



Redacted

Marine Scotland, Scottish Government
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Ref:39/L/MS02
21st September 2017

Dear Redacted

**Re: The Marine Works (Environmental Impact Assessment) Regulations 2017,
Regulation 14 – Request for a Scoping Opinion, Lochmaddy Ferry Terminal Upgrade.**

I write to request a scoping opinion for the Lochmaddy Ferry Terminal Upgrade, on behalf of Comhairle nan Eilean Siar. This is in accordance with The Marine Works (Environmental Impact Assessment) Regulations 2017, Regulation 14.

Please find enclosed the Lochmaddy Ferry Terminal Development EIA Scoping Report for your information and review.

I anticipate a scoping opinion by the end of November 2017. Allowing for the 30 days consultation period as outlined in Regulation 14 (5) and the additional 5-week period required for Marine Scotland to adopt a Scoping Opinion as outlined in Regulation 14 (7). Please inform Affric Limited at the earliest opportunity, if this is not achievable, so that we can update the project delivery programme accordingly.

We look forward to receiving your scoping opinion. Should you have any further queries in the meantime please contact Redacted [REDACTED] or Redacted [REDACTED] or Redacted [REDACTED] of this office.

Kind regards,

[REDACTED]
Redacted

Encs. Lochmaddy Ferry Terminal Development EIA Scoping Report



Wallace Stone

Marine Consulting Civil Engineers

Lochmaddy Ferry Terminal Development

EIA Scoping Report

Prepared by Redacted

Checked by Redacted

September 2017

Affric Reference: 39/LO3

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Executive Summary

The proposal by Comhairle nan Eilean Siar (CnES) to upgrade the Lochmaddy Ferry Terminal on the east coast of North Uist, will allow access by the new larger ferry proposed by Caledonian Marine Assets Ltd (CMAL). An EIA will be required to support the planning and marine licence applications for the upgrade works. To facilitate the agreement of the content of the EIA this scoping report has been prepared in line with Regulation 14 of the Marine Works (Environmental Impact Assessment (EIA)) Regulations 2017, and Regulation 17 of the Town and Country (EIA) (Scotland) Regulation 2017.

The information provided aims to give an understanding of the whole proposal; construction, operation, and reinstatement. The environment and potential impacts are discussed on a subject basis, to assess baseline conditions, highlight potential impacts, identify appropriate mitigation techniques and to determine the potential for remaining significant environmental effects and therefore the subject's inclusion in the EIA Report.

This project is an upgrade to the existing harbour; no significant operational changes in environmental impacts from the current baseline are expected, with the exception of traffic and access and noise (traffic only). The ferry has the capacity to bring more vehicles and passengers to the island. The ferry however will run a similar timetable and route to the current situation. As such, it is suggested that all EIA topics with regard to operation, with the exception of traffic and traffic associated noise, are scoped out of the EIA.

With regards to construction, two topics are proposed to be scoped out of the EIA process as they are not likely to have significant environmental impacts. These include:

- Landscape and Visual
- Population, Human Health and Socio-economics

Additionally, with consideration of standard mitigation measures; six further topics are proposed to be scoped out regarding construction. With the implementation of standard mitigation measures, no significant impacts are expected, these topics include:

- Archaeology and Cultural Heritage
- Air Quality and Climate Change
- Land and Soil Quality - Terrestrial
- Land and Soil Quality – Marine (elements covered by Water Quality – Marine)
- Natural Resource Usage and Waste
- Water Quality - Terrestrial

This approach has been taken in line with the 2017 regulations; to ensure the EIA focuses on the significant environmental effects and that the EIA Report is proportionate to the effects of the project. Mitigation measures outlined in this Scoping Report will be included in the Schedule of Mitigation (SoM) and implemented through the Construction Environmental Management Plan (CEMP) to ensure they are successfully implemented.

CnES and Affric Limited welcome a scoping opinion to allow the project to tailor the EIA Report to meet the requirements of Marine Scotland, CnES and their statutory consultees.

1 Introduction

A formal scoping opinion is sought from Marine Scotland for works conducted below the mean high-water springs (MHWS) under Regulation 14 of the Marine Works (EIA) Regulations 2017, and from the Comhairle nan Eilean Siar (CnES) for works conducted above the mean low water springs (MLWS) under Regulation 17 of the Town and Country Planning (EIA) (Scotland) Regulation 2017. This will determine the scope of the EIA required to support the Marine Licence and planning application for the proposed development of the Lochmaddy Ferry Terminal.

Information on the proposed development is provided to give an understanding of the whole proposal; construction, operation and reinstatement. The environment and potential impacts are then discussed on a subject basis, to assess baseline, recognise potential construction and operational impacts, identify appropriate mitigation techniques and to review the need for additional baseline data collection and assessment of potential effects. Section 2 of this document provides information about the development; Section 3 outlines the consenting and policy context of the development; Section 4 to 15 consider each EIA topic in turn, prior to conclusions being drawn in Section 16.

2 Proposed Development

2.1 Project Description

The project comprises of the following main components:

- Pier extension, reconstruction and fendering;
- Dredging;
- Upgrade to the existing substation; and
- Vehicle marshalling created from reclamation areas.

2.2 Location

Lochmaddy is located on the east coast of the Isle of North Uist and has a grid reference centre point of NF 92036 68002 (Figure 39.01). Lochmaddy is the largest settlement on the island of North Uist. The ferries that utilise this terminal provide the shortest link between the Uists and Uig on Skye, which has road links to the Scottish Mainland. The harbour is situated to the south east of the main village, within the shelter of the sea loch, Loch Nam Maddah.

Lochmaddy falls within the administrative area of the CnES. The development is delineated in Figure 39.01.02.

2.3 Project Phases

2.3.1 Construction

Generally, construction works will be conducted between 7am to 8pm Monday to Saturday, with Saturday work generally finish earlier. No Sunday working is anticipated to occur. However, work outwith these hours may be required on an infrequent basis to suit tides and ferry movements. Approval will be sought from the relative authority prior to this occurring.

2.3.1.1 Pier Extension, Reconstruction and Fendering

Prior to works to the pier commencing, a temporary fendering system will be installed to allow berthing of the ferry throughout the works. Steel piles will be installed into the underlying rockhead, which will then be tied back to the existing structure to form a steelwork frame. Pneumatic fenders will be attached to the temporary steel framework. Following the completion of the permanent works, the temporary fendering system will be removed.

The existing pier will be extended to the south east of the current structure, this will require dredging of the sands and gravels that overlay rock head and installation of rock mattresses to form a level foundation. A steel frame will be installed on the foundation, before a new concrete caisson (constructed offsite in a dry-dock) is floated into place, and installed on the steel foundation frame. A reinforced concrete slab will then be constructed to form the new deck, and the concrete roundhead will be levelled and tied into the newly installed deck. Bollards, surface drainage, lighting and power will be installed.

The existing pier will be reconstructed to accommodate the installation of the new fenders, work will include breaking out the edge of the existing concrete deck, before forming a new quay edge using reinforced concrete. New bollards, surface drainage, lighting and power will also be installed to the existing pier.

Generally, the new fendering system will be installed by driving piles into the underlying rock head. The sleeve mounted fenders will then be installed over the fender piles and grouted up. Fendering will be connected into the pier structure. Some of the fendering will be directly connected to the existing structures or new caisson without the requirement for fender piles. Localised scour protection may also be placed on the sea bed around the new / existing structures.

2.3.1.2 Dredging

Dredging will be undertaken to allow for vessel manoeuvres at the harbour. The dredge material is expected to be a mixture of granular seabed material and underlying rockhead. Dredged spoil, if suitable, will be utilised to contribute to the infill material for the reclamation works both at Lochmaddy and Tarbert Harbour development. It is anticipated that between 13,000m³ and 14,000m³ of material will be removed. The proportion of this that is rock dredge is ~1,250m³ and is located along the foreshore of the manoeuvring area to the north of the pier outer end. The only other area of rock to be dredged is an outcrop near the linkspan.

Currently it is anticipated that drilling and blasting may be required in some areas if hard bedrock is present. This will be informed by contractors following ground investigation. The rock dredge near the linkspan will have to be undertaken by stitch drilling and hydraulic breaker mounted on a barge mounted excavator to prevent destabilising the existing quay wall structures.

2.3.1.3 Substation

The existing sub-station will be upgraded with a larger transformer. This process may require additional onshore cabling, ducting and infrastructure works, all of which will remain within the existing harbour area.

2.3.1.4 Marshalling Area and Reclamation

The marshalling and infill areas will be extended and bituminised to sustain the increase in personnel and vehicles. This upgrade is expected to increase the vehicle capacity by 90% with an additional ~2500m² of reclaimed area, 350m² of uncleared land and ~600m² of previously developed area. An area to the north of the terminal building may be used for additional car parking and improvements in the terminal building, this has not as yet been fully defined however the maximum size of this will be 2,650m². The reclaimed marshalling and carpark area will include rock armouring to protect the seaward edges, and infilling to reclaim and re-profile the areas; dredged spoil may be utilised as the infill material. The reclaimed area will be tied into existing adjacent areas.

In addition, improvements to supporting infrastructure will be made, such as surface drainage including appropriate oil and silt interceptors, lighting and, power.

A new 10 m³ water tank is also proposed to provide a buffer for water bunkering operations by the vessel, including all necessary pumps, standby pump, pipework and control systems.

2.3.2 Operation

As the project is an extension of an existing ferry terminal significant change in operation from the current conditions are not expected. The new ferry will be working a similar timetable and route. This upgrade is proposed to allow for the berthing and operation of a larger ferry which has a greater vehicle and passenger carrying capacity than the current ferry.

Table 2.1: Capacity changes between the existing and new ferry

	Existing capacity	New capacity
Vehicles	98	135
Passengers	612	1000

The marshalling yard will be capable of handling up to 140% of the vehicle capacity of the new ferry which will take the pressure of the current situation whereby traffic is backed up into the main and only through road within Lochmaddy village. The marshalling yard will continue to occupy the additional land take through the life of the project.

Once the fendering, pier and substation are replaced/upgraded minimal operational changes are expected.

Maintenance dredging is not expected to be required during operation.

2.3.3 Demolition/Reinstatement

A degree of demolition of the existing fendering and pier structures is required to facilitate the proposed works. The volumes of demolished material will be minimised through design. However, where required, it is anticipated that the affected infrastructure will be removed and where possible recycled.

As a lifeline ferry service, there are no future plans to discontinue use of this site. Therefore, it is not considered necessary to plan for demolition and reinstatement works for closure of this site.

3 Consenting and Policy Context

3.1 Consenting Permitting and License Process

3.1.1 Marine Licence

A number of activities listed under Part 4, Section 21 of the Marine (Scotland) Act 2010 [Scottish Parliament, 2010], require a Marine Licence issued by the Marine Scotland Licensing Operations Team.

Any activity involving the deposit or removal of substances or objects in the sea, either on or under the seabed, or to construct/alter/improve any works in or over the sea or on or under the seabed, under the MHWS line are all subject to marine licence according to the Act.

As per the screening request opinion received from Marine Scotland on 24th August 2017, under the Marine Works (EIA) Regulations 2017 an EIA Report will be required to support the application for a Marine Licence.

3.1.2 Pre-Application Consultation

The Marine Licensing (Pre-application Consultation (PAC)) (Scotland) Regulations 2013 [Scottish Government, 2013], prescribe the marine licensable activities that are subject to PAC and in combination with the Marine (Scotland) Act 2010 [Scottish Parliament, 2010], set out the nature of the pre-application process. The Lochmaddy Ferry Terminal falls within Regulation 4(d) as a construction activity within the marine area exceeds 1000m² therefore requiring the project to go through the PAC process. Consultation is being carried out to meet the requirements of the Marine Licensing (PAC) (Scotland) Regulations 2013.

3.1.3 Planning Consent

Under the Town and Country Planning (Scotland) Act 1997 [Scottish Parliament, 1997], any type of development, i.e. carrying out of building, engineering, mining or other operation in, on, over or under land, or the making of any material change in the use of any building or other land over the MLWS will require planning consent. As such the Lochmaddy development will require planning permission issued by the CnES.

3.1.4 European Protected Species Licence

If it is determined that the development of construction activities will likely affect European Protected Species (EPS) listed under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) [United Kingdom (UK) Government, 1994]; which includes dolphins, harbour porpoises and European otters; an EPS Licence will be required. It is recognised that an EPS licence will only be granted if it is proved that:

- 1) *The project is on Imperative Reasons of Overriding Public Interest;*
- 2) *There are not satisfactory alternatives; and*
- 3) *The proposed action must not be detrimental to the maintenance of the species at 'favourable conservation status'.*

Depending on the construction techniques there is a potential to have disturbance effects on cetaceans and otters, hence EPS licenses may be required.

3.1.5 Habitat Regulation Appraisal

An appropriate assessment (AA) is part of the Habitats Regulations Appraisal (HRA) process [UK Government, 1994], to be undertaken by the competent authority. It is required when a plan or project potentially affects a European Natura site. The Natura sites' network in the UK consists of Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). An AA must demonstrate that there will be no adverse effect on site integrity. Should this requirement not be satisfied, a project would only receive consent if:

- (1) *Imperative Reasons of Overriding Public Interest are proved; and*
- (2) *There are not satisfactory alternatives.*

The Lochmaddy Ferry Terminal development will intersect the Loch nam Madadh SAC and hence is assumed to require an appropriate assessment. In addition, there is the potential for the development to cause indirect effects on several adjacent Natura sites. The intent is to provide appropriate information within the EIA Report to inform any AA's that many need to be undertaken by Marine Scotland as the competent authority in this case.

3.2 Policy

In 2015 the Scottish Government released Scotland's National Marine Plan which provides a comprehensive and overarching framework for managing activities undertaken within the marine environment surrounding Scotland. The vision for the marine environment is underpinned by a series of strategic objectives. These good environmental status descriptors outlined within the relevant sections of this document. The objectives relating to recreation and tourism relevant to the project include:

- *Position Scotland as a world class sustainable coastal and marine tourism and recreation destination through the sustainable development of coastal and marine recreation activities and industries in Scotland.*
- *Promote diversification of the recreation and tourism sector to increase the value of assets in rural towns and exploit opportunities from future climate change.*
- *Continued and improved access to marine and coastal resources for tourism activities and recreational use.*
- *Sustainable improvement and/or development of existing or new facilities, encouraging the sharing of facilities and supporting infrastructure and the use of low carbon energy solutions [Scottish Government, 2015c].*

The relevant planning policy within the Scotland's National Marine Plan to support this is:

- **REC & TOURISM 1:** *Opportunities to promote sustainable development of marine recreation and tourism should be supported [Scottish Government, 2015c].*

The objectives regarding shipping, ports, harbours and ferries relevant to the project include:

- *Sustainable growth and development of ports and harbours as a competitive sector, maximising their potential to facilitate cargo movement, passenger movement and support other sectors.*

- *Safeguarded essential maritime transport links to island and remote mainland communities [Scottish Government, 2015c].*

The relevant planning policy within the Scotland's National Marine Plan to support this is:

- **TRANSPORT 4:** *Maintenance, repair and sustainable development of port and harbour facilities in support of other sectors should be supported in marine planning and decision making [Scottish Government, 2015c].*

Eleven Scottish Marine Regions have been created which cover sea areas extending out to 12nm. Regional Marine Plans will be developed in turn by Marine Planning Partnerships, allowing more local ownership and decision making about specific issues within their area. The area surrounding the development will be covered by the Outer Hebrides Marine Region. This plan is not yet developed and it will take some time to set up Marine Planning Partnerships and develop marine plans for all of the 11 regions. In the interim period, the Marine Policy Statement and the National Marine Plan will apply [Scottish Government, 2015c].

The Scottish Government provides advice and technical planning information in the form of Planning Advice Notes (PAN)s. While the project will not be consented under the planning regulations the PANs will be considered as examples of best practice guidance throughout the design and EIA process.

Relevant sections of planning policies, will be identified, considered through the project development process and discussed within this scoping report.

4 Air Quality and Climate Change

4.1 Policy and Guidance

Relevant guidance and information sources includes:

- 2016 Air Quality Annual Progress Report for CnES [CnES, 2016]
- Assessment of Dust from Demolition and Construction [Institute of Air Quality Management (IAQM), 2014];
- Air Quality Monitoring in the Vicinity of Demolition and Construction Sites [IAQM, 2012];
- Assessing Greenhouse Gas (GHG) Emissions and Evaluating their Significance [Institute of Environment Management and Assessment (IEMA) and Arup, 2017];
- 2015 Local Authority Carbon Dioxide Emissions [Department for Business, Energy and Industrial Strategy (BEIS), 2017];
- Mapping Carbon Emissions & Removal for the Land Use, Land Use Change & Forestry Sector [Buys, Thomson, Moxley, & Malcolm, 2014]; and
- Working at construction and demolition sites: PPG6. [Environmental Agency, Northern Ireland Environmental Agency (NIEA) & Scottish Environmental Protection Agency (SEPA), 2012].

4.2 Baseline

There are no Air Quality Management Areas within the Western Isles, and the area does not have any areas where pollutant levels have been exceeded or are close to exceedance levels [CnES, 2016].

The nearest dwellings are two adjoining properties plus the visitor centre, which are situated within the boundary of the marshalling area, between 10-20m away from the site. The Lochmaddy Hotel is the next closest property 40 m along the road into the village, there is a further residential property situated 80 m away. The main boundary of the village is approximately 200 m away.

Nitrogen Dioxide (NO₂) monitoring was conducted in Stornoway during 2015, which is ~82km away from Lochmaddy. This is the largest town in the Western Isles and for this reason the most likely to contain the highest levels of NO₂. During this monitoring no exceedances were recorded. No particulate matter (PM)₁₀ or PM_{2.5} monitoring site are located in the Western Isles [CnES, 2016].

Background air emissions levels are not expected to be high at Lochmaddy as there is limited urbanisation and development on the North Uist.

"Scotland has the second largest sink of Land Use, Land Use Change and Forestry per capita emissions (-1.0 t carbon dioxide (CO₂) per person) due to forest land occupying a large proportion of land area" [BEIS, 2016]. According to local authorities 2015 data, the transport CO₂ emissions per capita on the North Uist is between 1.7-2.2 tonnes CO₂ per capita. This is in the middle range of the scale. The local authorities 2015 data of industrial and commercial emissions per capita on the North Uist is between 2.2-2.9 tonnes CO₂ per capita [BEIS, 2016].

4.3 Potential Construction Impacts

4.3.1 Dust

Dust has the potential to impact vegetation and human health through inhalation of particles, dust particles in eyes and covering the leaves of plants preventing photosynthesis, dust can also cause a nuisance by coating surfaces such as cars and windows. There is small amounts of earthworks and clearing required for this project, ~2500m², to increase the marshalling area. The use of dredge and infill material to construct additional areas has the potential to cause dust through material movement and placement as well as the additional open area this creates.

Additionally, vehicle movement on this cleared area during construction has the potential to cause dust, and to result in dust/mud track-out onto the public roads. High wind weather events have the potential to spread dust as it blows over the open area prior to it being tarmacked.

The increase in the reclaimed marshalling area is ~2500m². Additionally, there is a ~350m² area of additional lanes that is not previously cleared or tarmacked. The area north and east of the terminal building may be used for additional carparking and upgrades to the terminal building if required. The maximum area of this, if progressed would be 2,650m². Under the Air

Quality Monitoring in the Vicinity of Demolition and Construction Sites [IAQM, 2012] this development is classified on the lower end of medium magnitude for earthworks (Table 4.1).

Table 4.1: Lochmaddy and Medium Magnitude Dust Emissions from Earthworks [IAQM, 2012]

	Lochmaddy (approximations)	Earthworks Medium
Earthworks area	2850m ² - 5,500m ²	2,500 m ² – 10,000 m ²
Soil type	sand and gravel	Silt
Heavy earth moving vehicles	7	5-10
Material movement	25,000 tonnes	20,000– 100,000 tonnes

The classification for demolition, construction and track out will all be low to not applicable. Additionally, the main village boundary is ~200m way as such significant impacts are not considered likely.

4.3.2 Climate Change

There are likely to be a GHG emissions associated with the site preparation and construction of the Lochmaddy Terminal Development. This is a result of the; construction of the pier extension, fendering and substation works, burning of fossil fuels by plant and equipment to aid with construction, and a minimal amount resulting from clearing the small amount of vegetation in the marshalling area.

4.4 Potential Operational Impacts

4.4.1 Dust

All areas will be finished with concrete, tarmac or replanted, hence there will be no exposed ground to give rise to sources of dust.

4.4.2 Climate Change

Emissions from the harbour during operation are not expected to contribute to a significant negative change in GHG emissions from the current conditions. The new ferry is larger and capable of transporting more vehicles and people than the existing ferry. As a result, this vessel will require more fuel and emit more GHG if operating on Marine Gas Oil (MGO). However, this is not expected to be significant from the current emissions as it will be working a similar run and timetable.

The new vessel will also be able to operate on Liquefied Natural Gas (LNG) in addition to using MGO. It is proposed that LNG be the primary source of fuel for vessel operation and this would reduce GHG emissions. Infrastructure to enable fuelling of the vessel with LNG is being developed as part of a similar project at Uig on the Isle of Skye.

The potential for flooding (which may be associated with climate change) is discussed under Major Accidents and Disasters (Section 14).

4.5 Mitigation Measures

Table 4.2: Dust and Climate Change mitigation measures

Phase	Risk/Effect	Cause	Mitigation
Construction	Vegetation, nuisance and human health	Dust	<ul style="list-style-type: none"> Dust suppression in line with PPG6 (e.g. sprinklers and water trucks) will be used in open areas and stockpiles as appropriate [Environmental Agency, NIEA & SEPA, 2012].
Construction	Climate Change	GHG	<ul style="list-style-type: none"> Plant and vehicles will be well maintained.
Operations	Climate Change	GHG	<ul style="list-style-type: none"> Plant and vessels will be appropriately maintained. Marshalled vehicles will be requested to switch off engines while waiting.

4.6 Proposed Environmental Impact Assessment

Due to the size of the terrestrial area and limited development, the potential impacts outlined in Sections 4.3 and 4.4 and the mitigation measures (Section 4.5) it is proposed that air quality and climate change is scoped out of the EIA process. The mitigation measures outlined in Section 4.5 will be included in the SoM and included in the CEMP to ensure they are successfully implemented.

5 Archeology and Cultural Heritage

5.1 Policy and Guidance

Relevant policy, guidance and information source includes:

- PAN 2/2011: Planning and Archaeology [Scottish Government, 2011b];
- Managing Change in the Historic Environment: Setting [Historic Environment Scotland, 2010]; and
- PastMap [Historic Environment Scotland, 2017a].

5.2 Baseline

There are no known archaeological features on the site.

There are five listed buildings within a 2km radius of the Lochmaddy development, these are outlined in Table 5.1. No schedule monuments, conservation areas, world heritage sites or inventory battlefields are within 2km of the project area [Historic Environment Scotland, 2017a].

The Lochmaddy Ferry Terminal is a Canmore Site and has associated digital images. The Canmore Sites within a 500m radius are outlined in Table 5.2.

The Lochmaddy Terminal area has 14 recorded Canmore Maritime sites. These are outlines in Table 5.3.

Table 5.1: Listed Buildings within 2km of the site [Historic Environment Scotland, 2017a]

Site Name	Classification	Distance	Description	GRID.
Former Inn	Listed Building (Cat B)	230m	Late 18th/early 19th century. Former Inn. In derelict condition.	NF 91916 68257
Lee View Formerly MacLean's Mansion	Listed Building (Cat C)	760m	Prominently sited on the west shore of Lochmaddy (Loch nam Madadh), Lee View was a merchant's house of some significance when constructed. The building is dated 1852 over the porch, however, it is likely that this was a reworking of an earlier house. Its early date, relatively large scale and rarity as a building type in the Western Isles contribute to its interest. It is contextually important to a small group comprising the house, pier and an ancillary building, and it is an important visual and historical contributor to this harbourside group. Lee View was built as a townhouse for John Maclean of Boreray and it later became a general store and multiple dwelling. The upper floor was used as a Masonic Lodge from 1950, but this closed some years ago and the building has been out of use for some time. The roof was removed following a fire in 2008.	NF 91872 68788
Old Courthouse and Exercise Yard Walls	Listed Building (Cat B)	850m	James Ross of Inverness, architect, 1845; extended circa 1856, William Lawrie of Inverness. Former courthouse and jail with walled exercise yard to 3 sides. Replaced by present building 1877.	NF 91757 68861
Sheriff Court	Listed Building (Cat C)	880m	Lochmaddy Sheriff Court dates to 1875 and is a significant example of civic architecture in a remote rural setting. The court was built in high quality materials for the area and makes a strong contribution to the streetscape particularly when grouped with the former prison which is sited immediately adjacent to it. Internally the building retains its late 19th century gothic styled decorative scheme to the principal public area and timber detailing, which is of notable quality for a small rural court house.	NF 91774 68901
Sponish House	Listed Building (Cat B)	1.5km	Early 19th century 2-storey over basement house set on falling ground, with single storey wing flanking to right and 3-storey later 19th century wing to left. Rendered.	NF 92114 69536

Table 5.2: Canmore Sites within 500m [Historic Environment Scotland, 2017a]

Site Name	Site Number	Classification	Distance	Description	GRID.
Pier, Beacon and Ferry Terminal	NF96NW 46	Beacon, Ferry Terminal, Pier (Period unassigned)	0m	Nothing Available – Only images	NF 91987 68005
Lochmaddy Harbour	NF96NW 54	Harbour (Period Unassigned), Plank (Wood)	150m	Waterlogged timber found in dredging	NF 919 679
Lochmaddy Hotel	NF96NW 17	Hotel (19-20th Century)	150m	Lochmaddy Hotel, 1864; extension to left, Kinnear & Peddie, 1884 Fishing hotel with the standard form of a 19th-century West Highland inn still visible at its centre	NF 91903 68174
Taigh Chearsabhaigh	NF96NW 41	Inn (Period Unassigned)	230m	Taigh Chearsabhaigh, 1741 Former inn, which also served as a trading and rent-paying base. The tall house of two storeys over a raised basement, with detached stable/storehouse and pier, was built by the merchant Neil (Ruadh) Maclean on the site of an old salt house. Robert Reid's map of North Uist shows that in 1799 there was nothing on the site of the present village except for this building and the 'Innkeeper's park'. Utilised as a bothy after the hotel and new pier were built, it became a dwelling sometime after 1900 and an estate workshop in the 1950s. It was rescued from dereliction and extended as an art centre/museum by McKillop Assocs for Taigh Chearsabhaigh Trust, 1994-5; further extension, 2000.	NF 91916 68257
Manse	NF96NW 37	Manse (Period Unassigned)	430m	Nothing available	NF 9186 6846



Drill Hall	NF96NW 56	Drill Hall (20th Century), Office (Period Unassigned)	430m	Situated to the SE of the church and SW of the manse is a single storey building said to be the last of three Drill Halls used at Lochmaddy. It is not known when the building was used as a drill hall, but it is currently used as the estate office.	NF 91831 68459
Kersavagh	NF96NW 28	Township (Period Unassigned)	440m	A township comprising two roofed, one partially roofed and three unroofed buildings. This township is now located within the town of Lochmaddy	NF 917 684
Scaalan	NF96NW 11	Clearance Cairn(S) (Period Unassigned), Natural Feature(S) (Period Unknown)	450m	1911 -There is a group of 6 small cairns at Scaalan near Lochmaddy, upon the slope facing the island of Leiravay. 1965 - The area was perambulated but no cairns were seen. There are, however, a few natural rocky mounds and one or two stone clearance heaps.	NF 915 681
Trumisgarry Parish Church	NF96NW 36	Church (Period Unassigned)	470m	Nothing available	NF 9182 6848
Cam-ard-mor	NF96NW 25	Head Dyke (Post Medieval), Township (Period Unassigned)	500m	What may be a township comprising three unroofed buildings, one of which is T-shaped, and two lengths of head-dyke	NF 917 676

Table 5.3: Canmore Marine Sites at Lochmaddy Terminal [Historic Environment Scotland, 2017a]

Name	Site Number	Classification	Date	Location	Information
Arran Maid	NF96NW 8005	Wooden Scooner	1876	Arbitrary	Arran Maid, is on the rocks in Lochmaddy abandoned and in a sinking state.
Lord Wellington	NF96NW 8011	Ship	1824	Tentative	The Lord Wellington ran on shore at Lochmaddy but expected to be got off the next spring tide. She makes very little water
Active	NF96NW 8017	Smack	1874	Tentative	This vessel was wrecked at Lochmaddy
Scotia	NF96NW 8013	Brig	1842		It blew a very heavy gale from W during which the Scotia and Reform were driven on the rocks, bilged, and filled; crews saved, and cargoes expected to be secured but in a very damaged state.'
Reform	NF96NW 8014	Craft	1842		As above
Penelope	NF96NW 8018	Sloop	1830	Tentative	This vessel, with cargo of Kelp was sunk in Loch Maddy
Glentanner	NF96NW 8012	Brigantine	1831	Tentative	The Glentanner, Skeen, drove from her anchors in this harbour during a dreadful gale and got upon the rocks, and has sustained so much injury that the cargo must be discharged. Crew saved. It sunk in deep water, but has been raised, and hauled into a creek a complete wreck
Enegheten	NF96NW 8019	Craft	1810	Tentative	This vessel was driven on shore and bilged at Lochmaddy.
Fawn	NF96NW 8006	Wooden Smack	1845	Arbitrary	The wooden smack was stranded with cargo of lime at Lochmaddy.
Charles and Ellen	NF96NW 8010	Schooner	1882		Three-masted schooner, drove ashore from her anchorage at Lochmaddy, during a terrific gale. The vessel is lying on her beam ends on a rock and is likely to become a total wreck: crew saved.
Unknown	NF96NW 8022	Craft	1816	Tentative	This vessel was struck by lightning in Lochmaddy harbour and sank. Crew lost.
Regent Bird	NF96NW 8007	Wooden Jigger	1901	Arbitrary	This vessel stranded at Lochmaddy.
Joseph Howe	NF96NW 8016	Schooner	1850	Tentative	The Joseph Howe, drove from her anchors whilst lying at Lochmaddy and struck a rock, sank in about 6 fathoms.
Queen	NF96NW 8015	Craft	1841	Arbitrary	The Queen, Hawkins, was driven on shore in this harbour, during a violent gale. It was not lost but had to discharge part of her cargo to get off.

5.3 Potential Construction Impacts

Due to the nature of the project and the distance between the project site and any areas of archaeology or cultural interest, no significant impacts are expected. Potential impacts of the construction and site works to heritage sites include vibration (Section 10) and visual impacts on the ambiance of the heritage sites (Section 7). Both of which are unlikely as discussed in Sections 10 and 7 respectively. Additionally, marine heritage sites may be impacted by the construction and dredging activities however as this area is in the existing harbour order and has previously been developed it is unlikely that any new sites will be discovered or disturbed. Previously unknown remains could be uncovered during the construction works, however this is deemed unlikely due to level of development already undertaken on the site.

5.4 Potential Operation Impacts

Due to the project being associated with an existing harbour, no additional cultural and archaeological risks from the current baseline are expected to result from this development.

5.5 Mitigation Measures

A protocol for archaeological discoveries will be included within the CEMP to ensure it is utilised in the unlikely event of an archaeological find.

5.6 Proposed Environmental Impact Assessment

It is proposed that archaeology and cultural heritage is scoped out of the EIA process due to the lack of significant sites within the vicinity of the project area (Section 5.2) and the minimal impacts to these sites as a result of the project (Section 5.3 and 5.4).

6 Biodiversity and Nature Conservation

6.1 Policy and Guidance

Relevant policy and guidance includes:

- PAN 60: Planning for Natural Heritage [Scottish Government, 2008];
- Guidelines for Ecological Impact Assessment in Britain and Ireland: Marine and Coastal [Chartered Institute of Ecology and Environmental Management (CIEEM), 2010];
- Scottish Planning Policy [The Scottish Government, 2014b];
- Conservation (Natural Habitats, &c.) Regulations 1994 [Scottish Natural Heritage (SNH), 1994];
- Council Directive (92/43/EEC) [Office Journal of the European Communities, 1992];
- The Nature Conservation (Scotland) Act 2004 [Joint Nature Conservation Committee (JNCC), 2004];
- Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise [JNCC, 2010]
- Handbook for Marine Intertidal Phase 1 Biotope Mapping Survey [Wyn, 2006];
- Seabird monitoring handbook for Britain and Ireland: a compilation of methods for survey and monitoring of breeding seabirds [Walsh *et al.*, 1995];

- Guidance on Marine Non-Native Species [GreenBlue, 2013];
- Alien invasive species and the oil and gas industry: Guidance for prevention and management [IPIECA & OGP, 2010]
- Marine Non-Native Species [SNH, 2013]; and
- Guidance on Assigning Benthic Biotores using EUNIS or the Marine Habitat Classification of Britain and Ireland [Parry, 2015].

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 9 Natural heritage:** *Development and use of the marine environment must:*
 - Comply with legal requirements for protected areas and protected species;
 - Not result in significant impact on the national status of Priority Marine Features;
 - Protect, and where appropriate, enhance the health of the marine area; and
- **GEN 10 Invasive non-native species:** *Opportunities to reduce the introduction of invasive non-native species to a minimum or proactively improve the practise of existing activity should be taken when decisions are being made [Scottish Government, 2015a].*

The Scottish government has released a series of good environmental status descriptors within Scotland's National Marine Plan. These include:

- **GES 1:** *Biological diversity is maintained and recovered where appropriate. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.*
- **GES 2:** *Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.*
- **GES 4:** *All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.*
- **GES 6:** *Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected [Scottish Government, 2015c].*

6.2 Designated Sites

Statutory Designated Sites which are located within a 20km radius of the project are detailed in Table 6.1 and mapped in Figure 39.02.01-39.02.05 [SNH, 2017]. These include the following designations:

- Sites of Special Scientific Interest (SSSI);
- Special Areas of Conservation (SAC) and proposed Special Areas of Conservation (pSAC);
- Special Protected Areas (SPA) and proposed Special Protected Areas (pSPA); and
- Ramsar Sites.

Only sites highlighted in green have the potential to be impacted by the development, this is due to the proximity with Loch nam Madadh SSSI and SAC and the mobile nature of the Harbour porpoise (*Phocoena phocoena*) as designated by Inner Hebrides and the Minches pSAC.

Table 6.1: Statutory Nature Conservation Designated Sites relevant to the Lochmaddy harbour development [SNH, 2017]

Site	Designation	Distance Direction	Feature Category/Feature
Loch nam Madadh	SSSI SAC	Development within Designated Sites	Designated for its Coastal Geomorphology (Earth Sciences), Fox tail stonewort (<i>Lamprothamnium papulosum</i>) (Non-Vascular Plant), mudflats, rocky shore, Saline lagoon and tidal rapids (Marine). Otter (<i>Lutra lutra</i>) (Mammals), Intertidal mudflats and sandflats, Lagoons, Reefs, Shallow inlets and bays, Subtidal sandbanks (Marine)
Mointeach Scadabhaigh	SSSI SPA	1.2km SW	Designated for Black throated diver (<i>Gavia arctica</i>) breeding, Red throated diver (<i>Gavia stellata</i>) breeding, Breeding bird assemblages
Loch an Duin	SSSI Ramsar	1.3km NE	Designated for Brackish water cockle (<i>Cerastoderma glaucum</i>) (Invertebrates), Breeding Bird assemblage, Coastal Geomorphology (Earth Sciences), Otter (<i>Lutra lutra</i>) (Mammals), Saline Lagoon and Tidal rapids (Marine)
Mointeach Scadabhaigh	SAC	2.6km W	Blanket bog, Depressions on peat substrates (Upland) and Dystrophic and oligotrophic lochs, Acid peat-stained lakes and ponds, Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels (Freshwater habitats).
Inner Hebrides and the Minches	pSAC	5km E	Designated for Harbour porpoise (<i>Phocoena phocoena</i>) (Marine)
Loch Obisary	SSSI	5.5km SSW	Designated for Saline Lagoon Marine (including marine mammals)
North Uist Machair and Islands	SPA Ramsar	8 – 19km N & W 1.3 – 15.5km NE, NW, W	Designated for Breeding Birds Corncrake (<i>Crex crex</i>), Dunlin (<i>Calidris alpina schinzii</i>), Oystercatcher (<i>Haematopus ostralegus</i>), Redshank (<i>Tringa totanus</i>), Ringed plover (<i>Charadrius hiaticula</i>) and Non-breeding birds Greenland barnacle goose (<i>Branta leucopsis</i>), Purple sandpiper (<i>Calidris maritima</i>), Ringed plover (<i>Charadrius hiaticula</i>).
North Uist Machair	SAC	8 – 19km NNW to SW	Naturally nutrient-rich lakes or lochs which are often dominated by pondweed (Freshwater Habitats), Annual vegetation of drift lines, Atlantic salt meadows, Dune Grassland, Humid dune slacks, Machair, Shifting dunes (Coast), Slender naiad (<i>Najas flexilis</i>) (Vascular plants). Turnstone (<i>Arenaria interpres</i>) Non-breeding.



Site	Designation	Distance Direction	Feature Category/Feature
Machairs Robach and Newton	SSSI	8.5km NW	Designated for Coastal Geomorphology, Machair and Sand Dunes
Obain Loch Euphoirt	SSSI SAC	9km SW	Designated for Foxtail stonewort (<i>Lamprothamnium papulosum</i>) and Saline Lagoon Marine (including marine mammals). Lagoons (Marine)
West Coast of the Outer Hebrides	pSPA	10km NE	Designated for Red throated diver breeding, Black-throated diver, common eider, great northern diver, long tailed duck, re-breasted merganser, Slavonian grebe. (Proposed Marine SPA)
Berneray	SSSI	12km NNW	Designated for Greenland Barnacle goose (<i>Branta leucopsis</i>) non-breeding and Coastal Machair
Loch at Clachan	SSSI	13km SW	Designated for Dystrophic loch (freshwater habitats) and Saline Lagoon Marine (including marine mammals)
Baleshare and Kirkibost	SSSI	13.2km SW	Designated for Breeding bird assemblage, Machair, Saltmarsh and Sand Dunes (Coast)
Boreray	SSSI	13.5km NW	Designated for Greenland Barnacle goose (<i>Branta leucopsis</i>) non-breeding and Greylag goose (<i>Anser anser</i>) non-breeding
Vallay	SSSI	15.5km NW	Designated for Greenland Barnacle goose (<i>Branta leucopsis</i>) non-breeding, Breeding Bird assemblage, Machair, Saltmarsh and Sand Dunes (Coast)
Pabbay	SSSI	18.5km NNW	Designated for Breeding Bird assemblage, Greenland Barnacle Goose (<i>Branta leucopsis</i>) non-breeding, Bryophyte assemblage (non-vascular plants), Machair(coast), Springs(wetlands) and Coastal Geomorphology.
Aird and Borve, Benbecula	SPA	19km SW	Designated for Breeding Birds Corncrake (<i>Crex crex</i>)
Balranald Bog and Loch nam Feithean	SSSI	19.5km W	Designated for Breeding Bird assemblage, Greenland Barnacle goose (<i>Branta leucopsis</i>) non-breeding, Machair, Saltmarsh, Sand Dunes (Coast), Eutrophic loch (Freshwater habitats) and Mudflats Marine (including marine mammals)

6.3 Baseline

The following ecological studies have been carried out to inform the baseline:

Table 6.2: Completed Baseline Surveys at Lochmaddy Ferry Development Site

Title	Reference	Appendix
Lochmaddy Ferry Terminal Phase 1 Habitats and Otter Survey	Tyler, 2017a	Appendix 1
Lochmaddy Ferry Terminal Ornithological Survey	Tyler, 2017b	Appendix 2

6.3.1 Terrestrial

6.3.1.1 Vegetation and Habitats

A Phase 1 Habitat Survey has been completed for the proposed development area and the adjacent 250m in June 2017. A copy of the Phase 1 Habitat Survey has been provided in Appendix 1. The main findings of which are summarised here.

There are small areas of intertidal habitat surrounding the coastal areas of the Lochmaddy Terminal (Appendix 1). This includes the bay to the west of the site that will be included in the western edge of the marshalling area extension and the area north and east of the terminal building that may be used for additional car parks and terminal building upgrades. The intertidal habitat areas contain an array of seaweeds typical of North Uist sea lochs - *Ascophylum nodosum*, *Fucus vesiculosus*, *Pelvetia canaliculata*, *Fucus spiralis* [Tyler, 2017a].

The peninsula east of the ferry terminal, and the land mass area west of the existing site are classified as acid grassland. These are proposed locations for the extended marshalling area and the construction site compound. Further north on the headland and west outwith the proposed boundary, the habitat is herb-rich semi-improved grassland, with a high proportion of *Juncus squarrosus*, *Rumex*, *Ranunculus acris* and occasional stands of *Iris pseudocorus* [Tyler, 2017a].

The habitat types are typical of North Uist and there were no notable species present at the time of survey. The plantation woodland has provided habitat for breeding birds that would not usually be found around the east coast of North Uist. The acid grassland is common throughout the croftland areas of North Uist [Tyler, 2017a].

6.3.1.2 Otters

European otters (*Lutra lutra*) have been identified in and around Lochmaddy [National Biodiversity Network (NBN), 2017], and are afforded protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). During the Phase 1 Habitat and Otter Survey; otter spraint sites, lie ups and runs were found on the peninsula east of the development (Appendix 1) [Tyler, 2017a].

Otters are using the shore immediately to the east and north of the ferry terminal and the islands to the west. There was one lie-up on the peninsula to the east of the terminal with signs of regular use, and an otter was seen fishing in the bay to the north. The otters frequenting this area of Lochmaddy are tolerant of disturbance and have continued to use the area after other developments have been carried out in the vicinity of the ferry terminal [Tyler,

2017a]. This includes fendering repairs and repainting the linkspan in 2009 and installing a cathodic protection system in 2010. Otters are a designated feature of the Loch nam Madadh SAC, and are also an EPS.

6.3.2 Marine

6.3.2.1 Vegetation and Habitats

A comprehensive habitat mapping survey was completed in 1995 to survey the littoral and sublittoral habitats and communities of Loch Maddy. The findings were as follows:

*A wide range of biotopes... serve to illustrate varying degrees of wave exposure, restricted tidal range, freshwater influences and exposure to tidal currents which occur within the Loch Maddy system. The sheltered shore biotype of *Ascophyllum nodosum* on rock and on mixed substrate... was found to occur extensively in both inner and outer Loch Maddy. A range of interesting tide-swept lower shore areas were also found in the narrows between loch basins and lagoons [Entec, 1996].*

*Loch Maddy is a complex fjardic loch, with inner, very sheltered basins, a range of sheltered channels subject to strong tidal streams, and an outer, more extensive basin... The majority of the sublittoral area throughout the loch consisted of sediment, with medium and coarse sand in the outer loch, and sandy mud and mud in the inner basin. In deeper waters in the outer loch, beds of sea pens *Virgularia mirabilis* occurred. Extensive shallow inner parts of the loch system comprised principally extensive areas of fine sediment with burrowing infauna, some with dense mats of filamentous red algae, some with dense seagrass beds. Maerl was recorded mixed with kelp in tide-swept channels in the loch, with areas of dense sea oak (*Halidrys siliquosa*) with rich epifauna occurring in the slightly less tide-swept, outer parts of the channels. The survey recorded the continued presence of rare and unusual holothurians noted by Howson (1991), although the specimens collected require confirmation of identification [Entec, 1996].*

The Lochmaddy Harbour development is located within the vicinity of the existing harbour that is currently being used. The water within the harbour is shallow with maximum water depths of 7 meters. No specific information on the benthic ecology or its status has been found.

6.3.2.2 Marine Mammals

The waters around the Isle of Harris and the Outer Hebrides are utilised by numerous marine mammal species, including both cetaceans and seals. Marine mammals are protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Eight species of cetacean are regularly encountered in the region and a further three species occur less frequently [Reid, Evans and Northridge, 2003]. In addition, breeding populations of both grey (*Halichorurus grypus*), and common seals (*Phoca vitulina*) are present in the Outer Hebrides [Special Committee on Seals, 2016].

Several species of cetaceans occur regularly in the Minch just east of Lochmaddy including Risso's dolphin (*Grampus griseus*), Short-beaked common dolphin (*Delphinus delphis*), Killer whale (*Orcinus orca*), Minke whale (*Balaenoptera acutorostrata*), Bottlenose dolphin (*Tursiops truncatus*) and Harbour porpoise (*Phocoena phocoena*). Harbour porpoise are resident in the region throughout the year while other species occur more frequently during the summer and autumn months [Reid, Evans & Northridge, 2003].

Otters (Section 6.3.1.2) may be found within the marine environment as well as the terrestrial environment.

6.3.2.3 Fish

Various fish species are likely to be located in the waters surrounding the Lochmaddy Ferry Terminal.

6.3.3 Ornithology

There are 23 species of birds recorded as utilising the area within a 5km radius of the site [NBN, 2017]. Mointeach Scadabhaigh SPA is 1.2km SW of the project site and has a breeding population of 48 pairs of red-throated diver representing at least 3.8% of the UK's breeding population, [British Trust for Ornithology (BTO), 2010] and a breeding population of 4 pairs of black throated diver representing 2.1% of the UK's breeding population [Royal Society for the Protection of Birds, Unknown]. These breeding birds feed in nearby marine areas, including Lochmaddy. The baseline ornithological survey carried out in June 2017 encompassed the Lochmaddy Ferry Terminal area and all suitable breeding bird habitat within 250m of the terminal. No divers were recorded during this survey as outlined in Table 6.2 and Appendix 2. Red-throated divers tend to feed in the outer sections of the loch away from the development. Loch an Duin, 1.3km NE of the development, is a wetland of international importance, and as such is defined as a Ramsar Site. The Loch an Duin site is not likely to be affected by the works [Tyler, 2017b].

Two breeding birds were recorded during the 2017 survey, outwith the proposed site, Blackbird (*Turdus merula*) and Meadow pipit (*Anthus pratensis*). These are both common species and are not in habitats that will be affected by the proposed works. No calling corncrakes were recorded as breeders during the survey. Other birds that were recorded during the survey include the House sparrow (*Passer Domesticus*), Herring Gull (*Larus argentatus*), Common Tern (*Sterna hirundo*) and Common Buzzard (*Buteo Buteo*) [Tyler, 2017b].

6.4 Potential Construction Impacts

6.4.1 Terrestrial

During the initial stages of construction, an area of intertidal brown algal habitat will be removed to allow for the expansion of the marshalling area and carpark area, Appendix 1. This area is not considered to be intertidal mudflats and sandflats as designated under the Loch nam Madadh SSSI and SAC. Additionally, during the 2017 survey this area did not appear to contain any specific items of high habitat value (Appendix 1).

Additional areas of vegetation, including acid grassland and domestic garden, will be disturbed during the development. Construction on virgin land inevitably has an impact on the vegetation however these impacts are likely to be minimal as the total area is between 2,850m² and 5500m².

A possible otter lie-up with no recent signs of use may be within the development footprint, the potential carpark and terminal upgrades. This will be assessed further within the EIA when the requirements for this area is better understood.

Construction impacts on terrestrial fauna and habitat resulting from dust (Section 4.3.1), noise (Section 10.3), land and soil quality (Section 8.3) and water quality (Section 13.3) are discussed within the relevant section.

6.4.2 Marine

The dredging, installation of the pier extension and the additional areas of marshalling area and potential carpark and terminal upgrades will result in loss of marine habitat for benthic organisms, fish and potentially, marine mammals. The loss of habitat will be confined to the boundaries of Lochmaddy harbour. The pier construction area is already used by the ferry operation which are likely to cause local seabed disturbance and for this reason it is not expected to have high benthic value.

Both pile driving and rock levelling operations have the potential to cause injury or disturbance to fish and cetaceans through underwater noise emissions (Section 10.3). During construction, there may be additional boat movements associated with the delivery of raw materials, hence there is a potential to increase the marine mammal/boat interactions. However, the increase will be short lived and boats will follow designated routes, traveling at steady speeds on a constant course, minimising the chance of collisions.

The use of vessels to transport goods to the site during construction has the potential to introduce marine non-native species to the area. It is possible that some vessels such as work barges and dredge equipment will be coming to site from outwith the UK but within Europe. This will be minimised through procedures within the contract to identify recent work history of relevant materials and plant and ensure traceable cleaning prior to mobilisation to site to the minimise risk of alien invasive species.

Construction impacts on marine fauna and habitat resulting from piling and construction noise (Section 10.3), sedimentation and soil quality (Section 8.3) and water quality (Section 13.3) are discussed within the relevant section.

6.4.3 Ornithology

Birds are not likely to be significantly impacted by the site preparation, or construction activities as no habitat sites are expected within the proposed work areas. This is because even with temporary disturbance there are plentiful foraging patches around and beyond the Ferry Terminal for birds to use. In addition, the birds recorded during the baseline survey were not using the Ferry terminal vicinity as a nesting habitat. Furthermore, no bird species are designated in the Loch nam Madadh SAC or SSSI (Table 6.1).

The species recorded foraging nearby the ferry terminal waters were common tern and herring gull. The mobile nature of their foraging regimes will mean they will be foraging in multiple

food patches in the surrounding area. The common terns have three small colonies (less than 6 pairs) within 1km of the ferry terminal, and none are closer than 600m from the terminal [Tyler, 2017b]. The herring gull were noted as probably breeding on an island 250m from the ferry terminal [Tyler, 2017b]. The other bird species recorded were not directly utilising the ferry terminal area as a breeding site, instead utilising nearby woodland, buildings, or islands off the ferry terminal – all of which are more suitable nesting habitat than by the ferry terminal itself.

All bird species recorded during the survey within the extended vicinity of the site are common species for the area. Common tern and herring gull are listed as 'amber' and 'red' respectively in the Birds of Conservation Concern List [JNCC, 2016a & 2016b]. However, this proposed development is unlikely to affect their ability to breed in the area as their nesting habitat is more than 250m from the ferry terminal, and plentiful alternative foraging patches around the bays and coastline exist. For common terns, they have a mean foraging range of 15.2km [Natural England, 2012], and for herring gulls foraging ranges during the breeding season have been recorded as over 35km [BirdLife International, 2017].

Light pollution has the potential to impact on bird movement and feeding habits however this will be minimal, with the majority of construction activity being limited to day time hours (7am-8pm).

6.5 Potential Operational Impacts

As the project is an upgrade and extension of an existing harbour, boat movements and frequency are expected to remain the same, therefore no additional risks to marine ecology, terrestrial ecology or ornithology are expected from the operation of the site. The habitat removal resulting from the extension of the marshalling area and pier will remain throughout the lifetime of the harbour although as mentioned in Section 6.4.1 this area is minimal and in the case of the pier, previously disturbed. The additional rock armouring to support the marshalling area may provide new habitat for otters although this is not expected to be significant.

6.6 Proposed Environmental Impact Assessment

6.6.1 Terrestrial

Extensive terrestrial baseline surveys have already been completed at Lochmaddy Terminal Development (Appendix 1-2). These have not indicated a gap in the current knowledge base or specific concerns that require more information. As such, no further terrestrial baseline surveys are proposed as part of the EIA report.

6.6.1.1 Construction

As outlined in Section 6.3.1.2, otters, in particular their potential habitats, have the potential to be impacted by this development. It is proposed that otters are scoped into the EIA process and the assessment will follow the general principles outlined in the CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. This assessment will allow for effective and proportionate mitigation measures to be identified.

6.6.1.2 Operation

It is proposed that operational impacts on the terrestrial biodiversity resulting from the Lochmaddy Ferry Terminal development are scoped out of the EIA process. This is due to lack of significant impacts likely to result, as outlined in Section 6.5.

6.6.2 Marine

Due to the lack of recent and specific baseline with regard to the benthic habitat, it is proposed that benthic habitat mapping is undertaken as part of the EIA assessment. This will take the form of benthic video transects and grab sampling for benthic analysis this will be in line with SNH Guidance on Survey and Monitoring, Benthic Habitats [Saunders, Bedford, Trendall, & Sotheran, 2011]. Figure 39.02.06 denotes the proposed transects.

6.6.2.1 Construction

It is proposed that construction impacts on the marine biodiversity is scoped into the EIA process, this will involve assessing any potential impacts on Harbour porpoise (*Phocoena phocoena*) (as designated by the pSAC), other cetaceans, and fish known to be within the area. This impact assessment will be in line with the CIEEM (2010) Guidelines for Ecological Impact Assessment in the Britain and Ireland: Marine and Coastal. It is recognised that underwater noise will be one of the main issues, therefore once the underwater noise model is complete, an assessment of impacts on marine ecology will be conducted, in order to identify potential impacts to fish and marine mammal. The assessment will consider both the predicted noise levels, together with the current understanding of hearing thresholds and injury/disturbance criteria for each species, that are available in the scientific literature.

The assessment will allow effective and proportional mitigation to be implemented for each phase of works, as required. If deemed appropriate Marine Mammal Protocol aligned to the JNCC Guidance (2010) will be developed.

A benthic assessment will be carried out in terms of direct habitat loss by quantifying any losses in terms of percentage loss of certain biotypes/habitats.

A desktop assessment will be undertaken to determine potential sources that may result in the introduction of non-native species and identify appropriate mitigation measure to prevent the introduction.

6.6.2.2 Operation

It is proposed that operational impacts on the marine biodiversity resulting from the Lochmaddy Ferry Terminal development are scoped out of the EIA process. This is due to lack of significant impacts likely to result, as outlined in Section 6.5.

6.6.3 Ornithology

It is proposed that biodiversity - ornithology is scoped out of the EIA process due to the lack of sensitive features (Section 6.3.3) within the area and the minimal potential for construction and operational impacts (Section 6.4.3 and 6.5) associate with the Lochmaddy development.

7 Landscape, Seascape and Visual

7.1 Policy and Guidance

Relevant policy and guidance includes:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition [Landscape Institute & IEMA, 2013];
- National Scenic Areas (NSA): Scotland's finest landscapes [SNH, 2010];
- Western Isles landscape character assessment [Richards, 1998]; and
- Landscape Character Assessment Guidance for England and Scotland [Countryside Agency & SNH, 2002].

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 7 Landscape/Seascape:** *Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape and visual impacts into account* [Scottish Government, 2015a].

The Scottish government has released a series of good environmental status descriptors within Scotland's National Marine Plan. These include:

- **GES 7:** *Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems* [Scottish Government, 2015c].

7.2 Baseline

The Lochmaddy Ferry Terminal is located within the South Lewis, Harris and North Uist NSA. This stretches from Valtos in the north to Loch Eport in the south covering a total of 112,301ha [SNH, 2010].

NSAs are designated under Section 263A of the Town and Country Planning (Scotland) Act 1997, and are defined as "of outstanding scenic value in a national context." The legislation also states that within an NSA "special attention is to be paid to the desirability of safeguarding or enhancing its character or appearance." [SNH, 2010].

The North Uist area of this designation is described by its wide sandy strands. Loch Maddy and Loch Eport are indented sea lochs penetrating area of low hummocky relief, containing much exposed rock and many fresh water lochans [SNH, unknown].

The Lochmaddy development and surrounding area is defined as Crofting 2 Landscape Characteristic Type. This landscape type is characterised by sweeping slightly concave slopes with rocky knolls, rising to rocky or boggy moor inland and sloping down to rocky shores and broad shallow glens [Richards, 1998].

No national trails fall within the project area, although this area is known to attract various tourist through the ferry services.

The existing ferry terminal is at sea level, therefore due to topography it is not visible from the majority of the properties in Lochmaddy. The ferry terminal is visible from the hills across the water to the south and from the A867 to the east.

7.3 Potential Construction Impacts

The increase in the marshalling area will infill the existing bay to the west of the harbour. This bay is ~50m in length and will be completely covered during this development. An area to the north and west of the terminal building may be used to increase the carpark and improve the existing terminal building. If this is required a maximum additional area of 2,650m² will be infilled. The pier will be extended by 30m.

The nearest dwellings are two adjoining properties plus the visitor centre, which are situated within the boundary of the marshalling area of the ferry terminal. These are approximately 10-20m away from the site and will have views of the works.

A number of individual dwellings surround the site and main access road to the site will have views of vehicle movements used during the construction processes. Traffic impacts will be assessed with Section 12.

Visual impacts associated with construction works will be short lived, and affect relatively few receptors.

7.4 Potential Operational Impacts

The new ferry that will be using the harbour is slightly larger than the existing ferry; 3m longer, 1.2m wider and 3.3m taller. This is not considered to be significant as it is not a considerable change from previous conditions and its use of the port is intermittent.

The upgrade of the ferry terminal including the extension to the pier and marshalling area installations, is in keeping with the current use of the area and landscape character. The tallest components of the development are the lighting column in the marshalling area and pier. These are anticipated to be 10m tall.

Figure 39.02.07 demarks the zone of theoretical visibility (ZTV) around the Lochmaddy development, based on a very conservative 10m high box across the main site foot print. Note the potential additional carparking was not include but would not significantly change the ZTV as the pier would be the dominant feature in the area. It is evident within this figure that visibility is limited to around the development with very little beyond the 1km radius. The ZTV suggests that there is >50% visibility at properties including the two adjoining residential properties, the visitors centre, the southern half of the Lochmaddy hotel and the Taigh Chearsabhaigh Museum and Arts Centre. However, the actual percentage will be much lower in all cases, as the 10m high components on the site are the lighting columns, which take up a much smaller space in the vista than the solid 10m high box modelled.

A number of individual dwellings surround the site and main access road to the site will have views of vehicle movements pre and post ferry boarding schedules. Traffic impacts will be assessed with Section 12. However due to the low-lying nature of the development and the lack of visibility from the village and the A867 the visual impacts will be low. The development may be visible from the hills to the south, however they are over 1km away and hence the overall visual impact will not be significant.

7.5 Proposed Environmental Impact Assessment

Although it is acknowledged that the development area is in part of a NSA, the lack of visual impacts and the fact that the development is in keeping with the existing landscape, landscape and visual impacts during construction and operations are proposed to be screened out of the EIA.

8 Land and Soil Quality

8.1 Policy and Guidance

The Scotland National Planning Framework, Version Three [The Scottish Government, 2014a] has four key priorities for the Scottish Government, including *'the protection and promoting of Scotland's key environmental resources, whilst supporting their sustainable use'*.

The Scottish Planning Policy [The Scottish Government, 2014b] identifies two principles guiding policies and decisions relating to land quality. These are: *'Having regard to the principles for sustainable land use set out in the Land Use Strategy'*; and *'Avoiding over-development, protecting the amenity of new and existing development and considering the implications of development for water, air and soil quality.'*

It is stated in the Scottish Planning Policy [The Scottish Government, 2014b] *'Valuing the Natural Environment'* that *'The planning system should seek to protect soils from damage such as erosion or compaction'* and that *'Local nature conservation sites designated for their geodiversity should be selected for their value for scientific study and education, their historical significance and cultural and aesthetic value, and for their potential to promote public awareness and enjoyment'*.

The following sources of information and guidance are available:

- Sitelink website [SNH, 2017];
- BS EN 1997-1:2004+A1:2013: Eurocode 7: Geotechnical Design. British Standards Institution British Standards Institution, 2014a];
- Pre-Disposal Sampling Guidance [Scottish Government, 2017];
- BS EN ISO 14688-1:2002+A1:2013: Geotechnical Investigation and Testing — Identification and Classification of Soil (Part 1: Identification and description). [British Standards Institution, 2013]; and
- BS 5930: 2015: Code of Practice for Site Investigation [British Standards Institution, 2015].

8.2 Baseline

The British Geological Survey (BGS) 1:50,000 indicates that the bedrock formations within the area are Lewisian Complex - Metasedimentary Rocks and Metavolcaniclastic Rocks. Metamorphic Bedrock formed approximately 542 to 4000 million years ago. Originally sedimentary and igneous rocks, later altered by low-grade metamorphism. No superficial soils are recorded. To the north and south of the site, approximately 1.5km in each direction the bedrock is Lewisian Complex – Gneiss [BGS, 2017a].

The BGS Bedrock (250K) further into the Little Minch changes to Oligocene rocks (undifferentiated); rock, siliciclastic, argillaceous and sandstone (undifferentiated) and unnamed igneous intrusion of unknown age, microgabbroic-rock. The BGS Seabed Sediment (250K) within The Little Minch adjacent Lochmaddy is defined as marine sediment, holocene (undifferentiated) of varying ratios of gravel mud and sand. The BGS Hard Substrate (250k) contains patches of rock and hard substrate [BGS, 2017b].

The Loch nam Madadh is a 2321ha SSSI and SAC site that encompasses the development site. This is designated for its coastal geomorphology, mudflats, rocky shores and shallow sandflats. Loch an Duin is a 2621ha SSSI site that at its closest point is ~1.3km NE of the development. It is also designated for the protection of coastal geomorphology. Other designated sites of land and soil quality importance are listed in Table 6.1 (see Section 6.2).

8.3 Potential Construction Impacts

8.3.1 Terrestrial

During the construction of Lochmaddy Terminal minimal clearing will be undertaken to extend the marshalling area and potential carpark this is not expected to have a significant effect on the quality of the underlying soils.

There is the potential for unplanned emissions to occur from the storage of material, equipment and plant use, cement washings, silt water runoff and waste materials across the site. These will be minimised through standard good practice such as regular maintenance, spill prevention and response procedures. Additionally, if required remedial practices undertaken.

8.3.2 Marine

Dredging and pilling has the potential to affect the land and soil quality within the marine environment through change in the till structure and sediment deposition. The dredge material will potentially be used to infill the marshalling area and therefore reducing the requirement for in sea disposal.

There are areas of underlaying rock that will need to be removed to allow the ferry to manoeuvre within the terminal. This may involve blasting and physical removal of ~1250m³ of rock material.

Additional impacts that have the potential to impact water quality as well as soil quality such as the release of historic contamination during dredging, sedimentation and release of hazardous materials are outlined in Section 13.3.2.

8.4 Potential Operational Impacts

As the project is a replacement of an existing harbour no significant terrestrial or marine land and soil risks are expected from the current baseline as a result from this development.

8.5 Mitigation Measures

Mitigation proposed to minimise effects on land and soil quality within the terrestrial environment during construction and operations are outlined in Table 8.1.

Table 8.1: Land and Soil Quality Mitigation Measures

Phase	Risk/Effect	Cause	Mitigation
Construction and Operation	Soil contamination	Spills Loss of containment	<ul style="list-style-type: none"> • Correct disposal of hazardous waste and contaminated water. • Storage of chemicals and hydrocarbons in secondary containment, where applicable. • Adequate spill response equipment on site. • Installation of adequate surface water management facilities. • Regular maintenance will be undertaken on equipment. • Designated wash down areas for concrete contaminated equipment and tools.
Construction	Removal of underlying geology.	Dredging, use of drum cutter, drill or blasting	<ul style="list-style-type: none"> • Removal of rock areas, will be minimised through design informed by ground investigation. • Localised techniques to be utilised.

8.6 Proposed Environmental Impact Assessment

It is proposed that terrestrial land and soil quality is scoped out of the EIA process due to the lack of significant potential impacts associate with the Lochmaddy Harbour development (Section 8.3) and the mitigation measures proposed to further reduce the impacts (Table 8.1). The mitigation measures outlined in Table 8.1 will be included in the SoM and CEMP to ensure they are implemented.

Effects on land and soil within the marine environment associated with normal construction activities are not considered significant due to the lack of significant potential impacts associate with the Lochmaddy Harbour development (Section 8.4) and the mitigation measures proposed to further reduce the impacts (Table 8.1).

Effects on the land and soil quality within the marine environment associated with unplanned events (such as marine spills, sedimentation and release of seabed contamination) will be considered in the Water Quality Section (Section 13.6) of the EIA process. This is a result of transferability of risks, assessment and mitigation of these impacts and an attempt to improve the proportionality of the assessment. As such, it is proposed that Land and Soil Quality is scoped out of the EIA Report.

9 Population, Human Health and Socio-economy

9.1 Policy and Guidance

Relevant policy and guidance includes:

- Health in EIA [IEMA, 2017]; and
- Scottish Index of Multiple Deprivation 2016 [Crown, 2016].

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 2 Economic benefits:** *Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan; and*
- **GEN 3 Social benefits:** *Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this Plan* [Scottish Government, 2015a].

9.2 Baseline

The main economic sectors within the Western Isles are public services, construction, fishing, fish farming and fish processing. There are over 6,000 registered crofts in the islands with the majority of these in use. It is estimated that there are over 100,000 livestock on the island [CnES, 2014]

The nearest dwellings are two adjoining properties plus the visitor centre, which are situated within the boundary of the marshalling area of the ferry terminal these are between 10-20m away from the site. The Lochmaddy Hotel is the next closest property 40m along the road into the village, there is a further residential property situated 80m away overlooking the site. The main boundary of the village is approximately 375m away.

The human health within the vicinity of the Lochmaddy site is anticipated to be above average as the Benbecula and North Uist is ranked in the 7th decile for health domain range. This area ranks well in levels of crime and housing. The main issue within the deprivation scale is linked to the geographical access of the region [Crown, 2016]. The Scottish Government (2015b) links the level of deprivation to the consumption of unhealthy food, depression, anxiety and alcohol-related morbidity and mortality.

9.3 Potential Construction Impacts

As the construction contract has not yet been appointed, it is not possible at this stage of the development to know where the construction workforce will be obtained from. There is a potential that a proportion of the workforces (approx. 20-40 people) will be sourced from outwith the island and stay on island during the construction period. The local supply of workforce will be encouraged. During the construction period accommodation, food and leisure activities will be required for the workforce. This will have a positive socio-economic impact on the area. Due to the temporary nature and relatively small number of people required for this development, this is not anticipated to be significant.

The construction of this project is not likely to have significant negative impacts to human health as a result of dust (Section 4.3.1), water (Section 13.3), noise (Section 10.2.2), visual amenities (Section 7.3) or due to a major accident or incident (Section 14).

9.4 Potential Operational Impacts

As the project is an upgrade of an existing harbour, no additional population, human health or sociology risks from the current baseline are expected to result from this development.

This project is not expected to directly increase employment. The new ferry does however have the potential to transport more people and their vehicles to Lochmaddy and the North Uist which may increase tourism and economic growth within the area and give rise to indirect job creation. This will be dependent on various factors outside of the control of this project such as Scottish tourist numbers, marketing and availability of accommodation. The improvement in access to transport to and from the island may also bring positive social benefits to the area.

The operation of this project is not likely to have significant negative impacts to human health as a result of air quality (Section 4.4.1), noise (Section 10.4), water quality (Section 13.4), visual amenities (Section 7.4) or accidents and disasters (Section 14).

9.5 Proposed Environmental Impact Assessment

It is proposed that population, human health and socio-economics is scoped out of the EIA process due to the lack of significant potential construction and operational impacts (Section 9.3 and 9.4) associate with the Lochmaddy development. Information regarding air quality (dust) and noise are outlined in Section 4 and 10, respectively.

10 Noise and Vibration

10.1 Policy and Guidance

The standard applicable with regard to in-air noise and vibration are:

- BS5228-1:2009(as amended): Code of practice for noise and vibration control on construction and open sites [British Standards Institute, 2014b];
- BS 4142: 2014 Methods for rating and assessing industrial and commercial sound [British Standards Institute, 2014c]
- BS7455-1: 2003 Description and Measurement of Environmental Noise [British Standard Institute, 2003];
- Technical Advice Note Assessment of Noise [Scottish Government, 2011c]; and
- PAN 1/2011 Planning and Noise [Scottish Government, 2011a].

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 13 Noise:** *Development and use of the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects* [Scottish Government, 2015a].

The Scottish government has released a series of good environmental status descriptors within Scotland's National Marine Plan. These include:

- **GES 11:** *Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.* [Scottish Government, 2015c].

10.2 Baseline

10.2.1 Terrestrial

Baseline noise monitoring has not been completed within the area, but as the site is an existing ferry terminal with little urbanisation; the noise levels are expected to be generally low and peak during periods of ferry loading and unloading. The main noise source is likely to be from the ferry itself and the vehicles and people congregating in the area to use the ferry services.

The nearest dwellings are two adjoining properties, which are situated 10m to the eastern boundary of the marshalling area and to the north of the substation upgrade. The garden of this property is butted up against the existing marshalling area. Further along the access road is the visitors centre. This is approximately 20 m north of the proposed additional lanes to extend the marshalling area. The Lochmaddy Hotel is the next closest property, 40m away from the development at its closest point. There is a further residential property situated 240m away overlooking the site. The main boundary of the village is approximately 375m away.

There are various residential properties around the site, with the village of Lochmaddy further north of the site. Table 10.1 outlines the human noise sensitive receptors around the site and the distance between it and the site.

Table 10.1: Noise Receptors

Noise Receptor	Approx. distance from site	Description
Residential property in development	House 10m, Garden 1m	Two residential property within the harbour area.
Visitors Centre	20m	Visitors centre to the east of the extended marshalling area
Lochmaddy Hotel	40m	Hotel north of the development.
Western property	80m	Residential property to the west of the development off the main access road.
Taigh Chearsabhaigh Museum and Arts Centre	150m	Museum and art centre north of the development.
Bank of Scotland	200m	The Bank of Scotland is the beginning of a strip of commercial and residential properties extending north of the site into the main village.

10.2.2 Marine

No data is available for marine baseline noise levels within the Lochmaddy Harbour. The current source of in water noise would be limited to vessel traffic; the arrival and departure of

the ferry using the terminal and any other vessels entering the area. Noise will also result from any maintenance works being completed however these are undertaken within short timeframes. In addition, Acoustic Deterrent Devices (ADDs) may be utilised by the adjacent fish farms to deter seals from the fish stocks, and these will contribute to the baseline underwater noise levels.

10.3 *Potential Construction Impacts*

10.3.1 *Terrestrial*

During the construction of the Lochmaddy Terminal Upgrade noise is likely to result from the clearing and the construction of various parts of infrastructure, in particular during piling. Noise may cause disturbance to the local population as they are extremely close to the site. This may have knock on health impacts. Noise may also disturb fauna by impacting on normal behaviour patterns. The majority of construction works will be carried out between 7am and 8pm hence impacts on local residents' sleep should be minimal.

In-air vibration is not expected to be an issue during the construction of the Lochmaddy Terminal Upgrade. No terrestrial areas are anticipated to be blasting during this development. Noise associated with traffic will be discussed in Section 12.

10.3.2 *Marine*

During construction, there is the potential for underwater noise to be generated, and increase marine noise can affect marine mammals and fish. During the construction and installation of the Lochmaddy Harbour Terminal piling, dredging, rock levelling, and vessel movements have the potential to result in underwater noise. Noise has the potential to disturb and possibly injure marine mammals, thus could result in negative individual and population level effects. Different species have different hearing abilities and hence any given sound will be perceived differently by each species.

Blasting within the marine environment may be required to remove additional rock material to allow adequate water depths for manoeuvring the ferry. It is anticipated that ~1250m³ of dredge rock material to be removed by blasting. This has the potential to cause noise and vibration which may impact on normal and mating behaviours of marine animals.

10.4 *Potential Operational Impacts*

As discussed in Section 12, the new vessel has a 38% greater vehicle carrying capacity than the current ferry. Therefore, there could be a corresponding increase in the number of vehicles that could potentially access the Lochmaddy during operation. This has the potential to increase noise within the harbour and along the access area. No additional changes to noise and vibration are anticipated to occur during the operation of this upgraded harbour.

10.5 *Proposed Environmental Impact Assessment*

Due to the lack of noise baseline data available for this site, the proximity of the receptors and the potential impacts laid out in Sections 10.2.2; it is proposed that construction noise for both

terrestrial and marine, is scoped into the EIA process. Additionally, it is proposed that operational terrestrial noise associated with traffic is scoped into the EIA process.

Operational marine noise is proposed to be scoped out of the EIA process due to the minimal impacts outlined in Section 10.4.

10.5.1 Terrestrial

Noise monitoring will be undertaken in line with the methodology outlined in BS 4142: 2014, in accordance with guidance outlined in BS 7445-1:2003, taking precautions outlined in BS 4142:2014 to avoid interference from wind, heavy rain and electrical interference. It is proposed that monitoring is carried out at or near to the locations detailed in Table 10.2, assuming access can be granted.

Table 10.2: Proposed Noise Monitoring Locations

Monitoring Location	Grid Reference	Reason
Residential property	NF9198 6805	Enclosed within the development
Visitors Centre /Lochmaddy Hotel	NF9192 6815	Close proximity of the development
Taigh Chearsabhaigh Museum and Arts Centre	NF9192 6826	Beginning of the main residential area.

An assessment of construction and operational (traffic only) noise will be carried out in line with BS 5228-1:2009(as amended) and appropriate mitigation measures identified, this is likely to include implementation of construction best practice, and limiting working hours for the noisier construction activities.

Separate applications under Section 61 of Control of Pollution Act 1974 (as amended) (COPA) for an agreement on limits and mitigation methods for noise during construction will be made if required.

10.5.2 Marine

An underwater noise model will be developed, in order to predict the noise emission levels and frequencies at difference ranges from the site, resulting from the different phases of the development. The phases considered will include:

- Vibro piling,
- Impact piling,
- Rock wheel cutter dredging, and
- Underwater rock blasting.

The underwater noise model will inform the marine ecological risk assessment as outlined in Section 6.6.2.1. Noise will be minimised at source where practicable, if required noise mitigation techniques may be considered.

11 Natural Resource Usage and Waste

11.1 Policy and Guidance

Relevant policy and guidance includes:

- The Waste (Scotland) Regulations 2012 [Scottish Minister, 2012];
- The Management of Extractive Waste (Scotland) Regulations 2010 [Scottish Minister, 2010]
- Zero Waste Plan [Scottish Government, 2010]; and
- Waste Hierarchy.

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 11 Marine Litter:** *Developers, users and those accessing the marine environment must take measures to address marine litter where appropriate. Reduction of litter must take into account by decision makers [Scottish Government, 2015a].*

The Scottish government has released a series of good environmental status descriptors within Scotland's National Marine Plan. These include:

- **GES 11:** *Properties and quantities of marine litter do not cause harm to the coastal and marine environment [Scottish Government, 2015c].*

There are currently no regulations on, or pertaining to, sustainable resourcing in Scotland, outwith the public sector. However, in 2010 the Scottish Government published Scotland's Zero Waste Plan [Scottish Government, 2010], which sets out the government's vision for a sustainable and resource efficient future. While the sustainable resourcing aspect of the vision is still to be brought into the legislation, two components of the vision include:

'Individuals, the public and business sectors - appreciate the environmental, social and economic value of resources, and how they can play their part in using resources efficiently.'

And;

'Reduce Scotland's impact on the environment, both locally and globally, by minimising the unnecessary use of primary materials, reusing resources where possible, and recycling and recovering value from materials when they reach the end of their life.'

11.2 Baseline

The current site is already utilised as a harbour and currently accommodates the associated ferry. The operation of this site has minimal ongoing natural resource use and waste. This includes the resources used to run the terminal facilities, including electricity and water.

The majority of waste is likely to be associated with the passengers' activities and will include sewage, food and associated packaging waste.

11.3 Potential Construction Impacts

During construction and installation of the Lochmaddy Harbour, materials will be required to increase the marshalling area, extend the pier, upgrade the substation and produce and install the fendering.

Table 11.1: Construction Resources

Material	Use	Source
Rock Armour	Armouring of the marshalling area	Local Producer
Rock Infill	Foundations / Infill	Local Producer
Infill (Granular Seabed)	Marshalling Area Infill	Dredge Arisings, Lochmaddy
Concrete (In-situ)	Structural	Local Producer
Concrete (Precast, inc Caisson)	Structural	Mainland UK
Bituminous Material	Surfacing	Local Producer
Steelwork (Reinforcement)	Concrete Structures	Mainland UK
Steelwork (Piling)	Structures	Mainland UK
Steelwork (Structural)	Structures	Mainland UK
Fendering	Fendering System	Mainland UK / Europe
Miscellaneous	Works	Mainland UK

Infill material will be required to extend the marshalling area and potential carpark; likely to be sourced from dredge material as appropriate and infill material. In addition, rock armouring will be used to protect and stabilise the structure. The extended marshalling area and extra lanes will be tarmacked and the associated materials to achieve this used.

During construction and operation water will be sourced from mains water. As the amount of terrestrial construction is limited, it is not anticipated to have significant impacts on the water supply or to the surrounding environment.

During the construction phase of the Lochmaddy Terminal a degree of demolition of the existing fendering and pier structures is required to facilitate the proposed works. Waste will also be generated from the packaging of infrastructure and onsite welfare facilities. All waste not able to be reused will be appropriately segregated to facilitate recycling. Waste removed from site will be disposed of by a licensed waste contractor in line with the waste hierarchy and The Waste (Scotland) Regulations 2012 [Scottish Minister, 2012].

The potential impacts to soil quality (Section 8.3), water quality (Section 13.3), biodiversity (Section 6.4) and associated with fuel usage (Section 4.3.2) resulting from the construction of the Lochmaddy Ferry Terminal are discussed within the relevant sections.

11.4 Potential Operational Impacts

During operation, there may be a slight increase from current operations in the amount of materials required for maintenance of the harbour as well as the additional water used and waste produced by the passengers however this is not anticipated to be significant.

11.5 Mitigation Measures

Mitigation proposed to minimise effects on natural resources and waste during construction are outlined in

Table 11.2.

Table 11.2: Proposed Mitigation for Natural Resources and Waste

Phase	Risk/Effect	Cause	Mitigation
Construction	Material and water usage	Inefficient use of resources	<ul style="list-style-type: none"> • Reuse of dredge material, where practicable. • Waste hierarchy employed. • Existing built infrastructure will be re-used or upgraded wherever possible.
Construction	Waste	Incorrect waste disposal	<ul style="list-style-type: none"> • Limited number of construction employees on site. • Segregated bins provided. • Waste appropriately segregated. • Hazardous waste and contaminated water will be disposed of correctly.

11.6 Proposed Environmental Impact Assessment

It is proposed that natural resource usage and waste is scoped out of the EIA process due to the lack of significant potential impacts associate with the Lochmaddy Harbour development (Section 11.3 and 11.4) and the mitigation measures proposed to further reduce the impacts (Section 11.5). The mitigation measures outlined in Table 11.2 will be included in the CEMP to ensure they are implemented.

12 Traffic and Access

12.1 Policy and Guidance

Relevant policy and guidance includes:

- PAN 75: Planning for Transport [Scottish Government, 2005];
- Transport Assessment Guidance [Transport Scotland, 2012]; and
- Guidelines for the Environmental Assessment of Road Traffic [Institute of Environmental Assessment (IEA), 1993].

12.2 Baseline

There are no traffic counters on the Outer Hebrides so baseline data is limited. The entire North Uist has a population of ~1250 people scattered over the 20-mile-long Island which equates to 4.14 people per km². Due to this small population, it is assumed that the baseline traffic of residents is relatively small. Traffic will however be augmented by tourists especially in the summer months.

Access to the harbour currently utilises the A865 from the north and A867 from the south with a minor road providing direct access to the harbour. This access road avoids the centre of town, however various residents do live on this road with no other methods of access. During unloading and loading times there is a significant amount of traffic on this access road, at times not allowing access to the facilities around the terminal.

The current ferry has the capacity to bring ~98 vehicles on and off the island at Lochmaddy. This is currently causing pressure on the road infrastructure as the current marshalling area cannot hold the capacity and vehicles are often lining up along the roads and blocking the flow of traffic.

An increase in the traffic is currently happening as a result of Road Equivalent Tariff (RET). RET is a distance based fares structure, which underpins the Scottish Government commitment to providing one single overarching fares policy across Scotland's entire ferry network (Caledonian MacBrayne, 2017). The vessel and associated harbour upgrades will not in themselves be the primary driver for increase in traffic they will help accommodate the current trends going forward.

Two accidents have occurred in the vicinity of the project site within the last five years. A serious accident happened on the 11th of July 2016 to the north of the project site on the road leading into the town (57.606, -7.171) involving one vehicle and one casualty. A slight accident occurred on the A867 south of the ferry turn off (57.605, -7.178). This occurred on the 27th of May 2015 and involved one vehicle and two casualties [CrashMap, 2017].

12.3 *Potential Construction Impacts*

Vehicle movements along the access roads during the construction phase will be limited to those required to deliver materials and personnel transport. This is estimated to be a daily average of 34 vehicles in total, 4 heavy goods vehicles (HGV)s and 30 light vehicles. This will peak to 55 vehicles per day, 15 HGVs and 40 light vehicles. As there is only one road in and out of the ferry terminal this may add to the current congestion problem if deliveries and personnel shifts are at similar times to ferry loading and unloading.

Due to the small number of accidents that have occurred over the past five years and the fact that these have both been single vehicle accidents it is unlikely that at additional construction vehicles will increase the chance of accidents.

Air emissions (Section 4.3), noise (Section 10.2.2) and visual (Section 7.3) impacts resulting from vehicle movement during operations are discussed in the relevant sections.

12.4 *Potential Operational Impacts*

The upgraded ferry has the potential to transport 135 vehicles on and off the island. This is a 38% (35 additional vehicles) increase in the current baseline. The upgrade to the marshalling area allows for an additional 115 vehicles to be parked up awaiting access. As discussed in Section 12.2, the ferry and harbour works themselves won't necessarily lead to an increase in traffic, an increase is anticipated as a consequence of existing and expected future trends. These upgrades will assist in accommodating for this increase and as such should take some of the pressure off the current and future congestion issue along the access road and into the village.

Due to the small number of accidents that have occurred over the past five years it is unlikely that an additional 35 vehicles will increase the chance of accidents.

Air emissions (Section 4.3), noise (Section 10.4) and visual (Section 7.4) impacts resulting from vehicle movement during operations are discussed in the relevant sections.

12.5 Proposed Environmental Impact Assessment

It is proposed that construction and operational traffic and access is scoped into the EIA. During this, predictions of transport and marshalling requirements will be made to gain more insight into the traffic conditions that may result from the increase in vehicles able to access the area and the additional marshalling area. This will allow the impact of increased road movements to be assessed in line with IEA Guidelines (1993); it is expected that the impacts will not be significant in EIA terms.

13 Water Quality and Coastal Processes

13.1 Policy and Guidance

Relevant policy and guidance includes:

- European Water Framework Directive [European Parliament, 2000];
- Water Environment and Water Services (Scotland) Act 2003 [Scottish Parliament, 2003];
- PAN 79: Water and Drainage [Scottish Government, 2006];
- Guidance for Pollution Prevention (GPP) 5: Works and Maintenance in or Near Water [Environment and Heritage Service, SEPA & Environment Agency, 2017]; and
- Pollution Prevention Guideline Note (PPG) 6: Work at Construction and Demolition Sites [Environmental Agency, NIEA & SEPA 2012].
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide [SEPA, 2017]

The Scottish Government has released general policies as part of the Scotland's National Marine Plan in favour of sustainable development and use of the marine environment which include:

- **GEN 8 Coastal Process and Flooding:** *Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impacts on coastal processes or contribute to coastal flooding; and*
- **GEN 12 Water Quality and Resource:** *Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive, Marine Strategy Framework Directive or other related Directives apply [Scottish Government, 2015a].*

The Scottish government has released a series of good environmental status descriptors within Scotland's National Marine Plan. These include:

- **GES 5:** *Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.*
- **GES 8:** *Concentrations of contaminants are at a levels not giving rise to pollution effects* [Scottish Government, 2015c].

13.2 Baseline

The coastal water surrounding the site is classified as the Loch Maddy (20391) coastal water body. It is 15.25km² in area and is designated by the Loch nam Madadh SAC, as discussed in Table 6.1. In 2008 this was classified as having good overall, ecological and chemical status [SEPA, 2011].

To the west of the site the coast water body changes to the Loch na Ciste and Strom Ban, North Uist (200390). This is 0.19km² in area and also falls within the boundaries of the Loch nam Madadh SAC. In 2008 this was classified as having good overall, ecological and chemical status [SEPA, 2011].

The closest notable river body is the Loch nan Geireann (23373) west (~1.12km) of the project site and 0.76km² in area. This is also covered by the Loch nam Madadh SAC. In 2008 the overall and ecological status was classified as good and the chemical status was pass [SEPA, 2011].

The groundwater body in the area is the North Uist (150041) which covers a total of 299.77km². This groundwater body is classified as good overall status and is a drinking water protected area [SEPA, 2011].

The surface water north of the site ~500m is classified by the SEPA flood map [SEPA, 2015] as having a medium-high chance of flooding. This is unlikely to impact on the site due to the proposed flood boundary. The coastal water around Lochmaddy has a high possibility of flooding as discussed in the Major Accidents and Disasters Section (Section 14).

Lochmaddy lies within the medium likelihood (0.5% annual probability or 1 in 200 year) flood extent and may therefore be at medium to high risk of flooding [SEPA, 2015]. However, as this proposal is to upgrade an existing terminal these facilities are already water compatible, and have to be located within the functional floodplain for operational reasons.

13.3 Potential Construction Impacts

13.3.1 Terrestrial

There is unlikely to be any effect on surface and ground water as a result of the construction of the Lochmaddy Harbour Terminal. No significant water bodies are within the vicinity of the site therefore impacts to these are unlikely. Water will be sourced from mains water and this will be used for general construction activities including dust suppression.

There is the potential for unplanned emissions to occur from the storage of material, equipment and plant use, cement washings, silt water runoff and waste materials across the site. These will be minimised through standard good practice such as regular maintenance,

spill prevention and response procedures. Additionally, if required remedial practices undertaken prior to it accessing the ground water.

13.3.2 Marine

Sedimentation issues may arise from the dredging activities and use of this dredge spoil to infill the marshalling area. Reduction in water quality due to solids in the water column can have negative effects on marine ecology including the potential to smother the benthic ecology.

Any historic contamination in the seabed could be released during dredging and piling works, planned Ground Investigation studies will identify whether contamination is present. If it is then an appropriate mitigation plan will be developed including ground Investigation works to include sampling and analysis for contamination and an appropriate mitigation plan to be developed.

In addition to the terrestrial risk, there is a potential marine impact resulting from loss of containment of materials if they reach the water. There is the potential for chemical, concrete and hydrocarbon unplanned releases into the marine environment from works in or near the marine waters. These will be minimised through standard good practice such as regular maintenance and spill response procedures.

Marine contamination may also result from the surface water run off entering the marine environment.

13.4 Potential Operational Impacts

As this development is to upgrade the existing harbour no significant changes are anticipated from the current water quality condition. A new drainage system will be constructed and this will include the installation of an oily water separator to improve the quality of the surface water run off that is currently discharging to the marine environment, however this is not likely to be considered significant.

The extension of the marshalling area through the installation of land reclamation has the potential to alter wave direction and local geomorphological characteristics such as increasing erosion. However, this is unlikely and not considered significant. Figure 39.02.08 shows the infill area during a low tide event. The MLWS mark remains unchanged therefore the only variation in, wave direction and local geomorphology will occur during the periods around the high-water tides. Although this is unlikely as the area is rock armoured and islands to the west and south protect the area making wave energy relatively low. Figure 39.02.09 shows the islands to the south and west during low tide. The total area of change is small and the proposed change in the MHWS will align with the existing MHWS of the harbour's operational area. The change in the MHWS will only move SW between ~5m and ~28m across a width of ~53m.



Figure 39.02.08: Marshalling area extension prior to infill



Figure 39.02.09: Island and land area to the south and west

The area that may be required for additional car parking and upgrades to the terminal building may impact on wave direction and local geomorphological characteristics. This is unlikely however as the area is protected from wave energy by the landmass to the north, west and south of the development, in addition to the pier offering further protection to the south. The total infill area below the MHWS is 0.15ha and this will be armoured with rock.

Both changes mentioned above are small and localised, the only impact from wave reflections off the proposed armouring would be from west and south-west directions both of which are protected by islands. The fetches from these directions are very small so waves will be small and insignificant. The existing armoured slope around the operational harbour is about the same length as marshalling area extension and longer than that around the carpark as such reflections will be similar.

No changes are expected to occur on the area east of the development as this is made primarily of rock.

13.5 Mitigation Measures

Mitigation proposed to minimise effects on the terrestrial water quality during construction are outlined in Table 13.1.

Table 13.1: Terrestrial water quality mitigation measures

Phase	Risk	Cause	Mitigation
Construction	Water quality	Poor management practices	<p>Mitigation in alignment with PPG6 [Environmental Agency, NIEA & SEPA 2012], including:</p> <ul style="list-style-type: none"> • Correct disposal of hazardous waste and contaminated water • Storage of chemicals and hydrocarbons in secondary containment, where applicable. • Adequate spill response equipment on site • Installation of adequate surface water management facilities, including silt traps and an oily water separator as necessary. • Regular maintenance will be undertaken on equipment • Designated wash down areas for concrete contaminated equipment and tools.

13.6 Proposed Environmental Impact Assessment

Due to the distance between the site and any major waterways, potential impacts outlined in Sections 13.3.1 and 13.4 and the mitigation measures (Section 13.5) it is proposed that terrestrial water quality is scoped out of the EIA process. The mitigation measures outlined in Section 13.5 will be included in the CEMP to ensure they are successfully implemented.

Water quality aspects during construction within the marine environment are proposed to be scoped into the EIA process. This will follow the inclusion of those proposed by Land Use Planning System SEPA Guidance Note 17 (SEPA, 2014), where relevant and use a risk assessment process to evaluate significance. This will include the identification of all existing discharges within the vicinity of the construction site, for example the welfare facilities on the pier. Following identification details of how each will be accommodated will be included in the EIA.

In line with Section 13.4, it is proposed that operational impacts are scoped out of the EIA process.

14 Impacts from Major Accidents and Disasters

An initial list of major accidents/disasters was developed. These were then considered in terms of how the site location and the proposed land use may affect the risk of each disaster. Table 14.1 outlines the major accidents and disasters, the potential risk associated with location and site use and additional comments.

Table 14.1: Potential Major Accidents and Disasters

Major Accident or Disaster	Location Risk	Proposed Use Risk	Comments
Biological Hazards	N	N	Screened Out
Earthquakes	N	N	Screened Out The Outer Hebrides has a low hazard of seismic activity, peak ground acceleration of 0.005 -0.02g [BGS, 2017c]
Mass Movements	N	N	Screened Out
Severe Storms	Y	N	Further Consideration Required No additional risk as a result of this project. During construction, work would stop and the site made safe. During operation, ferries do not run.
Severe Drought	N	N	Screened Out
Severe Temperatures	N	N	Screened Out
Displaced Population	N	N	Screened Out
Fire	N	N	Screened Out The development does not introduce any additional fire sources. Buildings and existing tanks will continue to be managed via standard practices.
Flood/ Tidal Surges	Y	N	Further Consideration Required Discussed in Water Quality and Coastal Processes (Section 13)
Terror Attack	N	N	Screened Out
Transport accidents	N	Y	Further Consideration Required Navigation issues at Lochmaddy are limited by seabed depths at the berth and the close proximity of rocky foreshore to the North of the pier which limits operational sea room when berthing during strong Northerlies and Southerlies. The recent ferry incident in 2016 was an isolated incident due to mechanical failure of the vessel not related to the layout or form of the harbour infrastructure or new vessel.

15 Cumulative Impacts

The planning permissions within the vicinity of the proposed site are outlined in Table 15.1. This considered the planning applications within Lochmaddy since August 2015. During this time, there have been 22 granted and 2 pending decisions. Due to the scale and location of these projects they are not likely to have cumulative impacts with the Lochmaddy development and as such no assessment of cumulative impacts is proposed.

Table 15.1: Planning approvals within Lochmaddy post August 2015 [CnES, 2017]

Title	Address	Reference No.	Date Received	Status
Change of use from hostel and activity centre to a dwelling house	Uist Outdoor Centre Cearn Dusgaidh Lochmaddy Isle Of North Uist HS6 5AE	17/00361/PPD	19 Jul 2017	Pending Consideration
Temporary site compound to be provided in support of the laying of the network water pipeline associated with the approved SW works	Temporary Site Compound Blashval Lochmaddy Isle Of North Uist	17/00348/PERDEV	07 Jul 2017	Decided
Erect front entrance porch and shower room	Burnthill Cottage Lochmaddy Isle Of North Uist HS6 5AA	17/00194/PPD	06 Apr 2017	Decided
Installation of a new 600mm dish at a height of 10m and bearing 242.83 degrees	Telecommunications Mast Stromban Lochmaddy Isle Of North Uist	17/00186/TEL	30 Mar 2017	Decided
Rotate the existing 14 x 100m circumference cage group held in 60m grid (through 30°) and resite feed barge	Marine Site Grey Horse Channel Fish Farm Loch Cheesebay Cheesebay Lochmaddy Isle Of North Uist	17/00161/SCR_M 17/00161/FFFA	24 Mar 2017 18 Mar 2017	Decided Pending Consideration
Erect house; install ground source heating system; and construct access and parking	4C Clachan Sands Lochmaddy Isle Of North Uist	17/00165/PPD	21 Mar 2017	Decided
Erect Agricultural Shed	Agricultural Building 8 Clachan Sands Lochmaddy Isle Of North Uist	17/00120/AGRIC	21 Feb 2017	Decided
Restore and extend former house; extend existing driveway; and form two parking spaces (amendment to 16/00136/PPD)	Schoolside Cottage Lochmaddy Isle Of North Uist	7/00103/PPD	16 Feb 2017	Decided
Install 1 No. 1.2 metre ground based back up satellite dish with supporting steelwork plus cabling and all other ancillary equipment within new fenced compound within the existing site	Telecommunications Mast Stromban Lochmaddy Isle Of North Uist	17/00085/TEL	09 Feb 2017	Decided
Replace 2no Omni antenna with 3no. antenna, replacement of cabinet, addition of new cabinet,	Telecommunications Mast Stromban Lochmaddy Isle Of North Uist	16/00601/TEL	15 Dec 2016	Decided



battery cabinet, install of generator and ancillary equipment				
Install Telecoms Mast and compound	Mast Ahmor Lochmaddy Isle Of North Uist	16/00480/FULTEL	27 Sep 2016	Decided
Erect two 6.5m poles and attach 2x 0.3m superfast broadband communications dishes to each pole and install cabinet.	Monopoles Clachan Sands Lochmaddy Isle Of North Uist	16/00427/FULTEL	02 Sep 2016	Decided
Burial site for slaughterhouse waste	Burial Site Slaughterhouse Stromban Lochmaddy Isle Of North Uist	16/00412/PPD	30 Aug 2016	Decided
Erect house; install ground source heat pump; and create new vehicle access to the B893	8A Clachan Sands Lochmaddy Isle Of North Uist	16/00381/PPD	17 Aug 2016	Decided
Erect Water Treatment Works, install associated plant and tanks; and construct access and parking areas.	Water Treatment Works Lochmaddy Isle Of North Uist	16/00381/PPD	17 Aug 2016	Decided
Install Raw Water Pumping Station and form access	Pumping Station Blashval Lochmaddy Isle Of North Uist	16/00367/PPD	04 Aug 2016	Decided
Installation of Clear Water Tank and formation of access	Clear Water Tank Ahmor Lochmaddy Isle Of North Uist	16/00366/PPD	04 Aug 2016	Decided
Cast metal plaque 18.5"x11.5" securely bolted to a firmly sited stone boulder	Plaque Clachan Sands Lochmaddy Isle Of North Uist	16/00301/ADV	20 Jun 2016	Decided
11,000 volt overhead line Trumisgarry - Newton Ferry	Overhead Line Trumisgarry Clachan Sands Lochmaddy Isle Of North Uist	16/00275/OHL	02 Jun 2016	Decided
Erect Garage	5 Blashval Lochmaddy Isle Of North Uist HS6 5AR	16/00216/PPD	05 May 2016	Decided
Install PCP green cabinet measuring 1430mm x 1300mm x 450mm	Telephone Exchange Lochmaddy Isle Of North Uist	16/00188/FULTEL	20 Apr 2016	Decided
Restore & extend former house	Schoolside Cottage Lochmaddy Isle Of North Uist	16/00136/PPD	29 Mar 2016	Decided
Install a fire exit door with a sheet steel exterior painted brown to match the surrounding brown-stained timber	Museum Art Gallery And Post Office Taigh Chearsabhagh Lochmaddy Isle Of North Uist HS6 5AA	16/00005/LBC	05 Jan 2016	Decided

16 Conclusion

A full range of environmental aspects relating to the development of the Lochmaddy Ferry Terminal Development have been considered. Table 16.1 summaries the environmental aspects which are proposed to be scoped in and out of the EIA assessment process.

A scoping response is requested under Regulation 14 of the Marine Works (EIA) Regulations 2017 and Regulation 17 of the Town and Country Planning (EIA) (Scotland) Regulation 2017. Table 16.1 summarises the proposed scope of the EIA process for the proposed Lochmaddy Ferry Terminal. Development, by the CnES. This approach has been taken in line with the 2017 regulations; to insure the EIA focuses on the significant environmental risks and that the EIA Report is proportionate to the risk of the project.

CnES and Affric Limited welcome a scoping opinion to allow the project to tailor the EIA Report to meet the requirements of Marine Scotland and their statutory consultees.

Table 16.1: Proposed Scoping for the EIA assessment

Topic	Construction and Site Preparation	Operation
Air Quality and Climate Change		
Archaeology and Cultural Heritage		
Biodiversity and Nature Conservation		
Landscape and Visual		
Land and Soil Quality –Terrestrial		
Land and Soil Quality – Marine	Elements covered in Water Quality - Marine	
Population, Socio-economics and Human Health		
Noise and Vibration – Both		Terrestrial Only – Associated with Traffic
Resource Usage and Waste		
Traffic and Access		
Water Quality - Terrestrial		
Water Quality - Marine		

Key

	Negligible/No Effect – Scoped Out
	Potential Effect –Scoped out as they can be easily mitigated by measures proposed
	Potential Effect – Scoped In

17 References

- BEIS (2017). Local Authority Carbon Dioxide Emissions 2015. Retrieved from:
<https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics#2016>
- BGS (2017a) Geology of Britain Viewer. Retrieved from:
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
- BGS (2017b) MAREMAP: Marine Environmental Mapping Program. Retrieved from:
<http://www.maremap.ac.uk/view/search/searchMaps.html>
- BGS (2017c). A Revised Seismic Hazard Map for the UK. Retrieved from:
http://www.earthquakes.bgs.ac.uk/hazard/uk_hazard_map.html
- Birdlife International (2017). European Herring Gull *Larus argentatus*. Retrieved from:
<http://datazone.birdlife.org/species/factsheet/european-herring-gull-larus-argentatus/text>
- British Standard Institute (2003). BS7455-1: 2003 Description and Measurement of Environmental Noise. *British Standards Institute*, London, UK.
- British Standards Institution (2013) BS EN ISO 14688-1:2002+A1:2013: Geotechnical Investigation and Testing — Identification and Classification of Soil (Part 1: Identification and description). *British Standards Institute*, London, UK.
- British Standards Institution (2014a). BS EN 1997-1:2004+A1:2013: Eurocode 7: Geotechnical Design. *British Standards Institute*, London, UK.
- British Standards Institute (2014b). BS EN 5228-1:2009 +A1 2014: Code of practice for noise and vibration control on construction and open sites. *British Standards Institute*, London, UK.
- British Standards Institute (2014c). BS 4142: 2014: Methods for rating and assessing industrial and commercial sound. *British Standards Institute*, London, UK.
- British Standards Institution (2015). BS 5930: 2015: Code of Practice for Site Investigation. *British Standards Institute*, London, UK.
- BTO (2010). Red-Throated Diver, *Gavia stellate*. Retrieved from:
<https://www.bto.org/birdtrends2010/wcrretdi.shtml>
- Buys, G., Thomson, A., Moxley, J., and Malcolm, H. (2014). Mapping Carbon Emissions & Removal for the Land Use, Land Use Change & Forestry Sector. *Centre for Ecology and Hydrology*, UK.
- Caledonian MacBrayne (2017). About Road Equivalent Tariff (RET) fares. Retrieved from:
<https://www.calmac.co.uk/ret/about>
- CIEEM (2010). Guidelines for Ecological Impact Assessment in Britain and Ireland: Marine and Coastal. *CIEEM*, Hampshire, UK.
- CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. *CIEEM*, Hampshire, UK.

- CnES (2016). 2016 Air Quality Annual Progress Report for CnES. Retrieved from:
<http://www.cne-siar.gov.uk/envserv/airquality.asp>
- CnES (2017). Planning. Retrieved from: <http://planning.cne-siar.gov.uk/PublicAccess/search.do?action=advanced>
- Countryside Agency and SNH (2002). Landscape Character Assessment Guidance for England and Scotland. *The Countryside Agency*, Gloucestershire, UK.
- CrashMap (2017). Crashmap.co.uk. Retrieved from: <http://www.crashmap.co.uk/Search>
- Crown (2016). Scottish Index of Multiple Deprivation 2016. Retrieved from:
<http://simd.scot/2016/#/simd2016/BTTTTTT/14/-3.7633/57.5078/>
- Entec (1996). Broad scale habitat mapping of intertidal and subtidal coastal areas: Loch Maddy, North Uist. Retrieved from:
<http://www.snh.org.uk/pdfs/publications/research/76.pdf>
- Environmental Agency, NIEA & SEPA (2012) PPG 6: Work at Construction and Demolition Sites. Retrieved from: <http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>
- Environment and Heritage Service, SEPA & Environment Agency (2017) GPP5: Works and Maintenance in or Near Water. Retrieved from:
<http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>
- European Parliament (2000). European Water Framework Directive. Retrieved from:
<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060>
- GreenBlue (2010). Best Practice Invasive Species. Retrieved from:
<https://thegreenblue.org.uk/Clubs-and-Training-Centres/Antifoul-and-Invasive-Species/Best-Practice-Invasive-Species>
- Historic Environment Scotland (2010). Managing Change in the Historic Environment: Setting. *Historic Environment Scotland*, Edinburgh, UK.
- Historic Environment Scotland (2017a). PastMap. Retrieved from: <http://pastmap.org.uk/>
- IAQM (2014). Guidance on the Assessment of Dust from Demolition and Construction. *Institution of Environmental Sciences*, London, UK.
- IAQM (2016). Guidance on the Assessment of Mineral Dust Impacts for Planning. *Institution of Environmental Sciences*, London, UK.
- IEA (1993). Guidelines for the Environmental Assessment of Road Traffic. IEA, UK
- IEMA (2017). Health in Environmental Impact Assessment. Retrieved from:
<https://www.iema.net>
- IEMA and Arup (2017). Assessing GHG Emissions and Evaluating their Significance. *EIMA*, Lincoln, UK.
- PIECA & OGP (2010). Alien invasive species and the oil and gas industry: Guidance for prevention and management. OGP, London, UK

- Joint Nature Conservation Committee (2004). The Nature Conservation (Scotland) Act 2004. Retrieved from: <http://www.legislation.gov.uk/asp/2004/6/contents>
- JNCC (2010) Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise. Retrieved from: http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Piling%20protocol_August%202010.pdf
- JNCC (2016a). Herring Gull *Larus argentatus*. Retrieved from: <http://jncc.defra.gov.uk/page-2887>
- JNCC (2016b) Common Tern *Sterna hirundo*. Retrieved from: <http://jncc.defra.gov.uk/page-2895>
- Landscape Institute and IEMA (2013) Guidelines for Landscape and Visual Impact Assessment.
- Natural England (2012). Common tern: species information for marine Special Protection Area consultations. Retrieved from: publications.naturalengland.org.uk/file/3891830
- NBN (2017). NBN Atlas: Explore Your Area. Retrieved from: <https://records.nbnatlas.org/explore/your-area>
- Office Journal of the European Communities (1992) Council Directive (92/43/EEC). Retrieved from: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043>
- Parry M. (2015). Guidance on Assigning Benthic Biotores using EUNIS or the Marine Habitat Classification of Britain and Ireland. JNCC Report No: 546. JNCC, Peterborough, UK.
- Reid, J., Evans, P., & Northridge, S. (2003). Atlas of Cetacean distribution in north-west European waters. JNCC, Aberdeen, UK.
- Richards, J. (1998). Western Isles landscape character assessment. Scottish Natural History Review, No. 92.
- Royal Society for the Protection of Birds (Unknown). Black-Throated Diver. Retrieved from: <https://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/bird-a-z/b/blackthroateddiver/>
- Saunders, G., Bedford, G., Trendall, J., and Sotheran, I. (2011). Guidance on survey and monitoring in relation to marine renewables deployments in Scotland. Volume 5. Benthic Habitats. Unpublished draft report to Scottish Natural Heritage and Marine Scotland.
- Scottish Government (2005). PAN 75: Planning for Transport. Retrieved from: <http://www.gov.scot/Publications/2005/08/16154453/44538>
- Scottish Government (2006). PAN 79: Water and Drainage. Retrieved from: <http://www.gov.scot/Publications/2006/09/26152857/0>
- Scottish Government (2008). PAN 60: Planning for Natural Heritage. Retrieved from: <http://www.gov.scot/Publications/2000/08/pan60-root/pan60>
- Scottish Government (2010). Scotland's Zero Waste Plan. *The Scottish Government*, Edinburgh.

- Scottish Government (2011a) PAN 1/2011 Planning and Noise. Retrieved from:
<http://www.scotland.gov.uk/topics/built-environment>
- Scottish Government (2011b). PAN 2/2011: Planning and Archaeology. Retrieved from:
<http://www.gov.scot/Publications/2011/08/04132003/0>
- Scottish Government (2011c) Technical Advice Note Assessment of Noise. Retrieved from:
<http://www.gov.scot/Publications/2011/03/02104659/0>
- Scottish Government (2011d). The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). Retrieved from:
<http://www.legislation.gov.uk/ssi/2011/209/contents/made>
- Scottish Government (2013), The Marine Licensing (Pre-application Consultation) (Scotland) Regulations 2013. Retrieved from:
<http://www.legislation.gov.uk/ssi/2013/286/contents/made>
- Scottish Government (2014a). Ambition Opportunity, Place: Scotland's Third National Planning Framework. *The Scottish Government*, Edinburgh.
- Scottish Government (2014b). Scottish Planning Policy. *The Scottish Government*, Edinburgh.
- Scottish Government (2015a). Scotland's National Marine Plan: General Policies. Retrieved from: <http://www.gov.scot/Publications/2015/03/6517/5>
- Scottish Government (2015b). The Scottish Health Survey: Volume 1. Retrieved from:
<http://www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey>
- Scottish Government (2015c). Scotland's National Marine Plan: A Single Framework for Managing Our Seas. Retrieved from:
<http://www.gov.scot/Publications/2015/03/6517/downloads#res-1>
- Scottish Government (2017). Pre-Disposal Sampling Guidance. Retrieved from:
<http://www.gov.scot/Topics/marine/Licensing/marine/Applications/predredge>
- Scottish Minister (2010). The Management of Extractive Waste (Scotland) Regulation. Retrieved from: <http://www.legislation.gov.uk/ssi/2010/60/contents/made>
- Scottish Minister (2012). The Waste (Scotland) Regulations 2012. Retrieved from:
<http://www.legislation.gov.uk/sdsi/2012/9780111016657/contents>
- SNH (1994) Conservation (Natural Habitats, &c.) Regulations 1994. Retrieved from:
<http://www.legislation.gov.uk/uksi/1994/2716/contents/made>
- SNH (2010). NSA: Scotland's finest landscapes. Retrieved from:
<http://www.snh.org.uk/pdfs/publications/nsa/National%20Scenic%20Areas.pdf>
- SNH (2016). Marine non-native species. Retrieved from: <http://www.snh.gov.uk/land-and-sea/managing-coasts-and-sea/marine-nonnatives/>
- SNH (2017). Sitelink. Retrieved from: <https://gateway.snh.gov.uk/sitelink/searchmap.jsp#>
- SNH (unknown). South Lewis, Harris and North Uist. Retrieved from:
www.snh.org.uk/pdfs/publications/scotlandsscenicareas/Part2WesternIsles2.pdf
- Scottish Parliament (1997). Town and Country Planning (Scotland) Act 1997. Retrieved from:
<http://www.legislation.gov.uk/ukpga/1997/8/contents>

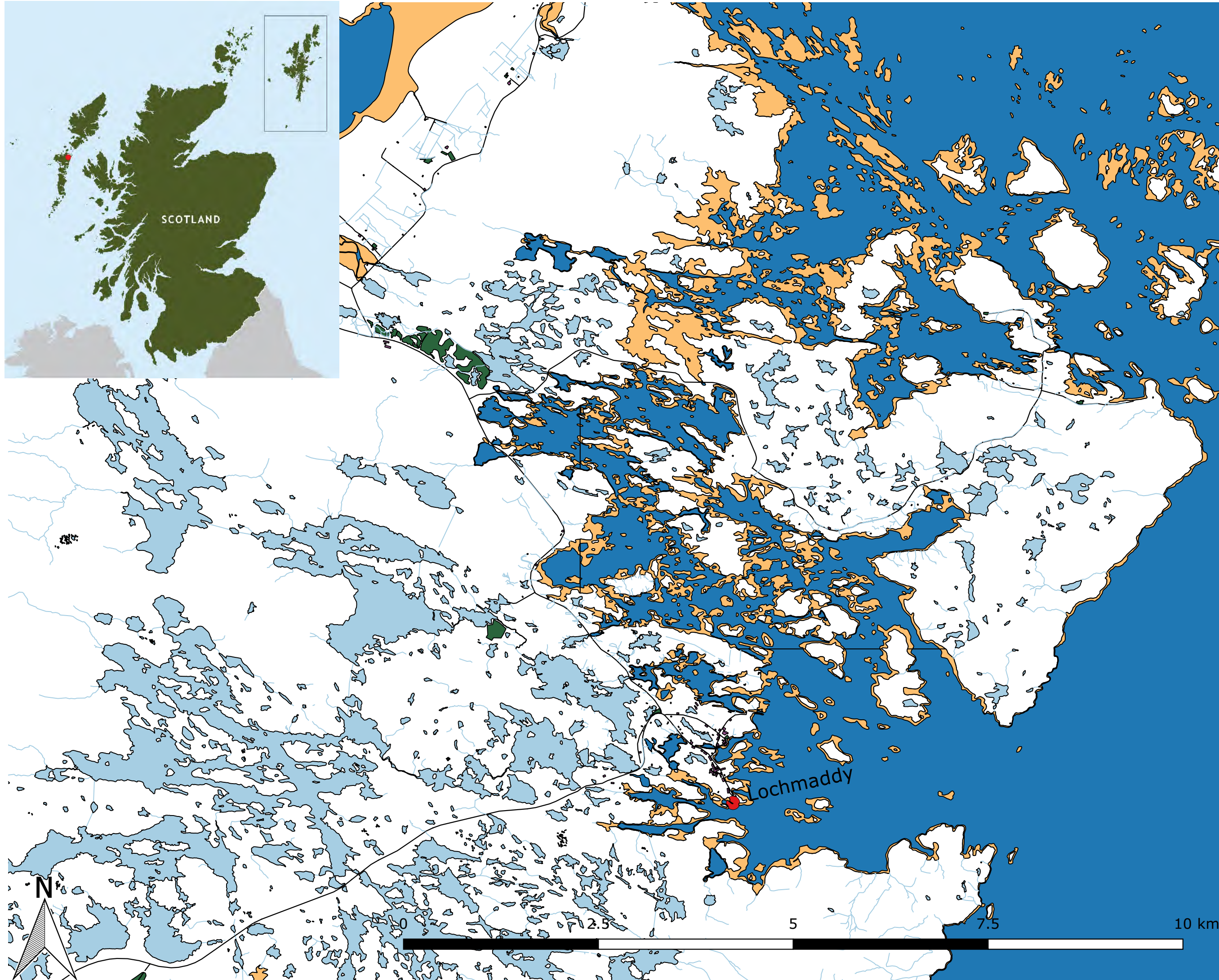
- Scottish Parliament (2003). Water Environment and Water Services (Scotland) Act 2003. Retrieved from: <http://www.legislation.gov.uk/sdsi/2015/9780111027820>
- Scottish Parliament (2010). Marine (Scotland) Act 2010: 2010 asp 5. Retrieved from: <http://www.legislation.gov.uk/asp/2010/5/contents>
- SEPA (2011). RBMP Interactive Map. Retrieved from: <http://map.sepa.org.uk/rbmp/>
- SEPA (2014). Land Use Planning System SEPA Guidance Note 17. Retrieved from: <https://www.sepa.org.uk/media/143325/lups-gu17-marine-development-and-marine-aquaculture-planning-guidance.pdf>
- SEPA (2015). Flood Maps. Retrieved from: <http://map.sepa.org.uk/floodmap/map.htm>
- SEPA (2017). The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide. Retrieved from: https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf
- Special Committee on Seals, (2016). Scientific Advice on Matters Relating to the Management of Seal Populations: 2016. Retrieved from: <http://www.smru.st-andrews.ac.uk/research-policy/scos/>
- Transport Scotland (2012). Transport Assessment Guidance. *Transport Scotland*, Glasgow, UK.
- Walsh, P., Halley, D., Harris, M., del Nevo, A., Sim, I., & Tasker, M. (1995). Seabird monitoring handbook for Britain and Ireland. Published by JNCC / RSPB / ITE / Seabird Group, Peterborough, UK.
- Wyn, G. (2006). Handbook for Marine Intertidal Phase 1 Biotope Mapping Survey. Countryside Council for Wales, Bangor, UK.
- UK Government (1994), The Conservation (Natural Habitats, &c.) Regulations 1994. SI; 1994:2716. Retrieved from: <http://www.legislation.gov.uk/uksi/1994/2716/contents/made>
- UK Government (2009). Marine and Coastal Access Act 2009: Chapter 23. Retrieved from: <http://www.legislation.gov.uk/ukpga/2009/23/contents>


18 Acronyms

AA	Appropriate Assessment
ADDs	Acoustic Deterrent Devices
BEIS	Department of Business, Energy and Industrial Strategy
BGS	British Geological Survey
BTO	British Trust for Ornithology
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CMAL	Caledonian Marine Assets Ltd
CnES	Comhairle nan Eilean Siar
CO ₂	carbon dioxide
COPA	Control of Pollution Act 1974 (as amended)
EIA	Environmental Impact Assessment
EPS	European Protected Species
GEN	General Policy
GES	Good Environmental Status Descriptors
GHG	Greenhouse Gas
GPP	Guidance for Pollution Prevention
HGV	Heavy goods vehicle
HRA	Habitats Regulations Appraisal
IAQM	Institute of Air Quality Management
IEA	Institute of Environmental Assessment
IEMA	Institute of Environment Management and Assessment
JNCC	Joint Nature Conservation Committee
LNG	Liquefied Natural Gas
MGO	marine gas oil
MHWS	mean high-water springs
MLWS	mean low water springs
MMRA	marine mammal risk assessment
NBN	National Biodiversity Network
NIEA	Northern Ireland Environmental Agency
NO ₂	Nitrogen Dioxide
NSA	National Scenic Areas
PAC	Pre-application Consultation
PANs	Planning Advice Notes
PPG	Pollution Prevention Guideline Note
PM	particulate matter
pSAC	Special Areas of Conservation
pSPA	proposed Special Protected Areas
SAC	Special Areas of Conservation
SNH	Scottish Natural Heritage
SoM	Schedule of Mitigation
SPA	Special Protected Areas

SSSI	Sites of Special Scientific Interest
SEPA	Scottish Environmental Protection Agency
UK	United Kingdom
ZTV	Zone of Theoretical Visibility

Figures





making it happen

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Title: 39.01 Lochmaddy Location

Projection: OSGB 1936/British National
Grid EPSG: 27700

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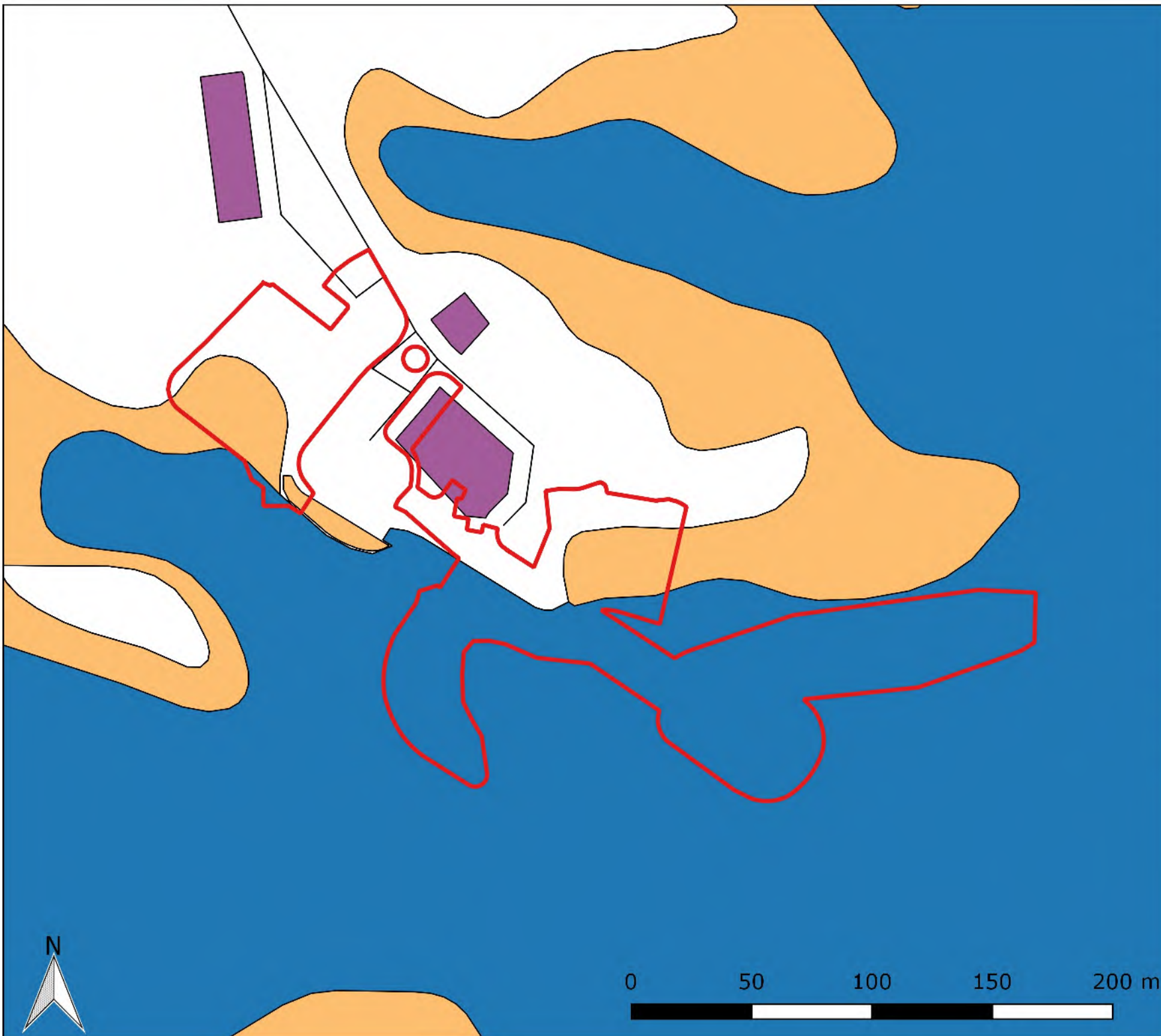
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Legend

- Inland Water
- Foreshore
- Lochmaddy
- Buildings
- Tidal Water
- Woodland
- Roads



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Title: 39.01.02 Lochmaddy Redline
Boundary

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Title: 39.02.01 Lochmaddy
Designated Sites: SAC

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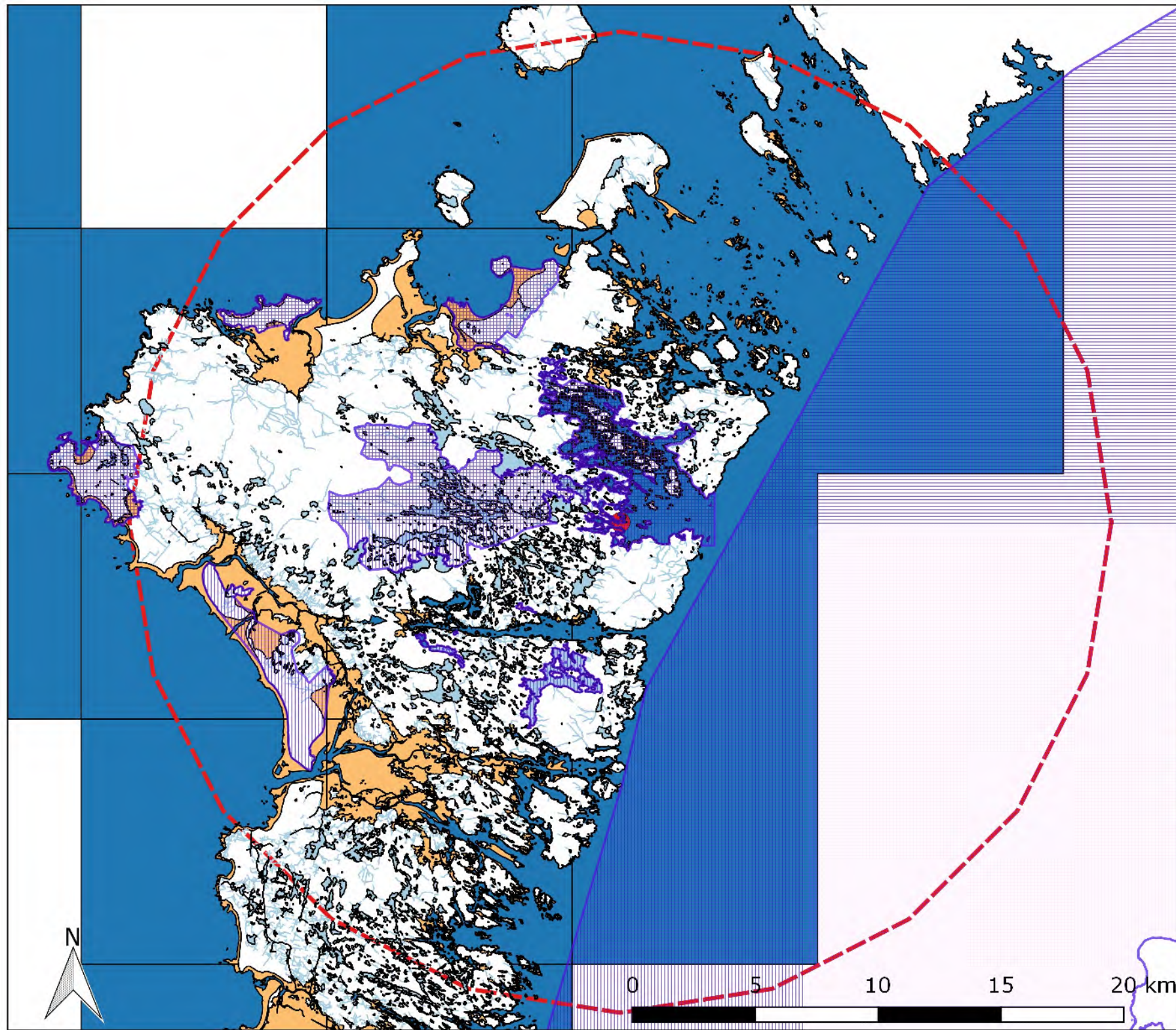
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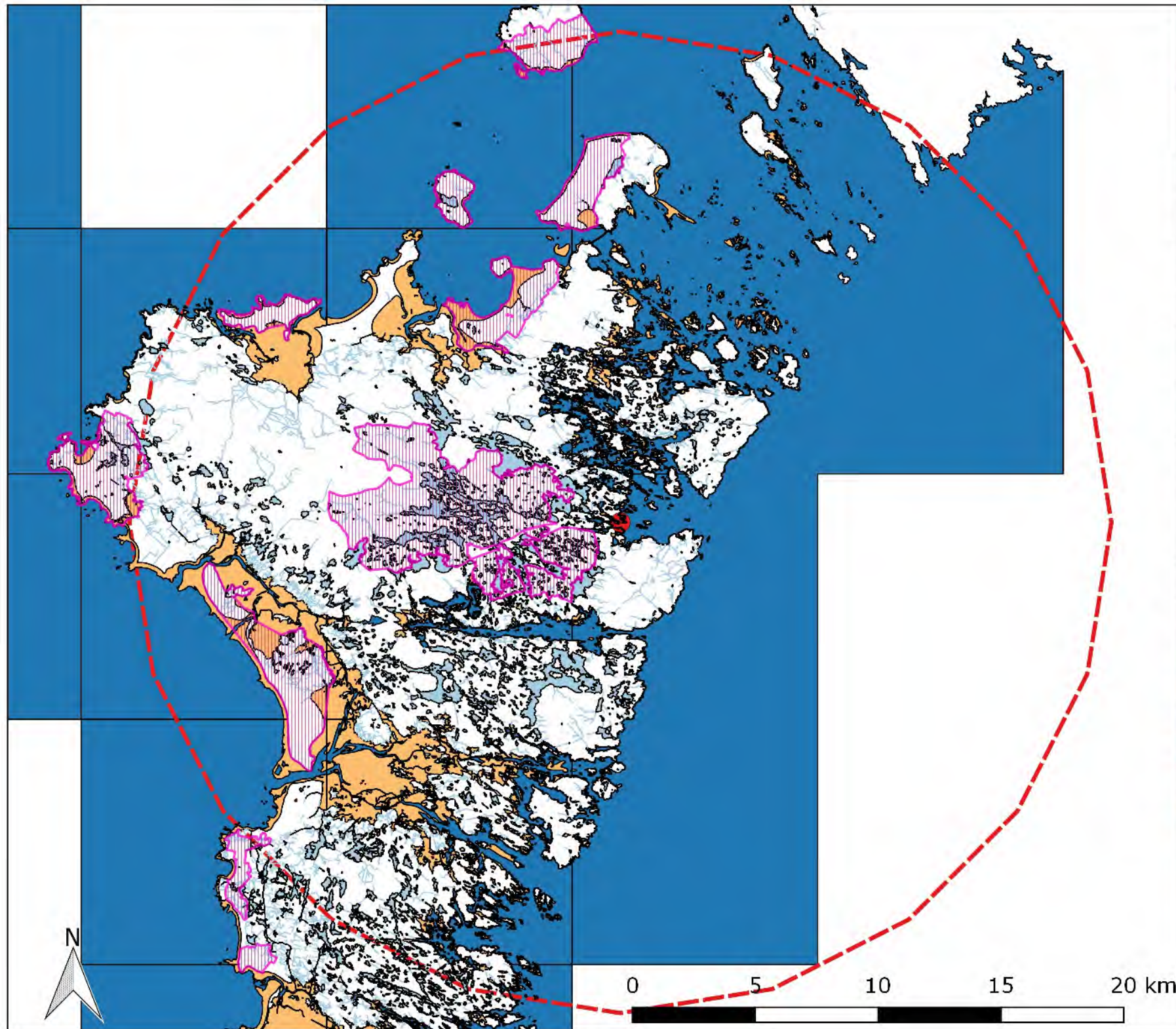
Rev No: 1

Drawing Date:
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Legend

-  SAC
-  Inland Water
-  Foreshore
-  20Km Buffer
-  Lochmaddy
-  Tidal Water





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Title: 39.02.02 Lochmaddy
Designated Sites: SPA

Projection: OSGB 1936/British National
Grid EPSG: 27700

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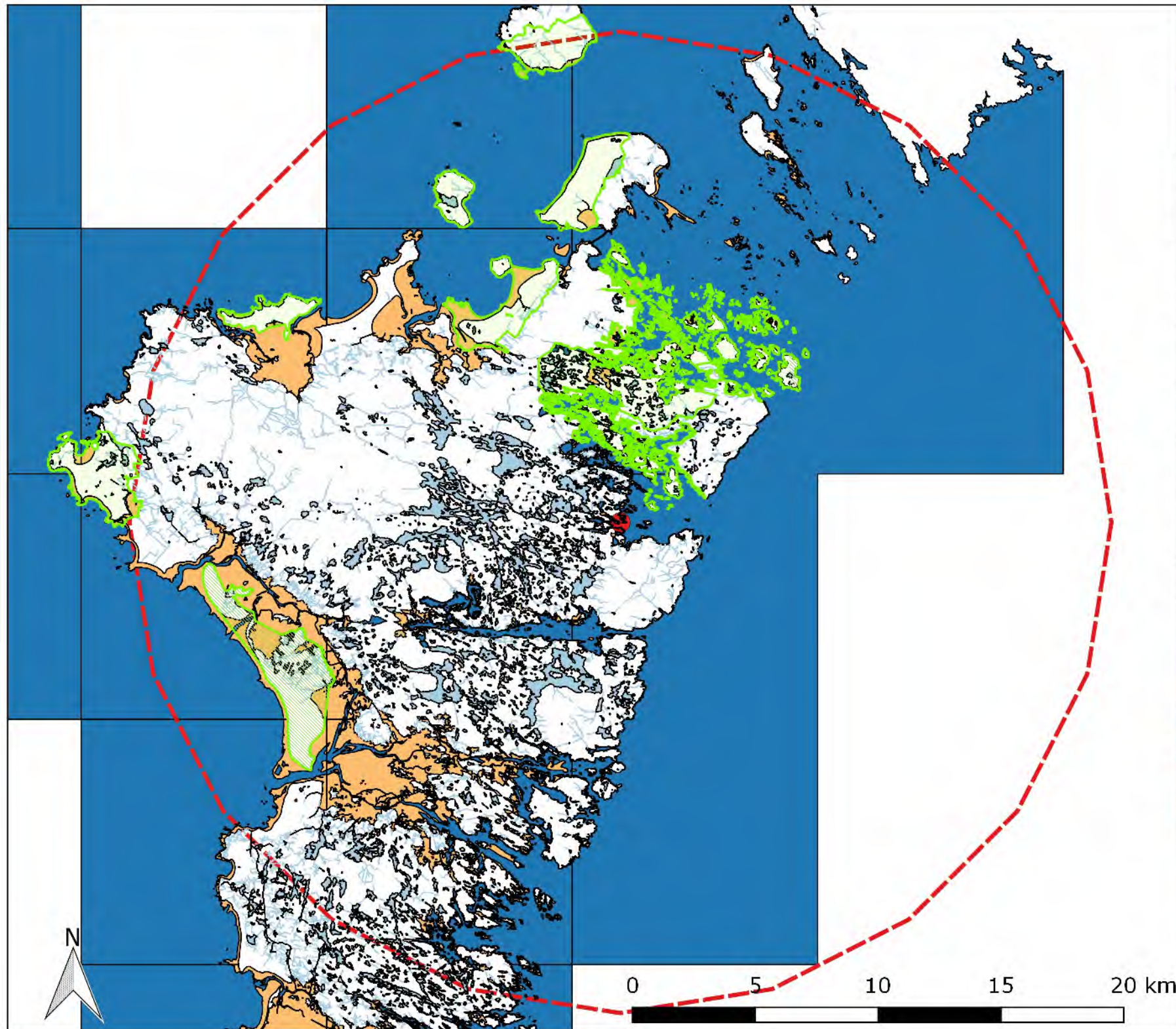
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Legend

- SPA
- Inland Water
- Foreshore
- 20Km Buffer
- Lochmaddy
- Tidal Water



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Title: 39.02.03 Lochmaddy
Designated Sites: Ramsar

Projection: OSGB 1936/British National
Grid EPSG: 27700

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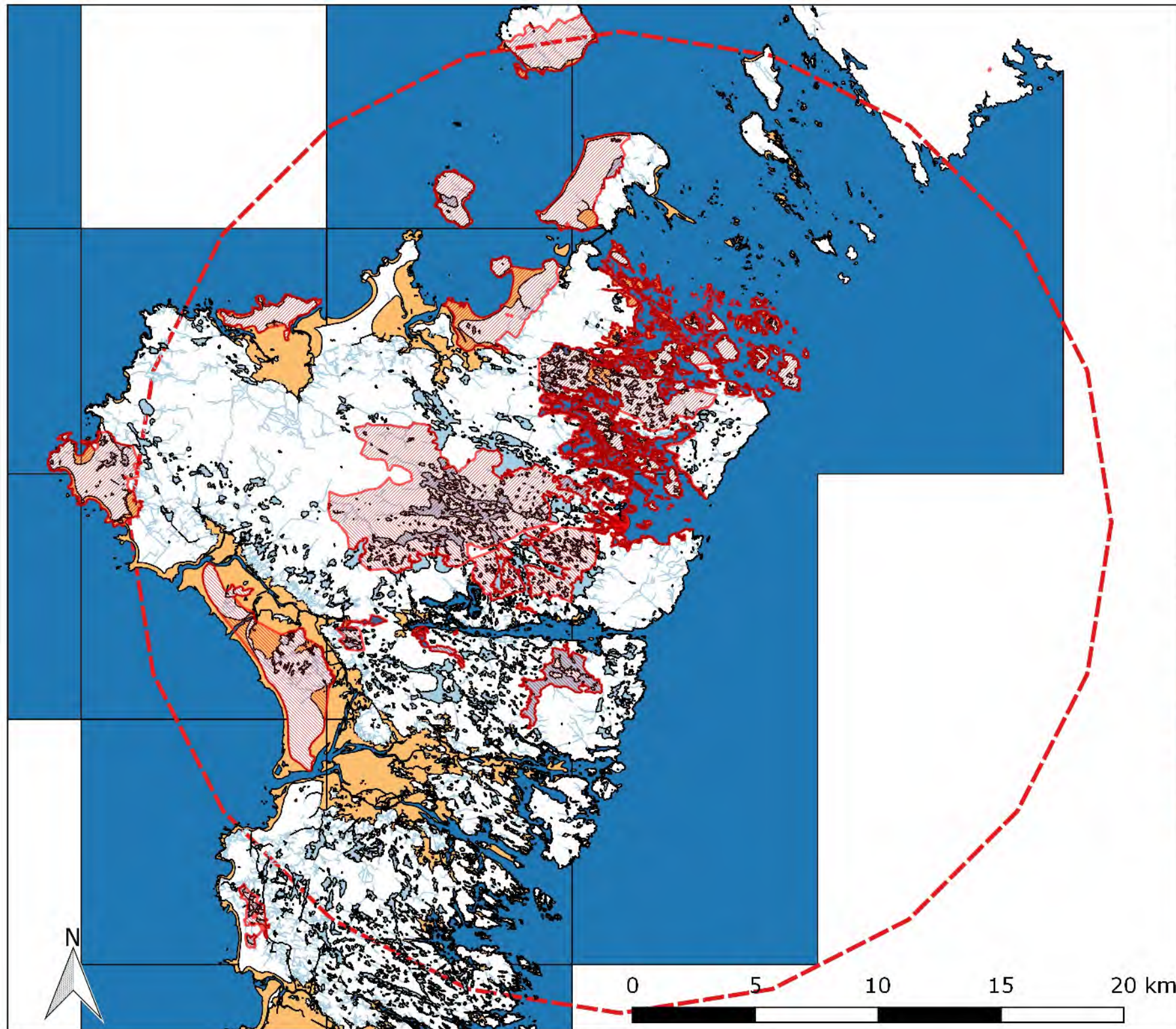
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Legend

-  RAMSAR
-  Inland Water
-  Foreshore
-  20Km Buffer
-  Lochmaddy
-  Tidal Water



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Title: 39.02.04 Lochmaddy
Designated Sites: SSSI

Projection: OSGB 1936/British National
Grid EPSG: 27700

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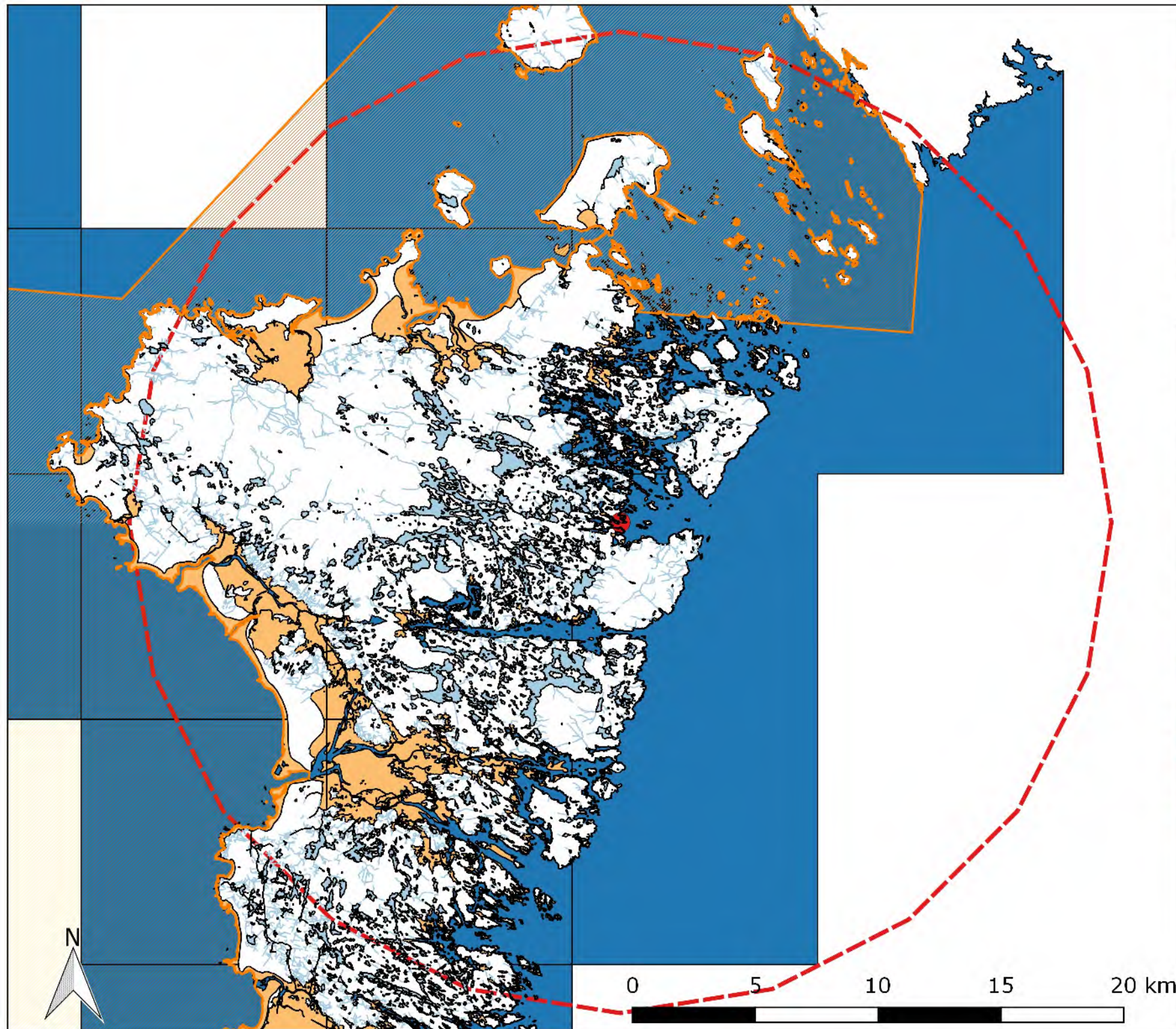
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Legend

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-  Foreshore
-  20Km Buffer
-  Lochmaddy
-  Tidal Water



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Title: 39.02.05 Lochmaddy
Designated Sites: pSPA

Projection: OSGB 1936/British National
Grid EPSG: 27700

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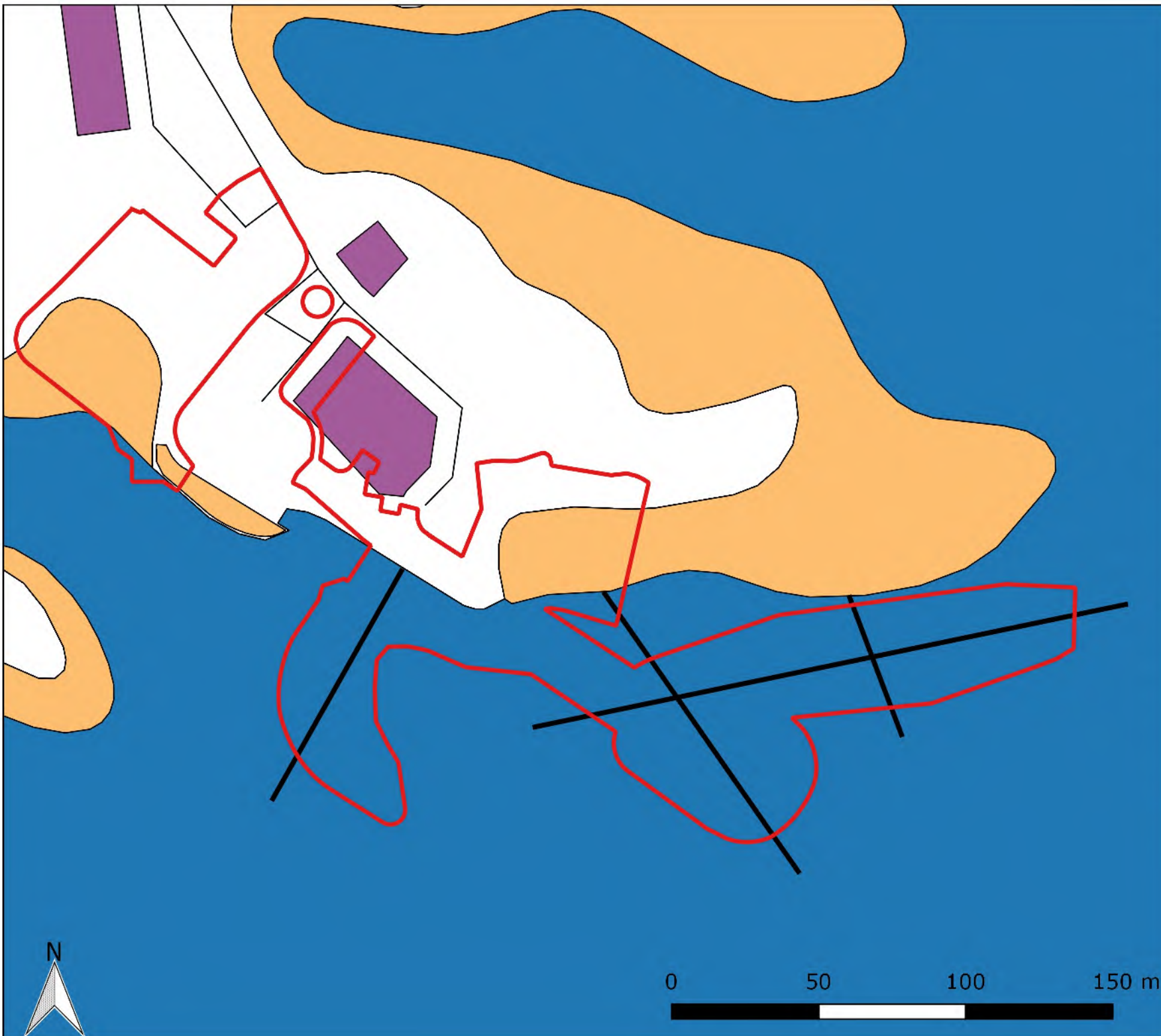
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-  Lochmaddy
-  Tidal Water



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Title: 39.02.06 Lochmaddy Benthic
Habitat Transects

Projection: OSGB 1936/British National
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Legend

- Benthic Transects
- Red Line Boundary
- Buildings
- Foreshore
- Tidal Water
- Roads

Lochmaddy Port Expansion



Zone of Theoretical Visibility

Key

Infrastructure modelled at 10m above reclaimed ground level

1, 2 and 5 km buffers

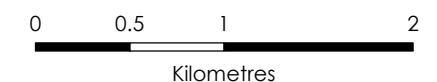
Horizontal Field of View ZTV

- Below 2°
- 2 - 5°
- 5 - 10°
- 10 - 20°
- 20 - 30°
- 30 - 40°
- 40 - 50°
- 50 - 60°
- Above 60°

Visibility calculated using Ordnance Survey's Terrain 50 dataset, which does not take into account the screening effects of buildings or vegetation.

HFOV ZTV calculated using Windfarmer 5.2.11.0 and footprint verified with ArcGIS 10.3 Viewshed tool.

Observer eye height 2m above ground and corrections for earth curvature and atmospheric refraction applied.



Scale @ A3:
1:40,000



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Appendix 1

**Lochmaddy Ferry Terminal
Phase 1 Habitats and Otter Survey**

June 2017

Redacted

**34 Valtos
Miavaig
Isle of Lewis
HS2 9HR**

Summary

A Phase 1 habitat and otter survey were carried out on the area around the Lochmaddy Ferry Terminal, North Uist, in May 2017. There were small areas of intertidal habitat to the west and south of the ferry terminal. Much of the terrestrial habitat was semi-improved acid grassland, with some small areas of tall ruderal habitat. Otters frequent the area, with a recently used lie-up within 100m of the ferry pier. The islands to the west of the pier also had signs of use by otters. There were no recent signs of otters using the actual area of the proposed works at the ferry terminal.

1 Introduction

1.1 Site Description

The survey was the site of the proposed works at the ferry terminal Lochmaddy, North Uist 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 24 and 25 May 2017. The survey was undertaken between 0900 and 1600 GMT in good weather conditions.

Otters

The survey was undertaken by Redacted 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.

The islands to the west of the ferry terminal were not accessed for the survey but were surveyed with a telescope from the mainland shore.

3 Results

Summary of Habitat Types

(see Appendix 1 for map of habitat types)

H1 Intertidal – brown algal beds

The intertidal areas to the south and west of the ferry terminal had an array of seaweeds typical of North Uist sea lochs - *Ascophylum nodosum*, *Fucus vesiculosus*, *Pelvetia canaliculata*, *Fucus spiralis*. *Ascophylum nodosum* var. *mackaii* was not found to be present.



Photographs 1 and 2
Brown algal intertidal areas west of the ferry terminal

H2 Saltmarsh

There were very thin strips of saltmarsh vegetation at the upper limits of the intertidal area to the north west of the ferry terminal.



Photograph 3
saltmarsh area west of ferry
terminal

B1 Acid grassland

The crofts west of the ferry terminal and the headland to the south west, on the other side of the peninsula, were herb-rich semi-improved grassland, with a high proportion of *Juncus squarrosus*, *Rumex*, *Ranunculus acris* and occasional stands of *Iris pseudocorus*. Other areas, including the peninsula to the east of the ferry terminal, were shorter grassland, with some dwarf shrub cover.



Photograph 4
Acid grassland to west of ferry
Acid grassland to west of ferry



Photograph 5
Peninsula to the north of the
ferry terminal – acid
grassland with some dwarf
shrub and stands of tall
ruderal near to the livestock
pens



Photograph 6
Acid grassland to the north
west of the ferry terminal, on
peninsula opposite
Lochmaddy Hotel

C1 Bracken

The two islands to the west of the ferry terminal had extensive bracken.



Photograph 7

Bracken-covered islands to west of terminal

C3.1 Tall ruderal

The area around the livestock pens to the north of the ferry terminal had stands of *Urtica dioica* and *Heracleum sphondylium*.



Photograph 8

Tall ruderal vegetation near the livestock pens by ferry car park

A1 Mixed plantation woodland

To the north west of the ferry terminal, adjacent to the Lochmaddy Hotel, is a small area of plantation woodland, with conifers dominating the western edge and mainly broadleaves to the east.



Photograph 9

Mixed plantation woodland west of ferry terminal

Target Notes

1 NF 92127 68053

Small peninsula to the east of the ferry terminal – short acid grassland with some dwarf shrub (mainly *Calluna vulgaris*) cover (less than 25%).

2 NF 92075 68059

Stands of *Urtica dioica* and *Heracleum sphondylium* adjacent to livestock pens.

3 NF 91901 68075

Interidal habitat in small bay to the west of the ferry terminal. *Ascophyllum nodosum*, *Fucus vesiculosus*, *Pelvetia canaliculata*, *Fucus spiralis* present. Thin strand line of saltmarsh vegetation.

4 NF 91915 68099

Acid grassland down to shore, with stands of *Iris pseudocorus* and other long ruderal.

5 NF 91882 68129

Semi-improved herb rich acid grassland, patches with extensive *Juncus squarrosus*, *Ranunculus acris*

6 NF 91769 68121

Upper section of intertidal habitat had more extensive saltmarsh vegetation at the strandline.

7 NF 91854 68244

Small area of plantation woodland. Conifers along the western edge, rest mainly broadleaved, *Salix* sp and *Alnus glutinosa*.

Otters

Otter spraint sites, lie-ups and runs were found in the vicinity of the ferry terminal – see Appendix 2.

There is a recently used lie-up dug into the peat on the peninsula to the east of the ferry terminal at NF 92130 68029, with fresh spraints nearby (see photograph 10). There was no nearby freshwater and so it is unlikely to be used as a holt, more likely an occasional lie-up. There is a well-used footpath on the peninsula, and so the site is subject to disturbance, which would also reduce the likelihood of it being used as a holt.



Photograph 10

Otter lie-up with fresh spraints on the peninsula to the north of the pier.

There were other holes in the peat that were potential lie-ups but had no signs of recent use.



Photograph 11

Other holes in peat on peninsula to the north of the pier that could potentially be used as lie-ups

An otter was seen fishing in the bay at NF921680. There were other possible lie-ups amongst shoreline peat and boulders to the north of this bay.

The islands to the west of the ferry terminal had signs of use by otters (see photograph 7). There was an obvious run through the bracken on the westernmost island at NF 91785 68066, and signs of spraints on the shore where the vegetation was affected.



Photograph 12

Otter run through bracken on island to west of terminal

The height of the bracken made it difficult to see whether there were holes dug by otters. The peat soil is typical of other sites in Lochmaddy where otters have dug holt under the bracken. It is also possible that there is freshwater on the islands which would increase the likelihood of there being a holt.

4 Assessment

Habitats

The habitat types are typical of North Uist and there were no notable species present. The plantation woodland has provided habitat for breeding birds that would not usually be found around the east coast of North Uist. The acid grassland is common throughout the croftland areas of North Uist.

Otters

Otters are using the shore immediately to the east and north of the ferry terminal and the islands to the west. There was one lie-up on the peninsula to the east of the terminal with signs of regular use, and an otter was seen fishing in the bay to the north. The otters frequenting this area of Lochmaddy are tolerant of disturbance and have continued to use the area after other developments have been carried out in the vicinity of the ferry terminal.

5 Recommendations

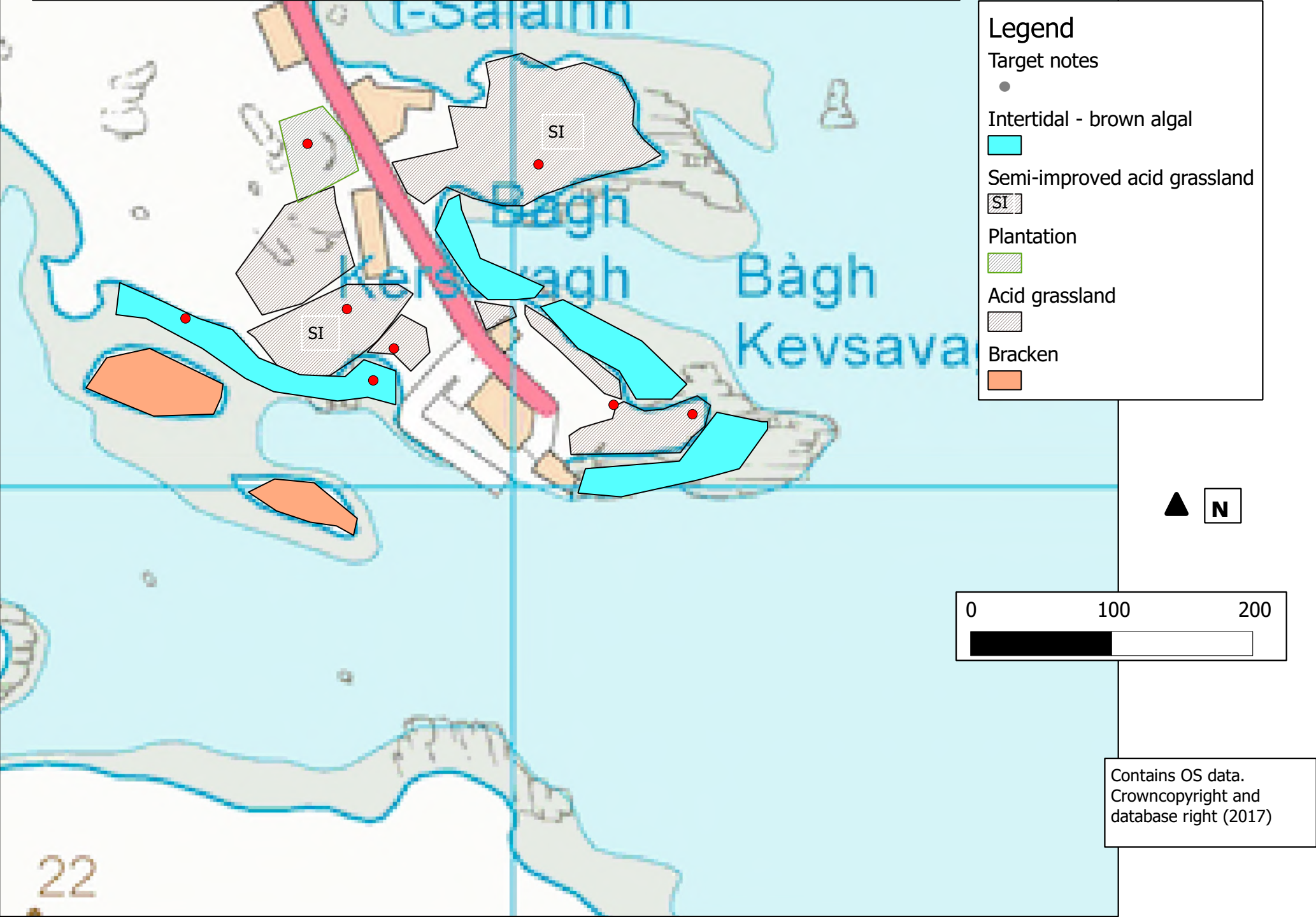
Habitats

There is no requirement for an NVC survey.

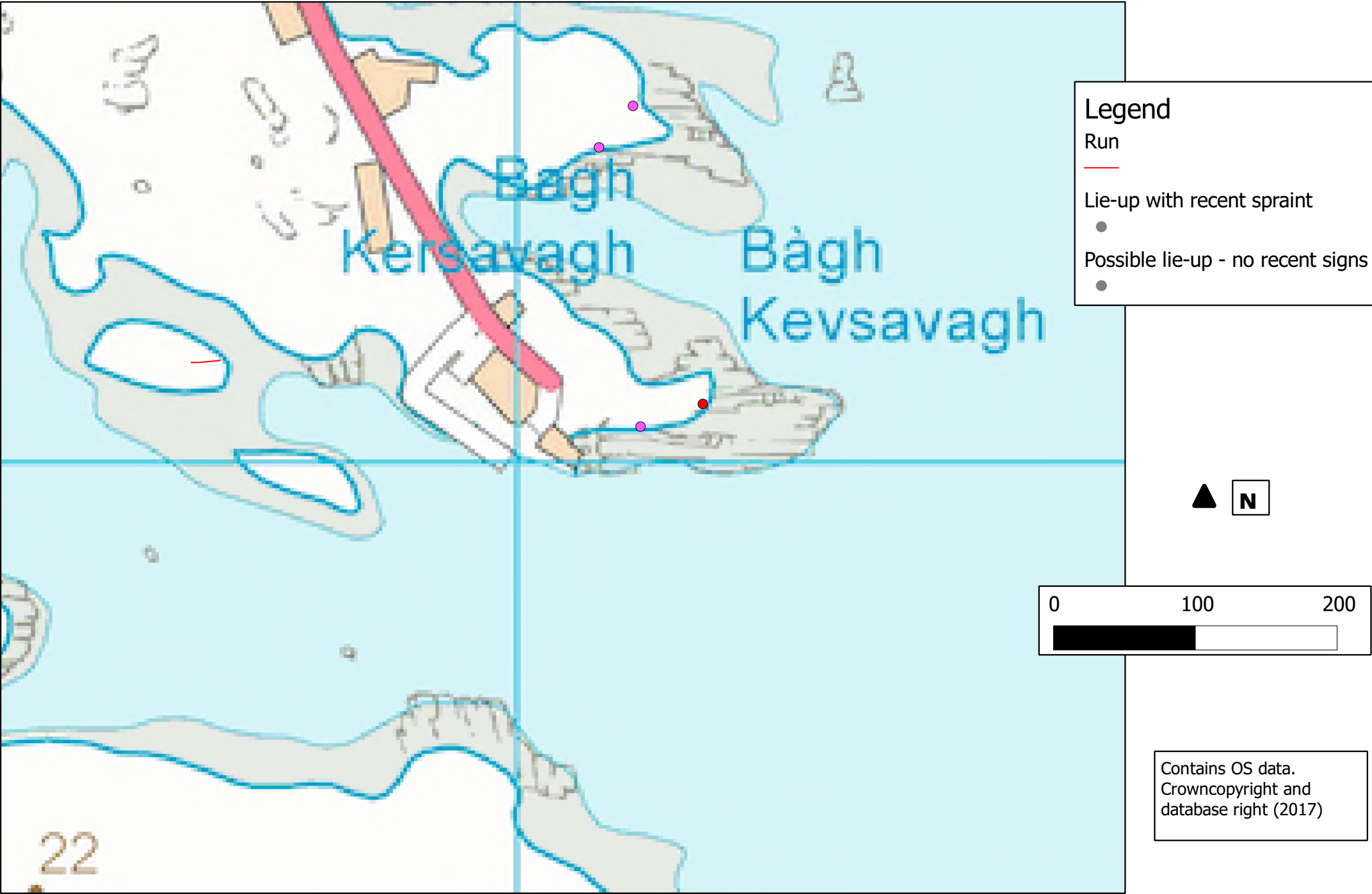
Otters

Otters are using the vicinity of the ferry terminal and a pre-construction survey is recommended. The islands to the west of the terminal may have otter resting places, and would be best surveyed when the bracken vegetation has died down. It is possible that a European Protected Species licence may be required, subject to the pre-construction surveys.

Appendix 1 Lochmaddy Ferry Terminal Phase 1 Habitats



Appendix 2 Lochmaddy Ferry Terminal Otter Survey





Appendix 2

Lochmaddy Ferry Terminal Ornithological Survey

June 2017

Redacted

**34 Valtos
Miavaig
Isle of Lewis
HS2 9HR**

Summary

A desktop study was carried out to identify ornithological designated sites that could be affected by the development works at Lochmaddy Ferry Terminal, and potential breeding and wintering bird species that may utilise the site.

A breeding birds survey was carried out of the area of Lochmaddy Ferry Terminal, North Uist, 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 Lochmaddy, North Uist, 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, and this information was used to direct the breeding bird survey.

A field survey aimed to locate all breeding birds within the survey area and assess 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 Lochmaddy ferry terminal:

- BTO Wetland Bird Survey (WeBS)
- 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

Information was also provided by Gwen Evans, a locally based ornithologist.

Field Survey

A standard walkover survey of the site, including a 250m buffer zone, was carried out by Redacted on 24 and 25 May 2017. RSPB have records of breeding corncrake within 20km of the site, and there were small areas of suitable long vegetations within 250m of the ferry terminal, so the field survey included surveying for corncrakes following standard RSPB methodology. The survey was undertaken in good weather

conditions. The area was surveyed between 0900 and 1800, and also between 0000 and 0050 to check for calling corncrakes.

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

3 Results

Desktop Survey

Mointeach Scadabhaigh Special Protection Area is within 10km of the ferry terminal. The site supports an assemblage of moorland breeding birds typical of moorlands and is especially important for breeding populations of both black-throated diver *Gavia arctica* (3 pairs) and red-throated diver *Gavia stellata* (48 pairs). Red-throated divers feed away from the SPA in surrounding marine areas, including Lochmaddy.

Also within 10km of the Lochmaddy Ferry Terminal is Loch an Duin Ramsar Site, a wetland of international importance.

Loch nam Madadh is also a Special Area of Conservation, the primary qualifying habitats being coastal lagoons and large shallow inlets and bays.

The proposed Special Protection Area West Coast of the Outer Hebrides is within 10km of the site.

Very little information on breeding and wintering birds in the immediate vicinity of the Lochmaddy Ferry Terminal was available.

There are three small (less than 6 pairs) common tern colonies within 1km of the ferry terminal, none closer than 600m from the terminal. There are recent records of calling corncrakes in Lochmaddy, more than 700m from the ferry terminal.

There are no recent WeBS counts. The only WeBS data available are two counts from 1976/77. No data on the seabirds of Lochmaddy was available from either the surveys carried out for the Shiant Isles Seabirds Recovery Project or the Inner Hebrides and the Minches candidate SAC.

The bay to the south of the ferry terminal has wintering seaduck, including red-breasted merganser, but not nationally important numbers. Black guillemot also congregate here. Waders, including oystercatcher, redshank and common sandpiper, are found along the shore of this bay during the breeding season.

Field Survey

Species found breeding in the survey area

Blackbird *Turdus merula*

Male carrying food seen in small woodland area adjacent to the Lochmaddy Hotel.

Meadow pipit *Anthus pratensis*

Two singing birds recorded in croftland within 250m of the site.

Other birds recorded during the survey

House sparrow *Passer Domesticus*

Birds seen feeding near ferry terminal and probably nesting under eaves of houses within 100m of ferry terminal.

Herring Gull *Larus argentatus*

Recorded in the vicinity of the ferry terminal and also on island just outwith 250 from ferry terminal – probably breeding.

Common Tern *Sterna hirundo*

One bird recorded fishing near ferry terminal. Small colony at NF920687, more than 600m from the terminal.

Common Buzzard *Buteo Buteo*

One bird seen outwith the survey area. Possible nest site within 500m of the ferry terminal.

4 Assessment

Moineach Scadabhaigh SPA has a breeding population of 48 pairs of red-throated diver representing at least 5.1% of the breeding population of Great Britain. These breeding birds feed in nearby marine areas, including Lochmaddy. No divers were recorded during the survey, and they tend to feed in the outer sections of the loch, more than 500m out from the ferry terminal. Loch an Duin Ramsar site is not likely to be affected by the works.

The breeding birds recorded during the survey are common species and are not in habitats that will be affected by the proposed works. No calling corncrakes were recorded during the survey.

The desktop study did not identify any recent published data on seabirds in the area of the ferry terminal.

5 Further Survey Recommendations

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

Lochmaddy has not been designated as of international importance for wintering seabirds. There is no recent published data to suggest that Lochmaddy is a nationally important area for wintering seaduck. A wintering bird survey is therefore not required.

Appendix 1 Lochmaddy Ferry Terminal Breeding Birds



Legend

Blackbird



Meadow pipit



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