NEWTON MARINA
STORNOWAY

ENVIRONMENTAL IMPACT ASSESSMENT REPORT:

NON-TECHNICAL SUMMARY

OCTOBER 2018

STORNOWAY PORT AUTHORITY

ENVIRO Centre

NEWTON MARINA, STORNOWAY

Environmental Impact Assessment Report: Non-Technical Summary

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1. INTRODUCTION

INTRODUCTION 1.1

Stornoway Port Authority proposes to develop a new marina at Newton Basin, alongside Goat Island. This will provide sheltered berths for 75 vessels, a public slipway, a boat lift and land for boat storage and future marina-related development.

This project has been developed in response to the popularity of the Port Authority's existing marina at Cromwell Street Quay, in Stornoway Town Centre. It forms a key part of the Port Masterplan, published in 2017 following a detailed public consultation process.

The Port Authority is seeking consent for the new development through a Harbour Revision Order application to Transport Scotland. In addition, works below high tide level require a licence from Marine Scotland. An Environmental Impact Assessment (EIA) is required as part of the applications for consents.

THE SITE

Goat Island is located within Stornoway Harbour and is connected to the town by a causeway. The island houses the Port Authority slipway, a marine engineering business, a shellfish processing factory and two boat storage sheds. The causeway connects the island to Battery Point, where Stornoway Coastguard Station and Power Station are located.

The island and the causeway enclose Newton Basin. The shoreline around the basin is exposed at low tide, as a raised area of seabed at the entrance to the basin.

The island is approximately 400m long and is 160m from Newton Street. This, and the adjoining Seaview Terrace are predominantly residential. The area to the north of Newton Street is mainly commercial and industrial.

The purpose of the EIA is to determine whether the marina development will cause significant environmental effects on the environment. Where significant effects have been predicted, the EIA considers the scale of the effects and measures to mitigate these effects.

This Non-Technical Summary sets out the scope of the EIA, the methods used and the conclusions of the assessment. Full details of the EIA are set out in the EIA Report.

The EIA Report will be submitted to Transport Scotland and Marine Scotland for consideration. Members of the public may make representations to these organisations during the formal consultation process. Details of how and when representations can be made will be publicised locally by the authorities in the coming months.

Above: The aerial image above shows the existing use of Goat Island. Proposed development would be to the right of the photo.

Small tidal bay within Stornoway Harbour, Isle of Lewis

Currently houses light industrial function comprising workshops, yard space, fish processing

OS Grid NB42732 32258

0-4m above sea level

7.97 hectares

STRUCTURE OF THIS NON-TECHNICAL SUMMARY

1.2

The NTS is set out in the same chapter format as the EIAR, to facilitate cross-referencing and to offer a summary of the environmental findings. The chapter format is as follows:

1. INTRODUCTION
2. PROPOSED DEVELOPMENT
3. EIA METHODOLOGY & SCOPING
4. LANDSCAPE & VISUAL
5. MARINE ECOLOGY
6. CULTURAL HERITAGE & ARCHAEOLOGY
7. NOISE
8. WATER ENVIRONMENT
9. TRAFFIC & TRANSPORT
10. OTHER ISSUES
11. CONCLUSIONS

Where environmental assessment has predicted potential adverse effects on the environment, measures to address and control effects, known as mitigation measures are identified. The assessment then presents the overall effects remaining after mitigation has been applied; these are referred to as the residual effects.

The overall suite of documents associated with the EIA includes the following:

- The Environmental Impact Assessment Report (EIAR) – which reports upon the potentially significant environmental effects of the proposed development on the receiving environment, and comprises of the following:
    - o Volume 1: Written Statement – this includes the written assessment and contains discussion of potentially significant environmental effects
    - o Volume 2: Figures – this volume includes figures, drawings and diagrams which support Volume 1
    - o Volume 3: Technical Appendices – this volume contains the technical background reports written and used to derive the environmental assessment
- Pre-Application Consultation (PAC) Report – this provides information on the community engagement which has been undertaken prior to this submission with regards to proposed development, and details public engagement initiatives and attitudes towards the proposed development
- Non-Technical Summary (NTS) – this document
- Licence Applications submitted to Marine Scotland as part of the EIA include:
    - o European Protected Species
    - o Marine Construction
    - o Marine Dredge and Disposal

2. THE PROPOSED DEVELOPMENT

SCOPE OF THE PROPOSED DEVELOPMENT

2.1

The marina development will provide pontoon berths for 75 vessels. Access to the pontoons will be via a bridge. A new breakwater will be built at the entrance to the basin to provide shelter from waves. The entrance to the marina and area around the pontoons will be dredged to allow vessels to berth at all states of tide.

The dredged material will be used to create land for boat storage, parking and future marina-related development. A new public slipway will be built at the eastern side of the reclaimed area. This will be useable at most states of low tide.

Future development on the reclaimed land will be subject to separate applications for planning consent. Potential uses include a marina facilities building and a boat workshop to provide covered space for boat building and maintenance.

The marina will provide water, electricity, wi-fi and waste collection services for boats moored at the pontoons. CCTV will be installed to monitor the pontoons and boat storage areas.

The project also includes provision of a new passing place at the northern end of the causeway. This will be created by reclaiming an area of land.

THE MARINA IS DUE TO BE COMPLETED IN EARLY 2020.

THE PROPOSED DEVELOPMENT WILL CONSIST OF:

RECLAMATION

Reclamation of 1.81 hectares of land along the north side of Goat Island featuring a level development platform and concrete retaining wall.

1.81HA

EXCAVATION

Excavation of up to 3m of material won by dredging from both sea and land.

FORMATION

Formation of a 75m long rock-armoured breakwater.

75M

FORMATION

Formation of a 50m long, rock-armoured slipway for the launch of vessels.

50M

FORMATION

Formation of pontoons with 100m long floating access walkway, with three walkway legs around 60m and finger piers on either side, and a 24m long access bridge connecting the shore.

INSTALLATION

Installation of a boat lift structure for boat repair and overwintering of vessels.

ROCK-ARMOURED PASSING PLACE

A rock-armoured passing place on the western side of Battery Point.

BERTH SERVICES

Berth services including power, water, waste collection, toilets, showers.

BOAT STORAGE

Up to 20 boat storage bays of up to 20m long, and 15 boat storage bays of up to 15m long (on land).

BOAT SHEDS

Two boat sheds of 12.5m in length, 5m wide and 6m high, to replace the existing boat sheds.

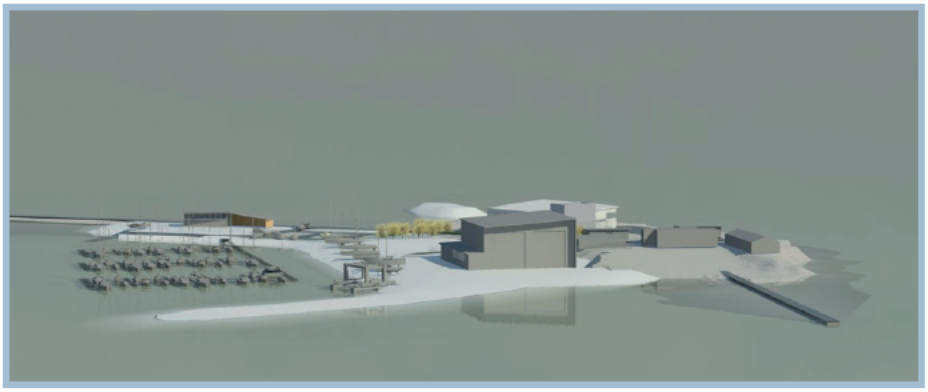
CAR PARKING

40 car parking spaces for marina users.

SCOPE OF THE PROPOSED DEVELOPMENT

2.1

These images give an illustration of how the marina could look after completion of this project and construction of buildings on the reclaimed area.



View from the north east.

View from the north west.

The existing marina at Cromwell Street Quay.

CONSTRUCTION TECHNIQUES 2.2


Image: Cutter-suction dredger.

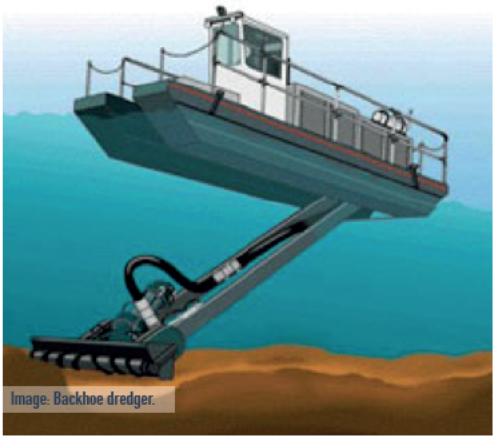


Image: Backhoe dredger.


Image: Piling of quay wall.

SLIPWAY

The slipway will be constructed from imported rock. The slipway will be a combination of in-situ poured concrete above the mid-tide level and pre-cast concrete units at the lower level.

BOAT LIFT STRUCTURE

This will comprise a steel framed structure. The horizontal rails will be supported on steel tube piles, which will be either driven into place by hammer or installed into sockets drilled into rock below the sea bed.

PONTOONS

The floating pontoons will be secured to vertical steel tube piles. These will be installed into sockets drilled into rock below the sea bed.

DREDGING

The dredging is likely to be carried out by a combination of a land-based excavator and a specialist dredging vessel. The vessel could be either a long-reach back hoe dredger or a cutter suction dredger, or both types may be used. Most of the dredged material will be re-used to form the reclaimed area. The material that is not suitable for re-use will be taken by ship to the Marine Scotland-approved disposal site at the approach to Stornoway Harbour.

The total volume of material to be dredged is 100,000 m3; 80% of this is expected to be suitable for reclamation use. Figure 2 within Appendix A shows the area to be dredged and the disposal site.

RECLAMATION

The reclaimed area will be formed from re-use of dredged material and some imported rock material. The material will be contained within a combination of rock bunds and a retaining wall. The reclaimed material will be compacted in layers and covered with a surface of crushed rock.

BREAKWATER

This will be formed by placement of imported rock by a land-based excavator.

PROJECT TIMING

2.3

It is estimated that the marina will take 14 months to construct. The key activities, in terms of environmental impact, have been listed below; the estimated duration of each activity has also been listed for the purpose of the EIA:

Months 1 – 3

Retaining Wall and Foundations

Rock Infill Retention Bunds

Months 2 – 3

Breakwater Rock Core

Months 4 – 7

Dredging

Months 4 – 9

Reclamation

Months 8 – 9

Access Ramp

Months 8 – 10

Rock Armouring (Breakwater/Passing Place/Causeway)

Months 9 – 11

Piling

Slipway

Months 10 – 11

Drainage and Sewerage

Months 12 – 13

Dock Structure

Pontoons

Surfacing

Months 12 – 14

Power, Water and WIFI

Month 14

Services to Pontoons

3. EIA METHODOLOGY & SCOPING

GENERAL EIA METHODOLOGY

3.1

The purpose of an EIA is to identify and evaluate the likely significant effects of a proposed development on the environment, and identify measures to mitigate or manage any significant adverse effects before a planning application is determined. The EIA process provided an opportunity to 'design out' adverse effects wherever possible by making alterations to the design of the proposed development before the application is submitted, and is based upon consultee feedback. Where adverse effects cannot be designed out, mitigation measures have been proposed to avoid, compensate, or reduce significant environmental effects to an acceptable level.

The environmental information gathered during the EIA was derived through a systematic process of identification, prediction and evaluation of the likely significant environmental effects of the proposed development. This process included identifying the sensitivity of the baseline conditions/receptors; predicting the magnitude of potential impacts; predicting the significant effect of the impacts; detailing mitigation measures; predicting the potential residual effects as well as the potential impacts associated with other planned developments (cumulative developments). The results and findings are presented in full within the EIAR and summarised in this document.

SCOPING AS PART OF THE EIA PROCESS

3.2

Scoping is defined as 'the way in which key issues are identified from a broad range of potential concerns for inclusion in EIA studies, the areas affected, and the level to which they should be studied'. Furthermore, the scoping process enables the topics to be covered in the EIAR to be agreed with the consenting bodies and for those topics not considered pertinent to be scoped out of the study or reduced in scope (i.e. topics where it is unlikely that significant environmental effects will occur).

Scoping Requests were submitted to the Comhairle nan Eilean Siar (CnES) on 1st September 2017 and Marine Scotland on 15th December 2017. Scoping Opinions were received from the CnES on 3rd November 2017 and Marine Scotland on 9th March 2018. The opinions provided in the Scoping Opinions were used to inform the EIA process by shaping the methodologies and the inclusion and exclusion of particular environmental topics and features for assessment.

CONSULTATION 3.3

Consultation responses were obtained from the following organisations in respect of the Scoping Reports issued to CnES and Marine Scotland:

- TRANSPORT SCOTLAND
- HISTORIC ENVIRONMENT SCOTLAND
- MARINE SCOTLAND LICENSING
- MARINE SCOTLAND SCIENCE
- SCOTTISH ENVIRONMENTAL PROTECTION AGENCY
- SCOTTISH NATURAL HERITAGE
- SCOTTISH AND SOUTHERN ENERGY
- HIGHLANDS AND ISLANDS AIRPORTS
- MET OFFICE
- MARITIME COASTGUARD AGENCY
- THE NORTHERN LIGHTHOUSE BOARD
- THE ROYAL YACHTING ASSOCIATION

SCOPE OF THE

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

3.4

The consenting bodies agreed that the EIA should consider the following matters:

- Cultural Heritage and Archaeology
- Landscape and Visual Impact
- Marine Ecology
- Noise
- Population and Human Health
- Other issues: socio-economic impact, navigational safety, property matters, impact on Scottish Water assets
- Traffic and Transport
- Water Environment

The following matters will be covered as part of the Construction Environmental Management Plan (CEMP):

- Control of emissions from plant
- Dust control
- Pollution

The marina contractor will prepare the CEMP and submit it for approval by the consenting bodies before works begin.

The consenting bodies agreed that the following matters need not be included within the scope of the EIA:

- Birds
- Climate Change
- Land-based ecology
- Visual impact and noise from traffic
- Hazardous traffic loads

4. LANDSCAPE & VISUAL

INTRODUCTION 4.1

A Landscape and Visual Impact Assessment (LVIA) was carried out for the proposed development. The assessment follows the approach as set out in the Guidelines for Landscape and Visual Impact Assessment 3 (GLVIA3) and other best practice guidance.

The assessment identifies the baseline against which the effects of the proposed development are assessed, and concentrates on predicting the likely significant effects during the operational phase. It aims to identify, predict and evaluate the key effects of the proposed development on the landscape and visual resources of the study area.

In order to establish a Landscape and Visual Baseline, the assessment comprised a desk study, computer analysis, field work and interpretation using professional judgement. Site visits were undertaken to gain a clear understanding of the landscape. Fieldwork was completed in January and February 2018 by a Chartered Member of the Landscape Institute.

Drawings detailing the following assessments were used to inform and support elements and conclusions of the LVIA:

- Landscape Character
- Coastal Character
- Recreational Routes
- Zone of Theoretical Visibility
- Viewpoint Analysis

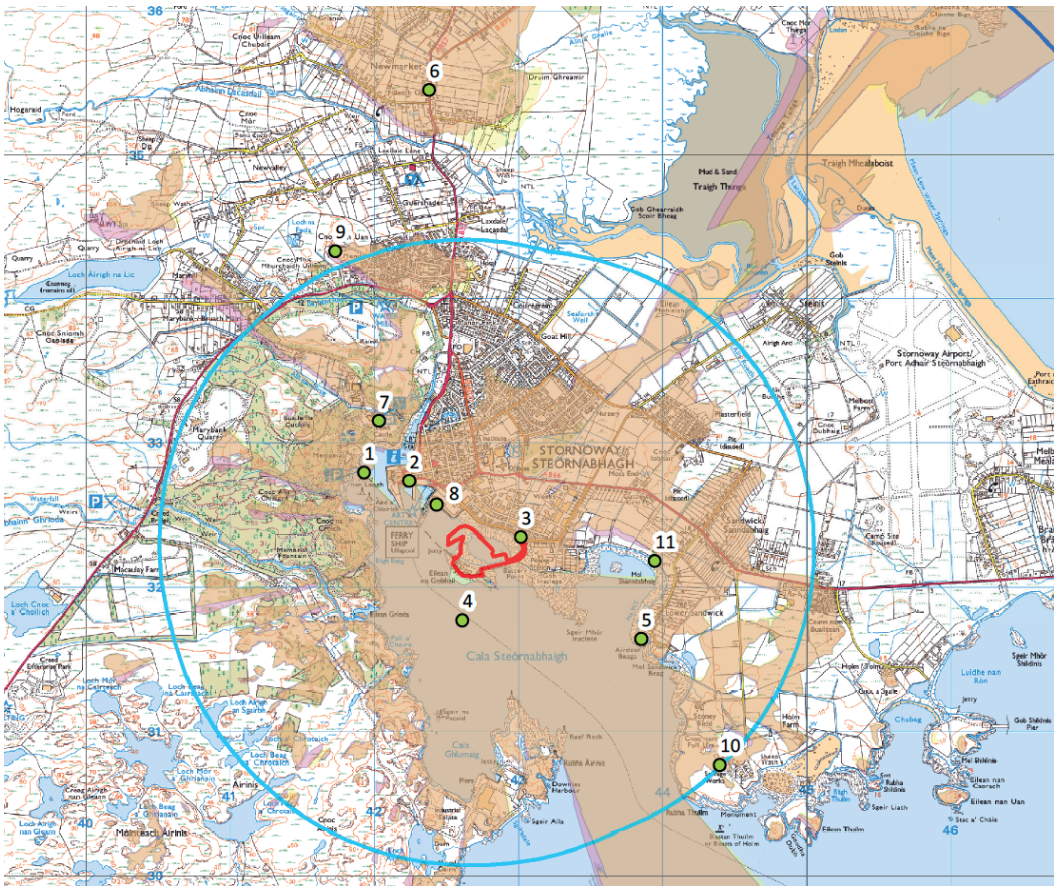
INTRODUCTION 4.1

The Landscape and Visual assessment was based on a study area of 5km from the marina. This is known as the Zone of Theoretical Visibility (ZTV). The ZTV is illustrated below. This indicates the areas from which the marina is likely to be visible. The ZTV takes account of the height of boat masts in the marina. For robustness, it also accounts for future developments on the reclaimed land, such as the new boat workshop.

The assessment considered the impact of the marina from a range of viewpoints within the ZTV. These were agreed in advance with Scottish Natural Heritage and CnES and are shown on the map below. Viewpoints were selected to represent areas receiving a high level of footfall and to take account of significant heritage assets such as Lews Castle and the War Memorial.

The viewpoints include: Cuddy Point, Lews Castle, South Beach, Newton Street, the ferry terminal, the incoming ferry, Lewis War Memorial, the car park at the Iolaire Memorial and Sandwick Bay.

The assessment also takes account of the cumulative impact of future proposed developments, such as the Deep Water Port.



Above: This illustrates viewpoint selection and ZTV. The full plan can be found in the Appendix as NTS Figure 3.

IMPACT ASSESSMENT AND SIGNIFICANCE OF EFFECTS

4.2

The area benefits from a high landscape quality. In particular, the wooded grounds of Lews Castle, designated as a nationally important Garden and Designed Landscape, provide a distinctive setting to Stornoway and its harbour. The scenic views across the harbour are an integral part of the visual amenity enjoyed by those living in, working in and visiting the town.

The assessment is based on a worst-case scenario, as the viewpoints were selected to provide the most open views onto the marina. Also, subsequent developments such as the boat workshop which are not part of the current consent applications were included for the sake of robustness.

No significant effects on the landscape and coastal character are predicted during construction or operation of the marina. Also, the development will not have any significant effects on views from Lews Castle or the Castle Grounds.

The assessment found that there will be significant visual impacts during the construction phase on viewpoints at Newton Street, the ferry terminal and views from the ferry. These viewpoints are all within 300m of the site.

On completion of the marina, there will be significant visual effects on these viewpoints. However, the assessment also found that the development would improve the appearance of Goat Island by introducing a recreational use to what is currently an industrial area.

5. MARINE ECOLOGY

INTRODUCTION 5.1

The Marine Ecology assessment considered the impact of the marina development on marine mammals, fish and otters. It was carried out by experienced ecologists who are members of the Chartered Institute of Ecology and Environmental Management and in accordance with the Institute's Code of Professional Conduct.

The assessment comprised review of existing record information, field surveys and consultation with bodies such as Scottish Natural Heritage and the Outer Hebrides Fisheries Trust. In addition, computer models were developed to predict underwater noise and the impact of dredging on sediment dispersion within the harbour.

The marine mammal species considered were: Risso's Dolphin, Short-beaked Common Dolphin, Harbour Porpoise, Grey/Harbour Seal, Killer Whale, Minke Whale, Atlantic Salmon, Sea Trout and European Eel. The study also considered the impact of the project on Atlantic Salmon in the River Creed and Sea Trout in the River Glen.

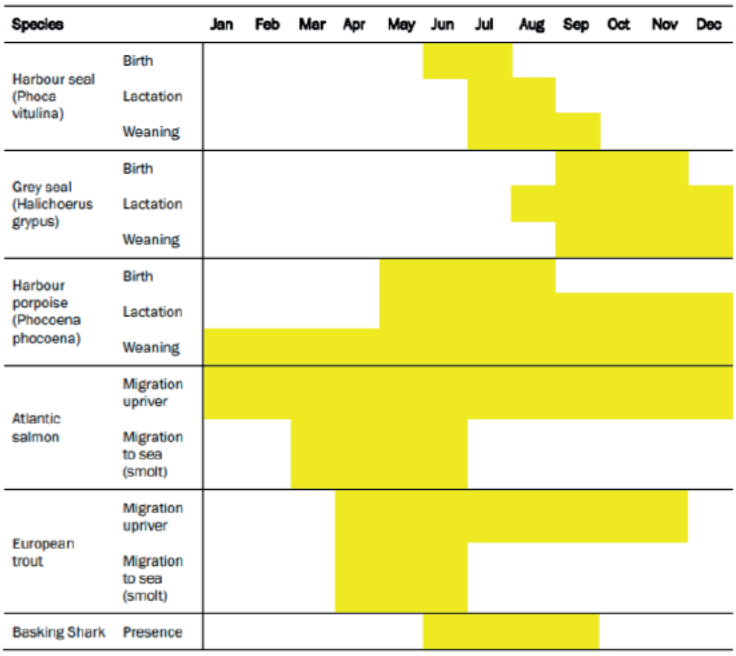
As well as the impacts on fish and marine mammals, the assessment considered the effect on their supporting habitats. The site is close to areas with proposed environmental designations, namely the North East Lewis proposed Marina Protection Area and the Inner Hebrides and Minches Candidate Special Area of Conservation.

Site Name	Designation	Distance from the Site	Designated Feature	Linkage to the Site
North East Lewis	Proposed MPA	Less than 1km east	Risso's dolphin	Connected ecologically and hydrologically
Inner Hebrides and The Minches	cSAC[1]	Approximately 1.4km north-east	Harbour porpoise	Connected ecologically and hydrologically

Table 1: Designated Sites

IRWIN CARR CONSULTING

Table 5. Breeding and/or important time periods for some of the local fauna. Only selected species presented here, according to perceived threat, based on presence information (sea watch foundation, 2018; The Mammal Society, 2018; Scottish National Heritage, 2018) & local NGOs.



Important time periods and breeding data for some of the local fauna included in the assessment.

1 A Candidate SAC (cSAC) has the same status as a SAC

IMPACT ASSESSMENT AND SIGNIFICANCE OF EFFECTS

5.2

The assessment found that the project would not have any significant impacts on the North East Lewis proposed Marina Protection Area and the Inner Hebrides and Minches Candidate Special Area of Conservation.

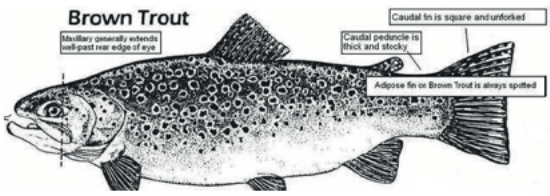
No evidence was found of otters near the marina site. The contractor's staff will be trained to check for signs of otters before starting work.

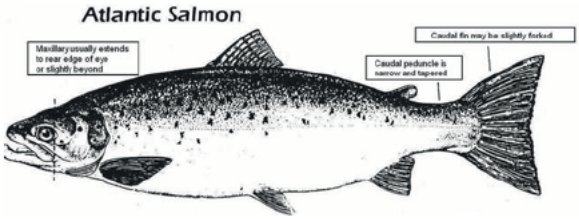
The computer model of sediment dispersion indicated that the majority of sediment would be retained within the Newton Basin area and would not impact migration paths of Atlantic Salmon. There is a slight risk of increased sediment levels around the River Glen. However, the predicted level of sediment is below the level at which Sea Trout migration patterns are disturbed.

The risk of pollutants being released into the water will be managed through the contractor's Construction Environmental Management Plan. This will set out measures to control re-fuelling of plant and release of pollutants from dredged material.

The main identified impact from construction work, particularly during piling activities, would be on marine mammals. The Marine Mammal Protection Plan in section 5.3 sets out the measures to avoid adverse impacts on these species.

Above: Harbour Porpoise; Below: River Creed





MARINE MAMMAL PROTECTION PLAN

5.3

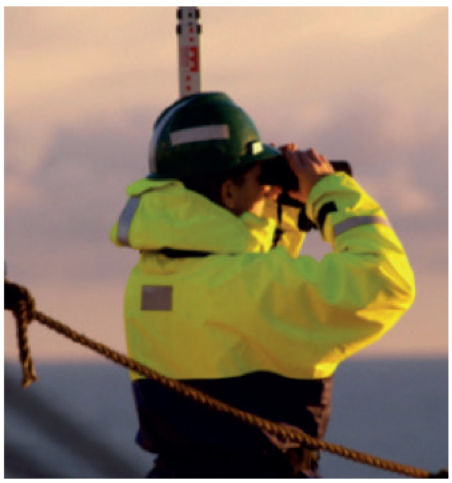
A Marine Mammal Protection Plan has been prepared in consultation with Scottish Natural Heritage and in keeping with Joint Nature Conservation Committee guidance.

A Marine Mammal Observer (MMO) will be present during impact piling. The MMO will check for the presence of marine mammals within a designated area around the works for a minimum of 30 minutes before work starts. Piling will not start if there are marine mammals within the area or until 20 minutes after they have left. The MMO will keep records of sightings of marine mammals and the start/finish times of impact piling.

Piling will begin with a soft-start period of at least 20 minutes. This will involve a gradual ramping up of piling power and will allow time for any marine mammals to move away from the noise. Due to the low risk of marine mammals being in the area, the soft start method will be used without the MMO visual check when piling begins in the hours of darkness or when waves exceed 0.5m in height.

If piling stops for more than 10 minutes, an underwater noise generator could be used to deter marine mammals from entering the area. This will be used for no longer than 1 hour (or 2 hours in exceptional circumstances such as a breakdown of machinery).

With these measures in place, no significant impacts are predicted on marine mammals or their habitats.



6. CULTURAL HERITAGE

INTRODUCTION 6.1

Cultural Heritage Assessment aims to identify and mitigate any effects of the proposed development upon the historic and cultural environment of the study area. Heritage assets accounted for within the assessment are Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes, Historic Battlefields and Historic Marine Protected Areas.

In accordance with Standards and Guidance Published by the Chartered Institute for Archaeologists (CIfA), baseline studies were supplemented by site visits, bathymetric surveys, interpretation of geophysical data, consultation of historic inventories, mapping the Zone of Theoretical Visibility (ZTV), compiling graphics to inform a comprehensive schedule of cultural assets within the Inner Study Area, which corresponds to the proposed development site boundary and; the Outer Study Area which extends to 1km from the proposed development.

Recent Photo: Stornoway from Castle Roof.

Historic Photo: Stornoway from Castle Roof.

IMPACT ASSESSMENT AND SIGNIFICANCE OF EFFECTS

6.2

Only one Scheduled Monument within the Outer Study Area, Cnoc na Croich, a prehistoric Cairn at the top of Gallow's Hill, was deemed to have high importance.

The assessment looked in detail at the impact of the development on Lews Castle and its grounds, which are included in the Inventory of Gardens and Designed Landscapes, and contain several Listed Buildings. These required specific consideration due to their importance in the setting of Stornoway Harbour.

The assessment further concluded that it would still be possible to appreciate and understand the cultural significance of Lady Lever Park Inventory Garden and Designed Landscape and the Conservation Area and existing historic views will remain unobstructed by the proposed development.

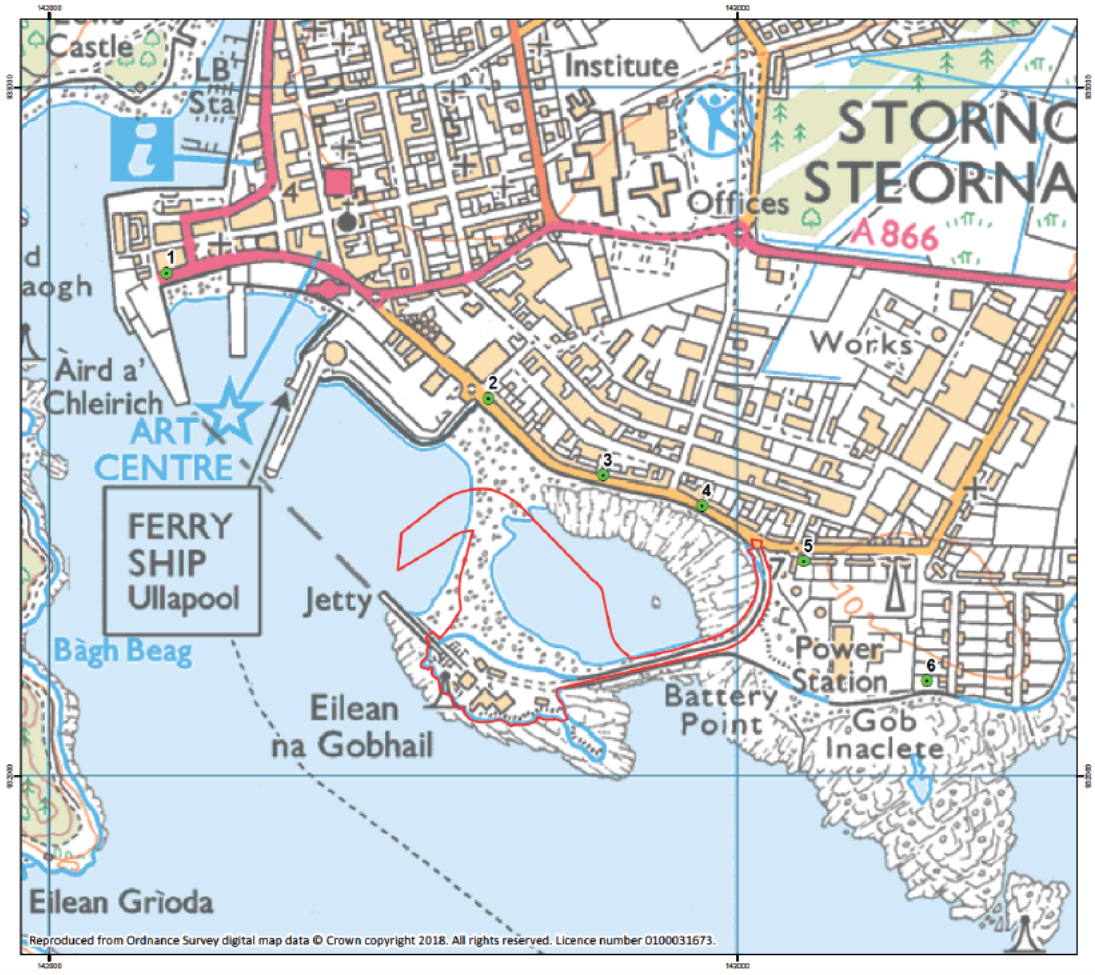
Cultural heritage assets within the Inner Study Area and Outer Study Area will therefore not be subject to construction or operational impacts of greater than negligible magnitude and therefore no mitigation is proposed in respect of Cultural Heritage within the associated EIAR.

Lews Castle and Lady Lever Park Inventory Garden and Designed Landscape (IGDL).

7. NOISE

INTRODUCTION 7.1

The noise assessment considered the impact of construction and operation of the marina at selected receptor locations. The locations were agreed with the Environmental Health service in CnES. These are illustrated in the map below.



Legend
Newton Marina Site Boundary
Noise Sensitive Receptors

Above: Noise Sensitive Receptor Plan.

IMPACT ASSESSMENT

7.2

The operation of the marina is not predicted to have any significant impact on noise levels at the receptor locations. Berthing and mooring of yachts does not generate major noise. The noise from boat maintenance is not expected to increase significantly.

The noise assessment therefore focused on noise from construction of the marina. Construction works will generally be carried out during the day or early evening. There will be occasions when work needs to be carried out late in the evening or at night due to tide levels, but this will be infrequent and is likely to be limited to the early stages of construction. Also, it may be that dredging is carried out at night, but this would be for a limited period.

Construction noise was calculated by considering all the activities predicted to take place within each month of the works. Where different types of equipment could be used (for example dredging plant), a separate assessment was carried out for each type.

A computer model was prepared to predict noise from construction activities at the receptor locations. The model also includes noise from the construction activities at the Deep Water Port and construction of the new fish processing factory at Goat Island, which could both coincide with the marina works.

The noise assessment was carried out in accordance with the relevant British Standard and Scottish Government guidance. Details of the methodology are set out in the Noise chapter of the EIAR. A threshold noise level is calculated for each location for daytime, evening and night-time noise, taking account of the baseline noise. This is deemed to be the acceptable level of noise. The predicted noise level is compared with the threshold level. The significance of any increase in predicted noise depends on the difference between the threshold level and the predicted noise level. An increase of up to 3 Decibels is classed as of 'Slight' significance and an increase of between 3 and 5 Decibels is classed as 'Moderate'. An increase of 3dB is just perceptible.

Table 2 on the following page shows the locations of predicted slight and moderate increases in noise and the associated construction activities and timing. Most instances of increased noise are of less than 3 Decibels, which is considered to be of Slight significance. The only predicted noise increases of between 3 and 5 Decibels are during months 4–7 during dredging. It should be noted that cutter-suction dredging is anticipated to be used for only part of this duration.

IMPACT ASSESSMENT 7.2

Construction activities	Estimated & frequency	Frequency of night-time working	Receptor no. & location affected	Threshold noise level (decibels)	Predicted increase in noise level (decibels)	Time [1]	Significance
Placement of rock infill bunds and construction of retaining wall	Months 1 to 3	Occasional, when low tide needed for works	2 – Newton St.	55	55.9	Night	Slight
			3 – Newton St.	55	57.7	Night	Slight
			4 – Newton St.	55	56.5	Night	Slight
			6 – Builnacraig St.	45	46.1	Night	Slight
Cutter suction dredging, reclamation and construction of breakwater core	Months 4 – 7	Dredging may be carried out at night over a 2-month period; construction of breakwater core will not be done at night	2 – Newton St.	55	58.8	Night	Moderate
			3 – Newton St.	65	65.6	Day	Slight
				55	59.8	Night	Moderate
			4 – Newton St.	55	57.4	Night	Slight
Backhoe dredging, reclamation and breakwater core	Months 4 – 7	None	2 – Newton St.	65	65.3	Day	Slight
			3 – Newton St.	65	66.8	Day	Slight
				65	66.3	Evening	Slight
			4 – Newton St.	65	65.5	Day	Slight
Reclamation, breakwater core, rock armouring & access ramp	Month 8	None	2 – Newton St.	65	65.1	Day	Slight
			3 – Newton St.	65	67.2	Day	Slight
			4 – Newton St	65	65.9	Day	Slight
Reclamation, rock armouring, access ramp, pontoon piling, slipway	Month 9	None	3- Newton St.	65	65.4	Day	Slight
Boat lift structure, pontoons	Months 12 – 13	None	3 – Newton St.	65	65.4	Day	Slight

Table 2: Predicted noise levels during marina construction.

[1]Day: 0700 to 1900 weekdays and Saturday 0700 to 1300, Evening: 1900 to 2300 weekdays, Saturdays 1300 to 2300 and Sundays 0700 to 2300; Night: 2300 to 0700

SIGNIFICANCE OF EFFECTS 7.3

The worst-case daytime and evening significance of effects from construction activities at Newton Marina (including cumulative impacts with Deep Water Port) is of a Slight significance which, although undesirable, represents an exceedance above threshold limits which will be barely perceptible. These receptors are located along Newton Street.

At night, the worst-case impacts (including cumulative impacts) are of Moderate significance at two receptors along Newton Street as a result of proposed dredging operations. This Moderate magnitude will only be applicable for a short duration of two months.

8. WATER ENVIRONMENT

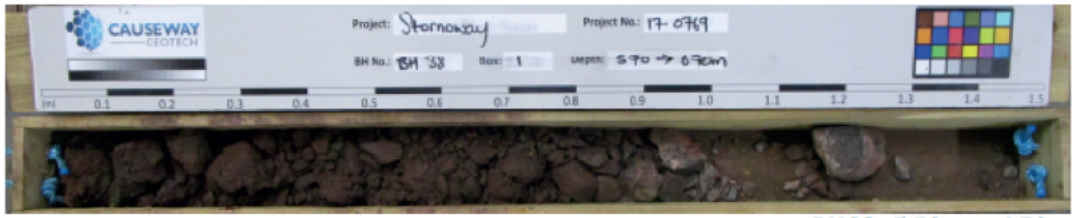
INTRODUCTION 8.1

This element of the EIA considered the impact of the marina development on water quality, sediment transportation and coastal erosion. The assessment process involved levels surveys of the seabed and adjoining ground and computer modelling of sediment movement and wave conditions during and after completion of the marina. In addition, samples were taken at varying depths within the seabed. These were subject to laboratory analysis to determine geological type, particle size and chemical composition.

The following elements were analysed to predict their impacts on the water environment: dredging, construction of breakwater, installation of pontoons, surface water drainage and operation of the marina berths.

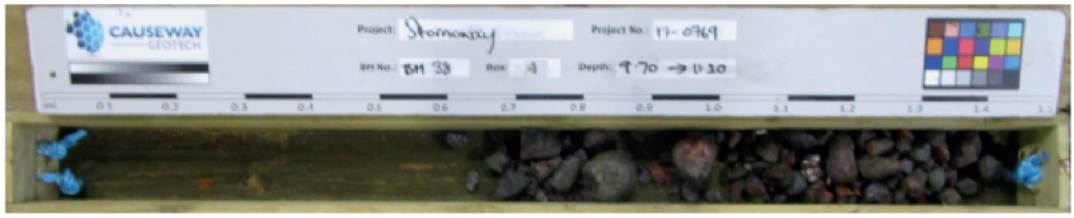
The assessment considered the impact of these elements on Stornoway Harbour, the River Creed, the River Glen and the proposed marine designated areas (the North East Lewis proposed Marina Protection Area and the Inner Hebrides and Minches Candidate Special Area of Conservation).

Stornoway Newton Basin G.I. **Report No.: 17-0769b**



BH38 5.70m to 6.70m

BH38 6.70m to 8.20m



BH38 9.70m to 11.20m

Borehole cores were analysed to characterise the seabed sediment from in and around Goat Island.

IMPACT ASSESSMENT

8.2

The assessment found that dredging and piling activities are predicted to have a negligible impact on the proposed marine conservation areas and the Rivers Creed and Glen. The permanent impact on the tide and wave climate was found to be negligible.

Analysis of the seabed samples determined that the dredged material not used for reclamation can safely be disposed of at sea. The Marine-Scotland-approved disposal site just beyond Arnish Point will be used for this purpose.

The risk of impacts from pollution during construction will be managed through the Construction Environmental Management Plan.

During operation of the marina, the Port Authority will reduce the risk of pollution from boats berthed at the marina by having monitoring procedures in place.

Surface water drainage will be designed to comply with Scottish Environmental Protection Agency guidelines.

Tidal regime and wave climate modelling characterised pattern within Stornoway Harbour and around Goat Island.

IMPACT ASSESSMENT

8.2

The impacts of sediment discharge/dispersion resulting from dredging and piling of the sea bed upon (i) the marine designations; and (ii) Rivers Creed/Glen are predicted to be negligible in significance while impacts upon the coastal waters and sediment of Stornoway Harbour is expected to be minor (post-mitigation).

Some of the more enduring effects such as altering of tidal regime and wave climate, although considered to be permanent, remain negligible in significance, with these conclusions being fully supported by hydrodynamic modelling. Other impacts from pollutant incidences concerning water and sediment quality are heavily mitigated for within the Schedule of Mitigation, namely Surface Water Management and SuDS programmes as part of the over-arching Construction Environmental Management Plan (CEMP). Design mitigation also stated the need for determining the Best Practicable Environmental Option (BPEO) report as part of Marine Licensing obligations for dredge and reclamation material.

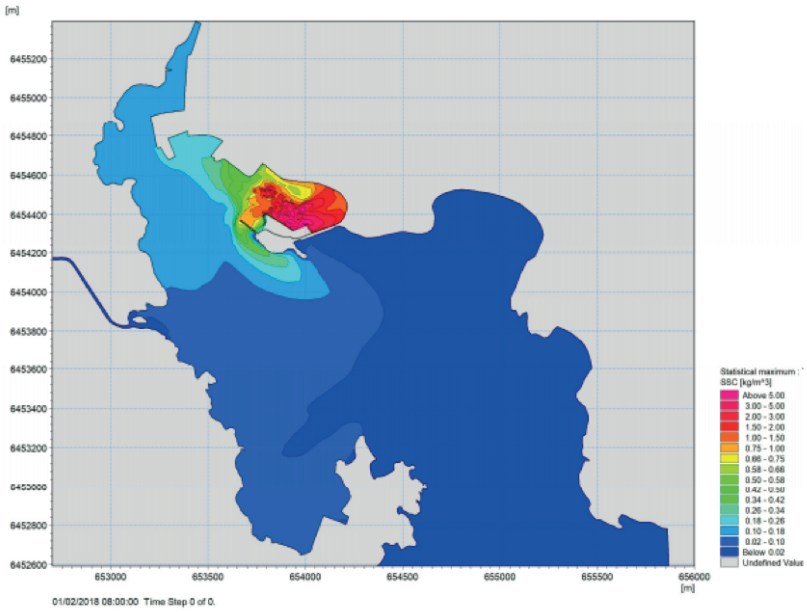


Figure 8.10: Maximum value envelope of the Total Suspended Sediment Concentration that occurs during the 60 day dredging simulation using combination of Cutter Suction and Backhoe dredgers

SIGNIFICANCE OF EFFECTS

8.3

In light of the prescribed mitigation measures, no significant effects have been identified on the water environment, sediments or coastal processes.

The conclusion of the assessment is that the development will not result in any significant effects on the water environment, sediment transport or coastal erosion.

9. TRAFFIC & TRANSPORT

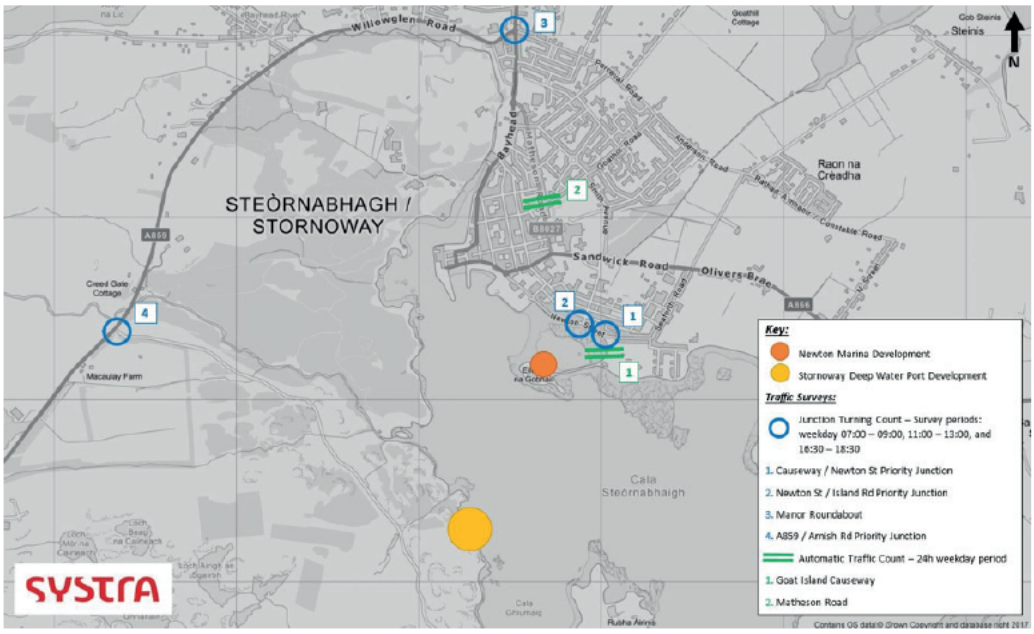
INTRODUCTION 9.1

The traffic and transport element of the EIA considered the impact of the marina development on the local road network and its users. The assessment included both construction and operational stages of the development. The type of impacts considered were:

- Accidents and Safety
- Driver delay
- Pedestrian delay
- Pedestrian amenity (i.e. the experience of using the road network)
- Severance (i.e. the impact of traffic on dividing a community)
- Dust and dirt

The study included assessment of the project on the following roads: Goat Island causeway, Newton Street, Island Road, Matheson Road, part of Sandwick Road, part of Macaulay Road and the Willowglen Road section of the A859. The routes to be assessed were agreed with CnES's Roads Manager. Traffic counts were taken of these routes using automatic traffic counters.

An estimate was made of the number of vehicle trips generated during the construction stage of the project. A computer model of traffic flows was developed using specialist software. This generated predicted numbers of vehicles along each of the routes. The assessment takes account of the additional traffic associated with the Deep Water port project, both at construction and operational stages.



Traffic Survey Locations.

IMPACT ASSESSMENT AND SIGNIFICANCE OF EFFECTS

9.2

Construction phase

The main traffic impact of the development during the construction phase will be the transport of imported rock and materials to the site. Most of the imported rock is likely to come from local sources. Other materials such as components for the retaining wall are likely to arrive by ferry.

The main impact on the local road network is estimated to be in months one to three of the project, when rock is being brought to the site to form bunds for reclamation and for the reclamation itself. Heavy Goods Vehicles (HGV's) bringing local rock materials to the site will travel the following route to the site: Willowbank Road, Macaulay Road, Matheson Road, Sandwick Road, Island Road then east along Newton Road to the Goat Island causeway. HGV's bringing materials from the ferry terminal will travel along Newton Street to the causeway.

The assessment identified that construction traffic would have a significant impact on two streets: Newton Road and the Goat Island causeway. A moderate impact in terms of driver and pedestrian delay, pedestrian amenity and severance is predicted along Newton Street during the first three months of construction. In terms of HGV movements, the predicted increase is from 38 daily HGV movements to 178. Most of these movements would involve delivery of locally-sourced materials, which would be routed via Matheson Road and would therefore only travel along the section of Newton Road to the east of Island Road.

The assessment predicted a major impact in terms of driver delay on the Goat Island causeway.

The effect of these impacts will be mitigated by the development of a Construction Traffic Management Plan. This will identify measures to minimise the number of construction vehicle trips and to programme deliveries to avoid congestion and avoid sensitive areas at key times (such as Matheson Road at school lunchtimes).

After implementation of these mitigation measures, the predicted impacts on Newton Street reduce from moderate to minor. The impacts on the Goat Island causeway are reduced from major to minor.

Operational stage

The assessment predicted no significant traffic impacts from the operation of the marina.

10. OTHER ISSUES

SOCIO-ECONOMIC 10.1

The marina is predicted to have a positive socio-economic impact on Stornoway and the wider population. The overall development, including the proposed new boat workshop, is estimated to support 45 construction jobs and create 13 new permanent jobs.

The marina will enhance Stornoway's reputation as a key yachting destination, building on strong demand in the marine leisure sector. The increase in capacity for visiting boats will encourage more people to visit Lewis, generating indirect benefits on the local economy in terms of retail, leisure and marine services.

The future development of a new boat workshop on the reclaimed land will allow for boat maintenance activities to be carried out in all weathers, as well as construction of new boats. Its location next to the boat lift and winter storage capacity will facilitate boat repairs and launching of new boats.

45

Full Time Equivalent (FTE) construction-phase jobs.

13

Full Time Equivalent (FTE) operational-phase jobs.

75

Berths by 2020.

8,500

Leisure Craft Boat Nights by 2025.

HUMAN HEALTH AND RECREATION

10.2

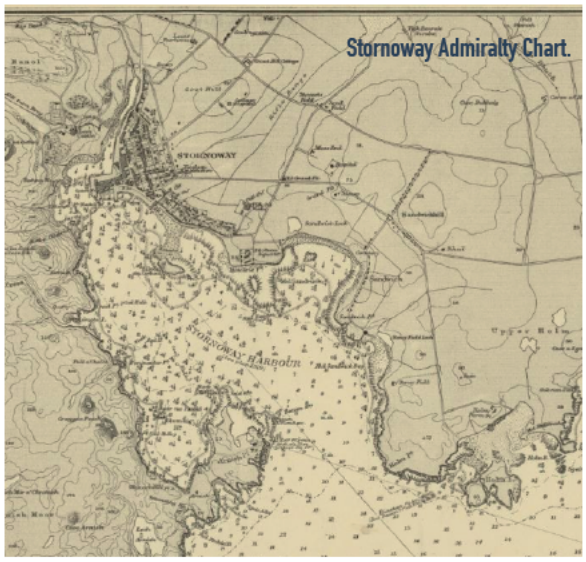
The EIA evaluated the impact of the marina development on human health. The development will have a beneficial impact on human health due to the increased access to marine recreation facilities. As well as an increased number of berths for yachts and small boats, the new slipway will be useable at most tide levels (the existing slipway at Cuddy Point is not useable at low tides).

The project will have a beneficial impact on recreation, both for residents and visitors. There are no adverse impacts predicted on key recreational areas such as the Castle Grounds or the town centre. While some moderate noise impact is forecast at Newton Street, this is anticipated to last for only two months. The overall impact will be to increase the attractiveness of Goat Island on a permanent basis, benefitting both local people and visitors.

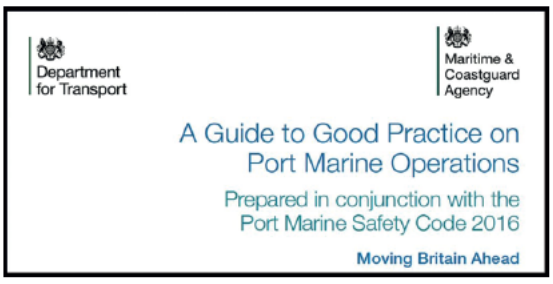
NAVIGATION 10.3

The EIA considered the impact of the project on navigational safety within the harbour. It considered effects both during construction of the marina and from its operation.

The assessment concluded that there would be no adverse impacts on navigational safety from either the construction or operational stages of the marina. The Port Authority will keep other harbour users informed about the construction process by means of Notices to Mariners. On completion of the marina, Admiralty Charts and hydrographic charts will be updated.



Stornoway Admiralty Chart.



11. CONCLUSIONS

CONCLUSIONS 11.1

This NTS reports upon the findings of the EIA, which has been shaped by several months of survey, consultation and assessment. The purpose of the EIA process, is to establish potentially significant environmental effects and avoid or mitigate these where applicable. The preceding sections of this NTS set out the proposed measures to mitigate environmental effects identified by the EIA.

The EIAR includes a schedule of mitigation contained within Chapter 11. Mitigation and enhancement measures shall be implemented throughout the construction and operation of the proposed development.

The EIA has established that due to the iterative design process and implementation of suitable mitigation measures, potentially significant adverse effects resulting from the proposed development have been minimised. The EIA identified only a small number of potentially significant effects associated with the Landscape and Visual (LVIA) and Noise assessments of the site. It is concluded that through the implementation of prescribed mitigation measures during the construction phase, and in light of the new recreational function proposed by the marina, that these effects are either very localised (i.e. for landscape and visual); or short-term (i.e. for noise).

Table 3 below summarises the predicted residual environmental impacts remaining after application of mitigation measures.

	Construction Phase Impacts (Residual post-mitigation)	Operational Phase Impacts (Residual post-mitigation)
Landscape and Visual	Significant (localised at Newton St, Offshore Harbour & Ferry Terminal) Not Significant (Coastal Character & Landscape)	Significant (localised moderate-major at Newton St, Offshore Harbour & Ferry Terminal) Not Significant (Coastal Character & Landscape)
Cumulative		Significant (localised moderate-major at Newton St & Ferry Terminal)
Marine Ecology	Not Significant (negligible)	Not Significant (minor)
Cultural Heritage	Not Significant (negligible)	Not Significant (negligible)
Noise:		
Daytime	Not Significant (slight)	Not Significant
Evening	Not Significant (slight)	Not Significant
Night-time	Significant (moderate)	Not Significant
Cumulative:		
Daytime	Not Significant (slight, neutral)	Not Significant
Evening	Not Significant (slight, neutral)	Not Significant
Night-time	N/A (no cumulative night-time)	Not Significant
Water	Not Significant (negligible, minor)	Not Significant (negligible, minor)
Traffic and Transport	Not Significant (all minor)	Not Significant (negligible, minor)

Table 3: Summary of Significance of Effects