

## SECTION 5: SUMMARY AND CONCLUSIONS





## CHAPTER 25: SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT



## 25. SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENTS

### 25.1 Introduction

This chapter presents a summary of the findings of the assessment of the environmental effects of the Aberdeen Harbour Expansion Project. Each of the assessment chapters are broken down into the significance of effect, any mitigation proposed and the residual significance of effect.

### 25.2 Summary Tables

#### 25.2.1 Chapter 6: Marine Physical Environment

**Table 25.1: Marine physical environment summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Breakwater and harbour construction	Direct impacts due to construction activities	Nigg Bay SSSI	Construction activities potentially affecting the physical integrity of the SSSI	Negligible	None	Negligible
<b>Operation</b>						
Physical presence of development	Changes to coastal processes	Nigg Bay SSSI	Changes to coastal processes potentially affecting the physical integrity of the SSSI	Negligible	None	Negligible

**25.2.2 Chapter 7: Marine Water and Sediment Quality**

**Table 25.2: Marine water and sediment quality summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Capital dredging.	Sediment disturbance.	RBMP designated water bodies.	Changes to classification status of designated RBMP water bodies.	Negligible.	Adherence to Environmental Management Plan (EMP)*.	Negligible.
	Release of sediment-bound substances into the water column due to sediment resuspension.	RBMP designated water bodies.	Changes to classification status of designated RBMP water bodies.	Negligible.	Adherence to EMP*.	Negligible.
		Bathing Waters.	Changes to classification status of designated Bathing Waters.	Minor adverse.	Adherence to EMP*.	Negligible.
	Deposition of suspended sediments on the seabed.	Sediment quality.	Changes to classification status of sediments.	Negligible.	Adherence to EMP*.	Negligible.
Releases of contaminants due to construction activities.	Increased contaminant levels in water.	RBMP designated water bodies.	Changes to classification status of designated RBMP water bodies.	Moderate adverse.	Adherence to EMP* and Pollution Prevention Guidelines (PPG)*.	Minor adverse.
<b>Operation</b>						
Physical presence of development.	Modification of water and sediment circulation patterns.	Don Estuary to Souter Head RBMP designated water body.	Changes to classification status of designated RBMP water bodies.	Moderate adverse.	None.	Moderate adverse.
		Dee (Aberdeen) Estuary RBMP designated water body.		Negligible.	None.	Negligible.
		Bathing Waters.	Changes to classification status of designated Bathing Waters.	Minor adverse.	None.	Minor adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.2: Marine water and sediment quality summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Maintenance dredging.	Increased SSC in the Water Column and release of sediment-bound substances into the water column due to sediment resuspension.	RBMP designated water bodies.	Changes to classification status of designated RBMP water bodies.	Negligible.	Adherence to risk reducing measures and PPG*.	Negligible.
		Bathing Waters.	Changes to classification status of designated Bathing Waters.	Negligible.	Adherence to risk reducing measures and PPG*.	Negligible.
	Deposition of suspended sediments on the seabed.	Sediment quality.	Changes to classification status of sediments.	Negligible.	Adherence to risk reducing measures and PPG*.	Negligible.
Operational activities.	Increased levels of contaminants in water.	RBMP designated water bodies.	Changes to classification status of designated RBMP water bodies.	Minor adverse.	Adherence to risk reducing measures and PPG*.	Negligible.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.3 Chapter 8: Flood Risk and Surface Water**

**Table 25.3: Flood risk and surface water summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Diversion and/or modify the existing East Tullos Burn and outfall.	The diversion and/or modification of the burn could lead to the erosion and entry of sediment and construction materials into the watercourse.	Surface Water Quality.	This could lead to an increase in the turbidity of the waters potentially limiting sunlight penetration into the water column thereby reducing algae growth and the spawning of fish. Moreover, sediment could carry chemical pollutants that could have an adverse effect upon the burn's ecosystem.	Negligible.	Use of best practice measures such as petrol/oil interceptors and control valves. An EMP* will be developed to prevent pollution.	Negligible.
		Fluvial Flood Risk.	Potential reduction in the capacity of the channel leading to a potential increase in flood risk.	Negligible.	None required, but follow best practice and EMP*.	Negligible.
Construction activities adjacent to outfalls.	No impact from construction, outfalls will be protected and if necessary diverted.	Existing Infrastructure (4 outfalls).	No effect anticipated.	Negligible.	None required, but follow best practice and EMP*.	Negligible.
Raising of site levels during construction, new breakwaters and quays.	Over time, reduce the risk of tidal flooding in the local area.	Tidal Flood Risk.	Beneficial.	Range from negligible to permanent, site-wide, minor beneficial.		Range from negligible to permanent, site-wide, minor beneficial.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						



**Table 25.3: Flood risk and surface water summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Precipitation during construction.	As construction progresses, an increase in impermeable surface area would lead to an increase in surface water run-off volume and rate.	Pluvial (Surface Water) Flood Risk.	Potential localized flooding.	Negligible.	None required, but follow best practice and EMP*.	Negligible.
Intrusive ground works and excavations, removal of made ground, sands and gravels.	Change to level of groundwater.	Groundwater Flood Risk.	No effects on abstractions, as none in vicinity.			
Foul water from construction work / workers.	None (as stored onsite).	Foul Drainage.	No effect anticipated.			
<b>Operation</b>						
Surface water network would be designed to discharge surface water to coastal waters.	No discharge to East Tullos Burn.	Surface Water Quality.	No effect anticipated.	Negligible.	Use of best practice measures such as petrol/oil interceptors and control valves, and EMP*.	Negligible.
Port designed to ensure that these outfalls are protected and diverted.	None.	Existing Infrastructure (4 outfalls).	No effect anticipated.	Negligible.		Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.3: Flood risk and surface water summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Raised ground, and breakwater.	Reduction of tidal and wave flood risk.	Tidal Flood Risk.	Beneficial.	Permanent, site-wide, minor beneficial.	Use of best practice measures and EMP*.	Permanent, site-wide, minor beneficial.
Permanent diversion of East Tullos Burn.	No surface water connections from port.	Fluvial Flood Risk.	No effect anticipated.	Negligible.		Negligible.
Built hard standing areas.	Increase in impermeable area to approximately 75% of the total site area.	Pluvial (Surface Water) Flood Risk.	No effect anticipated as surface water will discharge directly to the sea.	Negligible.		Negligible.
Port elevated above surrounding area.	Reduced risk of groundwater flooding.	Groundwater Flood Risk.	Beneficial.	Negligible.		Negligible.
Connection of Port to WWTW.	None.	Foul Drainage.	No effect anticipated.	Negligible.		Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

25.2.4 Chapter 9: Ground Conditions and Contamination

Table 25.4: Ground conditions and contamination summary

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Disposal of excavated material.	Potential for localised contamination to exist within the underlying soils.	Human Health and Environment.	Exposure of construction workers to contaminants.	Negligible.	Excavated material to be removed off-site would be subject to waste classification sampling and analysis in accordance with the requirements of the Special Waste Regulations 1996 (as amended) and transported, treated and disposed of in accordance with the Environmental Protection (Duty of Care) Regulations.	Negligible.
Construction activities, particularly earthworks associated with the construction of new structures, roads, car parks and quay walls.	Creation of pollutant linkages through ingestion, inhalation and direct dermal contact pathways.	Impacts on human health from ground contamination and ground gas.	Exposure of construction workers to contaminants.	Negligible.	Appliance of mandatory H&S requirements under the CDM Regs and Control of Substances Hazardous to Health Regulations 2002. An EMP would be prepared and implemented during construction of the development.	Negligible.
Construction activities, particularly exposing soils and stockpiling construction waste (including excavated materials).	Creation of dust linkages through inhalation contact pathways.		Residents and the general public could temporarily be exposed to contamination via the inhalation of potentially contaminated dust.	Minor adverse.		
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.4: Ground conditions and contamination summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Areas of existing hardstanding would be broken out locally to accommodate the Development.	Increased rainwater and surface run-off infiltration to the subsurface.	Soils and the water environment.	This could potentially mobilise previously contained residual contamination which could feasibly then migrate into the underlying superficial aquifer, the East Tullos Burn or the nearby Nigg Bay.	Minor Adverse.	Adoption of a site specific EMP*.	Minor Adverse.
				No construction works are proposed upstream of the East Tullos Burn outfall, the culvert to the bay will be retained in its existing location, so potential effects on this watercourse are considered to be negligible.	None.	Negligible.
Concrete pouring, the release of suspended sediment, storage of fuels and chemicals and leaks and spills of fuel and oil from construction vehicles.	To facilitate construction, it is anticipated that potentially polluting substances and activities would be introduced to the site.		This could potentially release pollutants into the environment.	Temporary, local moderate adverse.	Adoption of a site specific EMP*.	Temporary, local minor adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.4: Ground conditions and contamination summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Erection of a retaining sheet pile wall at the southern end of the West Quay.	Impacts on Nigg Bay sites.	Designated sites.	Protect SSSI feature against construction activity.	Negligible.	No mitigation proposed.	Negligible.
	Impacts on Balnagask to Cove LNCS.		There is a potential that accidental releases, leaks or spills could occur leading to migration beyond the construction area and potential effects on animal and plant receptors of the Balnagask to Cove LNCS	Temporary, local moderate adverse.	Future construction works as part of an EMP would reduce the likelihood and severity of any accidental pollution incidents on plant and animal populations within the Balnagask to Cove LNCS as far as practicable.	Temporary, local minor adverse.
<b>Operation</b>						
Port operation.	Creation of pollutant linkages through ingestion, inhalation and direct dermal contact pathways.	Impacts on human health from ground contamination and ground gas.	Hard standing area between potential contaminant sources and human receptors.	Negligible.	All future buildings at the Site would be designed to incorporate appropriate ground gas protection measures if required, based on the outcomes of the ongoing intrusive investigation.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.4: Ground conditions and contamination summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Harbour activities.	The use of the site as a harbour would introduce potentially contaminative activities, materials and chemicals to the site which could potentially impact upon the underlying soils and on-site and off-site water environment receptors.	Impacts on soils and the water environment.	Pollution to the local environment.	Long-term, local minor Adverse.	All activities subject to activity specific environmental risk assessment. Correct storage and labelling of substances, and any spills / leaks cleaned up in accordance with SEPA Pollution Prevention Guidelines.	Long-term, local minor Adverse.
New breakwaters and harbour infrastructure.	Calmer waters within the vicinity of the Nigg Bay SSSI.	Impacts on designated sites.	Reduction in risk of erosion of SSSI feature.	Negligible.	No mitigation proposed.	Negligible.
Harbour activities.	With regards to the Balnagask to Cove LNCS, the potential for accidental releases, spills and leaks associated with the day to day activities of the harbour cannot be completely discounted.	Impacts on designated sites.	Pollution to the local environment.	Long-term, local minor Adverse.	All activities subject to activity specific environmental risk assessment. Correct storage and labelling of substances, and any spills / leaks cleaned up in accordance with SEPA Pollution Prevention Guidelines.	Long-term, local minor Adverse.
Buried services and structures.	Creation of potential pathway for contaminants.	Buried services and structures.	This could potentially mobilise previously contained residual contamination.	Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

25.2.5 Chapter 10: Nature Conservation

Table 25.5: Nature conservation summary

Site	Approx. Distance from Development by Sea [km]	Implied Connectivity (Yes/No)	Relevant Assessment Chapter(s)
<b>International Designations: Special Areas of Conservation (SACs)</b>			
River Dee.	2	Yes	Chapter 13, Fish and Shellfish Ecology, and Chapter 27, HRA.
Moray Firth <sup>†</sup> .	160	Yes	
Firth of Tay and Eden Estuary <sup>†</sup> .	86	Yes	
Isle of May <sup>†</sup> .	110	Yes	
Berwickshire and North Northumberland Coast.	132	Yes	
Dornoch Firth and Morrich More <sup>†</sup> .	195	Yes	
<b>International Designations: Special Protection Areas (SPAs)</b>			
Ythan Estuary, Sands of Forvie and Meikle Loch.	20	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Buchan Ness to Collieston Coast <sup>†</sup> .	23	Yes	
Loch of Strathbeg.	60	No	
Troup, Pennan and Lion's Heads <sup>†</sup> .	85	Yes	
Fowlsheugh <sup>†</sup> .	23	Yes	
Montrose Basin <sup>†</sup> .	58	Yes	Chapter 14, Marine Ornithology.
Firth of Tay and Eden Estuary <sup>†</sup> .	86	Yes	
Firth of Forth.	101	Yes	
Firth of Forth Islands <sup>†</sup> .	110	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
<b>International Designations: Ramsar sites</b>			
Ythan Estuary and Meikle Loch.	20	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Loch of Strathbeg.	60	No – considered under SPA designation.	
Montrose Basin.	58	Yes.	
Firth of Tay and Eden Estuary.	86	Yes – considered under SPA designation.	
<b>Notes:</b>			
† Only notified bird species listed here as other features have no connectivity			
^ OSPAR MPA sit			

**Table 25.5: Nature conservation summary continued**

Site	Approx. Distance from Development by Sea [km]	Implied Connectivity (Yes/No)	Relevant Assessment Chapter(s)
<b>National Designations: Sites of Special Scientific Interest (SSSI)</b>			
Nigg Bay.	0	Yes	Chapter 6, Marine Physical Environment and Chapter 9, Ground Conditions and Contamination.
Fowlsheugh.	26	Yes	Chapter 14, Marine Ornithology and Chapter, 27, HRA.
St Cyrus and Kinnaber Links.	47	Yes	Chapter 14, Marine Ornithology.
Montrose Basin.	58	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Rickle Craig - Scurdie Ness.	55	No	-
Whiting Ness - Ethie Haven.	65	Yes	Chapter 14, Marine Ornithology.
Monifieth Bay.	95	No	-
Inner Tay Estuary.	105	Yes	Chapter 15, Marine Mammals and Chapter 27, HRA.
Tayport - Tentsmuir Coast.	91	Yes	Chapter 14, Marine Ornithology, Chapter 15, Marine Mammals and Chapter 27, HRA.
Eden Estuary.	96	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Firth of Forth†.	101	Yes	
Isle of May.	110	Yes	Chapter 15, Marine Mammals and Chapter 27, HRA.
Sands of Forvie and Ythan Estuary.	20	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Collieston to Whinnyfold Coast.	25	Yes	
Meikle Loch and Kippet Hills.	27	No	
Bullers of Buchan Coast.	33	Yes	
Loch of Strathbeg.	60	No	
Rosehearty to Fraserburgh Coast.	75	Yes	Chapter 14, Marine Ornithology.
Gamrie and Pennan Coast.	87	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
<b>National Designations: Nature Conservation Marine Protected Areas (NCMPAs)</b>			
Firth of Forth Banks Complex^.	44	No	-
Turbot Bank.	64	No	
Southern Trench.	45	No	
<b>National Designations: National Nature Reserves (NNR)</b>			
Forvie.	20	No	-
St Cyrus.	48	No	
Tentsmuir.	91	Yes	Chapter 15, Marine Mammals, Chapter 14, Marine Ornithology and Chapter 27, HRA.
Isle of May.	110	Yes	Chapter 15, Marine Mammals and Chapter 27, HRA.
<b>Notes:</b>			
† Only notified bird species listed here as other features have no connectivity			
^ OSPAR MPA sit			



**Table 25.5: Nature conservation summary continued**

Site	Approx. Distance from Development by Sea [km]	Implied Connectivity (Yes/No)	Relevant Assessment Chapter(s)
<b>Local Designations: Local Nature Reserves (LNR)</b>			
Donmouth.	5.5	No	-
Montrose Basin.	58	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Inner Tay Estuary.	105	Yes	Chapter 15, Marine Mammals, Chapter 14, Marine Ornithology and Chapter 27, HRA.
Eden Estuary.	96	Yes	
<b>Local Designations: Local Nature Conservation Sites (LNCS)</b>			
Balnagask to Cove.	0	Yes	Chapter 14, Marine Ornithology.
River Dee Corridor.	3	Yes	
River Don Corridor.	5	No	-
Balgownie-Blackdog Links.	5.5	Yes	Chapter 14, Marine Ornithology.
Proposed LNCSs North of Aberdeen (Aberdeenshire LDP 2016).			
Blackdog to Bridge of Don Coast.	5.5	Yes	Chapter 14, Marine Ornithology.
Newburgh to Balmedie.	9.5	Yes	-
Cruden Bay.	31.5	Yes	Chapter 14, Marine Ornithology Chapter and Chapter 27, HRA.
Ratray Head to Peterhead.	46	No	-
Strathbeg to Ratray.	57.5	No	
Proposed LNCSs South of Aberdeen (Aberdeenshire LDP 2016).			
Findon.	6.5	Yes	Chapter 14, Marine Ornithology.
Portlethen to Muchalls Coast.	9	Yes	
Muchalls to Stonehaven Bay.	14	Yes	
Downie Point to Catterline Coast.	21.5	Yes	Chapter 14, Marine Ornithology and Chapter 27, HRA.
Inverbervie to Johnshaven Coast.	29.5	Yes	Chapter 14, Marine Ornithology.
St Cyrus.	42.5	No	-
<b>Notes:</b>			
† Only notified bird species listed here as other features have no connectivity			
^ OSPAR MPA sit			

**25.2.6 Chapter 11: Terrestrial Ecology**

**Table 25.6: Terrestrial ecology summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction of offshore port infrastructure.	Obstruction for passage of Atlantic Salmon.	River Dee SAC and LNCS.	Impact on site integrity of River Dee SAC Possible vector on host species of freshwater pearl.	Negligible.	None required.	Negligible.
	Construction footprint.	Habitats of shingle/gravel, boulders/rocks above high-tide mark, seawall habitat within the Site.	Potential for habitat loss but habitats are widespread in the vicinity and seawall will be rebuilt.	Negligible.	Implementation of a Habitat Creation and Management Plan* and EMP*.	Negligible.
Construction of onshore port infrastructure.	Building up to and encroachment of LNCS in places and possible border impacts.	Tullos Hill LNCS.	None, no connecting pathway	Negligible.	None required.	Negligible.
		Balnagask to Cove LNCS.	Reduction in physical size of LNCS and potential loss of habitats.	Permanent, minor adverse at the District level.	Implementation of a Habitat Creation and Management Plan* and EMP*.	Negligible.
		River Dee Corridor LNCS	None, the proposed development is considered to be sufficiently distant.	Negligible.	None required.	Negligible.
	Scrub removal.	Scrub habitat within the Site.	Habitat loss.	Permanent, minor adverse at the local level.	Implementation of a Habitat Creation and Management Plan* and EMP*.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.6: Terrestrial ecology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction of onshore port infrastructure (continued).	Construction footprint.	Habitats of neutral grassland, dry dwarf scrub, strandline vegetation, maritime hard cliff, coastal heathland, wall habitat, and building habitat within the Site.	No effect anticipated, no overlap of connecting pathway.	Negligible.	Implementation of a Habitat Creation and Management Plan* and EMP*.	Negligible.
	Temporary use as laydown area.	Amenity grassland within the Site.	Short term loss, but will be restored on completion of works.	Permanent, minor adverse at the Site level.	Implementation of a Habitat Creation and Management Plan* and EMP*.	Negligible.
	Dust, noise, vibration and lighting, Scrub and tree removal.	Breeding Birds.	Disturbance and potential to disrupt normal foraging and loss of suitable nesting sites.	Temporary, minor adverse at the Local level.	Best practice – working out-with the breeding bird season. Use of an Environmental Clerk of Works to supervise work during the breeding bird season. Creation of a Habitat Creation and Management Plan*.	Negligible.
	Dust, noise, vibration and lighting, Scrub and tree removal.	Shore based wintering Birds.	Disturbance and potential to disrupt normal foraging and commuting behaviour.	Temporary, minor adverse at the Local level.	Creation of a Habitat Creation and Management Plan*.	Negligible.
<p><b>Note:</b>  * As discussed within Chapter 26 Outline Environmental Management Plan</p>						

**Table 25.6: Terrestrial ecology summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction of onshore port infrastructure (continued).	Dust, noise, vibration and lighting, Scrub and tree removal.	Migrant Birds.	Loss of the habitat.	Permanent, minor adverse at the local level.	Creation of a Habitat Creation and Management Plan*.	Negligible.
			Disturbance during construction	Temporary, minor adverse at the Local level.		
	Dust, noise, vibration and lighting, Scrub and tree removal.	Bat species.	Roosting potential within the Site is considered to be negligible.	Negligible.	No mitigation proposed.	Negligible.
Construction of onshore port infrastructure (continued).	Noise, vibration, lighting and visual.	Otter.	Disturbance and disruption to feeding and commuting behaviour.	Temporary, minor adverse at the Site level.	No night working; The use of white light would be avoided on-site; No soil materials would be stockpiled in the site; Any trenches / excavations would have escape ramps provided in case otter fall in; and The creation of linked commuting corridors / planting providing cover, in the Habitat Creation and Management Plan*.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.6: Terrestrial ecology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction of onshore port infrastructure (continued).	Dust, noise, vibration and lighting, Scrub removal.	Reptiles.	Data search produced no records for reptiles within 2km of the Site and none were observed during the Phase I walkover.	Temporary, minor adverse at the site level.	Adherence to the Habitat Creation and Management Plan* and EMP*.	Negligible.
	Loss of scrub habitat.	Invertebrates.	Reduction in foraging and sheltering opportunities.	Temporary, minor adverse at the Site level.	Adherence to the Habitat Creation and Management Plan* and EMP*.	Negligible.
	Reduction in area.	Flora.	Decline in species presence.	Permanent, minor adverse at the Site level.	Adherence to the Habitat Creation and Management Plan* and EMP*.	Negligible.
	Reduction in area.	Protected flora (curved sedge, sea pea and oyster plant).	Decline in species presence.	Permanent, major adverse at the National level.	Location of curved sedge, sea-pea and oyster plant. Species location to be marked and buffer zone implemented. If plants are to be lost, translocation will be used to protect the species.	Negligible.
	Habitat removal	Other notable / protected species.	No badgers, water voles, great crested newts or white clawed crayfish so no effect anticipated.	Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.6: Terrestrial ecology summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Permanent land take.	Loss of habitat.	Balnagask to Cove LNCS.	Small reduction in size of LNCS.	Permanent, minor adverse at the District level.	Ground maintenance programme as described in EMP*.	Negligible.
Port operation.	Displacement or barrier effect to Atlantic Salmon passage.	Interest features of River Dee SAC and LNCS.	No effect anticipated.	Negligible.	No mitigation proposed.	Negligible.
	Loss of habitat.	Habitats of scrub habitat, neutral grassland, dry dwarf shrub heath, strandline vegetation, and coastal heathland within the Site.	No effect anticipated as no overlap or connecting pathway.	Permanent, minor adverse at the Site level.	Ground maintenance programme as described in EMP*.	Permanent, minor beneficial.
Port operation (continued).	Loss of habitat.	Shingle/gravel, boulders/rocks above high-tide mark, maritime hard cliff, wall habitat, sea-wall habitat and building habitat within the Site.	Habitats are widespread in the vicinity and seawall will be rebuilt.	Negligible.	No mitigation proposed.	Negligible.
Reinstatement of temporary works area	Replanting of grassland	Amenity grassland within the Site	Amenity grassland restored if not improved.	Permanent, minor adverse at the Site level.	Implementation of a Habitat Creation and Management Plan*.	Minor beneficial.
Harbour associated activity, including noise, lighting, use of hazardous materials/chemicals.	Permanently increased levels of human activity, traffic, Increased levels of night time lighting that may impact patterns of animal use within adjacent habitats.	Breeding and wintering Birds.	Birds that breed and winter are common and widespread along Aberdeenshire coastline, birds likely to display degree of habitualisation.	Permanent, minor adverse at the Local level.	Use of sensitive lighting. Ground maintenance programme as described in EMP*.	Permanent, minor beneficial.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.6: Terrestrial ecology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Port operation.	Permanently increased levels of human activity, traffic, Increased levels of night time lighting that may impact patterns of animal use within adjacent habitats.	Migrant Birds.	Permanently increased levels of human activity and disturbance.	Permanent, minor adverse at the Local level.	Creation of a Habitat Creation and Management Plan*.	Negligible.
Port activities.	Permanently increased levels of human activity, traffic, Increased levels of night time lighting that may impact patterns of animal use within adjacent habitats.	Bat species, reptiles, invertebrates, and other notable / protected species.	As species are largely absent in first place likely to have no effect.	Negligible.	No mitigation proposed.	Negligible.
		Otter.	Otters in the short term are likely to avoid the area, but may become habituated over time to the port operation.	Permanent, minor adverse effect at the site level.	Use of sensitive lighting. Ground maintenance programme as described in EMP*.	Negligible.
	Land take, pesticides for weed control, grass cutting.	Flora.	Reduction in area.	Permanent, minor adverse at the Site level.	Ground maintenance programme as described in EMP*.	Negligible.
		Protected flora (curved sedge, sea pea and oyster plant).				
Port activities.	Habitat removal	Other notable / protected species.	No badgers, water voles, great crested newts or white clawed crayfish so no effect anticipated.	Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.7 Chapter 12: Benthic Ecology**

**Table 25.7: Benthic ecology summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Dredging and seabed preparatory work.	Permanent loss of seabed habitat.	Rocky algal dominated biotopes and shallow water sedimentary biotopes.	Habitat loss.	Minor adverse.	None.	Minor adverse.
		Rocky algal dominated biotopes.	Habitat loss.	Moderate adverse.		Moderate adverse.
		Shallow water sedimentary biotope indicative of Annex I sandbank habitat.	Habitat loss.	Major adverse.		Major adverse.
	Physical seabed disturbance.	Shallow water sedimentary biotopes. Shallow water rocky biotopes.	Temporary seabed disturbances disrupting habitats and associated species.	Negligible.	None.	Negligible.



Table 25.7: Benthic ecology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Dredging and seabed preparatory work, continued.	Increased suspended sediment concentrations (SSC).	Species characteristic of shallow water sedimentary biotopes and shallow water rocky biotopes.	Temporary increases in SSC reducing light, clogging gills and feeding apparatus etc.	Negligible.	None.	Negligible.
		Shallow water sedimentary biotopes. Shallow water rocky biotopes and associated characterising species.	Temporary increases in sediment deposition leading to smothering/burial and associated costs (e.g. mortality, energetic costs of repositioning).	Negligible.	None.	Negligible.
	Release of sediment contaminants.	Benthic habitat and species receptors.	Water quality changes, increased bioavailability of sediment contaminants, potential impairment to individuals / populations.	Negligible.	None.	Negligible.
Piling, drilling and blasting.	Increased levels of underwater noise/vibration.	Benthic habitat and species receptors.	Potential mortality and avoidance behaviour, susceptibility of sessile fauna.	Negligible.	None.	Negligible.
Construction vessel and plant activities.	Accidental releases of pollutants during construction.	Benthic habitat and species receptors.	Accidental release of pollutants, specific effect(s) depend on material involved.	Up to Major adverse.	Development of, and adherence to, an EMP.	Negligible.

**Table 25.7: Benthic ecology summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Offshore disposal of dredged material.	Disposal of material at a licensed disposal site.	Benthic habitat and species receptors.	Increased SSC, smothering and reduction in extent of 'original' seabed habitat and release of sediment contaminants.	Minor adverse.	None.	Minor adverse.
<b>Operation</b>						
Infrastructure foundations and scour material.	Footprint on the seabed.	Benthic habitat and species receptors.	Reduction in extent of original seabed habitat.	Negligible.	None.	Negligible.
	Colonisation.	Benthic habitat and species receptors.	Introduction of new seabed habitat. Change in biodiversity and exploitation of artificial habitat by Marine Non-Native Species (MNNS).	Minor adverse.	Development of, and adherence to, relevant protocols.	Minor adverse.
	Changes to hydrodynamic regime.	Benthic habitat and species receptors.	Localised increases in current speed around breakwaters, greater retention times of water in the bay.	Negligible.	None.	Negligible.

Table 25.7: Benthic ecology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Infrastructure foundations and scour material, continued. Maintenance dredging (incl. Vessel movements).	Disturbance of seabed by propellers.	Shallow water sedimentary biotopes. Shallow water rocky biotopes.	Temporary seabed disturbances.	Negligible.	None.	Negligible.
	Physical disturbance.	Benthic habitat and species receptors.	Temporary seabed disturbances.	Negligible.	None.	Negligible.
		Shallow water sedimentary biotopes. Shallow water rocky biotopes.	Temporary increases in SSC.	Negligible.	None.	Negligible.
			Temporary increases in sediment deposition.	Negligible.	None.	Negligible.
		Benthic habitat and species receptors.	Temporary release of sediment contaminants.	Negligible.	None.	Negligible.
Operational noise.	Increased levels of underwater noise.	Benthic habitat and species receptors.	Potential mortality and avoidance behaviour, susceptibility of sessile fauna.	Negligible.	None.	Negligible.
Offshore disposal of dredged material.	Disposal of material at a licensed disposal site.	Offshore benthic habitat and species receptors.	Increased SSC, smothering and reduction in extent of 'original' seabed habitat and release of sediment contaminants.	Negligible.	None.	Negligible.

**25.2.8 Chapter 13 Fish and Shellfish Ecology**

**Table 25.8: Fish and shellfish ecology summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect	
<b>Construction</b>							
Piling.	Underwater noise and vibration.	All receptors groups.	Mortality, startle reaction and avoidance.	Minor to moderate adverse.	Construction design Impact piling during the day and vibration piling by night during sensitive periods.	Minor adverse.	
Drilling.				Minor adverse.		None.	Minor adverse.
Blasting.				Negligible.		None.	Negligible.
Dredging.	Increased physical seabed disturbance.	All receptors groups.	Seabed habitat disturbances.	Minor adverse.	None.	Minor adverse.	
	Increased suspended sediment concentrations.		Increased SSCs.	Minor adverse.	None.	Minor adverse.	
	Release of sediment contaminants.		Deposition of sediment plumes.	Minor adverse.	None.	Minor adverse.	
			Temporary Release of Sediment Contaminants Due to Dredging.	Negligible.	None.	Negligible.	
Construction vessel and plant activities.	Accidental spills.	All receptors groups.	Water quality changes and increase in bio-availability of sediment contaminants.	Up to major adverse.	Development of, and adherence to, an EMP*.	Negligible.	
<b>Note:</b>							
* As discussed within Chapter 26 Outline Environmental Management Plan							

**Table 25.8: Fish and shellfish ecology summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Infrastructure foundations and scour material.	Footprint on the seabed.	All receptor groups.	Reduction in the extent of original habitat.	Minor adverse.	None.	Minor adverse.
			Change to the hydrodynamic regime.	Minor adverse.	None.	Minor adverse.
	Retention of pollutants entering Nigg Bay.		Change to water quality.	Minor adverse.	None.	Minor adverse.
	Colonisation.		Introduction of new seabed habitats.	Minor beneficial (new hard substrata). Minor adverse (seabed deepening).	None.	Minor beneficial (new hard substrata). Minor adverse (seabed deepening).
Vessel movements.	Disturbance of seabed by propellers.		Temporary seabed disturbances and increases in SSCs due to prop wash.	Minor adverse.	None.	Minor adverse.
	Vessel noise.		Avoidance due to increased vessel noise and presence.	Minor adverse.	None.	Minor adverse.
	Transport of species.		Introduction of harmful species.	Up to Major adverse.	Development of, and adherence to, relevant protocols.	Negligible.
Maintenance dredging.	Physical disturbance.		All receptors groups.	Seabed disturbances due to channel maintenance dredging.	Minor adverse.	None.
	Disposal of sediments.	Disposal at the offshore disposal site.		Minor adverse.	None.	Minor adverse.
Safety or navigational lighting or shading from buildings or over-water structures.	Change to the ambient underwater illumination.	Behavioural change due to changes to the ambient underwater illumination.		Minor adverse.	Lighting will be directional and dimmable to minimise light spillage.	Minor adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.9 Chapter 14 Marine Ornithology**

**Table 25.9: Marine ornithology summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Marine construction vessel activities.	Increased levels of in-air noise and visual disturbance.	Terns, auks, sea ducks and divers, and waders.	Disturbance and displacement.	Minor Adverse.	Production of an EMP*.	Minor Adverse.
		Gulls, tubenoses and gannet, cormorant and shag.		Negligible.	No mitigation proposed.	Negligible.
Terrestrial construction activities.	Increased levels of in-air noise and visual disturbance.	Terns, sea ducks and divers, and waders.	Disturbance and displacement.	Minor Adverse.	Production of an EMP*.	Minor Adverse.
		Auks gulls, tubenoses and gannet, cormorant and shag.		Negligible.	No mitigation proposed.	Negligible.
Dredging activities.	Temporary increases in suspended sediment concentrations (SSCs) due to dredging.	Terns, sea ducks and divers.	Reduced prey availability for visual predators due to the presence of sediment plumes.	Minor Adverse.	No mitigation proposed.	Minor Adverse.
		Auks, gulls, tubenoses and gannet, cormorant and shag and waders.		Negligible.	No mitigation proposed.	Negligible.
Marine construction vessel activities.	Accidental spills of oil and fuels etc. into the marine environment during construction.	Terns, common gull, razorbill and guillemot, sea ducks and divers, and waders.	Accidental release of environmentally harmful substances.	Minor Adverse.	Production of an EMP*.	Minor Adverse.
		Auk, gulls (except common gull), tubenoses and gannet, cormorant and Shag.		Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.9: Marine ornithology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Dredging activities.	Changes to prey availability i.e. changes in fish and benthic populations from: <ul style="list-style-type: none"> <li>• Seabed disturbance;</li> <li>• Raised sediment plumes;</li> <li>• Sediment deposition.</li> </ul>	Terns, sea ducks and divers, and waders.	Changes to prey availability (Reduced prey availability).	Minor Adverse.	No mitigation proposed.	Minor Adverse.
		Auks, gulls, tubenoses and gannet, and cormorant and shag.		Negligible.	No mitigation proposed.	Negligible.
Vessel traffic.	Collision between species and vessels.	Waders.	Increase in the risk of collision with vessels.	Minor Adverse.	No mitigation proposed.	Minor Adverse.
		Terns, sea ducks and divers, auks, gulls, tubenoses and gannet, and Cormorant and shag.		Negligible.	No mitigation proposed.	Negligible.
<p><b>Note:</b>                      * As discussed within Chapter 26 Outline Environmental Management Plan</p>						

**Table 25.9: Marine ornithology summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Deepening of basin.	Removal of seabed.	Sea ducks (excluding long-tailed duck) and divers.	Loss of habitat.	Moderate Adverse.	Breakwaters (with limited human access) as substitute for rocky shore. Adoption of an EMP*.	Minor Adverse.
		Terns, long-tailed duck, gulls, tubenoses, and gannet, and waders.		Minor Adverse.	No mitigation proposed.	Minor Adverse.
		Cormorant, and shag, and auk.		Negligible.	No mitigation proposed.	Negligible.
Operational activities including dredging.	Movement of vessels and plant.	Sea ducks and divers.	Disturbance.	Moderate Adverse.	Breakwaters (with limited human access) as substitute for rocky shore. Adoption of an EMP*. Post construction VP survey for at least one year, to monitor the effectiveness of the above mitigation.	Minor Adverse.
		Terns, waders and guillemot.		Minor Adverse.	No mitigation proposed.	Minor Adverse.
		Auks (excluding guillemot), gulls, tubenoses and gannet, cormorant and shag.		Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						



Table 25.9: Marine ornithology summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Construction of breakwaters, preventing natural flushing of bay.	Prevention of natural flushing of the bay.	Terns, common gull, razorbill and guillemot, sea ducks and divers, and waders.	Degraded water quality / accidental release of environmentally harmful substances.	Minor Adverse.	No mitigation proposed.	Minor Adverse.
	Prevention of natural flushing of the bay.	Auks, gulls (except common gull), tubenoses and gannet, and cormorant and Shag.		Negligible.	No mitigation proposed.	Negligible.
Maintenance dredging.	Removal of seabed material.	Terns, sea ducks and divers.	Increased turbidity.	Minor Adverse.	No mitigation proposed.	Minor Adverse.
	Removal of seabed material.	Auks, gulls, tubenoses and gannet, cormorant and shag, and waders.		Negligible.	No mitigation proposed.	Negligible.
Vessel traffic.	Risk of collision.	All species.	Mortality / Injury.	Negligible.	No mitigation proposed.	Negligible.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.10 Chapter 15 Marine Mammals**

**Table 25.10: Marine mammals summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Impact piling.	Increased levels of underwater noise.	All receptors.	Underwater noise leading to mortality, permanent or temporary injury or avoidance.	Moderate adverse.	Vibropiling where possible, soft-start procedures, MMOs, PAM (during hours of darkness) and a mitigation zone and resonance cages / bubble curtains.	Minor adverse.
Drilling.		All receptors.		Moderate adverse.	MMOs, PAM (during hours of darkness) and a mitigation zone.	Minor adverse.
Blasting.		All receptors.		Major adverse.	MMOs, PAM and a mitigation zone.	Minor adverse.
Capital Dredging.		All receptors.		Moderate adverse.	None.	Moderate adverse.
Capital Dredging.	Temporary increases in suspended sediment concentrations (SSCs) due to dredging.	All receptors.	SSCs leading to impairment of ability to forage and temporary displacement from habitat.	Minor adverse.	None.	Minor adverse.
	Release of sediment contaminants.		Increase in bio-availability of sediment contaminants.	Minor adverse.	None.	Minor adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.10: Marine mammals summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Disposal of dredged material.	Increased levels of underwater noise.	All receptors.	Underwater noise leading to mortality, permanent or temporary injury or avoidance.	Minor adverse.	None.	Minor adverse.
	Temporary increases in suspended sediment concentrations (SSCs).		SSCs leading to impairment of ability to forage and temporary displacement from habitat.	Minor adverse.	None.	Minor adverse.
Construction vessel activities.	Increased levels of vessel movements.	All receptors.	Disturbance due to visual impacts / movements.	Minor adverse.	Aberdeen Harbour Dolphin Code	Minor adverse.
	Collision between species and vessels (Hull impacts).	All receptors.	Mortality or physical injury due to collisions with vessel hulls or propellers.	Minor adverse.	Aberdeen Harbour Dolphin Code	Minor adverse.
	Propeller (Corkscrew) impacts.	Grey seal. Harbour seal.	Mortality or physical injury due to collisions with vessel propellers.	Minor adverse.	Aberdeen Harbour Dolphin Code	Minor adverse.
	Accidental spills of oil and fuels etc. into the marine environment during construction.	All receptors.	Interaction of pollutants with marine mammals following accidental spills.	Major adverse.	Pollution Prevention Plan*.	Negligible adverse.
All construction activities.	Changes in Prey Resource.	All receptors.	Reduction in prey species for marine mammals and lessening of foraging ability.	Minor adverse.	None.	Minor adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.10: Marine mammals summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Infrastructure foundations and scour protection.	Footprint on the seabed and physical structures.	Bottlenose dolphin, harbour porpoise.	Reduction in extent of original foraging habitat.	Moderate adverse.	Post-construction monitoring*.	Moderate adverse.
	Footprint on the seabed and physical structures.	White-beaked dolphin, grey seal, Risso's dolphin, minke whale and harbour seal.		Minor adverse.	None.	Minor adverse.
	Reduction of flushing of pollutants and increased residence times.	All receptors.	Water quality changes and interaction of pollutants with marine mammals leading to potential displacement.	Minor adverse.	None.	Minor adverse.
Maintenance dredging and disposal.	Temporary increases in suspended sediment concentrations (SSCs).	All receptors.	SSCs leading to impairment of ability to forage and displacement from habitat.	Minor adverse.	None.	Minor adverse.
Vessel movements.	Collision between species and vessels.	All receptors.	Mortality or physical injury due to collisions with vessel hulls or propellers.	Minor adverse.	Vessel routing plan. Vessel management plan. Aberdeen Harbour Dolphin Code.	Minor adverse.
	Increased levels of underwater noise.	All receptors.	Disturbance due to vessel noise.	Minor adverse.	None.	Minor adverse.
	Increased vessel traffic.	All receptors.	Disturbance due to visual impacts / movements.	Minor adverse.	Vessel routing plan. Vessel management plan. Aberdeen Harbour Dolphin Code.	Minor adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						



Table 25.10: Marine mammals summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
All operational activities	Changes in prey resource	All receptors.	Reduction in prey species for marine mammals and lessening of foraging ability.	Minor adverse.	None.	Minor adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.11 Chapter 16: Socio-economics**

**Table 25.11: Socio-economics summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Economic.	Construction of the proposed development would require a total capital investment of approximately £320 million (at current prices).	Local (Aberdeen City and Shire), and National (Scotland).	Support 1,215 man years of construction related employment in Scotland, of which 175 could be in Aberdeen City and Shire. Generate approximately £74 million GVA for the Scottish economy, of which approximately £11 million could be retained within Aberdeen City and Shire.	Negligible at the national level. Temporary, minor beneficial at the regional level. Temporary, moderate beneficial at the local level.	None required.	Negligible at the national level. Temporary, minor beneficial at the regional level. Temporary, moderate beneficial at the local level.
Diversion of paths and routes.	Part of the core path network will be closed and diverted.	General Public.	No or limited access to areas where the public previously had access to.	Permanent, minor adverse at the local level.	None available.	Permanent, minor adverse at the local level.
Wildlife watching.	Limited public access to areas of Nigg Bay.	General Public.	Limited as other viewpoints are available in the locality.	Negligible.	None required.	Negligible.
Cruise Tourism.	No impact.	General Public.	No effect.	No effect.	None required.	No effect.
Amenity of marine leisure uses	The operation of the proposed development would remove marine leisure users' current access to Nigg Bay.	Surfers.	Effect is limited if surfers use Aberdeen Beach.	Mainly negligible. Some permanent, minor adverse at the local level.	None available.	Mainly negligible. Some permanent, minor adverse at the local level.

Table 25.11: Socio-economics summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Economic.	The scale of the net additional economic impact that Aberdeen Harbour could generate if the proposed development proceeds.	Local (Aberdeen City and Shire), and National (Scotland).	Supporting an additional 3,020 jobs, of which 2,470 could be in Aberdeen City and Shire. Contributing an additional £383 million GVA/year to the Scottish economy, of which £354 million GVA/year could be retained within Aberdeen City and Shire.	Permanent, minor beneficial at the national level. Permanent, moderate beneficial at regional and local levels.	None required.	Permanent, minor beneficial at the national level. Permanent, moderate beneficial at regional and local levels.
Diversion of paths and routes.	Part of the core path network will be permanently closed and diverted.	General public.	No or limited access to areas where the public previously had access to. Areas will be improved under the implementation of a Habitat Creation and Management Plan (Chapter 11: Terrestrial Ecology).	Negligible.	None required.	Negligible.

**Table 25.11: Socio-economics summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Wildlife watching.	Limited public access to areas of Nigg Bay once the harbour is operational.	Public.	Limited as other viewpoints are available in the locality.	Negligible.	None required.	Negligible.
Cruise tourism.	30 and 40 cruise ships each year.	Local economy.	Expenditure generated by these ships and their passengers and crew is predicted to amount to around £4.4 million/year across Scotland (of which around £3.9 million is predicted to be retained in Aberdeen City and Shire). This represents an increase in turnover of around £4.2 million for the regional tourism industry each year. Creation of up to 30 jobs.	Permanent, moderate beneficial at the local level.	Collaboration with Aberdeen City Council and local tourism bodies.	Permanent, moderate beneficial at the local level.



Table 25.11: Socio-economics summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Expenditure by marine leisure uses.	The operation of the proposed development would remove marine leisure users' current access to Nigg Bay.	Local Economy.	Accordingly, it is estimated that the direct and indirect effect of this expenditure might support around one job and £25,800 GVA within the local economy.	Negligible.	None required.	Negligible.

**25.2.12 Chapter 17: Seascape, Landscape and Visual Effects**

**Table 25.12: Seascape, landscape and visual effects summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Land/Seascape</b>						
Local diversions to roads and footpaths.	<p>NCN Route 1/ EuroVelo 12/ North Sea Trail and GC31: Access would be disrupted by the development during construction. There would be some disruption to the cycling and walking trails.</p> <p>CP78: Changes to St Fittick's Road in Nigg Bay and the construction of the main entrance and security gate would directly affect the path.</p>	Recreational users of National Cycle Network (NCN) Route 1/ EuroVelo 12/ North Sea Trail and the Access Routes, GC31 and CP78.	Interference with route and experience.	Temporary and permanent, moderate adverse.	Proposed diversions (temp during construction). Implementation of an EMP* may provide some marginal benefits.	Temporary and Permanent Moderate Adverse.
Dredging and cutting. Monopiles and some grading of the slopes.	Alteration of the existing character.	Local landform and topography.	Reshaping seabed within bay and changes to beach & cliffs.	Temporary and Permanent Moderate Adverse.	Limited scope.	Temporary and Permanent Moderate Adverse.
Construction and vessel activities.	The construction of the harbour in Nigg Bay would interrupt fishing activity.	Land/sea use.	Interrupt fishing activity.	Temporary and permanent, minor adverse.	Limited scope.	Temporary and Permanent Minor Adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Land/Seascape</b>						
Construction and vessel activities.	The local landscape and coastal characteristics are interrelated and form a continuous land/ seascape. The proposals would affect the perceived open nature and relationship of sea to coastline in Nigg Bay.	Coastal character of Area 23: Girdle Ness/ Nigg Bay and the Local Coastal and Landscape Character Areas.	Change in character.	Temporary and permanent, major adverse.	Limited scope.	Temporary Moderate Adverse.
Breakwater construction.	The development would not change overall perception of topography and character of coastal cliffs. There would be no change to the dominant open agricultural character on the cliff tops. The new access road to the southern breakwater would alter local land level and be a wide linear formation out from the cliffs. The area associated with the southern access road would be disrupted.	Area 25: Doonies to Cove Coast.	Change in character.	Temporary and permanent, moderate adverse.	Limited scope.	Temporary and Permanent Moderate Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
Dredging vessels and breakwater construction vessels. Construction activities including breakwaters, quayside, and onshore works including construction of the gatehouse and temporary compound and batching plant.	Construction activities would partially alter the existing mid-distance view.	VP1 (Girdle Ness/Balnagask Golf Course).	Notable alteration of the view on recreational users.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Dredging vessels and breakwater construction vessels. Construction of breakwaters.	Construction activities would alter the existing mid distance view.	VP2 (on the coastal footpath).	Notable alteration of the view on recreational users.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Dredging vessels. Construction vessels. Breakwater and quayside construction.	The view would fundamentally change as a result of the construction activities.	Viewpoint (VP) 3 (on Greyhope Road), including some Dolphinwatch participants who travel around the headland).	Fundamental change to existing views on motorists/ tourists. Fundamental change to existing views on recreational users of the footpath on Girdle Ness. Fundamental change to existing views on residents of Sea Breeze Cottage.	Temporary, major adverse.	Implementation of a EMP* may provide some marginal benefits.	Temporary, major adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
Removal of car park. Construction of quayside.	The view would fundamentally change as a result of the construction activities.	VP4 (on the Coast Road).	Fundamental change to existing views on motorists.	Temporary, major adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, major adverse.
Dredging vessels and breakwater construction vessels. Construction activities including breakwaters and quayside.	The view would fundamentally change as a result of the construction activities.	VP5 (on the Coast Road).	Fundamental change to existing views on motorists.	Temporary, major adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, major adverse.
Construction activities.	Most construction activities would not be viewed as the treatment works are screened by bunding and vegetation. However, the view would be altered.	VP5	Change in view on workers.	Temporary Minor Adverse.	Implementation of an EMP* may provide some marginal benefits	Temporary Minor Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
Batching plant and welfare facilities visible during construction, as well as the accommodation camp.	Extensive views over the North Sea. Site works and construction activity would not be visible from this location due to intervening topography which screens-off Nigg Bay. The only visible area during the construction period would be the batching plant and welfare facilities next to Girdle Ness Lighthouse. The accommodation camp by the Girdle Ness lighthouse would be just about visible.	VP9 (Tullos Hill).	Changes to existing views on recreational users.	Temporary, minor adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, minor adverse.
<p><b>Note:</b>            * As discussed within Chapter 26 Outline Environmental Management Plan</p>						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
General construction activity.	Occasional views of the Nigg Bay. For residents, construction activity would be notable in the view. This would be a notable alteration to the existing view. VP14: the effects would be the same as those reported for recreational users at VP14 below.	VP13 (Balnagask Road).	Notable alteration of the view on resident / recreation.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Breakwater construction vessels. Construction activities including breakwaters, quayside, and onshore works including construction of the gatehouse, batching plant and welfare facilities.	Construction activity would be dominant in the view, fundamentally changing the focus and natural characteristics of the view.	VP14 (at Balnagask Park).	Notable alteration of the view on resident / recreation.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Construction vessels. Breakwater and quayside construction. Gatehouse.	The view would be fundamentally changed as a result of the proposed development.	VP15 (St Fittick's Road, on edge of Balnagask Golf Course).	Notable alteration of the view on motorists.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
Construction vessels. Quayside and breakwater construction. Construction of the gatehouse.	The view would be fundamentally changed as a result of the proposed Development.	VP16 (at St Fittick's Church).	Notable alteration of the view on recreational users.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Construction vessels. Construction of breakwaters and quayside. Onshore works including construction of the gatehouse, new entrance, temporary compound, batching plant, deck structures and tanks.	Construction activity would form the dominant focus and fundamentally change the view.	VP23 (Coastal Path (CP78) at Greg Ness).	Notable alteration of the view on recreational users.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
Dredging vessels and breakwater construction vessels. Construction activities including breakwaters, quayside and onshore works including construction of the gatehouse.	The view would fundamentally change as a result of the construction activities.	VP24 (on the Coast Road).	Fundamental change to existing views on motorists/rail users.	Temporary, major adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, major adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						



**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
<b>Visual</b>						
Initial construction activities including: dredging vessels, drilling rigs and barges. Construction of breakwaters. Onshore works including: water and composite bulk tanks, quayside cranes, lighting columns, construction compound and batching plant.	For VP26 and VP27 the view would fundamentally change as a result of the construction activities. For VP28 construction activities would alter the existing mid-distance view. However, once the South Breakwater is constructed, all other activity would be screened.	VPs 26, 27 and 28 (out at sea).	Alteration of the view on recreational users.	Temporary, moderate adverse.	Implementation of an EMP* may provide some marginal benefits.	Temporary, moderate adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Land/Seascape</b>						
Diversion of route due to construction of main entrance and security gate.	Access along this part of the coast would be affected. Changes to the junction with St Fittick's Road would mean that the existing route would remain diverted. The experience of this route would change as the aspect changes from natural coastline to an urban harbour, and a greater proportion becomes a road route. The effects are contained and the majority of these long routes/ trails would continue uninterrupted in the long term and the adverse change to the experience of the route would only be for a short part within Nigg Bay.	Recreational users of National Cycle Network (NCN) Route 1/ EuroVelo 12/ North Sea Trail and the Public Rights of Way (PRoWs) Access Routes, GC31 and CP78.	Interference with route and experience on recreational users.	Permanent, moderate adverse.	Proposed temporary diversion.	Permanent, moderate adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.12: Seascape, landscape and visual effects summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Land/Seascape</b>						
New quays. Harbour infrastructure. Access roads.	Change to the underwater topography of the bay on a permanent basis. Alterations to the slope in the vicinity of Nigg Bay would alter the existing character of the underwater rock formations. Change to the land formation due to realignment of the road and new quayside.	Local topography.	Localised changes to landform.	Permanent, moderate adverse.	Limited scope.	Permanent, moderate adverse.
Operation of the harbour.	The operation of the harbour would interrupt fishing activity within the bay, although there would be the potential for enhanced fish breeding sites when complete.	Land/sea use.	Interruption of fishing activity.	Permanent, minor adverse.	Limited scope.	Permanent minor Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Land/Seascape</b>						
Harbour quay.	This LCA covers the area of the site, and is defined as an open character landscape. The proposals would permanently affect the perceived open nature of the landscape and relationship of sea to coastline in Nigg Bay.	Area 23: Girdle Ness/Nigg Bay and the Local Coastal and Landscape Character Areas.	Change in character.	Permanent, major adverse.	Limited scope.	Permanent Major Adverse.
Access road and southern breakwater.	The Development would not change the overall perception of the topography and the character of the coastal cliffs. The new access road to the southern breakwater would alter local land level. The southern breakwater would mean an extension of Greg Ness headland.	Area 25: Doonies to Cove Coast.	Change in character.	Permanent, moderate adverse.	Limited scope.	Permanent Minor Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
Visible features: South Breakwater, North Breakwater, tall lighting columns and the occasional crane on West Quay, The realigned Greyhope Road, the new junction just below St Fittick's church, the Gatehouse and West Quay, vessels using the harbour.	There would be a notable alteration to the centre view as a result of the Southern Breakwater and temporary impact of visiting vessels. Ships entering and exiting the harbour and whilst stationary at the docks would be a temporary impact.	VP1 (Balnagask Golf Course).	Notable alteration of the view on recreational users.	Permanent, moderate adverse.	Limited Scope.	Permanent Moderate Adverse.
The South Breakwater would be the most dominant with the North Breakwater just visible. Vessels entering and exiting the harbour would be seen.	There would be a notable alteration to the centre view as a result of the Southern Breakwater and temporary impact of visiting vessels. Ships entering and exiting the harbour and whilst stationary at the docks would be a temporary impact.	VP2 (on the coastal footpath).	Notable alteration of the view on recreational users.	Permanent, moderate adverse.	Limited Scope.	Permanent Moderate Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
North and South Breakwater would be visible. The South East Pier would be visible and West Quay would be visible in the distance. Ships entering and exiting the harbour and whilst stationary would also be visible.	The view would be fundamentally changed when compared to the current view.	VP3 (Greyhope Road (including Dolphinwatch participants who explore the headland) in front of Sea Breeze Cottage looking south towards the site).	Fundamental change in the view on recreation/ motorists/ residents.	Permanent, major adverse.	Limited Scope.	Permanent, major adverse.
Viewpoint removed during construction.	The location of this viewpoint would not be publically accessible once the development is operational, i.e. there would be a loss of the viewpoint.	VP4 (on the Coast Road).	Fundamental change in the view on motorists.	Permanent, major adverse.	Limited Scope.	Permanent, major adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

Table 25.12: Seascape, landscape and visual effects summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
North Breakwater would become a prominent feature. East Quay would be visible as would the new harbour entrance and Gatehouse. Lighting columns, occasional dockside cranes and the water and mud tanks would all be noticeable. Vessels within the harbour would be visible.	The view would be fundamentally changed when compared to the current view.	VP5 (on the Coast Road).	Fundamental change in the view on motorists.	Permanent, major adverse.	Limited Scope.	Permanent, major adverse.
Harbour.	Alteration of the view	VP5.	Change in view on workers.	Permanent minor Adverse.	Increased screening as existing planting matures.	Negligible.
Views of the Harbour.	Extensive views over the North Sea. Harbour activity would not be visible from this location due to intervening topography which screens-off Nigg Bay.	VP9 (Tullos Hill).	Change in view on recreation.	Permanent, major adverse.	Limited Scope.	Permanent, major adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
Operational activity at southern and western ends the site would be visible where glimpsed between buildings. Dockside infrastructure and operational activity would be notable in the view.	There would be notable alteration to the existing view. Ships entering and exiting the harbour and whilst stationary at the docks would be a temporary impact	VP13 (Balnagask Rd).	Notable alteration of the view on residents.	Permanent, moderate adverse.	Limited Scope	Permanent moderate Adverse.
The North Breakwater would be on the horizon. Breakwater would be seen as would vessels within the harbour. The composite bulk and water tanks on the North Quay would be visible as would the main entrance and gatehouse area. The new harbour and associated operational activities would be dominant in the view.	VP14: The new harbour and associated operational activities would be dominant in the view, changing the focus and natural characteristics of the view.	VP14 (at Balnagask Park).	Notable alteration of the view on recreational users / residents.	Permanent, moderate adverse.	Limited Scope.	Permanent moderate Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						



**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
Visible features: North and South Breakwaters, East Quay and South East Pier, the most prominent element in the view would be the Gatehouse and West Quay, vessels docking within the harbour would interrupt the view.	VP15: The view would be fundamentally changed as a result of the proposed development. Ships entering and exiting the harbour and whilst stationary at the docks would be a temporary impact.	VP15 (St Fittick's Road, on edge of Balnagask Golf Course).	Notable alteration of the view on motorists.	Permanent, moderate adverse.	Limited Scope.	Permanent moderate Adverse.
Visible features: Gatehouse and West Quay, North and South Breakwaters, East Quay and South East Pier,	The view would be fundamentally changed as a result of the proposed Development.	VP16.	View on recreation.	Permanent, moderate adverse.	Limited Scope.	Permanent, moderate adverse.
Visible features: North Breakwater, South East Pier, parts of the West and North Quays, water and mud tanks, occasional dockside crane and lighting columns, the Gatehouse and new entrance, Vessels would be seen.	Operational activity would form the dominant focus and fundamentally change the view.	VP23 (Coastal Path (CP78) at Greg Ness).	Notable alteration of the view on recreational users.	Permanent, moderate adverse.	Limited Scope.	Permanent moderate Adverse.
<b>Note:</b>						
* As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.12: Seascape, landscape and visual effects summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
<b>Visual</b>						
North breakwater as well as North and East Quays would be clearly visible. The junction with the new harbour entrance and Gatehouse would be just visible. Vessels within the harbour would disrupt the view of the bay.	North Breakwater would become a prominent feature. North and East Quays would be visible. South Breakwater would be out of sight behind cliffs to the right of view. The junction with the new harbour entrance and Gatehouse would be just visible to the left of view. Vessels within the harbour would disrupt the view of the bay, but views out to sea would be possible.	VP24 (on the Coast Road).	Fundamental change in the view on motorists / rail.	Permanent, major adverse.	Limited Scope.	Permanent, major adverse.
Visible features: the water and composite bulk tanks, the quayside cranes and lighting columns, South Breakwater, Vessels would be seen using the harbour.	The view into Nigg Bay is extensive, especially of the western and southern beach and Greg Ness headland. The three tall blocks of flats and other residential areas in Balnagask are prominent in the background.	VPs 26, 27 and 28 (out at sea).	Alteration of the view on recreational users.	Permanent, minor adverse.	Limited Scope	Permanent Minor Adverse.
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.13 Chapter 18: Traffic and Transport**

**Table 25.13: Traffic and transport summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction vehicles.	Additional HGV movements for 3 years.	Local roads around harbour extension.	Route mainly through Industrial Estate.	Negligible.	The implementation of a Construction Traffic Management Plan as part of an EMP*. Improvements to Coast Road railway bridge traffic signals.	Negligible.
Road closures.	A temporary closure of Greyhope Road between Coast Road and Girdleness Lighthouse is proposed during the construction phase.	Other road users.	Limited as light traffic flows, has no strategic function, and can be accessed from elsewhere.			
Construction vehicles.	Accidents and safety.		Limited as construction traffic routed away from other road users as much as possible.			
	Disruption and driver delay.		Limited as the Coast Road, and Hareness Road are currently utilised by HGVs and are considered appropriate for future site related HGV movements. These links, and their junctions, currently operate well within capacity.			

**Note:**

\* As discussed within Chapter 26 Outline Environmental Management Plan

**Table 25.13: Traffic and transport summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction vehicles, continued.	Roads closed to site traffic.	Pedestrians and cyclists on St Fittick's Road.	No site traffic routed along St Fittick's Road towards the residential areas of Torry and Balnagask, part of Core Path 104.	Negligible.	None required.	Negligible.
	The route of the coastal path would need to be altered during the construction phase.	Pedestrians on coastal path.	An alternative route will be provided.	Temporary, local, minor adverse.	Management of rerouted pedestrian and cycle routes by construction contractor.	Temporary, local, minor adverse.
	Cycle route NCN1 currently uses Greyhope Road which would be temporarily closed between Coast Road and Girdleness Lighthouse during construction works.	Cyclists on NCN1 Greyhope Road.	Cyclists would therefore have to either use St Fittick's Road or the diverted coastal path instead.			Permanent, local, minor beneficial.
	Site traffic would be routed to the south along Coast Road.	Pedestrians and cyclists on coast road.	There are no footways on Coast Road adjacent the site and the road is narrow to the south of the railway bridge.	Temporary, local, moderate adverse.	Creation of alternative route between Coast Road railway bridge and Hareness Road	Permanent, local, minor beneficial
<p><b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan</p>						

Table 25.13: Traffic and transport summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Road alterations.	Severance.	Other road users.	Construction traffic would be routed through the Altens Industrial Estate and would not pass through any residential communities.	Negligible.	None required.	Negligible.
	Construction personnel travelling to the site by public transport (i.e. bus and rail) .	Public transport.	Limited as numbers using public transport will be low.			
<b>Operation</b>						
HGV movements.	Two-way HGV trips on Coast Road are predicted to be 74% higher when HGVs generated by the proposed development are taken into account.	Public road network.	Limited effect as extra traffic should be within the carrying capacity of existing roads.	Negligible.	Travel Plan to be implemented to encourage travel by sustainable modes rather than private vehicle. Improvements to Coast Road railway bridge traffic signals.	Negligible.
	Accidents and safety.	Other road users.	The greatest expected effects would be on Coast Road to the south of the site since all HGVs and other delivery vehicles would be routed in this direction.			
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**Table 25.13: Traffic and transport summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Disruption and driver delay.	The Coast Road railway bridge incorporates traffic signals which allow only one stream of traffic to cross at a time.	Other road users.	There would be slight increases in queuing and delay at the traffic signals, but they would continue to operate within capacity.	Negligible.	Travel Plan to be implemented to encourage travel by sustainable modes rather than private vehicle. Improvements to Coast Road railway bridge traffic signals.	Negligible.
HGV movements.	HGV traffic in residential areas.	Pedestrians and cyclists on St Fittick's Road.	There would be minimal development-generated HGVs or deliveries routed along St Fittick's Road towards the residential areas of Torry and Balnagask.	Negligible.	None required.	Negligible.
Operational traffic routes.	Much of the diverted coastal path route past the site would become a permanent diversion.	Pedestrians on coastal path.	An alternative route will be provided.	Negligible.	None required.	Negligible.
	Greyhope Road between Coast Road and Girdleness Lighthouse would be reopened, allowing cyclists to once again use this section of NCN1.	Cyclists on NCN1 Greyhope Road.	Full access to this stretch of road.			
Operational traffic routes, continued.	Site traffic would be routed to the south along Coast Road.	Pedestrians and cyclists on coast road.	There are no footways on Coast Road adjacent the site and the road is narrow to the south of the railway bridge.	Temporary, local, minor adverse.	Creation of alternative route between Coast Road railway bridge and Hareness Road.	Permanent, local, minor beneficial.
<p><b>Note:</b>  * As discussed within Chapter 26 Outline Environmental Management Plan</p>						

Table 25.13: Traffic and transport summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Severance.	Development generated HGVs and delivery vehicles would be routed through via Coast Road and the Altens Industrial Estate.	Other road users.	This traffic will not pass through any residential communities.	Negligible.	Travel Plan to be implemented to encourage travel by sustainable modes rather than private vehicle.	Negligible.
Travel by Harbour employees by public transport.	It is anticipated that approximately 20 to 25 staff would be based at the proposed development, with the majority working shift patterns so that only around 16 staff would be on-site at any time.	Public transport.	Existing services would have the capacity to accommodate the additional bus users expected as a result of the proposed development.			
<b>Note:</b> * As discussed within Chapter 26 Outline Environmental Management Plan						

**25.2.14 Chapter 19: Air Quality**

**Table 25.14: Air quality summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction activities earthworks, construction and trackout activities.	Dust emissions.	Residential areas along Greyhope Road at the Girdleness Lighthouse Pentland Crescent/Pentland Place Balnagask Circle.	Dust soiling, Human health, Ecological.	Adverse significant effects.	Routine environmental management control measures to prevent and control dust.	Negligible.
Emissions from construction vehicles.	Plant operating on the Site and construction vehicles entering and leaving the Site would have the potential to temporarily increase local pollutant concentrations, particularly NO <sub>2</sub> and PM <sub>10</sub> .		Human health, Ecological.	Adverse effect of minor significance to negligible.	Routine environmental management measures to control construction traffic.	Adverse effect of minor significance to negligible.
Emissions from construction plant.				Negligible.	None required.	Negligible.
<b>Operation</b>						
Emissions from traffic associated with the completed development.	Vehicles entering and leaving the Site would have the potential to temporarily increase local pollutant concentrations, particularly NO <sub>2</sub> and PM <sub>10</sub> .	Residential areas along Greyhope Road at the Girdleness Lighthouse Pentland Crescent/Pentland Place Balnagask Circle.	Human health, Ecological.	Adverse effect of minor significance to negligible.	Production of a travel plan to reduce single occupancy car trips and promote sustainable travel.	Adverse effect of minor significance to negligible.



Table 25.14: Air quality summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Shipping and Cargo Handling Equipment emissions Cruising (or "At Sea"); Manoeuvring; At berth (or in port), which can further be divided into two distinct modes: Loading/unloading; Hotelling.	The main pollutants of concern from marine vessels are generally NO <sub>x</sub> , SO <sub>x</sub> and particulate matter. The main pollutants of concern from marine vessels are generally NO <sub>x</sub> , SO <sub>x</sub> and particulate matter.	Local residents/ecology.	Human health, Ecological.	Negligible.	None required.	Negligible.

**25.2.15 Chapter 20: Terrestrial Noise and Vibration**

**Table 25.15: Terrestrial noise and vibration summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction plant noise: Dredging Access road excavation and paving, Breakwaters. Vibro and impact piling. Quay Construction Marine. Quay Construction On-Shore.	Elevated noise levels and types depending on construction activity.	SR A Doonies Rare Breeds Farm.	Elevated noise levels on the receptors.	Negligible.	Implementation of a site-specific noise control measures to be agreed with ACC, which may include: Selecting inherently quiet plant; The use, where necessary and practicable, of enclosures and screens around noisy fixed plant; Strategic planning of works; and Adherence to relevant British Standards.	Negligible.
		SR B Residential properties Girdle Ness Lighthouse.		Negligible to temporary, local very major adverse.		Negligible to temporary, local very major adverse.
		SR C Balnagask residential area.		Negligible to temporary, local very major adverse.		Negligible (except dredging evening temporary, local minor with very major at night-time).
Construction vibration.	Preliminary indications are that 'just' perceptible effects from vibration are unlikely due to the distances between operations and sensitive receptors.	Doonies Rare Breeds Farm. Residential properties Girdle Ness Lighthouse. Balnagask residential area.	Vibration.	Negligible.	Implementation of a site-specific mitigation measures to be agreed with ACC.	Negligible.

Table 25.15: Terrestrial Noise and vibration summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
Construction traffic noise.	Maximum number of 218 HGVs per day.	General Public living and working in the area of Coast Road, Hareness Road, Welling Road (South and North), and West Tulos Road. Doonies Rare Breeds Farm, Coast Road.	Elevated noise levels.	Negligible to temporary, local moderate adverse.	Implementation of Construction Logistics Plan; and Implementation of site-specific control measures.	Negligible to temporary, local moderate adverse.
<b>Operation</b>						
Fixed Plant And Building Services.	At this stage in the design, specific detail with regard to potential fixed plant and building services associated with the development is not known. Noise impacts are assessed from a vessel generator and grain elevator generator.	Doonies Rare Breeds Farm. Residential properties Girdle Ness Lighthouse. Balnagask residential area.	Elevated noise levels.	Negligible to permanent, local moderate adverse.	Control through noise condition. Procurement of 'quiet' plant and use of localised mitigation where required; acoustic louvres, enclosures, barriers.	Negligible.

**Table 25.15: Terrestrial noise and vibration summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Operational: Tank Cleaning. Loading large pipes onto lorries via mobile forklift. Cargo unloading. Moving containers from boat. Forklift lifting pipes. Crane lifting pipes off boat including dismantling chains from pipes. Forklift reverse alarm. Mobile crane lifting Large mobile crane moving. Vessel generator. Grain elevator generator. Waiting tugboat engine. Tugboat pulling away from dock	Elevated noise levels and types depending on operational activity.	Local area.	Elevated noise levels on the local area.	Neutral to permanent, intermittent, local major adverse.	Implementation of BPM to reduce noise levels from plant and operations.	Neutral to permanent, intermittent, local moderate adverse.

Table 25.15: Terrestrial noise and vibration summary continued

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Operational HGVs.	Noise emissions from HGV movements along the AHEP access road will be dependent on the hourly flow (number of vehicles per hour).	Doonies Rare Breeds Farm. Residential properties Girdle Ness Lighthouse. Balnagask residential area.	Elevated noise levels on the local area.	Neutral to moderate adverse	Implementation of operations logistics plan and localised mitigation measures.	Neutral to permanent, intermittent, local minor adverse.
Road traffic.	Increase in road traffic noise.	Coast Road.	Imperceptible 1.5 dB(A) increase.	Neutral to permanent, local minor adverse.	None Required.	Neutral to permanent, local minor adverse.

**25.2.16 Chapter 21: Shipping and Navigation**

**Table 25.16: Shipping and navigation summary\***

Activity	Impact	Risk Region	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>				
Vessel traffic.	Vessel Allision with the Partially Constructed Breakwater/Quayside.	Tolerable.	Appointment of dedicated Construction Marine Coordinator to liaise with VTS;  Advanced announcement of information (to specific receptors);  Planning so as to not impact adverse weather approaches; and  VTS (at a suitable level).	Not significant.
	Vessel-to-Vessel Collision due to Avoidance of the Site (Construction Phase).	Tolerable.	Appointment of dedicated Construction Marine Coordinator to liaise with VTS.	Not significant.
	Vessel-to-vessel Collision due to Construction Phase / Support Vessels in the Area.	Tolerable.	All work vessels required to carry AIS regardless of size; Appointment of dedicated Construction Marine Coordinator to liaise with VTS on the construction plans daily; and Installation of CCTV within Nigg Bay.	Not significant.
Construction of breakwater/quay foundation.	Fishing Gear Interactions with Subsurface Structure.	Broadly acceptable.	Advanced announcement of information (to specific receptors); and  Liaison with fishermen.	Not significant.

Table 25.16: Shipping and navigation summary continued

Activity	Impact	Risk Region	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>				
Construction vessel traffic.	Construction Vessel Allision with the Development.	Tolerable.	Appointment of dedicated Construction Marine Coordinator to liaise with VTS;  Advanced announcement of information (to specific receptors);  Planning so as to not impact adverse weather approaches; and  VTS (at a suitable level).	Not significant.
Construction vessel traffic Continued.	Construction Vessel Collision with Another Construction Vessel.	Tolerable.	All work vessels required to carry AIS regardless of size; and  Appointment of dedicated Construction Marine Coordinator to liaise with VTS on the construction plans daily.	Not significant.
	Construction Vessel Snagging on Fishing Pots.	Broadly acceptable.	Construction vessel transit routes made known; and  Liaison with fishermen.	Not significant.

**Table 25.16: Shipping and navigation summary continued**

Activity	Impact	Risk Region	Mitigation Proposed	Residual Significance of Effect
<b>Construction and Operation</b>				
Vessel Traffic.	Commercial Vessel (Powered) Allision with the Development.	Tolerable.	Pilotage training (different requirements to current harbour); Expansion of VTS (pre-construction) to cover new harbour limits; and  Appointment of dedicated Construction Marine Coordinator to liaise with VTS.	Not significant.
	Drifting Vessel Allision with the Development.	Tolerable.	Shuttle tanker anchorage area moved during construction.	Not significant.
	Fishing Vessel Allision with the Development.	Broadly acceptable.	Advanced announcement of information (to specific receptors); and  Liaison with fishermen.	Not significant.
	Recreational Craft Allision with the Development	Broadly acceptable	Use of works vessel as guard vessel;  CCTV installed in Nigg Bay; and  Advanced announcement of information to specific receptors (contact with recreational facilities and clubs).	Not significant.
Vessel traffic, continued.	Vessel Allision with the Fixed Fully Constructed Structure.	Tolerable.	Pilotage training (different competence requirements to current harbour);  Pilot exemption and vessel specification considered against the implication to safety; and  Expansion of VTS upon completion to cover new harbour limits.	Not significant.
	Vessel-to-vessel Collision due to Avoidance of the Site (Operational Phase).	Tolerable.	Expansion of VTS upon completion to cover new harbour limits.	Not significant.

\* This section describes the methodology of the Navigational Risk Assessment (NRA). The methodology and terminology of this section follows that used in the supporting technical study.



25.2.17 Chapter 22: Commercial Fisheries

Table 25.17: Commercial fisheries summary

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction and Operation</b>						
Construction and Operation of the harbour.	Fishing vessels will be prohibited from the development area, in conjunction with unwillingness of fishermen to use navigation channels for fishing.	Commercial fishing.	Displacement of fishing vessels from fishing grounds.	Minor adverse.	None.	Minor adverse.
	Displacement of fishing activity from the project area and new shipping routes into adjacent fishing grounds.	Commercial fishing.	Increased pressure on fishing areas adjacent to the development area.	Negligible.	None.	Negligible.

**25.2.18 Chapter 23: Other Users**

**Table 25.18: Other users summary**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
General construction activities.	Ability to install and maintain the export cable.	Kincardine Offshore Windfarm (KOWF)	Overlap between the development construction and the installation of the KOWF cable.	Negligible.	None.	Negligible.

25.2.19 Chapter 24: Archaeology and Cultural Heritage

Table 25.19: Archaeology and cultural heritage summary

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Construction</b>						
All activities associated with potential physical Impacts.	Physical impacts	Designated Heritage Assets.	Total and/or partial loss of these assets.	The Aberdeen Harbour Expansion Project would not result in any physical impacts to designated heritage assets therefore there will be no effects on these assets.		
Construction of quays, breakwaters and other infrastructure.		Undesignated Heritage Assets; Maritime and Aviation Archaeology; Unknown Archaeological Remains.		Major adverse.	Written Scheme of Investigation (WSI).  Watching briefs.  Historic Buildings Report and supplementary Heritage Statement.	Major adverse.
Dredging.		Maritime and Aviation Archaeology.		Major adverse.		Major adverse.
Landscaping or levelling works.		Unknown Archaeological Remains.		Major adverse.		Major adverse.
Relocation of outfalls/intakes		Archaeological and Cultural Heritage Assets (known and unknown).		Major adverse.		Major adverse.

**Table 25.19: Archaeology and cultural heritage summary continued**

Activity	Impact	Receptor	Effect	Significance of Effect	Mitigation Proposed	Residual Significance of Effect
<b>Operation</b>						
Physical presence of project / development.	Visual impacts of development infrastructure such as breakwaters, tanks in Nigg Bay.	St. Fittick's Church (WA 1030).	Changes to setting.	Major adverse.	Screening / Landscaping.	Major adverse.
		Girdle Ness Lighthouse (WA 1015), Fog Signal (WA 1018).		Minor adverse.	None.	Minor adverse.
		Tullos Hill cairn (WA 1044), Crab's Cairn (WA 1053), Baron's Cairn (WA 1055), Loirston Country Park Cairn (WA 1060), Cat Cairn (WA 1062).	Changes to setting.	Negligible.	None.	Negligible.
Berthing of large vessels in/outside harbour.	Visual impacts from the presence of (large) vessels in and around Nigg Bay.	St. Fittick's Church (WA 1030).	Changes to the landscape or seascape affecting the setting of the asset.	Major adverse.	Screening / Landscaping.	Major adverse.
Operational activities.	Visual impacts from the operation of quayside infrastructure such as cranes.	St. Fittick's Church (WA 1030).		Major adverse.	Screening / Landscaping.	Major adverse.
		Girdle Ness Lighthouse (WA 1015), Fog Signal (WA 1018).		Minor adverse.	None.	Minor adverse.
		Tullos Hill cairn (WA 1044), Crab's Cairn (WA 1053), Baron's Cairn (WA 1055), Loirston Country Park Cairn (WA 1060), Cat Cairn (WA 1062).		Negligible.	None.	Negligible.