeston	54 7 10	
	Water service, Swannanoa	46 9 0	
	Erecting forge, Christchurch	32 11 5	
	Removing water-tank, Rolleston	63 9 9	
	Shifting fence, Gasworks Road	19 7 6	
	New artesian well, Kaiapoi	74 0 6	
	Gathering boulders and breaking metal, Christchurch Station ...	231 18 5	
	Carried forward	£1,081 15 11	11,249 1 2

Additions and Improvements to Stations—continued.

	£ s. d.	£. s. d.
Brought forward	1,081 15 11	11,249 1 2
Travelling lifts, Lyttelton goods-shed	74 5 7	
Completing new station, Heathcote Valley	76 0 0	
Lowering Addington platform	75 4 8	
Lowering Sockburn platform	8 10 10	
Lowering Heathcote platform	17 10 6	
New front to Secretary of Railways' office	60 1 11	
Renewal of house, Addington	99 12 10	
Removal of gatehouse, Rakaia Bridge	63 9 9	
New coalshed, Christchurch yard	68 0 7	
Renewal stationmaster's house, Rakaia	48 6 0	
New telegraph office, Ashburton (not finished)	93 12 11	
New telegraph office, Chertsey (not finished)	85 14 4	
New telegraph office, Rangitata (not finished)	40 11 6	
Removal of Papanui Station	53 8 7	
New tanks, Sockburn	20 15 2	
New approach and gateways, Southbrook	35 6 3	
New station, Hawkins	163 19 2	
Repairs to Gladstone Pier shed	43 11 2	
Engine-reversing siding, Oamaru	44 12 6	
600 brass self-locking padlocks	125 16 3	
New pump, Temuka	36 8 11	
Lamp-room and store, Oamaru	29 16 10	
Additional gas lamps, Oamaru Station	20 17 5	
Three lamps, Christchurch yard	19 10 0	
Completing goods-shed floor, Dunsandel	23 18 0	
Lining signal-box, Eyreton Junction	17 3 1	
Improvements to offices and dwellings, Traffic Department ...	267 3 8	
Improvements to offices and dwellings, Permanent-Way Department	103 10 1	
New drains, Christchurch yard	100 12 9	
Deepening well, Glentunnel	16 11 11	
Deepening well, Ashburton	22 9 6	
Deepening well, Selwyn	12 7 0	
Lining well, Ellesmere	17 11 11	
Abyssinian well and pump, Moeraki	5 7 0	
Abyssinian well and pump, West Eyreton	2 14 6	
Removing water-service, Herbert to Maheno	9 11 1	
Gravelling approach road, Herbert goods-shed	15 16 3	
Miscellaneous	290 17 6	
		3,392 13 10
Total		£14,641 15 0

Summary.

Casualties, as above		£6,728 9 4
Additions, Permanent Way	£4,520 11 10	
Additions, Stations	3,392 13 10	
		7,913 5 8
Total		£14,641 15 0

J. Henry Lowe,
Resident Engineer.

TABLE I.—APPENDIX M.

STATEMENT showing Number of Miles Run by Engine No. 88, Class K (Express), 12-inch cylinder, for a period of One Month, Engine burning Native Coal exclusively; average Consumption per Mile; and Cost in Pence compared with a similar period when Engine was burning Coal imported from New South Wales.

No.	Mileage.	Fuel Consumed.	Cost.	Average Consumption of Coal per Mile.	Cost in Pence per Mile.	Tons Hauled.	Cost in Pence for Fuel per Ton per Mile.
			NEWCASTLE.				
		Cwts.	£ s. d.	Lbs.			
88	3,667	607	43 17 7	18·53	2·87	178,170	·059
			NATIVE.				
88	2,674	702	28 1 2	29·40	2·55	158,996	·043

Balance in favour of native coal (·32d. per mile × 166,125 total mileage of Class K Engines, for year ending 30th June, 1879), £221 10s.

Fuel calculated—Newcastle, at 28s. 11d. per ton; native, at 16s. per ton.

ALISON D. SMITH,
Locomotive Engineer.

STATEMENT showing Number of Miles Run by Engine No. 84, Class J (Heavy Goods), 14-inch cylinder, for a period of Two Months, Engine burning Native Coal exclusively; average Consumption per Mile; and Cost in Pence compared with a similar period when Engine was burning Coal imported from New South Wales.

No.	Mileage.	Fuel Consumed.	Cost.	Average Consumption of Coal per Mile.	Cost in Pence per Mile.	Tons Hauled.	Cost in Pence for Fuel per Ton per Mile.
			NEWCASTLE.				
		Cwts.	£ s. d.	Lbs.			
84	7,335	2,113	152 15 0	32·26	4·99	982,298	·037
			NATIVE.				
84	5,075	1,830	76 14 0	40·38	3·63	695,813	·026

Balance in favour of native coal (1·36d. per mile × 204,070 total mileage of Class J Engines, for year ending 30th June, 1879), £1,169 16s.

Fuel calculated—Newcastle, at 28s. 11d. per ton; native, at 16s. per ton.

ALISON D. SMITH,
Locomotive Engineer.

STATEMENT showing Number of Miles Run by Engine No. 77, Class F, 10½-inch cylinder, for a period of Three Months, burning Native Coal exclusively; average Consumption per Mile; and Cost in Pence compared with a similar period when Engine was burning Coal imported from New South Wales.

No.	Mileage.	Fuel Consumed.	Cost.	Average Consumption of Coal per Mile.	Cost in Pence per Mile.	Tons Hauled.	Cost in Pence for Fuel per Ton per Mile.
			NEWCASTLE.				
		Cwts.	£ s. d.	Lbs.			
77	9,820	1,446	104 11 6	16·49	2·55	565,069	·040
			NATIVE.				
77	9,504	2,394	95 15 3	28·21	2·41	647,909	.038

Balance in favour of native coal (·14d. per mile × 207,390 total mileage of Class F. Engines, for year ending 30th June, 1879), £120 19s. 6d.

Fuel calculated—Newcastle, at 28s. 11d. per ton; native, at 16s. per ton.

ALISON D. SMITH,
Locomotive Engineer.

TABLE K.—Appendix M.

Statement showing Quantity and State of Rolling-stock on the Middle Island Railways on 30th June, 1879.

LOCOMOTIVES.

Description.	8-in. cyl., 4 wheels, coupled, 8 tons. Class A.	9-in. cyl., Fairlie, 8 wheels, coupled, 23 tons. Class B.	9½-in. cyl., 4 wheels, coupled, 12 tons. Class C.	9½-in. cyl., 4 wheels, coupled, Bissel truck, 12 tons. Class D.	10-in. cyl., Fairlie, 8 wheels, coupled. Class E.	10½-in. cyl., 6 wheels, coupled, 17 tons. Class F.	10½-in. cyl., 4 wheels, coupled, with 4-wheel bogie. Class G.	Fell engines, 14-in. cyl. outside, 10-in. cyl. inside, 4 wheels, coupled. Class H.	14-in. cyl., 6 wheels, coupled, Bissel bogie, 25 tons, 6-wheel tender. Class J.	12-in. cyl., American engines, 4 wheels, coupled, 2 Bissel bogies, 8-wheel tender. Class K.	10½-in. cyl., 4 wheels, coupled, with Widmark's radial box on leading axle. Class L.	13-in. cyl., 6 wheels, coupled, tank engines, 28 tons. Class M.	10½-in. cyl., Fairlie, 8 wheels, coupled, 25 tons. Class N.	10½-in. cyl., 6 wheels, coupled, tank engine, radial box on leading axle. Class O.	8-in. cyl., 6 wheels, coupled, New Zealand-built, 12 tons. Class P.	12-in. cyl., single Fairlie, 29 tons. Class R.	8-in. cyl., 4 wheels, coupled, 10 tons. Class S.	Total Number.
Christchurch.																		
In good order	11	...	1	6	...	7	4	...	5	5	1	3	...	2	...	...	1	40
Undergoing heavy repairs ...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2
Undergoing light repairs ...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	12	...	1	6	...	8	4	...	6	5	1	3	...	3	...	...	1	50
Dunedin.																		
In good order	...	1	...	1	3	8	...	...	...	2	...	...	...	5	2	2	...	24
Undergoing heavy repairs ...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	3
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	4
Total	...	1	...	1	5	10	...	...	...	2	...	...	...	6	2	4	...	31
Invercargill.																		
In good order	...	...	1	2	...	3	...	...	...	1	...	1	...	5	...	...	...	13
Undergoing heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Total	1	...	1	3	...	3	...	...	...	1	...	1	...	6	...	...	...	16
Greymouth.																		
In good order	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Undergoing heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Westport.																		
In good order	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Undergoing heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Nelson.																		
In good order	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Undergoing heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Picton.																		
In good order	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Undergoing heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Undergoing light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Grand Total ...	13	1	8	12	5	21	4	...	6	8	1	4	...	15	2	4	1	105

CRANES.

—	Stationary.												Travelling.											
	Steam.						Hand.						Steam.						Hand.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Cwt.	12 tons.	10 tons.	5 tons.	3 tons.	1½ tons.	15 cwt.	12 tons.	10 tons.	5 tons.	3 tons.	2 tons.	1½ tons.	Tons.	5 tons.	3 tons.	2 tons.	1½ tons.	15 cwt.
CHRISTCHURCH.																								
In good order... ...	...	...	...	...	...	...	1	1	5	...	1	...	...	...	...	1	5	3	...	3	1	3	...	1
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
DUNEDIN.																								
In good order... ...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
INVERCARGILL.																								
In good order... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
GREYMOUTH.																								
In good order	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...
WESTPORT.																								
In good order	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	1	...	1	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
NELSON.																								
In good order	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
PICTON.																								
In good order	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...
Under heavy repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Under light repairs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In course of erection ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
In hands of contractors ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	...	...	...	...	...	...	1	2	5	...	8	...	2	...	...	4	10	3	...	7	1	9	...	1

MISCELLANEOUS.

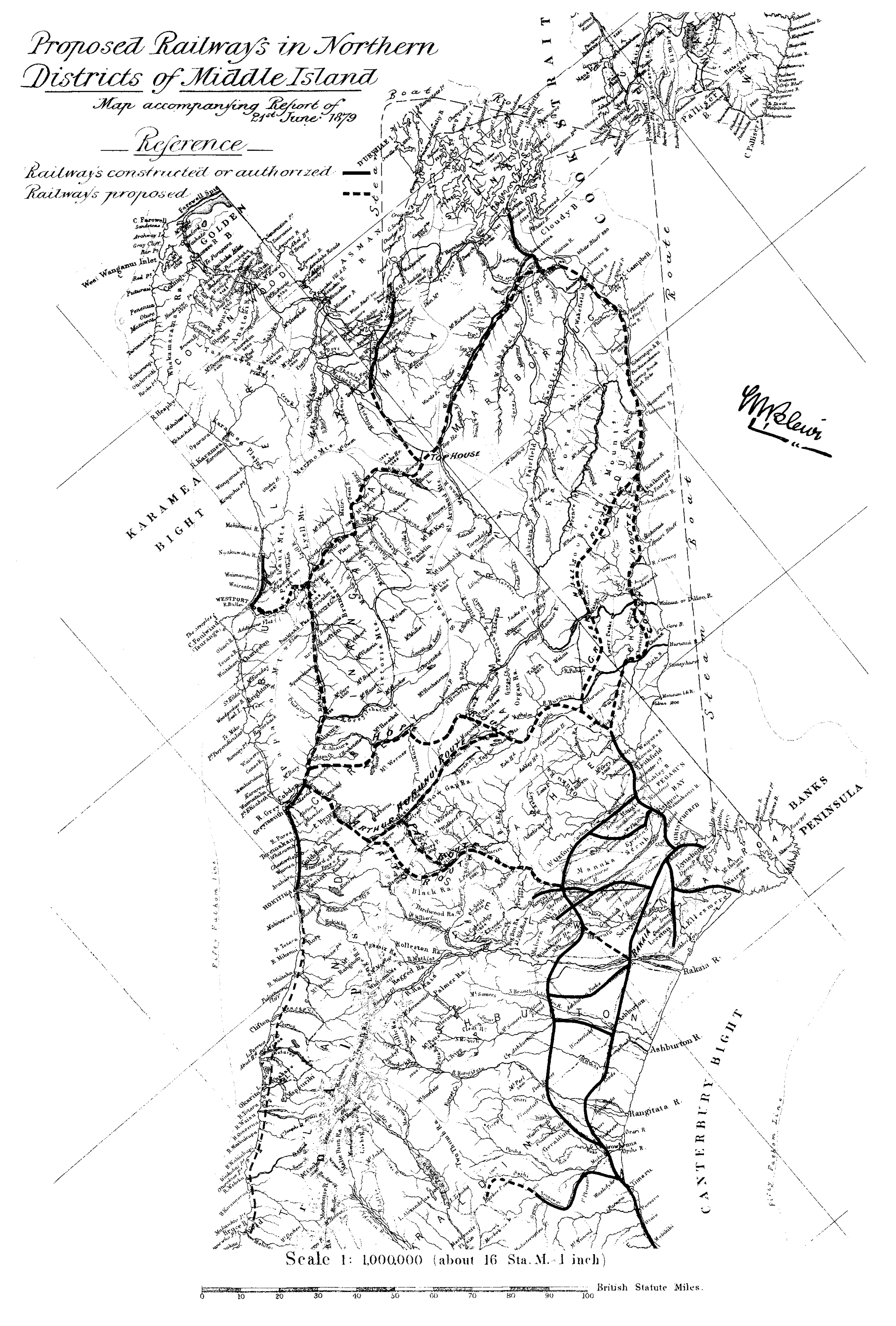
—	Steam Pumps.	Hand Pumps.	Windmill Pumps.	—	Steam Pumps.	Hand Pumps.	Windmill Pumps.
CHRISTCHURCH.				WESTPORT.			
In good order	3	32	6	In good order	...	2	...
DUNEDIN.				NELSON.			
In good order	...	12	1	In good order	...	2	...
INVERCARGILL.				PICTON.			
In good order	1	17	...	In good order	...	2	...
GREYMOUTH.							
In good order	...	2	...				
				TOTALS	4	69	7

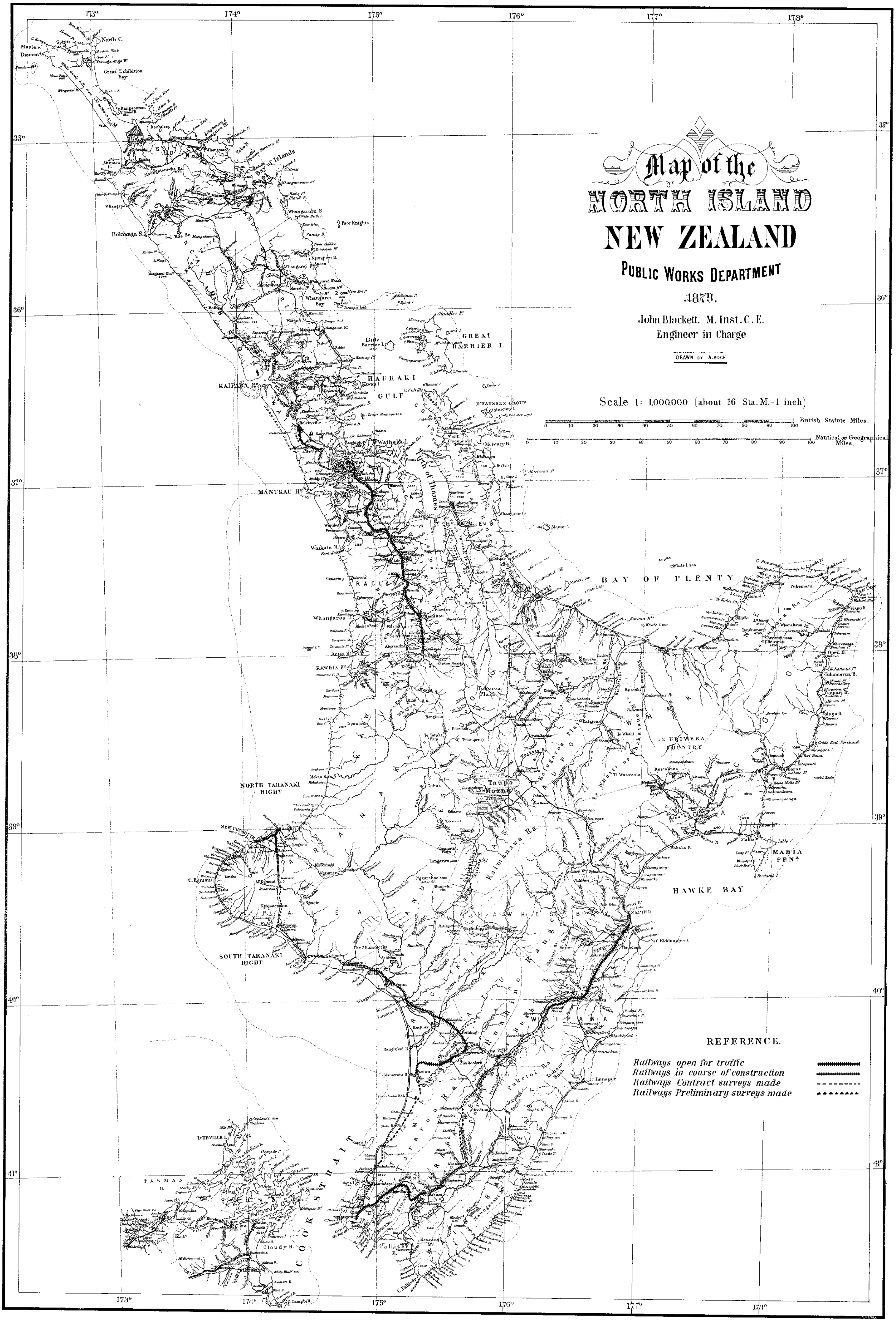
TURNTABLES, WEIGHBRIDGES, and MACHINES.

—	Turntables.							Weighbridges.				Weighing Machines.											
	Traverse Wagon.	50 feet.	40 feet.	18 feet.	14 feet.	13 feet.	12 feet.	Railway Wagon, 12 tons.	Cart, 8 tons.	Cart, 7 tons.	Cart, 3 tons.	22 cwt.	21 cwt.	16 cwt.	15 cwt.	13 cwt.	11 cwt.	10 cwt.	8 cwt.	6 cwt.	5 cwt.	4 cwt.	3 cwt.
CHRISTCHURCH.																							
In good order	4	3	2	4	13	15	3	8	1	...	...	...	1	7	13	1	16	20	3	2	12	1	...
DUNEDIN.																							
In good order	3	2	1	...	...	7	...	1	...	1	...	2	...	...	2	...	...	4	...	...	13	1	5
INVERCARGILL.																							
In good order	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	4	...	...
GREYMOUTH.																							
In good order	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...
In hands of Public Works ...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
WESTPORT.																							
In good order	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
NELSON.																							
In good order	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	4	...	2
PICTON.																							
In good order	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	2	...	...	4	...	...
Totals	9	5	3	4	13	24	3	14	1	1	1	2	1	7	16	1	16	27	3	2	37	6	8

By Authority: GEORGE DIDSBURY, Government Printer, Wellington.—1879.

Price 3s. 9d.]


Proposed Railways in Northern Districts of Middle Island
Map accompanying Report of 21st June 1879
Reference
Railways constructed or authorized
Railways proposed
COOK STRAIT
KARAMEA BIGHT
BANKS PENINSULA
CANTERBURY BIGHT
TOP HOUSE
WESTPORT
HOKITIKA
Scale 1: 1,000,000 (about 16 Sta. M. 1 inch)
British Statute Miles
0
10
20
30
40
50
60
70
80
90
100


Map of the
NORTH ISLAND
NEW ZEALAND
PUBLIC WORKS DEPARTMENT
1879.
John Blackett. M. Inst. C. E.
Engineer in Charge
DRAWN BY A. KOCH
Scale 1: 1,000,000 (about 16 Sta. M. ~ 1 inch)
British Statute Miles.
Nautical or Geographical Miles.
REFERENCE.
Railways open for traffic
Railways in course of construction
Railways Contract surveys made
Railways Preliminary surveys made
GREAT BARRIER I.
HAURAKI GULF
BAY OF PLENTY
HAWKE BAY
NORTH TARANAKI BIGHT
SOUTH TARANAKI BIGHT
COOK STRAIT
TE URIWERA COUNTRY
Taupo Moana
MANUKAU Hr.
KAIPARA Hr.
Bay of Islands
Great Exhibition Bay
NAPIER
MAHIA PENA.
D'URVILLE I.
Firth of Thames


Map of the
MIDDLE ISLAND
NEW ZEALAND
PUBLIC WORKS DEPARTMENT
1879.
W.N. Blair. M. Inst. C.E.
Engineer in Charge
DRAWN BY A. KOCK.
REFERENCE.
Railways open for traffic
Railways in course of construction
Railways Contract surveys made
Railways Preliminary surveys made
Scale 1: 1,000,000 (about 16 Sta. M. = 1 inch)
British Statute Miles.
Nautical or Geographical Miles.
COOK STRAIT
KARAMEA BIGHT
BANKS PENINSULA
CANTERBURY BIGHT
FOVEAUX STR
STEWART ISLAND
HOKITIKA
Greymouth
Westport
Timaru
Oamaru
Christchurch
Milford Sound
Queenstown
Invercargill