

HIGHLAND COUNCIL
PORTTREE HARBOUR DEVELOPMENT



MASTERPLAN STUDY REPORT

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CONTENTS

	<u>Page</u>
1. Introduction	1
2. Proposed Development Item Descriptions	3
3. Cost Estimates	7
4. Proposed Phasing	9
5. Consents Applications and Programme	11
6. Conclusions	12

APPENDICES

Appendix A – Drawings

HIGHLAND COUNCIL
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1. Introduction

Portree & Braes Community Trust have been considering the development of a new harbour at Portree for nearly three decades (see timeline of events below).

Year	History
1992-1996	The first harbour plans are drawn up. Portree Community Council commission a feasibility study funded by Local Enterprise Companies (LEC) to the value of £14k.
1997	A Portree working group is formed including all key local players. The project is accepted into the local plan.
1998-2003	A bid is made by Highland Council (HC) to Rural Challenge Fund – the bid fails to meet funding criteria. Portree Regeneration Partnership (PRP) is formed by key local players. Project Officer is appointed, funded by HC and LEC.
2004-2006	A new Project Manager is appointed. Despite national media interest a funding bid to the National Lottery fails. A private investment opportunity is explored but received little local support. PRP funding runs out and HC and LEC recommend the formation of a Community Company.
2006	LEC provide start-up funding to set up a steering group Portree Area Community company (PACT). The harbour project is confirmed as the key Portree project at a local meeting. Public support is identified through a questionnaire circulated with PACT membership forms.
2007	The group are advised by LEC that a business plan is required. Two group members attempt this. PACT are invited to the Ward Business Forum to present their case but receive mixed feedback. The group are advised to seek support from Highlands & Islands Enterprise (HIE) at a senior level.
2008	The group seek political support from MSP John Farquhar Munro. Mr Munro recommends approaching HIE chief executive for resources for a business plan. A follow on meeting is held with Mr Munro's successor Allan MacRae at a Liberal Democrat fundraiser at Uig.
2009	Wallace Stone marine consultancy costs the project at £29.5M. The group seek funding for an up-to-date feasibility study. Crown Estate pledge £5k towards this. HC unable to support Leader application for match funding due to previous funding of feasibility study.
2010-2013	The group regains strength with new members. Funds from the Crown Estate are secured for a Bathymetric Survey. A local Management Agreement between the Crown Estate and PACT is approved.
2014-2015	An application is submitted to the Coastal Communities Fund to fund the construction of a breakwater. The application comes close but fails to meet criteria of a project that is deliverable in two years.

2016-2017	PACT reforms as Portree and Braes Community Trust. New members are recruited and explore feasibility of taking ownership of the harbour. Local support is secured. EOI is submitted to HC for asset transfer of Harbour.
2018-2019	Development Officer is secured for 3 years funded by HIE. Maritime consultancy Fisher Associates prepare a master-plan proposal (not undertaken). Local HC and HIE representatives are approached for funding support. Facilitated by the Harbour Group, Certas Energy and the HC progress discussions re: the relocation of the oil tanks situated at the pier head.

This study pulls together the ideas from previous studies and considers how the project can be delivered in phases. The study concentrates on the feasibility, engineering issues and the projected costs of the development. Other masterplan areas such as policy, context, economic impact, business plan, operational constraints and environmental impact are all considered by others separately to this report.

To date, no detailed assessment of the ground conditions has been undertaken. The form of construction adopted has been based on using rock armoured slopes wherever possible. Vertical quay walls would be a more costly solution and they have been avoided where not required as they reflect wave energy; whereas rock armoured slopes help to absorb wave energy and mitigate wave action.

The purpose of the new development is to cater for the growth in global tourism. As the islands capital, Portree is a desirable destination and base for tourists whether from sea or road. There is a high volume of cruise ships wishing to visit the location, with a need for improved facilities for safe and efficient passenger transfer. In 2019 over 20,000 cruise ship passengers were disembarked at the pier pontoons onto coaches, from a variety of sized vessels, from the smaller Hebridean Princess (49 passengers) to the larger MV Columbus (1856 passengers).

There remains an operational home fishing fleet of 5 boats with other vessels using Portree Harbour when fishing in this area, and a fish sales business operating at the pier.

The RNLI are based at Portree Pier with their Trent Class lifeboat on a mooring. This situation slows down their response time as the vessel has to be brought in to the pier to pick up the crew.

There are limited facilities for visiting leisure craft and no overnight pontoons.

The proposed development aims to address the limitations of the current facilities and to create a safer and more welcoming environment for visitors and the local community.

2. Proposed Development Item Descriptions

A drawing of the proposed scheme is included in Appendix A.

2.1 Breakwater and Perimeter Access Road

The key to a new larger harbour is a breakwater to provide a harbour which is sheltered from bad weather from the south and east. This new harbour would be accessed from a new coastal road bypassing the town round the raised headland known as 'The lump'. The new road would be constructed initially starting from the lower long stay car park. Although there are other plans for a possible access road from a proposed roundabout at the A87/A855 junction down the hillside and crossing the River Leasgeary above the shore line; this study has not considered this road configuration and assumes the access road starts at the car park.

The new road would be 6.5m wide with a 2m wide ditch adjacent to 'The Lump', and a 2m wide footway. On the water side the footway would be 4.5m wide at its minimum to provide shared pedestrian and cycle use. This waterside footway then widens to provide open space for landscaping, car parking and coach parking. The access road would be produced from rock fill placed onto the foreshore and rock armouring placed on the outer face with a concrete L-shape wall cast onto the structure to form the edge of the walkway.

The breakwater would extend out on the eastern side to form a harbour basin of sufficient width to accommodate the marina pontoons. The breakwater would ideally have a road, along its crest to provide access for coaches for picking up cruise ship passengers. There would be also be a footway on each side of the road for pedestrians.

2.2 Marina Pontoons

Access to the pontoons would require 24m long access bridges to suit the tidal variations. It is proposed that the pontoons are located out from the toe of the inner rock armoured slope, with the access bridges spanning over the armour. Pontoons will be moored on piles installed into the sea bed, with pile guides round the piles to locate the pontoons. The spacing of the pontoons is based on the required spacing between boats, which should be 1.5 times the maximum boat length. Thus, for 3 legs of pontoons and 15m long boats, the basin width needs to be 190m. There is insufficient width available, so only two legs are possible in the proposed scheme.

A variety of pontoon finger unit sizes will be provided on the legs of the pontoons as the water depth is shallower to the south. Smaller shallower drafted boats would be located on the shorter fingers.

The arrangement exhibited on the drawings has 50 fingers, therefore providing 100 berths. The outer ends have hammer head pontoons to provide a longer outer end berth.

2.3 Slipway

At the south west corner of the harbour basin a slipway extending down at a 1 in 8 slope to at least 0mCD will be provided, with a 10m width, for launching of small boats off trailers and also to provide access onto fish farm landing craft vessels.

2.4 Cruise Ship Pontoons

A separate pontoon facility for cruise ship tenders to discharge their passengers would be provided on the inside of the breakwater with a high freeboard pontoon 4m wide and 40m long. This pontoon would have a bridge system up to the breakwater. If necessary, this could be a double bridge system to reduce the gradient to make it more suitable for all abilities use.

2.5 Cruise Ship Berth

The water depth at the outer end of the breakwater would be sufficient for a cruise ship berth to be located on the outside for smaller cruise ships up to 100m length. This would require a deck area at the centre for the ship's gangway and dolphins either end of the berth. The dolphins would be supported from piles braced back to thrust blocks at the top of the armour slope.

2.6 Pier

The existing pier is reported to be in a poor condition and needs to be rebuilt. This would provide the opportunity for a larger pier to be constructed to line up with proposed new harbour developments. It is likely that the pier would be either a replacement open piled structure or a sheet piled cellular structure full of rock fill, encapsulating the existing pier. The solid structure is the best option as it could provide shelter to a RNLI pontoon berth. It is proposed that a 50m long extension is constructed for additional berth length for fishing boats.

The existing harbour wall, originally constructed by Thomas Telford, requires attention to preserve its life and function in holding up the access road to the harbour.

A recent survey of the structure by the Highland Council structural engineers has identified a series of defects to be repaired.

2.7 RNLI Berth

The RNLI are currently based within the Harbour Office building at the pier. A new pontoon berth could be provided at the southern side of the pier and accessed via a bridge from the pier. The pontoon would be sized for the larger Severn Class vessel. RNLI have advised that they would fund the pontoon facility themselves once the pier was constructed.

2.8 Facilities Buildings

The Harbour Office building should be replaced as part of the pier development to bring it up to modern standards. The RNLI and Fish Sales business would also be relocated into this building. An outline two storey building was considered previously (see photo below).



A pontoon facilities building will be required to provide showers, toilets and laundry. The building would be located at the reclamation area to the south of the pontoons.

The cruise ship pontoon will require a shelter for passengers as they wait for the tender or busses. This could be a temporary shelter deployed each season or a permanent facility.

2.9 Link Road to Existing Pier

To connect the new harbour development to the existing pier, the new coastal road would be extended round 'The Lump' to the oil tank depot. It is proposed that this is again a rock armoured slope since there is limited water depth to justify a solid quay face for berthing.

2.10 Oil Depot Area

Given that all oil deliveries are now by road tanker, it is proposed that the tank farm and Oil Depot area be decommissioned and relocated away from the centre of the town. This will remove the Health & Safety risk of such facilities being located within the town. Certas have indicated that they will contribute towards the cost of the relocation of the tanks.

A smaller 40,000 lt oil tank would be needed for bunkering of vessels at the harbour including the fishing fleet and RNLI lifeboat.

Remediation of the ground due to contamination is likely to be required and will need to be allowed for in the costings.

3. Cost Estimates

Cost estimates have been prepared based on the assumption that no dredging under the reclamation areas or within the basin is required and the ground conditions are granular deposits with no soft material underlying that would cause settlement.

The main cost element is rock fill and rock armour and therefore the cost estimates are very sensitive to the supply rate for these materials.

An estimate has been made for reconstruction and enlargement of the harbour pier based on sheet piling round the structure and infilling with rock fill, with some allowance for rock toe pins.

Marina pontoon costs are established from recent projects at Stornoway. The cost of piles to support the pontoons has assumed they will drive and not need to be socketed into rock.

The cruise ship pontoon piles and cruise ship berth piles similarly have been assumed to be able to be driven into the seabed and not require socketing.

The cost estimates for buildings is based on similar facilities buildings at a recent project, Corpach Marina.

A drawing of the proposed full scheme is included in Appendix A, drawing number 2342/101.

Item	Cost Estimate (£)
1. Surveys/Studies/EIA/Fees	
1.1 Surveys (Topographical, Bathymetric, 3D Scans, Boreholes)	324,000
1.2 Wave Study	10,000
1.3 EIA and Licence Applications	180,000
1.4 Consultation Fees for Design and Procurement	750,000
1.5 Site Supervision and Construction Management	400,000
	<u>£ 1,664,000</u>
2. Access Road, Reclamation Area and Breakwater	15,455,000
3. Link Road to Existing Harbour	2,485,000
4. Marina Pontoons and Bridge	1,290,000
5. Slipway	445,000
6. Pontoon Facilities Building	2,600,000
7. Mechanical & Electrical and Services Infrastructure to Facilities Building (Substation, Package Sewage Treatment Works)	700,000

8. Relocation of Tank Farm	700,000
9. Remediation of Contaminated Land	500,000
10. Reconstruction and Extension to Pier	3,400,000
11. Repairs to Harbour Wall	220,000
12. RNLI Pontoon Facility	0
13. New Harbour Office/RNLI Building	2,000,000
14. New Oil Tank	60,000
12. Cruise Ship Pontoon	340,000
13. Outer Cruise Ship Berth	<u>3,200,000</u>
	35,059,000
Optimism Bias (44%)	15,426,000
Total for Full Scheme	£50,485,000

Due to the high cost of the access road and reclamation area, a reduced scheme was considered to minimise the reclamation area and reduce cost (refer to drawing number 2342/111). The estimate for this scheme then reduces by £3.8m (£5.5m with 44% optimism bias) to £44,985,000.

Considering the rock fill and armour supply rates, if these vary for example due to free supply, then this has a major influence on the total cost. The table below looks at the effect of the supply rate variation, with a £5/m³ reduction in cost.

	Reduction in Rock Fill Supply Rate by £5 m³	Reduction in Armour Supply Rate by £5 m³
1. Access Road, Reclamation Area & Breakwater	£1,825,000	£217,000
2. Reduced Reclamation Area Scheme	£1,206,000	£204,000
3. Link Road to Harbour	£147,000	£30,500

Thus, a saving or additional cost of £5 per m³ for rock fill from, has a significant effect on the cost of the project. A cheap option for rock fill is worth pursuing.

No allowance has been made in the cost estimate for legal fees, VAT, land acquisition, Crown Estate payments or compensation to land owners.

4. Proposed Phasing

To suit possible funding options that are available, the following phasing for the project is proposed with the associated costs; these phases are illustrated on drawing 2314/201 to 206 in Appendix A.

Phases	£
<u>Phase 1</u>	
Surveys, Investigations, Studies	334,000
EIA and Consents	180,000
Reconstruction of Pier	3,400,000
Repairs to Harbour Wall	220,000
New Harbour Office	2,000,000
RNLI Pontoon Facility	0
Relocation of Tank Farm	700,000
Remediation of Oil Tank Farm Area	500,000
Design and Supervision	<u>400,000</u>
	7,734,000
Optimism Bias 44%	<u>3,403,000</u>
	<u>£11,137,000</u>
<u>Phase 2</u>	
Design of Breakwater and Access Road	350,000
Construction of reduced Breakwater and Access Road	11,637,000
Supervision	<u>300,000</u>
	12,287,000
Optimism Bias 44%	<u>5,406,280</u>
	<u>£17,693,280</u>
<u>Phase 3</u>	
Marina, Pontoons and Bridge	1,290,000
Cruise Ship Pontoons	340,000
Design and Supervision	<u>80,000</u>
	1,710,000
Optimism Bias 44%	<u>752,400</u>
	<u>£2,462,400</u>

<u>Phase 4</u> Link Road Slipway Design and Supervision Optimism Bias 44%	2,485,000 445,000 <u>150,000</u> 3,080,000 <u>1,355,200</u> <u>£4,435,200</u>
<u>Phase 5</u> Pontoon Facilities Building (including optimism bias)	<u>£4,752,000</u>
<u>Phase 6</u> Outer Cruise Ship Berth (including optimism bias)	<u>£4,608,000</u>

5. Consents Applications and Programme

Once the proposed scheme concept is agreed, the consenting process needs to commence as this will be on the critical path. An EIA screening will be necessary, followed by a Pre-Application Consultation process (PAC) to comply with Marine Licencing (Scotland) Regulations 2013 and Town and Country Planning (Scotland) Act 1997. The EIA screening will determine whether the project requires an EIA.

It is highly likely that the for the full scheme an EIA will be necessary. The timescale for the EIA, planning and marine applications stage for the full scheme will be 1 to 2 years and require an extensive period for environmental studies of nesting birds, marine mammals, benthic surveys of the seabed, amongst the range of other topics such as landscape & visual, traffic impact, archaeology etc, inform the EIA.

It is considered that on its own the Phase 1 construction elements will not need the EIA in place as they have less impact on the environment. Although the pier extension is within the Harbour Authority boundary, with permitted development rights, the outline of the extended pier is likely to be out with the limits of deviation and require an HRO.

Alternatively, an application for a marine construction license from Marine Scotland could be made for the phase 1 works alone. With the HRO for the whole scheme being undertaken later or in parallel. A planning application for the landside elements would also need to be made, to cover the removal of the tanks and construct the new building.

The consents, design and tendering stage for Phase 1 would take up to 1 year, with the construction period taking a further 1 year.

6. Conclusions

The full scheme for the proposed Harbour Development at Portree is estimated to have a cost of circa £50.5m.

This can be reduced by £5.5m with less area for public space and coach parking at the reclamation area.

The significant item affecting the cost of the project is the rock fill rate with a variation of £5 per m³ having £1.2m to £1.8m change to the cost estimate for the full scheme or reduced scheme.

An initial Phase 1 development to focus on improvements at the existing harbour is considered the most important initial stage for the development. This includes the following elements: -

- Reconstruction and extension of the existing pier.
- Repairs to pier access road seawall.
- New Harbour Office.
- Relocation of existing tank farm and remediation of ground from contamination.
- Provision of a new oil tank for the harbour.
- Surveys, investigations, studies for both the phase 1 and full scheme.
- Consents, design and supervision for phase 1 only.
- Prepare the EIA and consents for full scheme.

It is proposed to apply for the necessary consents for phase 1 separately to the future full scheme, with the studies and EIA for the full scheme being progressed in parallel with Phase 1.

Once the EIA is completed and consents for the full scheme in place, further phased development could then take place within the shelter of the new harbour as funding becomes available.

Appendix A – Drawings