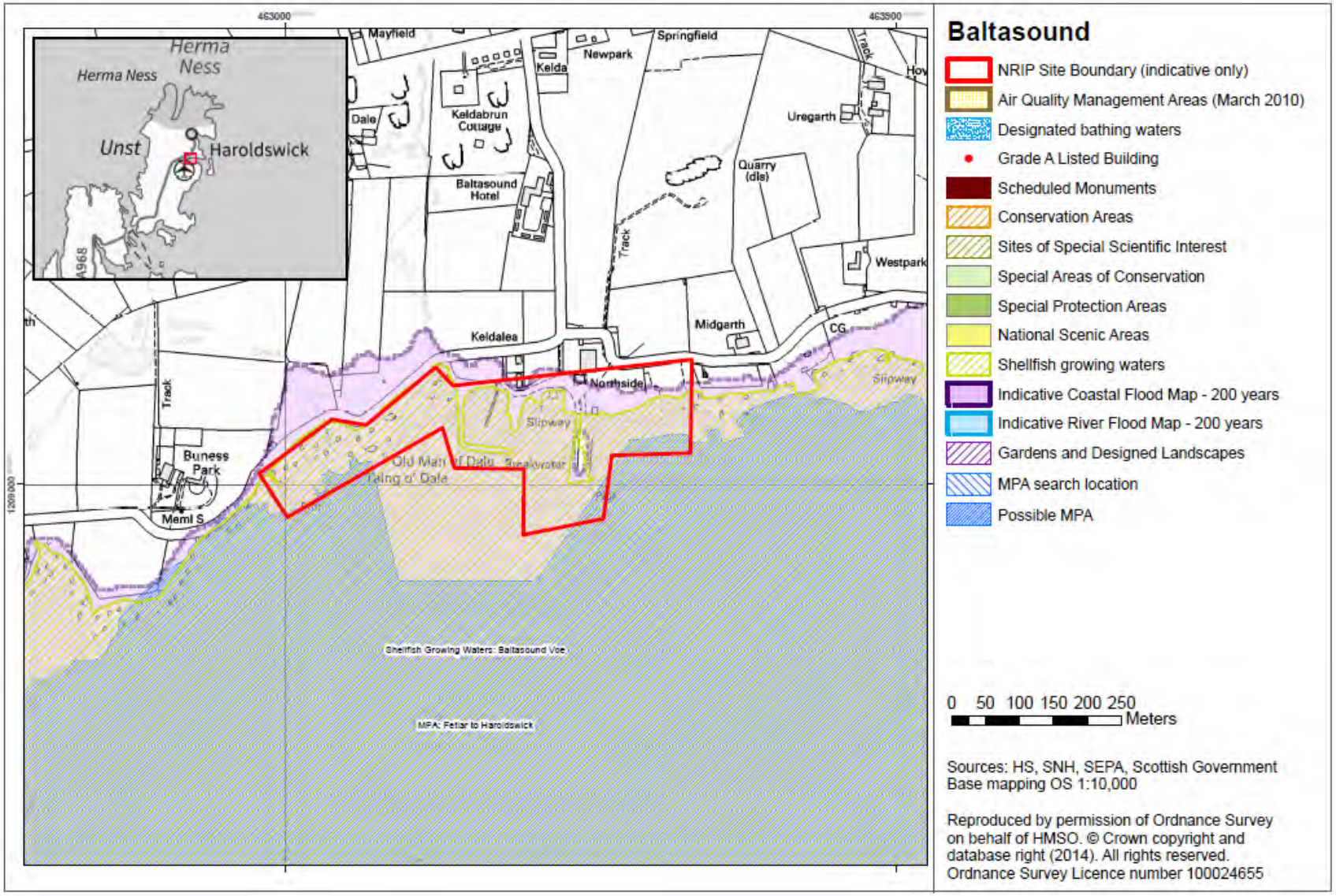
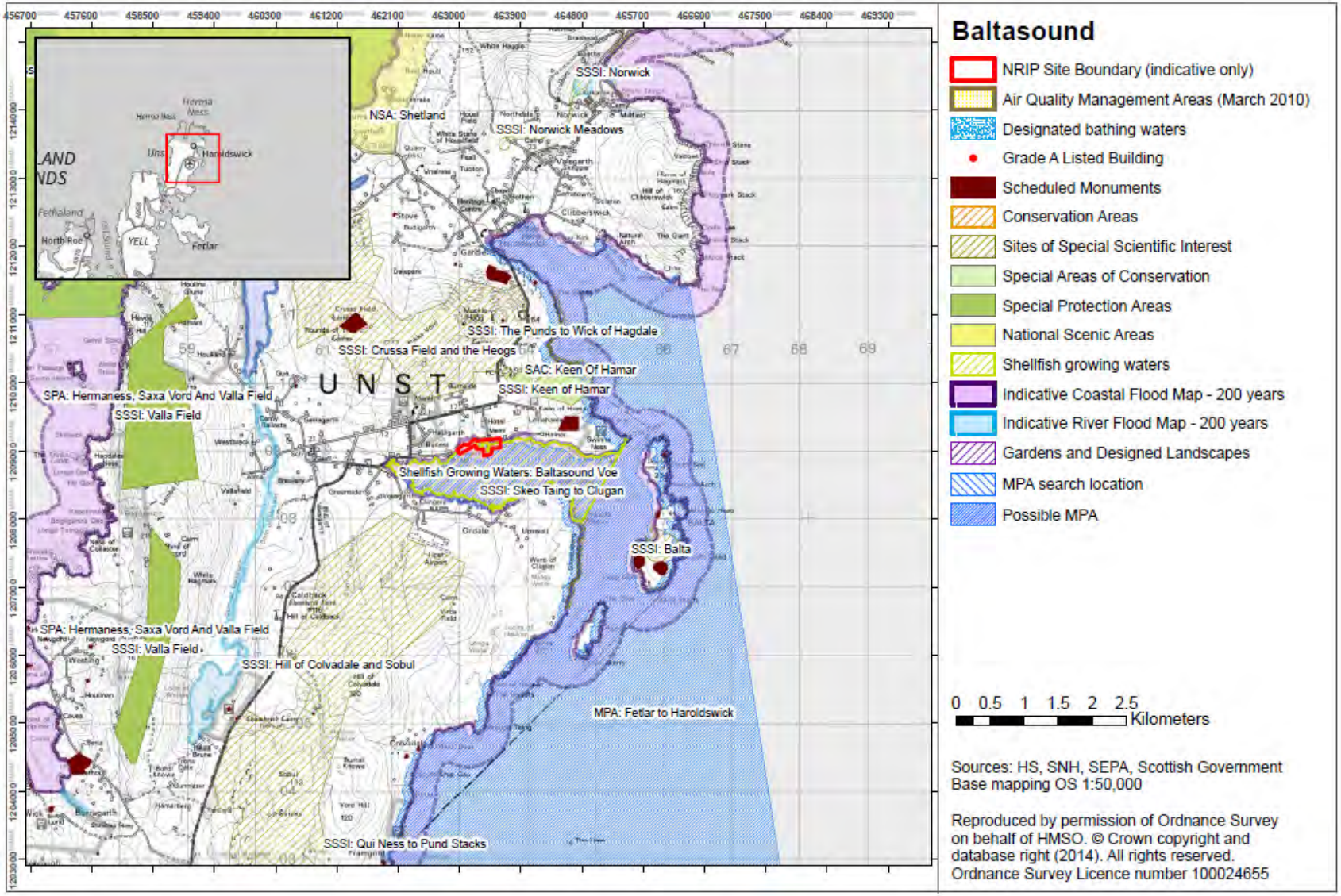
Appendix 2. MRIP Support Sites – Maps & Assessment Tables – Shetland

1. **Baltasound**
2. **Cullivoe**
3. **Hamnavoe**
4. **Lerwick (includes Dales Voe)**
5. **Mid Yell**
6. **Scalloway**
7. **Sullom Voe**
8. **Symbister**
9. **Uyeasound**
10. **Walls**
11. **West Burrafirth**

Site Map: Baltasound



Wider Map: Baltasound



Assessment Table: Baltasound

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE - BALTASOUND

Biodiversity, flora and fauna –

Crussa Field and the Heogs SSSI – birds – aggregations of breeding birds: Arctic skua (*Stercorarius parasiticus*), Whimbrel (*Numenius phaoepus*), breeding bird assemblage; vascular plants – vascular plant assemblage; inland rock (Calaminarian grassland and serpentine heath) (approximately 1 km N of the harbour at Baltasound)

Hermaness, Saxa Vord and Valla Field SPA – birds – aggregations of breeding birds: Gannet (*Morus bassanus*), Great skua (*Stercorarius skua*), Guillemot (*Uria aalge*), Kittiwake (*Rissa tridactyla*), Puffin (*Fratercula arctica*), Red-throated diver (*Gavia stellate*), Shag (*Phalacrocorax aristotelis*), Fulmar (*Fulmarus glacialis*), Seabird assemblage. (approximately 4 km NW and N of the harbour at Baltasound)

Hill of Colvadale and Sobul SSSI – birds – aggregations of breeding birds: Arctic skua (*Stercorarius parasiticus*), Whimbrel (*Numenius phaoepus*), breeding bird assemblage; Inland rock – Calaminarian grassland and serpentine heath; vascular plants – Arctic sandwort (*Arenaria norvegica*) (approximately 2 km S of the harbour at Baltasound)

Keen of Hamar SAC – Dwarf shrub heath (upland) – dry heaths; Inland rock – grasslands on soils rich in heavy metals; base-rich scree (approximately 1 km NE of the harbour at Baltasound)
Keen of Hamar SSSI – Vascular plants – vascular plant assemblage; Inland rock – Calaminarian grassland and serpentine heath (approximately 1 km NE of

ENVIRONMENTAL BASELINE - BALTASOUND

the harbour at Baltasound)

Valla Field SSSI – birds – aggregations of breeding birds: Great Skua (*Stercorarius skua*), Red-throated diver (*Gavia stellata*) (approximately 4 km W of the harbour at Baltasound)

Fetlar to Haroldswick Marine Protected Area (MPA) – biodiversity protected features – Black guillemot (*Cepphus grille*); circalittoral sand and coarse sediment communities; horse mussel (*Modiolus modiolus*) beds; kelp and seaweed communities on sublittoral sediments; maerl beds; shallow tide-swept coarse sands with burrowing bivalves. On the whole, these features are well-represented in Balta Sound, along the coast and on Balta[1].

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest for grey seals being on Fetlar to the south of Unst[2]. Indications are that the Shetland waters are well used by both harbour and grey seals[3].

European Protected Species – Cetaceans are likely to be passing through the area. It is likely that otters are using the coast in this area.

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[4].

Population and Human Health – The harbour is located in Baltasound, the largest village in Unst, which stretches around the shores of Balta Sound. Local residents likely have views of Balta Sound.

Water and marine environment – The harbour at Baltasound lies within designated shellfish growing waters: Baltasound Voe[5]. Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

[1] SNH 2013 Scottish MPA Project Management Options: Fetlar to Haroldswick
[2] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[3] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[4] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)
[5] Site 3 of Shellfish Water Designations 2012 – Baltasound Voe.

ENVIRONMENTAL BASELINE - BALTASOUND

Soil, Geology & Coastal Processes – There are several SSSI designated for their geological interest:

- Balta SSSI – Coastal Geomorphology of Scotland – the most complete machair system in Shetland (approximately 2.5 km from the harbour at Baltasound),
- Crussa Field and the Heogs SSSI – Mineralogy of Scotland (main areas of interest are found around the abandoned quarries at Quoys and Nikka Vord);
- Keen of Hamar SSSI – Mineralogy of Scotland;
- Skeo Taing to Clugan SSSI – Igneous petrology – Ordovician Igneous – coastal outcrops (approximately 1 km from the harbour at Baltasound); and
- Valla Field SSSI – Mineralogy of Scotland.

Fetlar to Haroldswick MPA - geodiversity protected features - Marine Geomorphology of the Scottish Shelf Seabed.

Sections of the Baltasound coastline in proximity to the pier have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.). Coastal erosion has been identified to the south of the sound near to the Yei and the Isle of Huney (approximately 3 km south east of the pier). However, no significant areas of erosion or accretion have been identified in Baltasound.

Cultural heritage – There are no Scheduled Monuments in the immediate vicinity of the harbour at Baltasound. The nearest Scheduled Monument is Hamar (No 6370), a Norse settlement approximately 1 km north east of Baltasound harbour. To the north of Baltasound there are several Scheduled Monuments, comprising the remains of:

- a house (No 7659), probably of Viking or Norse-Medieval date, to the south of Gue (approximately 2.5 km west of the harbour)
- a group of 6 cairns (No 2031), probably of Bronze Age date, near the summit of Crussa Field (approximately 2 km to the north-west of the harbour)
- two prehistoric burial cairns (No 3895), one on the summit of Muckle Heog and one some 100 m to the north west.
- a burial cairn (No 3896) on the summit of Little Heog hill, 605 m NW of Hagdale (approximately 2 km north of the harbour)
- a Norse settlement (No 13152), 80 m north west of Spoull (approximately 2.5 km north of the harbour)
- a Norse farmstead – house and field system (No 7660) – at the foot of Little Heog, overlooking Gardie and Haroldswick (approximately
- a settlement and field system (No 7662) at Soterberg (approximately 2.5 km north east of the harbour)

There are also Scheduled Monuments on Balta, comprising the remains of:

- a broch (No 7666), an Iron Age fortified residence, just south of the inlet called Geo of the Brough
- the site of St Sineva's Chapel (No 2649)
- numerous stone settings, in two extensive areas (No 10426) 500 m north west of the lighthouse. The origins of these stone settings are unknown

There are several Category B- and C-listed buildings in Baltasound, including for example, Buness House (B), Hillside Free Church and manse (B) and Old Unst Kirk (C) in Baliasta, and Oredale steading (B) and Oredaal House (farmhouse) (C) on the other side of the bay.

ENVIRONMENTAL BASELINE - BALTASOUND

In the early twentieth century, Baltasound was an important herring port in Shetland[6], and this is evidenced by the numerous remains and sites of (now demolished) buildings. There are at least 15 wrecks in Balta Sound, including the Lord Collingwood, the Julienne, the Mary Smethurst and HMS/M E49, a WWI submarine (now a war grave).

Landscape / Seascape – A component of the Shetland NSA approximately 6 km north of Baltasound. Proposed Local Landscape Area: Colvadale and Muness, Unst, lies approximately 2 km S of the harbour at Baltasound

Material Assets – Unst airport approximately 1.5 km south west of Baltasound. Unst possesses commercial quantities of chromite, plus serpentine, and talc - talc is presently quarried and exported from the new pier at Baltasound (Shetland Local Plan, Unst Community Council Area Statement, August 2006).

There is a small boat marina at the harbour; this is not suitable for visiting recreational vessels. Anchorage for such vessels is available south west of the pier and at a pontoon berth west of the main pier[7], so it is likely that recreational vessels access these waters. The main pier was built in or before August 2006[8] by Shetland Islands Council. There is a RYA light recreational cruising route to the south and east of Unst.

There are three active shellfish and three active finfish farms in Balta Sound, and one active finfish farm on the west coast of the island of Balta. Several of these are on the approach to the harbour (one appears to be at the end of the pier). There is also vessel traffic through Balta Sound; it is likely that this comprises vessels servicing fish farms, as well as fishing vessels. There may be fishing grounds in and around Balta Sound.

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[9]. It recognises the significant role that the geology of the islands plays in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.
Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

[6] http://www.undiscoveredscotland.co.uk/unst/baltasound/
[7] http://www.shetlandmarinas.com/marinas/yell-and-unst/baltasound
[8] Shetland Local Plan, Unst Community Council Area Statement. Available online at http://www.shetland.gov.uk/developmentplans/LocalPlanContents.asp
[9] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]

ASSESSMENT - BALTASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Birds – aggregations of breeding birds and waterbirds: SSSI and SPA, black guillemot - MPA, Areas of search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds, e.g. red-throated divers, from feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Terrestrial species and habitats: Crussa Field and the Heogs SSSI; Keen of Hamar SSSI; Hill of Colvadale and Sobul SSSI; Keen of Hamar SAC	No mobile species interests. Sites will not be affected due to distance from pier.	No effect	None required	None
Benthic habitat/ communities: Fetlar to Haroldswick MPA	Risk of loss of and/or damage to sensitive benthic habitats from anchorage or storage of gravity devices directly on the seabed.	Effects may be temporary or longer term, depending on the ability of the habitat to recover from disturbance. Recovery will also be dependent on the number of devices, the methods of anchoring and storage location/ duration.	Where vulnerable benthic habitats have been identified the storage of devices should be avoided.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.

ASSESSMENT - BALTASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
European Protected Species: Cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Water & Marine Environment Designated shellfish growing waters	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed could affect shellfish growing waters.	Effects are likely to be localised and temporary.	Developers should consider whether there are anchoring methods which would not result in increased turbidity.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site is within an Indicative 200 year Flood Zone	Potential to be at risk of flooding from the sea	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage activities.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.

ASSESSMENT - BALTASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Soil, Geology & Coastal Processes SSSI and MPA - geodiversity protected features	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on protected geodiversity features.	No significant adverse effect	None required	None
Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.	No significant adverse effect	None required	None
Cultural Heritage Scheduled Monuments and Listed Buildings	Storage of devices which are on or break the water surface is unlikely to affect the setting of the listed buildings or other historic features.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape / Seascape Proposed Local Landscape Area: Colvadale and Muness, Unst local residents	Residents in Baltasound are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of Balta Sound. This could affect the MPA biodiversity features; these should be avoided.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.

ASSESSMENT - BALTASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Material Assets Baltasound airport approximately 1.5 km SW of the proposed site at Baltasound.	Unlikely to be navigational impacts on airport.	No effect	None required	None
Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage sites will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen and/or Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT - BALTASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
OTHER DEVELOPMENT None known.				
Cumulative Effects	No cumulative effects are anticipated from wet storage at this site.			

Implications for development:

The following requires further examination at the project level:

- effects on benthic habitats; otters; birds using adjacent SPA/SSSI habitat, particularly red-throated diver. Early discussions should be held with SNH regarding timing, extent, location and duration of storage. Otter survey will likely be required as part of marine licensing process.
- risk of disturbance to seal haul outs and corkscrew injury to seals
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce effects on historic environment.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA and Historic Scotland.

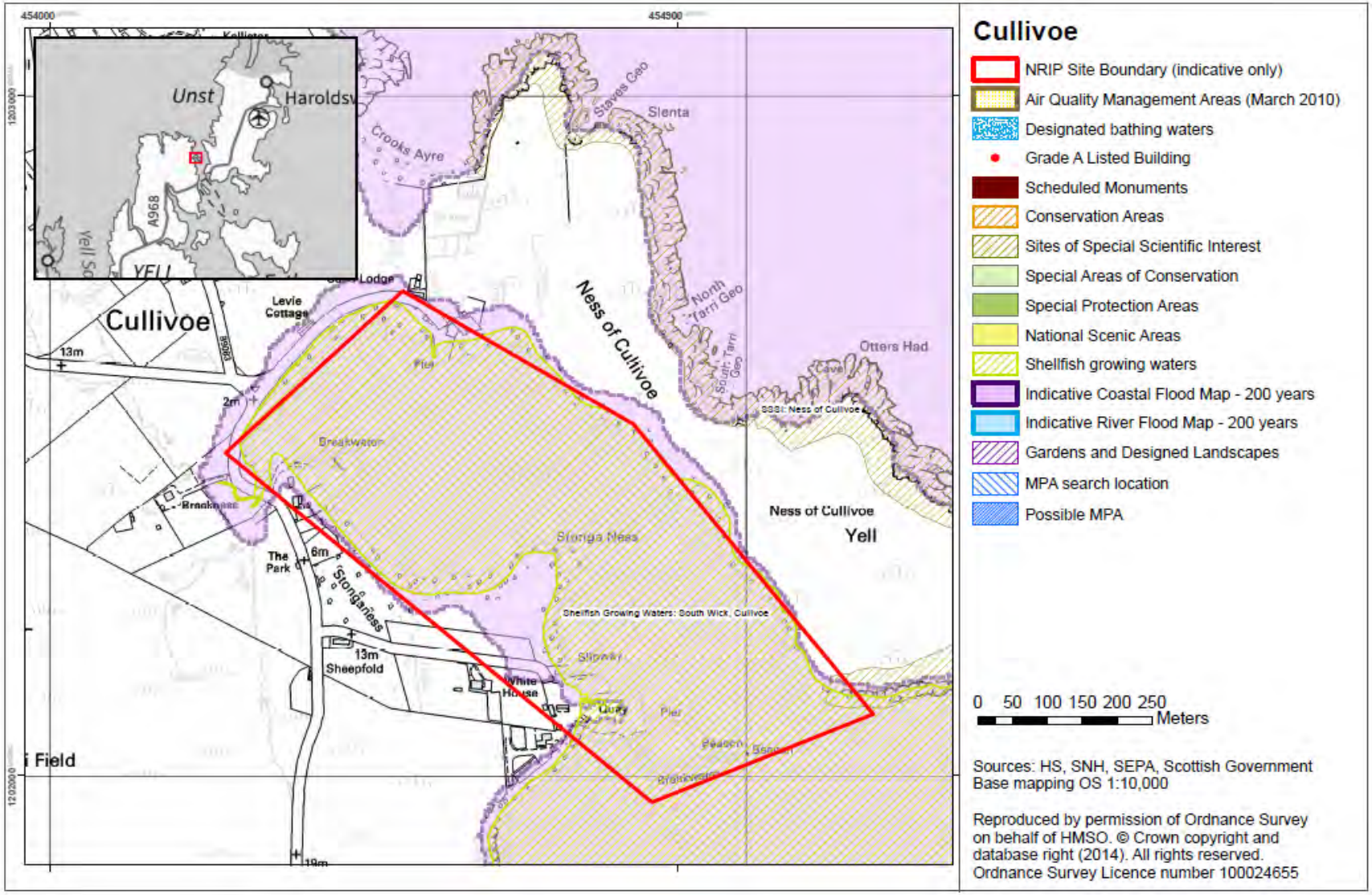
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

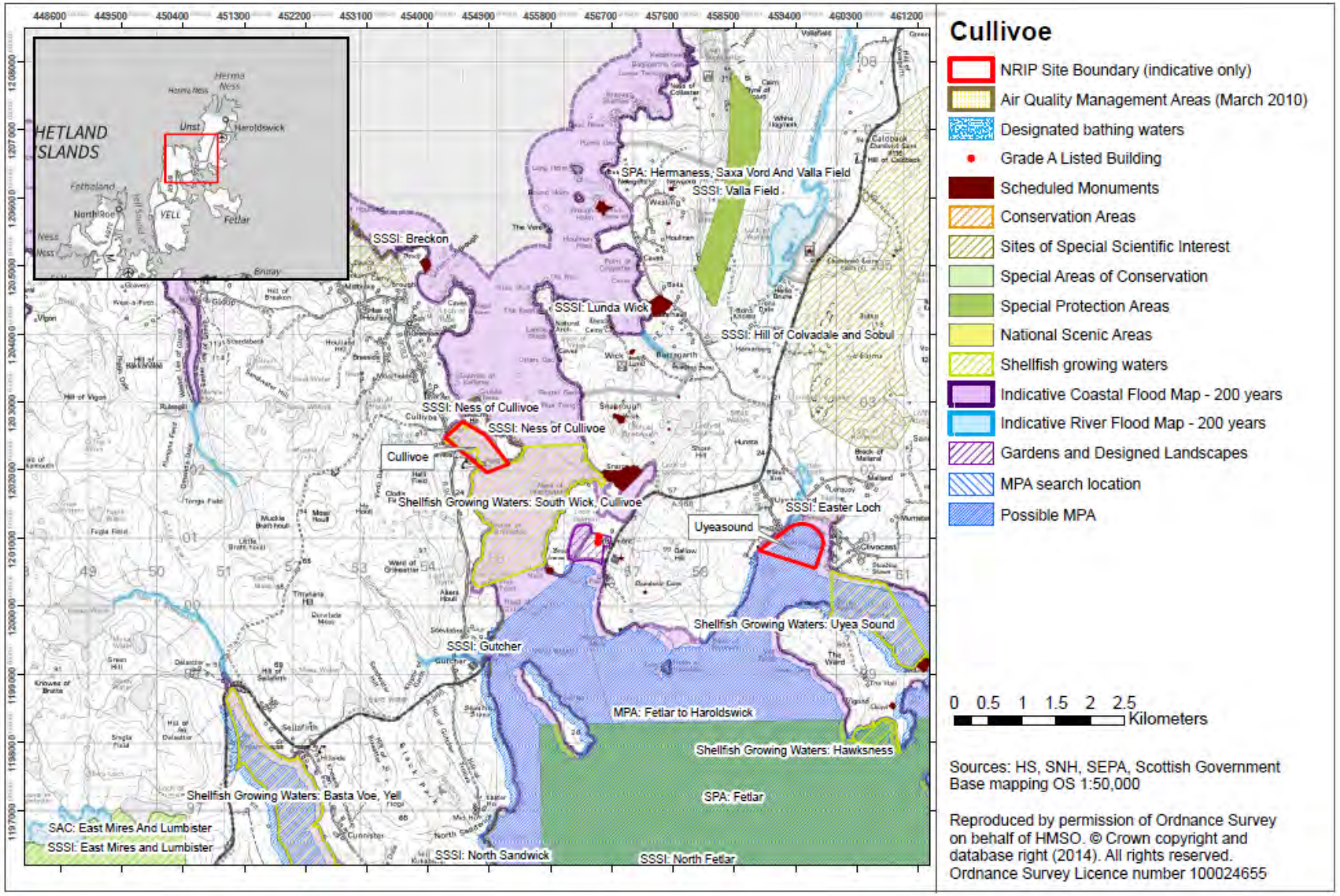
- effects on birds using adjacent SPA habitat, particularly red-throated diver.

Early discussions should be held with SNH.

Site Map: Cullivoe



Wider Map: Cullivoe



Assessment Table: Cullivoe

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE - CULLIVOE

Biodiversity, flora and fauna –

Fetlar SPA – Aggregations of breeding birds – breeding seabird assemblage, Arctic skua, Arctic tern, dunlin, fulmar, Great skua, red-necked phalarope, whimbrel (approximately 4 km south-east of the site).

Hermaness, Saxa Vord and Valla Field SPA – breeding Red-throated Diver, Northern Gannet, Great Skua, Atlantic Puffin. During the breeding season, the area regularly supports 157,500 individual seabirds including: Common Guillemot, Black-legged Kittiwake, European Shag and Northern Fulmar. The boundary of the SPA (approximately 4 km north of Uyeasound) is coincident with that of the Hermaness SSSI, Saxa Vord SSSI, and Valla Field SSSI. The seaward extension extends approximately 2 km into the marine environment to include the seabed, water column and surface (approximately 4 km north-east of the site).

Valla Field SSSI – Birds, aggregations of breeding birds – Great skua, Red-throated diver - and Mineralogy features (approximately 4 km north-east of the site).

Hill of Colvadale and Sobul SSSI – Birds – aggregations of breeding birds, inland rock and vascular plants - Arctic skua, whimbrel, breeding bird assemblage, Calaminarian grassland, serpentine heath and Arctic sandwort (approximately 5 km east of the site).

ENVIRONMENTAL BASELINE - CULLIVOE

Breckon SSSI – Eutrophic loch, maritime cliff, machair, sand dunes and Bog orchid (approximately 2 km north-west of the site).

Easter Loch SSSI – Aggregations of non-breeding whooper swan (approximately 5 km east of the site).

Fetlar to Haroldswick Marine Protected Area (MPA) – biodiversity protected features – Black guillemot, circalittoral sand and coarse sediment communities, horse mussel beds, kelp and seaweed communities on sublittoral sediments, maerl beds, shallow tide-swept coarse sands with burrowing bivalves (MPA boundary is approximately 1.75 km south of Cullivoe).

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for grey seals on Fetlar to the south-east and several harbour seal haul-out sites within Yell Sound to the south-west[10]. Indications are that the Shetland waters are well used by both harbour and grey seals[11].

European Protected Species – Cetaceans are likely to be passing through the area. It is likely that otters are using the coast in this area.

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[12].

Population and Human Health – Residents in Cullivoe and Stonganess are likely to have views of Culli Voe and Bluemull Sound.

Water and marine environment – The site is located within designated shellfish growing waters[13] (South Wick, Cullivoe). Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – While the site is not within an area designated as a geological SSSI, it is located adjacent to the Ness of Cullivoe (structural and metamorphic geology – moine). Breckon SSSI (eutrophic loch, maritime cliff, machair and sand dunes) and Gutcher SSSI (Structural and

[10] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[11] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[12] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)
[13] Site 75 of Shellfish Water Designations 2012 – South Wick, Cullivoe

ENVIRONMENTAL BASELINE - CULLIVOE

metamorphic geology – moine) are located approximately 2 km north-west of the site and 2 km south of the site respectively.
Sections of the coastline in Bluemull Sound have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including the beach within Cullivoe itself and the coastline to its south. Coastal erosion has been identified to the south of the sound near to the Isle of Linga (approximately 3.5 km south of the pier). However, no other significant areas of erosion or accretion have been identified in proximity to the site.

Cultural heritage –

St Olaf's Kirk (Ref: 18649), near the harbour, is a Category C-listed building. There are three listed buildings in Cullivoe, approximately 1 km north of the harbour. There are no Scheduled Monuments in Cullivoe; the nearest is the remains of a chapel and burial ground at Papil Bay (No 2674), approximately 2 km north of the harbour.

The pier in Cullivoe harbour is recorded on the Canmore website (ID 174694). There is a wreck of a 10th century craft (ID 290396) close to the pier, as well as two others on the other side of the Ness of Cullivoe - the Harmonia (ID 329264) and Lastdrager (ID 324832), and two further north in Blue Mull Sound (Canmore ID 290371 and 290372).

Landscape / Seascape – No national designation.

Material Assets – The harbour at Cullivoe has recently been upgraded, including a new breakwater, reclamation of quay space for net-mending, additional sheltered deep-water berths and dredging of the port approaches (http://www.shetland.gov.uk/ports/smallports/cullivoe.asp).

Cullivoe is a designated fishing port and is widely used by the Scottish and Shetland white fish fleets (http://www.shetland.gov.uk/ports/). The port is used for salmon, mussel farm and fishing operations. There are two finfish farm sites to the south of Cullivoe, one near the pier at Belmont and the other across the water near Virdi Point. The waters around Cullivoe support demersal and pelagic fishing, scallop dredging and prawn (trawling) and shellfish (static gear) fishing. There is a small boat marina at the west end of Culli Voe, and a RYA light recreational cruising route runs up the east coast of Yell.

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009. It recognises the significant role that the geology of the islands plays in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.
Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT - CULLIVOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Breeding and non-breeding Birds – Fetlar SPA, Hermaness, Saxa Vord and Valla Field SPA, Valla Field SSSI, Hill of Colvadale SSSI, and Easter Loch SSSI. Black guillemot - Fetlar to Haroldswick MPA, Areas of Search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds, e.g. red-throated divers, from feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Bog orchid – Breckon SSSI	No mobile species interests. Sites will not be affected due to distance from pier.	No effects	None required	None.
Fetlar to Haroldswick MPA	If devices are stored south of Cullivoe, adverse effects may occur: risk of loss of and/or damage to sensitive benthic habitats from anchoring or storage of gravity devices directly on the seabed.	Effects may be temporary or longer term, depending on the ability of the habitat to recover from disturbance. Recovery will also be dependent on the number of devices, the methods of anchoring and storage location/ duration.	Where vulnerable benthic habitats have been identified, the storage of devices should be avoided.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.

ASSESSMENT - CULLIVOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
European Protected Species: Cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Water & Marine Environment Designated Shellfish Growing waters	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed could affect shellfish growing waters.	Effects are likely to be localised and temporary.	Developers should consider whether there are anchoring methods which would not result in increased turbidity.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site is within an Indicative 200 year Flood Zone	Potential for Cullivoe and its surrounds to be at risk of flooding from the sea	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with O&M.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.

ASSESSMENT - CULLIVOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Soil, Geology & Coastal Processes Fetlar to Haroldswick MPA – protected geodiversity features	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on protected geodiversity features.	No effect	None required	None
Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.	No significant adverse effect	None required	None
Cultural Heritage Listed buildings and other historic features in the environs of the harbour	Storage of devices which are on or break the water surface is unlikely to affect the setting of the listed buildings or other historic features.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape / Seascape local residents	Residents in Cullivoe and Stonganess are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of Culli Voe/ Bluemull Sound. This could affect the MPA biodiversity features and locations should be selected to avoid this.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.

ASSESSMENT - CULLIVOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Material Assets Harbour access and Navigation	Possible effects on navigational safety. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage sites will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None

ASSESSMENT - CULLIVOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
OTHER DEVELOPMENT Nearby to Cullivoe Harbour, during 2012, a custom-designed tidal turbine being built by Leith-based renewable energy company Nova Innovations is expected to be deployed in the waters of the narrow Bluemull Sound. The 30-kilowatt device is planned to be grid-connected and power both an ice plant located in Cullivoe harbour and a nearby industrial estate.[14]				
Cumulative Effects	Adverse cumulative effects could occur: • disturbance of birds using SPA; • displacement of fishing and recreational vessels			

Implications for development:

The following requires further examination at the project level:

- effects on benthic habitats; otters; birds using adjacent SPA/SSSI habitat, particularly red-throated diver. Early discussions should be held with SNH regarding timing, extent, location and duration of storage.
- effects on protected biodiversity features of the MPA.
- risk of disturbance to seal haul out locations and corkscrew injury to seals.
- need to alleviate flood risk through project planning and design
- planning and design to avoid and/or reduce effects on wrecks. If wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

Habitats Regulations Appraisal

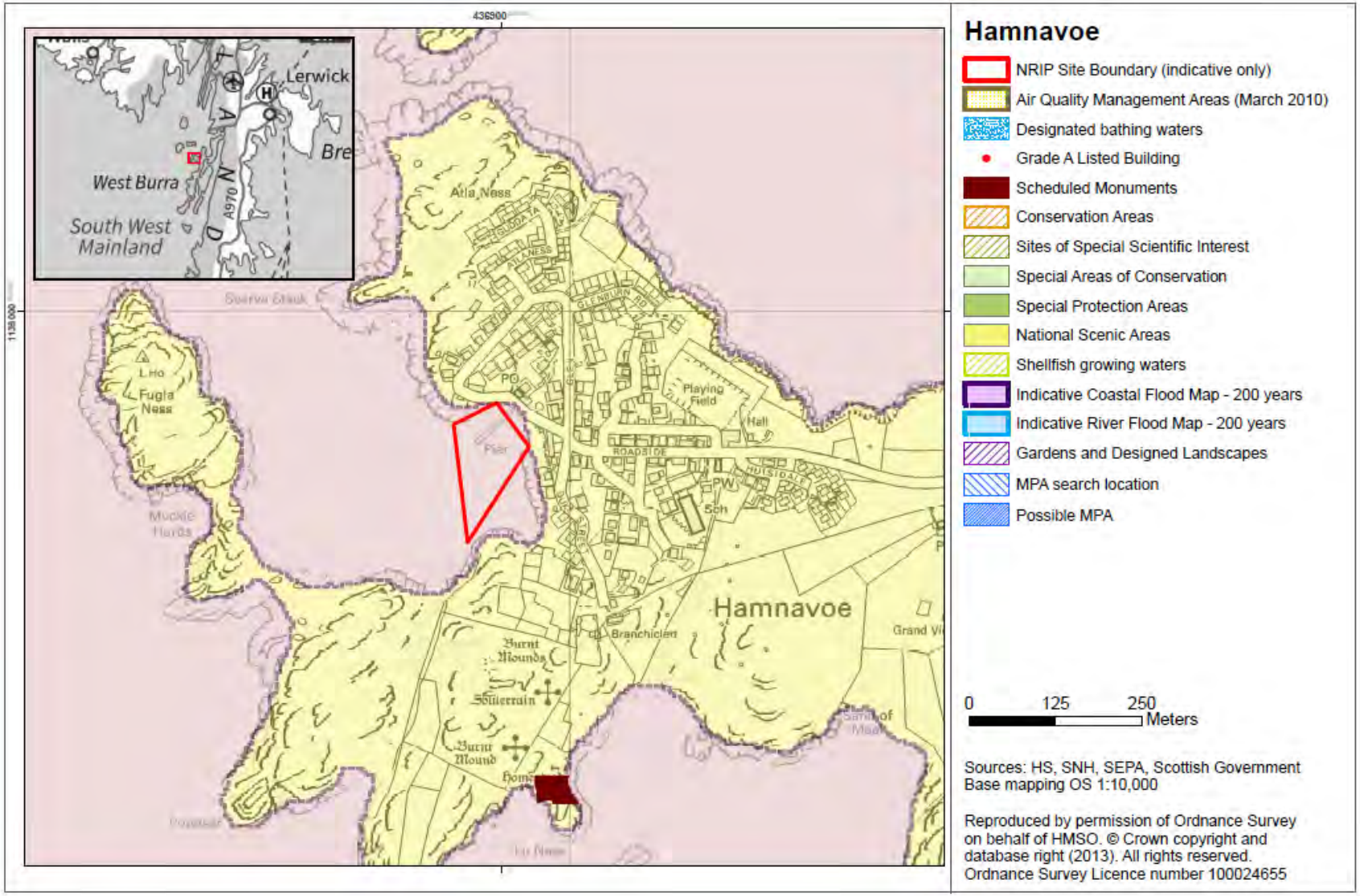
It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

- effects on birds using adjacent SPA/SSSI habitat, particularly red-throated diver.

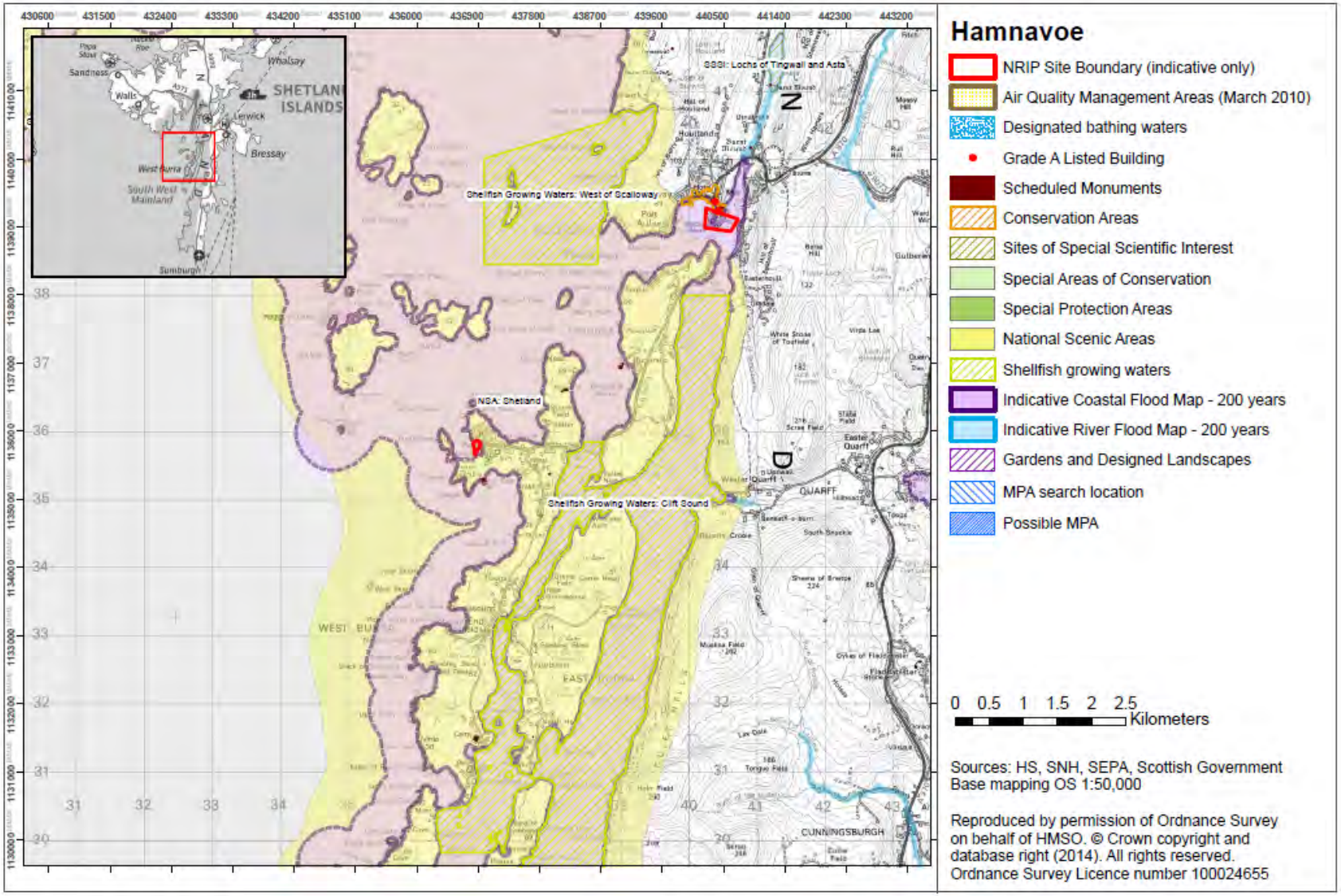
Early discussions should be held with SNH.

[14] Ports of Scotland Yearbook 2013, page 263

Site Map: Hamnavoe



Wider Map: Hamnavoe



Assessment Table: Hamnavoe

SITE USE – Refuge/wet storage/unplanned maintenance, in support of Scalloway.

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance

For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port. Few existing buildings appear available to re-use. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE - HAMNAVOE

Biodiversity, Flora and Fauna – No designated sites in the environs of Hamnavoe.

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest to the sites being for harbour seals at Sanda and Score Islands and Aa Skerry to the north-west, and Colsay to the south. Potential haul-out sites for grey seals are located near Sumburgh Head to the south (e.g. Siggar Ness)[15]. Indications are that the Shetland waters are well used by both harbour and grey seals[16].

European Protected Species – Cetaceans are likely to be passing through the area. It is likely that otters are using the coast in this area.

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[17].

[15] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[16] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[17] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)

ENVIRONMENTAL BASELINE - HAMNAVOE

Population & Human Health – Jetty within residential area.

Water & Marine Environment – Coastal waters classification (2011): Good. There is a Shellfish Designated Water in Clift Sound, between West Burra and the Shetland mainland, surrounding East Burra[18].

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI.
Sections of coastline in proximity to the site have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.). While coastal erosion has been identified to the north east of the pier near to the Isles of Oxna and Gheynies (approximately 3 km north west of the pier), no other significant areas of erosion or accretion have been identified in proximity to the site.

Cultural Heritage – No historic environment features on or in the environs of the harbour. There is a scheduled monument – a prehistoric settlement (No 13051) – approximately 250 m south of harbour in Hamna Voe. There are several wrecks around the coast of West Burra, including in the vicinity of the harbour at Hamnavoe.

Landscape / Seascape – Jetty located within Shetland National Scenic Area (NSA). Residents likely have views of Hamna Voe.

Material Assets – There is one finfish farm in the voe north of Hamnavoe village. The harbour is used by fishing vessels and other craft. The waters around Hamnavoe support demersal and pelagic fishing, scallop dredging and shellfish (static gear) fishing. There is a small boat marina (opened in 2009), and moorings for recreational vessels[19].

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009. It recognises the significant role that the geology of the islands plays in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.

[18] Site 9 of Shellfish Water Designations 2012 – Clift Sound.
[19] http://www.shetlandtimes.co.uk/2009/04/10/poignant-opening-for-hamnavoe-marina-as-flotilla-marks-big-day/

ENVIRONMENTAL BASELINE - HAMNAVOE
Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT – HAMNAVOE				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Waterbirds – Areas of Search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: Cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitats and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.

ASSESSMENT – HAMNAVOE				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Designated shellfish waters	Designated shellfish waters are physically separated from Hamna Voe by West and East Burra, so no effects are anticipated.	No effects	None required	None
Climatic Factors Site is within an Indicative 200 year Flood Zone.	Potential to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable planning and design measures to increase defensibility against flooding.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage operations.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.	No significant adverse effect	None required	None
Cultural Heritage Scheduled monument	Storage of devices which are on or break the water surface is unlikely to affect the setting of scheduled monument.	No effects	None required	None

ASSESSMENT – HAMNAVOE				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Wreck sites	Device storage could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape/Seascape Jetty located within Shetland S.W. Mainland National Scenic Area (NSA) local residents	Storage of devices which are on or break the water surface may have adverse local landscape and visual effects. It is unlikely that storage would affect the special qualities of the National Scenic Area, given the nature of the devices.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	At the local level, it may be desirable to locate devices in a sheltered bay away from overall views from Hamnavoe.	Assuming mitigation is implemented, the potential for significant adverse effects at the local level should be reduced.
Material Assets Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels in Hamna Voe. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – HAMNAVOE				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Recreational areas	Possible disturbance and/or displacement of recreational vessels by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
OTHER DEVELOPMENTS None known				
Cumulative Effects	Adverse cumulative effects are unlikely to occur.			

Implications for development:
The following requires further examination at the project level:

- effects on otters. Early discussions should be held with SNH regarding timing, extent, location and duration of wet storage.
- risk of disturbance to seal haul out locations and corkscrew seal injuries.
- need to alleviate flood risk through project planning and design
- planning and design to avoid and/or reduce effects on landscape/seascape and/or wrecks
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

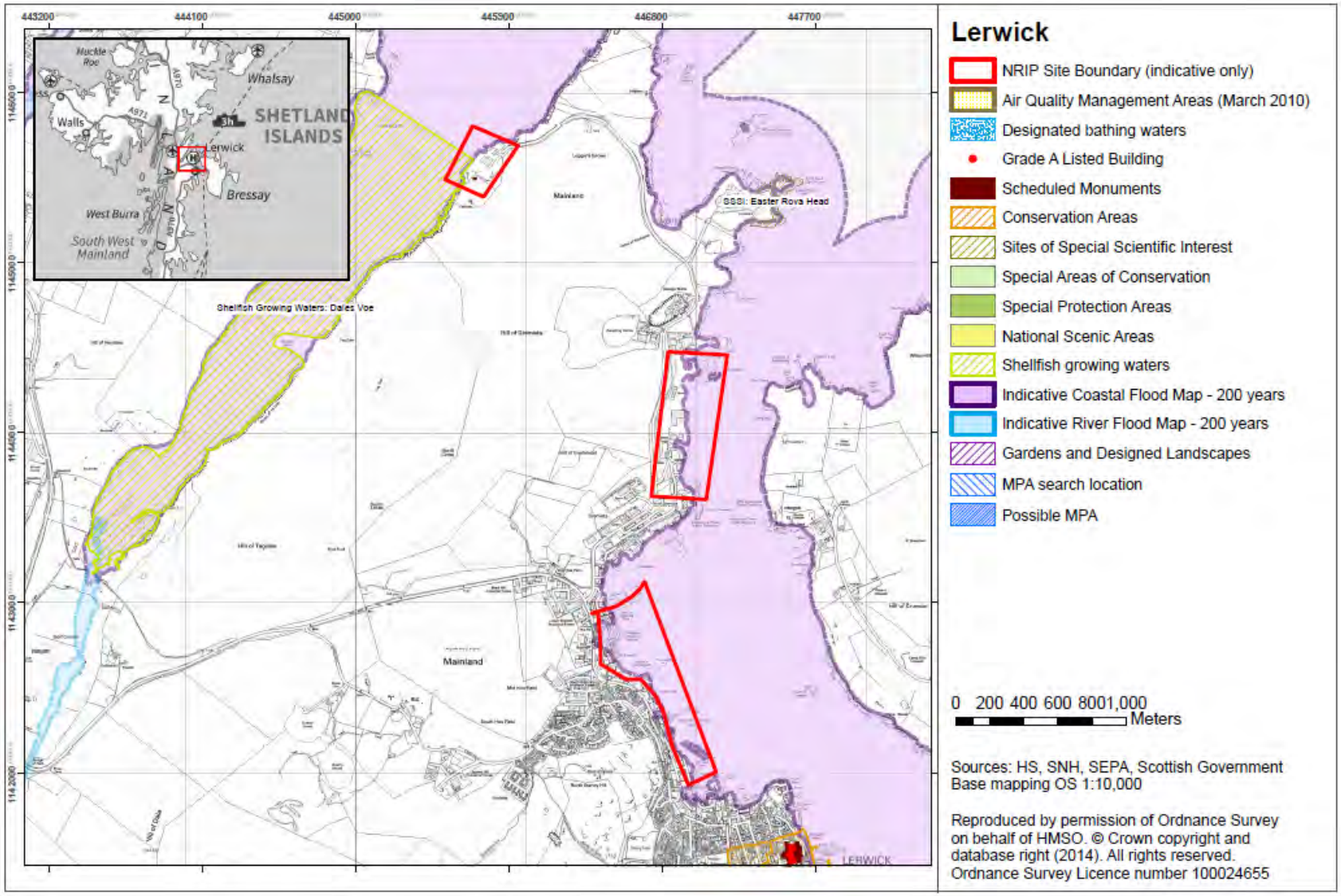
Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, Royal Yachting Association Scotland, The Crown Estate and aquaculture operators and other vessel operators as required.

Habitats Regulations Appraisal

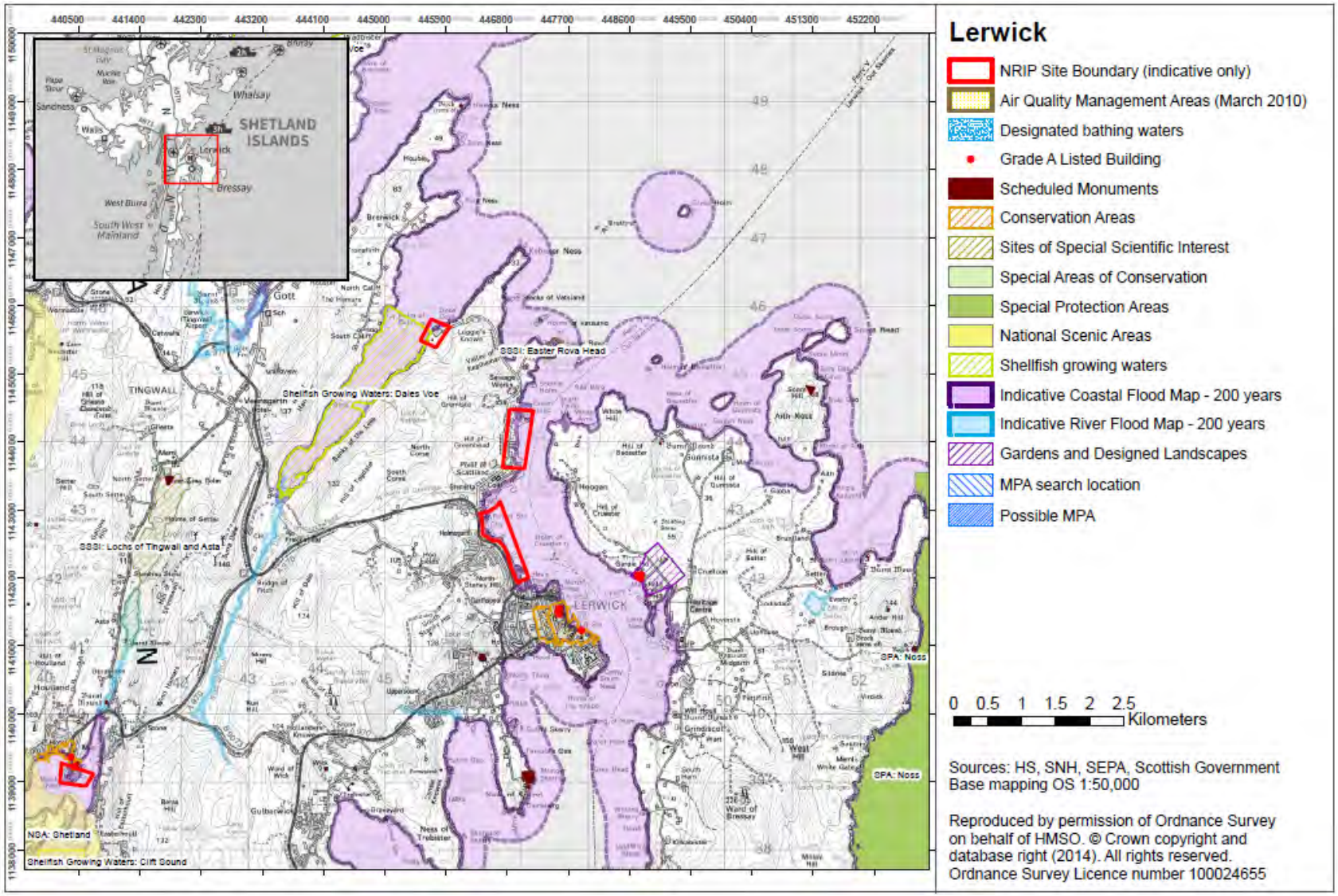
It is likely that Habitats Regulations Appraisal will not be required at the project level, as there are no Natura interests in the vicinity of this harbour that are likely to be affected.

Early discussions should be held with SNH.

Site Map: Lerwick (including Dales Voe)



Wider Map: Lerwick (including Dales Voe)



Assessment Table: Lerwick (including Dales Voe)

SITE USE – Manufacturing, Assembly/Construction and Installation, Operations and Maintenance

POTENTIAL DEVELOPMENT

Manufacturing

- Within the existing port of Lerwick, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required. At Dales Voe, new buildings are likely to be required. (Few existing buildings appear available to re-use.)
- Road/rail connections for manufacturing: this port is on the Shetland Mainland; assume that raw materials are to be transported by vessel direct to the port.

Assembly/Construction & Installation

- Within the existing port of Lerwick, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required. At Dales Voe, new buildings are likely to be required. (Few existing buildings appear available to re-use.)
- Wet storage of devices may be employed at this location.

Operations & Maintenance

- Within the existing port of Lerwick, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required. At Dales Voe, new buildings are likely to be required. (Few existing buildings appear available to re-use.)
- Wet storage of devices may be employed at this location.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – LERWICK (INCLUDING DALES VOE)

Biodiversity, flora and fauna – No designated sites near the potential development site.
Noss SPA – Aggregations of breeding birds – fulmar, gannet, great skua, guillemot, kittiwake and puffin (approximately 5 km east of the harbour).

Noss SSSI – Aggregations of breeding birds – great skua, guillemot, kittiwake, seabird colony, arctic skua and gannet (approximately 5 km east of the harbour).

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for harbour seals at Ness of Trebister south-east of Lerwick[20]. Indications are that the Shetland waters are well used by both harbour and grey seals[21].
European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast.

[20] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[21] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]

ENVIRONMENTAL BASELINE – LERWICK (INCLUDING DALES VOE)

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[22].

Population and Human Health – Harbour is located within a residential area.

Water & Marine Environment – Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI. **Easter Rova Head SSSI** – Non-marine Devonian stratigraphy (approximately 5 km north of the harbour).
Much of the Bressay Sound coastline has been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.). Coastal erosion has been identified on the Bressay coastline on the eastern side of the sound (approximately 800 m east of the harbour).

Cultural heritage – Several historic features are located in or adjacent to the site including the Gremista Breakwater (Canmore ID 181590), Holmsgarth Pier (Canmore ID 181592) and a number of wreck recorded sites. Scheduled Monuments Fort Charlotte (SM90145) The Knab, fixed torpedo platform (SM10755) are located to the south-east of the site amongst a cluster of recorded historic features within Lerwick's city centre. Listed building including the Bod of Gremista (37258) located adjacent to the northern portion of the site and a cluster of listed buildings located to the south of the site in Lerwick's city centre along the Esplanade and Commercial Street. Recorded wreck sites have been identified within Bressay Sound to the east of the site, and in waters to the north and south of the sound.

Landscape / Seascape – No national designation.

Material Assets –Recreational vessels utilise the marina within the northern portion of the site, whilst others such as fishing vessels, cargo vessels and ferry services to Kirkwall and Aberdeen also utilise harbour facilities in or near to the site.

Issues Scoped Out:
Air – There is likely to be increased boat traffic due to O&M activities, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

[22] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)

ASSESSMENT – LERWICK (INCLUDING DALES VOE)				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Aggregations of breeding birds – Noss SPA and SSSI, Areas of Search	There is suitable feeding habitat closer to the SPA, but birds may feed in and around Lerwick and could therefore be disturbed and/or displaced by noise and new devices in the water, should wet storage be employed. As this is a busy working port, effects from additional human presence/ activity are not anticipated.	Effects are likely to be temporary, but will depend on the number of devices, and the location and duration of storage.	If necessary, time storage activities and vessel movements to avoid breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: Otters	It is unlikely that proposed activities will add significantly to existing levels of noise and disturbance, due to the nature of existing activities in the harbour. No significant effects on otter (if they are using the harbour area).	No effects	None required.	None.
European Protected Species: cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); displacement and disturbance	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided

ASSESSMENT – LERWICK (INCLUDING DALES VOE)				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
		overall population numbers/viability		
Population and Human Health Residential developments within 100 m of site.	Noise disturbance during the construction of facilities. Due to the nature of existing activities in the harbour, it is unlikely this will add significantly to existing levels of noise and disturbance.	Temporary (Construction)	Construction protocols and/or good neighbour agreements would set out conditions for controlling noise and/or disturbance from construction activities.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site is within the Indicative 200 year Flood Zone.	Potential for Lerwick Harbour to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change and the potential volatility this could have on micro-climates.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with O&M.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	O&M vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Site activities on land will not affect wave patterns and coastal processes. Given the vessel movements and numbers of devices	No significant adverse effect	None required	None

ASSESSMENT – LERWICK (INCLUDING DALES VOE)				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
	assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.			
Cultural Heritage Schedule Monuments, Listed buildings and other historic features in the environs of the site	Site operations are unlikely to affect the setting of the Scheduled Monuments, Listed Buildings and historic features.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features. It is unlikely that site operations works would affect existing wreck sites, given their location.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape/Seascape Local views	Residents with views of Bressay Sound are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of the Sound.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.
Material Assets Harbour access	Possible effects on navigational safety, e.g. fishing vessels, cargo vessels, etc. Devices could block access to the harbour/ferry terminal and displace harbour users (e.g. require ferries to be re-routed).	Collisions could result in injury/death of human beings, oil spills etc. Inefficient operation of ferry terminal and/or ferries. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority and other vessel operators to agree storage areas and navigable	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – LERWICK (INCLUDING DALES VOE)				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
			channels .	
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere.	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
OTHER DEVELOPMENT Ferry services, fishing and recreational vessels accessing harbour facilities and associated vessel traffic in Bressay Sound.				
Cumulative Effects	Possible cumulative effect with existing operations in Bressay Sound and in the harbour, e.g. ferry services, fishing, cargo transportation, recreational boating, etc. Potential for cumulative effects on breeding birds and on marine mammals (i.e. corkscrew seal injuries). Assuming mitigation is implemented, the risk of significant adverse cumulative effects should be reduced.			

Implications for development:

The following requires further examination at the project level:

- effects on breeding birds, particularly disturbance and/or displacement from feeding habitat.
- risk of disturbance to seal haul out locations and corkscrew injury to seals.
- preparation and agreement of construction protocols/good neighbour agreements.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce landscape/visual effects and effects on historic environment, including wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

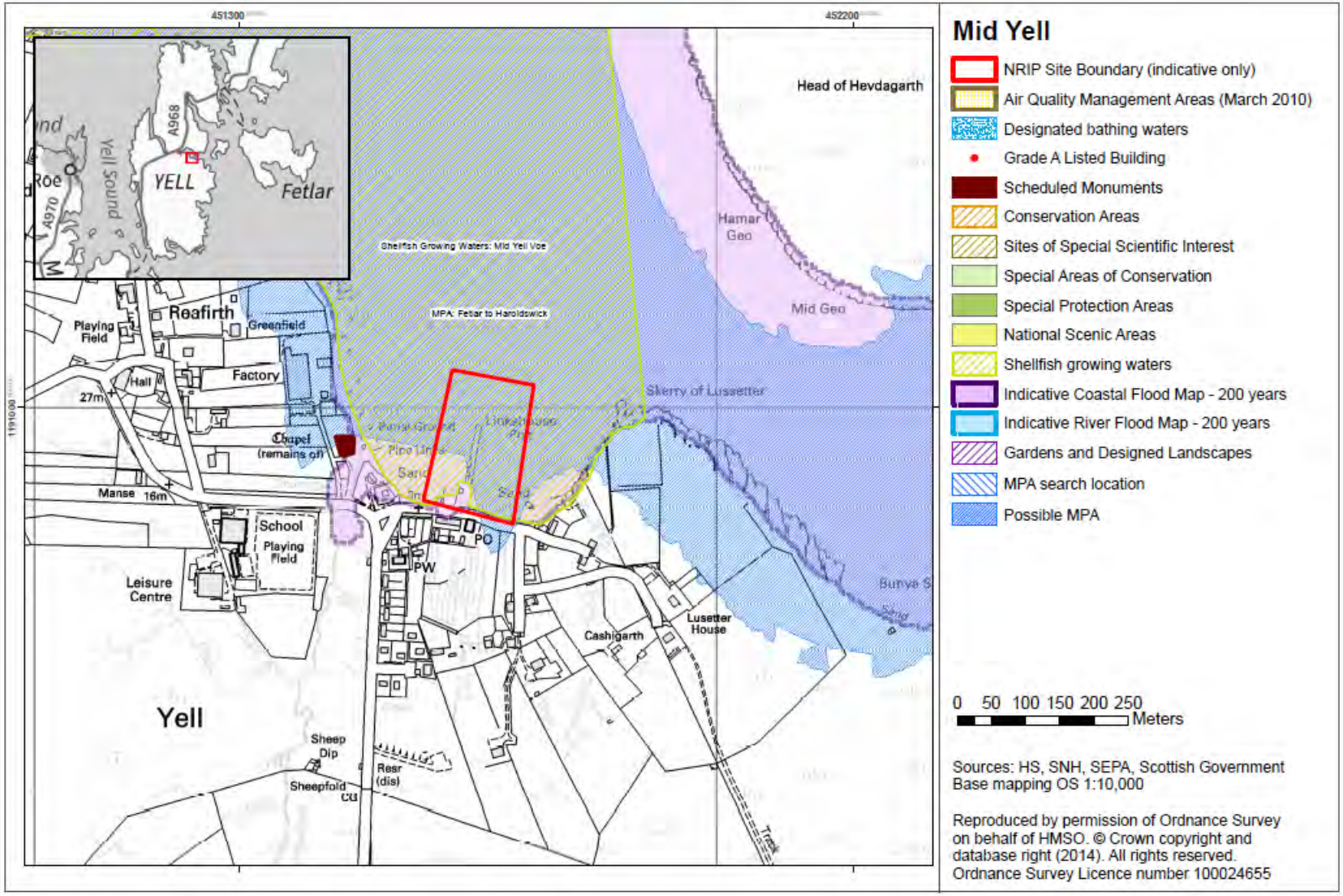
Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, Royal Yachting Association Scotland and other vessel operators as required.

Habitats Regulations Appraisal

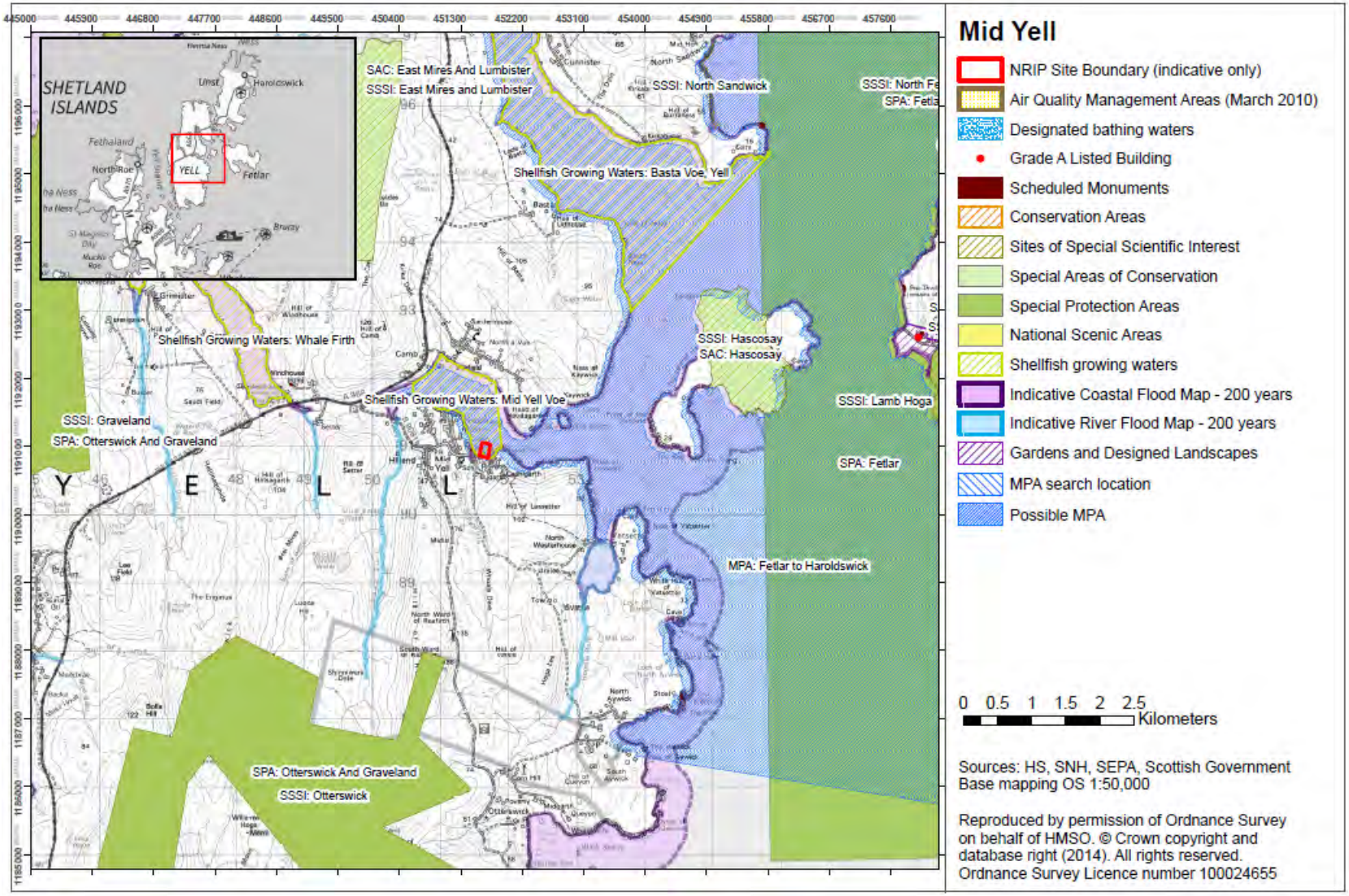
Habitats Regulations Appraisal may be required at the project level, if there are potentially significant effects on breeding birds.

Early discussions should be held with SNH.

Site Map: Mid Yell



Wider Map: Mid Yell



Assessment Table: Mid Yell

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – MID YELL

Biodiversity, flora and fauna – The site is not within an area designated as an SAC or SPA, but is located within an MPA. Several SSSIs have been identified in proximity to the site including:

Fetlar to Haroldswick MPA – overlaps the Fetlar SPA (breeding birds) and designated for benthic habitat features including seaweeds (maerl beds, sugar kelp), burrowing bivalves and horse mussel beds, and geodiversity features.

Hascosay SAC – blanket bog and otter interests (located on Hascosay approximately 3 km east of the site).

Hascosay SSSI – aggregations of breeding birds – dunlin, blanket bog and otter interests (located on Hascosay approximately 3 km east of the site).

East Mires and Lumbister SSSI – Upland blanket bog and breeding bird assemblages (approximately 3 km north-west of the site).

Otterswick and Graveland SAC and Graveland SSSI – aggregations of breeding birds – red-throated diver (approximately 2.5 km south of the site).

Fetlar SPA – aggregations of breeding birds – seabird assemblage, arctic skua, arctic tern, dunlin, fulmar, great skua, red-necked phalarope and whimbrel (approximately 3.5 km east of the site).

ENVIRONMENTAL BASELINE – MID YELL

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for grey seals on Fetlar to the east and Burray to the south-east, and harbour seals within Yell Sound to the south-west[23]. Indications are that the Shetland waters are well used by both harbour and grey seals[24].

European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast (see above).

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[25].

Population and Human Health – Residents in Camb and Mid Yell are likely to have views of Yell Sound.

Water and marine environment – The site is located within designated Shellfish Growing Waters (Mid Yell Voe). Neighbouring Basta Voe has also been designated as Shellfish Growing Waters. Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI.
Sections of the Yell coastline has been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including parts of Hascosay, and coastlines within Hascosay and South Sounds (approximately 2 km east of the pier). However, no coastal erosion or accretion has been identified in proximity to the site.

Cultural Heritage – The Linkshouse Pier (Canmore ID 157389) is located within the site boundary. , Several Listed Buildings are located in the surrounding areas with an outlook over Mid Yell Voe, predominantly centred around the township of Camb on the northern side of Mid Yell Voe and Mid Yell on the southern side. These include the Mid Yell Linkshouse (ID 18986) and St John's Kirk (ID 18646) located to the south and south-west of the pier respectively. Scheduled Monument Reafirth chapel (SM2095) is located approximately 200 m west of the Pier. Several recorded wreck sites are located within South Sound and Hascosay Sound located to the east and north east of Mid Yell Voe, including the Arctic Hunter (Canmore ID 243048) identified around 1.2 km east of the site at the entrance of Mid Yell Voe.

[23] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[24] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[25] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)

ENVIRONMENTAL BASELINE – MID YELL

Landscape / Seascape – No national or local landscape designations.

Material Assets –The pier is currently utilised by leisure craft and fishing vessels. Two shellfish aquaculture sites are located within Mid Yell Voe (Camb Mid Yell and Port Henry), the nearest located around 800 m north or the site. A further three finfish aquaculture sites are located within South Sound and Hascosay Sound located further east and north east of the site.

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[26]. It recognises the significant role that the geology of the islands play in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:

Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.

Air – There is likely to be increased boat traffic due to wet storage activities, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

Soil, Geology & Coastal Processes – Given the vessel movements and numbers of devices assumed for this assessment, it is considered unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes or in significant impacts on soil and marine geology.

ASSESSMENT – MID YELL

Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Biodiversity, Flora and Fauna Breeding birds – Hascosay SAC/SSSI, Otterswick and Graveland SAC, Graveland SSSI, Fetlar SPA, Areas of Search.	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds, e.g. red-throated divers, from feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc. .	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.

[26] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]

ASSESSMENT – MID YELL				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Otters – Hascosay SAC/SSSI and elsewhere (European Protected Species)	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: cetaceans (for otters see above)	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Water & Marine Environment Designated Shellfish Growing Waters (Mid Yell Voe).	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed could affect shellfish growing waters.	Effects are likely to be localised and temporary.	Developers should consider whether there are anchoring methods which would not result in increased turbidity.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.

ASSESSMENT – MID YELL				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Climatic Factors Site within designation on SEPA Indicative Flood Map 200 years	Potential for Linkshouse Pier to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change and the potential volatility this could have on micro-climates.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage activities.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Cultural Heritage Listed buildings and other historic features in the environs of the site.	Storage of devices which are on or break the water surface is unlikely to affect the setting of the listed buildings or other historic features.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape / Seascape local residents	Residents in Camb and Mid Yell are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of Mid yell Voe. This could affect the MPA biodiversity features and locations should be selected to avoid this.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.
Material Assets Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage sites will need to be appropriately lit and/or marked. Liaison with MCA,	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – MID YELL				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
			Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – MID YELL				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
OTHER DEVELOPMENT Users of Mid Yell Pier and Mid Yell Voe including fishing and recreational vessels, and aquaculture operations.				
Cumulative Effects	Possible cumulative effect with existing activities in Mid Yell Voe including fishing and recreational vessels, aquaculture operations, etc. Potential for cumulative effects on biodiversity features within the MPA/SACs and on marine mammals (i.e. corkscrew seal injuries). However, significant adverse effects potentially arising from site operations could be avoided through appropriate mitigation.			

Implications for development:
The following requires further examination at the project level:

- effects on birds using nearby SPA/SSSI habitat, particularly red-throated diver. Early discussions should be held with SNH regarding timing, extent, location and duration of storage.
- effects on protected biodiversity features of the nearby MPA.
- effects on otters using SAC habitat.
- risk of disturbance to seal haul out locations and corkscrew injury to seals.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce landscape/visual effects and effects on historic environment, including wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

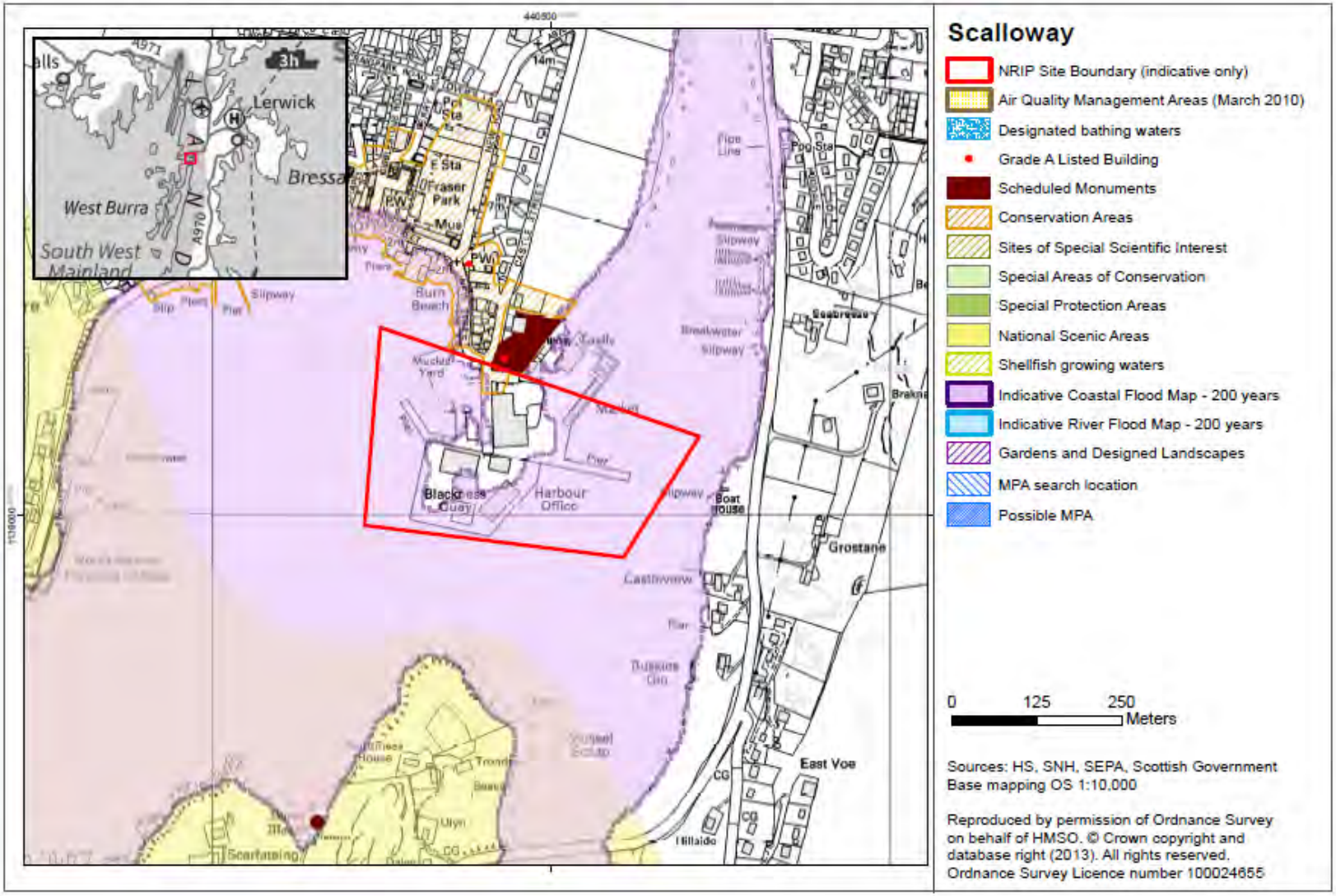
Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

Habitats Regulations Appraisal
It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

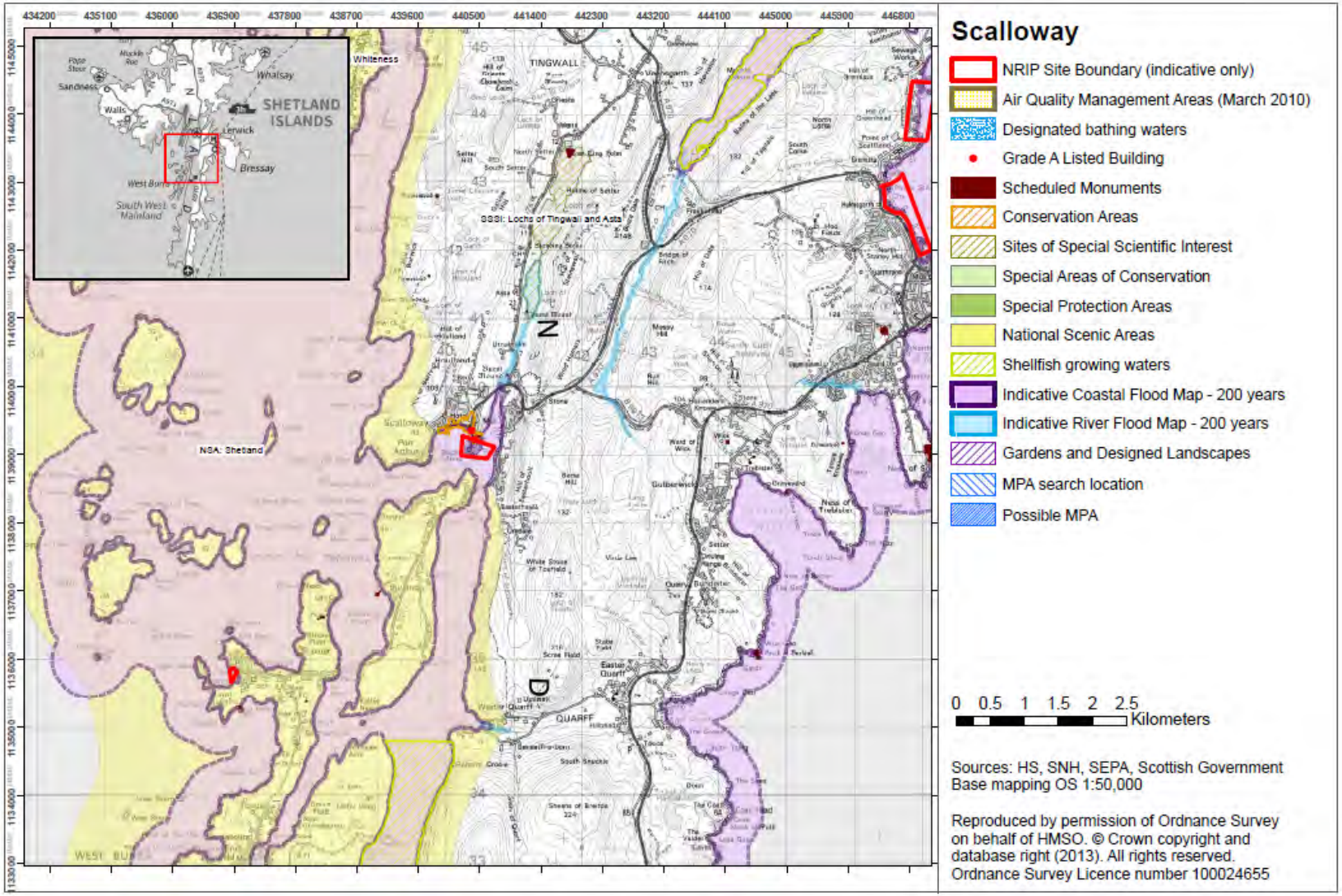
- effects on birds using nearby SPA habitat, particularly red-throated diver.

Early discussions should be held with SNH.

Site Map: Scalloway



Wider Map: Scalloway



Assessment Table: Scalloway

SITE USE – Assembly/Construction and Installation; Operations and Maintenance (supported by Hamnavoe)

POTENTIAL DEVELOPMENT

Assembly/Construction & Installation

- Within the existing port, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required.
- Wet storage of devices may be employed at this location.

Operations & Maintenance

- Within the existing port, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required.
- Wet storage of devices may be employed at this location.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – SCALLOWAY

Biodiversity, flora and fauna –

South Whiteness SSSI – Saltmarsh and Shetland mouse-ear-hawkweed (approximately 5 km north of harbour).

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for harbour seals at Score Islands and Aa Skerry to the north-west of the site[27]. Indications are that the Shetland waters are well used by both harbour and grey seals[28].

European Protected Species – Cetaceans, elasmobranchs are likely to be passing through the area. Otters may be found using this area of coast.

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[29].

Population and Human Health – Pier is located within residential area.

[27] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[28] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[29] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)

ENVIRONMENTAL BASELINE – SCALLOWAY

Water & Marine Environment – Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI.
Sections of coastline in proximity to Scalloway harbour have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including parts of Burwick and Whiteness Voe (approximately 2 km and 3 km north west of the harbour respectively) and East Voe of Scalloway itself. Coastal erosion has been identified in these areas.

Cultural heritage – Scheduled Monument Scalloway Castle (SM90273) is immediately adjacent to harbour.
Listed Buildings including Fisherman's Arms, Castle Road and Castle Street (Category C Index Number 47296) and The Bulwark, New Street (Category C Index Number 47304) are immediately adjacent to harbour. Listed Building Prince Olav slipway (Category C Index Number 47302) approximately 250 m north-west of harbour, and various Listed Buildings along main street and residential areas approximately 200 m north-west of harbour, with closest located on Main Street. Several recorded wreck sites have been identified in East Voe of Scalloway.

Landscape / Seascape – Harbour lies approximately 0.5 km from the east boundary of the Shetland SW Mainland NSA.

Material Assets –Finfish and shellfish farm interests have been identified in the area, to the south and west of the harbour. The pier is currently utilised by other marine users, e.g. recreational sailing, and ferry services from Scalloway to Foula operate from the harbour.

Issues Scoped Out:
Air – There is likely to be increased boat traffic due to O&M activities, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT – SCALLOWAY

Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Biodiversity, Flora and Fauna Waterbirds – Areas of Search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.

ASSESSMENT – SCALLOWAY				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: otters	It is unlikely that proposed activities will add significantly to existing levels of noise and disturbance, due to the nature of existing activities in the harbour. No significant effects on otter (if they are using the harbour area).	No effects	None required.	None.
European Protected Species: cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Population / Human Health Residential developments within 100 m of site.	Noise disturbance during site operations. Due to the nature of existing activities in the harbour, it is unlikely this will add significantly to existing levels of noise and disturbance.	Localised	Site protocols and/or good neighbour agreements would set out conditions for controlling noise and/or disturbance from construction activities and site operations.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Water & Marine Environment Coastal waters	Increased turbidity from the anchorage or storage of gravity devices directly on the	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological	Increased turbidity: as above. Temporary morphological effects.

ASSESSMENT – SCALLOWAY				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
classification	seabed. Introduction of devices into the waterbody.		effects.	
Climatic Factors Site is within the Indicative 200 year Flood Zone.	Potential for Blackness Quay to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with site operations.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Site activities on land will not affect wave patterns and coastal processes. Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.	No significant adverse effect	None required	None
Cultural Heritage Scheduled Monuments, Listed Buildings and historic features in harbour environs and nearby residential area including Scalloway castle and the Olav Slipway	As no new infrastructure is required, effects on the site or setting of the lighthouses are not anticipated.	No effect.	None	None
Wreck sites	Storage of devices could	Permanent loss of wreck	Avoid storage on these	Assuming mitigation is

ASSESSMENT – SCALLOWAY				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
	affect wreck sites through destruction of features.	features	areas.	implemented, the risk of significant adverse effects should be reduced.
Landscape/Seascape Harbour lies approximately 0.5 km from east boundary of the Shetland SW Mainland NSA local residents	Storage of devices which are on or break the water surface may have adverse local landscape and visual effects. However, it is unlikely that storage would affect the special qualities of the National Scenic Area, given its distance from the harbour.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	At the local level, it may be desirable to locate devices in East Voe of Scalloway away from overall views of Scalloway.	Assuming mitigation is implemented, the potential for significant adverse effects should be reduced.
Material Assets Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Harbour access	Possible effects on navigational safety, e.g. vessels servicing aquaculture sites. Devices could block access to the harbour/ferry terminal and displace harbour users (e.g. require ferries to be re-routed).	Collisions could result in injury/death of human beings, oil spills etc. Inefficient operation of ferry terminal and/or ferries. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – SCALLOWAY				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
		community effects; potential intensification of fishing elsewhere		
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
OTHER DEVELOPMENTS Ferry services and other marine users (e.g. fishing and recreational vessels) operate from Scalloway Harbour.				
Cumulative Effects	Possible cumulative effects with existing vessel traffic and anchorages in and around Scalloway identified. Assuming mitigation is implemented, the risk of significant adverse cumulative effects should be reduced.			

Implications for development:
The following requires further examination at the project level:

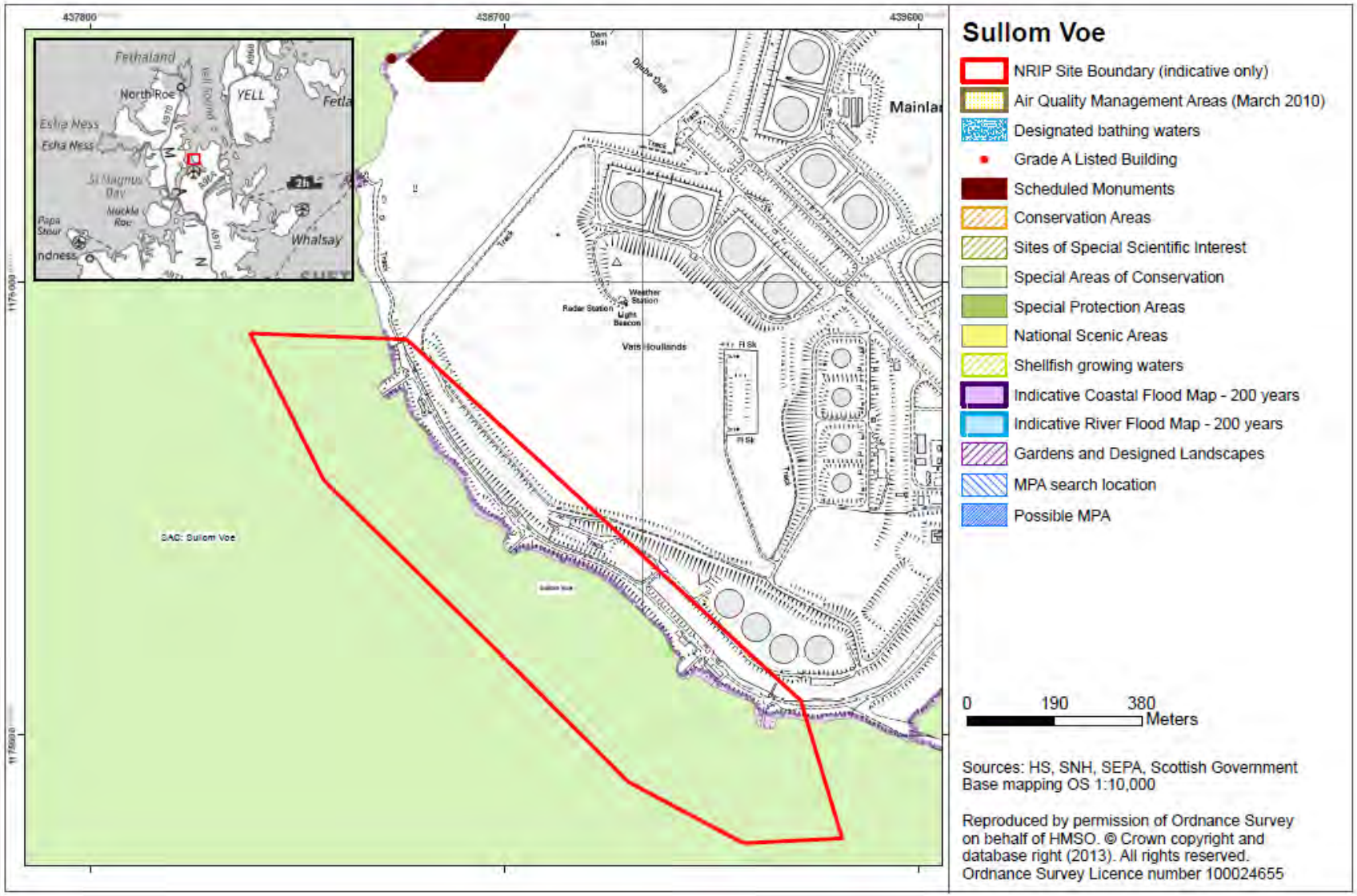
- need to alleviate flood risk through project planning and design.
- risk of disturbance to seal haul out locations and corkscrew seal injuries
- planning and design to avoid and/or reduce landscape/visual effects and effects on historic environment, including wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

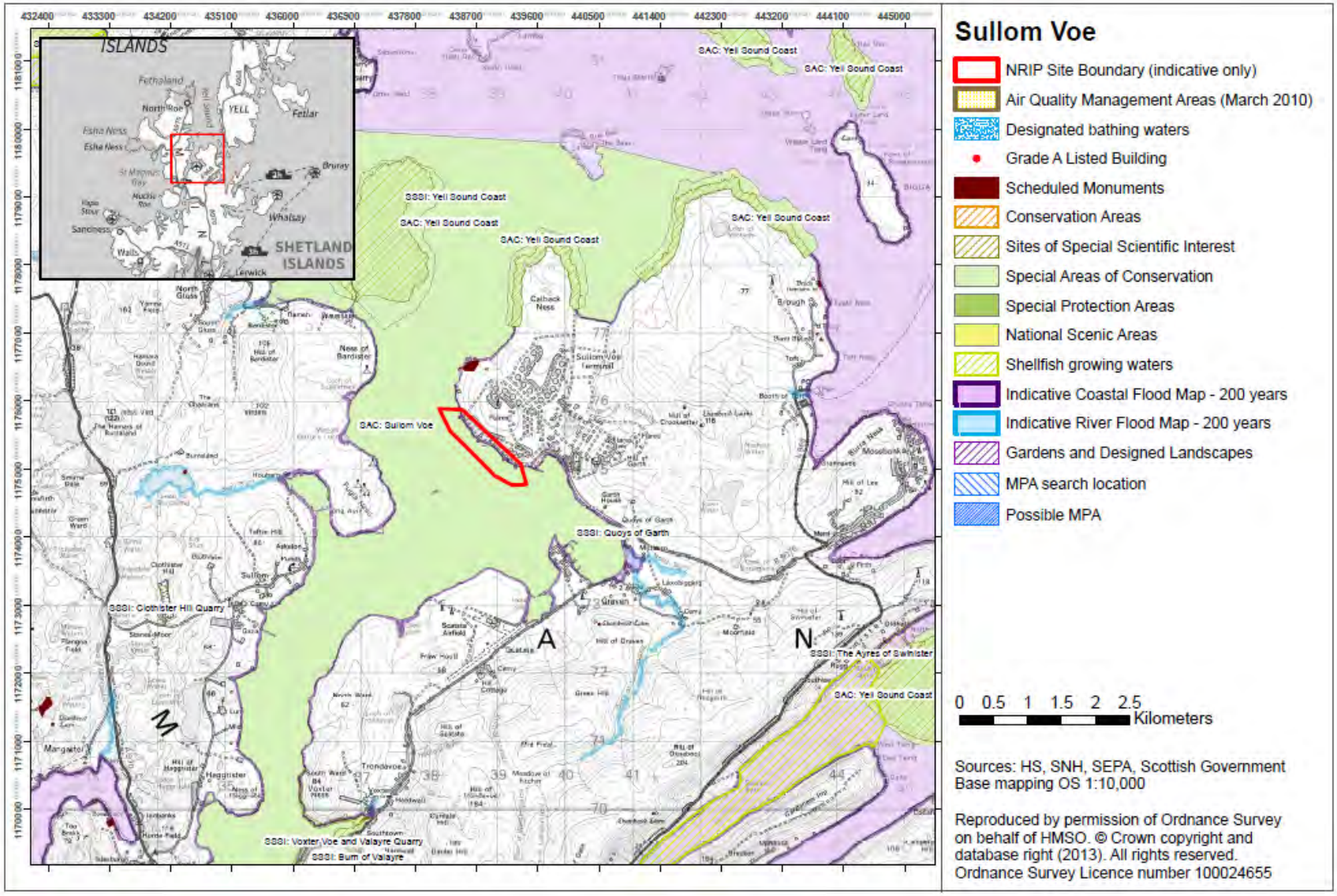
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will not be required at the project level, as there are no Natura interests in the vicinity of this harbour that are likely to be affected.

Site Map: Sullom Voe



Wider Map: Sullom Voe



Assessment Table: Sullom Voe

SITE USE – Assembly/Construction and Installation; Operations and Maintenance

POTENTIAL DEVELOPMENT

Assembly/Construction & Installation

- Within the existing port, new buildings are likely to be required. (Few existing buildings appear available to re-use.) No further infrastructure upgrade required.
- Wet storage of devices may be employed at this location.

Operations & Maintenance

- Within the existing port, new buildings are likely to be required. (Few existing buildings appear available to re-use.) No further infrastructure upgrade required.
- Wet storage of devices may be employed at this location.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – SULLOM VOE

Biodiversity, flora and fauna –

Sullom Voe SAC – Reefs, lagoons, shallow inlets and bays (located within the site boundary).

Yell Sound Coast SAC and SSSI – Otter and harbour seal (approximately 2.5 km north-west and 2 km north-east of the site).

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for harbour seals within Sullom Voe (Ungam) and a number of sites within Yell Sound to the north-east (e.g. Lamba, Little Roe, Tinga Skerry, Sligga Skerry)[30] reflecting the designation of the Yell Sound Coast SAC. Indications are that the Shetland waters are well used by both harbour and grey seals[31].

European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast (see above).

Population and Human Health – Pier is isolated, located adjacent to the Sullom Voe Oil Terminal with closest residential dwelling over 2.5 km from the site.

[30] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[31] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]

ENVIRONMENTAL BASELINE – SULLOM VOE

Water and marine environment – Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – The site is located within **Sullom Voe SAC** designated for inshore sublittoral rock (reefs), inshore sublittoral sediment (lagoons) and littoral sediment (shallow inlets and bays). **Clothister Hill Quarry SSSI –** Mineralogy interests (approximately 4.5 km south-west of pier).

Much of the coastline within the northern portion of Sullom Voe has been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including Garth's Voe to the east of the pier. Coastal erosion has been identified this coastline, and sections of coastal accretion have also been identified in this area.

Cultural heritage – Scheduled Monument The Kames (SM10756) located approximately 500 m north of site. Recorded sites such as Calback coast Battery Pier (Canmore ID 278207) and Sullom Voe Terminal (Canmore ID 191195) are located within 500 m of the site to the north and east, and many recorded coastal sites are located around Sullom Voe to the west and south of the site.
Several wreck sites including vessels and aircrafts are located within Sullom Voe to the south-west of the site.

Landscape / Seascape – No national designation.

Material Assets – The site area and piers are currently used by the Sullom Voe Oil Terminal. Local fishing and recreational sailing interests use inshore waters and harbour facilities around the Shetland Isles.

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to O&M activities, which could result in noise and disturbance to local residents. However, given existing levels of boat movements and proximity to the Sullom Voe Oil Terminal, this effect is unlikely to be significant.
Air – There is likely to be increased boat traffic due to O&M activities, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.
Landscape / Seascape – Storage of devices which are on or break the water surface may have adverse local landscape and visual effects. However it is unlikely that such operations would create significant effects, given the distance to residential receptors.

ASSESSMENT – SULLOM VOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Otter - Yell Sound Coast SAC and elsewhere (European Protected Species)	Potential disturbance (noise and human presence) from site operations. Due to the nature of existing activities in the harbour, it is unlikely that proposed activities will add significantly to existing levels of noise and disturbance. No significant effect on otter (if they are using the harbour).	No effects.	None required.	None.
Reefs, lagoons, shallow inlets and bays – Sullom Voe SAC.	Risk of loss of and/or damage to sensitive benthic habitats from anchoring or storage of gravity devices directly on the seabed.	Effects may be temporary or longer term, depending on the ability of the habitat to recover from disturbance. Recovery will also be dependent on the number of devices, the methods of anchoring and the location and duration of storage.	Where vulnerable benthic habitats have been identified, the storage of devices should be avoided.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Seals – including Yell Sound Coast SAC.	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: cetaceans (for otters see above)	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided

ASSESSMENT – SULLOM VOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
		overall population numbers/viability		
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site within designation on SEPA Indicative Flood Map 200 years.	Potential for the Sullom Voe piers to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with site operations.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Lagoons, shallow inlets and bays – Sullom Voe SAC. Wave patterns and coastal processes.	Potential damage to geological features from wet storage of devices. (Devices have the potential to result in some changes to wave energy dissipation and coastal processes.)	Effects of this will range from temporary to permanent depending on storage location/duration and frequency.	Locate devices away from this SAC and areas vulnerable to coastal erosion/accretion. Alternatively, implement sediment and erosion controls during wet storage operations.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Mineralogy interests, structural and metamorphic geology – Clothister Hill Quarry SSSI Voxter Voe and Valayre Quarry SSSI.	Given the distance from the site, environmental effects are considered unlikely.	None	None required	None

ASSESSMENT – SULLOM VOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Cultural Heritage Scheduled Monuments and Historic features in at the site and in its environs including Calback Coast Battery Pier and Sullom Voe Terminal.	As no new infrastructure is required, effects on the site or setting of these features are not anticipated.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Material Assets Harbour access	Possible effects on navigational safety, e.g. vessels accessing the oil terminal. Devices could block access to the pier/terminal and displace harbour users (e.g. delay or require other vessels to be re-routed).	Collisions could result in injury/death of human beings, oil spills etc. Inefficient operation the terminal and potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – SULLOM VOE				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
OTHER DEVELOPMENTS Sullom Voe is frequented and used by a range of marine users, most notably vessels associated with the oil terminal.				
Cumulative Effects	Possible cumulative effects with existing vessel traffic and anchorages in and around the Oil Terminal identified. Assuming mitigation is implemented, the risk of significant adverse cumulative effects should be reduced.			

Implications for development:

The following requires further examination at the project level:

- effects on otters and benthic habitats from site operations and wet storage of devices.
- risk of disturbance to seal haul out locations and corkscrew seal injuries.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce effects on cultural heritage features, including wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, Royal Yachting Association Scotland and other vessel operators as required.

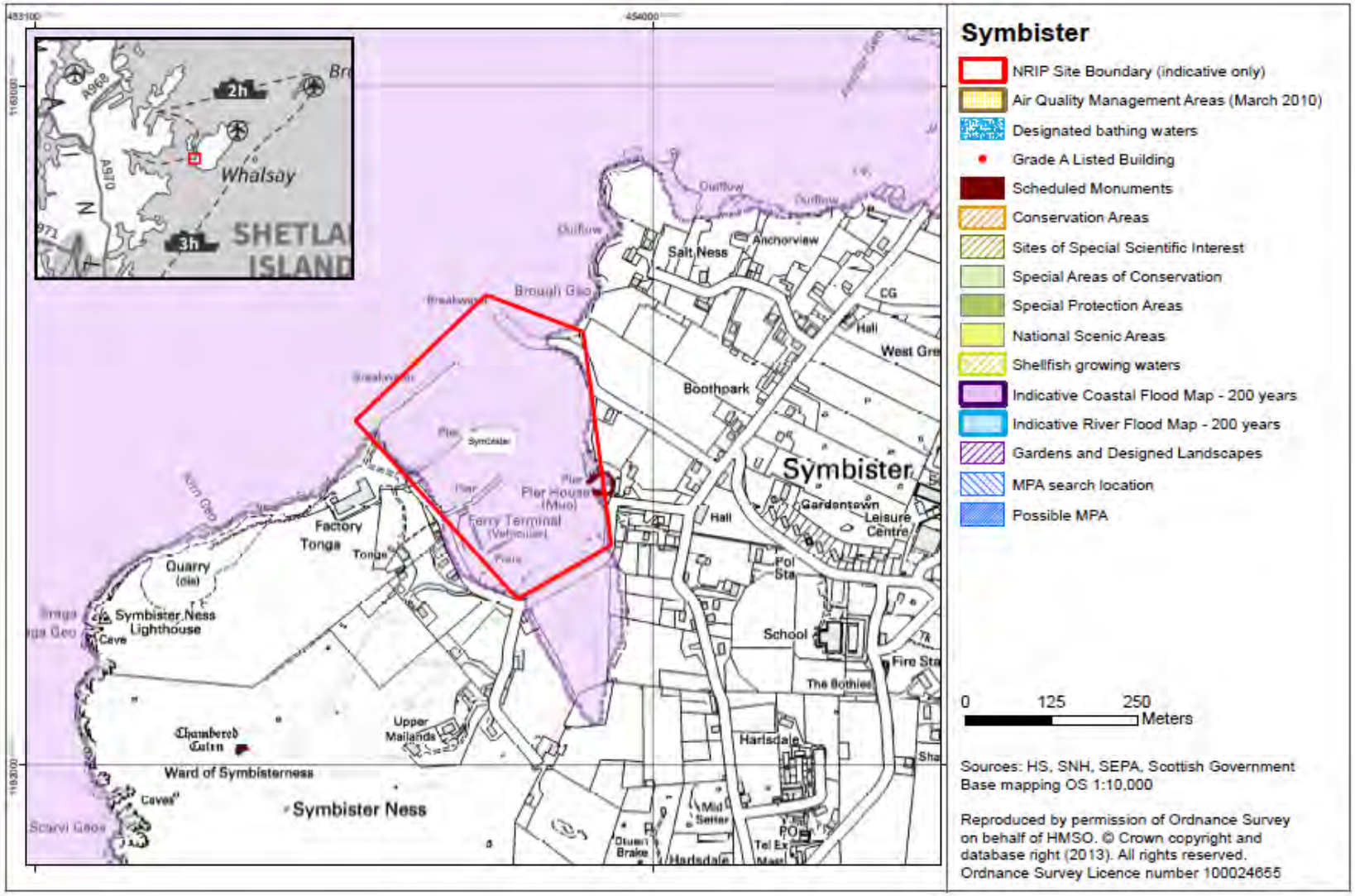
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

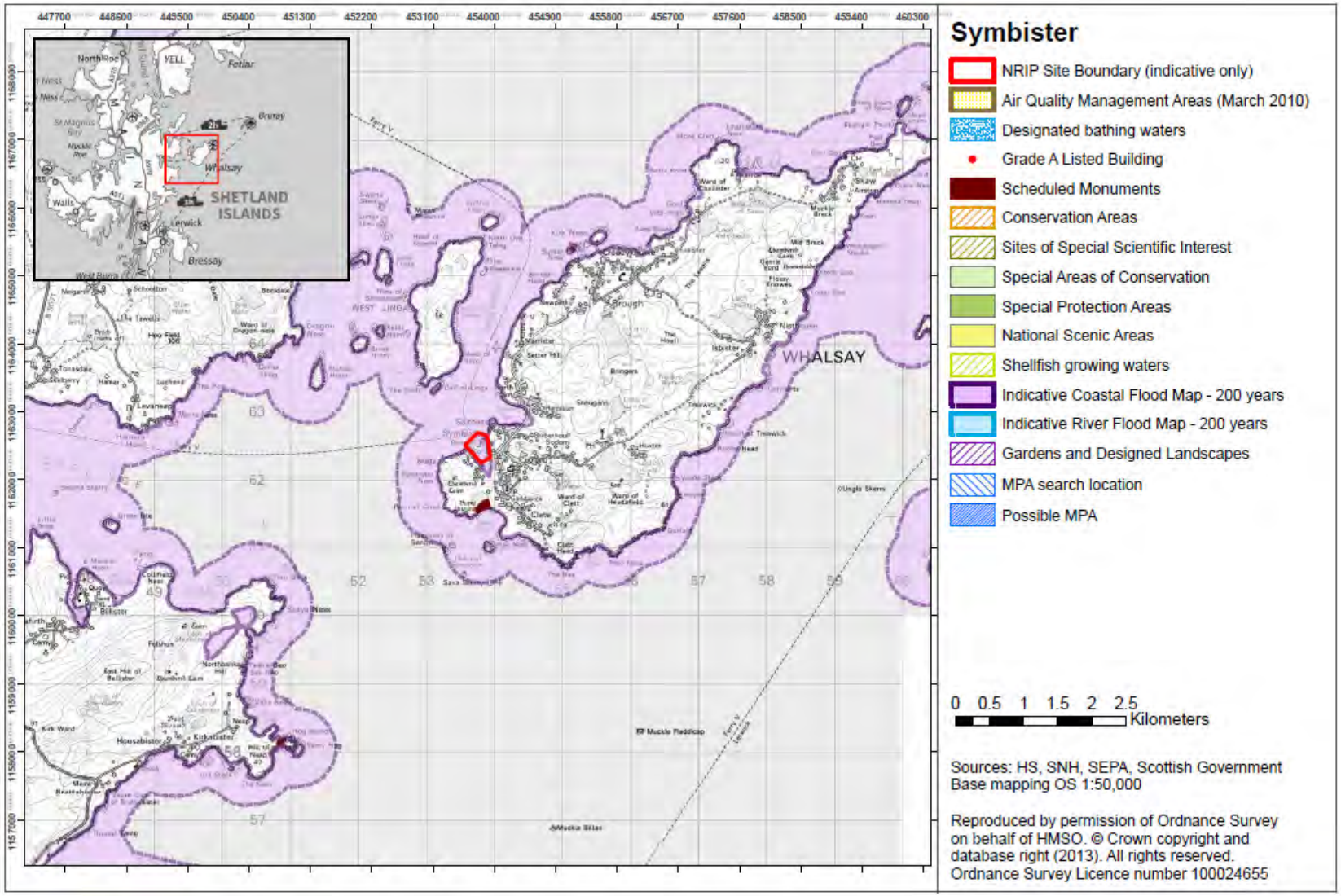
- disturbance of otters and seals from site operations.
- disturbance of benthic habitats within Sullom Voe from wet storage of devices.

Early discussions should be held with SNH.

Site Map: Symbister



Wider Map: Symbister



Assessment Table: Symbister

SITE USE – Refuge/wet storage/unplanned maintenance
POTENTIAL DEVELOPMENT **Refuge/Wet Storage/Unplanned Maintenance** For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required. There are three scenarios for wet storage: (a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered. (b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch. (c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress. See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – SYMBISTER
Biodiversity, flora and fauna – No designated sites near the potential development site. Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for harbour seals at Hunder Holm in Lunning Sound and Rumble to the east of Whalsay to the west and east respectively. The nearest potential designated haul-out site for grey seals is located at the Guens near Out Skerries to the north-east[32]. Indications are that the Shetland waters are well used by both harbour and grey seals[33]. European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast. Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[34].

[32] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[33] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[34] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)

ENVIRONMENTAL BASELINE – SYMBISTER

Population and Human Health – Residential areas throughout the bay and in close proximity to harbour are likely to have views of stored devices.

Water and marine environment – Coastal waters classification (2011): Good. There are active seawater finfish and shellfish sites located in the area, the nearest being North Voe finfish farm less than 1 km north of the harbour.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI.
Sections of the eastern Whalsay coastline have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including Symbister, Sand Wick (approximately 1 km south of the pier), North Voe (approximately 600 m north east of the pier) and near Creadyknowe (approximately 3.5 km north east of the pier). Coastal erosion has been identified at Symbister.

Cultural Heritage – Historic environment features include Whalsay Symbister Pier (Canmore ID 181882) within the site, several wrecks within Symbister Bay and several listed buildings and the Old Harbour and Pier House Scheduled Monument (ID 2983) located in Symbister close to the existing Ferry terminal.

Landscape / Seascape – Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[35]. Although not specifically a landscape designation, it recognises the significant role that the geology of the islands plays in the landscape experience, which is often evident at the coast.

Material Assets –Finfish interests are located in the area, the nearest just north of the harbour (North Voe)[36]. Local fishing and recreational sailing interests use local harbour facilities, and ferry services between Whalsay and the Shetland mainland operate from Symbister Harbour[37].

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.
Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

[35] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]
[36] Marine Scotland (2013) National Marine Plan Interactive.
[37] The Scottish Government (2011) Scotland's Marine Atlas: Information for the National Marine Plan, pg. 153, 173.

ASSESSMENT – SYMBISTER				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Waterbirds – Areas of Search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
European Protected Species: cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.

ASSESSMENT – SYMBISTER				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Climatic Factors Site within designation on SEPA Indicative Flood Map 200 years	Potential for Symbister Harbour and surrounds to be at risk of flooding from the sea	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage operations.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes.	No significant adverse effect	None required	None
Landscape/Seascape Local residents	Residents in Symbister are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of Symbister Bay and North Voe.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.
Cultural Heritage Listed Buildings	As no new infrastructure is required, effects on the site or setting of these features are not anticipated.	No effect	None required	None
Scheduled Monuments	As no new infrastructure is required, and given the distance between the harbour and these features, no effects are anticipated.	None	None required	None

ASSESSMENT – SYMBISTER				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Material Assets	Possible effects on navigational safety, e.g. aquaculture sites, ferries. Devices could block access to the pier/terminal and displace harbour users (e.g. delay or require other vessels to be re-routed).	Collisions could result in injury/death of human beings, oil spills etc. Inefficient operation of ferry terminal and/or ferries. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Harbour access				
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – SYMBISTER				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on geodiversity or landscape features.	No significant adverse effect	None required	None
OTHER DEVELOPMENTS Ferry services and other marine users (e.g. fishing, recreation and aquaculture vessels) likely utilise Symbister Harbour facilities.				
Cumulative Effects	Possible cumulative effects with existing vessel traffic and anchorages in and around Symbister Harbour identified. Assuming mitigation is implemented, the risk of significant adverse cumulative effects should be reduced.			

Implications for development:
The following requires further examination at the project level:

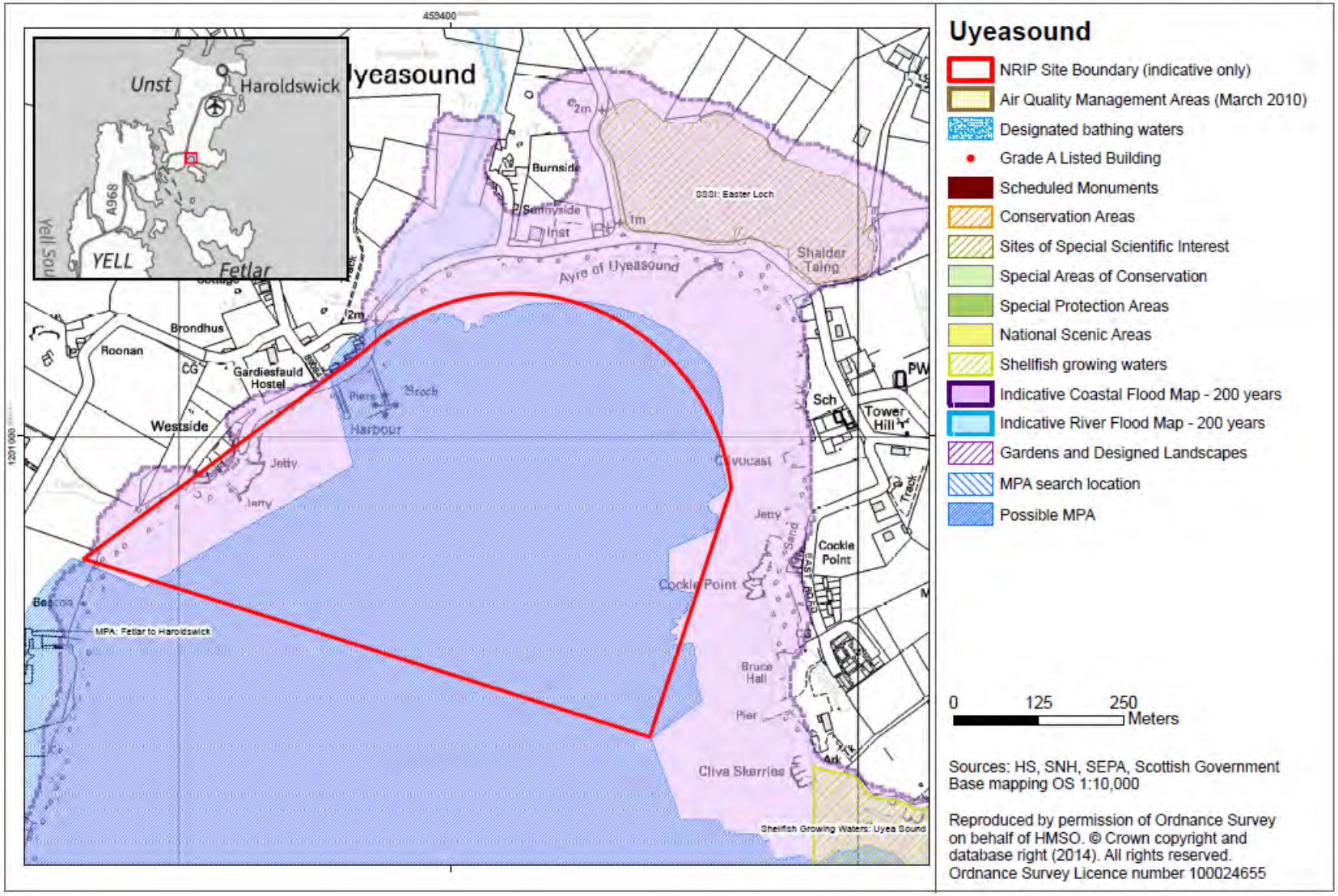
- risk of disturbance to seal haul out locations and corkscrew seal injuries.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce landscape/visual effects and effects on historic environment, including wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

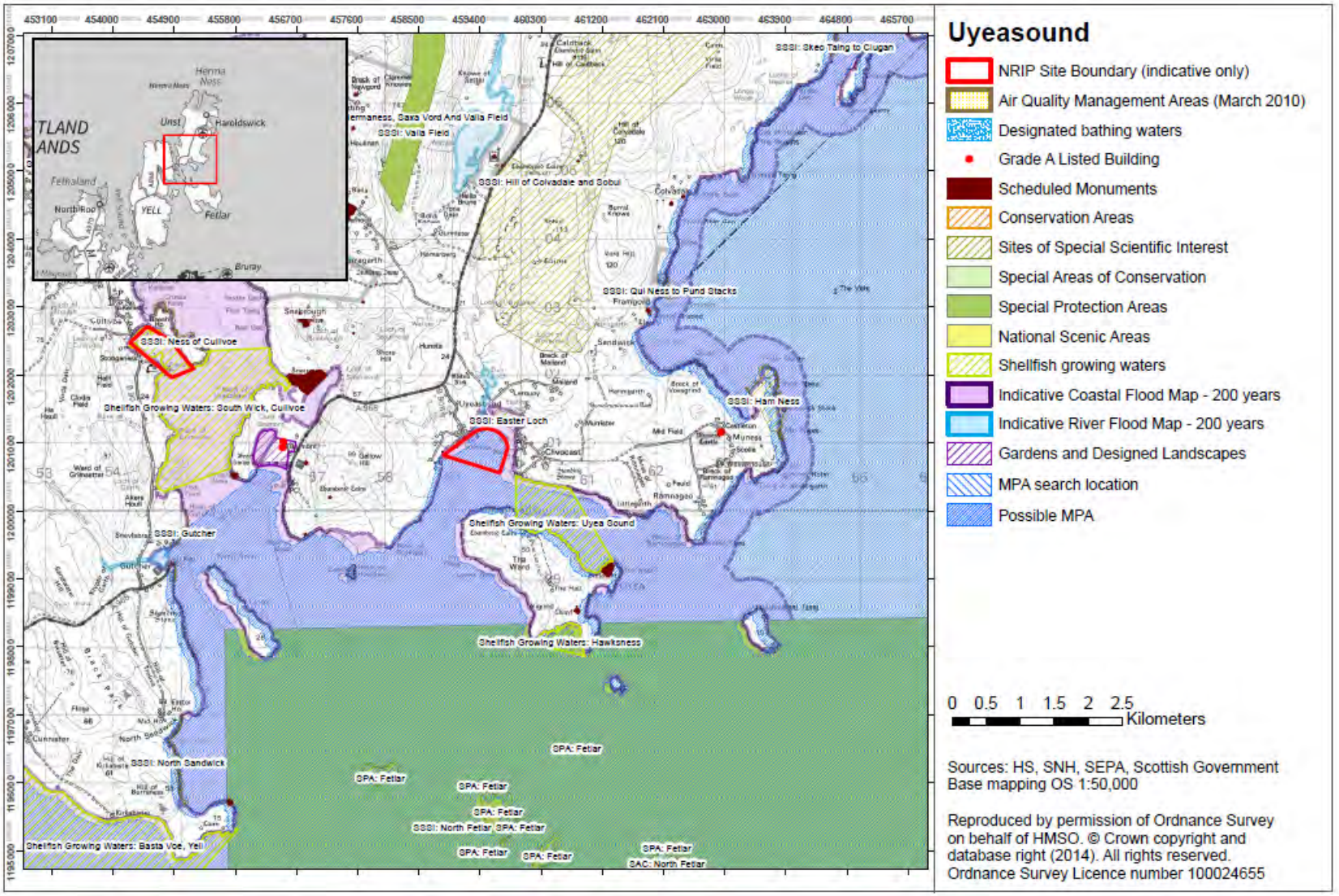
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will not be required at the project level, as there are no Natura interests in the vicinity of this harbour that are likely to be affected.

Site Map: Uyeasound



Wider Map: Uyeasound



Assessment Table: Uyeasound

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – UYEASOUND

Biodiversity, flora and fauna –

Fetlar SPA - Aggregations of breeding birds – breeding seabird assemblage, Arctic skua, Arctic tern, dunlin, fulmar, Great skua, red-necked phalarope, whimbrel (approximately 2.5 km south of the site).

Hermaness, Saxa Vord and Valla Field SPA – breeding Red-throated Diver, Northern Gannet, Great Skua, Atlantic Puffin. During the breeding season, the area regularly supports 157,500 individual seabirds including: Common Guillemot, Black-legged Kittiwake, European Shag and Northern Fulmar. The boundary of the SPA (approximately 4 km north of Uyeasound) is coincident with that of the Hermaness SSSI, Saxa Vord SSSI, and Valla Field SSSI. The seaward extension extends approximately 2 km into the marine environment to include the seabed, water column and surface (approximately 8 km north of the site).

North Fetlar SAC –Dwarf shrub heath (Upland) - dry heaths; Fen, marsh and swamp (Upland) - alkaline fens (approximately 2.5 km south of the site).

Easter Loch SSSI - Aggregations of non-breeding birds – Whooper swan (non-breeding) (approximately 1 km east of jetty).

Hill of Colvadale and Sobul SSSI – Birds – aggregations of breeding birds, inland rock and vascular plants - Arctic skua, whimbrel, breeding bird assemblage, Calaminarian grassland, serpentine heath and Arctic sandwort (approximately 2 km north-east of site).

ENVIRONMENTAL BASELINE – UYEASOUND

North Fetlar SSSI – Aggregations of breeding birds - Arctic skua, Arctic tern, Great skua, Red-necked phalarope, Whimbrel, Breeding bird assemblage. Inland rock – Calaminarian grassland and serpentine heath. Marine mammals – Grey and Harbour seals (approximately 4 km south of the site).

Valla Field SSSI – Birds, aggregations of breeding birds – Great skua, Red-throated diver - and Mineralogy features (approximately 4 km north of site).

Fetlar to Haroldswick Marine Protected Area (MPA) – biodiversity protected features – Black guillemot, circalittoral sand and coarse sediment communities, horse mussel beds, kelp and seaweed communities on sublittoral sediments, maerl beds, shallow tide-swept coarse sands with burrowing bivalves (immediately south-east and overlapping the indicative site boundary). Kelp and seaweed communities are present in Uyea and Skuda Sounds; black guillemot are present near Uyeasound. There may also be records of maerl and horse mussel in Uyea and Skuda Sounds.

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being for grey seals on Fetlar and Burray to the south, and several sites for harbour seals within Yell Sound to the south-west[38]. Indications are that the Shetland waters are well used by both harbour and grey seals[39].

European Protected Species – Cetaceans are likely to be passing through the area. It is likely that otters are using the coast in this area.

Waterbirds – Several Areas of Search developed to identify possible marine SPAs are located in Shetland. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Shetland and complement the existing network of SPAs[40].

Population and human health – Residents in Uyeasound. Residents are likely to have views of Uyea Sound.

Water and marine environment – Designated Shellfish Growing waters[41] in Skuda Sound to the south-east of the harbour, between the island of Uyea and the Unst mainland. Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

[38] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[39] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]
[40] The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs (accessed 5/4/2014)
[41] Site 79 of Shellfish Water Designations 2012 – Uyea Sound

ENVIRONMENTAL BASELINE – UYEASOUND

Soil, Geology & Coastal Processes – **Gutcher SSSI** – structural and metamorphic geology – moine – sea cliffs and foreshore rock exposures

Ham Ness SSSI – igneous petrology – Ordovician igneous

Ness of Cullivoe SSSI - structural and metamorphic geology – moine

North Sandwick SSSI - structural and metamorphic geology – moine

Qui Ness to Pund Stacks SSSI – igneous petrology – Ordovician igneous – coastal and foreshore rock exposures

Skeo Taing to Clugan SSSI – igneous petrology – Ordovician igneous – coastal rock exposures

Fetlar to Haroldswick MPA –protected geodiversity features – Marine Geomorphology of the Scottish Shelf Seabed.

Sections of the Uyeasound and Skude Sound coastlines have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.), including the southern coastline of Unst and the northern and western coasts Uyea (approximately 1 km south of the pier). Coastal erosion has been identified along the coastline to the west of the pier and on the north west and west coast of Uyea.

Cultural Heritage – The harbour on the west side of the bay is included on the Canmore website (ID 55); the harbour dates back to the 18th and 19th centuries. The site of a possible broch (ID 45) is now partially overlain by this pier. There are two C-listed buildings (Greenwell's Booth, Ref: 17475; Pierfront buildings and shop, Ref: 45299) on the west waterfront of Uyeasound, with the B-listed Uyeasound Kirk (Ref: 45300) on the east side of the bay. Several wrecks are located in the Sound and in waters further to the south and south-east.

The existing Shetland Local Plan proposes to investigate whether the Uyeasound Waterfront could be designated as a Conservation Area (Shetland Local Plan, Unst Community Council Area Statement).

Landscape / Seascape – No national interests identified.

Material Assets - active seawater finfish (eight) and shellfish (two) sites located in the near vicinity of the site. Five finfish farms in Uyea Sound in the approach to the harbour. There are two harbours at Uyeasound, the harbour on the west side of the bay and a new (2009) pier, slipway and industrial site on the east side of the harbour to accommodate aquaculture operations (replacing an existing pier). Other marine users, for example recreational users, also utilise harbour facilities.

ENVIRONMENTAL BASELINE – UYEASOUND

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[42]. It recognises the significant role that the geology of the islands play in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:
Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.
Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT - UYEASOUND

Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Biodiversity, Flora and Fauna Birds and aggregations of breeding and non-breeding birds, black guillemot – Easter Loch & Hill of Colvadale and Sobul SSSI, Fetlar SPA, Fetlar to Haroldswick MPA, Areas of Search	Potential disturbance (vessel noise and human presence) from wet storage activities. Presence of new features likely to disturb and possibly displace birds, e.g. red-throated divers, from feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Fetlar to Haroldswick MPA – other biodiversity protected features	Risk of loss of and/or damage to sensitive benthic habitats from anchoring or storage of gravity devices directly on the seabed.	Effects may be temporary or longer term, depending on the ability of the habitat to recover from disturbance. Recovery will also be dependent on the number of	Where vulnerable benthic habitats have been identified, the storage of devices should be avoided.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.

[42] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]

ASSESSMENT - UYEASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
		devices, the methods of anchoring and storage location/ duration.		
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: Cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Water & Marine Environment Designated Shellfish Growing Waters	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed could affect shellfish growing waters.	Effects are likely to be localised and temporary.	Developers should consider whether there are anchoring methods which would not result in increased turbidity.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological	Increased turbidity: as above. Temporary morphological effects.

ASSESSMENT - UYEASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
	seabed. Introduction of devices into the waterbody.		effects.	
Climatic Factors Site is within an Indicative 200 year Flood Zone	Potential for the harbour and jetty to be at risk of flooding from the sea.	This will be a permanent issue given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage activities.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Fetlar to Haroldswick MPA – protected geodiversity features Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes or affect protected geodiversity features.	No significant adverse effect	None required	None
Cultural Heritage Listed buildings and other historic features in the environs of the site.	Storage of devices which are on or break the water surface are unlikely to affect the setting of the listed buildings or other historic features.	No effect	None required	None
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT - UYEASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Landscape / Seascape local residents	Residents in Uyeasound are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of Uyea Sound. This could affect the MPA biodiversity features and locations should be selected to avoid this.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.
Material Assets Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage sites will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT - UYEASOUND				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
OTHER DEVELOPMENT None known.				
Cumulative Effects	No cumulative effects are anticipated from wet storage at this site.			

Implications for development:

The following requires further examination at the project level:

- effects on birds using adjacent SPA/SSSI habitat, particularly red-throated diver. Early discussions should be held with SNH regarding timing, extent, location and duration of storage.
- effects on protected biodiversity features of the MPA.
- effects on otters
- risk of disturbance to seal haul out locations and corkscrew injury to seals.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce effects on wrecks. If wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

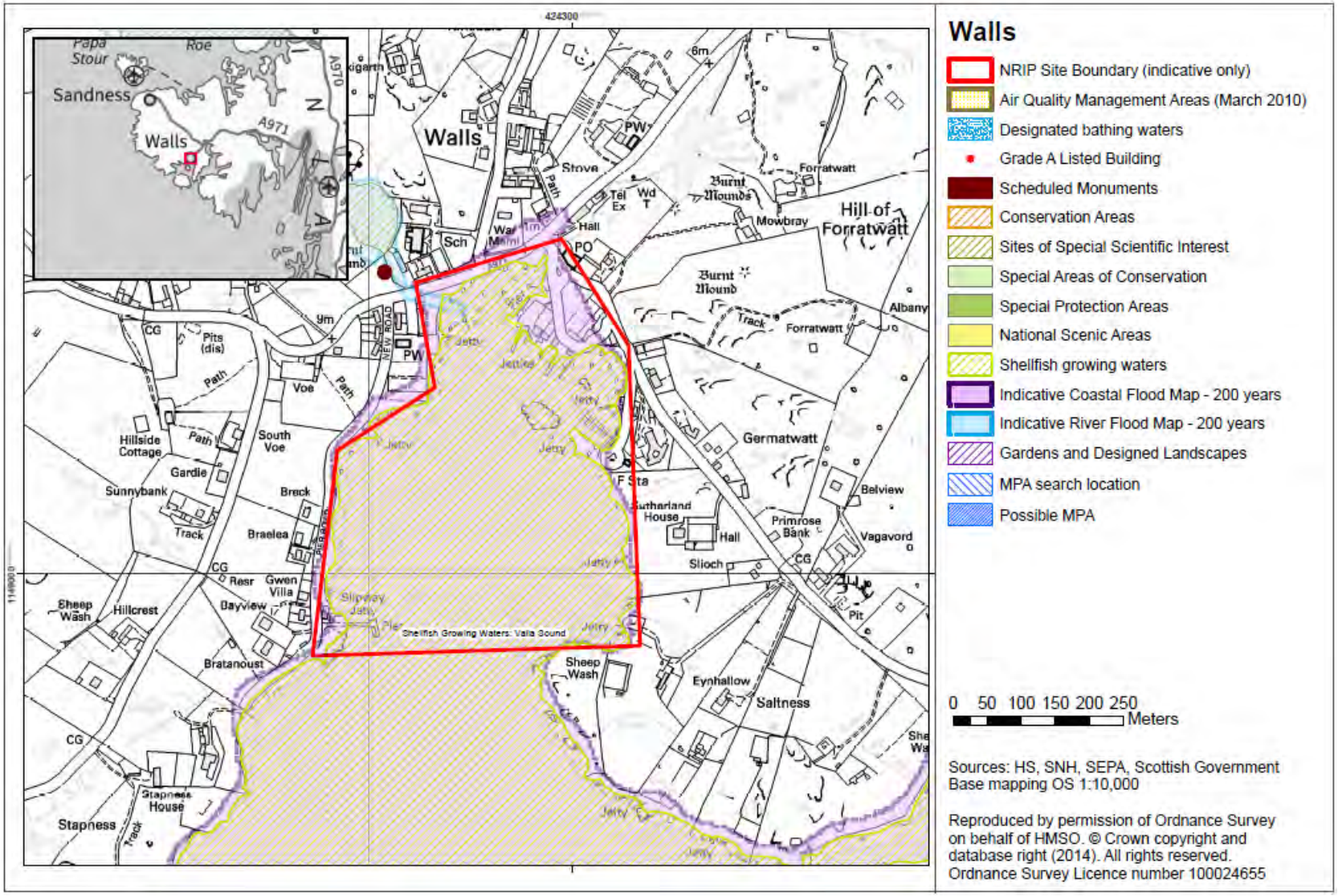
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

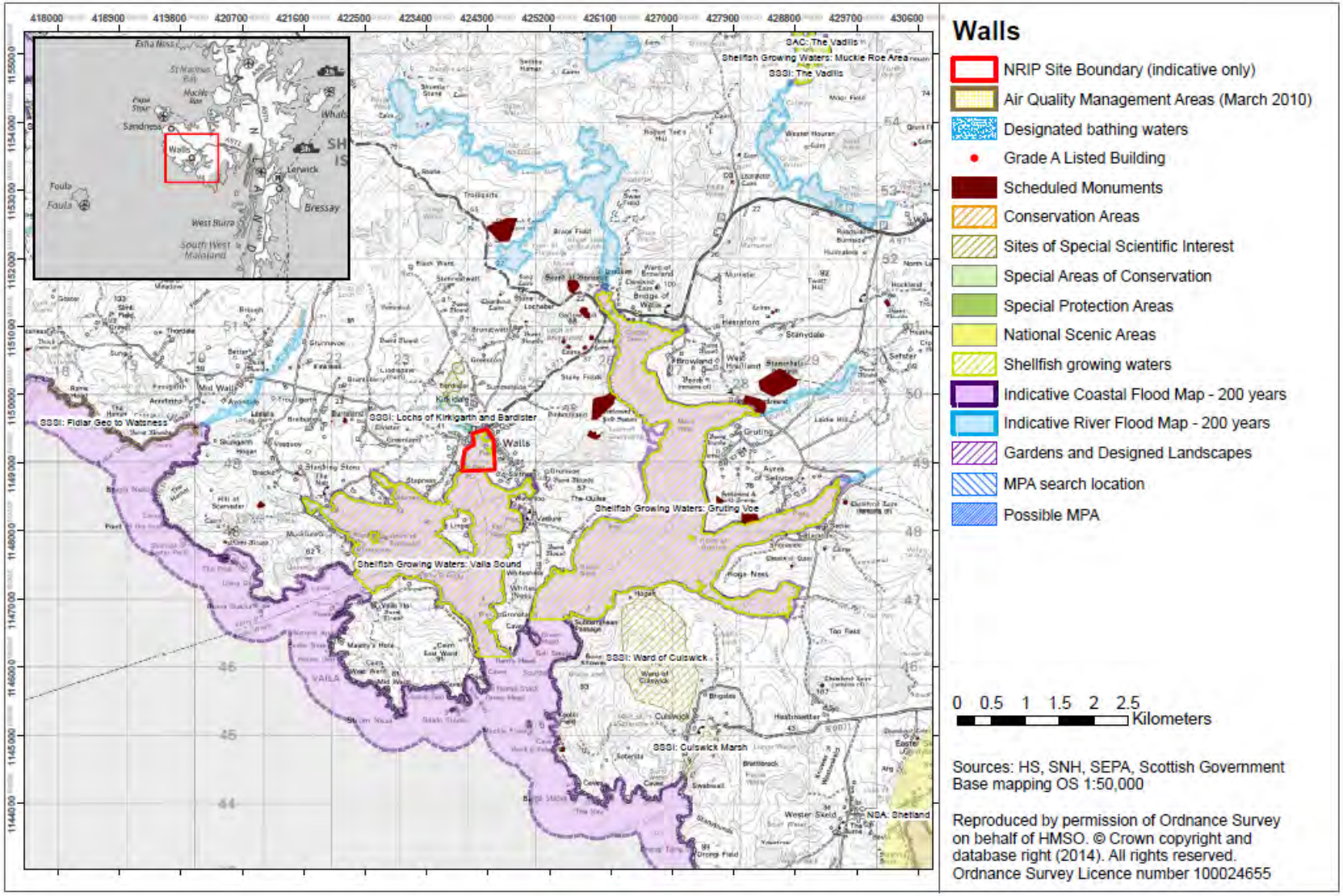
- effects on birds using adjacent SPA habitat, particularly red-throated diver.

Early discussions should be held with SNH.

Site Map: Walls



Wider Map: Walls



Assessment Table: Walls (Shetland)

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port; re-use existing buildings if possible. No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE - WALLS

Biodiversity, flora and fauna – The site is not within an area designated as an SAC or SPA. However, two SSSIs have been identified in the environs of the harbour including:

Ward of Culswick SSSI – Breeding and migratory birds – Arctic skua and whimbrel (approximately 4 km south-east of Walls).

Culswick Marsh SSSI – Valley fen (approximately 5 km south-west of Walls).

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest to the site being for harbour seals at Head West (98) within Voe of Browland to the northeast, Aa Skerry (94) and the Score Islands (80) to the south-east, and Foula (95, 142) to the west[43]. Indications are that the Shetland waters are well used by both harbour and grey seals[44].

European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast.

[43] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[44] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]

ENVIRONMENTAL BASELINE - WALLS

Population and human health – Residents in Walls have views of the coast/sea and the harbour.

Water and marine environment – The site is located within designated Shellfish Growing Waters[45]. Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI. Nearest site is **Fidlar Geo to Watsness SSSI** – Non-marine Devonian (approximately 5 km west of Walls).
Sections of Vaila Sound and nearby coastlines (i.e. Wester Sound, Lera Voe) have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.). Coastal erosion has been identified along coastlines in Vaila Sound (south west of the pier) and Gruting Voe (approximately 2 km south east of the pier).

Cultural Heritage – Three Scheduled Monuments in the vicinity of Walls, all burnt mounds: Burnt mound south of Loch Kirkigarth (5550); burnt mound (The Houb) 150 m NE of Grunnavoe (5552); burnt mound 125 m SSE of Grunivoe (13026). There are several listed buildings in the village (three B- and four C-listed). There are several wreck sites in Vaila Sound, particularly around the island of Linga.

Landscape / Seascape – The Shetland National Scenic Area is approximately 6 km to the SE of Vaila Sound. A Candidate Local Landscape Area has been identified around Vaila Sound, including part of the settlement of Walls, the island of Vaila and the headland between Lera Voe and Voe of Footabrough[46].

Material Assets – The pier is currently utilised by other marine users, including the ferry between Foula and West Burrafirth. There are five shellfish and two finfish aquaculture sites in Vaila Sound. The waters around Walls support demersal and pelagic fishing, scallop dredging and prawn (trawling) and shellfish (static gear) fishing. There is also a marina, and a second pier at the Walls Boating Club. This is the starting point for the annual Round Foula Yacht Race as well as the Walls Regatta held every year[47].

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[48]. It recognises the significant role that the geology of the islands play in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

[45] Site 80 of Shellfish Water Designations 2012 – Vaila Sound. Site 17 (Gruting Voe) is immediately to the east.
[46] Land Use Consultants (2011) Shetland Local Landscape Designation Review: Final Report, Prepared for Shetland Islands Council [online] Available at: http://www.shetland.gov.uk/planning/documents/ShetlandLLDRFinalReport.pdf [accessed 28/10/2013]
[47] http://www.shetlandmarinas.com/marinas/west-mainland/walls
[48] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]

ENVIRONMENTAL BASELINE - WALLS
Issues Scoped Out: *Population and Human Health* – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant. *Air* – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT - WALLS				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Ward of Culswick SSSI – Breeding and migratory birds.	There is likely to be increased boat traffic due to the movement of devices, which could result in increased noise. However, given existing levels of boat movements, this additional noise is unlikely to result in significant adverse effects, e.g. disturbance, to birds.	No effects	None required	None
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: Otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.

ASSESSMENT - WALLS				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
European Protected Species: cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Water & Marine Environment Shellfish growing waters (Vaila Sound)	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed could affect shellfish growing waters.	Effects are likely to be localised and temporary.	Developers should consider whether there are anchoring methods which would not result in increased turbidity.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site is within an Indicative 200 year Flood Zone	Potential for the jetties, pier and surrounding coastline to be at risk of flooding from the sea.	This will be a permanent issue given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage operations.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of	No significant adverse effect	None required	None

ASSESSMENT - WALLS				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
	coastal processes.			
Cultural Heritage Scheduled monuments / listed buildings in Walls and the site environs	Storage of devices which are on or break the water surface is unlikely to affect the setting of scheduled monuments or listed buildings.	No effects	None required	None
Wreck sites	It is unlikely that devices would be stored on existing wreck sites, given their location. However, should this occur, device storage could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape / Seascape Site is within a candidate local Landscape Designation and some 6 km from an NSA local residents	Storage of devices which are on or break the water surface may have adverse local landscape and visual effects. It is unlikely that storage would affect the special qualities of the National Scenic Area, given its distance from the harbour.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	At the local level, it may be desirable to locate devices in a sheltered bay away from overall views from Walls.	Assuming mitigation is implemented, the potential for significant adverse effects at the local level should be reduced.
Material Assets Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels in Vaila Sound. Devices could block access to the harbour/ferry terminal and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority,	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT - WALLS				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
			aquaculture operators and other vessel operators to agree storage areas and navigable channels.	
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational vessels by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Shellfish and finfish interests	Possible damage to existing aquaculture infrastructure, e.g. in the event of devices breaking loose.	Permanent loss of equipment/facilities	Storage sites will need to be located away from aquaculture sites. Liaison with The Crown Estate and aquaculture operators to agree a suitable distance.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
OTHER DEVELOPMENT None known				

ASSESSMENT - WALLS				
Environmental Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Cumulative Effects	No cumulative effects are anticipated from wet storage at this site.			

Implications for development:

The following requires further examination at the project level:

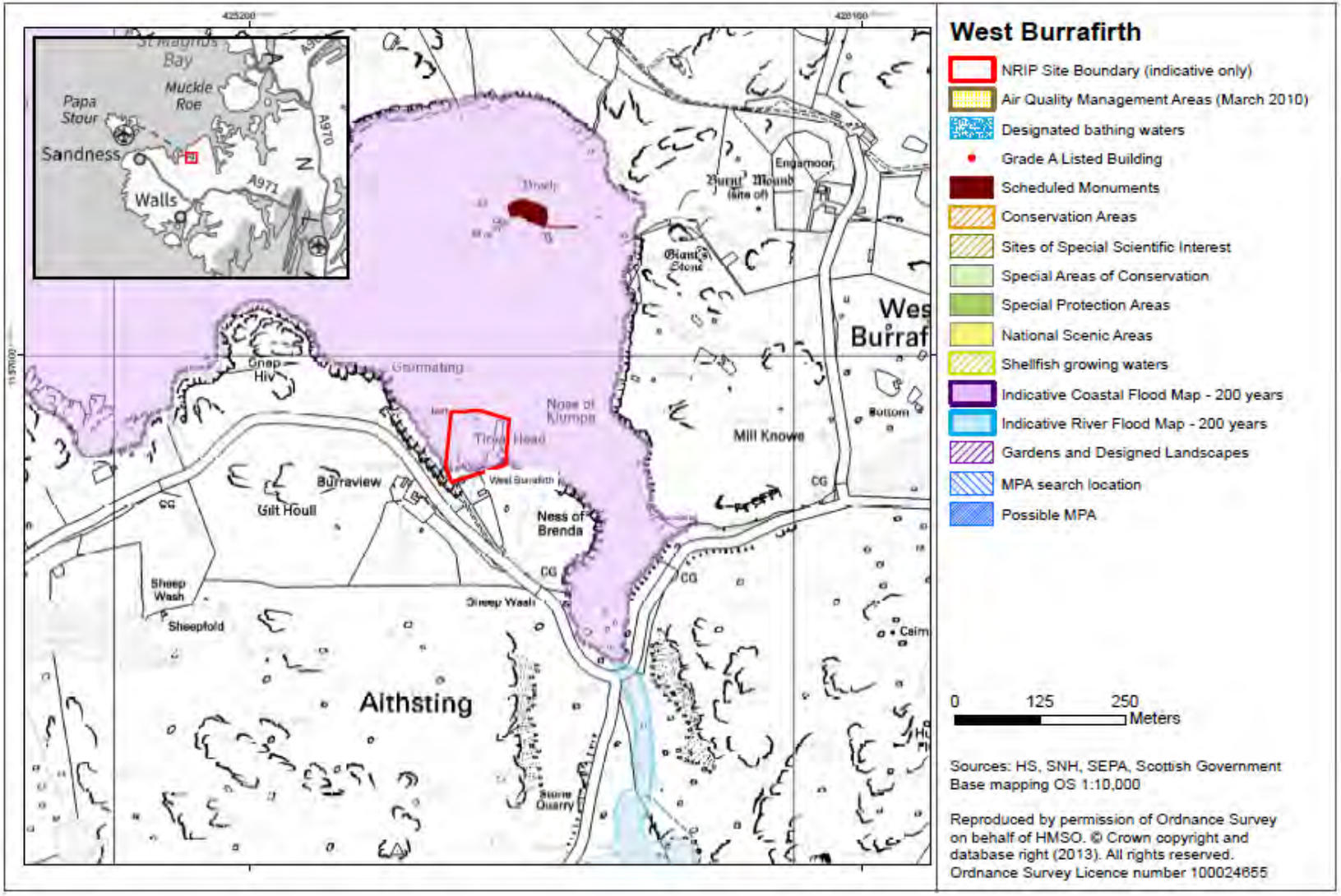
- disturbance to seal haul out locations and corkscrew seal injuries.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce effects on wrecks. If wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, The Crown Estate, aquaculture operators, Royal Yachting Association Scotland and other vessel operators as required.

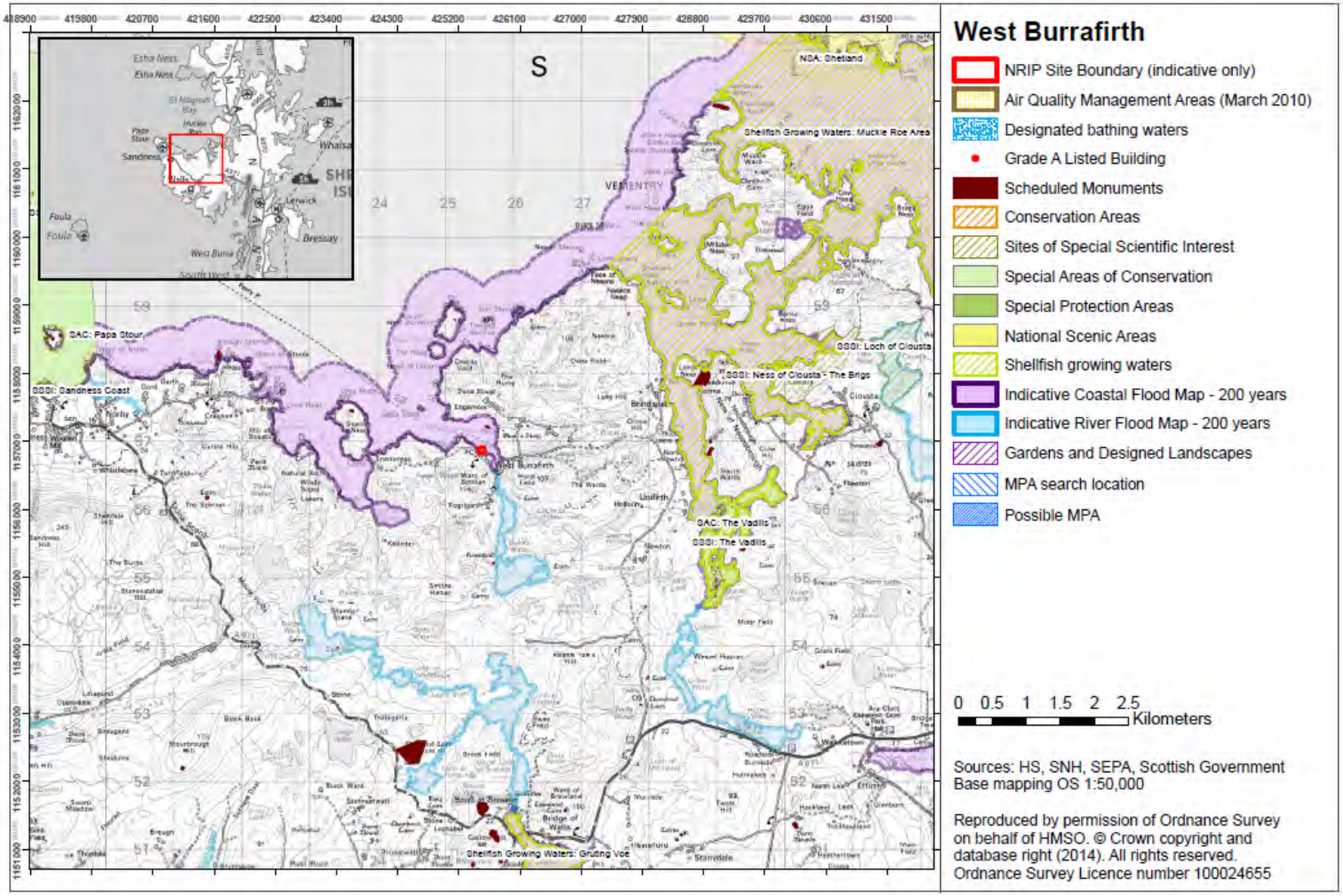
Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will not be required at the project level, as there are no Natura interests in the vicinity of this harbour that are likely to be affected.

Site Map: West Burrafirth



Wider Map: West Burrafirth



Assessment Table: West Burrafirth

SITE USE – Refuge/wet storage/unplanned maintenance

POTENTIAL DEVELOPMENT

Refuge/Wet Storage/Unplanned Maintenance
For unplanned maintenance, it may be necessary to provide a portacabin (or similar) within the existing port. (Few existing buildings appear available to re-use.) No further infrastructure upgrade required.

There are three scenarios for wet storage:
(a) Company that manufactures the devices cannot store them as it needs the laydown space so the developer needs to move the devices to a wet storage site which is both close to the lease site and sheltered.
(b) The developer wants to store the devices close to the lease site until the installation vessel they wish to use is available, which means they store them in the loch.
(c) Refuge site needed when devices are being towed to the installation site and need to take shelter during bad weather (for a day or two) before resuming progress.

See Section 3 of the Environmental Report for assumptions about wet storage.

ENVIRONMENTAL BASELINE – WEST BURRAFIRTH

Biodiversity, Flora and Fauna – The site is not within an area designated as an SAC or SPA. The nearest Natura sites comprise:

The Vadills SAC – Inshore sublittoral sediment (Marine) (approximately 4 km south-east of the harbour). The SAC is underlain by a SSSI designated for egg wrack, tidal rapids and saline lagoon.

Papa Stour SAC – reefs (inshore sublittoral rock - marine) and submerged or partially submerged sea caves (littoral rock - marine) (approximately 5.5 km west of the harbour):

- Reefs are habitat complexes which comprise an interdependent mosaic of subtidal (and intertidal) habitats. Papa Stour is an example of very exposed reefs on hard rocks. The underwater terrain supports a diverse range of plant and animal communities, including extensive kelp forests; communities on circalittoral rock (soft coral, featherstar, encrusting coralline algae and serpulid worm); wave-exposed gullies (jewel anemone, ascidians and bryozoans); and strong tidal streams (hydroid, brittlestar).
- The sea caves support rich communities that illustrate the effects of surge, scour and changes in light conditions, including northern anemone and a rare, surge-tolerant alga.

Papa Stour SPA – Aggregations of breeding birds including Arctic tern and Ringed plover (approximately 7 km west of the harbour). The SPA is underlain by a SSSI also designated for aggregations of breeding birds, including Ringed plover, Arctic skua, and Arctic tern. It is also designated for rocky shore and maritime cliff habitat.

ENVIRONMENTAL BASELINE – WEST BURRAFIRTH

Loch of Clousta SSSI - upland habitats; in particular, Tall Herb Ledge features on the islands in the loch. This SSSI is approximately 4 km east of the harbour.

Sandness Coast SSSI – littoral rock (marine) – rocky shore supporting 23 different intertidal biotopes (approximately 6 km west of the harbour)

Seals – Potential designated haul-out sites for both harbour and grey seals around Shetland, the nearest being Tainga Skerries (87) in St Magnus Bay for harbour seals approximately 2 km north-east of the site and Swarta Skerry (99) on Papa Stour, to the west of West Burrafirth[49]. Indications are that the Shetland waters are well used by both harbour and grey seals[50].

European Protected Species – Cetaceans are likely to be passing through the area. Otters may be found using this area of coast.

Population / Human Health – Isolated residents likely to have views of coast/sea.

Water & Marine Environment – Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Site is not within an area designated as a geological SSSI. Nearest geological SSSI is **Ness of Clousta – The Brigs**, designated for igneous petrology, and old red sandstone igneous features (approximately 3 km east of the harbour). **Papa Stour SSSI** includes geomorphology and palaeontology features.
Sections of coastline in proximity to West Burrafirth have been identified as having the potential for erosion or accretion (e.g. beaches, soft cliffs, etc.) including Papa Stour and the Sound of Papa (approximately 8 km north west of the pier), Voe of Snarraness (approximately 2 km west of the pier) and West Burrafirth itself. Coastal erosion has been identified within West Burrafirth, in the Sound of Papa and in numerous Sounds and Voes to the east of the pier (approximately 4 km east of the pier).

Cultural Heritage – No historic environment features at the harbour itself. One Scheduled Monument (No 2090), approximately 300 m north of the harbour, which comprises a broch and the remains of a causeway that connect it with the shore at West Burra Firth. There is also a wreck of a 19th century schooner (Dolores Canmore ID 239999) approximately 350 m north-west of the harbour.

[49] The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.
[50] SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: http://www.scotland.gov.uk/Resource/0043/00437053.pdf [accessed 5/12/2013]

ENVIRONMENTAL BASELINE – WEST BURRAFIRTH

Landscape / Seascape – A component of the Shetland NSA is located approximately 8 km to the north-west of the harbour. A Candidate Local Landscape Area has also been identified, extending east from the Hill of Bousta to Vementry, including West Burra Firth.

Material Assets –No aquaculture sites are located within West Burra Firth; a finfish farm is located in the Voe of Snarraness (approximately 2 km west of the harbour). The pier is currently utilised by other marine users (e.g. fisheries, recreational users, etc.) including the ferry between Papa Stour and West Burrafirth. The waters around West Burrafirth support demersal and pelagic fishing, scallop dredging and prawn (trawling) and shellfish (static gear) fishing. An RYA recreational cruising route runs roughly parallel to the coast.

Geopark Shetland became a member of the European and UNESCO Global Geoparks Network in 2009[51]. It recognises the significant role that the geology of the islands play in the landscape experience, which is often evident at the coast. (A Geopark is a territory which has outstanding geological heritage, and uses that heritage to provide sustainable economic benefits to the area. The European Geoparks Network was established in 2000 to protect geodiversity, promote an understanding of geological heritage and support sustainable development through geological tourism and education.)

Issues Scoped Out:

Population and Human Health – There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of boat movements, this effect is unlikely to be significant.

Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

Material Assets – Finfish farm in Voe of Snarraness will not be affected by wet storage of devices – this part of the Voe of Snarraness is separated from West Burra Firth by a land peninsula.

[51] Shetland Amenity Trust (2013) Geopark Scotland [online] Available at http://www.shetlandamenity.org/about-geopark-shetland [Accessed 25/10/13]

ASSESSMENT – WEST BURRAFIRTH				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Biodiversity, Flora and Fauna Breeding birds	There is suitable feeding habitat closer to the SPA, but birds may feed in and around West Burrafirth and could therefore be disturbed and/or displaced by new devices in the water, should wet storage be employed. As this is a working harbour, effects from additional human presence/ activity /noise are not anticipated.	Effects are likely to be temporary, but will depend on the number of devices, and the location and duration of storage. It is likely that pre-storage bird survey will be a requirement of the marine licensing process.	If necessary, avoid breeding season.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Seals	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
European Protected Species: otters	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.

ASSESSMENT – WEST BURRAFIRTH				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Other European Protected Species: cetaceans	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability.	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. Temporary morphological effects.
Climatic Factors Site is within an Indicative 200 year Flood Zone.	Potential for the jetty and its surrounds to be at risk of flooding from the sea.	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
	Increase in GHG emissions due to vessel movements associated with wet storage.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes or designated features.	No significant adverse effect	None required	None

ASSESSMENT – WEST BURRAFIRTH				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
Cultural Heritage Scheduled monument in environs of West Burrafirth	Storage of devices which are on or break the water surface is unlikely to affect the setting of the scheduled monument.	No effects	None required	None
Wreck sites	Device storage could affect wreck site through destruction of features.	Permanent loss of wreck features	Avoid storage on this area.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape/ Seascape National Scenic Area; candidate local Landscape Designation area local residents	Storage of devices which are on or break the water surface may have adverse local landscape and visual effects. However, it is unlikely that storage would affect the special qualities of the National Scenic Area, given its distance from the harbour.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	At the local level, it may be desirable to locate devices in a sheltered bay away from overall views from West Burrafirth.	Assuming mitigation is implemented, the potential for significant adverse effects should be reduced.
Material Assets Harbour access	Possible effects on navigational safety, e.g. ferries, fishing vessels. Devices could block access to the harbour/ferry terminal and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage site will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds and	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – WEST BURRAFIRTH				
Receptor	**Effect**	**Characteristic**	**Mitigation**	**Residual Effects**
		socio-economic and community effects; potential intensification of fishing elsewhere		
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic loss.	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association Scotland as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Geopark Shetland	Short-term anchorage or storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the Geopark designation.	No significant adverse effect	None required	None
OTHER DEVELOPMENT None known.				
Cumulative Effects	No cumulative effects are anticipated from wet storage at this site.			

Implications for development:

The following requires further examination at the project level:

- effects on birds using adjacent SPA/SSSI habitat. Early discussions should be held with SNH regarding timing, extent, location and duration of storage.
- risk of disturbance to seals haul out locations and corkscrew injury to seals
- need to alleviate flood risk through project planning and design
- planning and design to avoid and/or reduce effects on wrecks. If wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Early discussions should be held with SNH, SEPA, Historic Scotland, the Local Planning Authority, Harbour Authority, MCA, Inshore Fisheries Group and/or local fishermen, Royal Yachting Association Scotland and other vessel operators as required.

Habitats Regulations Appraisal

Habitats Regulations Appraisal may be required at the project level, if there are potentially significant effects on breeding birds. Early discussions should be held with SNH.