E.—No. 10.

REPORT

UPON THE PROPOSED

LIGHTHOUSE AT FAREWELL SPIT:

BY THE MARINE ENGINEER.

PRESENTED TO BOTH HOUSES OF THE GENERAL ASSEMBLY, BY COMMAND OF HIS EXCELLENCY.

WELLINGTON.

1867.

REPORT ON THE PROPOSED LIGHTHOUSE AT FAREWELL SPIT.

Copy of a Letter from Mr. BALFOUR to the Hon. JOHN HALL.

SIR,— Marine Department, Wellington, 22nd May, 1867.

I have the honor to report that on the 18th and 19th instant I effected a landing on Farewell Spit, and procured necessary levels, bearings, &c.

There is no question that the most efficient way to light this danger would be to erect two lights, one on Cape Farewell or in its vicinity, and one on screw piles on the extremity of the spit, in about two fathoms of water at low water, but the cost of this arrangement would be great. In the absence of detail drawings, I estimate the cost of a light on Cape Farewell at about £5,000, and of a pile light at Spit End at at least £15,000. The annual cost of maintenance would also be heavy.

I consider however that a useful light may be erected near "Bush End," which will suffice to indicate the dangers in a less perfect but still reasonably satisfactory manner, and this is all that I would for the present propose to erect. I did contemplate the possibility of erecting a screw pile beacon on the outer end of the spit, and illuminating it by electricity generated at the lighthouse some four miles distant, but on a close examination of the site, the difficulties appear so formidable that I cannot, for the present at least, recommend the experiment.

At Bush End the area of sand which is dry at high water is so extremely limited that I have considered it wise to select a site about a-half mile further up the spit, where there is a much more considerable area, which is but very seldom if ever submerged. At the same time the general level of the grassed valleys in the spit, which are the only portions whose permanence may be with some certainty calculated on, is not more than from two to three feet above high water, and consequently the whole elevation of the light must be obtained by artificial means.

The proposed height should not be less than one hundred feet above the sea, so as to ensure a range of not less than sixteen nautical miles, thus extending a little beyond Cape Farewell on the one side, and overlapping Separation Point two miles on the other. I propose that it should be a revolving light, with either 60" or 30" period, white in all directions except over the end of the spit, in which direction I propose to show a coloured one, to warn mariners of their approach to the danger,—the tower to be an open timber framework strongly braced, founded on sleepers mortised to the heads of piles driven not less than twelve feet into the sand, and possibly guyed by wire ropes fixed to screw moorings, so as to diminish vibration.

The dwellings will also be of timber. I found it practically impossible, owing to the great extent of mud flat, to effect a landing on the inside of the spit, but very easy to do so anywhere on the outside in fine weather. As the spit is thirteen miles long, and as a rule very soft, it would be very expensive to carry material for the works from Cape Farewell, if landed there; and I consequently assume that it will be necessary to land all the materials on the outside of the spit, in the immediate vicinity of the proposed site. Probably this can be more economically done by the 'St. Kilda' or the 'Sturt' than by a contractor, as it would scarcely be safe to employ a sailing vessel for any such purpose; but this can be ascertained by taking tenders, both inclusive and exclusive of the cost of conveyance from Nelson or Wellington, and landing on the spit.

In consequence mainly of the difficulty of landing material being greater than I anticipated, I have increased the estimate of the works complete to £6,500, for which sum a vote should be taken, though, after working drawings have been prepared, I may possibly be able to reduce this amount to a small extent.

I have, &c.,
JAMES M. BALFOUR,
Marine Engineer.

The Hon. the Postmaster-General,
Wellington.