

very slowly, increasing in size. The land plans for the Westport-Ngakawau Railway have been finished for some time.

Westport Harbour Works.—The training-wall on the northern side of the river has been continued during the year and extended 1,026 feet, which brings it almost as far as it is intended to go. There have been 11,400 tons of stone deposited, as against 5,700 in the fifteen months ending last March, and the average cost of the wall has been reduced from £9 10s. to £6 10s. per lineal foot. The immediate object in commencing this particular part of the harbour works was the closing-up of the northern channel then existing. This has been fully attained, and large accumulations of shingle have taken place behind the wall, but it is difficult to say whether the bar will be appreciably affected.

The whole country in the vicinity of Westport has been carefully examined to ascertain the locality from which a large quantity of stone can be most economically obtained for the harbour works. The result is that Cape Foulwind is found to be the most suitable for the works on the south side of the river, and the Nine-mile Quarry for those on the north side. If the works are to proceed vigorously, and in the most economical manner, it will be necessary to lay a temporary line of railway to both places.

Enclosure No. 2 gives a table showing the depth on the Buller bar at each high water of spring and neap-tides, from June, 1879, to March, 1884. It is compiled from information kindly supplied by the Harbourmaster.

GREYMOUTH TO NELSON CREEK RAILWAY.

Railway.—The only construction-works in progress on the open portion of this line are minor additions to stations, water-services, and the Greymouth engine-shed and workshop. The land plans of the Greymouth-Nelson Creek Railway, so far as opened, are all finished. A contract for the extension seawards for 450 feet of the wharf at Greymouth was entered into in October, but the work has not yet begun; the delay is caused by the non-arrival of the Australian timber.

Greymouth Harbour Works.—Although the advance in the breakwater is considerably less, the quantity of materials excavated and deposited during the past year is much the same as in the two previous years. This and other leading points of comparison are shown in the following table:—

				1881-82.	1882-83.	1883-84.
Stone quarried and placed in breakwater	..	..	Tons	69,800	56,200	46,900
Quarry refuse deposited in reclamation	..	..	"	16,700	32,200	36,000
Total materials obtained	..	..	"	86,500	88,400	82,900
Advance of breakwater	..	..	Lineal feet	830	310	183
Average cost per ton of all materials in place	..	..	£	0 2 10	0 2 10½	0 3 4
Cost of breakwater per lineal foot	..	..	£	14 0 0	41 0 0	79 0 0

The increase of cost per ton this year is due to the larger size of stone required as the work advances into heavier seas. As shown by the above statement, the proportion of quarried materials that cannot be used in the breakwater is constantly increasing, and latterly the weight of the blocks has occasionally reached twenty tons.

During the last three months the stone has been tipped from staging as designed by Sir John Coode, instead of the solid mound previously adopted. The alteration has not affected any material saving in cost, but it enables the stone to be more nearly deposited in its proper place at once, the smaller blocks in the centre.

The length of breakwater yet to be done is about 630 feet, and the balance remaining out of the original estimate is about £59,000, equal to £94 per lineal foot. So far as can be judged at present, this will be sufficient. The section naturally taken by the breakwater approximates very closely to that shown on Sir John Coode's plans.

The experience of another year testifies further to the success of the Greymouth Harbour works, as more particularly described in my last annual report. The following table, which gives an abstract of the depths for the last four years, shows the alteration that is taking place on the bar:—

Depth of Water on Bar.	Number of Days in each Year on which the Depth occurred.			
	1880-81.	1881-82.	1882-83.	1883-84.
Under 10 feet	165	130	16	27
10 feet and under 12 feet	140	144	78	85
12 feet and under 14 feet	57	90	230	123
14 feet and under 16 feet	3	2	40	100
16 feet and over	Nil	Nil	1	30

Enclosure No. 2 gives the depth of water on the Grey bar at each high water of spring and neap-tides every month from June, 1879, to March, 1884. The statement is prepared from information kindly supplied by the Harbourmaster and the captain of the tug "Dispatch."

GREYMOUTH TO HOKITIKA RAILWAY.

The principal work in progress during the year is the formation of about 50 chains at the Hokitika end, for which a contract was let in September; 6,000 sleepers have also been supplied by contract.