



# **Kishorn Port – Land Reclamation for Laydown Area Extension**

## **EIA Screening - Support Document**



**Date: 30/03/2020**

## Document Control

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## 1 Introduction

Kishorn Port Ltd wish to create a level laydown area between the east quay and dry dock. The proposed laydown area is planned on an area immediately adjacent to the east quay in order to create a link to the dry dock, which will exist at +7.3m Chart Datum (CD). This will include a portion of land reclamation to create an area of approximately 9.52ha in size, of which 8.03ha are below MHWS. The development works had the benefit of an earlier Marine Licence which expired in 2019.

The development will involve works both below Mean High Water Springs (MHWS) and above Mean Low Water Springs (MLWS). Therefore, a Marine Licence will be sought for works below MHWS, under the Marine (Scotland) Act 2010, whilst the works above MLWS are already consented under the Town and Country Planning (Scotland) Act 1997. The works above MLWS are already covered in the existing planning consent (18/05057/S42). A further Section 42 consent was granted in January 2019 to include decommissioning of offshore structures. As such, this is the planning consent under which Kishorn Port now operates.

A formal Screening Opinion is requested from Marine Scotland under regulation 10(1) of the Marine Works (Environmental Impact Assessment (EIA)) (Scotland) Regulations 2017 ('EIA Regulations'); to determine whether an EIA will be required to support the Marine Licence application for the proposed coastal infill works as part of land reclamation between the east quay and dry dock. As the works above MLWS are already consented by the Highland Council through a previous application, screening under the Town and Country Planning (EIA)(Scotland) Regulations 2017 is not required.

This report provides the information requested under Section 10 of the EIA Regulations, in order to inform the corresponding screening opinion, namely a description of:

- The location of the proposed works;
- The proposed works;
- The environmental sensitivities of the geographical area;
- The aspects of the environment likely to be significantly affected by the proposed works;
- The likely significant effects; and
- The features of the proposed works or proposed measures envisaged to avoid or prevent significant adverse effects on the environment.

## 2 Background and Need

Initially developed in the 1970's, Kishorn Yard was used to serve as an oil platform construction for the North Sea oil industry. Since then, recent developments have seen the emergence of Kishorn Port as a site to provide essential shipping and transportation services, as well as providing high-quality aggregates as a result of the creation of Kishorn Quarry.

With deep water access, the site is recognised by Scotland's National Renewables Infrastructure Plan (N-RIP & N-RIP2) (Scottish Government, 2015) for its potential to support the offshore energy sector (Dalgleish Associates Ltd, 2013).

As a result, Kishorn Port Limited wish to create a new laydown area through land reclamation on the foreshore between the east quay and dry dock of Kishorn Port. The new laydown area

is intended to enable the possibility of further onshore support facilities for varying industries. The proposal was made initially to help the port build on the facilities already present at the site, by providing additional onshore areas and armour stone protection for coastal works. This was done through a previous marine licence application, in which an Environmental Statement was produced and the construction of the new laydown area was assessed for any potential environmental effects (Dalgleish Associates Ltd, 2013).

Since then, the marine licence, ref. 05003/03/0, expired in 2019 so there is a need for a new application for marine construction works to be made to Marine Scotland. Thus, before an application can be made, it is required that the proposal go through screening to indicate whether an EIA is required or not under regulation 10(1) of the 'EIA Regulations' in support of the marine construction licence application. As per the 2013 Environmental Statement (ES), the proposed construction of the laydown at Kishorn Port includes the re-use of material excavated from rock blasting of a terraced area to the west of the Kishorn dry dock. The material will be used in the construction of the laydown area between the east quay and dry dock by the creation of coastal infill. Here the infill area will subsequently reclaim land over the beach area and adjacent shallow coastal waters. The creation of the laydown area will create a link between the dry dock to the flat eastern end of the site, where the east quay is situated. Here, it is envisaged that the additional level land and extended area will be provide a suitable laydown area for large structures, such as concrete batching plants, stockpile and fabrication areas and the ability to facilitate a concrete casting yard.

It should be noted however that the ES produced in 2013, was required for the wider masterplan development at Kishorn, which also included an extension to Kishorn Quarry. This ES was not specifically for the land reclamation works.

### **3 Location**

Kishorn Port (Grid Reference: NG 8174 3991) near the head of Loch Kishorn (Drawing 55/01), lies 8km west of the village of Lochcarron along the A896. Kishorn Port falls within the Community Council boundary of Lochcarron. The Port is shown in (Drawing 55/02).

## **4 Characteristics of Development**

The characteristics of the development are described below. Upon discussions with the client, it has been estimated that the approximate duration for the construction of these works is likely to last around 18 to 24months.

### **4.1 Development Description**

#### **4.1.1 Minor Modification of Watercourse**

Prior to undertaking the coastal infill works, it is required that a minor, but currently much modified watercourse partially in culvert draining the upper sections of the site is diverted. The watercourse which runs via a storage pond, will be diverted from a single point immediately east of the dry dock, and re-routed to Loch Kishorn via a culvert to the edge of the coastal infill area. An existing narrow rock barrier on the eastern side of the dry dock will be removed to provide clear access to allow for the modification of the watercourse.

Drawing 1629-115B indicates the scale of the diversion. The proposed culvert will include the use of a single 1200mm diameter twin wall plastic pipe with access chambers along its length and an outfall structure through the rock armoured slope.

#### **4.1.2 Transportation of Infill Material**

The terraced area on the west quay is yet to be removed and will be done so during transportation of material to the coastal infill area. This material at the terraced area arises from the original excavation of the dock and rock excavated from elsewhere within the Kishorn Port area during past operations. This pile creating the terraced area has been crushed and screened in the processing area at Kishorn Port, to produce appropriately sized stone required for the coastal infill area.

The clean, appropriately sized stone will be transported using dump trucks from the processing area to the foreshore area east of the dry dock. The stone will be used to create the outer perimeter bund for the infill area.

#### **4.1.3 Coastal Infill Area**

The seaward extent of the reclaimed land will be rock armoured, utilising excavated rock from the terraces to the west of the dry dock and/or from other permitted extraction areas within Kishorn Port. The material will subsequently be placed to form an outer perimeter bund for the infill area. Much of the placement will be undertaken on land between MLWS and MHWS in tidal windows. As noted earlier, works above MLWS are already consented under an existing planning permission (18/05057/S42) granted on 21<sup>st</sup> January 2019.

As placement is ongoing, the perimeter bund will be built up in compacted layers to provide continued vehicular access at all tidal states. On completion, a heavy-duty geotextile membrane will be secured against the inner slope and the infill will be completed by backfilling with crushed rock to form compacted layers (Drawing 1629-115C).

The length of shoreline rock armour will sit at 724 metres over an area of 11,946m<sup>2</sup>. It is anticipated that primary rock armour stone 1m<sup>3</sup> (3 tonnes) and secondary rock armour stone 0.45m<sup>3</sup> in size (0.25 tonnes) will be utilised to form the rock armour perimeter bund.

#### **4.1.4 Operation**

The additional laydown provided by the land reclamation and recontouring of the terrace area will allow large structures to be stored and worked on, such as wind turbine assemblages, in support of the renewable energy sector. It is envisaged that the extended laydown area will be suitable to support manufacturing and energy services project such as wind turbine storage and assembly.

#### **4.1.5 Decommissioning**

There are no plans to discontinue use of this site in the future, therefore, it is not considered necessary to plan for demolition and reinstatement works for closure of this site.

## 5 Known Sensitivities

### 5.1 Biodiversity

#### 5.1.1 Designated Sites

Table 5.1 details the Statutory Nature Conservation Designation Sites of Marine Protected Areas (MPA), Special Scientific Interest (SSSI), Special Protected Area (SPA), Special Area of Conservation (SAC) and Nature Reserve sites within 20km of the proposed development. Of the identified sites, no SPA's or Nature Reserves were found within 20km of the proposed development (Drawing 55/03) and thus, are not considered in Table 5.1. Table 5.1 identifies the sites most likely or unlikely to be affected by the development due to their location and/or associated designated features. Each designated site in Table 5.1 identified within 20km of the proposed development has been commented on whether they may be affected by the proposed development. Those highlighted in grey are considered unlikely to be affected by the proposed works.

**Table 5.1: Statutory Nature Conservation Designations within 20km of the Development Site (Marine Scotland, 2020; SNH, 2017)**

Site	Designation	Distance Direction	Designated Feature Category/Feature	Requires Consideration?
Beinn Bahn	SSSI	1.19km N	Tall herb ledge, Upland assemblage	Lack of connectivity and thus not considered.
	SAC		Acidic scree, Alpine and subalpine heaths, Dry heaths, Montane acidic grasslands, Plants in crevices on acidic rocks, Tall herb communities, Wet heathland with cross-leaved heath	
Loch Carron	MPA	1.97km WSW	Flame shell beds, Maerl beds	Potential connectivity – considerations made with Water Quality.
Rassal	SSSI	3.25km NE	Bryophyte assemblage, Flies, Lichen assemblage, Limestone pavement, Moine, Subalpine calcareous grassland, Upland assemblage, Upland mixed ash woodland, Wood pasture and parkland	Lack of connectivity and thus not considered.



	SAC		Alpine and subalpine calcareous grasslands, Base-rich fens, Hard-water springs depositing lime, Limestone pavements, Mixed woodland on base-rich soils associated with rocky slopes, Mountain willow scrub, Plants in crevices on base-rich rocks	
Inner Hebrides and the Minches	SAC	3.31km WSW, 16.5km N & 15.2km S	Harbour porpoise ( <i>Phocoena phocoena</i> )	Designated species is mobile and hence could be in the vicinity of the works.
Alt nan Carnan	SSSI	7.95km E	Upland birch woodland	This site it too far from the development to be affected.
Coille Mhor	SSSI  SAC	8.55km S	Dragonfly assemblage, Oligotrophic loch, Upland oak woodland  Western acidic oak woodland	Dragonfly are mobile species but only have a range of up to 1.5km. This site is too far from the development to be affected for other qualifying features.
Doire Damh	SSSI	11.4km NE	Upland oak woodland	This site it too far from the development with no mobile features to be affected.
Loch Maree Complex	SAC	11.4 – 18.7km NE	Acidic scree, Alder woodland on floodplains, Alpine and subalpine heaths, Blanket bog, Bog woodland, Caledonian forest, Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels, Depressions on peat substrates, Dry heaths, Montane acidic grasslands, Otter ( <i>Lutra lutra</i> ), Plants in crevices on acid and base-rich rocks, Tall herb communities, Western acidic oak woodland, Wet	The mobile feature 'Otter' could be affected by the development, the other designated features are not mobile and too far from the development to be affected.

			heathland with cross-leaved heath	
Shieldaig Woods	SSSI	11.8km N	Beetles, Bryophyte assemblage, Flies, Native pinewood, Upland birch woodland	This site is too far from the development to be affected.
Lochs Duich, Long and Alsh (Reefs)	SAC	12.3km S 13.7km SE & 13.5km SW	Reefs	There is a degree of hydrological connectivity in the marine environment between the designated site, the Loch Carron MPA and development site. However, the distance is too large between the two areas for any impacts to occur.
	MPA		Burrowed mud, Flame shell beds	
Kinloch and Kyleakin Hills (Monadh Chaol Acainn is Cheann Loch)	SSSI	14.9km SSW	Alpine heath, Blanket bog, Bryophyte assemblage, Lichen assemblage, Subalpine dry heath, Subalpine wet heath, Torridonian, Upland oak woodland	This site is too far from the development to be affected.
	SAC		Alpine and subalpine heaths, Blanket bog, Dry heaths, Mixed woodland on base-rich soils associated with rocky slopes, Otter ( <i>Lutra lutra</i> ), Western acidic oak woodland, Wet heathland with cross-leaved heath	Although Otters are mobile species, there is no connectivity between this site and the area of development, given its location on the Isle of Skye.

Abhainn Alligin	SSSI	18.4km N	Subalpine dry heath, Tall herb ledge, Upland mixed ash woodland	This site is too far from the development to be affected.
Ob Lusa to Ardnish	SSSI	18.5km SW	Hettangian, Sinemurian, Pliensbachian (Earth Sciences)	This site is too far from the development to be affected.
Torridon Forest	SSSI	18.7km NE	Alpine heath, Alpine moss heath and associated vegetation, Beetles, Mass movement, Quaternary of Scotland, Sawflies, wasps and ants, Siliceous scree, Spiders, Subalpine calcareous grassland, Subalpine dry heath, Vascular plant assemblage	This site is too far from the development to be affected.

## 5.2 Biodiversity – Terrestrial

An Extended Phase 1 Habitat Survey was updated during site visits in October 2011, November 2012 and March 2013 which were used to inform the Environmental Statement (ES) (Dalgleish Associates Ltd, 2013). The Phase 1 Habitat survey identified a small section of *Erica tetralix* (Cross-leaved heath – identified as a qualifying feature as part of the Beinn Bahn SAC) on the hillside behind the yard facility close to the Russel Burn, although this species is not a designated species for protection under Schedule 8 of the Wildlife and Countryside Act 1981. Site-specific surveys for European otter (*Lutra lutra*) were carried out between 2005 to 2013, which identified the presence of otters in the wider Kishorn area. The latest survey in 2019 covered all of the area consented under permission 18/05057/S42, identifying considerable otter activity on site (Direct Ecology, 2020). Otter activity was identified particularly on coastal areas in the north west of the site with many resting sites identified.

Otter are a European Protected Species (EPS) and is protected under the Conservation (Natural Habits and Species) Regulations 1994 (as amended) in Scotland. With the results of the surveys and the proximity of the proposed development in relation to the coastal areas where otter presence has been identified north west of the site, it would be appropriate to consider them to be a sensitive receptor in this instance.

The same ecological survey also identified evidence of badger in three locations, with the identification of three small badger sets in rocky areas. Both badgers and their setts are protected under the Protection of Badgers Act 1992 as amended by the Wildlife and Natural Environment (Scotland) Act 2011. As badger setts are likely to have high potential of linking cavities creating networks of tunnels to other areas, it would be appropriate to consider them as a sensitive receptor.

## 5.3 Biodiversity - Ornithology

Bird species were recorded during site visits in October 2011, November 2012 and March 2013. A total of 29 species were identified with 11 of those species on the Birds of Conservation Concern 3 (BoCC3) Amber List and 4 species on the BoCC3 Red List. A total of 123 bird species

have been recorded within a 5km radius of the proposed development (National Biodiversity Network Atlas, 2019b). The area of the proposed development itself, however, is not considered an important site for breeding bird species. None of the Statutory Nature Conservation Designations within 20km of the Development Site are designated for the qualifying features being bird species, breeding or non-breeding. As such ornithology is not considered to be a sensitive receptor associated with this site.

## **5.4 Biodiversity – Marine**

Important benthic, fish and marine mammal receptors are all present within and close to Kishorn Port and the development area. Designations are in place for two of the three groups of marine receptors within 20km of the development.

### **5.4.1 Marine Mammals**

The waters around Kishorn Port 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). The Inner Hebrides and The Minches Special Area of Conservation (SAC), designated for harbour porpoise (*Phocoena phocoena*), is located at its closest point 3.3km west south-westerly of the proposed development. It is noted that harbour porpoise are afforded protection when they are outwith the SAC, and they are known to swim into Loch Carron and Loch Kishorn. A number of records show that harbour porpoise are often present within eastern points of Loch Carron (Hebridean Whale and Dolphin Trust, 2020), although most records are concentrated in the outer basin towards the mouth of the loch.

Overall, five species of marine mammal are regularly encountered in the area (Reid, Evans, & Northridge, 2003; Sea Mammal Research Unit, 2019), although as marine mammals are mobile features, it is possible for more species to utilise the area less frequently. Non-breeding populations of grey (*Halichorurus grypus*) or common seals (*Phoca vitulina*) are present. Marine mammals, particularly harbour porpoise, are a known sensitivity in the area.

### **5.4.2 Benthic Ecology**

The Loch Carron MPA and the Lochs Duich, Long and Alsh MPA are designated for benthic features. The Loch Carron MPA is designated for its high density of flame shell and maerl beds, whilst the Lochs Duich, Long and Alsh MPA are designated for flame shell beds and burrowed muds. Each of these features are not mobile. In May 2017, Loch Carron was designated as an MPA on an urgent basis in order to aid the recovery of flame shell beds, signifying their sensitivity to disruption (Scottish Natural Heritage, 2019). The same environments also provide an important habitat for a myriad of other animals and plants, such as seaweeds, whelks, starfish, brittlestars and crabs (Scottish Natural Heritage, 2019).

Between the dry dock and the east quay, the majority of the foreshore area consists of a gently shelving beach with a small zone of pebbled-rocky coastline (Dalglish Associates Ltd, 2013). This habitat is common around Loch Kishorn and supports a number of seaweed species such as bladder wrack, spiral wrack and serrated wrack. None of these identified species are identified as Priority Marine Features (PMFs) (Tyler-Walters et al., 2016), nor are protected under Schedule 8 of the Wildlife and Countryside Act 1981.

### 5.4.3 Fish Ecology

A total of 53 fish species have been recorded within a 10km radius of the proposed development (National Biodiversity Network Atlas, 2019a), although no designated sites exist in the immediate area for them. Of these records, it was identified that Atlantic Salmon (*Salmo salar*) were present in Loch Kishorn and the surrounding area. Data on NMPi identified that the River Kishorn, which meets the most northerly point of Loch Kishorn, is a river which is likely to have salmon present, and the link between the two systems may demonstrate a migratory pathway from sea to freshwater, living in freshwater as juveniles then migrate to sea as post-smolts following spawning, where they mature (Godfrey, Stewart, Middlemas, & Armstrong, 2014).

Loch Kishorn, Loch Carron and the wider marine area also provide valuable spawning grounds for Whiting, nursery grounds for Saithe, Herring and Cod, as well as spawning and nursery grounds for Sprat and Nephrop species.

### 5.4.4 Aquaculture

Approximately 700 metres east of the coastal infill area, in North West Loch Kishorn, is a mussel site of commercial interest (SEPA, 2011). Similarly, 1.5km south east of the coastal infill area (OS Grid Ref: NG 834 391) lies a pacific and native oyster farm. Loch Kishorn is also designated as a Shellfish Harvesting Area (Loch Kishorn North) by the Food Standards Agency (FSA) for the production of Common mussels (*Mytilus edulis*) and Pacific oysters (*Crassostrea gigas*).

## 5.5 Archaeology

No designated sites for archaeology are identified in the development area and no nationally important assets are present.

Within a 2km radius of the proposed development site, there are 2 Canmore maritime and 17 Canmore entries (Historic Environment Scotland, 2020). No wrecks are identified within the footprint of the development nor close to the foreshore where land will be reclaimed.

A total of 30 Historic Environment Records and a single listed building have been identified within 2km of the site. Five of the Historic Environment Records have been identified to the north of the coastal infill area on the periphery of the east quay and eastern foreshore of Kishorn Port. The single listed building and remaining number of Historic Environment Records are on the opposite side of Loch Kishorn to the development.

The Historic Environment Records on the periphery of the east quay and foreshore are detailed in Table 5.2.

**Table 5.2: Details of Historic Environment Records on the periphery of Kishorn Port.**

Site/Description	Index No. Primary Reference	Designation/Status	Location (OS NGR)
<b>Russel (Dyke), Kishorn</b> Section of drystone dyke. Aligned NW-SE and running down the scree slope from the rockface to the perimeter fence, the tumbled remains of a stone dyke.	MHG 31527	Historic Environment Record	NG 81672 39937
<b>Russel (Rockshelter 2), Kishorn</b>	MHG 37296	Historic Environment Record	NG 81486 39866
<b>Russel (Rockshelter 1), Kishorn</b>	MHG 37295	Historic Environment Record	NG 81704 40013

Site/Description	Index No. Primary Reference	Designation/Status	Location (OS NGR)
<p><b>Russel (Enclosure), Kishorn</b></p> <p>Two enclosures making use of the rockface and boulders to form part of the walls:</p> <p>1. A well-preserved section of walling 3m long and 1.2m high connects a large boulder to the rockface. Parallel to this and 2m to the S, the low remains of another section of walling connect this boulder to a tumble of boulders which form the western boundary of the enclosure.</p> <p>2. 10m W along the rockface, a second enclosure measuring 12m by 4m. The southern front section of wall is very tumbled but the side sections curving in to key into the rockface are well preserved and stand 1m high.</p>	MHG 29799	Historic Environment Record	NG 81783 40000
<p><b>Russel (Township), Kishorn</b></p> <p>A township comprising seven roofed buildings, one partially roofed building, four unroofed buildings and five enclosures is depicted on the first edition of the OS 6-inch map (Ross-shire 1880, sheet cx). Four roofed buildings, three unroofed buildings and five enclosures are shown on the current edition of the OS 1:10000 map (1971).</p>	MHG 22499	Historic Environment Record	NG 82092 40370

## 5.6 Landscape

Kishorn Port lies within the southern part of the Wester Ross National Scenic Area (NSA). The Wester Ross NSA is designated in part for having some of the finest mountain scenery in Scotland and for embracing a diversity of landscapes from myriad lochs to intricate coastlines. As the development only affects a small area of foreshore, the works will ultimately be low-lying and will not compromise the integrity of the NSA.

## 5.7 Land, Air and Water

### 5.7.1 Land

A Phase 1 Contaminated Land Assessment was conducted as part of an Environmental Statement for previous construction activities at Kishorn Port. No contaminated land was identified as part of the assessment. Since the assessment was completed there have been no pollution incidents which may have given rise to contaminated land (Dalgleish Associates Ltd, 2013).

The Geology of Britain Map by the British Geological Society (BGS) identifies that the underlying geology of the site consists of Applecross Formation Sandstone (which is pebbly/gravelly in nature) (British Geological Survey, 2020). This formation of sandstone are

fluvial in origin and reflect levees of rivers or estuaries overlaying Lewisian Gneiss (British Geological Survey, 1955, 2020).

Designated sites with geological qualifying features are identified within 20km of the proposed site for development and are outlined in Table 5.3. All designations are for Moine, with the closest 6.98km away. Despite designated sites existing for Moine close to the development area, no Moine has been discovered (British Geological Survey, 1955; Strachan, Smith, Harris, & Fettes, 2002).

**Table 5.3: Statutory Nature Conservation Designations with Geological Designations within 20km of the Development Site (Marine Scotland, 2019; SNH, 2020)**

Site	Designation	Distance Direction	Designated Feature Category/Feature	Requires Consideration?
Carn a' Bhealaich Mhoir	SSSI	6.98km S	Moine	No - Moine is recorded at the site of development and will not be impacted during construction. This site is too far from the development to be affected.
Slumbay Island	SSSI	7.86km E		
Attadale	SSSI	10.1km ESE		
Ard Hill	SSSI	12.8km S		
Avernish	SSSI	13.2km S		

Kishorn Quarry is also adjacent to the east quay, on the other side of the dry dock to where coastal infill works are to occur. The quarry itself consists of hard sandstone which is appropriate for engineering and for use in high quality concrete structures (Dalgleish Associates Ltd, 2013). Likewise, the material for coastal infill will be derived from the previously landscaped terrace area and/or other locations with Kishorn Port. The terraced area was created utilising rock excavated for the formation of the dry dock which also consists of Applecross Sandstone (British Geological Survey, 1955, 2020).

The intertidal area is underlain by the same Applecross Formation sandstone as the quarry and other parts of Kishorn Port. The intertidal area is covered by Marine beach deposits of sand and gravel.

### 5.7.2 Air

Kishorn Port is not currently in an air quality management zone. As Kishorn Port is located in a remote, rural location the air quality is expected to be of good condition with little pollution in comparison to urban areas. The 2019 Highland Council Air Quality Report states that The Highland Council area has generally good air quality conditions.

### 5.7.3 Water

The proposed development at Kishorn will be located on the lower section of the slopes of Sgurr a' Choarachain, Maell Gorm and Beinn Bhan. Natural runoff from these slopes would have drained through the site area, generally towards the south-east. Water will pass over or through glacial moraine and superficial deposits, beach deposits in the coastal area and into Loch Kishorn (Dalgleish Associates Ltd, 2013). Surface water also drains into one of the main

watercourses in the area, the Russel Burn to the east of the site. SEPA's River Basin Management Plan classifies the Russel Burn (sea to Russel) as 'Moderate' and the Russel Burn (Russel to source) as 'Good' (SEPA, 2015).

Another moderately sized catchment (Allt Cnoc nan Uan) has been culverted a number of times prior to its discharge into the sea immediately to east of the dry dock. This much modified watercourse which drains the upper part of Kishorn Port will be diverted from a point immediately east of the dry dock and re-routed to Loch Kishorn via a culvert to the edge of the coastal infill area.

Loch Kishorn is classified as 'Good' under SEPA's River Basin Management Plan (SEPA, 2015), where water depths can reach up to -80m CD in the main channel. It is envisaged that the proposed development will ascertain depths of +/- 0m CD (where MLWS is +0.6m CD).

## 5.8 People

The nearest residential property is at Ardarroch, 2.1km away from the proposed development, directly across from the head of Loch Kishorn in an easterly direction. By road, Ardarroch is 6.1km away from the proposed development along the A896. Ardarroch itself is a small hamlet with few properties, although the area does offer a small number of businesses including a bunkhouse and a restaurant. The development will not be visible from this location.

In a south easterly direction, 2.5km away across the head of Loch Kishorn is the small crofting township of Achintraid, which again offers a small number of guesthouses and holiday cottages. The site for the development will be visible from Achintraid.

The largest residential area, the village of Lochcarron lies approximately 8km east of the proposed development and has a population of 893 people as per the 2011 census (National Records of Scotland, 2011).

Although demographics and employment could not be found for each individual village within close proximity of Kishorn Port, namely Lochcarron, it was identified that the Lochcarron Community Council area was within the top 5% of council area in the Highlands with a population predominantly 54 years old or over (National Records of Scotland, 2019).

Lochcarron contains a variety of local services including a small supermarket, a Highland Council service point, two hotels, a restaurant and two cafés (LaDBA, 2016). The development site is not visible from Lochcarron.

The area of development is 92 miles from Fort William and 68 miles from Inverness, which are the next closest major town and city.

## 5.9 Traffic, Transport and Navigation

Road access to and from Kishorn Port is gained from the unclassified Applecross – Tornapress road. Vehicles travel north and east on the unclassified road from the port for 1.4km to the junction with the A896 at Tornapress (Dalgleish Associates Ltd, 2013). Thereafter, vehicles can travel east to Lochcarron or north to Shieldaig along the A896. This main road to and from Kishorn Port is mainly single track with various passing places, although sections of this road have now been upgraded between Tornapress and Lochcarron.

Data utilised from CrashMap has been used in considering safety on the A896 – the main passage to Kishorn Port, and identified that 3 serious accidents have occurred since 2014 (CrashMap, 2017). These accidents did not involve HGV's. No fatal accidents occurred.



The annual average daily flow (AADF) for the A896 is summarise in Table 5.4. The AADF describes all vehicle movements (including pedal bicycles) for the years 2014 – 2018. Data was retrieved from the Department of Transport's 'road traffic statistics'.

**Table 5.4: The Annual Average Two-Way Daily Flow (AADF) of traffic for 5 years for the A896**

Year	The AADF for all vehicles along the A896
2018	776
2017	771
2016	762
2015	742
2014	725

## 6 Potential Effects

### 6.1 Construction

Table 6.1 provides a description of the environmental aspects requiring consideration resulting from the proposed Kishorn Port land reclamation. The likely effects on the environment resulting from the use of natural resources and the expected residues and emissions are identified. Additionally, it outlines the sensitivities as detailed in Section 4 and proposes mitigation measures for any effects that could have a potential impact on the environment.

**Table 6.1: Construction Effects and Sensitivities**

Aspect		Source	Sensitivities	Potential Significant Effect (no mitigation)	Any mitigation measures?
Use of Natural Resources	Use of Material	Heavy duty geotextile membrane	None	NO	Efficient use of resources, only order and use what is required.
	Use of Land and/or Soil	Crushed rock and infill material from rock blast	None	NO	The volumes of removed material will be minimised through design.
	Biodiversity / Hard-Landscaping	Reclamation of land over foreshore area	Terrestrial – Otters	NO	Pre-construction otter survey with mitigation/licensing where required.
Residues and Emissions	In-Air Noise and Vibration	Rock placement Plant movements	None - sensitive noise receptors including residential properties are too far from the development to experience elevated noise levels.	NO	Works conducted in line with current practice for noise and vibration control on construction and open sites.
	Underwater Noise and Vibration	Plant movements Rock infill / Material placement	Biodiversity – Marine Mammals and Fish (incl. Harbour Porpoise the qualifying features of the Inner Hebrides and the Minches SAC)	NO – most of the work is expected to be out of the water or in very shallow areas below MLWS, hence sound is not expected to travel	Rock infill will not be dropped from height by the excavator. All plant vehicles used will be well maintained.

				through water column.	
Air Quality (Emissions – dust)	Rock placement Rock infill / Material placement Plant movements	None - sensitive dust receptors including residential properties are too far from the development to experience elevated noise levels.	NO		Dust management in line with good construction practice.
Air Quality (Greenhouse Gases and Climate Change)	Plant movements	No Local Sensitivities Possible Climate Change Contribution	NO		Plant vehicles will be well maintained.
Terrestrial Pollution	Risk of unplanned emissions / release of pollutants from, i.e. <ul style="list-style-type: none"> <li>Waste material</li> <li>Oil/fuel storage and handling</li> <li>Plant/machinery fault</li> </ul>	Land Quality Biodiversity – Terrestrial	NO		Works conducted in line with standard best practice and existing guidelines: <ul style="list-style-type: none"> <li>Storage and handling;</li> <li>Waste management;</li> <li>Surface water management; and</li> <li>Spill plans and spill kits will be implemented.</li> </ul> Plant and machinery will be appropriately maintained.  The Port has an MCA approved Oil Spill Contingency Plan.
Water Quality (Marine and Freshwater)	Risk of unplanned emissions / release of pollutants from, i.e. <ul style="list-style-type: none"> <li>Waste material</li> <li>Oil/fuel storage and handling</li> <li>Plant/machinery fault</li> </ul> Release of fines and disturbed sediments due to rock placement. Diversion of watercourse.	Biodiversity – Marine (incl. Loch Carron MPA; Inner Hebrides and the Minches SAC)	NO		Works conducted in line with standard best practice and existing guidelines: <ul style="list-style-type: none"> <li>Storage and handling;</li> <li>Waste management; and</li> <li>Spill plans and spill kits will be implemented.</li> </ul> Works associated with the diversion of the modified watercourse will

	Light Emissions	Light for construction	Biodiversity – Terrestrial Biodiversity – Marine	NO	<p>Works will follow the Scottish Executive Guidance Note, 'Controlling Light Pollution and Reducing Lighting Energy Consumption';</p> <ul style="list-style-type: none"> <li>• Over-lighting will be avoided and designed to industry recommended levels; and</li> <li>• All lights will be carefully directed to where they are most needed and will be designed to minimise light pollution</li> </ul> <p>Works will also follow British Standard Guidance.</p>
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### **6.1.1 Water Quality (Freshwater)**

Freshwater systems and their associated species may be impacted by pollution indices as a result of unexpected releases and emissions, typically as a result of the loss of hydraulic fluids and/or oils from plant and machinery. However, the effects of the release of unplanned emissions and pollutants are well understood which allows appropriate mitigation to be put in place to prevent and minimise these effects. It is recognised that the potential for these effects to occur are only restricted to the construction phase.

Section 7 identifies specific policies and guidance which will be followed in order to ensure correct mitigation and best practicable environmental option(s) (BPEO) are undertaken.

Additionally, pre-construction surveys will be conducted to identify otter holts, layups or couches, to allow appropriate mitigation and licences to be put in place prior to construction.

### **6.1.2 Water Quality (Marine)**

The marine waters around Kishorn Port and the marine flora and fauna that use these waters have the potential to be impacted during the construction of the laydown area. Impacts may arise a result of underwater noise from placing rock infill, the unplanned release of emissions and construction light. The potential impacts on marine receptors due to varying pollution indices as a result of unexpected releases and emissions, most typically as a result of the loss of hydraulic fluids and/or oils from plant/vessel machinery, are well understood which allows appropriate mitigation to be put in place to minimise these effects. It is recognised that the potential for these effects to occur are only restricted to the construction phase.

Likewise, the use of heavy machinery for construction can give rise to underwater noise emissions and potentially vibration effects. However, extremely limited time working in water will not give rise to any issues with underwater noise.

Section 7 identifies specific policies and guidance which will be followed in order to ensure correct mitigation and best practicable environmental option(s) (BPEO) are undertaken.

## **6.2 Operations**

Table 6.2 provides a description of the environmental aspects requiring to be considered during operations following the completion of the proposed development.

As the project is a redevelopment of the existing port, emissions during operation are not expected to constitute a significant change from the baseline conditions. Table 6.2 therefore only discusses the operational effects associated with the increased commercial capacity of the port.

**Table 6.2: Operational Effects and Sensitivities**

Aspect		Source	Sensitivities	Potential Effect (no mitigation)	Any mitigation measures?
<b>Residues and Emissions</b>	In-Air Noise and Vibration	Slight increase in noise may result from increased operational uses of the port	People Biodiversity - Land	NO – sensitive noise receptors including residential properties are too far from the development to experience elevated noise levels.	No mitigation required
	Underwater Noise and Vibration	Potential slight increase due to greater use of site from increased vessel numbers.	Biodiversity – Marine	NO	No mitigation required
	Terrestrial Pollution	None	Land Quality	NO	No mitigation required
	Water Quality (Marine and Freshwater)	Risk of unplanned emissions / release of pollutants from, i.e. <ul style="list-style-type: none"> <li>• Waste material</li> <li>• Oil/fuel storage and handling</li> <li>• Plant/machinery fault</li> </ul>	Biodiversity – Marine	YES	Works conducted in line with standard best practice and existing guidelines: <ul style="list-style-type: none"> <li>• Storage and handling;</li> <li>• Waste management</li> </ul>
	Light Emissions	Vessel lighting Port lighting	Biodiversity – Land Biodiversity - Marine	NO -	Standard best practise in line with existing guidelines on lighting
<b>Landscape and Visual</b>	Reclaimed land between East Quay and Dry Dock	Coastal infill Rock armour stone perimeter bund	People Wester Ross National Scenic Area	NO – the scale of the works is too small within the wider area	No mitigation required
<b>Traffic, Transport and Access</b>	Operational HGV movements	Port Activities	NO – sensitive receptors including residential properties are too far from the development to	NO	No mitigation required.

			experience elevated noise levels. Likewise, the area is extremely rural to experience any significant traffic, access or congestion issues.		
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### 6.2.1 Air Quality

As the project is an upgrade to the existing port, emissions during operation are not expected to constitute to a significant change from current conditions. However, there may be one potentially positive effect resulting from the development. As components which will be utilised for the construction of industrial buildings will be brought in on shipping vessels, there will be a reduction in the number of vehicles in which it would require to transport the same materials. This may reduce greenhouse gas emissions.

### 6.2.2 Biodiversity – Marine

The marine waters around Kishorn Port and the marine flora and fauna that use these waters have the potential to be impacted during operations, primarily through emissions to the marine environment and the increase in operational lights required for the larger area. These impacts will be reduced through aligning practices with the guidelines outlined in Section 7.

## 7 Mitigation

Mitigation identified to avoid significant negative effects along with general mitigation measures to minimise other environmental effects are detailed within this section. These will form the basis of the mitigation which will be submitted in support of planning and marine licence applications. In addition to the specific mitigation identified to manage effects that could be significant in the absence of mitigation, construction guidance will be followed to minimise other potential negative effects of the projects, this is likely to include:

- Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014);
- Pollution Prevention Guidance 6 (PPG6) – for Working at Construction and Demolition Sites (Environmental Agency et al, 2012);
- Coastal and Marine Environmental Site Guide: C584 (Budd, John, Simm, & Wilkinson, 2003);
- Guidance for Pollution Prevention 8 (GPP8) – Safe storage and disposal of used oils (SEPA, Natural Resources Wales, & NIEA, 2017);
- Pollution Prevention Guidance 7 (PPG7) – The safe operation of refuelling facilities (Environment and Heritage Service, SEPA, & Environment Agency, 2011); and
- Guidance for Pollution Prevention 5 (GPP5) – Works and maintenance in or near water (NIEA, 2017).

In addition, any applicable General Binding Rules from the Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended will be applied.

## 8 Summary

The Kishorn Port land reclamation and laydown area extension works are required to ensure the port is best placed to provide facilities necessary to support the renewable energy and oil and gas decommissioning sectors. This development, seen as supporting the Scottish Government's N-RIPd N-RIP2, requires the minor modification of a watercourse and the internal sourcing and transportation of infill material for land reclamation. These activities require the use of natural resources and could result in emissions which, without mitigation, may affect sensitive receptors in the areas including marine and terrestrial biodiversity receptors.



The project falls under the Marine Act (Scotland) 2010 and the Town and Country Planning (Scotland) Act 1997. A screening opinion is sought from Marine Scotland under the Marine Works (EIA)(Scotland) Regulations 2017 only as planning permission has already been granted.

During construction, potential significant negative effects were identified if no mitigation was in place. However, mitigation has been identified for all of these aspects which reduce or eliminate the resultant effects such that they are not likely to be significant.

Kishorn Port put in place a comprehensive construction environmental management plan (CEMP) to ensure appropriate mitigation is implemented.

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## 10 Glossary

Acronym	Definition
BPEO	Best Practicable Environmental Option
EIA	Environmental Impact Assessment
ES	Environmental Statement
EPS	European Protected Species
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
MPA	Marine Protected Areas
NSA	National Scenic Areas
PMFs	Priority Marine Features
SAC	Special Areas of Conservation
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage
SPA	Special Protection Areas
SSSI	Sites of Special Scientific Interest



## Drawings

