Scoping Report

Uig Harbour Redevelopment

The Highland Council

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Redacted Graduate Consultant	Redacted Associate Director	Redacted Associate Director

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Prepared for:

The Highland Council
Development and Infrastructure
Project Design Unit
Materials Testing Lab
Diriebught Depot
94 Diriebught Road
Inverness
IV2 3QN

Prepared by:

AECOM Limited
1 Tanfield
Edinburgh
EH3 5DA
UK

T: +44 131 301 8600
aecom.com

Table of Contents

Tables

List of Figures

A number of figures have been inserted as A3 figures at the end of the document.

1. Introduction

1.1 Project Background

Uig Harbour is located in Uig Bay in the north east of the Isle of Skye. It forms part of the 'Skye Triangle' (along with Tarbert and Lochmaddy), providing lifeline ferry services for communities in the Western Isles. The Pier at Uig Harbour, named King Edward Pier, serves the CalMac ferry route to the isles of Harris and North Uist. The Pier is under the control of Highland Harbours which is run by The Highland Council (THC), whilst the ferry service operations are controlled by CalMac Ferries Ltd. (CFL).

Increasing demand and aging tonnage has led the ferry operator to commission new, larger ferry vessels for a number of its routes. The 'Skye Triangle' has been identified by the operator as a priority and the procurement of a new vessel for this route has commenced.

THC (hereafter also referred to as the 'Applicant') is required to undertake redevelopment works (hereafter referred to as the 'Proposed Development') to Uig Harbour to accommodate the new vessel which has been commissioned and is currently programmed to arrive at the harbour in October 2018.

1.2 Consenting Requirements

The Proposed Development comprises onshore and offshore elements (e.g. above and below Mean Low Water Springs (MLWS) and Mean High Water Springs (MHWS)) and requires multiple consents including:

- Planning permission from The Highland Council Planning Department under the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006 – for works down to MLWS;
- Marine licences from Marine Scotland (MS) under the Marine (Scotland) Act 2010 – for any licensable activities below MHWS; and
- A Harbour Revision Order from Transport Scotland under the Harbours Act 1964 – to vary THC's existing harbour powers.

MS has requested that all works planned below the Mean High Water Springs (MHWS) are assessed together. Following pre-application discussions, the Applicant has opted to assess both onshore and offshore elements together. Given the scale of the works and the proximity to a number of marine protected areas, the Proposed Development is deemed to require Environmental Impact Assessment (EIA). The Applicant is undertaking one EIA for the Proposed Development as a whole under the following regulations:

- Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- The Harbour Works (Environmental Impact Assessment) Regulations 1999.

A Screening Letter submitted to Transport Scotland on July 21st 2017 is included in Appendix A. This outlines the key triggers for EIA for the Proposed Development.

This Scoping Report outlines the proposed scope of the EIA. It accompanies a Scoping Opinion Request to Transport Scotland, MS and THC Planning Department.

This Report has the following structure:

1. Introduction
2. Description of the Proposed Development
3. Scope of the Environmental Impact Assessment

2. Description of the Proposed Development

The Proposed Development consists of redevelopment works to Uig Harbour to accommodate a larger ferry vessel. The vessel is expected to be approximately 3 m longer and 1.2 m wider than the current ferry. The design of the Proposed Development is still being finalised and a number of alternative options are still being considered. This has been considered in scoping the EIA. Table 2-1 below provides a breakdown of the Proposed Development.

Table 2-1 Description of the Proposed Development - Preferred Options & Potential Additional Options

Works	Description
Preferred Option	
Dredging	Dredging the berth area to minus 5.9 mCD consisting of approximately 20,000 m^3 of dredged material and dredging along the widened approachway for the fisherman's berth consisting of approximately 2,000 m^3.
Dredge Disposal	The Applicant will endeavour to re-use the dredged material in the land reclamation where possible in order to minimise waste. However, the material may not be suitable for use in the land reclamation and will therefore need to be disposed of. Given the naturally high concentrations of heavy metals in the sediment in Uig Bay, the Applicant is looking to dispose of the dredged material in the vicinity of the Proposed Development in a receiving environment with similar levels of heavy metals. The Applicant is looking to open a new sea disposal site within 1 km of Uig Bay for the disposal of the material from the initial capital dredge and future maintenance dredges. A Site Characterisation Process will be carried out to identify the preferred sea disposal location.
Widening of the existing berth	The existing berthing structure will be widened by 10 m. This will require the following: • Demolition and relocation of the existing waiting shelter on the pier; • Removal and replacement of the fenders, fender piles and fender panels; • Demolition of sections of the existing wave wall and construction of new wave protection wall; • Driving new tubular piles; • Using a combination of precast and insitu concrete to construct the deck and completed berthing structure extension; and • Reinforcement will be provided by steel tubular bearing piles with reinforced concrete plugs.
Increased marshalling area by land reclamation	Undertaking approximately 11,000 m^2 of land reclamation using approximately 50,000 m^3 of infilling material with rock armour revetment and sheet piles.
Works on the increased marshalling area	This will include constructing of a new ticket office, vehicle lanes, HGV lanes, parking spaces, collection and drop off spaces, replacing the dry berthing area and relocating the existing fisherman's compound.
Extension of the approachway	The extension of the approachway by 6 m will require the following: • Driving new steel tubular piles with reinforced concrete pile caps; • Using a combination of pre-cast and insitu concrete to construct the deck; • Repairing existing concrete deck on approachway over open piled and masonry wall section; • Removing and reinstating the monoblock area and backfill; and • Replacing the timber grillage, fenders and steel boat deflectors, boat steps.
New single lane linkspan with new lifting dolphins	Replacing the existing linkspan and M&E equipment, and replacing or upgrading the existing lifting dolphins and bankseat. Involves driving new piles and removing old piles.
Demolition of the existing ticket office	The existing ticket office will be demolished at the end of the construction phase.
Construction compound	The construction compound will be located immediately to the west of the existing ticket office.
Upgrades to public utilities	The potable water system, electrical supply, telecoms / data lines and street lighting will be upgraded.
Potential Additional Options	
Extension of the pier to include bringing the line of dolphins on to the line of pier.	Creating a solid pier between the end of the berthing structure and the extremity of the outer berthing dolphin with an upgraded fender system. Additional 10 m length of pier added.

Wave screen and outer dolphin repositioning	Moving the existing outer dolphin 10 m seaward to accommodate increased mooring confidence of the new vessel and installing a greenheart timber wave screen, using steel tubular bearing piles and greenheart timber piles respectively.
Slipway	Installing a concrete slipway to the back of the marshalling area. Sheet piled or rock armour edging with infill and a concrete slab on top.
LNG Storage	The new ferry vessel will operate on Liquid Natural Gas (LNG). It is assumed at this stage that the operation would require construction of a storage tank (30 m long and 3 m in diameter) and bunkering system for LNG. It is currently expected that the storage tank will be filled 2 to 4 times a week by road tankers with a maximum volume of 42000l per bunkering. The Vessel will bunker twice a week. The installation will be equipped with an automatic Emergency Shutdown (ESD) system linked to gas detection and to emergency stop buttons, available to the operators. Two options are being considered for the location of the tank: the Berthing Pier and the Old Pier. If the Old Pier location is selected for the LNG storage, the existing Old Pier will be demolished and a new tubular steel pile structure with a concrete deck will replace it. The existing Harbour Master's building and fuel tank will be relocated to the main pier widening. A connection between the tank and the bunker door will be established underneath the deck passed the linkspan to the widened pier deck for bunkering. Additional dredging of approximately 5,000 m^3 may be required along the approachway to provide an alternative refuelling berth if the Old Pier location is selected. The LNG storage and bunkering system will be designed in accordance with relevant guidance and regulations (e.g. the Control of Major Accident Hazards (COMAH) regulations, BS EN1473:2007, and ISO 20519:2017). Consents will be sought from the Scottish Environmental Protection Agency (SEPA) and the Health & Safety Executive (HSE) by CFL as the operator of the LNG storage and bunkering system (see Appendix B for a statement from CFL).

Figure 2-1 illustrates the planned works to Uig Harbour and Figure 2-2 shows the location of the Proposed Development and EIA Study Area.

3. Scope of the Environmental Impact Assessment

3.1 Introduction

This section outlines which elements of the physical, biological and human environment require further assessment and will be scoped in to the EIA, and which elements can be scoped out as significant effects are unlikely. The following sections provide a brief description of baseline conditions, likely significant effects and the proposed scope for further assessment in the EIA where applicable.

Figure 3-1 illustrates the key environmental constraints identified in the surrounding area.

3.2 Marine Physical Environment

3.2.1 Baseline Conditions

Uig Harbour is located within Uig Bay, a sheltered inlet on the west coast of the Trotternish peninsula, Isle of Skye. Along its western boundary, Uig Bay opens onto the larger embayment of Loch Snizort, which in turn opens (to the northwest) into The Minches. The Minches are protected along the western and northwestern extent by the Western Isles; in turn, the Western Isles also provide shelter to Loch Snizort and Uig Bay from the direct approach of Atlantic swell waves.

The bathymetry within Uig Bay (as defined from Admiralty Chart 2533 and described in the Uig Pier Upgrading Study[1]) gradually shallows from around 60 m depth at the entrance to the Bay, to around 5 m depth at the existing Harbour berth (alongside the existing pier).

High-level sediment mapping, available from British Geological Survey maps (BGS, 1988[2]) indicate that the wider regions, across Loch Snizort, primarily comprise a mixture of muddy and sandy seabed sediment. At the entrance to Uig Bay, the high-level mapping identifies the bed to predominantly comprise sandy mud. Within Uig Bay, grab sampling (undertaken to inform the initial considerations on potential dredge disposal sites) reveals that the seabed sediment includes gravel (mixed with sand or mud) - identified along the eastern coast and on the northern edge of the Bay entrance; and mud - within outer and northern parts of the Bay, including in proximity to the existing Uig Harbour.

Hydrodynamic conditions within Uig Bay are influenced by the combined action of tidal propagation and wave activity. Tidal information from The Admiralty is presented in Table 3-1, which indicates the area experiences a mean spring tidal range of 4.6 m and a mean neap range of 1.6 m. As a result of the tidal range, Uig Bay is described as ‘macrotidal’ (defined by a spring range between 4 and 6 m).

Table 3-1 Tidal Information from the Tidal Admiralty

Tidal State	m ACD	m AOD
Highest Astronomical Tide (HAT)	6.2	3.5
Mean High Water Spring (MHWS)	5.3	2.6
Mean High Water Neap (MHWN)	3.5	0.8
Mean Sea Level (MSL)	3.03	0.33
Meal Low Water Neap (MLWN)	1.9	-0.8
Mean Low Water Spring (MLWS)	0.7	-2
Lowest Astronomical Tide (LAT)	0.1	-2.6
Mean Spring Range (MHWS-MLWS)	4.6 m	1.9
Mean Neap Range (MHWN-MLWN)	1.6 m	-1.1

Source: UKHO Admiralty Tide Tables (2017)

Wave modelling carried out for the Uig Pier Upgrading Study[3] indicates that the wave climate with Uig Bay is a combination of swell waves (which diffract and refract around the entrance headlands to Loch Snizort and Uig Bay), and locally generated wind waves (which build over the longer fetch lengths associated with westerly and southwesterly approaches to the Bay). The same study identified that the 1 in 1-year significant wave height at the existing Uig Harbour pier was up to approximately 1 m, associated with an approach direction (to the entrance to Uig Bay) of 305°N (associated with an

[1] The Highland Council, 1998. Uig Pier Upgrading Feasibility Study. Halcrow Crouch, for the Highland Council. June 1998.
[2] BGS, 1988. Little Minch – Sheet 57N 08W. Sea bed sediments and quaternary. Scale: 1:250,000.
[3] The Highland Council, 1998. Uig Pier Upgrading Feasibility Study. Halcrow Crouch, for the Highland Council. June 1998.

offshore direction between 286 and 315°N). Waves approaching the Bay from other approach directions were found to be smaller.

The sediment transport pathways (and the associated local and regional morphology of the wider Uig Bay area), are controlled by the combined influence of hydrodynamic and wave conditions.

A more detailed description of the baseline characteristics will be provided within the EIA Report, informed by survey data collected for the Proposed Development and the supporting numerical modelling studies.

3.2.2 Likely Significant Effects

The key impact pathways relating to the physical marine environment include:

- Changes to the hydrodynamic regime as a result of the dredge (and associated disposal of arisings) and the capital construction works;
- Changes to the wave climate as a result of the dredge (and associated disposal of arisings) and the capital construction works;
- Changes to sediment transport processes (including erosion and deposition) as a result of the dredge (and associated disposal of arisings) and the capital construction works;
- Sediment disturbance through the dredge (and associated disposal of arisings) and the capital construction works. The associated increase in suspended sediment concentration is, itself, a potential impact that will be assessed under other EIA topics (e.g. water quality, benthic ecology and fish/shellfish); and
- Change in substrate type through the re-deposition of suspended sediments and placement of materials at the disposal site.

3.2.3 Proposed Scope of Assessment

The significance of the effects arising from the pathways identified above will be informed by a conceptual understanding of the study area and numerical modelling. Hydrodynamics, waves and sediments will all be modelled to determine the magnitude of effects arising from the Proposed Development including:

- Effect of the Proposed Development on local hydrodynamic and wave conditions, and associated downstream effects on sediment transport pathways. An estimation of likely maintenance dredge requirements will also be determined;
- The fate of re-suspended sediments during the dredge and construction works (including erosion and deposition); and
- The fate of the deposited dredge arisings at the proposed disposal site.

The numerical modelling will be underpinned by a conceptual understanding of the study area along with the collection of site specific data.

3.3 Marine Water and Sediment Quality

3.3.1 Baseline Conditions

Water quality

Many standards for water quality are regulated at EU level through a range of environmental directives. The most relevant for Uig Bay comprise the Water Framework Directive (WFD) (2000/60/EC), the Priority Substances Directive (2008/105/EC and 2013/39/EU), the revised Bathing Water Directive (2006/113/EC) and the MSFD (2008/56/EC). Loch Snizort Shellfish water, designated under the Shellfish Waters Directive (2006/113/EC), is the closest shellfish waters to the Proposed Development; however, it should be noted that the Shellfish Waters Directive was repealed in 2013 and subsumed within the WFD.

The WFD establishes a framework for the management and protection of Europe's water resources and it is implemented in Scotland through the Water Environment Water Services (Scotland) Act 2003 and the Water Environment (Controlled Activities) (Scotland) Regulations 2011, more commonly known as the Controlled Activity Regulations (CAR). Two subsequent amendments to the WFD through the development of the Priority Substances Directive (2008/105/EC and 2013/39/EU) have outlined Environmental Quality Standards (EQS) for a series of priority substances and priority hazardous substances.

Programmes of measures under the WFD have also been developed through a process of river basin management planning. The river basin management plan for the Scotland river basin district: 2015–2027 was published in December 2015[4]. The plan provides an assessment of the condition of the water environment, and identifies where efforts must be targeted for protection and improvement. Uig Bay is located within the Loch Snizort coastal water body in the Scottish river basin district.

The revised Bathing Water Directive sets physical, chemical and microbiological standards for bathing waters in the EU. It was introduced to update the (old) Bathing Water Directive (76/160/EEC) to ensure compatibility with the WFD. There are no designated bathing waters in the vicinity of Uig Bay.

Sediment quality

Unlike water quality, there are no formal quantitative EQS for sediments. Therefore, in the absence of any quantified UK standards, common practice for characterising baseline sediment quality conditions is to compare against the Centre for Environment, Fisheries and Aquaculture Science (Cefas) Guideline Action Levels for the disposal of dredged material. Cefas Guideline Action Levels are used as part of a 'weight of evidence' approach to assessing material suitability for disposal at sea. Cefas guidance indicates that, in general, contaminant levels below Action Level 1 (AL1) are of no concern and are unlikely to influence the licensing decision. However, material with contaminant levels above Action Level 2 (AL2) is generally considered unsuitable for disposal at sea. Dredged material with contaminant levels between AL1 and AL2 requires further consideration and testing before a decision can be made. However, the action levels should not be viewed as pass/fail thresholds and it should be acknowledged that these guidelines are not statutory requirements.

Surface sediment contamination samples were collected from seven locations throughout Uig Harbour in December 2016 shown in Figure 3-2. The samples collected from the points closer to the shore were found to be primarily gravel/ silt sediment whereas those in the centre/ deeper sections of Uig Bay tended to be mud. The results of the sample analysis have been compared with Cefas Action Levels which demonstrated that samples were recorded above AL2 for Chromium and Nickel and above AL1 for Copper, Zinc and total Polycyclic Aromatic Hydrocarbons (PAHs). Further sediment contamination testing will be carried out in the vicinity of the dredge and the dredge disposal site to consider the potential implications for water and sediment quality. This will be set in the context of contamination levels throughout the bay.

[4] Available from: https://www.sepa.org.uk/media/163445/the-river-basin-management-plan-for-the-scotland-river-basin-district-2015-2027.pdf

3.3.2 Likely Significant Effects

The Proposed Development has the potential to affect water and sediment quality through the following impact pathways:

- Potential changes to suspended sediment concentrations in the vicinity of the capital construction works, dredge site and disposal site;
- Potential changes to dissolved oxygen in the water column;
- Potential changes to levels of water and sediment contaminants; and
- Potential impacts from redistribution of sediment-bound chemical contaminants.

The potential implications of changes in water quality for wider receptors have been considered in the respective chapters (e.g. benthic ecology, fish and shellfish).

3.3.3 Proposed Scope of Assessment

As part of the baseline for the EIA, a review of existing water quality conditions in the study area will be undertaken based on available information. Potential data sources include Scottish Environment Protection Agency (SEPA) and Scottish Government websites, specifically to determine current Loch Snizort coastal water body status results and Loch Snizort shellfish water protected area classification. Site specific sediment contamination data will also be collected in the vicinity of the proposed dredge and the potential dredge disposal site. The survey specification will be agreed with Marine Scotland in advance of the surveys being undertaken.

The assessments will take in to consideration all phases and elements of the Proposed Development including in the vicinity of the harbour works, dredging and disposal site. The assessments will all be desk based through further interpretation of the physical marine environment assessments (including numerical modelling) and site specific sediment contamination data. In addition, a WFD assessment will be undertaken to consider the potential impacts on the current status and future objectives of the relevant WFD waterbodies.

3.4 Flood Risk

3.4.1 Baseline Conditions

Existing Flood Risk

The levels for all the structures were set historically. It is understood from anecdotal evidence (speaking to the pier and CFL staff) during storm events and coastal flood events; the site is susceptible to flooding and coastal process. Further anecdotal evidence was gathered.

- 'The Great Flood of Uig, Isle of Skye' described from "Memorable Highland Floods" by D Nairne, 1895 give the location of a flood event and the description would suggest this was fluvial event caused by significant rainfall but the pier was not constructed so effect were not described; and
- Discussion with pier staff relating to the 2005 flood suggested significant damage to the Bakur bar on the opposite side of the approachway. The damage is described on CRGP Architects website.

The existing site has incorporated defences for coastal process, along the approachway and pier, a wave wall has been constructed, which is believed to provide some protection and resilience to passenger and users.

Review of Existing Topography

The levels of the foreshore at the base of the rock armour is approximately 0.8 m AOD and the car parking area immediately in front of the marshalling area's lowest point is 4.05 m and the approachway and pier is approximately 4.05m AOD at the lowest points. The fisherman's compound at the eastern corner is approximately 3.6 m AOD. The trunk Road (A855) at the lowest point at the pier end is approximately 4.1 m AOD.

The highest Astronomical Tide in Uig Bay is 3.43 m AOD leaving only a small margin between the level and the pier. This would suggest that flooding from coastal flooding is likely; however, a wave, surge and wind model would be required to confirm the level of protection required.

Historic Wave and Wind Model

A wave and wind modelling study was undertaken by Halcrow Crouch, June 1998 for The Highland Council and suggest a wave height of 1.5-1.9 m for a 1 in 50 event. This does not seem to account for any protection provided by the harbour arrangements or any wave break at the coastline. Further modelling will therefore be required to take account of such measures together with a review of the impact of increased sea levels and frequency of extreme wind events as a result of climate change.

Review of Available Flooding Information

The Proposed Development is situated in Uig Bay, Skye. The site of the development is outwith the identified areas of fluvial flooding and pluvial flooding according to the indicative flood maps. This is further realised by the distance the development is from the two water courses (River Rha and the River Conon) which discharge into the bay approximately 1 km further round the bay in a north easterly direction.

However, the Proposed Development is identified within the coastal flood risk areas and part of the Potential Vulnerable Areas (PVA) for coastal flooding. The development falls within the Isle of Skye Coastal Catchment and is assessed in Uig, Isle of Skye Potentially Vulnerable Area 1/11 assessment and district plan. The study was undertaken by SEPA and the Highland Council as part of the Flood Risk Management (Scotland) Act 2009 assessment.

The PVA does not separate the risk from coastal flooding and provides a statement that Uig is at risk but there is insufficient detail to determine if this includes the site.

The SEPA flood maps show the pier as at risk, this may be due to the detail of the maps would not consider the specific levels of the pier. This would be further assessed as part of the Modelling.

3.4.2 Likely Significant Effects

Due to the location of the Proposed Development it would have no impact on the surrounding area for flooding from pluvial or fluvial sources as it is proposed in the foreshore and does not sit in the influence of flooding from the River Rha and the River Conon and there has been no historic evidence of flooding from surface water or sewers. The Proposed Development would have no effect on the coastal flood level to adjacent land or foreshore.

Coastal flooding in our initial assessment is a potential risk to the Proposed Development, however, this needs to be further investigated and the impact of coastal process from anecdotal evidence should be modelled to enhance the understanding of the impact. The proposed new terminal building finished floor level (FFL) will need to be such that it considers the resilience of the structure to a 1:200 year event. The proposed FFL of the building is proposed 5.25 m AOD which is the same as the existing building. The resilience of this FFL will need to be determined through the modelling exercise. A review of the standard of protection provided to the marshalling area should also been undertaken as vehicles and passengers may congregate in this area during extreme weather events where flooding may be an issue. The level of the pier deck extension is based on the level of the existing deck and therefore for operational reasons this cannot be altered. A review of the flood levels at Uig will provide details with regard to the frequency at which the deck will be inundated and how this will change with future sea levels rises.

In addition to direct tidal inundation wave run and wave overtopping could pose a flood risk. The pier structure itself provides protection. There is a risk however that wave will break over the pier wall. Wave overtopping analysis will be undertaken to determine the frequency, rate and consequence of such overtopping in line with the EuroTopp guidance.

Climate Change

Consideration for global sea level rise would also be factored into the resilience of the Proposed Development. Sea level rise is estimated due to climate change = 0.343 m[5]. The impact of climate change is required to be included in the modelling.

3.4.3 Proposed Scope of Assessment

Modelling

A numerical modelling study is required to assess wind and wave climate for the Proposed Development. The results from the study are required to inform an assessment of potential environmental impacts. This will form part of the flooding assessment.

The first stage will involve adapting an existing hydrodynamic model (Figure 3-3), refining the mesh in key areas such as the area to be dredged and reclaimed. The calibrated hydrodynamic model will provide a description of flow patterns and tidal variations. A more detailed description of the modelling approach is provided below.

Extreme Water Levels

Extreme water levels will be extracted from SEPA's Coastal Flood Boundary (CFB) dataset for Scotland for the prediction points within Uig Bay. Extreme water levels for return periods: 2, 10, 20, 50, 100, 200, 1000 years will thus be established. It is proposed to use the UKCP09 medium emissions scenario 95th percentile values for climate change allowances, subject to confirmation by SEPA.

Hydrodynamic Modelling

AECOM propose to use the 'MIKE21 by DHI' software from the Danish Hydraulic Institute (DHI) to simulate hydrodynamic conditions within the study area. Assuming relatively shallow water depths

[5] Source: Coastal flood boundary conditions for UK mainland and islands - SC060064/TR4 Practical guidance design sea levels (data set was provided by SEPA CFB_Extreme_Sea_Levels_SEPA.shp)

and well-mixed conditions, a 2D depth-averaged model will provide a sufficiently accurate representation of current speed variations through the water column.

AECOM will use digital data from the C-Map database of Admiralty charts covering UK waters to provide the primary source of bathymetric data in the model. This will be merged with any site specific survey data for the study area provided the Applicant. The offshore boundary conditions for the hydrodynamic model will be configured using tidal harmonic constituents from DHI's global database. The hydrodynamic model will be calibrated against measured current and tide gauge data that is freely available from the British Oceanographic Data Centre (BODC). Additional data on local currents and water levels will be collected to calibrate the model.

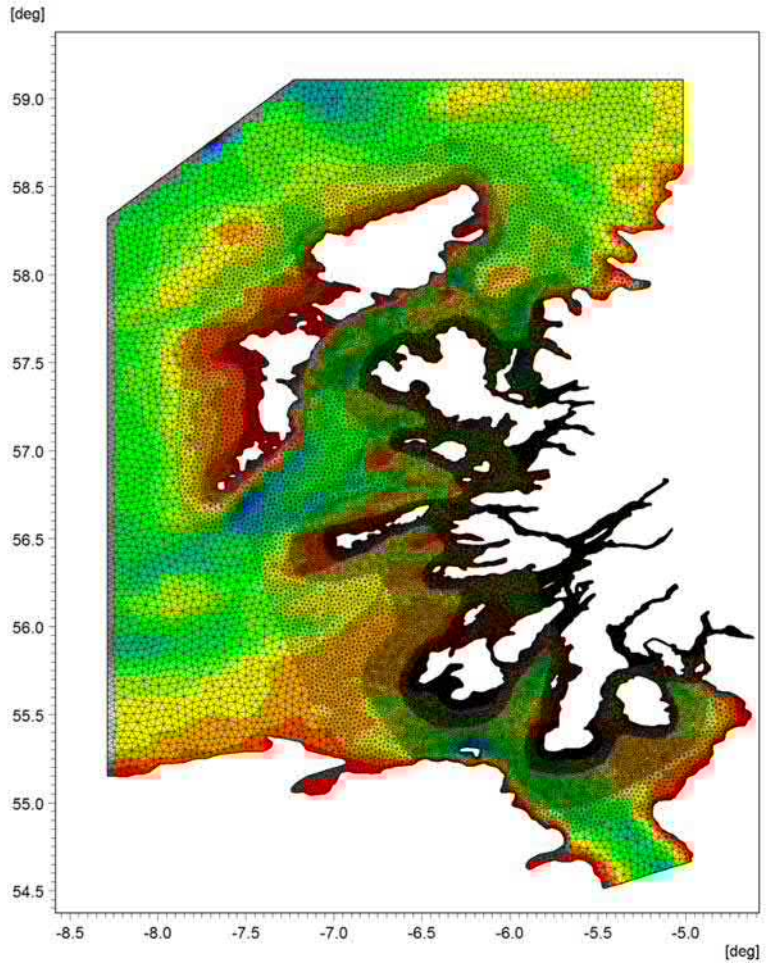


Figure 3-3 AECOM Western Isles Hydrodynamic Model

Wave Transformation Modelling

A wave transformation model will be configured using the MIKE21 Spectral Wave (SW) model. Figure 3-4 provides an example of the results obtained from the application of this model.

It is proposed to operate the wave model in 'hindcast' mode using local wind data from UK Met Office. Time-varying water levels will be included in the model to ensure that the transformation of wave parameters (significant wave height and peak wave period) account for varying fetch lengths and depth-limited wave breaking due to changes in water levels (tides and surge).

A numerical modelling approach will be adopted to generate the required simultaneous long-term record (up to 20 years) of waves and water levels. The record length will directly affect the confidence limits applied to the predictions and will therefore need to be sufficiently long to enable reliable statistical distributions to be established.

This proposed method will provide a technically rigorous approach in which the wave statistics will be directly derived from the long time series data modelled seaward of the defined frontages. This approach includes the influence of surge, tide and wind together with their interactions with the local

bathymetry thus providing a reliable estimate of site specific correlation coefficients. Joint probability curves and tabulated data will be presented for each location for the following return periods as noted above of 2, 10, 20, 50, 100, 200 and 1000 years. The data will also be tabulated separately making an allowance for climate change.

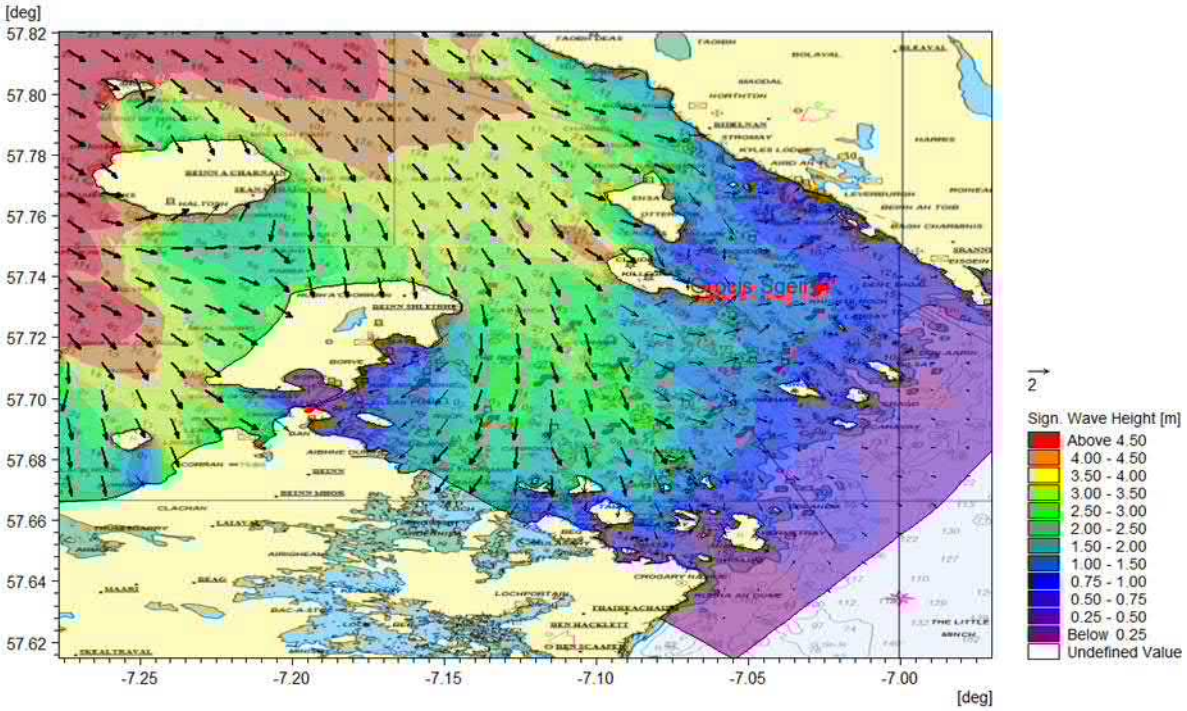


Figure 3-4 Example output from the MIKE21-SW wave model

Joint Probability of Waves and Water Levels

A Joint Probability Analysis (JPA) of waves and water levels will be undertaken at the 4 defined locations along the coastal frontage. The simplified JPA approach, as described in established guidance[6], will be used to establish combinations of waves and water levels for the standard set of return periods previously identified.

Wave Overtopping Assessment

Wave overtopping discharges will be calculated using methods described in the European Wave Overtopping Manual (EurOtop). To achieve this, industry recognised software (the HR Wallingford overtopping calculator) will be used allowing different types of defence structure to be considered and accounting for effects such as depth-limiting conditions in front of the existing structures.

The neural network approach will be used to assess overtopping discharge over the existing defence sections. Representative profiles will be schematised for each section where flooding is considered. To rationalise the number of calculations for the assessment of flood inundation, extreme water levels will be discretized into 0.1 m increments encompassing the full range of water levels that may occur.

For each extreme water level increment, up to three different wave conditions will be considered based on the range of extreme wave heights and periods generated from the wave modelling and JPA. This will ensure that the required range of potential joint exceedance return periods is covered by a look-up table used to estimate overtopping discharge for the specified joint exceedance events.

This proposed method will provide a technically rigorous approach in which the wave statistics will be directly derived from the long time series data modelled seaward of the defined frontages. This approach includes the influence of surge, tide and wind together with their interactions with the local bathymetry thus providing a reliable estimate of site specific correlation coefficients. Joint probability curves and tabulated data will be presented for each location for the following return periods as noted

[6] Use of Joint Probability Methods in Flood Management: A Guide to Best Practice – R&D Technical Report FD2308/TR 2, 2005

above of 2, 10, 20, 50, 100, 200 and 1000 years. The data will also be tabulated separately making an allowance for climate change.

3.5 Ground Conditions and Contamination

3.5.1 Baseline Conditions

This section covers onshore ground conditions and contamination. Offshore contamination will be covered in the Marine Water and Sediment Quality chapter described in Section 3.3 above.

Site History

A review of historical mapping available on the National Library of Scotland[7], indicates that a pier was constructed at the Proposed Development in the 1890s. A road was shown along the northern boundary of the Proposed Development leading to the pier. Historical mapping from 1947 shows a road labelled A856 leading to the pier. Rectangular buildings were recorded on the 1955 mapping adjacent to the A856 in the area adjacent to the pier. No historical maps are available in the public domain since 1957.

Current use

A search on Google Maps [8]indicates that the onshore area of the Proposed Development is currently covered by hardstanding and is occupied by the Uig Ferry Terminal with associated infrastructure including roads and car parking areas. The pier recorded on the historical map editions is shown within the Proposed Development and it appears to be unchanged. A small area of the Proposed Development, immediately to the north of the pier along the shore is used as a fishermen's storage compound. The A87 forms the Proposed Development's western and southern boundary with various buildings and car parking areas beyond. The existing ticket office is located in the northeastern corner of the Proposed Development. AECOM understands that the Proposed Development area is located along the coastline and parts of it were developed on an area of reclaimed land, e.g. the existing Marshalling area and Fishermen's storage compound.

Ground Conditions

Ground investigation works are currently being undertaken but the results will not be available until end of October 2017. The British Geological Survey's (BGS) On-shore Geoindex Portal[9] was consulted for an initial assessment of ground conditions at the Proposed Development. BGS records indicate that the onshore superficial deposits beneath the Proposed Development consist of undifferentiated Shoreface and Beach deposits and Raised Beach deposits comprising mainly of sands and gravels. The thickness of the superficial deposits is not known.

While the BGS Geoindex does not show records of made ground at the Proposed Development site or within its vicinity, made ground deposits (or reworked natural deposits) are likely to be present from the construction of the existing ferry terminal, i.e. the existing ticket office, reclaimed land in the Marshalling area and fishermen's storage compound area.

Bedrock underlying the Proposed Development site is indicated to be the Little Minch Sill-complex, which is a combination of igneous Basaltic and Microgabbro rock types. The depth to rockhead is unknown.

Depth to groundwater is unknown but is expected to be shallow. As the Proposed Development is located in the intertidal zone, the groundwater will be tidal in this area.

Loch Snizort is a sea loch located immediately adjacent to the south of the Proposed Development. Surface waters draining into Loch Snizort are noted within and adjacent to the Proposed Development.

Potential for Contamination

Made ground associated with the construction of the existing ferry terminal is likely to be present beneath the onshore area of the Proposed Development. Given that no significant industrial activities are known to have taken place at the Proposed Development site and adjacent areas it is likely that

[7] http://maps.nls.uk/ accessed on July 2017
[8] https://www.google.co.uk/maps accessed on July 2017
[9] http://mapapps2.bgs.ac.uk/geoindex/home.html accessed on July 2017

any made ground, if present, comprises sea dredged material and/or locally derived soils. Significant contamination is not expected to be associated with such materials.

Potential Receptors

The following potential sensitive receptors have been identified:

- Construction and maintenance staff;
- Future site users of the Proposed Development (employees, passengers, visitors to the Proposed Development);
- Users of neighbouring areas;
- The water environment (Loch Snizort and groundwater beneath the site);
- Buildings (e.g. new ticket office); and
- Water supply pipes (if any).

3.5.2 Likely Significant Effects

It is understood that the Proposed Development will involve a small amount of land disturbance, especially in the area of the proposed new ticket office. AECOM understands that the old ticket office is proposed to be demolished following upgrade of the terminal. Minor earthworks across the Proposed Development will be undertaken associated with these works.

While the presence of minor contamination cannot be discounted, significant contamination is not expected to be present associated with soils underlying the Proposed Development, therefore given the future use of the Proposed Development, the risk to potential receptors including human health (construction workers, future users of the site), the water environment, property, flora and fauna is likely to be very low. The works associated with the Proposed Development are unlikely to result in significant effects on the identified sensitive receptors, however further assessment to confirm this position is required.

Limited soil excavation may be required as part of the earthworks. The potential for reuse of any excavated material should be assessed in line with current regulatory requirements.

3.5.3 Proposed Scope of Assessment

Given the continued use of the Proposed Development as a terminal it is envisaged that there would not be any significant impacts on the identified sensitive receptors both during the operational and construction phases of the Proposed Development.

It is understood that intrusive ground investigations are currently underway across the Proposed Development area. Contamination testing is being undertaken as part of the ground investigation works to confirm the absence/presence of potentially contaminative substances. A desk-based assessment should be carried out to fully determine the baseline geology and soil conditions for the Proposed Development and this should include a review of the final factual ground investigation report.

The main objective of the desk-based impact assessment will be to identify viable contaminant pathways (if any) to sensitive receptors on and in the vicinity of the Proposed Development and to assess the potential significance and magnitude of the effects of contaminated soils (if any) on these receptors. The potential for contaminated land and the risk assessment will be identified in accordance with the relevant legislation and guidance.

3.6 Terrestrial Ecology

3.6.1 Baseline Conditions

The nearest land-based designated site for nature conservation is the Trotternish Ridge Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI), situated approximately 5.6 km to the east of Uig Harbour. The Trotternish Ridge is designated for a range of upland habitat types, including alpine and montane grasslands, as well as for its geological features.

An extended Phase 1 habitat survey was carried out around Uig Harbour in May 2017. The survey followed the methods described in JNCC (2010)[10], with all habitat types present within 250 m of the ferry terminal being accordingly categorised and mapped. Target notes were used to record any evidence of protected and/or notable species (e.g. invasive non-native plants). An assessment was also made of the potential for the habitats and other features present to support protected or notable species.

In addition to the standard extended Phase 1 habitat survey, a detailed otter *Lutra lutra* survey was also carried out. All watercourses and the shoreline (in particular the rock armour seawall) within 250 m of the harbour were surveyed for evidence of otter presence or activity following the guidelines published in Chanin[11]. Evidence searched for during this survey included holts and other resting sites, spraints, footprints, runs and signs of foraging.

Full details of the results of the extended Phase 1 habitat and otter survey are provided in Tyler (2017a)[12] in Appendix C. However, in summary, the majority of the survey area is covered by the intertidal zone, with this habitat being found to be typical of the sea lochs of north Skye. There are also small areas of saltmarsh at the upper limits of the intertidal zone, below the rock armoured seawall, as well as shingle with sparse vegetation above the high tide line. Away from the intertidal zone the main habitat types present are grasslands, with semi-improved acid grassland in the crofts above the shore and other areas of grassy verge between the existing ferry terminal car park and the seawall.

A number of non-native plant species were recorded, with these considered to be escapes from the gardens of nearby properties. No species of high conservation concern were identified (e.g. through their presence on Invasive Species Scotland's list of five high-impact species or Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)).

The existing ferry terminal building, which is to be demolished as part of the Proposed Development, is constructed predominantly of corrugated metal and provides low suitability for roosting bats, as defined by Collins (2016)[13]. However, no rigorous searching of the building was carried out and no internal inspections for signs of bat use were conducted.

Although detailed searching for otter presence was conducted, no evidence of this species was found. It is possible that otters may make infrequent use of the area around Uig Harbour but as the shoreline is unbroken and the area is relatively densely populated and experiences higher volumes of traffic when compared to the surrounding countryside, it is unlikely that any otter resting sites will be present in the vicinity of the ferry terminal.

No other evidence of any other protected or notable species was recorded during the extended Phase 1 habitat survey and the habitats present are unlikely to be of any significant importance to such species.

3.6.2 Likely Significant Effects

The habitats present at and around the existing ferry terminal are of low conservation value. None have been assessed as holding the potential to support protected or notable species, other than on

[10] JNCC (2010), Handbook for phase 1 habitat survey – a technique for environmental audit. Joint Nature Conservation Committee, Peterborough.
[11] Chanin P (2003), Monitoring the Otter Lutra lutra, Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterburgh.
[12] Tyler A (2017a), Uig Ferry Terminal Phase 1 Habitats and Otter Survey.
[13] Collins J (ed) (2016), Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition, The Bat Conservation Trust, London.

an occasional basis (e.g. otter foraging along the coastline). The terrestrial works associated with the Proposed Development are relatively small in scale and are predominantly confined to areas of existing hard-standing and the intertidal zone adjacent to the existing harbour infrastructure. Table 3-2 below outlines the works which are proposed to take place which could potentially impact upon terrestrial ecological receptors.

Table 3-2 Key Activities and Potential Effects to Terrestrial Ecological Receptors

Works	Potential Effects
Land reclamation to increase the size of the marshalling area	Loss of habitat which is of low ecological value Disturbance to species (although no protected or notable species have been identified)
Works on the increased marshalling area, and the demolition of the existing ticket office and shed	Disturbance to species (although no protected or notable species have been identified) Possible destruction of bat roost should any be present within the building (although the ticket office has been evaluated as having low bat roost potential)
Creation of construction site compound	Temporary loss of habitat which is of low ecological value Disturbance to species (although no protected or notable species have been identified)
Replace existing streetlights with LEDs	Reduced light spillage may benefit nocturnal species

The works associated with Proposed Development are therefore not considered likely to result in significant effects on terrestrial ecology.

3.6.3 Proposed Scope of Assessment

The habitats present around Uig Harbour are of low ecological value and have been assessed as having limited potential to support any protected or notable species, with no evidence of such species identified during the extended Phase 1 habitat or detailed otter survey. The risk of disturbance being caused to any protected species by the limited terrestrial works associated with the Proposed Development is therefore considered to be negligible. With no predicted significant effects, therefore, it is proposed to scope out terrestrial ecology from the EIA.

However, the Proposed Development will involve the demolition of the existing ferry terminal building. This structure is built of sheet metal and is likely to hold only low suitability for roosting bats, according to the definitions provided in Collins (2016). However, to confirm this, it is proposed that a detailed Bat Roost Potential (BRP) survey will be conducted, including a detailed internal and external inspection, in line with the guidelines published in Collins (2016). Further surveys to confirm the presence or absence of bats in the building would then be carried out as required and again following the guidelines provided in Collins (2016). Should a bat roost be found, this would be dealt with through the SNH Licensing Team, with mitigation provided which was proportionate to the type of roost present.

3.7 Marine Protected Areas

3.7.1 Baseline Conditions

There are no ecological designations within Uig Bay, but the bay is located in proximity to two Special Areas of Conservation (SAC) and a proposed Marine Protected Area (MPA) as described in Table 3-3 below and shown in Figure 3-1. The Inner Hebrides and the Minches SAC, designated for porpoise populations in the North-West of Scotland, is located approximately 1 km to the West of the Harbour, at the edge of Uig Bay, and the Ascrib, Isay and Dunvegan SAC, designated for its common seal populations, is located approximately 8 km to the West. An MPA has been proposed approximately 25 km to the South-West of the Harbour to provide protection for a potentially important basking shark breeding site, important areas for minke whales, tidal fronts and important geological features.

Table 3-3 Marine Conservation Designations in the vicinity of the Proposed Development

Designated Area	Description	Designated habitats or species	Distance from Uig
Inner Hebrides and the Minches Special Area of Conservation (SAC)	This is a 100% marine designation in the north west of Scotland which is considered to be one of the best areas in the United Kingdom for the harbour porpoise. The SAC is approximately I km to the west of the harbour, at the edge of Uig Bay.	Harbour porpoise (*Phocoena phocoena)*	1 km
Ascrib, Isay and Dunvegan SAC	The complex of skerries, islets, undisturbed mainland shores and offshore islands in north-west Skye consistently support a breeding colony of the harbour seal (*Phoca vitulina)*. The site represents one of the larger discrete colonies of common seals in the UK, holding around 2% of the UK population.	Harbour seal (*Phoca vitulina)*	8 km west
Sea of the Hebrides proposed MPA	The MPA proposal covers the Sea of the Hebrides between the east coast of the Outer Hebrides and the west coasts of Skye, Mull and the Ardnamurchan Peninsula. The pMPA supports basking shark and minke whale.	Basking shark Minke whale	25 km + Western coastline of Skye

3.7.2 Likely Significant Effects

Impact piling will result in the propagation of underwater sound in Uig Bay. The designating species for the two SACs detailed in Table 3-3 above, the harbour porpoise and the harbour seal, are sensitive to underwater sound. Due to the orientation of Uig Bay in relation to the wider Loch the direction of most sound propagation will be towards the southern side of the bay and the southern region of the Loch. Some sound propagation towards the Ascrib islands within the SAC designated for seals is likely to occur but these islands are at least 7 km from the piling site and the rocky reefs at the north western mouth of Uig Bay may reflect some of this sound back into the bay. There are seal pupping sites, for the grey seal (*Halichoerus grypus*), but these are on the west coast of the islands and will not be impacted by underwater sound from the Uig works. Thus, the level of sound near the Ascrib Islands is expected to be low.

The project will adopt the standard impact piling mitigation measures recommended by the JNCC[14] which includes the use of marine mammal observers (MMO) and piling soft-starts prior to commencement of impact piling. These measures ensure any marine receptors, including seals and harbour porpoise for which the SACs above are designated, that are within the vicinity of the works are able to move away before any injury could occur. In any case injury from piling sound would only be likely to occur if animals were very close, within metres, to the impact piling activity. Thus, with limited impacts on marine mammals there are no Likely Significant Effects expected to result from impact piling during the works.

3.7.3 Proposed Scope of Assessment

As no likely significant effects are expected an assessment of the impact of the Proposed Development on the two designated sites (SACs) can be scoped out of the EIA.

[14] JNCC (Joint Nature Conservation Committee), 2004. Guidelines for minimizingacoustic disturbance to marine mammals from impact piling. Joint NatureConservation Committee, Peterborough. Available from: http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Piling%20protocol_August%202010.pdf

3.8 Benthic Ecology

3.8.1 Baseline Conditions

A marine ecology desk-based study has identified the intertidal and subtidal seabed of Uig Bay and the wider environment of Loch Snizort is dominated by sediment habitats comprising varying levels of mud and sand[15]. There are some localised areas of rocky reef, particularly around the Ascrib islands in Loch Snizort, but there are also bedrock habitats present close to the north and south entrances to Uig Bay and close to the ferry terminal itself (Figure 3-5[16]). Thus, the Annex 1 habitats "H1160 - Large shallow inlets and bays" and "H1170 – Reefs" are present in this region though these specific locations in Uig Bay or Loch Snizort have not been designated as conservation areas.

Intertidal Habitats

The intertidal habitats in Uig Bay are largely mixed sediments with some rocky areas. Detailed intertidal habitat distribution data was unavailable but data collected during an ecological survey undertaken in May 2017 [17] confirms the presence of intertidal mixed sediments with fucoid algae along the shore of Uig Bay including in front of the current ferry assembly area. The presence of rock armour was also observed to occur in the upper intertidal of this area. The algal species present, as listed below, are typical of intertidal habitats in the UK.

- *Ascophylum nodosum*
- *Fucus vesculosis*
- *Pelvetia canaliculata*
- *Enteromorphia spp.*
- *Fucus spiralis*

No habitats of conservation importance have been identified to occur in the intertidal region of Uig Bay but specific data are limited.

Subtidal Habitats

Broadscale subtidal habitat data from EUSeaMap2 shown in Figure 3-5 indicates the majority of the seabed in Uig Bay and Loch Snizort comprises mud and mixed sediment habitats with varying proportions of mud, sand and gravel.

A subtidal sediment survey in Uig Bay, undertaken in December 2016 by the Harbour Master to determine sediment chemistry for the project, confirmed sediment habitats comprising mud, sand and gravel were found at all stations sampled.

The sub-tidal habitats within Loch Snizort and Uig Bay were mapped as part of the 1988 Skye Sealochs Marine Nature Conservation Review (MNCR)[18]. During this survey the Priority Marine Feature (PMF) habitats were reported. These are shown in Figure 3-6.

"Seapens and burrowing megafauna in circalittoral soft mud" and "Kelp and red seaweed on sublittoral sediments" were each observed at a single station in the middle of the bay. This is supported by the findings of localised camera surveys undertaken in support of planning applications for fish farms[19]. Burrowing megafauna (including *Nephrops norvegicus,* the Norway lobster) and several species of seapen (*Pennatula phosphorea*, *Virgularia mirabilis* and *Funiculina quadrangularis*)

[15] EUSeaMap2 September 2016 data: Broad Habitat – Broad scale predictive habitat map.
[16] Source: https://marinescotland.atkinsgeospatial.com/nmpi/
[17] Tyler, A. 2017. Uig Ferry Terminal Phase 1 Habitats and Otter Survey.
[18] Data available from: https://data.gov.uk/dataset/habitat-point-records-from-1991-mncr-loch-bracadale-skye-survey/resource/a1e2327f-347c-426e-8c39-7137d811ba76.
[19] See planning documents available at the following links: : http://wam.highland.gov.uk/wam/applicationDetails.do?activeTab=documents&keyVal=NVE1C5IH09A00 and http://wam.highland.gov.uk/wam/applicationDetails.do?activeTab=documents&keyVal=OQ7HWQIHLVB00

were observed in the soft sandy muds found at two fish farm locations, 1.4 and 4 km south of Uig Harbour. Thus, on the basis of the sediment types known to be present in the Bay and Loch this particular PMF may be widespread in this area.

'Northern seafan and sponge communities' and 'Maerl beds' were also observed but only close to the Ascrib islands, over 7 km away from the Proposed Development. As there is minimal presence of suitable rocky habitats in the rest of the Loch and Uig Bay these particular habitats are not anticipated to be common but may be present close to the mouth of Uig Bay.

Whilst the PMF data provides some useful information to describe some of the key marine features present within the vicinity of the Proposed Development, some of the data is almost 30 years old. Consequently, this data cannot wholly be relied upon to provide a detailed and accurate assessment of the habitats present in Uig Bay or the wider Loch Snizort.

3.8.2 Likely Significant Effects

The Proposed Development has the potential to affect intertidal and subtidal benthic habitats and species through the following impact pathways:

- **Intertidal benthic habitat loss**: The extension of the terminal marshalling area by land reclamation will involve the infilling of approximately 50,000 m^3 of infilling material with rock armour revetment in an area below Mean High Water Springs (MHWS). These works will result in the loss of an estimated 11,000 m^2 of intertidal habitat. However, the intertidal zone in this area does not include any habitats of conservation importance and represents a small proportion of the assumed similar habitat types present in the overall intertidal zone in Uig Bay. In this case no likely significant effects are anticipated.
- **Subtidal habitat loss**: Potential loss of benthic habitat as a result of smothering by sediment disposal from dredging.
- **Habitat disturbance from dredge spoil**: Dredging will result in a volume of approximately 22,000 m^3 of dredged material for disposal. Opening of a new disposal site in Loch Snizort has the potential to result in habitat disturbance or habitat loss in subtidal region and the extent of the impact will depend on the nature of the specific habitats at the selected disposal site.
- **Suspended sediment and changes to water quality**: Potential impacts to benthic habitats as a result of the dispersion of sediments and any associated contaminants as a result of bucket dredging and potential sediment disposal at sea.

3.8.3 Proposed Scope of Assessment

A detailed intertidal survey will be required to confirm the nature and distribution of the habitats present in Uig Bay and determine the presence or absence of any habitats of conservation concern or PMFs. Sediment dispersion modelling will be used to determine the detailed scope of the intertidal survey.

A site characterisation of the disposal site options will also be required in order to determine if significant effects are likely. Survey work involving a drop-down camera and/or grab sampling may be required as will liaison with Marine Scotland.

3.9 Fish and Shellfish Ecology

3.9.1 Baseline Conditions

There is limited information available on fish and shellfish ecology in Uig Bay and Loch Snizort. The River Snizort is a recognised salmon and trout fishing river so salmonids will be moving through the Loch during upstream migration between late June/early July and October. The migration route to the river is not likely to include fish movements through Uig Bay and so the abundance of these species in the near location of the works is expected to be low.

There is no commercial fisheries data for this area to indicate the fish community present in this area. However, species likely to be present, that are the subject of sea angling in areas such as the Isle of Skye, includes typical coastal species such as pollock, wrasse, flat fish, rays and dogfish.

A number of active and inactive aquaculture sites (finfish and shellfish farms) have been identified in Uig Bay and the surrounding area. It is understood that a finfish farm within Uig Bay may be operational in the near future. This is discussed further in section 3.19 Commercial Fisheries.

Fisheries sensitivity data[20], updated in 2014[21], show that most important commercial fish species spawn to the north and/or west of Loch Snizort. However, the spawning area of whiting, sand eel, sprat and *Nephrops* does include the northern waters of the Isle of Skye indicating there is potential for these species to be present in the project area at key life stages. The wider region, that includes Loch Snizort, also provides nursery habitat for herring, cod, sand eel and nephrops.

Fish have been grouped into three categories of sensitivity to underwater sound:

- Low sensitivity - fishes with no swim bladder or other gas chamber (e.g., elasmobranchs and flatfish). These species are less susceptible to barotrauma and only detect particle motion, not sound pressure. However, some barotrauma may result from exposure to sound pressure.
- Moderate sensitivity - fishes with swim bladders in which hearing does not involve the swim bladder or other gas volume (e.g., Atlantic salmon). These species are susceptible to barotrauma although hearing only involves particle motion, not sound pressure.
- High sensitivity - fishes in which hearing involves a swim bladder or other gas volume (e.g.,Atlantic cod, herring and relatives, Otophysi). These species are susceptible to barotrauma and detect sound pressure as well as particle motion.

On the basis of available data there may be highly sound sensitive fish present in the project vicinity, in particular herring and cod, but there is no data to indicate how abundant these species are in Loch Snizort or Uig Bay. In addition moderately sensitive salmon will be migrating in the vicinity of the project during late summer and autumn months.

Basking sharks are known to be common in the waters around the Inner Hebrides. However, data presented in support of the Sea of the Hebrides proposed MPA indicates that abundance in the inner reaches of Loch Snizort, near Uig, is very low (<0.1 km^2 for the period 2000-2012)[22]. According to data accessed via Marine Scotland's National Marine Plan Interactive, there have been several basking shark sightings in Uig Bay so they may occur in very low numbers in the vicinity of project activities.

Fishing effort in the waters of Loch Snizort were rated at a score of 2 out of 5 in the 1998 fisheries sensitivity analysis indicating the abundance of fish in this region is not high and modelled data analysing identify the probability of presence of high abundances of 0-group fish (fish in the first year of their life) that are sensitive to sound is a maximum of 33%[23].

[20] Coull, K.A., Johnstone, R., and Rogers, S.I. (1998). Fisheries Sensitivity Maps in British Waters. Published and distributed by UKOOA Ltd., Aberdeen, 58 pp.
[21] 2014 update to Coull et al., (1998) data available from: https://marinescotland.atkinsgeospatial.com/nmpi/
[22] SNH, 2014. Scottish MPA Project. Data confidence assessment for SEA OF THE HEBRIDES MPA PROPOSAL. Available from: http://www.snh.gov.uk/docs/A1351902.pdf
[23] 2014 update to Coull et al., (1998) data available from: https://marinescotland.atkinsgeospatial.com/nmpi/

The Fisheries Sensitivity layers have been generated to in Scottish waters. 13 species are covered by these layers.

The shellfish ecology of the area is unknown although Loch Snizort has been designated as an area of Shellfish Growing Waters (SGW) since 2000. This was for the production of the common periwinkle (*Littorina littorea*) and the common cockles (*Cerastoderma edule*). There are also mussels present in Uig Bay (a SEPA sampling point at NG 39209 63623). *Nephrops* (langoustine), crabs and scallops that were reported to be landed into Uig in 2015 may also be present.

3.9.2 Likely Significant Effects

The key impact pathways relating to fish and shellfish ecology are as follows:

- **Underwater sound**: Potential effects from the terminal works that may impact fish are in relation to underwater sound resulting from impact piling. Pile driving activities are of particular concern as they generate very high sound pressure levels and are relatively broad-band in frequency (20 Hz to >20 kHz) (Nedwell and Howell, 2004[24]). Thus, underwater sound resulting from impact piling at the ferry terminal has the potential to injure or disturb any fish in the vicinity of the works. However, any injury in fish from pile driving is only likely to occur in very close proximity to the works[25] and since a soft-start will be employed before the commencement of any piling any fish in the area are able to move away. Thus, injury from underwater sound is unlikely.

  However, some disturbance of fish is possible in response to underwater sound. Herring and cod, species with high sensitivity, may be present at some times of the year and at key life stages and salmon will be undertaking seasonal migrations through Loch Snizort. The significance of such behavioural responses will be determined by the size and type of piles, the nature of the seabed where the piles will be located and the duration and timing of the piling. However, the abundance of these species is not anticipated to be high.

- **Suspended sediment and changes to water quality**: Potential impacts to fish and shellfish as a result of the dispersal of sediments and any associated contaminants as a result of bucket dredging and potential sediment disposal at sea.

3.9.3 Proposed Scope of Assessment

Underwater sound propagation calculations will be undertaken to determine the distance at which underwater sound, at levels that may cause disturbance, will propagate into the water column. The noise level (SL) arising from piling activities is partly related to the size of the pile involved with larger piles generating greater noise levels and can be described by the following model developed by the Environment Agency [26]:

SL = 10.973 Ln(PD) + 234.74

Where

- SL is the Source Level expressed as unweighted peak-to-peak SL in dB re 1 µPa m; and
- PD is the pile diameter in metres.

The sound propagation calculations will be used to determine the level of disturbance in fish species for the impact assessment.

[24] Nedwell J and Howell D, 2004. A review of offshore windfarm related underwater noise sources. Report No. 544 R 0308. Report commissioned by COWRIE.
[25] Popper et al., 2014. Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report prepared by ANSI-Accredited Standards Committee S3/SC1 and registered with ANSI. Springer and ASA Press, Cham, Switzerland.
[26] Presented at the Institute of Fisheries Management Conference on 23 May 2013

Sediment dispersion modelling, together with analysis of sediment samples from the dredging location will be used to determine the impact of any water quality changes on fish and shellfish in the project zone of influence.

3.10 Marine Mammals

3.10.1 Baseline Conditions

The Inner Hebrides, including the Isle of Skye, are known to support a number of marine mammal species designated under Annex II of the EC Habitats Directive. These include the harbour porpoise, dolphins and whales. The area is also important for seals, protected under The Marine (Scotland) Act 2010 which replaced the Conservation of Seals Act 1970. The distribution and abundance of these species is detailed below:

Cetaceans

The most important cetacean species around Uig and Loch Snizort is the harbour porpoise (Phocoena phocoena) as recognised by the Inner Hebrides and Minches SAC which encompasses the islands of Skye, Mull, Lismore, the group of small islands within the Firth of Lorn, and Colonsay . The SAC comprises an area of 13,539.77 km^2 and the site supports approximately 31.4% of the harbour porpoise population present within the UK's part of the West Scotland management unit[27]. The density of harbour porpoises was highest, at 1.071 animals per km^2, in the Inner Hebrides which includes the southern region of the Isle of Skye. For the sea areas in the north of Skye, including Loch Snizort, the density of harbour porpoise was found to be lower[28], at 0.394 animals per km^2. Although the SAC has been identified using and in the area around the west of Skye (which includes Loch Snizort) was using summer modelled data, harbour porpoise are present throughout the year and thus the designation applies year round.

Small numbers of bottlenose dolphin, at an estimated density of 0.008 animals per km^2, have been observed around the Isle of Skye including waters in the north of the island. Some sightings of minke and killer whale have also been made in the Inner Hebrides but none have been found for the waters of Loch Snizort or the waters of the north of Skye.

Seals

There are no designated seal haul out sites in very close proximity to Uig though the Ascrib, Isay and Dunvegan SAC, designated specifically for the presence of the harbour seal, is approximately 7 km from the mouth of Uig Bay. There is also a grey seal pupping site on the Ascrib Islands though this is on the western coast of the island and will not be subject to underwater sound from the project activities. The Sea Mammal Research Unit compiled a 12-year data set demonstrating consistent use of the site by around 600 common seals, equating to around 2% of the UK population. There was no specific information found in relation to the presence of seals in Uig Bay and whilst this area is not important for breeding or hauling out it is expected that seals may utilise this area, along with the wider Loch Snizort, for feeding.

3.10.2 Likely Significant Effects

- **Underwater sound**: Potential effects from the terminal works that may impact marine mammals are related to the production of underwater sound from impact piling. This has the potential to injure or disturb any marine mammals present in the vicinity of the works. However, auditory injury to marine mammals is only likely to occur at very close proximity, probably within metres, of the piling activity. As the project will adopt a Marine Mammal Observer and a soft-start prior to any impact piling activities no injury is likely to occur to any marine mammals as a result of the project.

  Behavioural disturbance, however, is possible and the level of impact will depend on the sound source level, the duration of piling and the size of the piles. Recent evidence indicates that disturbance of seals occurred up to 25 km away from impact piling at an offshore windfarm but the recovery time found for seals was within 2 hours after piling ceased. However, differences in pile characteristics, and the effects of bathymetry on sound propagation, means that the displacement distances can vary significantly between sites

[27] Clark, J., Dolman, S.J. & Hoyt, E. (2010). Towards marine protected areas for Cetaceans in Scotland, England and Wales: A scientific review identifying critical habitat with key recommendations. Whale and Dolphin Conservation Society, UK.
[28] SCANS II data and reports available from: http://biology.st-andrews.ac.uk/scans2/inner-finalReport.html.

(Madsen et al. 2006[29]). In Uig, the location of the impact piling is expected to limit the propagation of sound towards the seal haul-out locations on the Ascrib Island.

Impact piling is expected to be of short duration and the presence of marine mammals is expected to be low so that no likely significant effects are anticipated. However, sound propagation calculations will be required to test this assumption.

- **Suspended sediment and changes to water quality**: Potential impacts to marine mammals, as a result of the dispersal of sediments and any associated contaminants as a result of bucket dredging and potential sediment disposal at sea, are considered unlikely. Marine mammals are highly mobile and expected to move away from any localised areas where water quality has changed. Therefore, it is considered this impact can be scoped out of the EIA.

3.10.3 Proposed Scope of Assessment

An impact assessment, in relation to the sound produced by impact piling, will be undertaken as described in the section for fish to determine the extent of behavioural impacts on marine mammals.

[29] Madsen, P.T., Wahlberg, M., Tougaard, J., Lucke, K. & Tyack, P. (2006). Wind turbine underwater noise and marine mammals: implications of current knowledge and data needs. Marine Ecology Progress Series, 309, 279–295.

3.11 Ornithology

3.11.1 Baseline Conditions

A desk study was carried out to identify potential breeding and wintering bird species which may utilise Uig Harbour and the surrounding habitats. This included a review of the following data sources for records of bird species:

- British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS);
- BTO Breeding Bird Atlas;
- Joint Nature Conservation Committee (JNCC) Seabirds at Sea and European Seabirds at Sea database;
- data collected for the Shiant Isles Seabird Recovery project; and,
- data obtained during surveys carried out for the proposal to designate the Inner Hebrides and the Minches candidate Special Area of Conservation (cSAC).

In addition, a single walkover survey of the existing ferry terminal plus a 250 m buffer was carried out in May 2017 to record all of the birds present and, where possible, to estimate the locations of breeding territories. The breeding bird field visit included a night-time survey for corncrake *Crex crex*.

Full details of the results of the ornithology desk study and site survey are provided in Tyler (2017b)[30] in Appendix D. No data were available on seabirds in Uig Bay from the Shiant Isles Seabird Recovery Project or from the surveys of the Inner Hebrides and the Minches SAC. The only WeBS data were from a single count made over ten years ago and due to their age have not been considered. The Royal Society for the Protection of Birds (RSPB) holds records of corncrake breeding in the area around Uig and there is tall, unmanaged vegetation suitable for breeding by this species present in the town. However, no corncrakes were encountered during the survey completed in May 2017 for the Proposed Development.

The existing pier was assessed for its suitability to support nesting black guillemot *Cepphus grille*, but it was determined that the structure was not suitable for this species.

The only bird species identified during the walkover which were considered to be breeding in proximity to the ferry terminal were house sparrow *Passer domesticus* (it was estimated that two pairs were breeding under the eaves of the filling station adjacent to the ferry terminal), starling *Sturnus vulgaris* (at least four pairs were believed to be nesting in the roof area of the ferry terminal building), sedge warbler *Acrocephalus schoenobaenus* (one territory was identified in the shrub vegetation between the road and the shore to the west of the ferry terminal) and wren *Troglodytes troglodytes* (one territory was identified in shrubs near to the existing terminal car park). Other birds recorded but which did not show signs of breeding behaviour included pied wagtail *Motacilla alba*, swallow *Hirundo rustica*, herring gull *Larus argentatus* and eider *Somateria mollissima*. All of the aforementioned species are common and widespread both on Skye and the wider Highland region.

As the only field survey was carried out during the breeding season and the desktop study provided no results for Uig Bay, there is currently no information about the use of the area around the harbour by shore- and seabird species during the migratory and/or winter periods. The intertidal and marine zones may be used by such species for foraging and/or roosting during the non-breeding season (which is generally taken to be September to March, inclusive).

3.11.2 Likely Significant Effects

There is the potential for the loss of a small amount of habitat which is used by breeding birds and/or for disturbance to be caused to breeding birds around the ferry terminal. However, for the following reasons, these effects are not considered likely to be significant:

[30] Tyler A (2017b), Uig Ferry Terminal Ornithological Survey.

- the areas of habitat to be lost, and the numbers of birds which will thus be able to utilise them, are small;
- none of the species recorded are considered to be particularly susceptible to human disturbance and the zone of influence over which works may affect these species is therefore likely to be small;
- there is extensive suitable nesting habitat of similar or higher quality in the nearby area to which any displaced birds can move; and,
- the species present are all common and widespread and any loss of breeding territories will not significantly affect the conservation status of these species, either locally or within the wider Highland region.

The sole exception to the above is corncrake, which as a bird listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), receives special legal protection from disturbance and is of high conservation concern. Records of breeding by corncrake in Uig exist and it has been assessed that there is suitable habitat for nesting by this species, including immediately to the north-west of the existing ticket office where it is proposed that the temporary compound will be established. It is therefore possible that the Proposed Development could result in the loss of corncrake breeding habitat and/or that increased levels of human activity associated with the works could cause disturbance to nearby breeding corncrake. Therefore, to reduce the risk of corncrake breeding in the vicinity of the site, any areas of suitable nesting habitat will be removed (e.g. by strimming) prior to the commencement of the breeding season. By implementing this measure, it is not predicted that there will be any significant effects on corncrake as a result of the Proposed Development.

No information is currently available on the use of Uig Bay by wintering birds. However, it is possible that the works proposed to take place in the intertidal and marine zones could cause disturbance to a range of waterbird species that may prevent them from roosting and/or foraging.

3.11.3 Proposed Scope of Assessment

As the habitats present at and in the immediate vicinity of the ferry terminal are of low value to most breeding birds, and with only common and widespread species recorded during the survey visit completed in May 2017, it is proposed to scope out breeding birds from the EIA. Instead, generic mitigation will be incorporated into the Proposed Development to minimise the risk to breeding birds. This would be included in a Breeding Bird Protection Plan and may include timing works to take place outside of the bird breeding season or ensuring that pre-works checks for breeding birds are completed and that suitable exclusion zones are established around any active nest sites which are found.

To ensure that due care is taken with respect to corncrake, targeted surveys will also be carried out for this species. These will follow the methods described in Gilbert et al (1998), [31]with at least two surveys carried out between May and June 2018. Where corncrakes are identified as being present, a suitable works exclusion zone, to be agreed with SNH, will be implemented.

It is proposed that impacts on wintering birds will be assessed as part of the EIA for the Uig Harbour Redevelopment. Surveys will therefore commence in September 2017 and will continue until and including December 2017. As the EIA is to be submitted in early-2018, it will not be possible to continue surveys for the remainder of the wintering period. However, it is expected that the data collected will provide sufficient information on the assemblage of species within Uig Bay and the numbers of birds which utilise the area during the winter months to conduct an Ecological Impact Assessment (EcIA). An adapted version of the methods described in Bibby et al (2000) for counting flocking and migrating birds will be used to survey the entirety of Uig Bay. Subject to safe access, surveyors will walk from the point at Ru Idrigill, to the west of Uig, round the Bay as far as Rubha Riadhain. All waterbirds encountered during this walkover will be counted and mapped, highlighting any areas which are of apparent importance for roosting or foraging. Regular stops will be made at suitable vantage point locations to scan the sea and shoreline to ensure that all birds are recorded.

[31] Gilbert G, Gibbons D.W and Evans J (1998), Bird Monitoring Methods: a manual of techniques for key UK species, the Royal Society for the Protection of Birds, Sandy.

One survey will be completed each month, with alternating visits completed around high tide (i.e. during the period of two hours either side of high tide) and around low tide (i.e. during the same period around low tide). Should it take more than four hours to complete the survey, then two surveyors will be employed, walking from opposite ends of the survey area, to ensure that the entire area is covered around the times of high and low tide. Surveyors will maintain contact to avoid double counting.

Impact assessment will follow the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016)[32].

[32] CIEEM (2016), Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition, Chartered Institute of Ecology and Environmental Management, Winchester.

3.12 Socio-Economics & Public Access

3.12.1 Baseline Conditions

Local Economy and Tourism

The Proposed Development is located in Uig Village. The population of Uig comprises approximately 300-400 residents and the primary sources of income for the local community are fishing, crofting (usually part-time), tourism and the ferry. Several crofting townships including Cuil, Rha and Idrgill are located around Uig Bay.

A number of local businesses have been identified in the immediate vicinity (within 250 m) of The Proposed Development including:

- The Uig Pottery;
- Uig Filling Station, Shop and Takeaway;
- The Isle of Skye Brewing;
- Orasay B&B, Caravans & Tearoom;
- Uig Campsite; and
- Bakur Bar.

A number of guesthouses and hotels are also located around Uig Bay and two tour companies ('Go to St Kilda' and 'SkyeXplorer') provide boat trips in the surrounding area from Uig Harbour.

Public Access

The onshore footprint of the Proposed Development is limited to the existing pier, ticket office and marshalling area, and a section of land immediately to the north west of the existing ticket office for the construction compound. The A87 provides access to the pier and the surrounding businesses and cuts across the Proposed Development.

The existing ferry service running from Uig Harbour provides lifeline services to communities living on the Western Isles through Tarbert and Lochmaddy. However, the islands can also be accessed by ferry via Stornoway and Loichboisdale.

3.12.2 Likely Significant Effects

Local Economy and Tourism

There is the potential for temporary loss of business for local businesses around Uig Harbour, particularly Uig Campsite and Orasay B&B and Caravans, during construction of the Proposed Development due to reduced traffic flow and increased disturbance. However, there is the potential for increased business in the longer term with the greater capacity of the new vessel and the upgraded services which could result in higher traffic volumes passing through Uig Harbour during the operation of the Proposed Development.

Construction workers may generate some business for the local shop and eateries.

Public Access

The ferry service will continue to run throughout construction but will likely be limited to a passenger service during linkspan replacement works. Construction may therefore result in limited access for short periods of time. However, access will likely improve during operation with the increased capacity of the vessel and improved facilities.

3.12.3 Proposed Scope of Assessment

It is proposed to undertake a desk-based assessment to identify all the socio-economic receptors in the surrounding area and how these might be affected by the Proposed Development.

3.13 Seascape, Landscape and Visual Effects

3.13.1 Baseline Conditions

The proposed works associated with the Proposed Development are concentrated around the existing harbour and pier. The village of Uig lies at the head of the sheltered inlet of Uig Bay on the west coast of the Trotternish peninsula on the Isle of Skye which lies outwith the Trotternish National Scenic Area at the peninsula's northeastern end. The area is, however, designated by a regional landscape designation (Trotternish and Tianavaig Special Landscape Area) which takes in the coast of northwest and southeast Trottenish. Uig Harbour, from which the ferry to the Western Isles leaves, contrasts with the remote interior defined by the elevated spine of the Trotternish ridge.

Uig is a linear crofting community surrounded by stepped moorland with open views extending across Uig Bay. It is also a harbour settlement, dominated by the coastal edge dividing the land and sea with a concentration of activity focussed around the pier and harbour buildings and the ferry terminal. It is already characterised by through traffic and intermittent activity associated with ferry traffic. The existing pier, area of hard standing and the harbour buildings associated with the ferry terminal are larger scale than surrounding residences and create a visual focus and prominent features within the landscape and in views along the coast. The pier already appears as a noticeable feature in views, extending out into Uig Bay when viewed from across the bay, along the coast and from more elevated viewpoints within the surrounding rising moorland.

3.13.2 Likely Significant Effects

The works associated with the Proposed Development are not considered to result in significant effects on the landscape or seascape resource or the visual amenity of local residents and visitors to the area. The works associated with the Proposed Development would be most apparent during the construction phase, however, this would be for a relatively short period of time and would be temporary. The permanent structures would be of a similar scale to the existing facilities and would be seen as an extension to the existing harbour infrastructure in Uig.

3.13.3 Proposed Scope of Assessment

Given that there are unlikely to be any significant impacts, it is proposed to scope out Landscape, Seascape and Visual Effects from the EIA.

3.14 Traffic & Transport

3.14.1 Baseline Conditions

Access to Uig Harbour is from the A87 trunk road (T) which falls within the jurisdiction of Transport Scotland. The A87 (T) serves as a strategic route connecting Uig Harbour to Portree, Kyle of Lochalsh and Invergarry. Local roads connect to the A87 (T) for localised access. The A87 (T) is a two-way single carriageway of approximate 7.3 m width with provision of footways, dedicated crossings, bus stops and street lighting intermittently provided along its length.

It is considered that the A87 (T) is a receptor of High Sensitivity based on its regional context.

Baseline traffic flow information for the A87 (T), on the Isle of Skye, has been extracted from Department for Transport (DfT) Counters. These are shown in Table 3-4. The locations of the DfT Counters are shown in Figure 3-7.

Table 3-4 Existing DfT Traffic Flow Information for A87 (T) on the Isle of Skye

DfT Counter Reference	Average Annual Daily Traffic (AADT)	Heavy Goods Vehicles (HGVs)
1133	1,334	42
50924	1,468	60
30944	3,465	112
1131	3,586	207
50928	2,037	115
20940	3,330	184
80387	5,679	257
10943	3,934	186

N.B. all counter information dates from 2016

Source: DfT Counters

Figure 3-7 A87 (T) DfT Traffic Counter Locations and 2016 AADT Flows

3.14.2 Likely Significant Effects

The Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1994) serves as the basis for assessing transportation

considerations of EIAs. These Guidelines identify changes in traffic in excess of 30%, 60% and 90% as constituting “slight,” “moderate” and “substantial” impacts respectively. Any traffic changes below 30% are considered to be “negligible” or have “no impact.” These traffic change definitions are considered in this scoping assessment.

Operational

There are two existing ferry routes from Uig Harbour to Lochmaddy on North Uist and to Tarbert on Harris. Using the existing ferry timetable information provided in Appendix E and the capacity of the existing vessel (number of vehicles), Table 3-5 identifies the existing ferry related vehicular trip generation to and from the Harbour. This assumes a worst case scenario whereby every single vessel is 100% full.

Table 3-5 Uig Harbour Existing Ferry Vehicle Trip Generation

Day	Arrivals		Departures		Total	
	Number of Ferries	Vehicular Trip Generation*	Number of Ferries	Vehicular Trip Generation*	Number of Ferries	Vehicular Trip Generation*
Monday	3	270	4	**360**	7	630
Tuesday	3	270	3	270	6	540
Wednesday	3	270	3	270	6	540
Thursday	3	270	3	270	6	540
Friday	**4**	**360**	**4**	**360**	**8**	**720**
Saturday	4	360	3	270	7	630
Sunday	3	270	3	270	6	540

*This assumes that every vessel is 100% full with all 90 spaces occupied (capacity of existing vessel)

Table 3-5 suggests that the busiest day of the week during the peak summer period is on a Friday when there are four arriving and four departing ferries. Assuming all of these ferries are fully occupied, this equates to a worst case total vehicular trip generation of 720 vehicles across the day.

It is intended that the Proposed Development would facilitate larger vessels to serve the Harbour. It is anticipated that these larger vessels would be able to accommodate 130 vehicles as opposed to the current provision of 90 vehicles. Assuming there would be no changes to existing ferry frequencies, Table 3-6 summarises the resulting additional vehicular trip generation as a result of the proposed larger capacity vessels.

Table 3-6 Proposed Development Ferry Vehicle Trip Generation

Time Period	Arrivals			Departures			Total		
	Number of Ferries	Vehicular Trip Generation*	Additional Vehicles	Number of Ferries	Vehicular Trip Generation*	Additional Vehicles	Number of Ferries	Vehicular Trip Generation*	Additional Vehicles
Worst Case Weekday	4	520	160	4	520	160	8	1040	320

*This assumes that every vessel is 100% full with 130 spaces occupied.

Table 3-6 suggests that there would be a worst case daily uplift of 320 vehicles using Uig Harbour compared to the existing situation as a result of the larger capacity vessels.

The magnitude of impact associated with the change in traffic has been quantified and is shown within Table 3-7. It has been presumed that 100% of traffic would route to and from Uig Harbour via the A87 (T) towards the Skye Bridge to provide for a more robust assessment.

Table 3-7 Proposed Development Magnitude of Impact (Change in Traffic) - Operation

DfT Counter Reference	Average Annual Daily Traffic (AADT)	Additional Daily Vehicles	% Impact Uplift
1133	1,334	320	24%
50924	1,468	320	22%
30944	3,465	320	9%
1131	3,586	320	9%
50928	2,037	320	16%
20940	3,330	320	10%
80387	5,679	320	6%
10943	3,934	320	8%

The data suggests that the Proposed Development would result in a worst case scenario of a 24% uplift in base traffic on the immediate approach to Uig Harbour. This impact sustains until after the junction between the A87 (T) and the A850 where it notably reduces to 9%.

Combining the High Sensitivity of the receptor (A87 (T)) with the magnitude of the impact (less than 30%) results in “slight” significance and thus as per the IEMA Guidelines and DMRB does not warrant further consideration. It is therefore proposed that operational transport related impacts are scoped out of the EIA.

Construction

The average volume of daily construction traffic associated with the Proposed Development has been estimated as 40 two-way vehicles. The resultant magnitude of impact on the A87 (T) is shown in Table 3-8. It has been presumed that 100% of construction traffic would route to and from the Harbour via the A87 towards the Skye Bridge to provide for a more robust assessment.

Table 3-8 Proposed Development Magnitude of Impact (Change in Traffic) - Construction

DfT Counter Reference	Average Annual Daily Traffic (AADT)	Daily Construction Vehicles	% Impact Uplift
1133	1,334	40	3%
50924	1,468	40	3%
30944	3,465	40	1%
1131	3,586	40	1%
50928	2,037	40	2%
20940	3,330	40	1%
80387	5,679	40	1%
10943	3,934	40	1%

Combining the High Sensitivity of the receptor (A87 (T)) with the magnitude of the impact (less than 30%) results in “slight” significance and thus as per the IEMA Guidelines and DMRB does not warrant further consideration, it is therefore proposed that construction related traffic impacts are scoped out of the EIA.

The Proposed Development is not predicted to result in significant effects as a result of construction or operational traffic flows.

3.14.3 Proposed Scope of Assessment

It is envisaged that there would not be any transport and traffic impacts classified as being “significant” both during the operational and construction phase of the Proposed Development and therefore the production of an EIA would not be warranted (in respect of Traffic and Transport).

3.15 Air Quality

3.15.1 Baseline Conditions

There are no known Air Quality Management Areas or sensitive receptors to air quality in the vicinity of the Proposed Development. Local air quality is expected to be good due to the area's coastal setting with high levels of wind dispersal and a lack of significant sources of emissions.

3.15.2 Likely Significant Effects

The total traffic flow and the increases predicted due to the Proposed Development are considered unlikely to exceed the threshold criteria published in best-practice guidance[33] to indicate that a potentially significant local air quality effect may occur. Therefore, the local air quality effects due to road vehicle emissions have been scoped out from further assessment.

The proposed LNG bunkering system is not anticipated to lead to any local air quality concerns, and has been scoped out from any further assessment.

Some construction phase effects may occur due to emissions of dust and construction vehicle emissions. However, this phase of the Proposed Development will be temporary, and implementing measures to control emissions through the environmental management plan will ensure that effects are not significant.

All plant and vehicles will meet good industry standards and will be powered off when not in use to minimise emissions. During dry conditions water will be used for dust suppression. Storage of materials will be enclosed and / or covered with dust sheets and all HGV's delivering loose material to the site compound will be fitted with suitable sheeting. Daily inspections of the site and surrounding areas will be undertaken to ensure that accumulations of dust and mud are removed as soon as possible. Mitigation measures will also include the use of wheel-wash facilities and the implementation of speed restrictions. There will be a designated site contact person to handle any complaints regarding construction dust.

3.15.3 Proposed Scope of Assessment

Given that no significant effects are anticipated on Air Quality, it is proposed to scope it out of the EIA. The dust and emissions mitigation controls will be detailed in a CEMP in accordance with the IAQM (2014) guidance 'Guidance on the assessment of dust from demolition and construction' prior to the commencement of construction.

[33] EPUK/IAQM guidance(2017) 'Land-Use Planning & Development Control: Planning For Air Quality'

3.16 Greenhouse Gas Assessment

3.16.1 Baseline Conditions

Current sources of greenhouse gas emissions in Uig Harbour are likely limited to the existing ferry service and local traffic using the service and the surrounding road network.

3.16.2 Likely Significant Effects

Likely significant impacts on global greenhouse gas (GHG) concentrations from the entire lifetime of the Proposed Development are not anticipated. The new ferry is expected to have lower emissions than the current ferry due to newer and more efficient technology such as dual fuel. At present, the ferry timetable and number of vessel movements is not expected to change. There will be GHG emissions associated with the construction of the Proposed Development (e.g. construction traffic and production of the construction material) but these will be limited to the construction phase and, given the scale of the works, these are not anticipated to be significant.

3.16.3 Proposed Scope of Assessment

Given that likely significant effects on greenhouse gas emissions are not anticipated it is proposed to scope the Greenhouse Gas Assessment out of the EIA.

3.17 Terrestrial Noise & Vibration

3.17.1 Baseline Conditions

The study area for this assessment encompasses any areas where construction works are to be undertaken and extends to the closest noise and vibration sensitive receptors to these works. Additionally, the study area includes representative receptors in proximity to the routes that will be used by road vehicles travelling to or from the site during the construction and operation of the Proposed Development.

The closest terrestrial noise sensitive receptors to the proposed works are residential properties approximately 80 m to the west of the pier, including:

- The Haven;
- Fuaim na Mara; and
- Orasay

Publically available data, such as satellite imagery, has been used to examine the location of the Proposed Development and the surrounding area. There are no obvious significant sources of sound in the locality, with the exception of the road traffic on the A87, and boat movements in the harbour itself. The site is a relatively rural location and the baseline sound levels are anticipated to be relatively low.

3.17.2 Likely Significant Effects

The potential for significant effects to occur as a result of noise and vibration impacts on nearby onshore sensitive receptors will be considered. Possible impacts from the Proposed Development include:

- Noise and vibration emissions from construction and demolition plant;
- Operational noise emissions from the new boats; and
- Changes in road traffic noise levels on the surrounding roads, due to vehicles associated with the operation of the Proposed Development.

Consultation

The Environmental Health Department of Highland Council has been consulted in order to discuss the potential noise and vibration impacts from the Proposed Development. The assessment methodology below was agreed by phone call[34] and in a subsequent e-mail the Highland Council document Construction Noise Limits was provided. The e-mail stated that “a construction noise assessment will be required in the following circumstances: -

- Where it is proposed to undertake work, which is audible at the site boundary, out with the hours Mon-Fri 8am to 7pm; Sat 8am to 1pm

OR

- Where noise levels during the above periods are likely to exceed 75dB(A) for short term works or 55dB(A) for long term works (Generally, long term work is taken to be more than 6 months). Both measurements to be taken as a 1hr LAeq at the curtilage of any noise sensitive receptor.

[34] Telephone conversation on 29th June 2017 between Tim Britton, Principal Acoustic Consultant, AECOM and Robin Fraser, Environmental Health Officer at Highland Council

If an assessment is submitted, it should be carried out in accordance with BS 5228-1:2009 "Code of practice for noise and vibration control on construction and open sites – Part 1: Noise"[35]. Details of any mitigation measures should be provided including proposed hours of operation."

The duration of the construction works are anticipated to exceed 6 months, and are anticipated to involve piling along with earthworks and other noise generating activities. It is therefore clear that an assessment is required.

The potential for operational noise impacts from the development to occur was also discussed. It was agreed that an assessment would only be required if additional boat movements are anticipated during the night-time, or significant increases in ferry movements are proposed.

3.17.3 Proposed Scope of Assessment

Construction Noise and Vibration Emissions

In order to assess the impact of the construction noise emissions on human receptors, the guidance in British Standard 5228: 2009+A1:2014 'Noise and Vibration Control on Construction and Open Sites' will be used. BS 5228 includes the following:

- Guidance on the potential impacts of construction and demolition noise and vibration;
- Discussion of the legislative framework;
- Prediction assessment methodology;
- General best practice control measures; and
- Example criteria that may be used to assess the resulting impact significance of construction and demolition noise and vibration.

Potential noise impacts will be assessed using the "ABC method" in Annex E of the standard. This identifies thresholds above which potentially significant effects occur, depending on the baseline sound levels. Given the location of the Proposed Development, it is considered likely that the current baseline sound levels will be below the lowest threshold level in the standard. Hence it is not necessary to establish the actual baseline sound levels at the receptors to determine the potential impacts. Estimated vibration levels will be assessed against the guidance in BS 5228-2 to identify the potential for significant effects to occur on people and buildings.

Construction noise and vibration impacts upon sensitive ecological receptors will be assessed elsewhere in the EIA. For non-marine receptors, this may require use of the results of the construction noise predictions.

Road Traffic Noise

The methodology in Calculation of Road Traffic Noise (CRTN) will be used to predict the likely changes in road traffic noise levels on the nearby road network as a result of the operation of the Proposed Development. The Highways England 'Design Manual for Road and Bridges Volume 11 Section 3 Part 7 - Traffic Noise and Vibration' (DMRB)[36] will be used to assess the potential noise impacts.

Construction road traffic is not expected to result in significant effects on noise and is therefore proposed to be scoped out of the EIA.

Operational Noise

It is understood that the ferry timetable is not anticipated to change as a result of the Proposed Development. Hence, significant impacts are highly unlikely and operational noise impacts have been scoped out of the EIA.

[35] BSi, BS 5228: 2009+A1:2014. 'Code of Practice for Noise and Vibration on Construction and Open Sites, Part 1: Noise'.
[36] Highways Agency (2011). 'Design Manual for Road and Bridges Volume 11 Section 3 Part 7-Traffic Noise and Vibration'.

3.18 Commercial & Recreational Navigation

3.18.1 Baseline Conditions

The Highlands Council are the statutory harbour authority (SHA) for Uig Harbour. An SHA administers the majority of port operations. Every SHA is self-governed, with specific legislation (normally Acts of Parliament) creating the SHA as an entity, with further powers and amendments made over time in response to the changing scope and remit of the SHA. Underpinning the powers of an SHA is a range of national legislation which places statutory responsibility on the Harbour Authority to ensure navigation and safety within the harbour limits; this includes the 'Harbours, Docks and Piers Clauses Act 1847' and the 'Harbours Act 1964'. Under such legislation, the Harbour Master may issue general or specific directions to control movements of vessels within their SHA in order to ensure safety.

For the purposes of the EIA the study area will encompass Uig Bay with the limit comprising a straight line joining Ru Idrigill and Ru Chorachan.

The main user of Uig Harbour is the ferry service operated by CFL, the ferry operates at a frequency of circa 200 sailings per month and operates between Uig, Lochmaddy and Tarbert. A range of fishing activities in the area means that Uig Harbour is regularly used by vessels associated with this industry. These vessels are likely to include maintenance vessels for aquaculture in the area as well as commercial and recreational fishing vessels that use the harbour to land their catch.

The closest Royal Yachting Association (RYA) affiliated clubs are based at Portree on the eastern coast of the Isle of Skye and at Lochmaddy in the Western Isles. There is an anchorage area for recreational vessels at the north side of the pier in Uig Harbour. There are also a limited number of tourist vessels that operate out of Uig Harbour.

3.18.2 Likely Significant Effects

The key impact pathways relating to commercial and recreational navigation include:

- Dredger accident or incident during dredging (capital and maintenance);
- Dredger accident or incident whilst on passage between Uig and the disposal site (capital and maintenance);
- Accident or incident involving construction craft;
- Displacement of vessels; and
- Water quality impacts from pollutants resulting from accidents, incidents or spillages.

The ferry operation and routeing remains unchanged as a result of the Proposed Development and as such any potential pathways directly associated with the operation of the ferries has been scoped out of requiring any further assessment.

3.18.3 Proposed Scope of Assessment

This section sets out the key elements of work which will be required as part of the EIA.

Key information on navigation within the study area will be collected from public domain datasets e.g. Department for Transport (DfT) shipping and port statistics and the most recently released Maritime and Coastguard Agency (MCA) Automatic Identification System (AIS) data. This will identify:

- Vessel transit tracks and intensity of sea area usage;
- Vessel type; and
- Vessel voyage information (including port of origin and destination).

Further relevant information sources include:

- Royal Yachting Association indicative cruising routes and sailing areas;
- Data from the Marine Accident Investigation Branch (MAIB) on reportable ship incidents; and
- Royal National Lifeboat Institute (RNLI) incident response data.

A desk based assessment of the effects of dredging (and disposal) and the associated construction works on commercial and recreational navigational receptors will be carried out on the basis of this information. The following guidance will be used in undertaking the assessments:

- MCA Marine Guidance Note 543 and the MCA's 'Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI)' [37];
- DfT / MCA Port Marine Safety Code[38]; and supplemented by
- International Maritime Organization (IMO) Revised Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule making process[39].

[37] DfT/MCA, 2013. Methodology for Assessing the Marine Navigational Safety and Emergency Response Risks of Offshore Renewable Energy Installations (OREI). Department for Transport / Maritime and Coastguard Agency.
[38] DfT/MCA, 2016. Port Marine Safety Code (PMSC), Department for Transport / Maritime and Coastguard Agency, November 2016.
[39] IMO, 2013. Revised Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule making process.

3.19 Commercial Fisheries

3.19.1 Baseline Conditions

Commercial fisheries

The UK fisheries statistics[40], show that *Nephrops* (langoustine), crabs and scallops were the three main species landed into Uig Harbour (by weight and value) by Scottish and English fishing vessels in 2015.

Inspection of UK fleet landings by ICES rectangle[41] did not show any 2015 landings originating from ICES rectangle 44E3 in which Uig Bay is located, or from ICES rectangles 44E4, 43E3 or 43E4 which incorporates the wider area around the Isle of Skye. Hence, this appears to indicate that the catches being landed into Uig Harbour are not caught in the vicinity of the Proposed Development. However, potting vessels are known to operate out of Uig Harbour and Scotmap[42] data indicates that the wider area is important for scallop trawling (based on fishing activity between 2007 and 2011). Consultation with the local fishing industry will therefore be undertaken to confirm the location and intensity of commercial fishing activity.

Aquaculture

Uig Harbour is located within a Shellfish Water Protected Area (Loch Snizort; SWPA57) as shown in Figure 3-8.

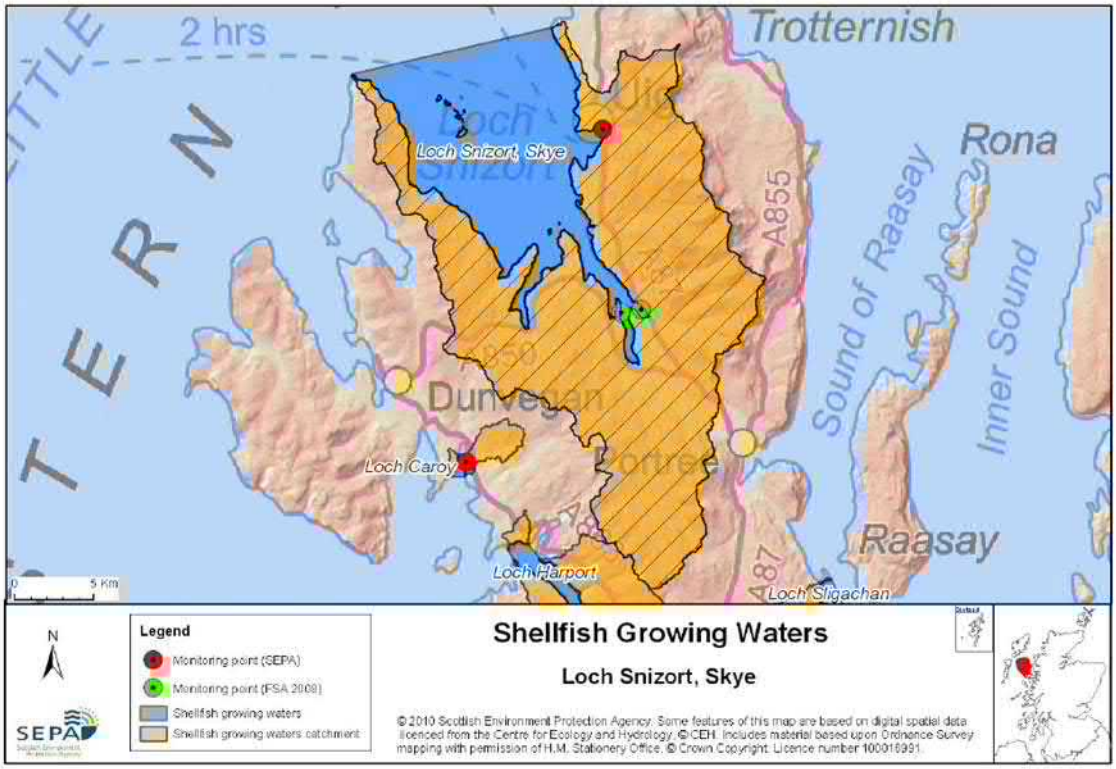


Figure 3-8 Shellfish Growing Waters in Loch Snizort, Skye (source: SEPA, 2010)

According to Marine Scotland's National Marine Plan interactive map (NMPI[43]) there is one active seawater finfish farm (producing Atlantic salmon) approximately 4 km south of Uig Harbour. This database also indicates that there is a deregistered seawater finfish farm approximately 1.4 km south

[40] MMO, 2016. UK Sea Fisheries Statistics 2015. Available online at: https://www.gov.uk/government/statistics/uk-sea-fisheries-annual-statistics-report-2015

[41] ICES (International Council for the Exploration of the Sea) rectangles have been used since the 19702 for the geographical gridding of data to make simplified analysis and visualisation of marine data.

[42] Scotmap data (https://marinescotland.atkinsgeospatial.com/nmpi/) provides an indication of the value of fisheries based on information provided by fishermen (based on activity between 2007 and 2011).

[43] https://marinescotland.atkinsgeospatial.com/nmpi/

of the Uig Harbour and a deregistered shellfish site and an inactive shellfish site both approximately 2.2 km south of the harbour. However, based on initial discussions with the lease holder and operator of the fish farm within Uig Bay (in September 2017) it is understood that there is a plan to re-open the site to farm Atlantic Salmon in the near future[44]. This information will be verified with Marine Scotland during the EIA process.

3.19.2 Likely Significant Effects

The key impact pathways relating to commercial fisheries and aquaculture are the following:

- Potential disruption of fisheries activities due to vessel movements between the dredge area and the disposal site;
- Potential impacts to fishing activities and fish stocks (including through changes to habitat availability, water quality/contamination, noise and vibration; as assessed in the water quality and marine ecology chapters). This will include any potential impacts to farmed stock (finfish) as well as wild stocks.

3.19.3 Proposed Scope of Assessment

The assessment will focus on the following:

- Commercial fisheries – Given that the ICES rectangle data indicates that there are no landings arising from the ICES rectangles covering the wider area, it is assumed that additional analysis of publically available landing statistics will not be able to further inform the assessment. The assessment will therefore focus on consultation with the commercial fisheries sector to identify any available data or information regarding the distribution and intensity of any fishing activity in the vicinity of the works (including seasonal variations in activity), species targeted, gear types used and the volumes and value of landings from these area. Consultees are likely to include:
    - The West Coast regional Inshore Fisheries group (rIFG) (and any other key local fishing association advised by the West Coast rIFG); and
    - The Scottish Fishermen's Federation, if data or information is not available from the above consultees.
- Aquaculture – The assessment will require confirmation regarding the current status of any aquaculture production businesses in the wider area and this will be sought from Marine Scotland. Further consultation with the lease holder and operator of the fish farms in the area will also inform the assessment.

A desk based assessment of the effects of construction works (including dredging and disposal) on commercial fisheries receptors will be carried out on the basis of this information. Potential effects during the operational phase have been scoped out (with the exception of the potential for maintenance dredging) given there is no proposed changes to the ferry operations or routeing.

[44] See planning documents available at: http://wam.highland.gov.uk/wam/applicationDetails.do?activeTab=summary&keyVal=NVE1C5IH09A00

3.20 Other Users

3.20.1 Baseline Conditions

There is no known oil and gas exploration, renewable development or military activity in the Uig Harbour area that is likely to be affected by the Proposed Development. Potential impacts on other marine users undertaking commercial and recreational navigation or commercial fishing will be assessed in their relevant sections of the EIA (see sections 3.18 and 3.19 of this report respectively).

3.20.2 Likely Significant Effects

There may be the opportunity for future sea disposal in Uig Bay by other users as a result of opening the new sea disposal site which could be beneficial to future development. However, any future disposal outwith the Proposed Development will require consent under separate Marine Licence applications.

3.20.3 Proposed Scope of Assessment

No significant effect is anticipated on other marine users and it is therefore proposed that Other Users be scoped out of the EIA.

3.21 Archaeology & Cultural Heritage

3.21.1 Baseline Conditions

Pastmap, Canmore and modern satellite imagery were examined to identify any known heritage assets in the Proposed Development site including potential locations for the new disposal site and a 100 m buffer.

The following known heritage asset types have been identified within the study area:

- Maritime (i.e. wrecks): 2 (20th and 21st century)
- Historic Environment Record/Canmore: 2 sites – King Edward Pier (c.1900); Memorial (1902)

King Edward Pier is a non-designated asset, as is the 20th-century monument which stands at its shoreward end. There is a small amount of evidence for prehistoric archaeology around Uig Bay, including a cairn designated as a scheduled monument and the find spot of a stone/flint scraper tool. All other assets recorded in the wider area are post-medieval and later in date. These appear to be mainly 19th and 20th century date, and relate to buildings and other settlement elements (e.g. cemetery, bridge). The only marine asset is an undated fish trap on the Idrigil foreshore, which appears as a distinct linear feature on modern satellite imagery, c. 150m long. This feature is c. 500m from King Edward Pier and nothing comparable is visible in the development area.

Other than early 20th century built features, the development area is devoid of known heritage features. The potential for undiscovered features being present on the foreshore is considered to be low.

Two wrecks are recorded in the approaches to Uig Bay: the motor fishing vessel Sara Lena; and the Irlanda, built 1941 and lost 1943.

3.21.2 Likely Significant Effects

Siting of the disposal site will take into account proximity to known wrecks. Given the nature of the works, the absence of designated features within the study area and the low likelihood of encountering unrecorded features, no likely significant effects are anticipated on Archaeology and Cultural Heritage.

3.21.3 Proposed Scope of Assessment

Given that no likely significant effects are anticipated on Archaeology and Cultural Heritage it is proposed to scope it out of the EIA.

3.22 Proposed Scope of EIA

Based on preliminary investigation and consultation, this section outlines the proposed scope of the EIA. Table 3-9 below outlines which topics require further assessment and are scoped into the EIA, and which elements are unlikely to result in significant effects and are therefore proposed to be scoped out.

Table 3-9 Proposed Scope of the EIA

Scoped In	Scoped Out
Marine Physical Environment	Terrestrial Ecology
Marine Water & Sediment Quality	Marine Protected Areas
Flood Risk	Seascape, Landscape & Visual Effects
Ground Conditions & Contamination	Traffic & Transport
Benthic Ecology	Air Quality
Fish & Shellfish Ecology	Greenhouse Gas Assessment
Marine Mammals	Other Users
Ornithology	Archaeology & Cultural Heritage
Socio-Economics & Public Access	
Terrestrial Noise & Vibration	
Commercial & Recreational Navigation	
Commercial Fisheries	

To aid the determination, the following technical studies will be submitted with the EIA Report:

- Site Characterisation Report for the proposed dredge disposal site; and
- Water Framework Directive Assessment.

The Applicant is seeking a Scoping Opinion from Marine Scotland, Transport Scotland and THC Planning Department for the Proposed Development.

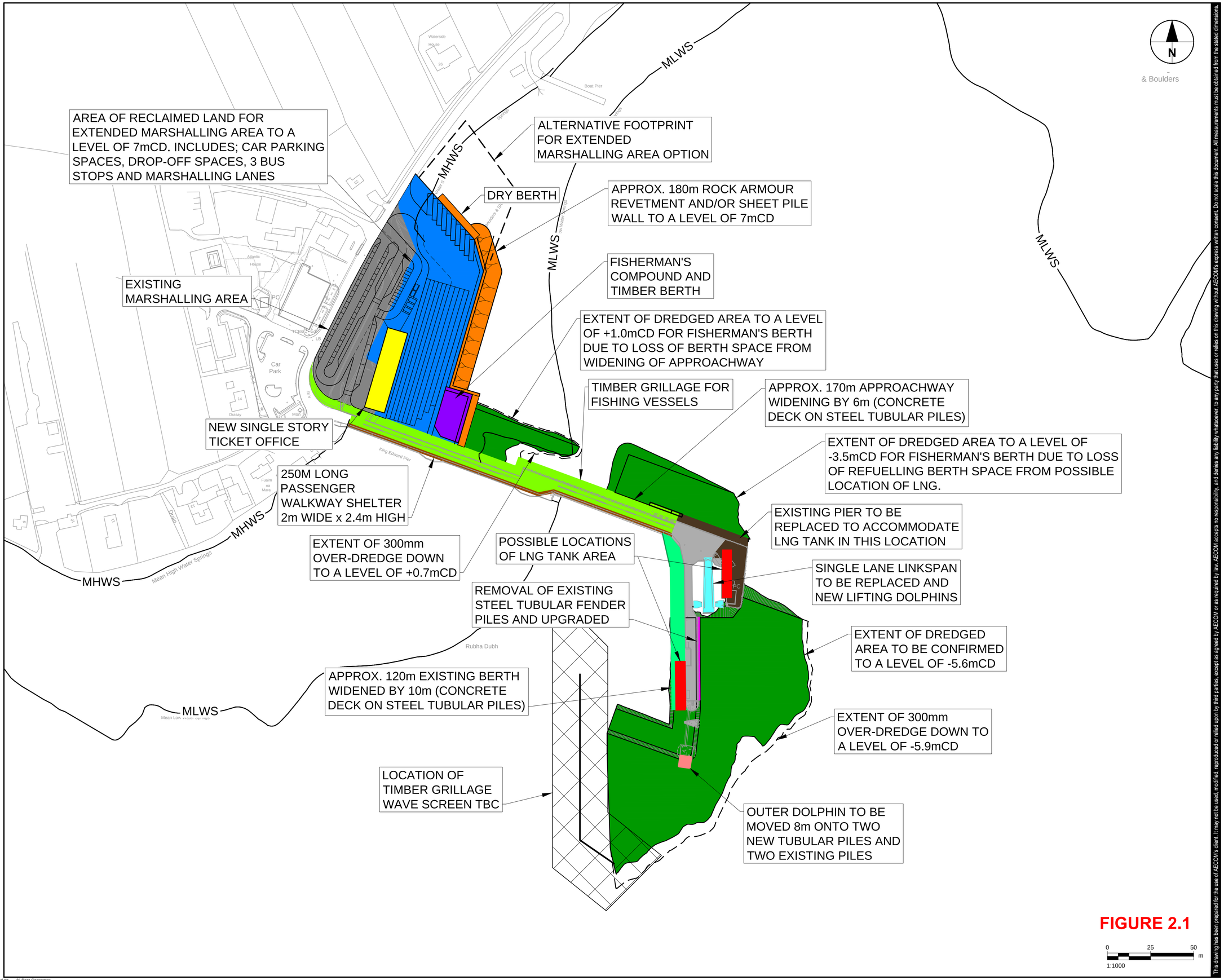


FIGURE 2.1

0 25 50 m
1:1000

PROJECT

UIG HARBOUR REDEVELOPMENT

CLIENT

THE HIGHLAND COUNCIL

GLENURQUHART ROAD, INVERNESS,
IV3 5NX
01349 886 606 tel

CONSULTANT

AECOM
7th FLOOR, AURORA,
120 BOTHWELL STREET
GLASGOW, G2 7JS
0141 248 0300 tel
www.aecom.com

NOTES

1. ALL DIMENSIONS IN METRES UNLESS OTHERWISE NOTED. DO NOT SCALE.
2. ALL LEVELS IN METRES AND REDUCED TO CHART DATUM UNLESS OTHERWISE NOTED.
3. THIS DRAWING TO BE USED FOR PURPOSES OF THE EIA ONLY.

LEGEND

- EXISTING MARSHALLING AREA
- PROPOSED MARSHALLING AREA
- SINGLE STORY TICKET OFFICE
- ROCK ARMOUR AND/OR SHEET PILE WALL AND BERTH
- FISHERMAN'S COMPOUND
- APPROACHWAY
- PASSENGER WALKWAY SHELTER
- EXISTING PIER
- BERTHING STRUCTURE WIDENING
- LINKSPAN AND DOLPHINS
- LNG TANK AREA
- REPLACEMENT OF EXISTING PIER
- REPLACEMENT OF FENDERS
- OUTER DOLPHIN REPOSITIONING
- EXTENT OF DREDGING
- LOCATION OF TIMBER WAVE SCREEN TBC

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	2017-09-25	FOR INFORMATION
B	2017-09-13	FOR INFORMATION
A	2017-08-23	FOR INFORMATION

KEY PLAN

PROJECT NUMBER

60536743

SHEET TITLE

EIA
PROPOSED DEVELOPMENT PLAN

SHEET NUMBER

60536743-SKE-00-0000-C-1160

Scale: 1:20,000 @ A3

0 1 2 km

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

- Uig Harbour
- EIA Study Area

PROJECT NUMBER

60536743

SHEET TITLE

Figure 2.2 Site Location

SHEET NUMBER

1 of 1

Project Management Initials: DH Designer: MLS Checked: BM Approved: DH

Scale: 1:125,000 @ A3

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

- EIA Study Area
- Listed Buildings
- Scheduled Monuments
- Sea of Hebrides Proposed Marine Protected Area
- Marine Conservation Areas
- Sites of Special Scientific Interest
- Special Areas of Conservation

PROJECT NUMBER

60536743

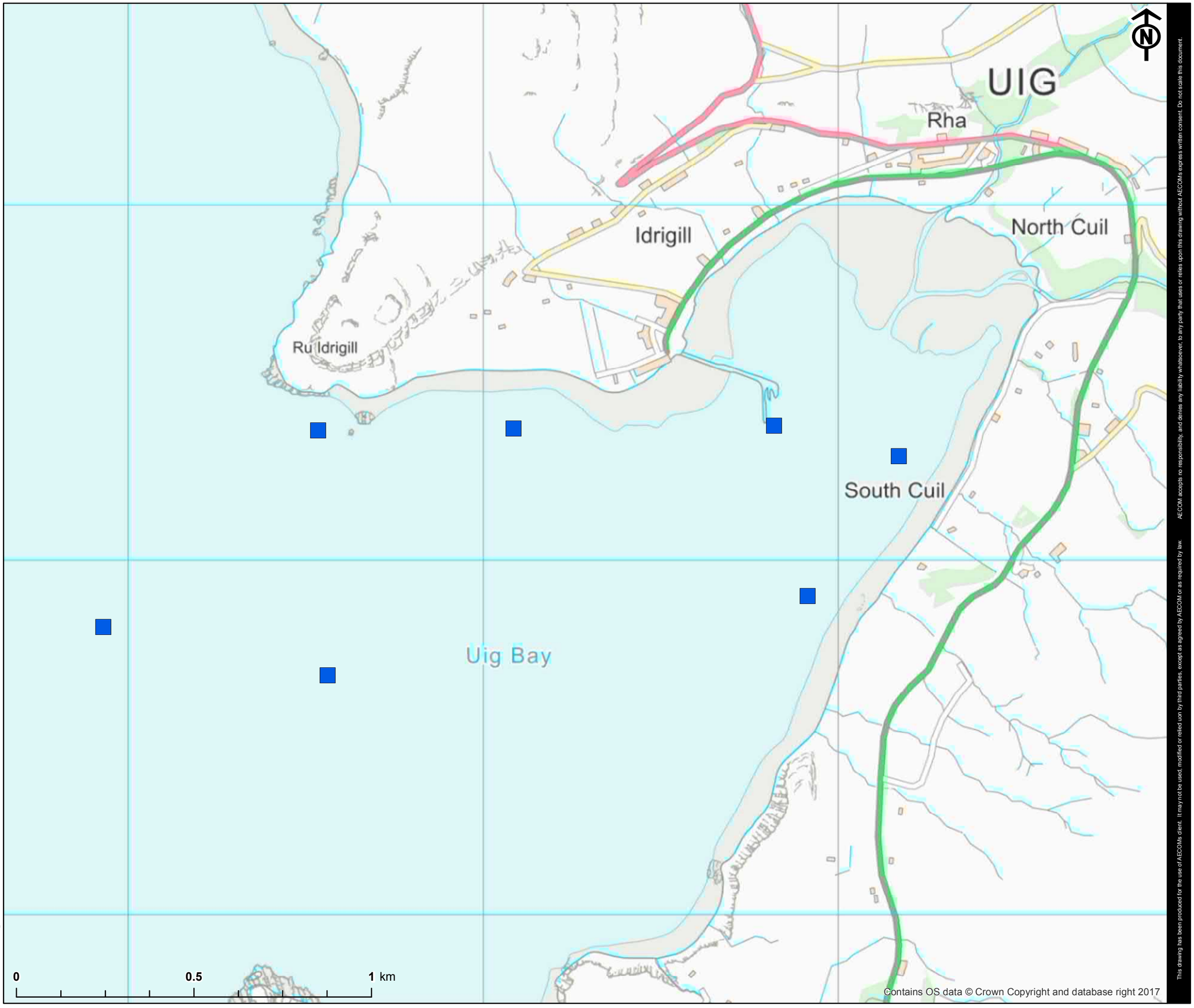
SHEET TITLE

Figure 3.1 Constraints Map

SHEET NUMBER

1 of 1

Project Management Initials: DH Designer: MLS Checked: BM Approved: DH



Scale: 1:10,000 @ A3

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

Sediment Sampling Locations

PROJECT NUMBER

60536743

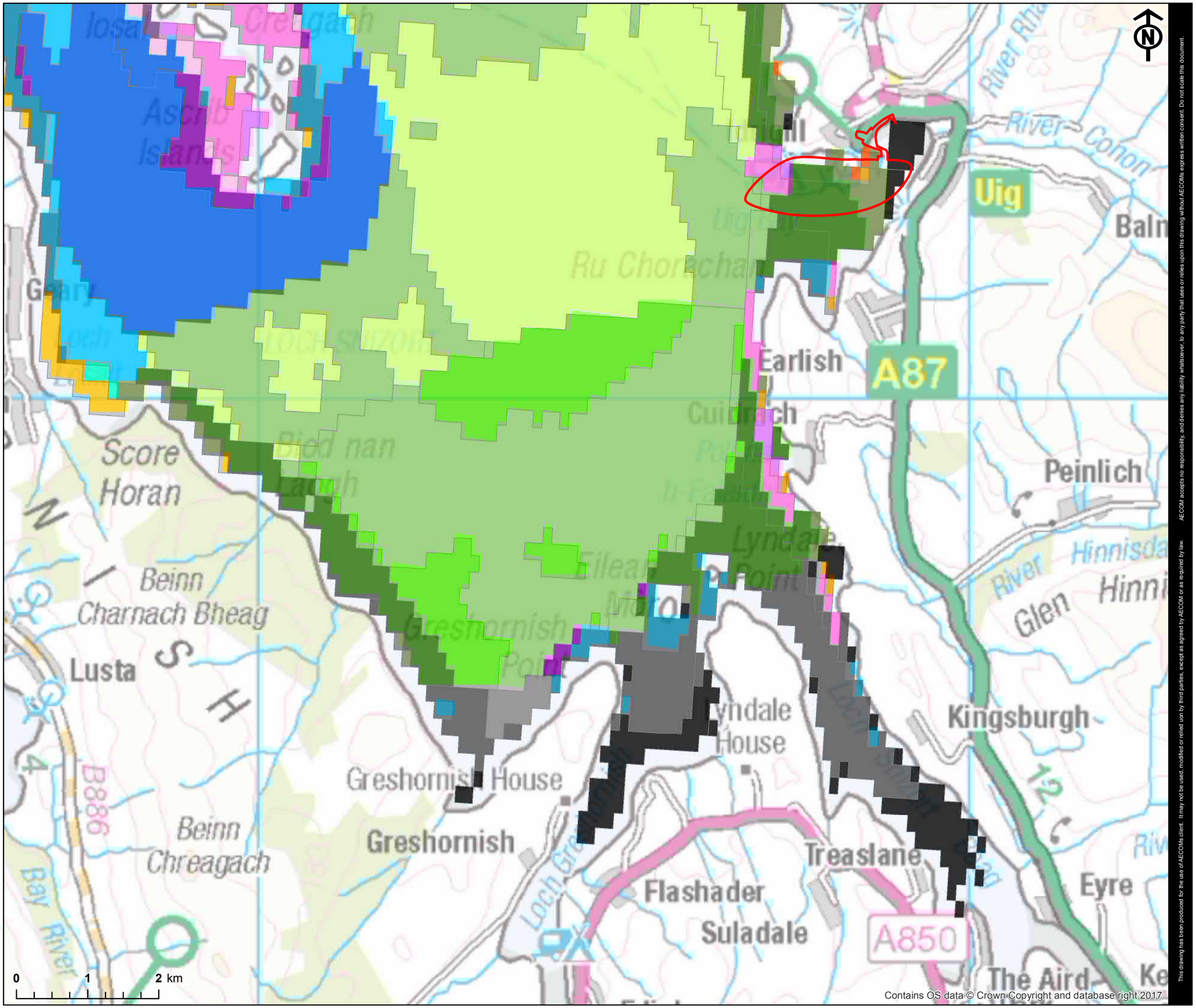
SHEET TITLE

Figure 3.2 December 2016 Sediment Sampling Locations

SHEET NUMBER

1 of 1

Project Management Initials: DH Designer: MLS Checked: BM Approved: DH



AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

EIA Study Area

Broad habitat – Broad-Scale Predictive Habitat Map EUSeaMap2 September 2016. Habitat Type:

- A3.1: Atlantic and mediterranean high energy infralittoral rock
- A3.2: Atlantic and mediterranean moderate energy infralittoral rock
- A3.3: Atlantic and mediterranean low energy infralittoral rock
- A4.1: Atlantic and mediterranean high energy circalittoral rock
- A4.12: Sponge communities on deep circalittoral rock
- A4.2: Atlantic and mediterranean moderate energy circalittoral rock
- A4.27: Faunal communities on deep moderate energy circalittoral rock
- A4.3: Atlantic and mediterranean low energy circalittoral rock
- A4.33: Faunal communities on deep low energy circalittoral rock
- A5.33 or A5.34: Infralittoral sandy mud or infralittoral fine mud
- A5.35: Circalittoral sandy mud
- A5.35 or A5.36: Circalittoral sandy mud or Circalittoral fine mud
- A5.36: Circalittoral fine mud
- A5.37: Deep Circalittoral mud
- A5.43: Infralittoral mixed sediments
- A5.44: Circalittoral mixed sediments
- A5.45: Deep circalittoral mixed sediments
- Circalittoral Seabed
- Infralittoral seabed
- Deep circalittoral seabed

PROJECT NUMBER

60536743

SHEET TITLE

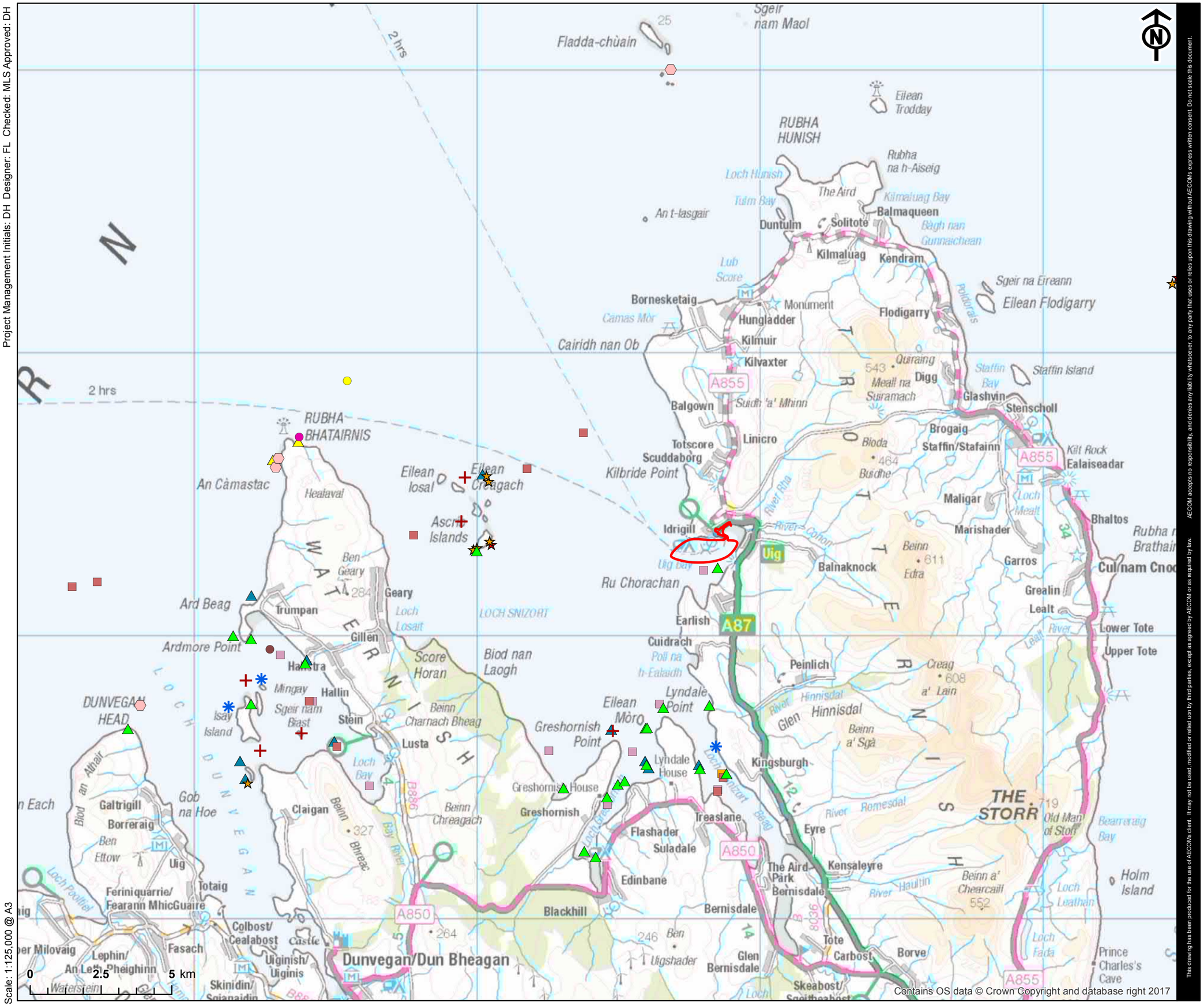
Figure 3.5 Broad-scale Habitat

SHEET NUMBER

1 of 1

Scale: 1:50,000 @ A3

Project Management Initials: DH Designer: FL Checked: MLS Approved: DH



Contains Marine Scotland Data Copyright © Marine Scotland 2017

Scale: 1:125,000 @ A3

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

- EIA Study Area
- Kelp and seaweed communities on sublittoral sediment
- Kelp Beds- Laminaria hyperborea with dense foliose red seaweeds on exposed infralittoral rock
- Kelp Beds- Laminaria hyperborea and foliose red seaweeds on moderately exposed infralitroral rock
- European Spiny Lobster
- Inshore deep mud with burrowing heart urchins
- Maerl Beds
- Northern seafan and sponge communities- Caryophllia smithii and Swiftia pallida on circalittoral rock
- Northern seafan and sponge communities- Northern Sea Fan
- Ocean Quahog
- Tide swept algal communities- Laminaria hyperborean on tide-swept infralittoral mixed substrata
- White cluster anemone
- Borrowed Mud- Burrowing megafauna and Maxmuelleria lankesteri incicalittoral mud
- Borrowed Mud- Seapens and burrowing megafauna in cicalittoral fine mud
- Borrowed Mud- Tall sea pen

FOR REFERENCE ONLY

PROJECT NUMBER

60536743

SHEET TITLE

Figure 3.6 Priority Marine Features

SHEET NUMBER

1 of 1

Appendix A Screening Letter

AECOM Limited
1 Tanfield
Edinburgh
EH3 5DA
UK

T: +44 131 301 8600
aecom.com

Date
21 July 2017

Redacted

Ports and Harbours Branch
Aviation, Freight, Maritime & Canals
Directorate
Area 2F North
Victoria Quay
Edinburgh
EH6 6QQ

Dear Redacted

I am writing on behalf of The Highland Council (THC), the developer, to request a Screening Opinion from Transport Scotland for the Uig Harbour Redevelopment (hereafter referred to as the 'Proposed Development'). The existing harbour powers defined under the Highland Regional Council (Harbours) Order Confirmation Act 1991 does not include for the entirety of the works so THC will be applying for a Harbour Revision Order (HRO) from Transport Scotland to update their development rights.

THC will also be applying for marine consent from Marine Scotland for works below Mean High Water Springs (MHWS) and may also apply for planning permission from THC Planning Department for works above Mean Low Water Springs (MLWS) as it remains unclear what the HRO will cover.

Introduction

Uig Harbour, located in Uig Bay, at the north eastern end of the Isle of Skye, forms part of the Skye Triangle ports, consisting of Uig, Tarbet and Lochmaddy, providing lifeline ferry services to the communities of the Western Isles. The Pier at Uig Harbour, named King Edward Pier, predominantly comprises the linkspan berth which serves the Calmac ferry route to the isles of Harris and North Uist. The Pier is under the control of Highland Harbours which is run by THC, with the operations for the ferry service controlled by Calmac (CFL).

Increasing demand and aging tonnage has led the ferry operator to commission new, larger ferry vessels for a number of its routes. The Skye Triangle has been identified by the operator as a priority and the procurement of a new vessel for this route has commenced.

THC, the developer, has to undertake redevelopment works to Uig Harbour to accommodate the new vessel which has been commissioned and is currently programmed to arrive at the harbour in October 2018. The Proposed Development consists of onshore and offshore elements and therefore falls under both THC's and Marine Scotland's jurisdiction. However, a Harbour Revision Order (HRO) will also be required, so the Proposed Development therefore also falls under Transport Scotland's jurisdiction.

Marine Scotland has requested that all works planned below the MHWS are assessed together. Given the overlap between THC's and MS's jurisdiction, the developer opted to screen both onshore and offshore elements together.

The following sections outline a brief description of the Proposed Development, the consenting requirements and the need for an Environmental Impact Assessment (EIA).

Project Description

The Proposed Development

The Proposed Development consists of the following works:

- Dredging (12,250 m^3);
- Dredge Disposal;
- Widening of the existing berth;
- Increasing the marshalling area by land reclamation (11,000 m^2);
- Works on the increased marshalling area including a new terminal building;
- Extension and widening of the approachway;
- New single lane linkspan with new lifting dolphins and bankseat;
- Demolition of the existing ticket office; and
- Upgrades to public utilities.

Two additional potential options are also being considered:

- Extension of the pier to include bringing the line of dolphins on to the line of the pier (as shown in Drawing 60536743-SKE-00-0000-C-1135 in Appendix B); and
- Wave screen and outer dolphin repositioning.

A detailed description of the Proposed Development is provided in Appendix A. Plans and sections of the Proposed Development are provided in Appendix B.

Location of the Proposed Development and Environmental Sensitivities

Figures 1 and 2 appended below (Appendix B) provide the red line boundary for the Proposed Development including potential disposal sites across Uig Bay and the key environmental constraints identified in the surrounding area respectively.

Uig Harbour is located in proximity to two Special Areas of Conservation (SAC) and a proposed Marine Protected Area (MPA):

- The Inner Hebrides and the Minches SAC, designated for porpoise populations in the North-West of Scotland, is located approximately 1 km to the West of the Harbour, at the edge of Uig Bay.
- The Ascrib, Isay and Dunvegan SAC, designated for its common seal populations, is located approximately 8 km to the West.
- An MPA has been proposed approximately 25 km to the South-West of the Harbour to provide protection for a potentially important basking shark breeding site, important areas for minke whales, tidal fronts and important geological features.

Uig Harbour is not located in close proximity to any onshore ecological designations. A Grey Seal Pupping Site is located approximately 8 km to the West of Uig Harbour on Ascrib Islands. The closest designated site on Skye is Trotternish Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC), designated for its flora and geological features, located approximately 5 km to the east of Uig Harbour.

Several listed buildings are located along the A87 and a scheduled monument is located 600 m to the east of the Proposed Development.

Consenting Requirements

As the Harbour Authority at Uig, THC operates as a statutory undertaker in respect of docks, piers or harbours. THC therefore possesses a range of Permitted Development (PD) rights and powers under Class 35 of the Town

& Country Planning (General Permitted Development) (Scotland) Order 1992 for the onshore elements and The Highland Regional Council (Harbours) Order Confirmation Act 1991. THC, as the local authority, also benefits from PD rights and powers under Class 30 of the Town & Country Planning (General Permitted Development) (Scotland) Order 1992. The rights and powers confirmed by the Highland Regional Council (Harbours) Order Confirmation Act 1991 are currently under legal review and shall provide clear guidance on the scope of the works to be contained within the HRO.

However, if the Proposed Development is considered EIA development, these PD rights will no longer apply and THC, the developer, will require consent under the following three regimes:

- The Harbours Act 1964– Transport Scotland to grant a Harbour Revision Order to vary THC's existing harbour powers;
- The Marine (Scotland) Act 2010 – consent will be required from Marine Scotland for any licensable activities below Mean High Water Springs; and
- The Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc (Scotland) Act 2006 – for works down to Mean Low Water Springs. An application for Planning Permission will be determined by THC.

Requirement for Environmental Impact Assessment

Environmental Impact Assessment Screening – Legislative Context

The European EIA Directive (85/337/EEC), in force since 1985 and most recently amended in 2014 (Directive 2014/52/EU), outlines the range of public and private developments which require EIA. The European Directive is translocated to Scottish legislation under the following regulations:

- The Harbour Works (Environmental Impact Assessment) Regulations 1999;
- Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

The EIA Directive and associated Scottish regulations contain two lists of different types of development projects. The Harbour Works (EIA) Regulations 1999 refer back to Annex I and II of the European EIA Directive (85/337/EEC) whereas the Marine Works (EIA) Regulations and T&CPA (EIA) Regulations outline the different types of developments which may require EIA in Schedule 1 and 2 of the regulations.

The first list is contained within Annex/Schedule 1. This sets out the descriptions of development for the purpose of classifying development as Annex/Schedule 1 development for which EIA is mandatory.

The second list is contained within Annex/Schedule 2. This sets out the descriptions of development and applicable thresholds and criteria for the purpose of classifying development as Annex/Schedule 2 development. Where the project falls within the description of the developments listed in Annex/Schedule 2 and exceed the applicable thresholds and criteria, it must be screened to determine whether it is likely to have significant environmental effects "by virtue of factors such as the development's nature, size or location".

Additionally, where the project falls within the description of the developments listed and falls below the applicable thresholds and criteria, but is located in, or partly in, a sensitive area, it must be screened to determine whether it is likely to have significant environmental effects.

A project that is contained within Annex/Schedule 2 that would be likely to have significant environmental effects is EIA development.

Environmental Impact Assessment Screening – Screening Requirement for the Proposed Development

The Proposed Development does not fall within Annex I of the European EIA Directive and ferry piers are excluded from Schedule 1 of the Marine Works (EIA) (Scotland) Regulations 2017 and the T&CPA (EIA) (Scotland) Regulations 2017. However, multiple elements of the Proposed Development fall under Annex II of the European EIA Directive and Schedule 2 of the Scottish Regulations and trigger the need for screening as shown in Table 1 below.

Table 1 Legislative requirement for EIA screening under European and Scottish legislation

Works subject to EIA screening	European EIA Directive	Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017	Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017	Applicable threshold and criteria under the relevant Regulations
Reclamation of land from the sea	Annex II. 1 (g)	Schedule 2. 1 (e)	Schedule 2. 1 (e)	All works
Construction of roads, harbours and port installations, including fishing harbours (projects not included in Annex I)	Annex II. 10 (e)	Schedule 2. 10 (g)	Schedule 2. 10 (g)	The area of works exceeds 1 ha
Sludge deposition sites	Annex II. 11 (d)	Schedule 2. 11 (d)	Schedule 2. 11 (d)	The area of deposit or storage exceeds 0.5 ha

Need for an Environmental Impact Assessment

Given the nature and scale of the works, and the proximity to a number of marine protected areas, there is the potential for the Proposed Development to cause significant effects on the environment during construction, and it is therefore deemed to require EIA. THC Planning Department and Marine Scotland have advised that screening is not required as they have confirmed their agreement with the developer that EIA is required. Notwithstanding that THC Planning Department and Marine Scotland agree that an EIA is required, can Transport Scotland please provide a Screening Opinion of the Proposed Development in respect of the Harbour Revision Order process.

Should you have any questions please do not hesitate to contact me at 01313018718 or Dominique.Hill@aecom.com.

Yours sincerely,

Redacted

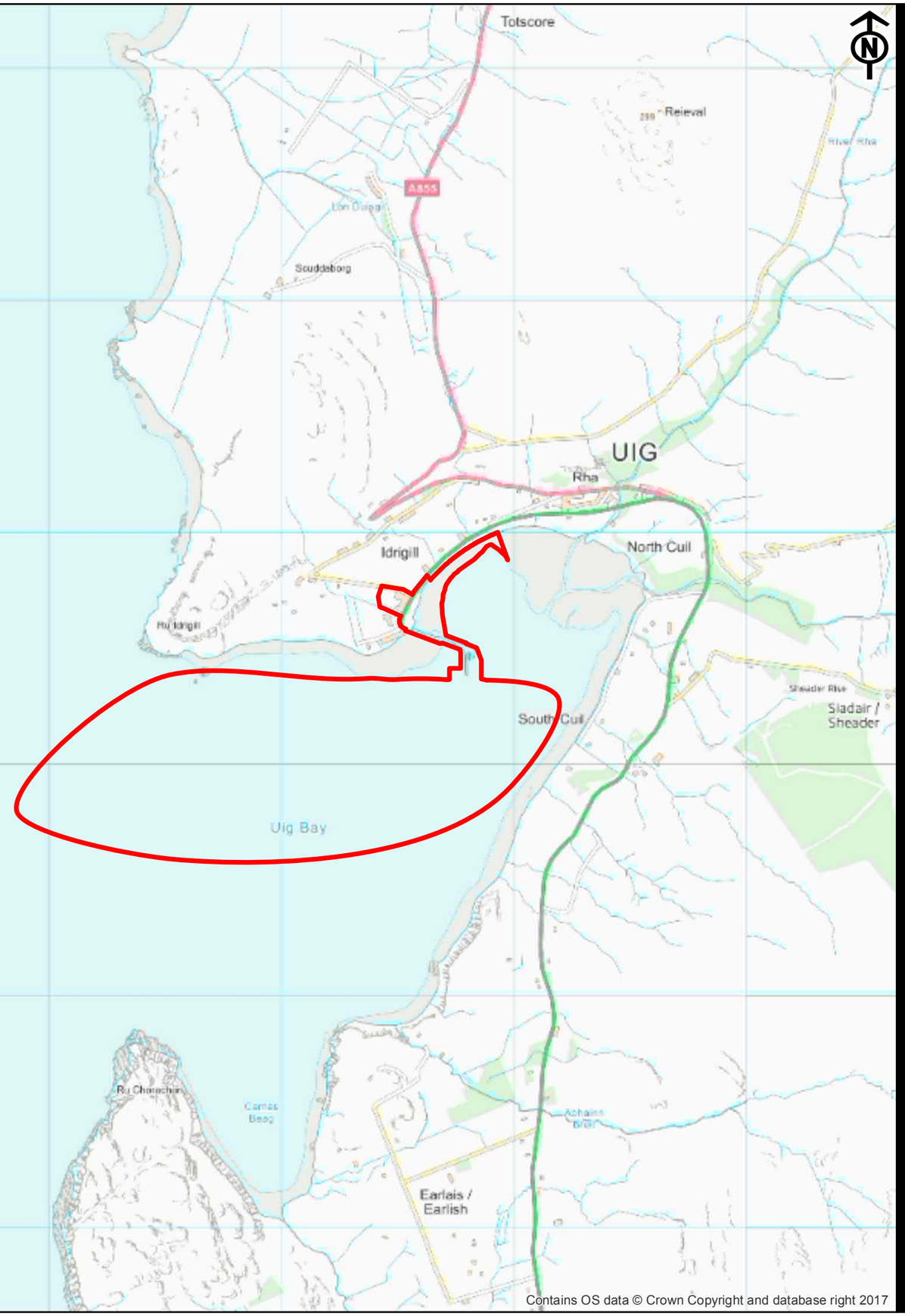
AECOM Limited

Appendix A - Description of the Proposed Development with the relevant Consenting Authority - Preferred Options & Potential Additional Options

Works	Description	Relevant Consenting Authority
Dredging	Dredging the berth area to minus 5.6 mCD consisting of approximately 12,250 m^3 of dredged material.	Marine Scotland
Dredge Disposal	THC will endeavour to re-use the dredged material in the land reclaim where possible in order to minimise waste. However, the material may not be suitable for use in the land reclaim and will therefore need to be disposed of. Given the naturally high concentrations of heavy metals and hydrocarbons in the sediment in Uig Bay, it is unknown whether the material is suitable for disposal at landfill until further testing can be carried out. The dredged material may therefore need to be disposed of in the vicinity of the Proposed Development in a receiving environment with similar levels of heavy metals and hydrocarbons. THC are investigating 3 potential options for the disposal of dredged material: • Disposal at landfill; • Disposal at sea in a new sea disposal site within 1 km of Uig Bay (a number of potential sea disposal sites have been identified within Uig Bay and in the immediate vicinity); • Disposal on the beach ('beach recharge') immediately to the north of the pier.	Marine Scotland and THC
Widening of the existing berth	The existing berthing structure will be widened by 10m. This will require the following: • Demolition and relocation of the existing waiting shelter; • Replacement of fenders, fender piles and fender panels; • Demolition of existing wave wall and construction of new wave protection wall; • Driving and plugging new tubular piles; • Using a combination of precast and insitu concrete to construct the deck and completed berthing structure extension; and • Reinforcement will be provided by steel tubular bearing piles with reinforced concrete plugs.	Marine Scotland
Increased marshalling area by land reclamation	Undertaking approximately 11,000m^2 of land reclamation using approximately 50,000m^3 of infilling material with rock armour revetment and sheet piles.	Marine Scotland and THC
Works on the increased marshalling area	This will include constructing of a new ticket office, vehicle lanes, HGV lanes, parking spaces, collection and drop off spaces, replacing the dry berthing area and relocating the existing fisherman's compound.	Marine Scotland and THC
Extension of the approachway	The extension of the approachway by 6 m will require the following: • Driving new steel tubular piles with reinforced concrete plugs; • Using a combination of pre-cast and insitu concrete to construct the deck; • Repairing existing concrete deck on approachway over open piled and masonry wall section; • Removing and reinstating the monoblock area and backfill; and • Replacing the timber grillage, fenders and steel boat deflectors, boat steps.	Marine Scotland
New single lane linkspan with new lifting dolphins	Replacing the existing linkspan and M&E equipment, and replacing or upgrading the existing lifting dolphins and bankseat.	Marine Scotland
Demolition of the existing ticket office	The existing ticket office will be demolished at the end of the construction phase.	THC
Construction compound	The construction compound will be located immediately to the west of the existing ticket office.	THC
Upgrades to public utilities	The potable water system, electrical supply and street lighting will be upgraded.	THC
Potential Additional Options		
Extension of the pier to include bringing the line of dolphins on to the line of pier.	Creating a solid pier between the end of the berthing structure and the extremity of the outer berthing dolphin with an upgraded fender system. Additional 10 m length of pier added.	Marine Scotland
Wave screen and outer dolphin repositioning	Moving the existing outer dolphin 10 m seaward to accommodate increased mooring confidence of the new vessel and installing a greenheart timber wave screen, using steel tubular bearing piles and greenheart timber piles respectively.	Marine Scotland

Appendix B - Plans and Sections

Project Management Initials: DH Designer: MLS Checked: BM Approved: DH



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0 1 2 km

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

EIA Red Line Boundary

PROJECT NUMBER

60536743

SHEET TITLE

Figure 1. Site Location

SHEET NUMBER

1 of 1

Project Management Initials: DH Designer: MLS Checked: BM Approved: DH

Scale: 1:125,000 @ A3

AECOM

PROJECT

Uig Harbour Redevelopment

CLIENT

The Highland Council

KEY:

- EIA Red Line Boundary
- Uig Bay Fish Farm

Listed Buildings by Category

- A
- B
- C
- Scheduled Monuments
- Sea of Hebrides Proposed Marine Protected Area
- Marine Conservation Areas
- Sites of Special Scientific Interest
- Special Areas of Conservation

PROJECT NUMBER

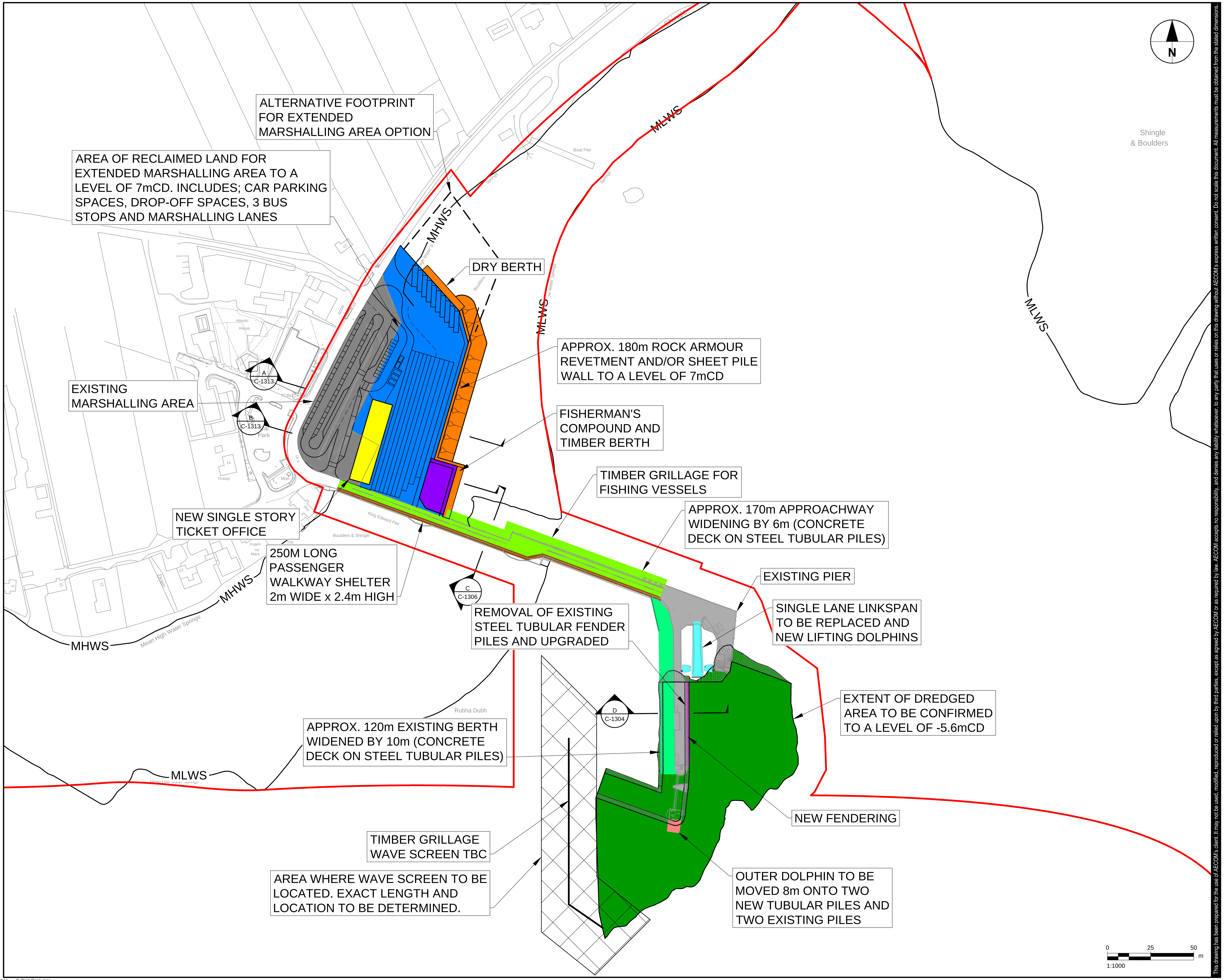
60536743

SHEET TITLE

Figure 2. Constraints Map

SHEET NUMBER

1 of 1



ALTERNATIVE FOOTPRINT FOR EXTENDED MARSHALLING AREA OPTION
AREA OF RECLAIMED LAND FOR EXTENDED MARSHALLING AREA TO A LEVEL OF 7mCD. INCLUDES; CAR PARKING SPACES, DROP-OFF SPACES, 3 BUS STOPS AND MARSHALLING LANES
DRY BERTH
MHWS
MLWS
APPROX. 180m ROCK ARMOUR REVETMENT AND/OR SHEET PILE WALL TO A LEVEL OF 7mCD
EXISTING MARSHALLING AREA
A C-1313
B C-1313
FISHERMAN'S COMPOUND AND TIMBER BERTH
TIMBER GRILLAGE FOR FISHING VESSELS
APPROX. 170m APPROACHWAY WIDENING BY 6m (CONCRETE DECK ON STEEL TUBULAR PILES)
NEW SINGLE STORY TICKET OFFICE
250M LONG PASSENGER WALKWAY SHELTER 2m WIDE x 2.4m HIGH
EXISTING PIER
C C-1306
REMOVAL OF EXISTING STEEL TUBULAR FENDER PILES AND UPGRADED
SINGLE LANE LINKSPAN TO BE REPLACED AND NEW LIFTING DOLPHINS
EXTENT OF DREDGED AREA TO BE CONFIRMED TO A LEVEL OF -5.6mCD
D C-1304
APPROX. 120m EXISTING BERTH WIDENED BY 10m (CONCRETE DECK ON STEEL TUBULAR PILES)
NEW FENDERING
TIMBER GRILLAGE WAVE SCREEN TBC
AREA WHERE WAVE SCREEN TO BE LOCATED. EXACT LENGTH AND LOCATION TO BE DETERMINED.
OUTER DOLPHIN TO BE MOVED 8m ONTO TWO NEW TUBULAR PILES AND TWO EXISTING PILES
Shingle & Boulders
Boat Pier
King Edward Pier
Boulders & Shingle
Rubha Dubh
Mean High Water Springs
N
0 25 50 m
1:1000

AECOM

PROJECT

UIG HARBOUR REDEVELOPMENT

CLIENT

THE HIGHLAND COUNCIL

GLENURQUHART ROAD, INVERNESS, IV3 5NX
01349 886 606 tel

CONSULTANT

AECOM
7th FLOOR, AURORA,
120 BOTHWELL STREET
GLASGOW, G2 7JS
0141 248 0300 tel
www.aecom.com

NOTES

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LEGEND

HRO BOUNDARY

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	2017-07-20	FOR INFORMATION

KEY PLAN

PROJECT NUMBER

60536743

SHEET TITLE

HRO
BLOCK PLAN

SHEET NUMBER

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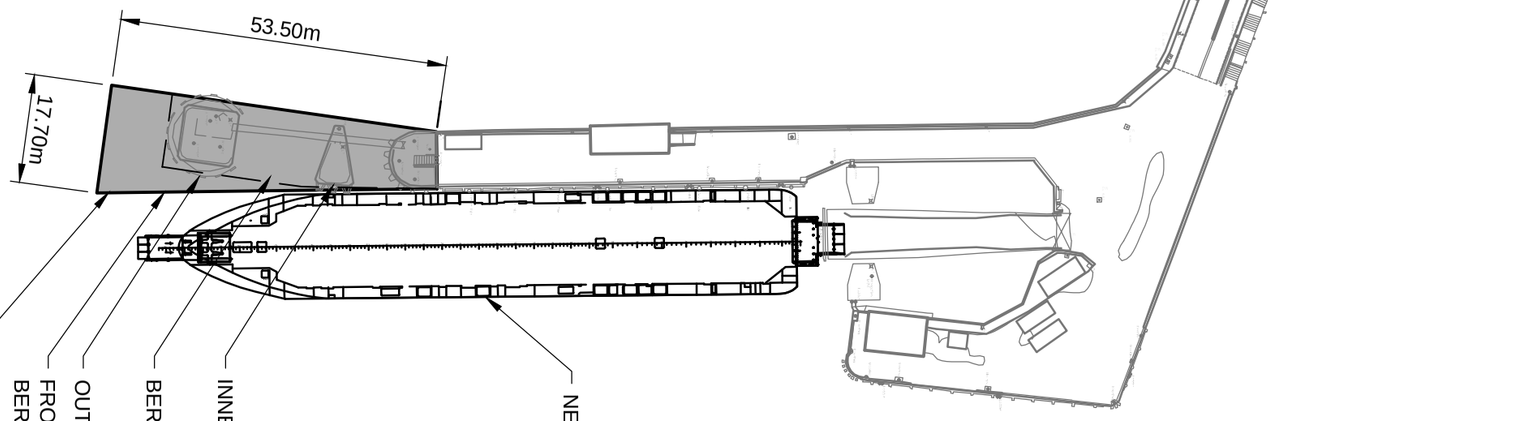

INFILL AREA, BERTH REALIGNMENT AND EXTENSION

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Issue Status: FOR INFORMATION

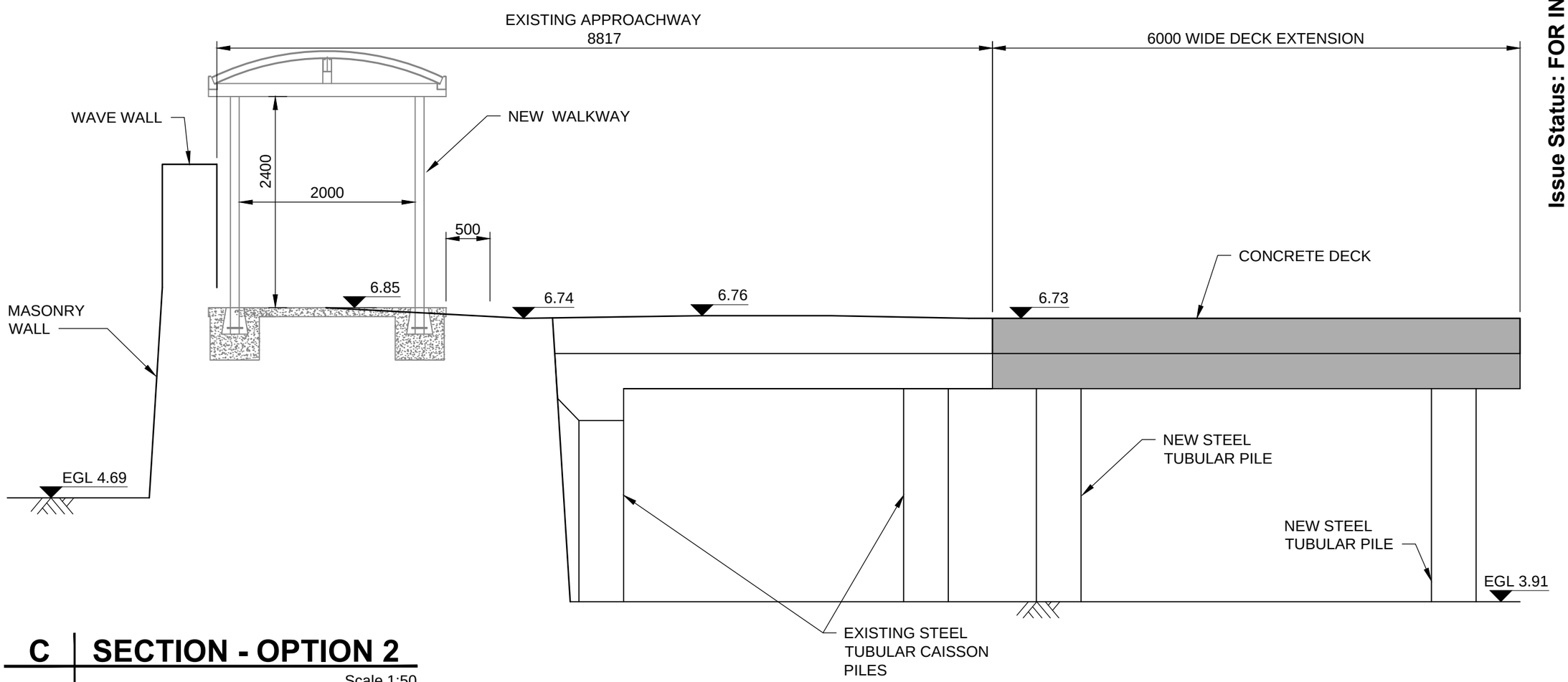
UIG HARBOUR REDEVLOPMENT

THE HIGHLAND COUNCIL, UIG, ISLE OF SKYE
Project No.: 60536743 Date: 2017-04-11

MASTERPLAN
BERTH IMPROVEMENT
OPTION 6

AECOM

60536743-SKE-00-0000-C-1135



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Scale 1:50

Issue Status: FOR INFORMATION

AECOM

60525699-SKE-00-0000-C-1306-C

MASTERPLAN
APPROACHWAY
OPTION 2

UIG HARBOUR REDEVLOPMENT

THE HIGHLAND COUNCIL, UIG, ISLE OF SKYE
Project No.: 60536743 2017-06-01

Project Management Initials: Designer: DWM Checked: Approved: ISO A3 297mm x 420mm

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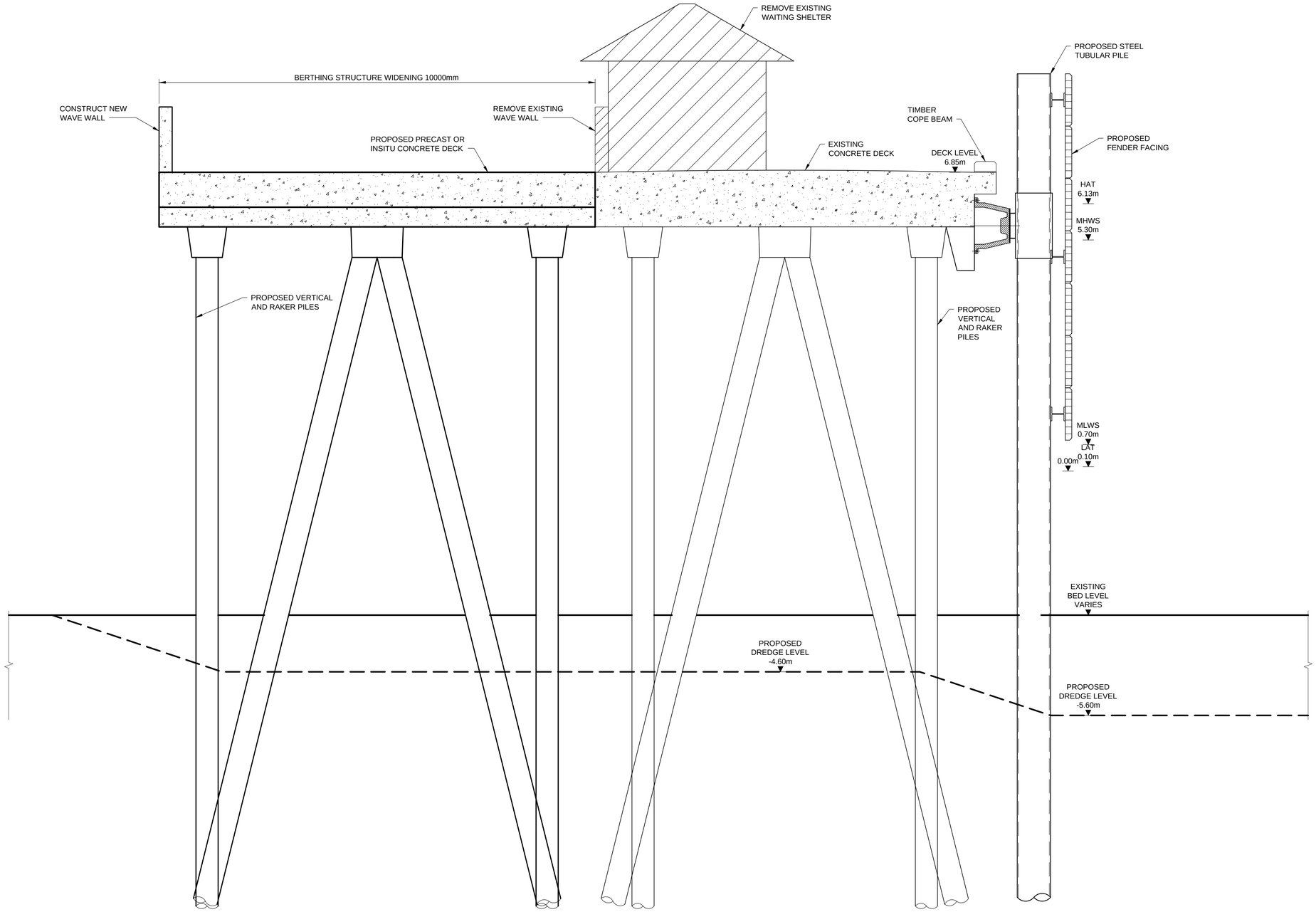

D SECTION

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1:50

AECOM

PROJECT

UIG HARBOUR REDEVELOPMENT

CLIENT

THE HIGHLAND COUNCIL

GLENURQUHART ROAD, INVERNESS,
IV3 5NX
01349 886 606 tel

CONSULTANT

AECOM
7th FLOOR, AURORA,
120 BOTHWELL STREET
GLASGOW, G2 7JS
0141 248 0300 tel
www.aecom.com

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LEGEND

ISSUE/REVISION

C	2017-07-20	FOR INFORMATION
B	2017-06-01	DRAFT
A	2017-05-09	DRAFT
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

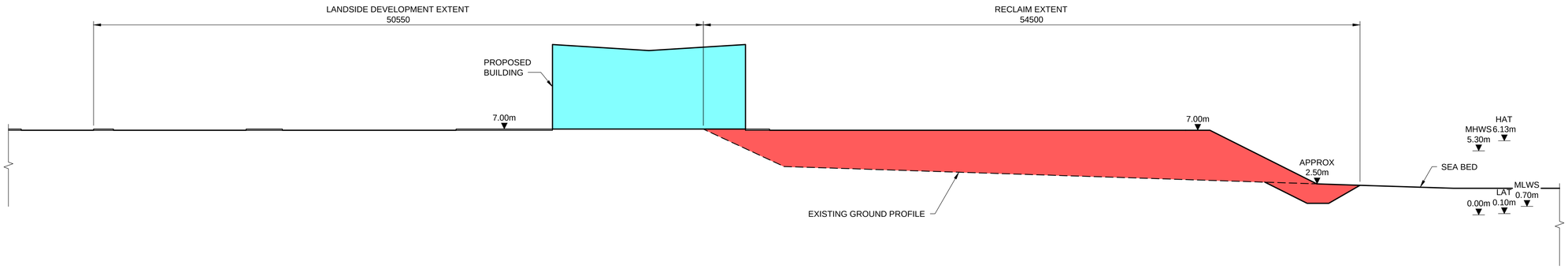
60536743

SHEET TITLE

BERTHING STRUCTURE WIDENING DETAIL

SHEET NUMBER

60536743-SKE-00-0000-C-1304



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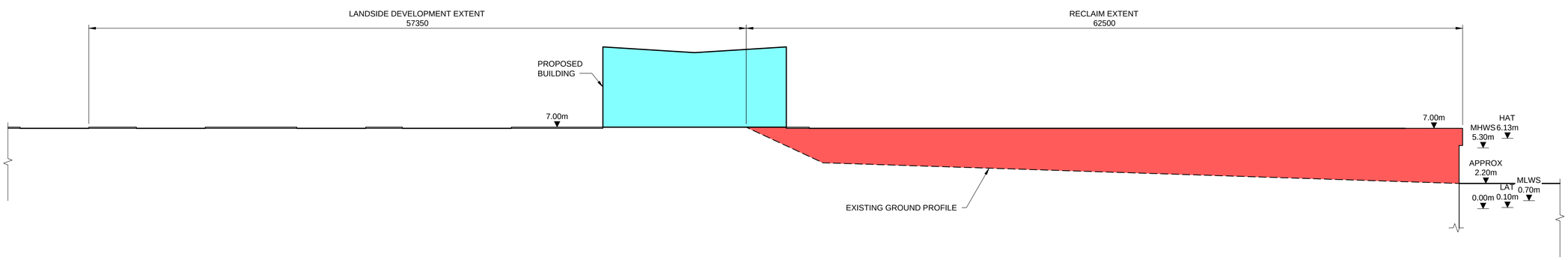

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AECOM

PROJECT

UIG HARBOUR REDEVELOPMENT

CLIENT

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GLENURQUHART ROAD, INVERNESS,
IV3 5NX
01349 886 606 tel

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AECOM
7th FLOOR, AURORA,
120 BOTHWELL STREET
GLASGOW, G2 7JS
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LEGEND

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	2017-07-20	FOR INFORMATION

KEY PLAN

PROJECT NUMBER

60536743

SHEET TITLE

MARSHALLING AREA
SECTIONS

SHEET NUMBER

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Appendix B Statement for CalMac Ferries Ltd. regarding LNG

LNG at Uig Pier – Statement for inclusion in The Highland Council's Scoping Report to Marine Scotland

September 2017

Background

CalMac Ferries Ltd (CFL) operates the Clyde & Hebridean Ferry Services on behalf of Transport Scotland. Part of our operation includes ensuring the logistical arrangements in place to fuelling our vessels.

In 2018 CFL expect to take delivery of two new dual fuel vessels, one of which is to be deployed on the Skye Triangle route. The new vessels are designed to operate on LNG and Marine Gas Oil (MGO) and we intend to bunker LNG at Uig Pier. The current vessel deployed on this route, operates on MGO and bunkering consists of two deliveries per week via a road tanker driving directly on the ferry. To ensure CFL can operate a resilient service and maximise the environmental benefits of operating on LNG we require storage of LNG at Uig Ferry Terminal.

Uig Terminal owners, The Highland Council, have advised that in principal they are content to accommodate LNG requirements at Uig, subject to all required operational, consenting, H&S and construction issues being suitably addressed by CFL.

Arrangements

CFL are responsible for delivery of this project and have in place a team with international experience to ensure the solution for LNG fuelling facilities at Uig are safe, suitable and reflect industry best practice.

It is acknowledged that this is the first project of its kind in Scotland for LNG ferries, and we are keen to work openly with all our stakeholders to raise awareness and understanding of LNG. We would also advise that we are progressing similar arrangements for LNG bunkering at Ardrossan Ferry Terminal.

At this early stage in the project we anticipate two separate approaches to the market:

- Procure LNG Bunkering Solution – supply, operation and maintenance of the supporting infrastructure to enable LNG bunkering operations (tanks, pumps, safety devices, pipework, bunkering gantry etc.)
- Procure LNG Fuel Supply & Delivery

It is our current intention to have on-site storage of LNG of less than 100 tonnes, which sits within the lower tier of COMAH regulations.

Our LNG installation will adhere to BS EN1473:2007, ISO20519, Dangerous Goods in Harbour Areas Regulations 2016

In order to achieve necessary approvals and raise LNG awareness CFL is engaging fully with;

- The Highland Council, as owner and Statutory Harbour Authority
- The Highland Council as Local Authority
- HSE
- SEPA
- Scottish Fire & Rescue
- NHS Health Boards
- Local Community

At Uig we expect to undertake two bunkering actions per week with a maximum transfer of 40 tonnes of LNG per bunkering. Based on the transfer rates of 100m³/h storage to ship and 40m³/h road tanker to storage, we anticipate the following:

- LNG transfer from road tanker to storage tank will account for 208 hours per year
- Road tanker is considered to be present onsite 312 hours per year
- LNG transfer from storage tank to the ferry will account for 84 hours per year

At this time, it is anticipated that an LNG compound at Uig may be similar to that in the photo below, showing a LNG ferry in Denmark, but we await details of potential solutions to be provided by the market.

We are currently reviewing proposed locations of the LNG compound at Uig Ferry Terminal, and the next step will be to identify a preferred location. Two of the locations under consideration (extended marshalling area and berth widening structure) are not yet constructed, and are part of THC's proposed infrastructure upgrades works at Uig Terminal.

The final location of the LNG storage facility will be determined following consideration of the following: available space, outcome of DNV-GL risk analysis, impacts to ferry operations, cost to accommodate facility and discussions with key stakeholders.

As noted above the LNG facility will fall under COMAH regulations and will be constructed in adherence with ISO 20519. It will be operated under guidance from the HSE Approved Code of Practice for Dangerous Goods in Harbour Areas.

CFL have commenced engagement with the statutory consultees SEPA and HSE and initial indications are positive.

Timescales

We anticipate the following timescales:

- Oct 17 – finalise preferred compound location, consultations with stakeholders and supplier procurement exercises
- May 18 – appoint supplier/operator and finalise compound and bunkering plans
- June 18 – provide detailed design arrangements to stakeholders
- May 19 – complete planning consents and agreements
- Sept 19 – LNG installation completed & LNG bunkering at Uig possible

Appendix C Phase 1 Habitat and Otter Surveys

Uig Ferry Terminal
Phase 1 Habitats and Otter Survey

June 2017

Redacted

Summary

A Phase 1 habitat and otter survey were carried out on the area around the Uig Ferry Terminal, Skye, in May 2017. There relatively extensive intertidal area both to the east and west of the ferry pier. Much of the habitat immediately north of the intertidal area had introduced plants and shrubs. To the west of the ferry terminal was an area of croftland. There were no recent signs of otters using the area of the proposed works at the ferry terminal.

1 Introduction

1.1 Site Description

The area of the survey was the ferry terminal at Uig, Isle of Skye and all habitat within 250m of the terminal.

1.2 Aims of Survey

A standard Phase 1 habitats and otter survey was carried out to identify the main habitat types present and to establish if there is evidence that otters use the site.

2 Methodology

Habitats

The phase 1 habitat survey was carried out following the methodology described in JNCC (2010) Handbook for Phase 1 habitat survey – a technique for environmental audit, JNCC, Peterborough.

As it was a relatively small site, and much of the area was built-up, a 1:2500 map was used.

A standard walkover survey of the site, including a 250m buffer zone, was carried out by Alison Tyler on 25 and 26 May 2017. The survey was undertaken between 0900 and 1600 GMT in good weather conditions.

Otters

The survey was undertaken by Alison Tyler, an experienced otter surveyor with an SNH otter disturbance licence, number 13297. All shoreline and watercourses were checked for signs of otter (spraints, prints and digging), including evidence of runs, holts, lay-ups or couches. The rock armour along the shore was checked for otter lie-ups/holts. The walkover survey for otter was carried out and recorded according to the guidelines set out in Chanin P (2003) Monitoring the Otter' (*Lutra lutra*) Conserving Natural 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

All signs of otters were photographed and a grid reference recorded using a handheld GPS. Otter spraints were identified by sight and smell. All spraints found were categorized according to the guidelines set out in Chanin 2003.

3 Results

Summary of Habitat Types

(see Appendix 1 for map of habitat types)

H1 Intertidal – brown algal beds

A significant part of the survey area was the intertidal zone, which was typical of the sea lochs of the north of Skye. The following seaweed species were identified in the intertidal area exposed at low tide :

Ascophylum nodosum
Fucus vesculosis
Pelvetia canaliculata
Enteromorphia spp.
Fuscus spiralis
Fuscus serratus (although this was likely to be washed up from deeper water)

Ascophylum nodosum var. *mackaii* was looked for but not found

Photograph 1

Intertidal area and rock armour below ferry assembly area

H2 Saltmarsh
There were very small areas of saltmarsh at the upper limits of the intertidal area, below the rock armoured sea wall

H3 Shingle above high tide
West of the ferry terminal, the shingle area above high tide had sparse vegetation, including several garden escapes.

Photograph 2

Shingle and intertidal area west of the ferry pier

B1 Semi-improved acid grassland
The crofts leading down to the shore were herb-rich semi-improved grassland, with a high proportion of *Juncus squarrosus* and *Potentilla anserina.*

Photograph 3

Croftland west of the ferry terminal (see target note 7)

B Grass verges

Along the roadside and between the ferry car park and the sea wall the grassland was a mixture of grass species, Rumex obtusifolius, Plantago spp, Chamerion angustifolium.

J1.4 Introduced Shrub

An area between the road and the shore to the east of the ferry terminal had a mixture of shrubs (extensive *Ulex europeus, Salix, Rubus fruticosus* and *Crataegus monogyna*), occasional taller trees, native scrub and verge grassland, and also had several non-native species seeded from the gardens on the opposite side of the road. As it was a small area it was mapped as introduced shrub.

Photograph 4
Grassy verge and introduced shrub east of the ferry assembly area

Target Notes

1 NG 38654 63824

Verge grasses with wide strip between road and shore with extensive *Ulex europeus, Salix, Rubus fruticosus* and *Crataegus monogyna* shrub, *Urtica dioica, Atropa belladonna, Lychnis flos-cuculi.*

2 NG 38586 863710

Single mature specimens of *Acer pseudoplatanus, Sorbus aucuparia, Sambucus nigra*. A few specimens of *Hyacinthoides* sp. *Chamerion angustifolium widespread*.

3 NG 38597 63658

Strand line vegetation typical of saltmarsh, *Armeria maritima*.

4 NG 38564 63614

Grass verge adjacent to ferry marshalling area. *Rumex obtusifolius, Plantago spp, Chamerion angustifolium*, *Urtica dioica, Atropa belladonna.*

5 NG 38538 63551
Shingle above high tide with *Potentilla anserina, Atriplex laciniata* and garden escapes including *Crocosmia* sp.

6 NG38472 63698

Various stands of long vegetation in area behind CalMac office, including *Phragmites australis*, *Urtica dioica, Anthriscus sylvestris.*

Photograph 5
Long vegetation – mainly *Phragmites australis* – in area behind CalMac office

7 NG 38312 63619
Semi-improved croft grassland, herb-rich (mainly *Ranunculus acris*) with high proportion of *Juncus squarrosus. Potentilla anserina* and *Filipendula ulmaria* present.

Otters

No recent signs of otters were found in the survey area. Although otters are relatively common on Skye, they are typically found in along the more complex shorelines of the sea lochs, and are not normally associated with straight coastline such as by the Uig ferry terminal. The presence of residential and commercial properties along the coastline will also be a factor in reducing the likelihood of otters using this stretch of coastline.

4 Assessment

Habitats

The habitat types recorded in the survey are mainly typical of the north of Skye. The township of Uig is unusual in that the gardens reach down to the shingle shore and so there are areas of garden introductions all along the upper shore. Garden plants and shrubs had self-seeded in most of the terrestrial habitat types. No species of particular note were found, and there were no groundwater dependent ecosystems identified.

Otters

No signs indicating the presence of otters were found. As otters are numerous around the coast of Skye it is possible that they use the area infrequently, but no

recent signs were found and the fact that the shoreline is unbroken, and the area is populated and busy with traffic, means it is unlikely that otters use resting places in the vicinity of the ferry terminal.

5 Further Survey Recommendations

Habitats
As the habitat types recorded are not of particular conservation importance, there is no requirement for a further NVC survey of the area.

Otters
As no signs indicating the presence of otters were found there is no requirement for a further otter survey.

Appendix 1 Uig Ferry Terminal
Phase 1 Habitat

Legend

Target notes

Intertidal

Verges

Introduced shrub

shingle

Campsite

Semi-improved acid grassland

0 100 200 m

N

Appendix D Ornithological Survey

Uig Ferry Terminal

Ornithological Survey

June 2017

Redacted

Summary

A desktop study was carried out to identify potential breeding and wintering bird species that may utilise the site.

A breeding birds survey was carried out of the area of Uig Ferry Terminal, Skye, in May 2017. Very few breeding birds were found in the vicinity of the ferry terminal, and no breeding Schedule 1 birds were found.

1 Introduction

1.1 Site Description

The area of the survey was the ferry terminal at Uig, Isle of Skye and all suitable breeding bird habitat within 250m of the terminal.

1.2 Aims of Survey

A desktop study was carried out to identify potential breeding and wintering bird species that may utilise the site.

A field survey was also carried out, which aimed to locate all breeding birds within the survey area and asses the requirement for further breeding bird survey visits to the area.

2 Methodology

Desktop Survey

The following were consulted for data on breeding and wintering birds in the vicinity of Uig ferry terminal:

BTO Wetland Bird Survey
BTO Breeding bird atlas
JNCC's Seabirds at Sea and European Seabirds at Sea database
Data collated for the Shiant Isles Seabird Recovery Project
Surveys carried out for the Inner Hebrides and the Minches candidate Special Area of Conservation

Field Survey
A standard walkover survey of the site, including the existing pier structure and a 250m buffer zone, was carried out by Redacted on 24 and 25 May 2017. The survey was undertaken in good weather conditions. The area was surveyed between 0900 and 1800, and suitable long vegetation for corncrakes was surveyed again between 0015 and 0045.

The survey was undertaken by Alison Tyler, an experienced ornithologist.

3 Results

Desktop Survey
There are no designated sites for breeding birds within 20km of the Uig Ferry Terminal. Uig Bay is within the candidate (submitted to EC) Special Area of Conservation Inner Hebrides and the Minches, which has harbour porpoise as its qualifying feature. The Trotternish Ridge SAC is also within 20km of the site.

Very little information on breeding birds of the Uig area was available. RSPB have records of breeding corncrake in the area, so the field survey included surveying following standard RSPB methodology.

No data on the seabirds of Uig bay was available from either the surveys carried out for the Shiant Isles Seabirds Recovery Project or the Inner Hebrides and the Minches candidate SAC. A single count was carried out for the Wetland Bird Survey in winter 2005/2006.

Field Survey
The existing pier is an open mental construction at the seaward end and a solid concrete wall and rock armour at the shore end. As detailed in the Phase 1 Habitats and Otter Survey Report[1], the intertidal area is brown algal beds with a small area of saltmarch at the upper llimits of the area below the rock armoured sea wall. The shingle area above high tide has sparse vegetation (Figure 1). There is a grass verge between the seawall and the roads and car park area. The adjacent crofts land is herb-rich semi-improved grassland.

Figure 1: Pier and Intertidal Area

<u>Species found breeding in the survey area</u>

House sparrow *Passer Domesticus*
Two breeding pairs under the eaves of the filling station adjacent to the ferry terminal

Starling *Sturnus vulgaris*

At least 4 pairs nesting in the roof area of the CalMac ferry terminal building.

[1] A Tyler, Uig Ferry Terminal Phase 1 Habitats and Otter Survey, June 2017

Sedge Warbler *Acrocephalus schoenobaenus*

One pair nesting in the shrub vegetation between the road and the shore west of the ferry terminal.

Wren *Troglodytes troglodytes*

One pair nesting in the shrubs near the ferry car park.

Other birds recorded during the survey

Pied Wagtail *Motacilla alba*

Seen flying near the ferry car park.

Swallow *Hirundo rustica*

Flying over shore near pier – probably nesting in croft buildings near survey area

Herring Gull *Larus argentatus*

7 birds recorded in the vicinity of the pier

Eider *Somateria mollissima*

Flock of 5 birds on sea loch within 200m of pier.

4 Assessment

There are no designated sites for breeding or wintering birds within 20km of the Uig Ferry Terminal. There are records for breeding corncrake within the township of Uig, and there is suitable long vegetation within the survey area, but no calling corncrakes were recorded during the survey. The breeding birds found during the survey are all common species found throughout Skye and the Highlands and Islands. The survey timing was sub-optimal for Black Guillemot *Cepphus grylle* however the habitat present did not provide suitable nesting sites, for that species.

The desktop study did not identify any published data on wintering birds in Uig Bay, other than the single WeBS count. Uig Bay was not included on the Areas of Search for inshore aggregations of waterbirds outside the breeding season by the JNCC Seabirds at Sea team surveys. Eider were recorded during the breeding bird survey and it is known that they are also present as a wintering species.

5 Further Survey Recommendations

As the breeding birds in the vicinity of the ferry terminal are relatively common in Skye, and there were no Schedule 1 breeding birds, there is no immediate requirement for further breeding bird survey work.

There is a lack of information on wintering seabirds in the vicinity of the ferry terminal. There is no published data to suggest that Uig Bay is a nationally important area for seaduck. Eider are present throughout the year, and, although eider can feed in the intertidal areas, the proposed development is unlikely to have an adverse effect on the eider population in Uig Bay.

Appendix 1 Uig Ferry Terminal Breeding Birds

Legend

House sparrow

Starling

Sedge warbler

Wren

N

Appendix E Current Ferry Timetable

There are two existing ferry routes from Uig Harbour to Lochmaddy on North Uist and to Tarbert on Harris. The ferry times from the peak summer period are shown in Table 1 and Table 2.

Table 1 Uig to Lochmaddy Peak Ferry Times

Day	Uig -> Lochmaddy		Lochmaddy -> Uig	
	Departure	Arrival	Departure	Arrival
Monday	09:50	11:35	12:05	13:50
	18:40	20:25	-	-
Tuesday	-	-	07:15	09:00
	14:00	15:45	16:15	18:00
Wednesday	09:30	11:15	11:45	13:30
	19:20	21:05	-	-
Thursday	-	-	07:15	09:00
	14:00	15:45	16:15	18:00
Friday	09:10	10:55	11:30	13:15
	18:20	20:05	20:30	22:15
	22:30	00:15	-	-
Saturday	-	-	07:15	09:00
	14:15	16:00	16:30	18:15
Sunday	09:30	11:15	11:45	13:30
	18:30	20:15	20:40	22:25

N.B. These ferry times represent the busiest schedule throughout the year (23 June – 2 September)

Source: CFL Timetables, 2017

Table 2 Uig to Tarbert (Harris) Peak Ferry Times

Day	Uig -> Tarbert		Tarbert -> Uig	
	Departure	Arrival	Departure	Arrival
Monday	05:30	07:10	07:40	09:20
	14:20	16:00	16:30	18:10
Tuesday	09:30	11:10	11:40	13:20
	18:30	20:10	-	-

Day	Uig -> Tarbert		Tarbert -> Uig	
	Departure	Arrival	Departure	Arrival
Wednesday	-	-	07:15	08:55
	14:10	15:50	16:20	18:00
Thursday	09:30	11:10	11:40	13:20
	18:30	20:10	-	-
Friday	-	-	07:00	08:40
	14:00	15:40	16:10	17:50
Saturday	09:30	11:10	11:50	13:30
	18:45	20:25	21:00	22:40
Sunday	14:15	15:55	16:25	18:05

N.B. These ferry times represent the busiest schedule throughout the year (23 June – 2 September)

Source: CFL Timetables, 2017