

1942.

NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

SURVEYS

(ANNUAL REPORT ON).

Presented to both Houses of the General Assembly by Command of His Excellency.

THE SURVEYOR-GENERAL to the Hon. the MINISTER OF LANDS.

SIR,—

Wellington, 1st September, 1942.

I have the honour to present herewith the report on survey operations for the year ending 31st March, 1942.

I have, &c.,

H. E. WALSH,

Surveyor-General.

The Hon. the Minister of Lands.

REPORT.

THE extension of the war to the Pacific during the last quarter of the year ended 31st March, 1942, caused the Department's activities in surveys and mapping to be primarily devoted to work connected with the defences of the Dominion. The tables appended to this report analysing the work done during the year show this trend, but naturally the full significance will not be seen until next year.

Geodetic Triangulation.—This work had reached its closing stages at the end of the year, the horizontal-angle observations being practically completed. Three base-lines and some astronomical work still remain to be done, but this is being deferred during the war period. Meanwhile the provisional results are proving of great value in co-ordinating the surveys.

During the year, 3,640 square miles of first order and 4,440 square miles of second and third order triangulation were completed, at a cost of £4,116 4s. 11d.

General Survey Work.—This shows a decided decrease, due both to a lessened demand and to the more urgent nature of defence surveys.

Military Surveys.—During the last quarter of the year greatly increased activity in this work was made, practically our whole field staff being engaged on work of this nature. The work, however, is such that full details of location and scope cannot be published at the present time.

Office-work.—The number of plans received for examination show a decrease of nearly 25 per cent. on last year's figures. The examination of these has, in general, been kept up to date, though in some of the smaller offices the greater urgency of other work has interfered with prompt examination at times.

No tidal analyses were made, the predictions for the seven standard ports carried out on the machines at the Tidal Institute, Liverpool, being made on the former constants supplied from here.

Map drawing and publication have been confined exclusively to the requirements of the Defence authorities. The need for the conservation of paper would, in any case, not have permitted ordinary publication of standard maps unless of military value.

In the first part of the year town schemes submitted were equal to the number submitted last year. Reserves to the extent of $5\frac{1}{2}$ perches for each lot were provided.

Other Work.—Under this heading £13,374 is returned. Of this, £9,724 is for surveys in connection with defence, £927 for locating pegs and boundaries, £810 for investigational surveys, £186 attendances at Court, while the balance for routine reports, leave, &c.

Warrants.—During the year, 217 warrants for certificates of title and 9 proclamations of road-lines under the Native Land Act, 1931, were dealt with.

Work in Hand.—The proposed operations for the year 1942–43 comprise almost exclusively work required by the Army, Navy, and Air Services, ordinary routine work being kept to the bare minimum necessary.

Staff.—The extreme urgency of much of the work carried out has kept the reduced staff working at pressure the whole of the time, and in many cases long hours have been worked. Their efforts in this direction are greatly appreciated.

Table 1.—SUMMARY OF FIELD-WORK.

Class of Work.	Area or Mileage.	Average Cost.	Total Cost.
			£ s. d.
Geodetic triangulation (first order)	3,640 sq. miles	9·4s. per sq. mile	1,712 9 0
Triangulation (second order)	4,440 sq. miles	10·8s. per sq. mile	2,403 15 11
Standard traverses	89·8 miles	£23·73 per mile	2,130 12 8
Topographical survey for settlement	13,896 acres	7·8d. per acre	452 12 3
Rural survey	71,837 acres	1·4s. per acre	4,889 4 7
Village and suburban survey	882 acres	38·6s. per acre	1,704 9 2
Native land survey	1,441 acres	6·7s. per acre	485 19 1
Town survey	72·9 acres	£4·46 per section	787 3 8
Housing survey (section)	258·3 acres	£2·80 per section	3,105 19 11
Housing scheme (preliminary)	355·3 acres	21·4s. per acre	379 14 9
Road and railway survey	103·2 miles	£41·61 per mile	4,293 5 11
Other work	..	..	13,373 19 10
Total cost of completed works	..	..	35,719 6 9

Table 2.—SUMMARY OF MAP SALES AND CREDITS FOR THE YEAR ENDING 31ST MARCH, 1942.

Item.	Credits.
	£ s. d. £ s. d.
Sales of lithographs to the public	793 16 0
Sales of lithographs to other Departments	1,843 2 3
Lithographs issued free to other Departments	408 17 6
Lithographs for office use	586 8 3
	3,632 4 0
Sale of publications and plan forms	340 19 4
Search fees	10 11 8
Royalty fees	51 12 2
Total	£4,035 7 2

Table 3.—PRINCIPAL CLASSES OF OFFICE-WORK DONE FROM 1ST APRIL, 1941, TO 31ST MARCH, 1942.

District.				Plans placed on Instruments of Title.			Deeds and other Instruments passed.	Plans examined and passed.				Maps drawn for Lithography.			
				Crown.		Native Land.		Land Transfer.	Crown.	Native.	Land Transfer.	Other Departments.	Standard Publications.		Sale Plans.
				Leases and Licenses, &c.	Freehold.								Drawn.	Revised.	
Auckland and North Auckland	..	..	853	1,162	543	9,928	6,343	208	48	592	327	..	14	..	
Gisborne	..	..	189	..	139	385	349	10	8	27	28	2	..	..	
Hawke's Bay	..	..	204	80	..	415	921	40	12	85	15	..	..	..	
Taranaki	..	..	181	106	4	717	637	16	5	54	35	..	..	..	
Wellington	..	..	426	287	36	3,565	1,821	32	6	223	165	..	..	..	
Marlborough	..	..	75	34	..	177	138	8	..	25	13	..	..	..	
Nelson	..	..	198	24	..	713	1	26	..	97	23	1	2	..	
Westland	..	..	302	24	5	203	226	37	..	12	23	2	..	..	
Canterbury	..	..	406	42	..	2,628	1,389	30	..	190	68	..	..	..	
Otago	..	..	310	88	..	1,600	896	22	..	104	52	..	..	..	
Southland	..	..	215	74	..	741	595	6	..	29	16	..	1	..	
Totals	..	..	3,359	1,921	727	21,072	13,316	435	79	1,438	765	5	17	..	

Table 4.—SUMMARY OF TOWN SCHEME SUBDIVISIONS DEALT WITH UNDER SECTION 16 OF THE LAND ACT, 1924, FOR THE YEAR ENDING 31ST MARCH, 1942.

District.	Number of Plans.	Number of Saleable Lots.	New Roads.	Reserves.	Reserve (Percentage of Saleable Lots).	Saleable Lots.	Total Areas.
			A. R. P.	A. R. P.		A. R. P.	A. R. P.
Auckland and North Auckland	119	996	27 2 36·69	15 0 01·34	4	377 1 16·20	420 0 14·23
Gisborne	1	2	..	..	..	3 3 00·5	3 3 00·5
Hawke's Bay	5	54	1 2 09·2	1 3 00	14	12 1 03·82	15 2 3·02
Taranaki	2	3	..	..	..	2 1 24·95	2 1 24·95
Wellington	32	399	10 1 18·79	27 0 29·81	20	136 1 26·25	173 3 34·85
Marlborough	8	20	..	..	..	12 1 25·5	12 1 25·5
Nelson	6	29	0 1 29	0 0 37	2	11 2 09·2	12 0 35·2
Westland	6	40	0 2 30·72	0 2 00	5	10 3 22·64	12 0 13·36
Canterbury	31	290	8 3 21·4	20 2 23	27	74 1 16·1	103 3 20·5
Otago	10	61	0 0 00·52	0 2 00	2	20 3 29·98	21 1 30·5
Southland	..	..	..	..	..	..	..
Totals	220	1,885	49 2 26·32	65 3 11·15	10	662 1 15·14	777 3 12·61

Table 5.—GENERAL SUMMARY OF SALARY EXPENDITURE FROM 1ST APRIL, 1941, TO 31ST MARCH, 1942.

Item.	(1) Survey.		(2) Plan Preparation.		(3) Plan Examination.		(4) Mapping.		(5) Records.		(6) Diagrams.		(7) Tracings.		(8) Investigation.		(9) General.		(10) Supervision.		Totals.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.		
General	7,111	5 11	2,261	10 8	1,799	9 9	1,655	0 5	2,736	9 2	1,350	3 2	4,823	15 10	1,939	11 11	7,704	0 10	3,477	8 7	£	s. d.
Triangulation	4,529	2 0	29 5	1	302	3 1	..	..	11	7 11	..	..	57	12 1	..	..	37	2 7	..	..	£	s. d.
Topographical	6,827	7 11	2,421	4 6	120	1 0	2,525	18 5	95	19 7	..	..	241	0 6	..	..	135	3 2	263	4 9	£	s. d.
Standard traverse	1,154	6 5	250	10 7	137	14 0	..	..	..	..	..	..	11	13 3	..	..	..	..	3	15 8	£	s. d.
Survey maintenance	193	4 3	5	19 8	..	..	..	..	1	2 9	..	..	0	17 10	9	2 4	..	..	3	10 9	£	s. d.
Levelling, precise	..	..	2	11 8	2	8 4	..	..	..	..	..	..	..	..	..	..	..	..	0	10 0	£	s. d.
Levelling, secondary	2	0 0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£	s. d.
Inspection and investigation	485	8 4	12	5 11	13	16 7	..	..	..	..	..	..	..	..	12	6 8	..	..	23	10 10	£	s. d.
Scheme plans	..	..	4	13 10	66	0 0	0	4 1	0	8 8	..	..	5	17 9	170	4 8	..	..	48	13 6	£	s. d.
Land-development	785	15 1	5	4 9	6	5 4	..	..	..	..	..	..	104	7 8	36	9 7	..	..	33	16 10	£	s. d.
Tidal survey	7	10 0	..	..	5	7 0	..	..	4	8 0	..	..	..	..	..	..	..	..	..	..	£	s. d.
Native Department	127	18 7	30	8 10	196	8 1	..	..	0	16 7	165	11 7	72	19 10	799	8 5	14	4 6	306	13 1	£	s. d.
Land and Deeds Department	20	10 0	4	0 10	4,210	0 8	10	8 11	184	19 6	1,818	14 0	46	17 9	948	6 5	599	12 0	1,699	5 11	£	s. d.
Public Works Department	3,940	6 0	431	13 9	971	4 3	..	..	0	14 8	0	4 1	247	8 0	177	1 2	13	0 0	250	2 4	£	s. d.
Housing Department	1,431	15 4	304	15 11	614	4 4	..	..	..	..	..	..	183	16 5	64	19 11	93	9 7	424	0 1	£	s. d.
Other Departments	3,277	14 5	173	2 10	1,191	5 0	778	6 2	67	16 1	3	6 8	2,159	16 7	193	11 5	14	11 11	286	8 4	£	s. d.
Totals	29,894	4 3	5,937	8 10	9,636	7 5	4,969	18 0	3,104	2 11	3,337	19 6	8,040	3 6	4,371	2 6	8,631	4 7	6,821	0 8	£	s. d.

Table 5a.—GENERAL SUMMARIZED STATEMENT OF SALARY EXPENDITURE IN VARIOUS OFFICES FROM 1ST APRIL, 1941, TO 31ST MARCH, 1942.

Land District.	(1) Survey.		(2) Plan Preparation.		(3) Plan Examination.		(4) Mapping.		(5) Records.		(6) Diagrams.		(7) Tracings.		(8) Investigation.		(9) General.		(10) Supervision.		Totals.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.		
Head Office	4,137	8 7	1,220	17 10	830	13 4	2,105	16 3	481	16 9	1,321	17 6	784	14 9	19	5 2	902	6 10	345	5 5	£	s. d.
Auckland and North Auckland	10,417	17 0	2,780	19 0	3,721	1 11	751	16 2	712	9 3	..	..	2,736	2 2	1,785	2 9	2,762	13 4	2,772	13 2	£	s. d.
Gisborne	723	10 11	85	4 9	163	10 6	260	18 5	154	9 3	284	14 0	399	8 7	257	16 5	487	7 5	61	13 7	£	s. d.
Hawke's Bay	1,426	4 10	420	15 9	507	17 10	64	15 7	227	12 10	236	16 6	279	8 11	301	5 11	457	18 2	470	0 0	£	s. d.
Taranaki	482	12 3	199	4 1	221	2 6	15	4 0	239	6 11	103	17 2	610	5 1	395	11 7	595	0 11	371	15 4	£	s. d.
Wellington	3,298	2 1	329	8 2	1,618	14 4	352	12 1	163	12 2	541	3 1	915	14 1	1,200	15 1	1,219	7 1	1,022	8 3	£	s. d.
Marlborough	1,043	11 9	76	8 8	136	19 10	48	4 2	230	17 6	40	12 11	254	4 3	15	10 11	204	5 4	229	0 4	£	s. d.
Nelson	1,852	5 5	77	10 0	577	15 0	37	5 0	216	5 0	103	0 0	269	0 0	31	10 0	334	5 0	108	0 0	£	s. d.
Westland	673	4 0	124	18 11	150	12 9	52	12 3	91	17 0	53	5 8	217	4 10	26	2 1	162	16 0	78	17 11	£	s. d.
Canterbury	2,654	4 10	363	2 5	745	6 5	1,145	0 3	278	0 3	146	13 11	712	18 6	135	5 1	799	4 10	979	16 3	£	s. d.
Otago	2,472	3 9	247	17 4	601	11 4	67	16 3	202	3 7	316	0 6	701	4 3	184	8 6	493	17 2	328	6 11	£	s. d.
Southland	712	18 10	11	1 11	361	1 8	67	17 7	85	12 5	187	18 3	159	18 1	18	9 0	212	2 6	53	3 6	£	s. d.
Totals	29,894	4 3	5,937	8 10	9,636	7 5	4,969	18 0	3,104	2 11	3,337	19 6	8,040	3 6	4,371	2 6	8,631	4 7	6,821	0 8	£	s. d.

Table 6.—RETURN OF FIELD-WORK EXECUTED BY THE STAFF AND CONTRACT SURVEYORS ON LANDS ADMINISTERED BY THE LANDS AND SURVEY DEPARTMENT FROM 1ST APRIL, 1941, TO 31ST MARCH, 1942.

District.	Minor Triangulation.				Topographical Survey.				Standard Survey.				Rural Survey.			
	Acres.	Cost per Acre.	Total Cost.	Acres.	Cost per Acre.	Total Cost.	Miles.	Cost per Mile.	Total Cost.	Acres.	Cost per Acre.	Total Cost.	Acres.	Cost per Acre.	Total Cost.	
Auckland and North Auckland	..	60,000	d. 0.5	£ s. d. 120 0 9	1,100	d. 21.5	£ s. d. 98 12 3	..	£ ..	£ s. d. ..	10,513	s. 2.3	£ s. d. 1,185 0 9			
Gisborne ..	..	..	..	..	..	..	..	..	..	..	1,347	2.3	156 0 0			
Hawke's Bay ..	..	..	..	..	..	..	..	..	..	..	21,806	1.2	1,290 5 11			
Taranaki ..	..	..	..	..	6,500	1.3	34 12 11	9.0	10.46	94 3 6	1,200	2.2	132 15 11			
Wellington ..	..	..	..	..	..	..	..	15.0	28.95	434 5 10	1,233	2.3	142 6 4			
Marlborough ..	..	..	..	..	..	..	..	22.8	14.91	340 0 0	2,049	7.8	797 0 0			
Nelson ..	..	..	..	..	..	..	..	..	..	..	899	4.2	190 17 5			
Westland ..	..	..	..	..	3,184	14.6	193 5 9	18.0	33.44	601 19 2	4,597	1.3	290 17 4			
Canterbury ..	..	..	..	..	1,000	7.6	31 9 4	25.0	26.41	660 4 2	26,727	0.4	523 17 11			
Otago ..	..	..	..	..	2,112	10.8	94 12 0	..	..	..	..	..	..			
Southland ..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Totals ..	..	60,000	0.5	120 0 9	13,896	7.8	452 12 3	89.8	23.73	2,130 12 8	71,575	1.3	4,777 1 7			

District.	Village and Suburban Sections.				Town Sections.				Road Survey.				Other Work.				Total Cost of Completed Work.
	Acres.	Number of Sections.	Cost per Acre.	Total Cost.	Acres.	Number of Sections.	Cost per Section.	Total Cost.	Miles.	Cost per Mile.	Total Cost.	Miles.	Cost per Mile.	Total Cost.			
Auckland and North Auckland	210.27	34	s. 30.0	£ s. d. 314 17 6	7.45	12	£ 7.43	89 3 7	1.92	51.32	98 11 0	1.94	51.64	100 3 8	£ s. d. 8,899 2 5		
Gisborne ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	313 2 4		
Hawke's Bay ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,382 13 4		
Taranaki ..	62.28	3	24.8	77 6 7	..	..	..	..	0.40	119.69	47 16 9	0.32	72.41	23 3 6	1,706 1 6		
Wellington ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,115 8 8		
Marlborough ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	618 12 7		
Nelson ..	6.55	9	178.9	58 12 0	8.60	25	5.69	39 16 9	3.30	19.82	65 7 9	3.30	19.82	65 7 9	1,365 13 0		
Westland ..	39.04	9	41.6	81 2 7	8.64	14	7.92	110 17 3	5.25	12.80	67 3 3	5.25	12.80	67 3 3	1,446 6 3		
Canterbury ..	36.12	1	24.0	43 18 3	4.06	37	1.61	59 17 4	3.50	34.31	120 1 4	3.50	34.31	120 1 4	2,101 8 2		
Otago ..	103.15	8	24.7	127 7 5	13.55	10	7.24	72 7 2	1.20	4.80	5 15 0	1.20	4.80	5 15 0	1,864 16 7		
Southland ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	941 11 3		
Totals ..	457.41	64	30.7	703 4 4	52.60	111	4.01	444 16 5	17.83	29.62	528 2 3	11.200	10 10	20,357 1 1			

Table 7.—RETURN OF FIELD-WORK EXECUTED BY THE STAFF AND CONTRACT SURVEYORS ON LANDS ADMINISTERED BY OTHER DEPARTMENTS FROM 1ST APRIL, 1941, TO 31ST MARCH, 1942.

District.	Rural Survey.			Village and Suburban Survey.			Town Section Survey.			Housing Subdivision Survey.		
	Acres.	Cost per Acre.		Acres.	Total Cost.		Acres.	Total Cost.		Acres.	Number of Sections.	
		£	s. d.		£	s. d.		£	s. d.		£	s. d.
Auckland and North Auckland	..	..	..	133.5	91.5	610 18 5	7.71	31	4.38	107.49	467	3.42
Gisborne ..	..	..	..	9.4	114.8	53 13 0	..	..	..	..	..	..
Hawke's Bay ..	..	..	..	..	..	..	8.30	40	2.78	..	..	..
Taranaki ..	..	..	..	16.9	28.7	24 6 0	..	..	..	..	..	..
Wellington ..	..	..	..	..	..	..	..	..	..	..	..	..
Marlborough ..	..	..	..	59.0	11.6	34 6 8	0.47	1	16.85	6.35	34	2.46
Nelson ..	..	..	..	..	..	..	1.25	3	9.20	27 12 0	..	..
Westland ..	..	..	..	..	..	..	193 14 1	2	4.50	9 0 0	249	1.72
Canterbury ..	..	..	..	72.2	53.7	43 6 8	0.57	2	10.27	20 10 11	30	3.97
Otago ..	..	..	..	14.1	61.4	41 0 0	1.18	2	10.72	21 9 1	8	2.84
Southland ..	..	..	..	119.6	6.9	..	..	..	..	..	..	..
Totals ..	262.2	8.6	11.2 3 0	424.7	47.1	1,001 4 10	20.31	81	4.21	342 7 3	1,111	2.80
										258.32		3,105 19 11

District.	Housing Schemes (Preliminary).			Native Land Survey.			Road and Railway Survey.			Total Cost of Completed Work.		
	Acres.	Cost per Acre.		Acres.	Total Cost.		Miles.	Cost per Mile.		Total Cost.	Other Work.	Total Cost of Completed Work.
		£	s. d.		£	s. d.		£	s. d.		£	s. d.
Auckland and North Auckland	..	..	..	..	..	..	..	..	..	..	..	..
Gisborne ..	..	..	..	..	..	..	..	..	..	..	..	..
Hawke's Bay ..	..	..	..	..	..	..	..	..	..	..	..	..
Taranaki ..	..	..	..	..	..	..	..	..	..	..	..	..
Wellington ..	..	..	..	..	..	..	..	..	..	..	..	..
Marlborough ..	..	..	..	..	..	..	..	..	..	..	..	..
Nelson ..	..	..	..	..	..	..	..	..	..	..	..	..
Westland ..	..	..	..	..	..	..	..	..	..	..	..	..
Canterbury ..	..	..	..	..	..	..	..	..	..	..	..	..
Otago ..	..	..	..	..	..	..	..	..	..	..	..	..
Southland ..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	..	..	..	..	..	..	..	..	..	..	..	..

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