

BEST PRACTICABLE ENVIRONMENTAL OPTION (BPEO):
MAINTENANCE DREDGING OF PORT OF NESS HARBOUR



1.0 Background

Port of Ness (Scottish Gaelic: Port Nis) is a village on the Isle of Lewis in the community of Ness, in the Outer Hebrides, Scotland. Port of Ness is within the parish of Barvas and the Harbour (Port of Ness) is situated at the end of the A857, which runs from Stornoway.

The harbour was constructed in the early 19th century. An enlargement was built in 1893, with a breakwater added the following year. The Port was the lifeblood of Ness, whose people's skill at boat handling is legendary. Its concrete remodelling by D. & T. Stevenson in the early 1890s included the (now partially collapsed) breakwater.

2.0 Dredging

Since the collapse of the outer breakwater, the harbour has been susceptible to continued progressive natural infilling from two sources:

- a) River-borne silts and muds; and
- b) Sea-borne sands

Port of Ness Harbour Ltd (Registered Scottish Charity) has been maintaining the harbour through regular dredging over the years to allow the harbour to remain functional.

3.0 Options

Port of Ness Harbour Ltd are actively engaging with the community landlord (Urras Oighreachd Ghabhsainn), the local authority (Comhairle Nan Eilean Siar) and the Crown Estate to prepare funding applications to look to reinstate the outer breakwater which is anticipated will reduce the level of infilling currently being experienced.

Significant investment is required in order to reinstate and improve the current port infrastructure and this will take some time to implement. Port of Ness Harbour Ltd are in the process of updating the business plan with collaboration from our local partner agencies.

In the short term, the continued infilling of the harbour requires to be addressed and options with regards to the disposal of the dredged material are outlined as follows:

3.1 Landfill

The most common use of dredged material within landfill sites is as capping or restoration material. Material would need to be brought ashore within the existing harbour and dewatered before being transported to trucks and taken to the landfill site by road. There are no suitable sites in the immediate vicinity of the harbour that could cope with a large quantity of material on an annual basis.

Dredged material is relatively inert, so disposal to landfill is not usually necessary or recommended unless dredged material is significantly contaminated, which it is not in this case (Please refer to chemical analysis already undertaken). Prior to landfill, dredged material would have to be dried in lagoons before being

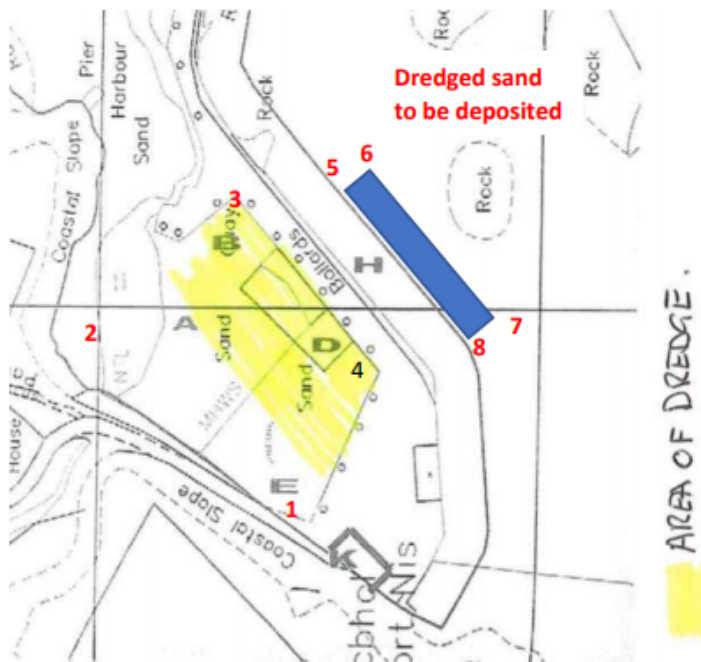
transported by road to a distant site. Suitable land for drying lagoons is not available within the harbour. Transportation of material from the harbour to the landfill would generate significant vehicle movements on local roads, contributing to congestion and generating air and noise pollution, as well as road safety concerns.

3.2 Agricultural/Crofting Use

There is potential to use the dredged material as bedding for local livestock. Machinery will be in situ and local crofters may benefit from the loading of materials for depositing on their crofts accordingly. This option is being discounted due to the volume of material being dredged and the anticipated demand for this use. Should there be a level of demand, the option would be exercised along with option 3.3.

3.3 Sea Disposal

This option would simply redeposit the material over the harbour wall to the area hatched in blue in the below:



Dredging Positions

- 1- 58°29.530'N 006°13.645'W
- 2- 58°29.560'N 006°13.614'W
- 3- 58°29.541'N 006°13.572'W
- 4- 58°29.523'N 006°13.613'W

Depositing Positions

- 5- 58°29.527'N 006°13.588'W
- 6- 58°29.523'N 006°13.583'W
- 7- 58°29.513'N 006°13.607'W
- 8- 58°29.513'N 006°13.608'W

4.1 Strategic considerations

4.1.1 Operational Aspects

The practicalities of disposing of dredged material at the designated deposit site are straightforward. It is likely that 2 tracked excavators would be used. One to dredge the site and deposit the material on the harbour car park and the other to transfer the material from there, over the breakwater to the designated disposal site. No preparation of the material is required prior to disposal.

4.1.2 Availability of Suitable Sites/Facility

No such site exists locally.

4.1.3 General Public Acceptability

The deposit site has a long history of use for disposal of dredged material. As there is no requirement for the dredged material to come ashore for onward transportation, there is no associated impact on the local road network.

4.1.4 Local Acceptability

There are no anticipated local acceptability issues associated with the continuation of a longstanding method of disposing of dredged material. Port of Ness Harbour has never received a complaint or enquiry from a member of the public regarding the disposal of maintenance dredged material at sea. No known objections have been received from members of the public relating to previous marine licence applications.

4.1.5 Legislative Implications

The existing deposit site has received dredged material from the harbour for many years. A marine licence would be required from Marine Scotland to dispose of material at the site.

4.2 Environmental considerations

4.2.1 Safety Implications

Disposal to sea would have negligible implications for safety providing that normal navigational and maritime procedures are observed.

4.2.3 Public Health Implications

There are no known threats to public health associated with sea disposal.

4.2.4 Pollution/Contamination Implications

The risk of pollution/contamination is extremely low with chemical analysis of the dredged material having already been provided to Marine Scotland.

4.3 Cost Considerations Estimated cost of sea disposal

4.3.1 The total cost of sea disposal is estimated at <Redacted>

5.0 Best Practicable Environmental Option

The below table summarises the BPEO assessment presented in Section 4 by allocating a relative score of 0 or 1 for each option in each of the three areas considered, where a score of 0 is the least favourable option.

	Option 1 - Landfill	Option 2 - Agricultural/ Crofting Use	Option 3 - Sea Disposal
Strategic Considerations	0	1	1
Environmental Considerations	1	1	1
Cost Considerations	0	0	1
TOTAL	1	2	3

6.0 Pre Dredging Sampling

6.1 Preliminary Considerations

a) Is Dredging Required?

Dredging is required due to the continued build up of sand within the inner harbour basin. Port of Ness Harbour have over the last 2 years worked to complete a feasibility study and masterplan which will look at how the Harbour infrastructure can be developed to minimise siltation and remove the requirement for dredging in the longer term.

b) How are sources of contamination to the site controlled and reduced?

Contamination is considered to be of extremely low risk due to the type of material being dredged, its make-up being mostly sand. Access to the dredge site will be restricted to ensure the dredged material is dispersed onto the sandy beach on the other side of the Breakwater without any opportunity for contamination.

c) How can you maximise beneficial use of dredged material?

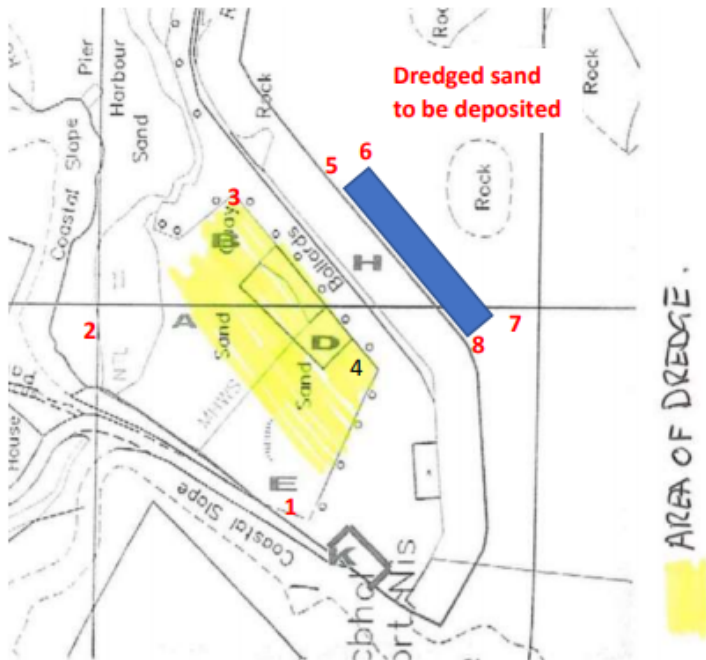
There is potential to use the dredged material as bedding for local livestock. Machinery will be in situ and local crofters may benefit from the loading of materials for depositing on their crofts accordingly. The volume of material being dredged is anticipated to exceed any potential demand.

d) How can you minimise volumes to be dredged?

Due to Covid we were unable to dredge as previously licenced and were only to operate one dredge cycle over the licence period. Annual dredging will assist in reducing the dredge volume and we are also looking at potential changes to the Harbour facility that would minimise siltation over the longer term.

6.2 Sampling & Analysis Plan

a) Chart of Dredge Area



Dredging Positions

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b) Sample Locations

- 1 – 58°29.551'N 006°13.609'W
- 2 - 58°29.536'N 006°13.624'W
- 3 - 58°29.542'N 006°13.588'W
- 4 - 58°29.532'N 006°13.653'W (DEPOSIT AREA SAMPLE)

c) Sample Types & Methodology

As per Marine Scotland's "Pre-disposal Sampling Guidance Version 2 – November 2017" the volume of dredged material at Port of Ness Harbour required 3 sample stations plus one sample station in the receiving area to be set-up. The dredged material will be up to one metre in depth and therefore grab samples have been obtained and analysed by a suitably qualified laboratory which carry the required accreditations as set out in the "Pre-disposal Sampling Guidance Version 2 – November 2017".

6.3 Assessment of Material

a) Sample Results were assessed against Action Levels 1 & 2 (Per table 2 of Marine Scotland's "Pre-disposal Sampling Guidance Version 2 – November 2017"). Sample results were submitted to MS-LOT using the Pre-Disposal Results Sampling Form.

b) The outcome of the dredge will result in the inner harbour basin having an extended operating period due to greater depths being achieved post dredge. There is no impact to the deposit site as all sand is deposited at low tide and washed away by the incoming tide. There will be limited access to the area during the dredge operation and all safety protocols will be put in place by the dredge contractor. This dredge process has been effective over many years with little to no disruption to wildlife, harbour users, beach users and the local community. The dispersal of the deposited material is rapid with no impact to bathing waters. We have a very active wave climate which has been studied by RPS Group in November 2022 when they conducted a detailed Hydraulic survey to assist in the formulation of the feasibility and masterplan for the redeveloped Harbour. This can be made available to support the application if required.