



Environmental Impact Assessment Report (EIAR)

Ringaskiddy Port Re-development – Vol IVc Appendices

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APPENDIX 9.11 DROPDOWN VIDEO SURVEY

Port of Cork (AYESA)

Ringaskiddy Drop Down Video Survey



AQUAFACT
APEM Group

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1. Introduction

AQUAFACT - APEM Group (hereafter referred to as AQUAFACT) was commissioned by Ayesa on behalf of the Port of Cork Company to conduct a drop-down video survey (DDV) as part of the preparation of an EIAR chapter on Marine Ecology for proposed developments.

On the 24th of July 2024, 28 drop-down video (DDV) recordings were carried out in the vicinity of the proposed development at Ringaskiddy. A high-resolution drop-down video system was deployed at 28 locations to characterise the flora and fauna in the area. AQUAFACT adheres to NMBAQC and JNCC guidelines for the best practice acquisition of video stills imaging of benthic substrata and epibenthic species. This ensures that the collected data meets the specific needs and requirements of the proposed survey, including broadscale habitat type analysis, identification of fauna, burrows, percentage cover of reef types, anthropogenic influences, and biotope classification.

This report provides an overview of the DDV observations made at each location, detailing the substrates and species encountered.

Ringaskiddy Port is an active ferry and bulk cargo port, reclaimed in the past from the Ringaskiddy shoreline. It is entirely enclosed by constructed structures, including a 480m quay on the western side and 1,400m of rock armour forming the rest of the perimeter. Additionally, there are several mooring dolphins within the inner basin, as well as Roll-on/Roll-off ramps. The port's outer boundary is separated from Monkstown Creek tidal flats by the 600m long ADM Jetty and a 430m long rock armour breakwater (ADM Training Wall). Virtually the entire Training Wall and around 350m of the ADM Jetty are located in the intertidal zone. The mouth of the basin, extending from the end of the ADM Jetty to the rock armour embankment on the eastern side, is 320m wide. The majority of Ringaskiddy Basin consists of the subtidal open-water area of the port, which predominantly features a soft sediment bottom at depths of 7-13m.

The main basin experiences regular ship traffic, and every few years, the bottom sediments are dredged along the berths and approaches to maintain a safe navigable depth. The basin is a very sheltered area, which is reflected in the dominance of its subtidal soft sediment substrate and, in the

case of the perimeter rock armour, by its associated brown seaweed-dominated communities in the intertidal and adjoining shallow subtidal zones.

The Survey Plan for Assessing the Benthic Ecology of Ringaskiddy in 2024

The proposed development site (“the Site”) is located at the Port of Cork, Ringaskiddy, Co. Cork. The Site is centred at approximate Irish Transverse Mercator (ITM) coordinates 706992, 735455 and is *ca.* 0.4ha.

This Drop-Down Video (DDV) study focuses on the maritime area near the proposed redevelopment of Ringaskiddy. The Port of Cork Company (POCC) has completed major redevelopment at Ringaskiddy under the permitted Strategic Infrastructure Development (PA0035, with modifications). The main elements of these works are operational, but further permission is needed to complete remaining works due to reporting requirements.

The remaining redevelopment at Ringaskiddy involves several key construction elements across multiple sites and are summarised below (also see redline boundaries Figure 1-1).

Ringaskiddy East (Container and Multi-purpose Berth (CB/MPB)):

- A Container Berth of approximately 200m in length (CCT 2)
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)
- Installation of link-span comprising a floating pontoon and access bridge
- Installation of container handling cranes
- Lighting and fencing

Ringaskiddy West (Deepwater Berth Extension):

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB
- Dredging works to varying levels to facilitate navigational access to the new facilities
- Lighting

Road Improvements:

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28
- Lighting and fencing

The redevelopment also features Load on Load off (LoLo), Roll on and Roll off (RoRo), and general cargo operations, with specific quay structures, surfacing, and reclamation works. Key services such as drainage, lighting, and security systems will be installed to ensure the safe and efficient operation of the terminal.

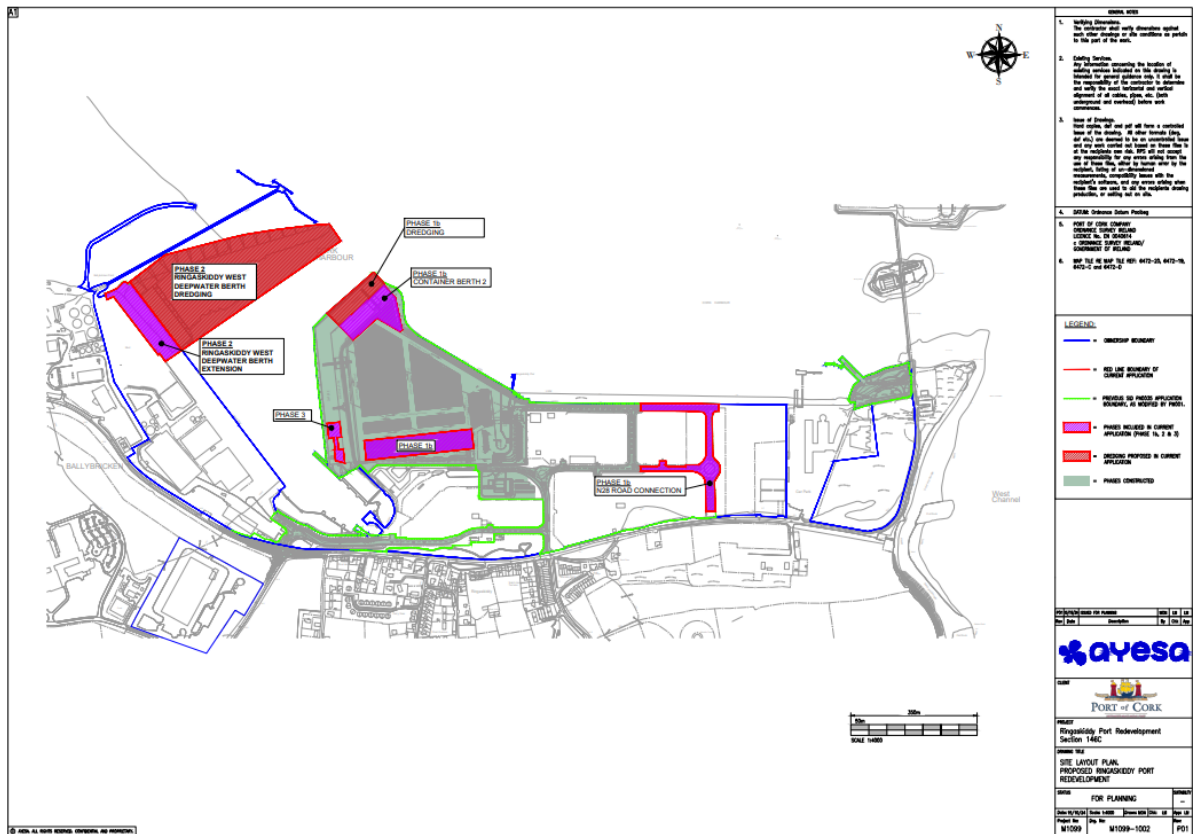


Figure 1-1: Ringaskiddy development site

2. Materials & Methods

2.1 Ringaskiddy Drop Down Video (DDV)

AQUAFACt staff conducted this beam DDV survey on the 27th of June in the vicinity of Ringaskiddy. The beam trawl was deployed from the Denis Murphy, a vessel kindly provided by the Port of Cork.

The drop-down camera used was the STR SeaSpyder Nano, an ultra-compact system offering high-resolution digital imaging and photographic-quality illumination. The system featured the latest generation STR SeaCam Mini IP camera and two ultra-efficient STR SeaLight LED lights, installed on a lightweight deployment frame with a 50m Kevlar-reinforced umbilical. Real-time HD video was captured using the supplied STR VidOverlay software. Laser scaling was integrated into the camera system, which was essential for conducting an assessment and for accurately measuring percentage cover.

Short drifts were used at each station, with video recorded along each transects, with the camera positioned approximately 50cm to 1m above the seabed. The camera was landed on the seabed along each transect, enabling an assessment of spatial variability.

At each station, the immediate survey area was checked for obstructions, such as static gear. Notes were made in-situ on visible sediment conditions, seabed features, flora and fauna, and notable sensitive and protected species, along with the DGPS position, water depth, date, and time.

The camera was lowered to the seafloor and a recording made of the bottom type and flora and fauna encountered. Once the camera was recording, the boat was allowed to drift with the current during filming (for approximately two minutes) to get representative footage along each camera deployment. All captured video footage was reviewed, and substrate type and characterising species were noted and used to assess any changes in the environment.

The survey sites were in the sublittoral zone, in areas of low to medium energy, exposed to tidal action. There were 28 locations studied. Stations covered the entire expanse of Ringaskiddy, and depths ranged from 1 m to 16 m.

2.2 Ringaskiddy DDV Locations

The locations for the drop-down video surveys (Figure 2-1) were selected to provide a visual assessment of the various biotopes within the Ringaskiddy basin, as well as the areas outside where proposed developments are planned.



Figure 2-1: Drop Down Video locations Ringaskiddy

The GPS coordinates for the drop-down video stations are shown in Table 2-1.

Table 2-1: Locations of drop-down video stations in 2024.

Station	2024 – Subtidal Video positions	
1	51.83669	-8.32142
2	51.83658	-8.32357
3	51.83629	-8.32409
4	51.83537	-8.32471
5	51.83585	-8.32484
6	51.83491	-8.32458
7	51.83397	-8.32443
8	51.83268	-8.32422

Station	2024 – Subtidal Video positions	
9	51.83268	-8.32422
10	51.83139	-8.32375
11	51.8317	-8.3256
12	51.83267	-8.32556
13	51.83357	-8.32682
14	51.83527	-8.32886
15	51.83561	-8.33096
16	51.83646	-8.33212
17	51.83671	-8.3309
18	51.83776	-8.32986
19	51.83736	-8.32918
20	51.8378	-8.32759
21	51.8386	-8.32584
22	51.83928	-8.32796
23	51.83757	-8.32441
24	51.83706	-8.32206
25	51.83718	-8.32182
26	51.83744	-8.32158
27	51.83768	-8.32124

3. Results

Table 3-1 shows the initial field observations by the AQUAFACCT survey team working onboard the vessel. This table includes the station numbers, success or failure of collecting DDV, approximate depth, sediment type or benthic habitats observed, and relevant comments are summarised in the table below. There was significant variation in depth across the sites studied, and at many locations, considerable sediment was observed in the water column. At station 11, it was initially thought that no video was collected, but a substantial amount of footage was available for assessment. Stations 10, 12, and 14 were not visited.

Table 3-1 DDV stations, video collected, file name, depth (m), sediment type and observations.

Station (ST)	Video collected	File name	Depth(m)	Sediment type	Observations
1	Y	ST01 240724	6	Mud	Featureless
2	Y	ST02 240724	11	Mud	Shell, some rock
3	Y	ST03 240724	10	Mud	Anoxic, Plow track
4	Y	ST04 240724	15	Mud	Shell, Crab, Green Algae, Tunicates, Mussels
5	Y	ST05 240724	14	Mud	Featureless, brief sighting of a cephalopod
8	Y	ST08 240724	13.5	Mud	Green and brown algae
9	Y	ST09 240724	11	Mud	Featureless
11	Photos only	ST11 240724	7	Mud	Crabs
13	Y	ST13 240724	13	Mud	
15	Y	ST15 240724	9	Mud	Gobies
16	Y	ST16 240724	9.6	Mud	Featureless
17	Y	ST17 240724	14	Mud	Gobies, drift algae
18	Y	ST18 240724	1	Mud	Algae
19	Y	ST19 240724	10.8	Sandy Mud	Shelly, crabs
20	Y	ST20 240724	10.3	Mud	Shelly, sandy, velvet crabs, gobies
21	Y	ST21 240724	10.3	Muddy sand	Drift weed, large brown weed, shell
22	Y	ST22 240724	10.2	Mud	Shells <i>M. edulis</i> , unsafe waters, quick

Station (ST)	Video collected	File name	Depth(m)	Sediment type	Observations
24	Y	ST24 240724	6	Mud	Rock Armour, shells, fan brown algae
25	Y	ST25 240724	10	Mud	Rocky, Fan brown algae
26	Y	ST26 240724	14.5	Mud	Shell, brown & green algae, <i>A. rubens</i>
27	Y	ST27 240724	14.5	Mud	Shelly
28	Y	ST28 240724	16	Mud	Heavy Current, boat keeping at 3knts

3.1 Drop Down Video Results

Images of the seabed were captured from the videos recorded at each of the stations that drop-down video was deployed. Below is an analysis of each station based on review of the footage along with representative still images of the epibiotic communities. The distance between the green lasers in each image is 20 cm. Full video footage from each of the recordings is available through request from AQUAFAC if required.

3.1.1 ST 01 Biotope Description:

The transect video at station ST01 was 1 minute and 31 seconds long. The depth at this station was recorded as approximately 6 metres below chart datum. The substrate consisted of very fine, soft mud with a pock marked/dimpled surface. During the video, the sediment was disturbed, revealing anoxic layers beneath the surface, indicating high organic content and limited oxygen penetration.

The seabed appeared flat and featureless, and no macrofauna or epifauna were observed in this area. The fine-grained composition of the sediment points to a depositional environment typical of shallow coastal or estuarine habitats, where tidal movements or currents continually influence sediment dynamics.

Biotope classification: This station corresponds to the SS.SSa.IMuSa - Infralittoral muddy sand biotope, characterised by fine muddy sand substrates in shallow sublittoral areas. The lack of visible fauna and the presence of fine sediments suggest a relatively low-energy environment with organic-rich conditions. Alternatively, if more fine-grained sediments and higher silt content are confirmed, it could also align with SS.SMu.ISaMu - Infralittoral sandy mud biotope, which supports similar environments with soft mud and minimal epifaunal activity.

This station represents a benthic habitat where visible fauna is scarce.

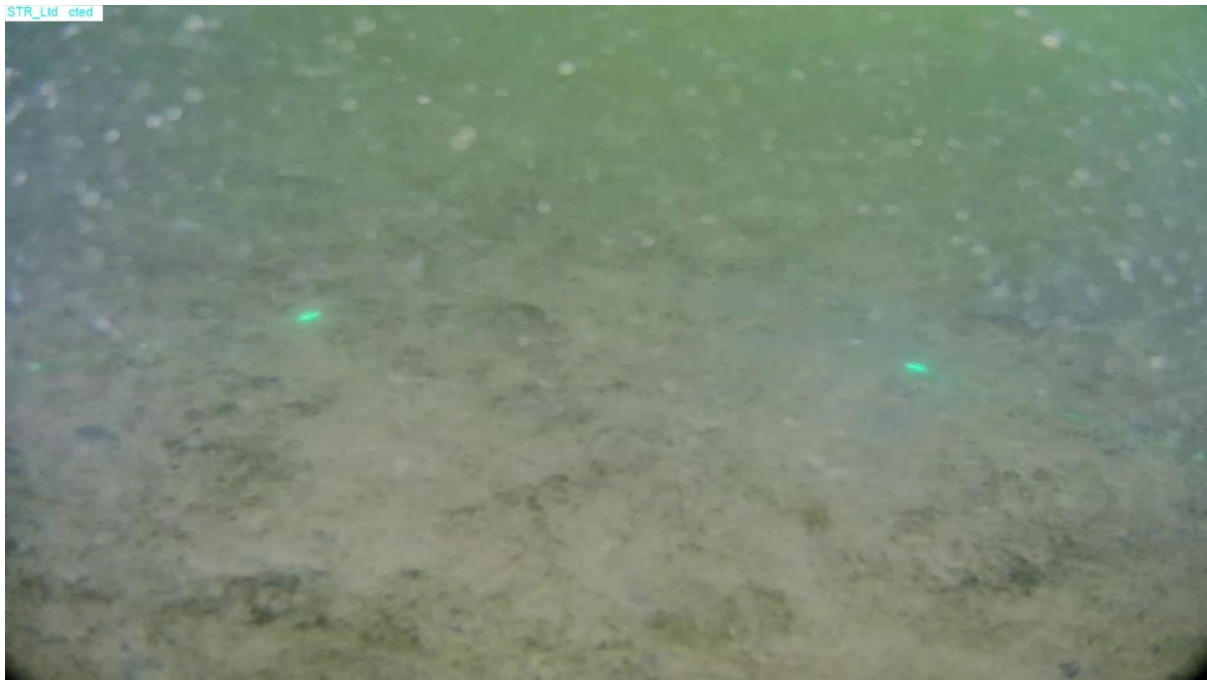


Figure 3-1: Representative video still from station ST 01.

3.1.2 ST 02 Biotope Description:

The transect video at station ST02 was 2 minutes and 18 seconds long. The depth at this station was approximately 11 metres below chart datum. The substrate consisted of a mixture of soft mud, shells, and some scattered rocks and stones, possibly of anthropogenic origin. These stones varied in colour, indicating different sources. The water had a noticeable green tinge, and considerable suspended particulate matter was present.

Green seaweed (*Ulva lactuca*) was observed, along with small tufts of brown algae, potentially *Laminaria* spp. A large rock was present and may serve as a habitat for marine life, though no epifaunal species were visibly attached.

Biotope classification: The biotope likely corresponds to SS.SMx.CMx - Circalittoral mixed sediment, characterised by a combination of soft mud, shells, and coarser materials like stones and debris. This biotope typically supports a variety of infaunal species, including polychaetes and bivalves, although none were visible in this transect. Alternatively, the station may also align with SS.SSa.IMuSa - Infralittoral muddy sand, particularly if the fine sediment dominates, with only occasional stones and debris.

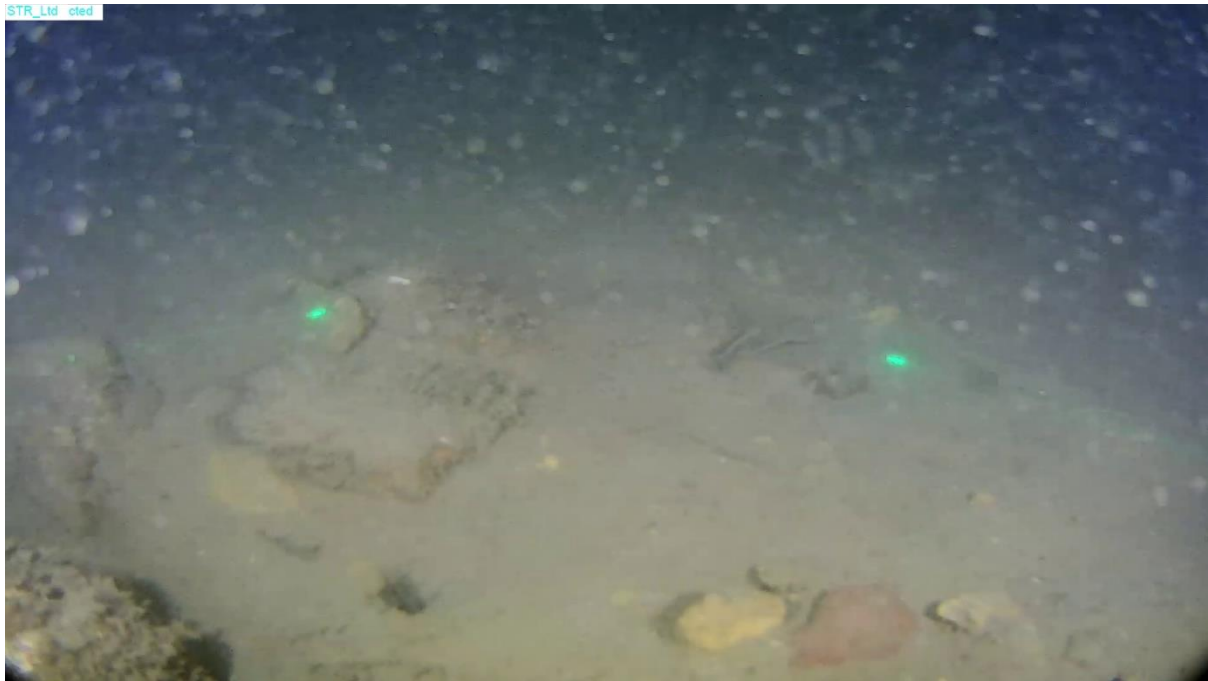


Figure 3-2: Representative video still from station ST 02.

3.1.3 ST 03 Biotope Description:

The transect video at station ST03 was 2 minutes and 54 seconds long. The depth at this station was approximately 10 metres. The substrate consisted of very fine mud, which showed minimal signs of biological activity. During the video the sediment was significantly disturbed, with clear resuspension of particles. Anoxic areas were visible within the sediment, suggesting limited oxygen penetration, possibly due to the cohesive nature of the fine mud.

A trench feature in the sediment was observed. No large fauna was observed.

Biotope classification: This station appears to be SS.SMu.IFiMu - Infralittoral fine mud biotope, which is characterised by fine muddy environments in low-energy areas, supporting a community of burrowing infauna like *Nephtys* spp. or *Thyasira* spp. The presence of anoxic layers and fine mud suggests poor water circulation, typical of this biotope. Alternatively, if the sediment has some sandy components, the SS.SMu.ISaMu - Infralittoral sandy mud biotope could also apply.

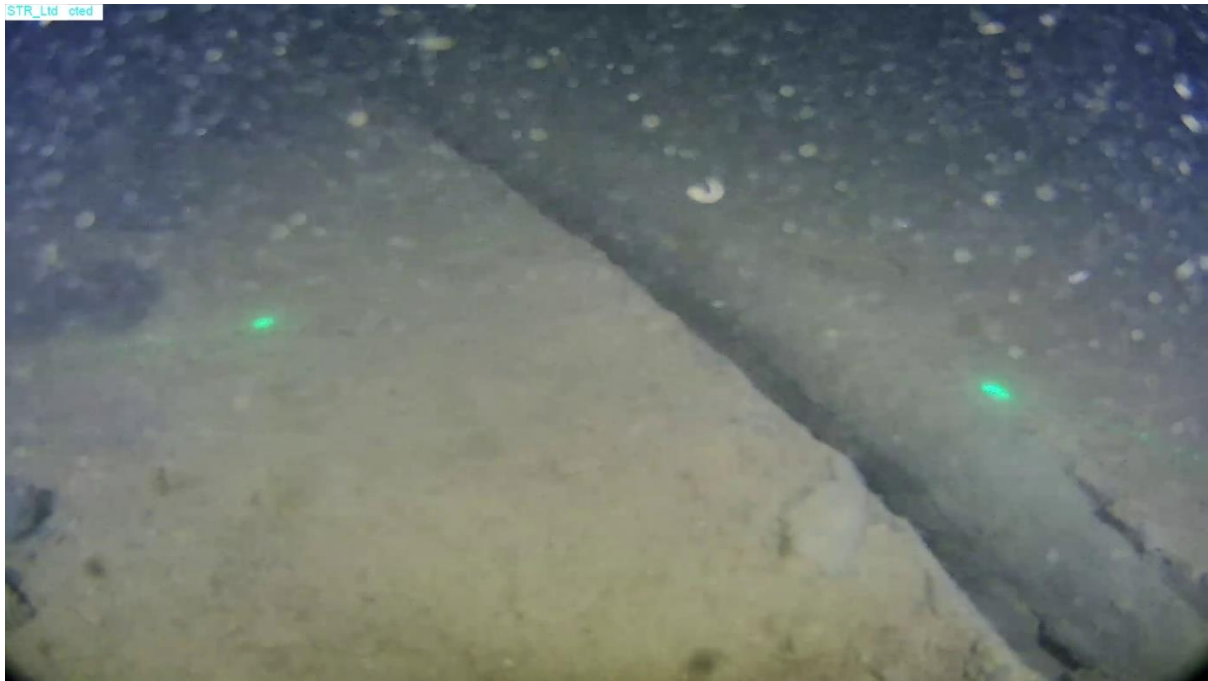


Figure 3-3: Representative video still from station ST 03.

3.1.4 St 04 Biotope Description:

The transect video at station ST04 was 2 minutes and 37 seconds long. The depth at this station was 15 metres. The substrate was primarily composed of mud, with the presence of shell material, green algae, and tunicates. A live mussel bed (*Mytilus edulis*) was observed, with mussels showing high growth rates and clean shells, many of which had barnacles (*Balanidae*) attached. A harbour crab (*Polybius depurator*) was visible, indicating a diverse and stable benthic community. The mussel shells were also home to sponges (*Porifera*) and other small organisms.

Biotope classification: This station is probably best classified under SS.SBR.SMus.MytSS - *Mytilus edulis* beds on sublittoral sediment, a biotope characterised by mussel beds in low-energy environments, where associated fauna such as crabs, sponges, and barnacles thrive. The combination of live mussels, sediment, and associated species matches the classification. Additionally, the presence of *Ulva* spp. (which may be may be detrital – particularly at this depth) is notable.

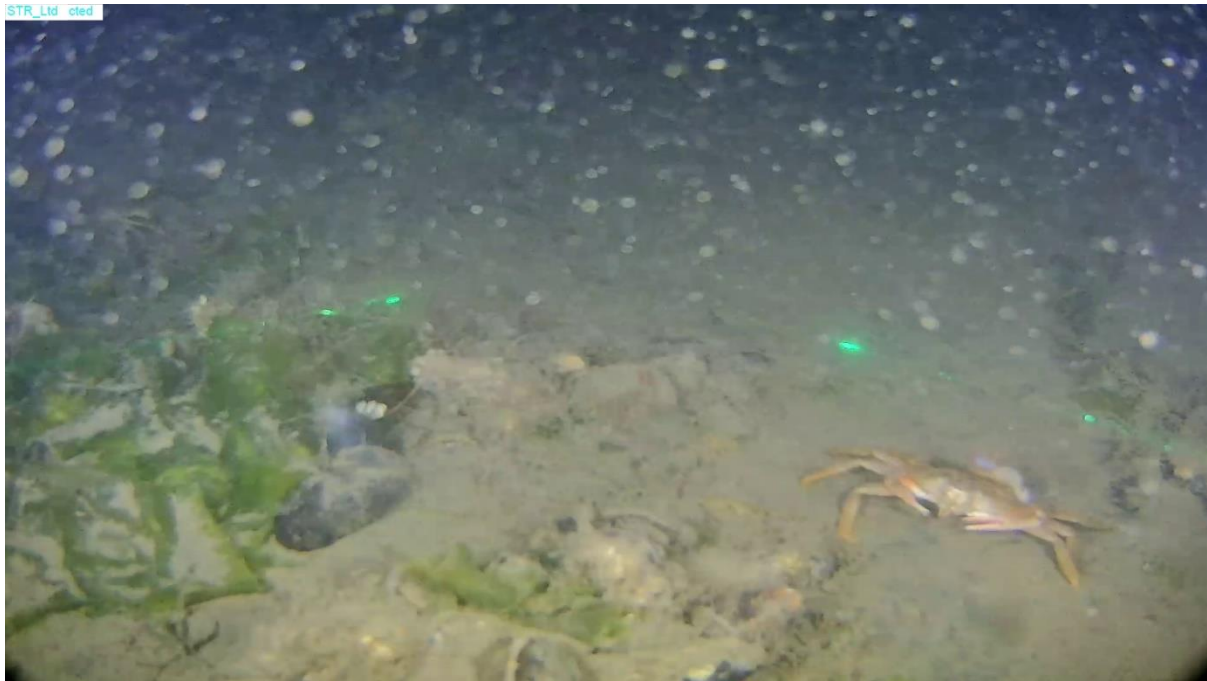


Figure 3-4. Representative video still from station ST 04.

3.1.5 ST 05 Biotope Description:

The transect video at station ST05 was 2 minutes long. The depth at this station is recorded as approximately 14 metres. The substrate consisted of fine mud, with anoxic layers exposed by the burrowing activity of some type of clam such as *Mya arenaria*. The seabed appeared uniformly smooth and featureless, with signs of anoxia suggesting organic enrichment, possibly influenced by its proximity to a harbour pier.

The water column contained a large amount of suspended particulate matter. There was a brief sighting of a cephalopod noted, though it did not remain visible for long. Additionally, a harbour crab (*Polybius depurator*) was observed burying itself into the sediment, indicating some faunal presence. Biotope classification: SS.SMu.IFiMu - Infralittoral fine mud biotope, characterised by fine muddy sediment and low-energy environments where burrowing species such as clams thrive. The signs of anoxia and organic enrichment suggest a habitat typical of soft sediment depositional environments.

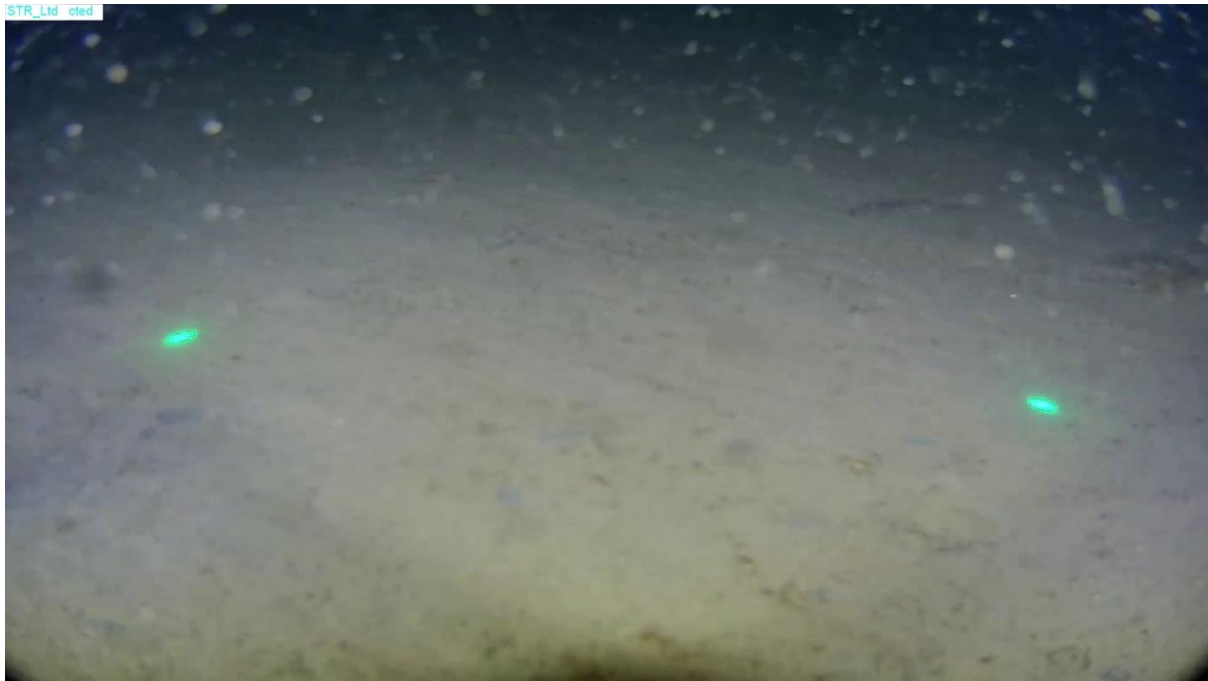


Figure 3-5: Representative video still from station ST 05.

3.1.6 ST 08 Biotope Description:

The video at station ST08 was 2 minutes and 16 seconds long. The depth at this station was recorded as approximately 13.5 metres. The water column had a green tinge, with moderate amounts of suspended particulate matter compared with the other sites observed. The substrate appears to be consisted of very fine mud, with some indications of mussel shell on the seabed. *Saccharina latissima* and other macroalgae, including green algae (*Ulva* spp.), were observed. A fish, likely a wrasse (Labridae), briefly swam through the frame.

The seabed appeared smooth and covered in fine sediment, characteristic of a low-energy environment, which allows fine particles to accumulate.

Biotope classification: This station likely corresponds to the SS.SSa.IMuSa - Infralittoral muddy sand biotope, which is characterised by fine sediment in sheltered, low-energy environments. The presence of macroalgae such as *Ulva* and *Saccharina latissima* suggests that the biotope may also have features similar to SS.SMp.KSwSS.SlatR - *Saccharina latissima* and red seaweeds on infralittoral sediments, but these may have been detrital in nature.

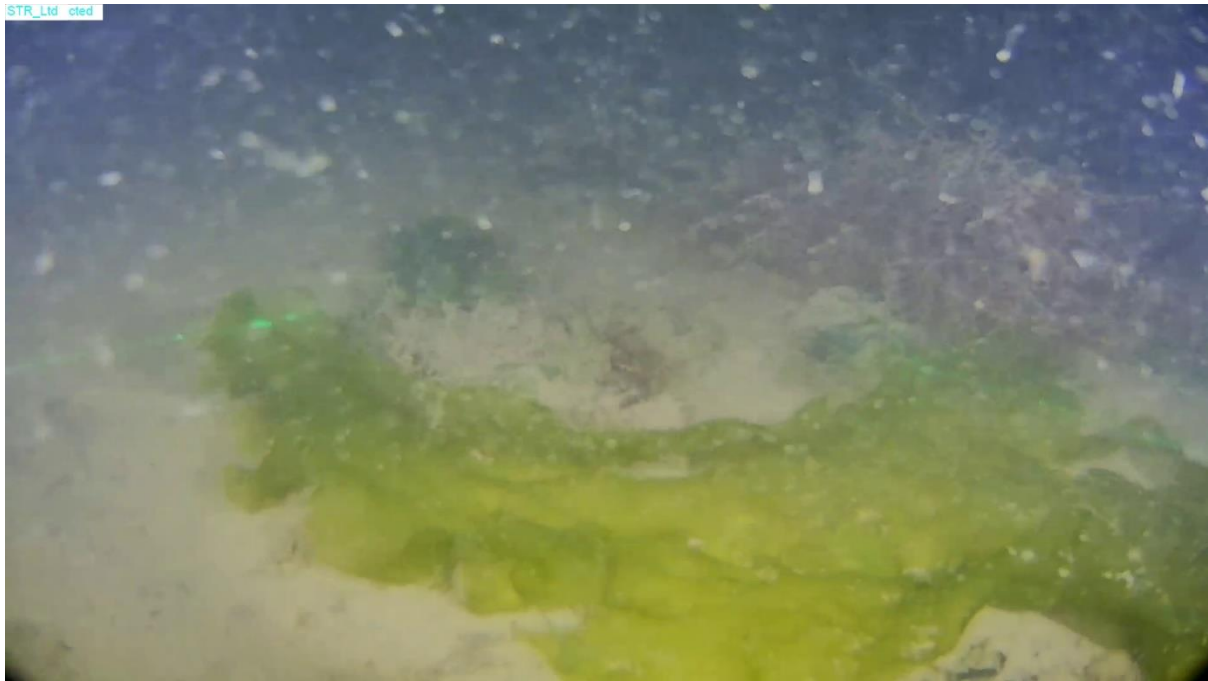


Figure 3-6: Representative video still from station ST 08.

3.1.7 ST 09 Biotope Description:

The transect video recording at station ST09 was 2 minutes and 3 seconds long. The depth at this station was recorded as approximately 11 metres. The substrate consisted of very fine mud, with an anoxic layer close to the surface, suggesting low oxygen levels and organic matter deposition. Fine suspended particulate matter was disturbed during the video drop, causing visible resuspension. The seabed appeared uniform and soft, with pitting and signs of burrowing.

Several green crabs (*Carcinus maenas*) were observed feeding and burrowing into the sediment, contributing to the pitted surface. Despite the active presence of crabs, the seabed remained relatively featureless, with no other visible macrofauna or flora in the frame.

Biotope classification: This station aligns with SS.SMu.IFiMu - Infralittoral fine mud biotope, which is typical of low-energy environments with fine sediment and anoxic conditions. The presence of crabs and organic enrichment reflects a habitat that supports burrowing fauna in soft, fine mud. The anoxic conditions and fine sediment point to low-energy depositional environments that allows for fine particles to settle and accumulate.

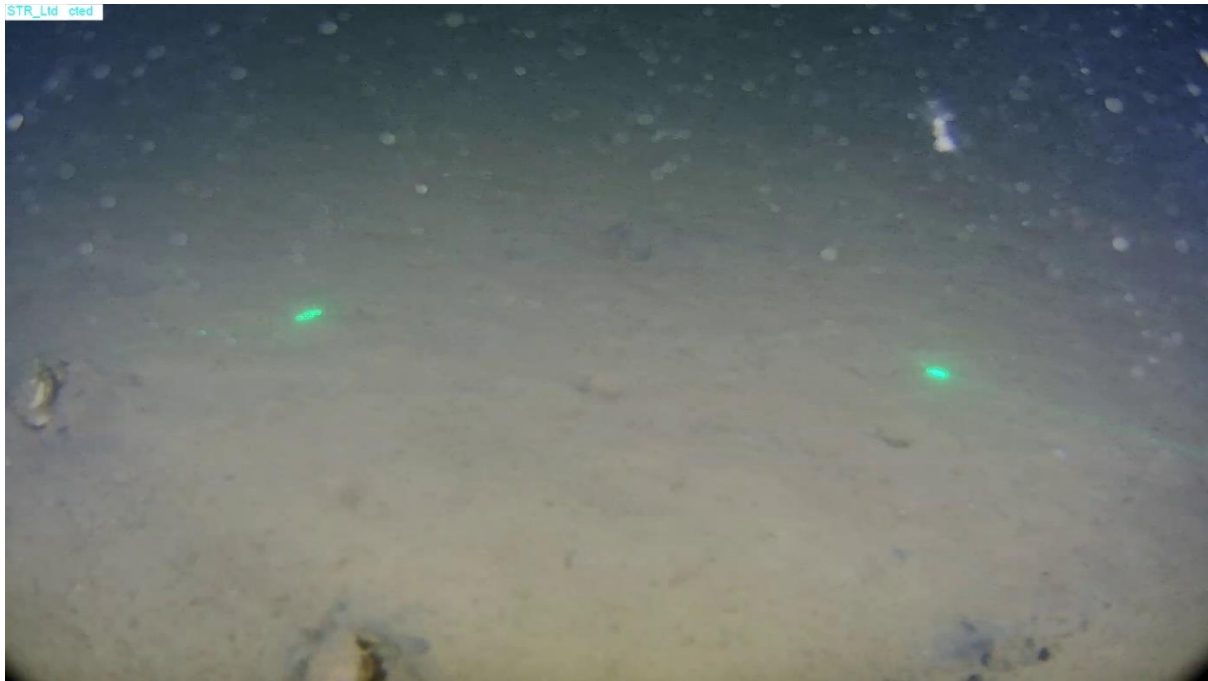


Figure 3-7: Representative video still from station ST 09.

3.1.8 ST 11 Biotope Description:

The transect video at station ST11 was 2 minutes and 9 seconds long. The depth at this station was recorded as 7 metres. The water column had an intense green tinge. The movement of the video equipment caused resuspension of particulate matter, indicating a fine-grained and cohesive substrate.

The currents appeared strong, and there was detritus on the seafloor, though its exact nature was unclear due to the speed of the video. A harbour crab (*Polybius depurator*) was observed moving across the soft sediment.

Biotope classification: This station corresponds to the SS.SSa.IMuSa - Infralittoral muddy sand biotope, characterised by fine, slightly muddy sediment in low-energy environments. The presence of a harbour crab indicates that this habitat supports burrowing and scavenging fauna, typical of infralittoral muddy sand environments.

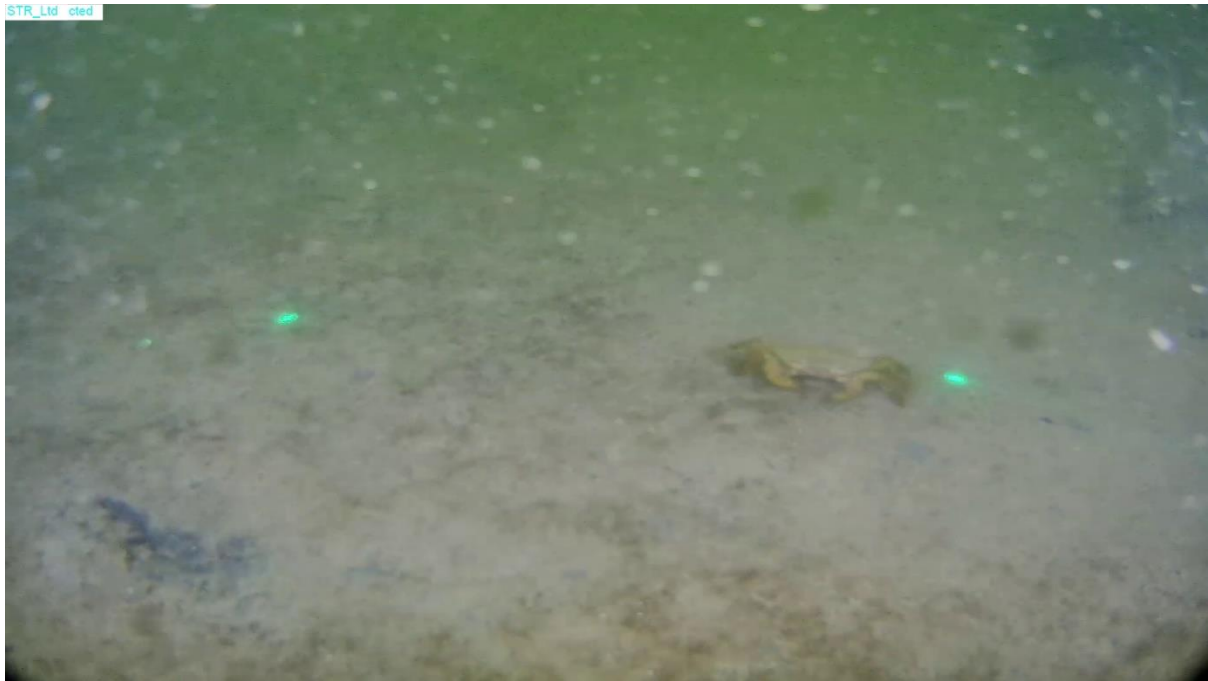


Figure 3-8: Representative video still from station ST 011.

3.1.9 ST 13 Biotope Description:

The video at station ST13 was 2 minutes and 39 seconds long. The depth was approximately 13 metres. The water column was very green, with a significant amount of suspended particulate matter. The seabed was relatively smooth and uniform, composed of fine mud with visible patches of exposed anoxic sediment, suggesting organic enrichment and low oxygen levels.

A harbour crab (*Polybius depurator*) was observed moving across the seabed. The fine, cohesive nature of the sediment suggests a depositional environment with limited disturbance.

Biotope classification: This station is classified under SS.SMu.IFiMu - Infralittoral fine mud, which typically supports burrowing infauna in low-energy environments with fine sediments and organic enrichment. The exposed anoxic patches and presence of particulate matter indicate that this habitat experiences limited water movement, allowing fine particles to settle and accumulate.

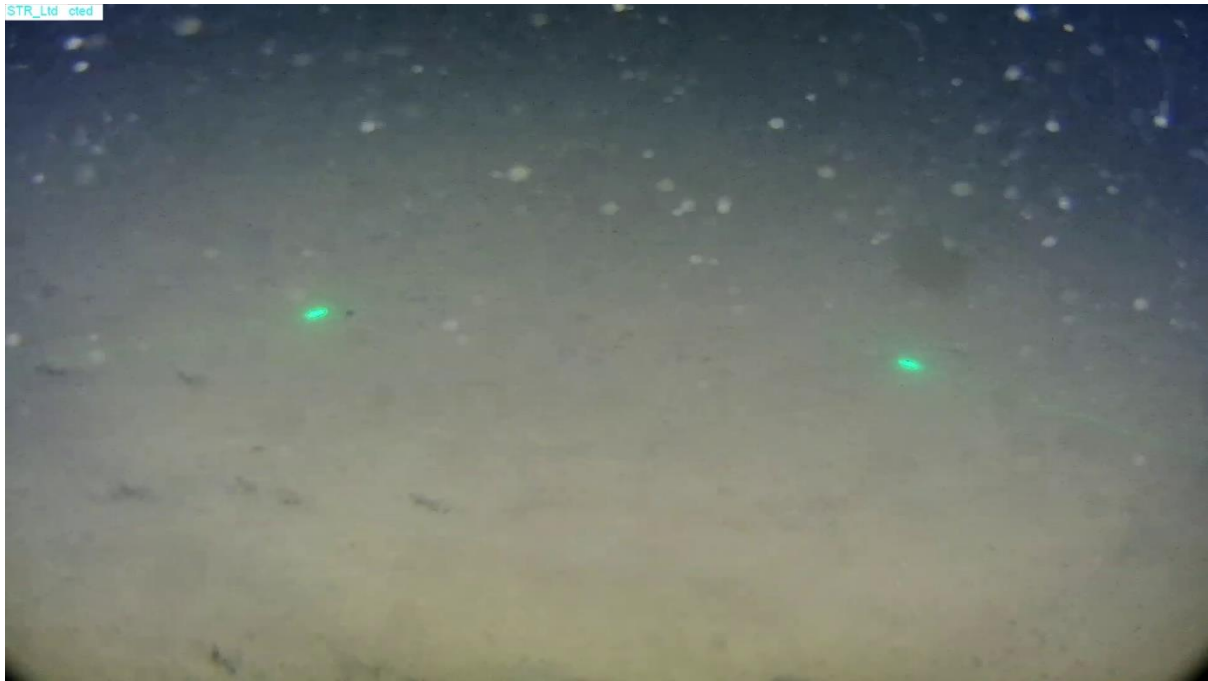


Figure 3-9: Representative video still from station ST 13.

3.1.10 ST 15 Biotope Description:

The transect video at station ST15 was approximately 3 minutes and 17 seconds long. The depth at this station was recorded as 9m. The substrate consisted of fine silty mud with benthic diatoms visible throughout. The station was located near rock armour. Several fish species were observed, including gobies (possibly *Gobius niger*) and probably common dragonets (*Callionymus lyra*). The water column had some suspended particulate matter, although it appeared less disturbed compared to other stations in the survey.

Biotope classification: This station likely corresponds to the biotope SS.SSa.IMuSa - Infralittoral muddy sand, which is characterised by fine muddy sand and associated benthic species adapted to such environments.

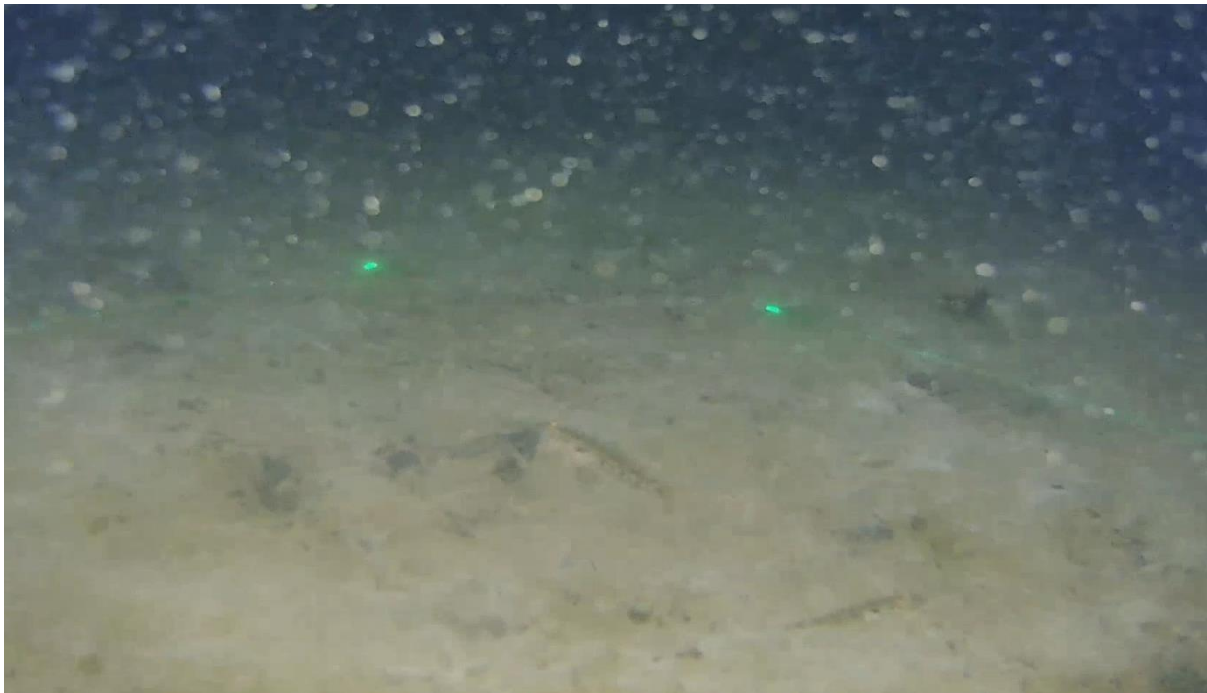


Figure 3-10: Representative video still from station ST 15.

3.1.11 ST 16 Biotope Description:

The transect video at station ST16 was 2 minutes and 6 seconds long. The depth at this station is recorded as approximately 9.6 metres. The substrate consisted of fine silt, with anoxic patches visible on the surface. The seabed was featureless and smooth, showing minimal topographical variation.

This station is most likely classified under SS.SMu.IFiMu - Infralittoral fine mud, which typically supports burrowing infauna in low-energy environments with fine sediments and organic enrichment. The exposed anoxic patches and presence of particulate matter indicate that this habitat experiences limited water movement, allowing fine particles to settle and accumulate.

Biotope classification: is likely to align with SS.SMu.CSaMu characterised by fine silt, low energy. Further sediment analysis and faunal assessment would confirm this.



Figure 3-11: Representative video still from station ST 16.

3.1.12 ST 17 Biotope Description:

The transect video at ST17 was 2 minutes and 42 seconds long. The depth at this station was recorded as approximately 14.2 metres. The seabed was smooth and uniform, composed of mud with visible anoxic patches. The site also featured patches of *Saccharina latissima* and green seaweed, possibly *Cladophora* spp.

The benthic fauna was diverse, with gobies and dragonets observed, contributing to the ecological complexity of the area. Drift algae were also present. The seabed's relative smoothness and low-energy characteristics are consistent with low-energy, fine-mud environments.

Biotope classification: for this site could be a combination of SS.SMp.KSwSS.SlatR—*Saccharina latissima* and red seaweeds on infralittoral sediments (if the *Saccharina* is attached) and SS.SMu.IFiMu—infralittoral fine mud, as the habitat reflects both the characteristics of kelp and green algae on sediment and the fine mud substrate with visible anoxic conditions. Further analysis of faunal composition and sediment characteristics would help refine this classification.



Figure 3-12: Representative video still from station ST 17.

3.1.13 ST 18 Biotope Description:

The transect video at station ST18 was 2 minutes and 30 seconds long. The depth at this station was 1 metre, representing a shallow coastal site. The seabed was characterised by a mixture of broken bivalve shells, interspersed with fine sediment. The substrate appeared more solid and compact than was observed at deeper stations, likely due to the coarser sediment.

Suspended particulate matter was significant in the water column during filming. Drifting green and red seaweeds were also observed, contributing to the nature of the site with detritus. Additionally, anoxic material was disturbed by the video drop, indicating that parts of the seabed may be poorly oxygenated beneath the surface.

Biotope Classification: The characteristics of this station are consistent with SS.SMx.IMx—infralittoral mixed sediment, as the substrate includes a mixture of coarse sediment and fine particles, with visible signs of productivity and organic matter accumulation.



Figure 3-13: Representative video still from station ST 018.

3.1.14 ST 019 Biotope Description:

The transect video at station ST19 was 3 minutes and 10 seconds in length. The depth at this station was recorded as 10.4 metres. The seabed appeared firm in nature and covered with a variety of bivalve shells, including *Cerastoderma edule* (cockles) and clam species. Green crabs (*Carcinus maenas*) were observed, and there were filamentous green seaweeds (*Ulva intestinalis*).

The substrate appeared to be a mix of soft mud, fine silt, and coarser materials like small rocks and shell fragments, creating a complex habitat. Some suspended particulate matter was present, though less than at other stations. The presence of both live bivalves and shell debris suggests a stable, productive environment.

Biotope Classification: This station can be classified as SS.SMx.IMx—infralittoral mixed sediment.



Figure 3-14: Representative video still from station ST 019.

3.1.15 ST 020 Biotope Description:

The transect video at station ST20 was 3 minutes and 41 seconds in length. The depth at this station was recorded as 10.3 metres. The seabed was of a mixed nature, composed of sandy mud, with debris including bivalve shells, filamentous seaweeds, and live mussels (*Mytilus edulis*). *Laminaria saccharina* and *Ulva lactuca* were observed, along with green crabs (*Carcinus maenas*) and gobies. The substrate appeared firm, with anoxic layers exposed by the video drop, suggesting a dynamic habitat with active biological processes.

Biotope Classification: SS.SMx.IMx—infralittoral mixed sediment, characterised by a mixture of fine and coarse sediments, live mussels, and diverse fauna.



Figure 3-15: Representative video still from station ST 020.

3.1.16 ST 021 Biotope Description:

The transect video at station ST21 was 3 minutes and 49 seconds long. The depth at this station was 10.3 metres. The substrate was firm, consisting of mud with filamentous green algae, stones, and bivalve shell fragments. A strong horizontal current was observed, likely influencing sediment deposition and resuspension. Large brown seaweed fronds and significant amounts of broken shell material were present, likely due to the strong currents. The substrate's firmness and the shell fragments suggest a moderately disturbed environment with some habitat complexity.

Biotope Classification: The site likely falls under SS.SMx.IMx—infralittoral mixed sediment, given the mix of fine mud, coarse materials, and the presence of shell fragments and algae. The strong currents and habitat complexity suggest a dynamic environment supporting diverse benthic fauna.

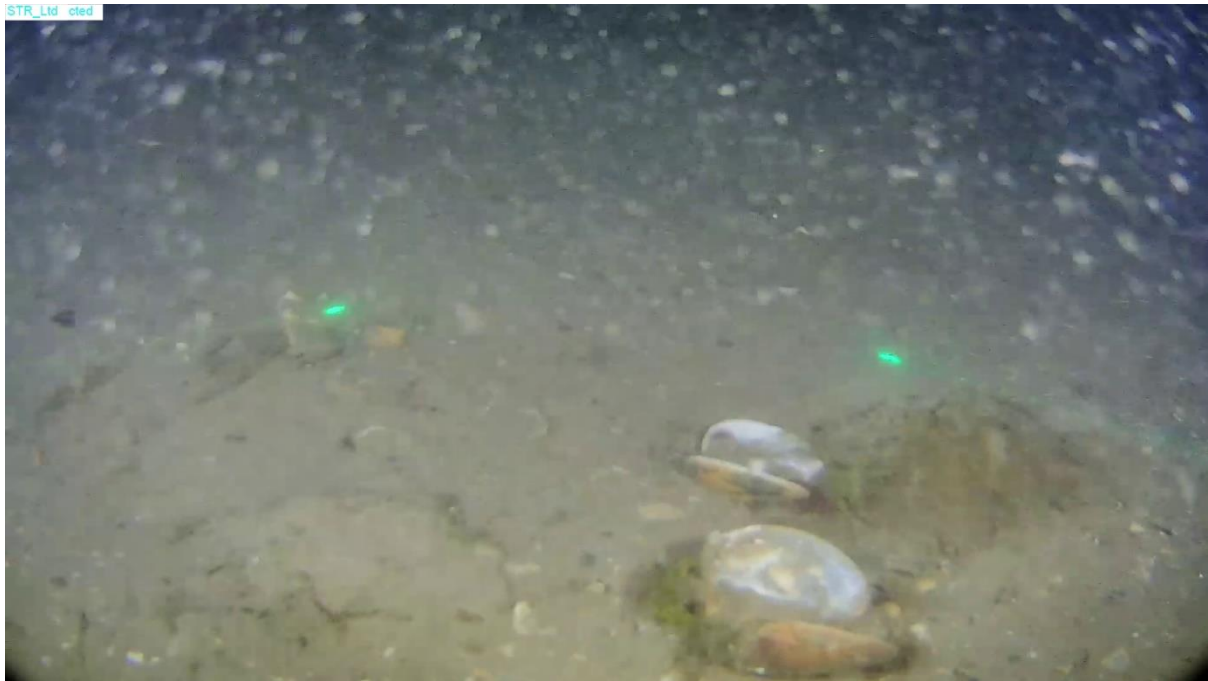


Figure 3-16: Representative video still from station ST 021.

3.1.17 ST 022 Biotope Description:

The transect video at station ST22 was approximately 1 minute and 46 seconds long, with a depth of 10.2 metres (not recorded on video). The site was near a pier pillar and showed a live mussel bed (*Mytilus edulis*) with fine sediment filling the gaps between the mussels. The mussels were old in nature, many covered with barnacles (*Balanidae*) and broken shells were scattered throughout, indicating predation, likely by green crabs (*Carcinus maenas*) or other bivalve predators. The presence of old, damaged shells suggests a well-established mussel bed with active biological processes, including ongoing predation and sediment deposition.

Biotope Classification: This station appears SS.SBR.SMus.MytSS—*Mytilus edulis* beds on sublittoral sediment, characterised by live mussel beds creating biogenic structures, supporting diverse benthic organisms and stabilising sediment.

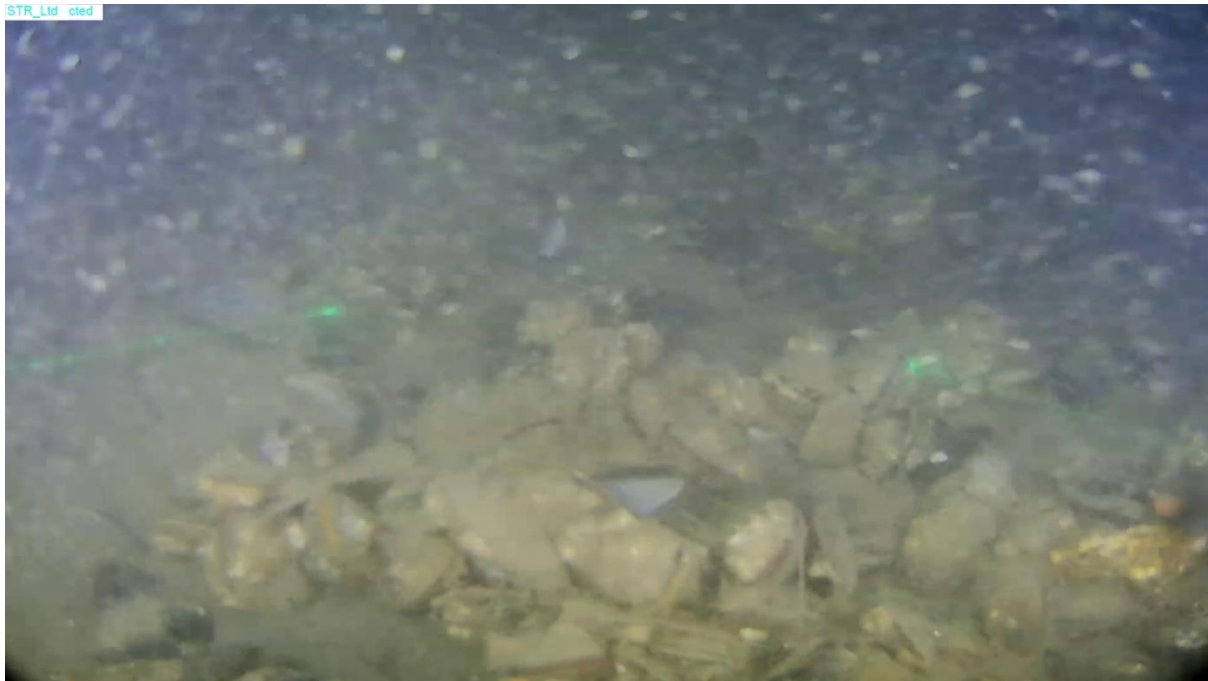


Figure 3-17: Representative video still from station ST 022.

3.1.18 ST 024 Biotope Description:

The transect video at station ST24 was 1 minute and 37 seconds long, with a depth of 6 metres. The water column had a green hue, and the seabed was covered in stones and barnacles. A live mussel reef, along with broken shell fragments, was present. The mussel shells had epifaunal covering of calcareous worms (Serpulidae). The site also included a man-made structure fouled with orange sponges (possibly *Cliona celata*) and brown seaweed *Fucus serratus*, typically found around the lower intertidal area of a shore.

Biotope Classification: SS.SBR.SMus.MytSS—*Mytilus edulis* beds on sublittoral sediment, characterised by the live mussel bed, shell fragments, and the influence of artificial structures.



Figure 3-18: Representative video still from station ST 024.

3.1.19 ST 025 Biotope Description:

The transect video at station ST25 was 2 minutes and 15 seconds long. The depth at this station was recorded as approximately 10 metres below chart datum. The substrate consisted of mud and rocky material with gravelly stones and bivalve shells. Filamentous brown algae were observed attached to the rocks, along with a large purple sea squirt (Ascidiacea). The seabed supported a diverse habitat, including orange sponges, green crabs (*Carcinus maenas*), calcareous worms (Serpulidae), and barnacles, with a possible sighting of a harbour crab (*Polybius depurator*). A jellyfish was briefly observed in the water column.

The stones and shell debris provided interstitial spaces, offering shelter and attachment points for epifauna. Suspended particulate matter in the water column suggests some disturbance, likely from tidal currents.

Biotope classification: This station likely corresponds with the IR.LIR.K biotope – silted kelp communities on infralittoral rock, or IR.LIR.IFaVS – faunal communities on variable salinity infralittoral rock. The observed species and substrate suggest a low to moderate energy infralittoral rocky environment.



Figure 3-19: Representative video still from station ST 025.

3.1.20 ST 026 Biotope Description:

The transect video at station ST26 was 2 minutes long. The depth at this station was recorded as approximately 14.5 metres below chart datum. The substrate consisted of soft mud with scattered shell fragments and patches of brown and green algae. A species observed was the common starfish (*Asterias rubens*), which was present on the substrate.

The seafloor appeared to be a low-energy environment, with fine mud and occasional coarser materials such as shell fragments and small rocks.

The presence of shell and organic debris contributed to the habitat's structural complexity, providing microhabitats for small benthic organisms, even though larger fauna was not immediately visible in the frame.

Biotope classification: This station corresponds with the SS.SMu.CSaMu biotope – Circalittoral sandy mud, characterised by fine mud and the presence of scattered shell and organic material. The low-energy environment and occasional disturbances shape the habitat, supporting species such as *Asterias rubens* and providing ecological niches for small benthic organisms.

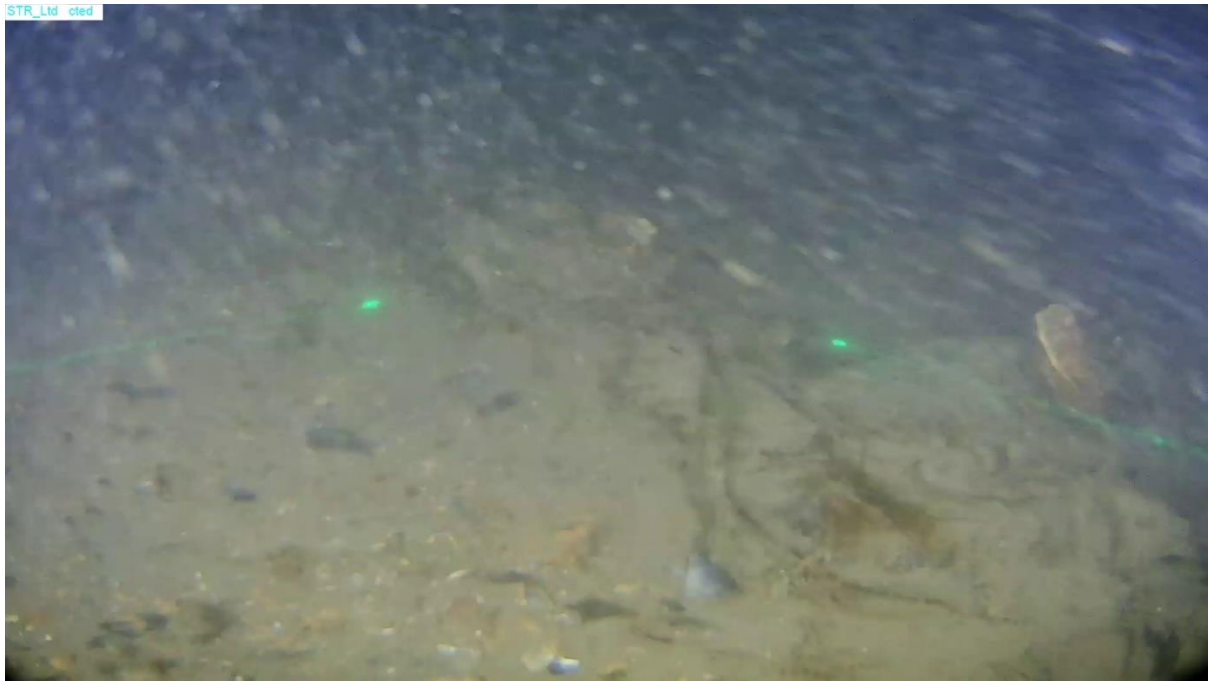


Figure 3-20: Representative video still from station ST 026.

3.1.21 ST 027 Biotope Description:

The transect video at station ST27 was approximately 2 minutes long. The depth at this station is recorded as approximately 14.5 metres below chart datum. The substrate consisted of soft mud mixed with numerous shell fragments, indicating a dynamic environment. The seabed showed evidence of regular disturbances, as visible suspended particulate matter was observed in the water column, likely from tidal movements or other influences.

The shell fragments scattered across the seafloor suggest the presence of bivalves or other molluscs, contributing to the structural complexity of the habitat.

Biotope classification: This station appears to be SS.SMu.CSaMu biotope – Circalittoral sandy mud, characterised by soft muddy sediment with occasional coarser materials. The regular disturbances and presence of shell debris suggest an environment that supports various benthic species, contributing to the biodiversity of the area.



Figure 3-21: Representative video still from station ST 027.

3.1.22 ST 028 Biotope Description:

The transect video at station ST28 was 2 minutes long. The depth at this station is recorded as approximately 16 metres. The substrate consisted of soft mud and fine silt, characteristic of a low-energy environment where fine particles can settle. However, strong currents were present, and the boat maintained a speed of 3 knots.

The water column contained a significant amount of suspended particulate matter, likely stirred up by the strong current and boat movement. No large visible flora or fauna were observed in the image, possibly due to the current or the organisms being burrowed into the sediment.

Biotope classification: This station has the characteristics of SS.SMu.CSaMu biotope – Circalittoral sandy mud, characterised by fine muddy sediments and strong current influences.

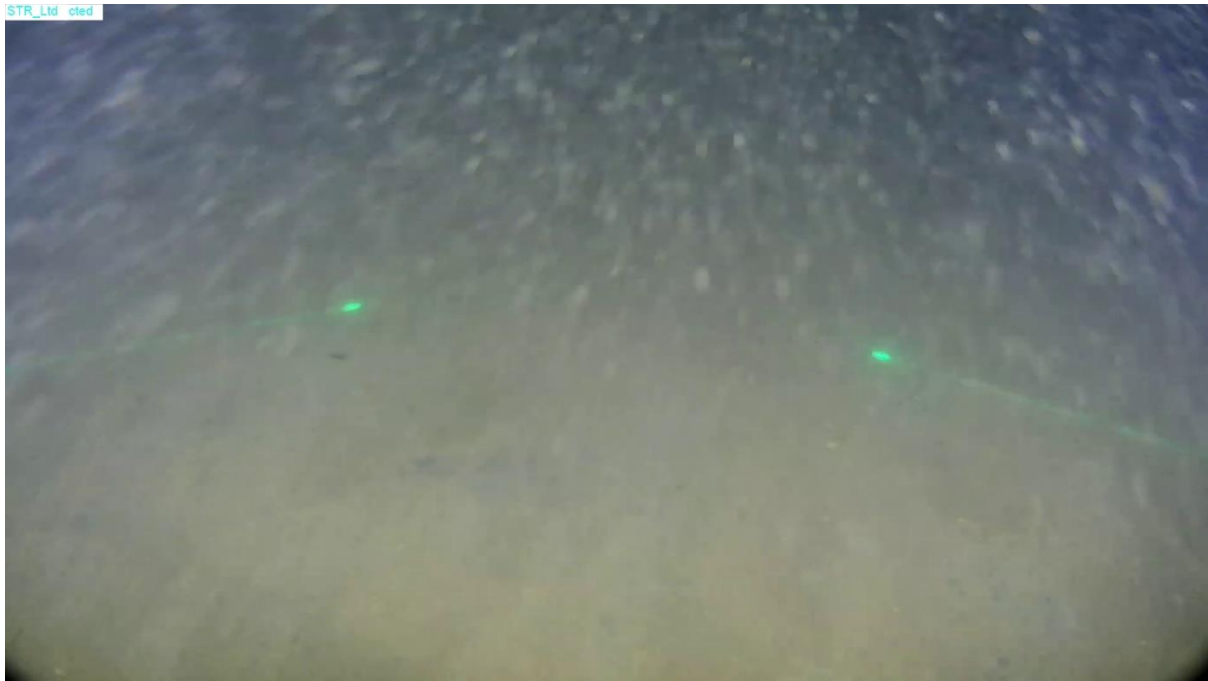


Figure 3-22: Representative video still from station ST 028.

3.2 Summary of Benthic Marine Environments Observed using DDV in 2024:

The 2024 DDV survey revealed a range of biotopes primarily associated with subtidal sedimentary environments. Infralittoral sandy mud (SS.SSa.IMuSa and SS.SMu.ISaMu) were common biotopes at many stations, with fine muddy sand characterising the low-energy environments. *Mytilus edulis* beds (SS.SBR.SMus.MytSS) were observed at several sites, indicating biogenic reef aggregations on sublittoral sediments. At a number of stations infralittoral mixed sediment (SS.SMx.IMx) were observed. Additional habitats identified infralittoral fine mud (SS.SMu.IFiMu), *Saccharina latissima* and red seaweeds (SS.SMp.KSwSS.SlatR), and circalittoral sandy mud (SS.SMu.CSaMu) characterised by fine silts, shell fragments, and organic materials.

General Observations:

Across the stations, a range of taxa were observed, reflecting the diversity of habitats. Crabs (*Carcinus maenas* and *Polybius depurator*) were among the most frequently observed species, often seen foraging or burrowing. Bivalves (*Mytilus edulis* and *Cerastoderma edule*) and were seen at several stations, contributing to the structural complexity of the seabed. Algae, particularly *Saccharina*

latissima and *Ulva* spp., were observed at several stations but in some cases, these may have been detrital in nature. A variety of fish species were also observed, including gobies (*Gobius* spp.), dragonets (*Callionymus* spp.), a wrasse (Labridae spp.), and a squid (*Teuthida* spp.).

Table 3-2: Summary of Faunal Species recorded in 2024.

Station	Faunal Species 2024
ST01	None recorded
ST02	<i>Carcinus maenas</i> (green shore crab)
ST03	<i>Mytilus edulis</i>
ST04	<i>Mytilus edulis</i> , <i>Polybius depurator</i> (harbour crab) Porifera (sponges)
ST05	<i>Mya arenaria</i> , <i>Polybius depurator</i> (harbor crab)
ST08	Bivalvia (possible mussels)
ST09	<i>Carcinus maenas</i> (green crab)
ST11	<i>Carcinus maenas</i> (green crab)
ST13	<i>Polybius depurator</i> (harbour crab)
ST15	<i>Gobius niger</i> (goby) <i>Callionymus lyra</i> (dragonet)
ST16	None observed
ST17	<i>Gobius niger</i> (goby) <i>Callionymus lyra</i> (dragonet)
ST18	None recorded
ST19	<i>Carcinus maenas</i> (green crab) <i>Mya arenaria</i> (clam) <i>Cerastoderma edule</i> (cockle)
ST20	<i>Necora puber</i> (velvet crab) <i>Gobius</i> sp. (goby) <i>Mytilus edulis</i> (mussel)
ST21	<i>Carcinus maenas</i> (green crab) Shell fragments ,
ST22	<i>Mytilus edulis</i> (live mussel bed) <i>Balanus</i> spp. (barnacles)
ST24	<i>Mytilus edulis</i> , <i>Balanus</i> spp. (barnacles) <i>Cliona celata</i> (sponge)
ST25	<i>Mytilus edulis</i> , <i>Carcinus maenas</i> (green crab) Scyphozoa (jellyfish) Porifera (sponges)
ST26	<i>Asterias rubens</i> (common starfish)
ST27	<i>Mytilus edulis</i> Shell fragments Bivalvia (bivalves)
ST28	None observed

4. Discussion

In 2024 there were 27 locations visited. The of the biotope classifications recorded during the 2024 survey is provided in Table 4-1. Full descriptions of all JNCC biotopes can be found on the Marine Life Information Network (MarLIN) website [Home - MarLIN - The Marine Life Information Network](https://www.marlin.gov.uk/).

Table 4-1: Biotope classification in 2024

Station	Biotope Classification 2024
ST01	Infralittoral Sandy Mud habitat complex [SS.SSa.IMuSa] Infralittoral sandy mud SS.SMu.ISaMu
ST02	Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu], Circalittoral mixed sediment [SS.SMx.CMx]
ST03	Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu]
ST04	<i>Mytilus edulis</i> beds on sublittoral sediment SS.SBR.SMus.MytSS - Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu]
ST05	Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu]
ST08	Infralittoral muddy sand [SS.SSa.IMuSa] <i>Saccharina latissima</i> and red seaweeds on infralittoral sediments [SS.SMp.KSwSS.SlatR]
ST09	Infralittoral fine mud [SS.SMu.IFiMu]
ST11	Infralittoral muddy sand [SS.SSa.IMuSa]
ST13	Infralittoral fine mud [SS.SMu.IFiMu]
ST15	Infralittoral muddy sand [SS.SSa.IMuSa]
ST16	Infralittoral fine mud [SS.SMu.IFiMu] Characterised by fine silt, low energy [SS.SMu.CSaMu]
ST17	Infralittoral fine mud [SS.SMu.IFiMu] <i>Saccharina latissima</i> (if attached) [SS.SMp.KSwSS.SlatR]
ST18	Infralittoral mixed sediment [SS.SMx.IMx]
ST19	Infralittoral mixed sediment [SS.SMx.IMx]
ST20	Shell/Mussel-bed habitat complex [SS.SMx.IMx]
ST21	Shell/Mussel-bed habitat complex [SS.SMx.IMx]
ST22	<i>Mytilus edulis</i> beds on sublittoral sediment [SS.SBR.SMus.MytSS]
ST24	<i>Mytilus edulis</i> beds on sublittoral sediment [SS.SBR.SMus.MytSS]

Station	Biotope Classification 2024
ST25	Faunal communities on variable salinity infralittoral rock [IR.LIR.IFaVS] Sublittoral biogenic reefs [SS.SBR]
ST26	Circalittoral sandy mud, characterised by fine mud and the presence of scattered shell and organic material [SS.SMu.CSaMu]
ST27	Circalittoral sandy mud, characterised by soft muddy sediment with occasional coarser materials [SS.SMu.CSaMu].
ST28	Circalittoral sandy mud, characterised by fine muddy sediments and strong current influences [SS.SMu.CSaMu].

The predominant habitat types across these locations consisted of relatively homogeneous, featureless muddy sands. Occasionally, burrowing anemones and crabs were observed on the sediment surface. This habitat type was classified as the Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu], following the JNCC classification guidelines. The video evidence supported the conclusions drawn from faunal and granulometric assessments conducted during the grab survey at the time, which also identified the same habitat type within the Ringaskiddy Basin.

There was a diversity in substrate and ecological communities across the infralittoral and circalittoral environments, ranging from mixed sediments and biogenic reefs to fine muddy areas with unique faunal communities.

5. Conclusion

Infralittoral Sandy Mud habitats (SS.SSa.IMuSa and SS.SMu.ISaMu) were common across many stations observed, particularly ST01, ST02, ST03, ST04, ST05, ST08, ST11, ST15, and ST20. These habitats are typical for low energy, infralittoral zones. *Mytilus edulis* (blue mussel) beds on sublittoral sediment were seen at ST04, ST22, and ST24, indicating biogenic reefs where mussels play a prominent role. Infralittoral Fine Mud habitats (SS.SMu.IFiMu) are present in stations such as ST09, ST13, ST16, and ST17, characterised by finer sediments and low energy environments. Some of these locations include specific features, such as low-energy environments with fine silt in ST16. *Saccharina latissima* occurred on infralittoral sediment at ST08 and at ST17 but this may be detrital in nature. Shell/Mussel-bed complexes are reported at ST20 and ST21, representing areas with a dominance of shells or mussel beds. Circalittoral Sandy Mud (SS.SMu.CSaMu) habitats were seen at stations ST26, ST27, and ST28, characterized by fine muddy sediments, often with scattered shells, organic material, and, in some locations, influenced by strong currents.

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APPENDIX 9.12 FISHERIES REPORT

AYESA (Port of Cork)

Fish, Fisheries & Aquaculture Desk Study

Ringaskiddy, Cork Harbour

Client: AYESA (Port of Cork)

Reference no: P15494

Date of issue: 18/11/2024

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Report Approval Sheet

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Glossary

AA	Appropriate Assessment
ABP	An Bord Pleanála
BIM	Bord Iascaigh Mhara
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DAFM	Department of Agriculture, Food and Marine
EU	European Union
NPWS	National Parks and Wildlife Service
QI	Qualifying Interest
SAC	Special Area of Conservation
SCI	Special Conservation Interest
SPA	Special Protection Area
S-P-R	Source-Pathway-Receptor
Zol	Zone of Influence

1. Introduction

1.1. Overview

This desk-based baseline survey for fish/shellfish in the Ringaskiddy area has been prepared by AQUAFACT - APEM Group to provide relevant information to support the assessment of environmental effects on the marine and coastal environment associated with the proposed development at the port. This baseline report sets out significant fish/shellfish that have the potential to be present in the area to inform whether mitigation should be advised during the environmental assessment process prior to construction.

This study focuses on the maritime area near the proposed redevelopment of Ringaskiddy Figure 1-1. The remaining redevelopment at Ringaskiddy involves several key construction elements across multiple sites and are summarised below (also see redline boundaries Figure 1-1).

Ringaskiddy East (Container and Multi-purpose Berth (CB/MPB)):

- A Container Berth of approximately 200m in length (Cork Container Terminal -CCT 2)

- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)

- Installation of link-span comprising a floating pontoon and access bridge

- Installation of container handling cranes

- Lighting and fencing

Ringaskiddy West (Deepwater Berth Extension):

A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB

- Dredging works to varying levels to facilitate navigational access to the new facilities

- Lighting

Road Improvements:

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28:

- Lighting and fencing

The redevelopment also features Load on Load off (LoLo), Roll on and Roll off (RoRo), and general cargo operations, with specific quay structures, surfacing, and reclamation works. Key services such as drainage, lighting, and security systems will be installed to ensure the safe and efficient operation of the terminal.

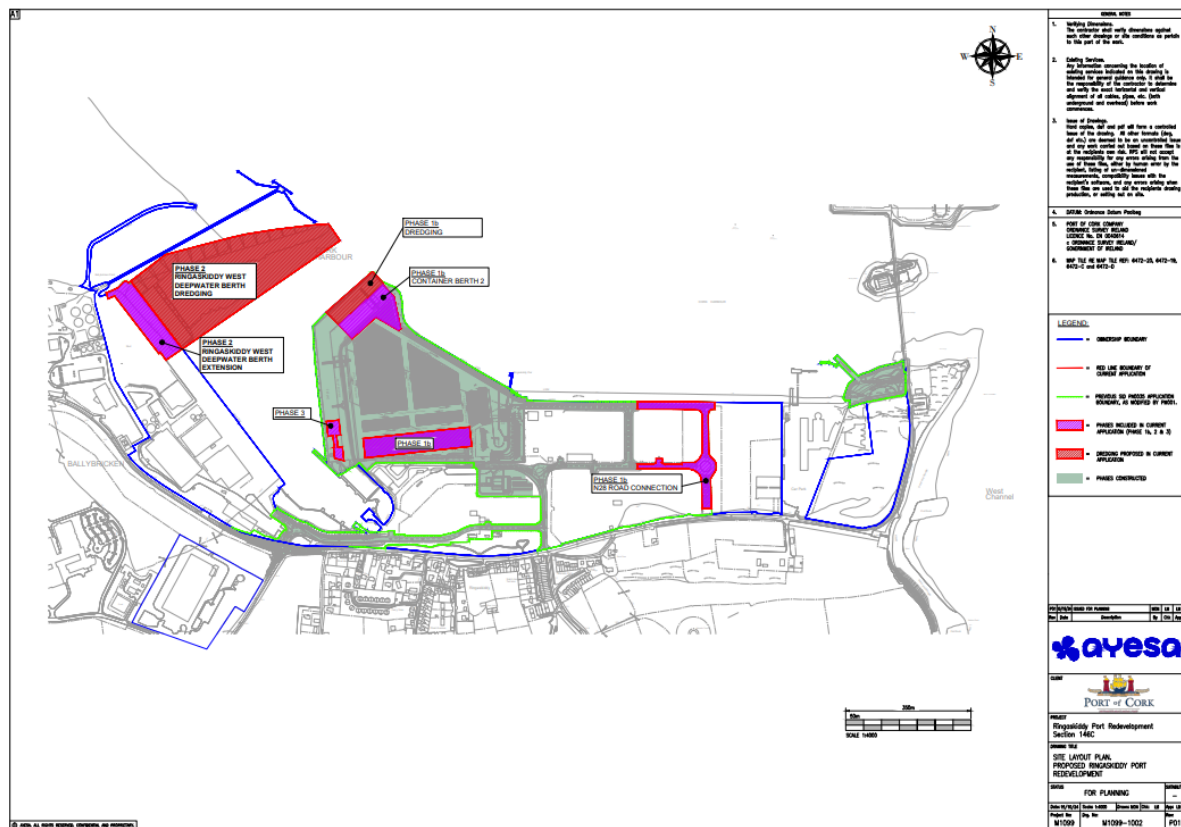


Figure 1-1: Ringaskiddy project area.

This baseline desk study reviews the aquaculture, fishing activities and fish/shellfish species found around Ringaskiddy. Ireland's Marine Atlas¹ was used to identify commercial fisheries and related considerations, the Department of Agriculture Food and the Marine (DAFM)² was also consulted to obtain details on fishery orders/ shellfish waters, while the National Biodiversity Data Centre³ (was consulted to document species of interest identified at sites along the shore.

This assessment includes an assessment of available records of fish in the Ringaskiddy area including the following sources:

- Conservation status assessment reports, backing documents and maps prepared to inform national reporting required under Article 17 of the Habitats Directive.
- Site synopsis, conservation objective reports and Natura 2000 forms available from NPWS.
- Published and unpublished NPWS reports on protected habitats and species including Irish Wildlife Manual reports, species action plans and conservation management plans.
- Existing relevant mapping and databases *e.g.* waterbody status, species and habitat distribution, *etc.* (sourced from the National Biodiversity Data Centre (NBDC)⁴ and the NPWS⁵).

Ireland's Marine Atlas supports national reporting for the European Commission's Marine Strategy Framework Directive on the environmental status of the surrounding seas and oceans. Ireland's Marine Atlas features a variety of content that includes administrative boundaries, protected sites, oil and gas, oceanographic features, fisheries and aquaculture, marine monitoring, seabed habitats, tourism and leisure, transport, infrastructure, discharge point sources, International Maritime Organisation protected areas, and current/historical dumping sites.

The National Biodiversity Data Centre, objectives are to acquire, collate, manage, validate, and make available data concerning Ireland's biodiversity. This documents wildlife resources and monitors changes over time, supporting national initiatives to maintain and enhance biodiversity. This includes recording species and habitat information related to terrestrial, freshwater, marine, river, and wetland environments.

1.2. Statement of Authority

Dr Ronan Browne is the Head of Consultancy at AQUAFACT. He has an extensive background in fisheries and aquaculture, with a strong academic foundation including a PhD on the European clawed lobster *H. gammarus*, fisheries practices and resource management from NUIG, as well as an MSc in Shellfish Biology, Fisheries, and Culture from Bangor University, Wales, and a National Diploma in Aquatic Biology from Galway Regional Technical College. His practical experience in the industry is equally relevant, having worked as a Fishery Assessment Technician for the Marine Institute, monitoring inshore fisheries, trawler-based discards species and catch assessment. He has conducted surveys and prepared reports on native oyster, cockles and scallop beds, and contributed to many national review publications on Irish aquaculture. Ronan's experience extends to education and training, having delivered fish and shellfish hatchery courses for BIM/FETAC. Additionally, his background includes roles such as a Marine Research Coordinator at MRI Carna Research Labs, post-doctoral work on cod hatchery rearing, and served as a Regional Aquaculture Officer for Taighde Mara Teo in Galway and Donegal.

2. Desk Study

There are over 563 marine fish found around Ireland. Some 245 species are found inshore (<200m depth) (130 exclusively inshore) and 435 species offshore (>200m depth) (321 exclusively offshore). Approximately 65 fish species in transitional waters are being monitored through the Water Framework Directive Fish Monitoring Programme (Inland Fisheries Ireland).

Annex II marine fish species which can occur around Ireland are:

- 1095 Sea lamprey [*Petromyzon marinus*]
- 1099 River lamprey [*Lampetra fluviatilis*]
- 1103 Twaite shad [*Alosa fallax*]
- 1106 Atlantic salmon [*Salmo salar*]

(Source: <https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17/2019/species/fish>)

Sea Lamprey (*Petromyzon marinus*) and River Lamprey (*Lampetra fluviatilis*): Both the sea and river lamprey are anadromous, spending part of their lives in freshwater before migrating to the sea. Sea lamprey is listed as near threatened in Ireland but of least concern globally, while river lamprey is least concern on both lists (King *et al.*, 2011; IUCN, 2021). Population declines have been linked to overharvesting and habitat disruption, particularly due to man-made barriers (Igoe *et al.*, 2004). Sea lampreys in the River Ulla, for instance, experience significant delays due to such obstacles (Silva *et al.*, 2019). Both species spawn in fast-flowing rivers with gravel beds, and after a single spawning event, they die (Bracken *et al.*, 2018). Key habitats in Ireland include the Shannon, Suir, Nore, Moy, and Corrib rivers, among others.

Twaite Shad (*Alosa fallax*): Twaite shad is an anadromous species of the herring family (Clupeidae) that inhabits the north-eastern Atlantic, ranging from Iceland in the north to Morocco in the south and as far east as the Baltic Sea (Aprahamian *et al.*, 2003). Globally, it is listed as of least concern on the IUCN Red List (IUCN, 2021), but it is classified as vulnerable on Ireland's Red List (King *et al.*, 2011). Adults migrate from the sea into freshwater rivers to spawn between February and June, depending on their geographical location (Davies *et al.*, 2020). In Ireland, they spawn in rivers such as the Munster Blackwater and the Barrow-Nore-Suir system (Gallagher *et al.*, 2020).

Atlantic Salmon (*Salmo salar*): Atlantic salmon are an anadromous species, migrating from the sea to spawn in freshwater rivers with clean, well-oxygenated gravel beds. They are listed as vulnerable in Europe and Ireland (IUCN, 2021; King *et al.*, 2011). River obstacles such as bridges and culverts hinder salmon migration, and their removal would enhance river connectivity (Atkinson *et al.*, 2020). In Ireland, the Shannon River Basin supports healthy juvenile salmon populations, with monitoring showing strong numbers in rivers such as the Feale and Mulkear (Gargan *et al.*, 2020).

European Eel (*Anguilla anguilla*): The European eel, found throughout Ireland, is a critically endangered species on the IUCN Red List (IUCN, 2021) and is listed under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II due to concerns over trade. This catadromous species spends most of its life in freshwater or estuaries before migrating to the Sargasso Sea to spawn (Arai *et al.*, 2006). In the River Shannon, eel populations have been affected by hydropower developments, with declines in both juvenile and adult numbers despite past stocking efforts (McCarthy *et al.*, 2008).

2.1. South West Regional Inshore Fisheries Forum (RIF) Overview

The Southwest RIFF area covers the coastal zone of Cork and Kerry, stretching from Youghal in East Cork to the Kerry-Limerick border. Around 32% of the national fishing fleet is based here, with 647 vessels primarily in the polyvalent general, specific, and potting sectors. The key fishing ports include Castletownbere, Cobh, Kinsale, Union Hall, and Dingle. Numerous smaller harbours and piers support both fishing and tourism activities across the region. Fisheries in the area target lobster, brown crab, shrimp, spider crab, crayfish, scallops, *Nephrops*, and whelk, among others, using a variety of gear such as pots, trawls, and nets.

Ireland's Marine Atlas provides various information on the fisheries detailed below and their target various species, such as shown in **Error! Reference source not found.:**

Table 2-1: Fisheries and target species

Bottom trawl: fishing targets mixed demersal species, nephrops (<i>Nephrops norvegicus</i>), scallops (<i>Pecten maximus</i>) and queen scallops (<i>Aequipecten opercularis</i>).
Pot fishing: focuses on brown crab (<i>Cancer pagurus</i>), crab (<i>Carcinus maenas</i>), lobster (<i>Homarus gammarus</i>), velvet crab (<i>Necora puber</i>), nephrops (<i>Nephrops norvegicus</i>), shrimp (<i>Palaemon serratus</i>), spider crab (<i>Maja squinado</i>), and whelk (<i>Buccinum undatum</i>).
Net fishing: encompasses baitfish (Various species), crayfish, herring (<i>Clupea harengus</i>), mixed demersal species (Various species), pollack (<i>Pollachius pollachius</i>), cod (<i>Gadus morhua</i>), salmon (<i>Salmo salar</i>), sprat (<i>Sprattus sprattus</i>), turbot (<i>Scophthalmus maximus</i>), and wrasse (Labridae).
Dredge fishing: typically involves clam, cockle, mussels, native oysters, razor clams, scallops, seed mussel, and surf clams.
Periwinkle harvesting: is conducted in the intertidal areas of the shore.

2.2. Fishing activities around Ringaskiddy

As part of the desk study, the Sea Fisheries Protection Agency (SFPA) was contacted for updates on information previously provided in the Ringaskiddy NIS. However, the following points were clarified in their response: The SFPA clarified that fishing vessel and aquaculture licensing queries should be directed to the Department of Agriculture, Food and the Marine (DAFM), or Board Iascaigh Mhara (BIM) for specific data. The SFPA does not

analyse fisheries like scallops and razor clams, and there is no classification for these species in Cork Harbour, though oysters are classified, and a mussel classification is dormant. The SFPA also can no longer provide public insights on developments like Ringaskiddy, as this falls under the EIAR process, requiring input from qualified ecologists.

Also, on contacting DAFM they informed us that Sea-fishing Boat licences are not area specific, so the information required is not available to the Licensing Authority. While BIM undertakes an annual survey where aquaculture companies are asked to provide economic and operational details for the year, the data is then grouped by species and submitted to the EU in an aggregated form, ensuring that individual companies or persons cannot be identified.

According to the South West Regional Inshore Fisheries Forum Overview the region's "Licensed Charter" fleet has approximately forty vessels over 10 meters with 4-5 smaller vessels distributed as follows: Cork Harbour Area (Youghal to Kinsale), ten 10-meter boats plus five smaller vessels, with 5 vessels from the Old Head of Kinsale to Castletown while the Kerry Coast has twenty five 10 meter vessels and five smaller vessels.

As mentioned earlier Ireland's Marine Atlas highlights a variety of fishing activities that take place around the coast. These include inshore fishing, periwinkle harvesting, dredging, line fishing, midwater trawling, net fishing, bottom trawling, and pot fishing. Each method of fishing is designed for different marine species and habitats, reflecting the varied fishing practices used by local communities along Ireland's coastline.

Edible periwinkles are found along most Irish coastlines and are primarily harvested for export. There are several sites around the mouth of Cork Harbour and at Whitegate where periwinkles are collected shown as green dots in Figure 2-1 (Source Irelands Marine Atlas).

Ireland's Marine Atlas showed no activity for dredge fishing, line fishing, midwater trawl fishing, nets fishing, or bottom trawl fishing. The only recorded activity was pot fishing within the Cork Harbour area.

In Figure 2-22 it appears that shrimp potting is the primary documented potting activity in Cork Harbour, however for an area the size of Cork harbour it is likely that other potting activities, such as crab and lobster fishing, may also be occurring at lower intensities that are not recorded. (Figure 2-22 source Irelands Marine Atlas).

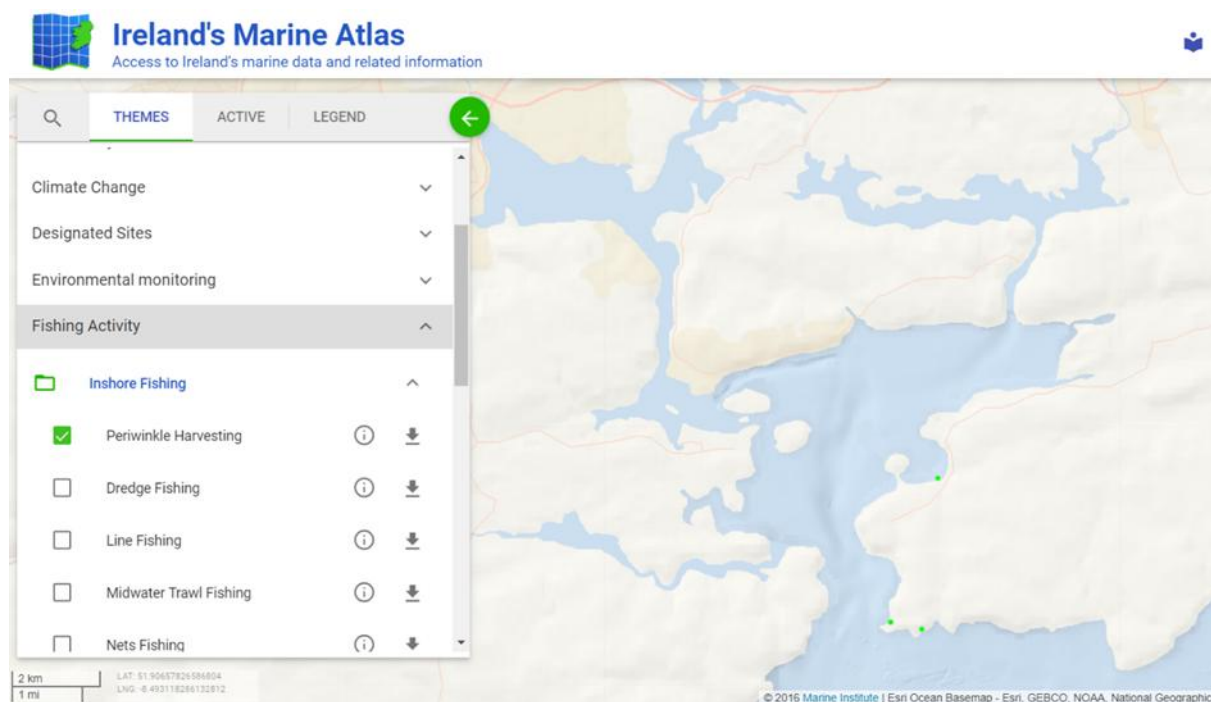


Figure 2-1: Periwinkle harvesting (green dots) (Source Irelands Marine Atlas)

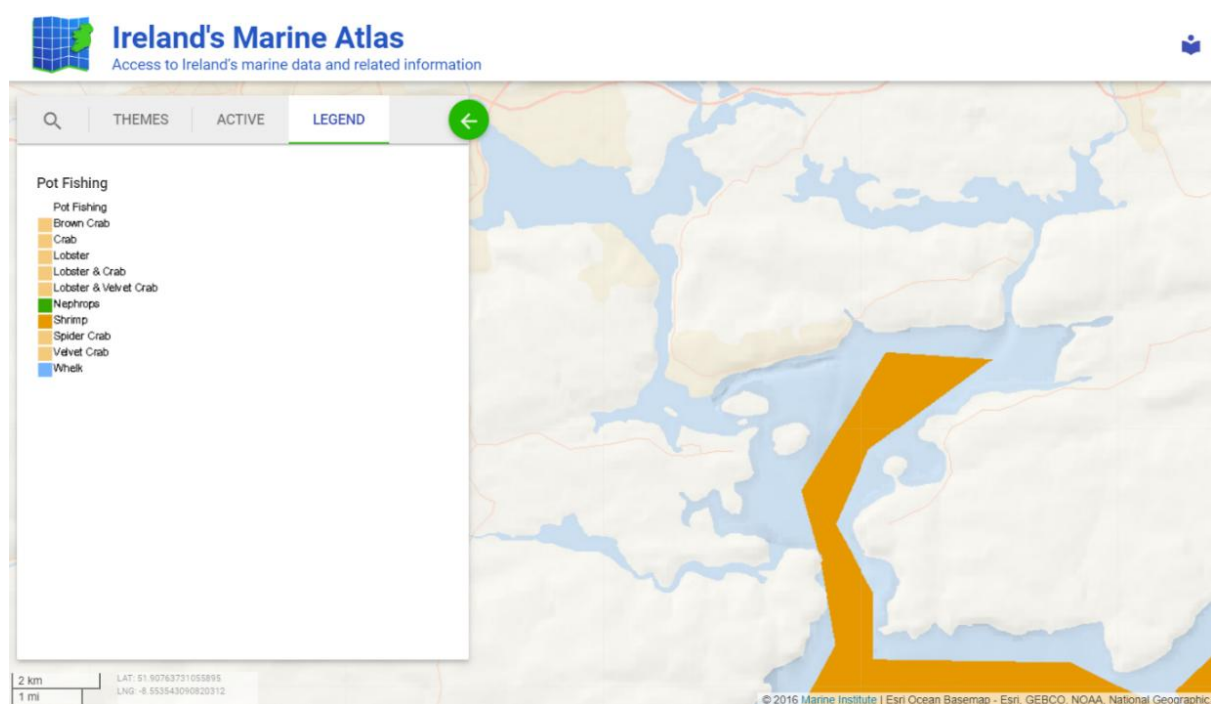


Figure 2-2: Pot fishing for brown crab, lobster, velvet crab, spider crab (light brown colour), shrimp (dark brown) and whelk fishing grounds (blue) (Source Irelands Marine Atlas).

2.3. Commercial Fish Species (nursery and spawning grounds)

The commercial fish, their nurseries, and spawning grounds in Cork Harbour were assessed through Ireland's Marine Atlas (

Table 2-2). The species included in the atlas are blue whiting (*Micromesistius poutassou*), cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), hake (*Merluccius merluccius*), herring (*Clupea harengus*), horse mackerel (*Trachurus trachurus*), mackerel (*Scomber scombrus*), megrim (*Lepidorhombus whiffiagonis*), monkfish (*Lophius piscatorius*), nephrops (*Nephrops norvegicus*), whiting (*Merlangius merlangus*), and salmon (*Salmo salar*).

Table 2-2: Commercial fish species, nursery and spawning grounds.

Species	Nursery Grounds	Spawning Grounds	Nursery & Spawning	Observations
Blue Whiting	None	None	None	None
Cod	Yes	None	None	None
Haddock	None	None	None	None
Hake	None	None	None	None
Herring	Yes	None	None	Wide-ranging
Horse Mackerel	Yes	Not shown	Not shown	Not shown
Mackerel	None	None	None	None
Megrim	None	None	None	None
Monkfish	None	None	None	None
Nephrops	None	None	None	None
Whiting	Yes	Yes	Yes	None
Atlantic Salmon	None	None	None	Entire range

Figure 2-3 depicts cod (*Gadus morhua*) nursery ground (indicated in mustard colour) within Cork Harbour. This data is sourced from the fisheries theme accessed through Ireland's Marine Atlas.

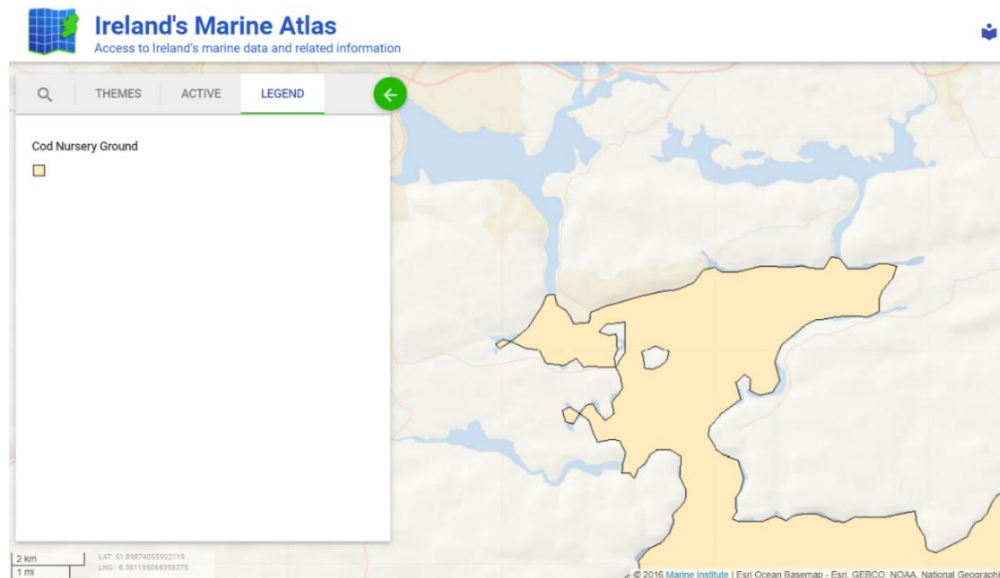


Figure 2-3: Cod (*Gadus morhua*), nursery ground (mustard colour) in Cork Harbour. (Source: Data from the fisheries theme accessed through Ireland's Marine Atlas).

Figure 2-4 shows herring (*Clupea harengus*) nursery grounds (indicated by the saturated blue colour with a bold black outline) inside Cork Harbour. This data is sourced from the fisheries theme accessed through Ireland's Marine Atlas.

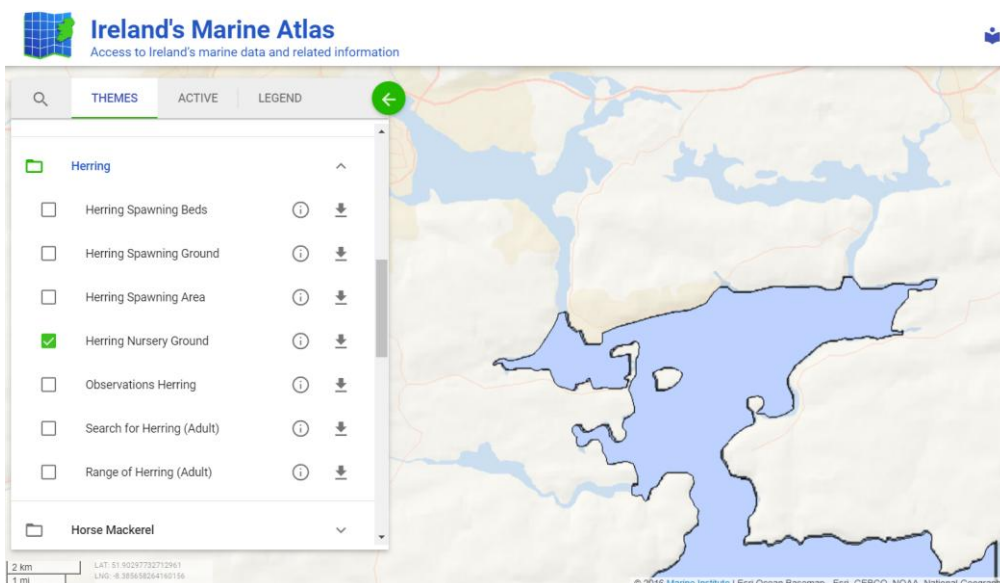


Figure 2-4: Herring (*Clupea harengus*) nursery grounds (blue colour) in Cork Harbour. (Source: Data from the fisheries theme accessed through Ireland's Marine Atlas).

Figure 2-5 depicts the horse mackerel (*Trachurus trachurus*) nursery ground (indicated in pink) in Cork Harbour. This data is sourced from the fisheries theme accessed through Ireland's Marine Atlas.

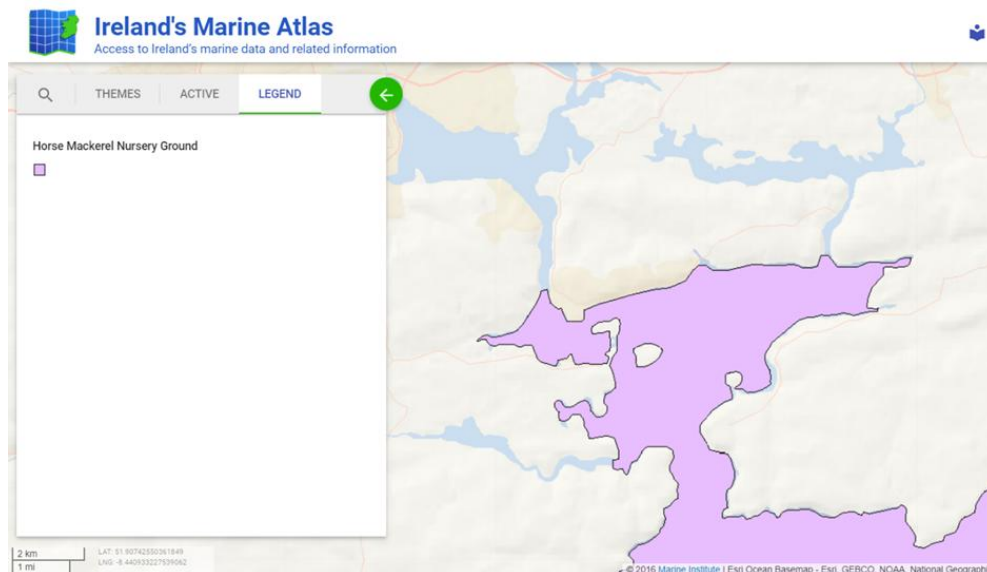


Figure 2-5: Horse mackerel (*Trachurus trachurus*) nursery ground (pink colour) in Cork Harbour. (Source: Data from the fisheries theme accessed through Ireland's Marine Atlas).

Figure 2-6 shows the whiting (*Micromesistius poutassou*) nursery and spawning ground (indicated in pink) in Cork Harbour. This data is sourced from the fisheries theme accessed through Ireland's Marine Atlas.

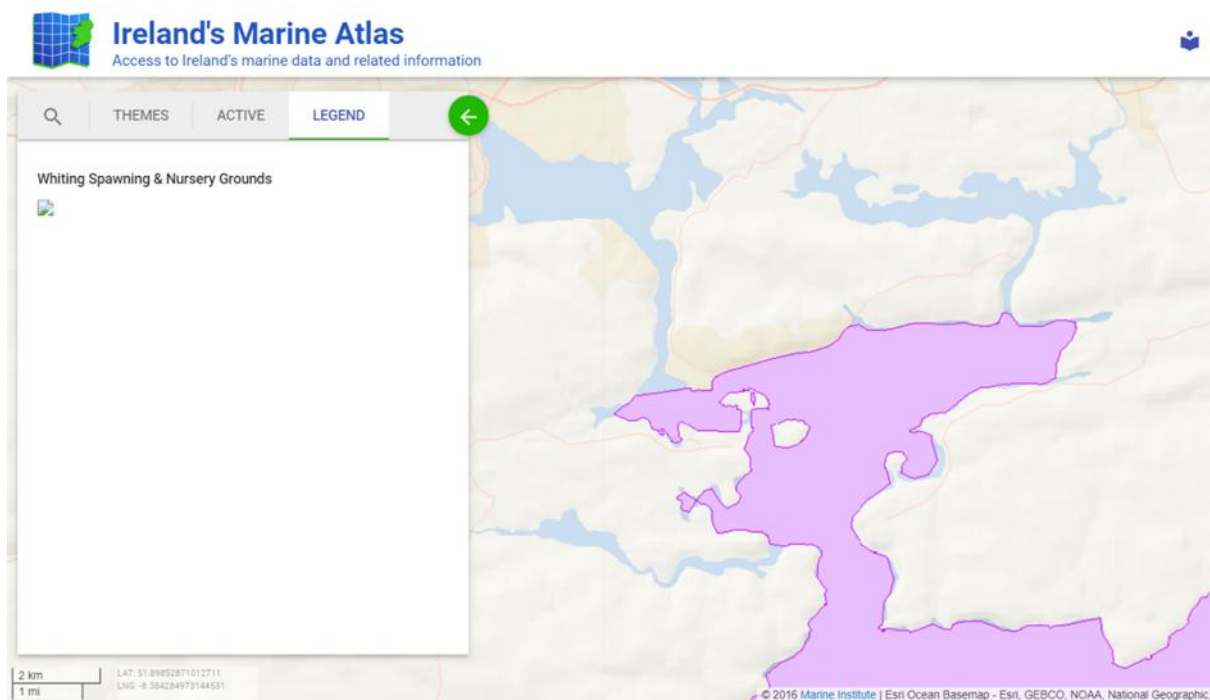


Figure 2-6: Whiting (*Micromesistius poutassou*) nursery and spawning ground (pink colour) in Cork Harbour. (Source: Data from the fisheries theme accessed through Ireland's Marine Atlas).

Figure 2-7 illustrates the range of Wild Atlantic Salmon (*Salmo salar*) (indicated in brown) in Cork Harbour. This data is sourced from the fisheries theme accessed through Ireland's Marine.

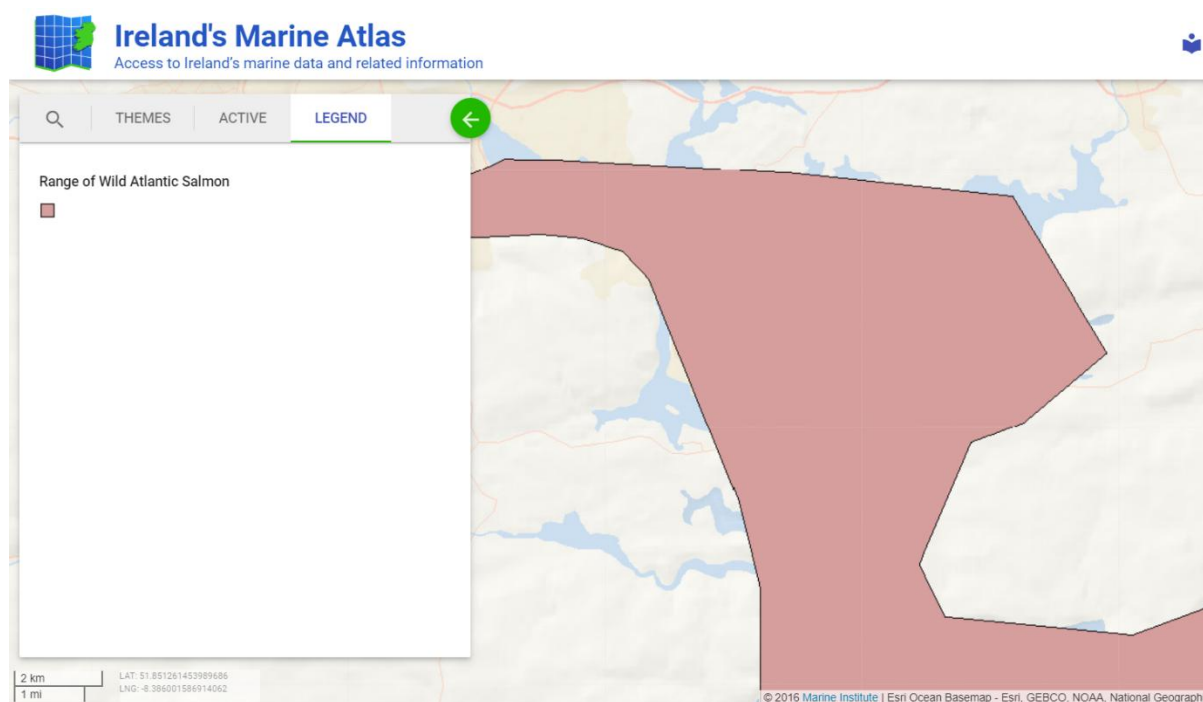


Figure 2-7: Range of Wild Atlantic Salmon (brown colour) in Cork Harbour (Source: Data from the fisheries theme accessed through Ireland's Marine Atlas).

Additional relevant information (Table 2-3: Additional fishery information.) is provided by the South West Regional Inshore Fisheries forum detailing that the fisheries in the South West RIFF area include:

Table 2-3: Additional fishery information.

Broadly prosecuted pot fisheries for Lobster from the River Shannon to east Cork.
Brown Crab pot fishery with high dependency from north Kerry -Tralee Bay south to Kenmare Bay, Castletownbere and east to Youghal.
The Shrimp pot fishery is particularly significant in the South West; Valentia Harbour into Dingle Bay, Kenmare River around into Castletownbere and east to Roaringwater Bay and Ballycotton.
Spider crab is significant top entry pot fishery in north Kerry – Tralee Bay with seasonal fisheries in other areas.
Crayfish are caught both by tangle-netting from north Kerry to east Cork. There is a significant bycatch to the top entry pot fishery in Tralee Bay.
Scalloping occurs off the Blasket Islands and in the Kenmare River, Valentia Harbour, Bere Island Harbour and Bantry Bay, also a limited dredge fishery on the south coast around the Stag rocks and in Roaringwater Bay. Shading/poling harvest of scallop also occurs.
<i>Nephrops</i> pot fishery in Bantry Bay and Kenmare River.
Green crab fishery around Cromane and in Cork particularly in Roaringwater and Bantry Bays.
Velvet crab pot fishery.
Whelk pot fishery – Roaringwater Bay and small fishery in Tralee bay.
Inshore trawling occurs in Dingle Bay predominantly with some also occurring in Tralee Bay and North of the Kerry Head shoals. Fintan’s Bay in the Kenmare River provide some towing areas also. In Cork inshore trawling occurs along the south coast from Bantry Bay to Youghal, – <i>Nephrops</i> and mixed Demersal fishery.
Hook & line fisheries including trolling and jigging for whitefish occur all along the coast.
Mackerel gillnet fishery – Garnish.
Gillnetting for demersal species.

2.4. Migratory fish

Migratory fish species for consideration designated under Annex II of the Habitats Directive include:

- *Salmo salar* (Atlantic salmon)
- *Lampetra fluviatilis* (River lamprey)
- *Petromyzon marinus* (Sea lamprey)
- *Alosa fallax* (Twaite shad)

The Irish SACs for designated for Annex II migratory fish species are listed in Table 2-12.

Atlantic salmon (*Salmo salar*) is a protected species in freshwater under Annex II of the Habitats Directive (92/43/EEC). Salmon are protected by conservation measures under the EU Freshwater Fish Directive (78/659/EEC), which was transposed into Irish law in 1988 through the European Communities Regulation on Quality of Salmonid Waters (S.I. No. 293/1988).

Under S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations 1988, Water Framework Directive (WFD) River Network Routes were designated as Designated Salmonid Waters. The Council Directive 78/659/EEC of 18 July 1978 on the quality of fresh waters needing protection or improvement to support fish life, and the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, were transposed into Irish law under the Fish Directive S.I. 293/1988 and Habitats Directive S.I. 477/2011.

This legislation requires that salmonid waters must sustain their natural populations of Atlantic salmon, sea trout/brown trout (*Salmo trutta*), char (*Salvelinus*), and whitefish (*Coregonus*).

2.5. Selected fish species recorded by the National Biodiversity Centre (finfish/ shellfish) around Cork Harbour.

Table 2-4 presents a list of some of the marine fin fish species that may have a commercial interest at sites (W76, W76X) in Cork Harbour recorded by the National Biodiversity Data Centre.

Table 2-4: Fish species with a commercial interest (NBD, 2024).

Flounder (<i>Platichthys flesus</i>)
Horse Mackerel (<i>Trachurus trachurus</i>)

Table 2-5 presents a list of the shellfish species (bivalve and crustacean) documented by Biodiversity Ireland.

Table 2-5: Some commercial shellfish species recorded (NBD, 2024).

Common Prawn (<i>Palaemon serratus</i>)
Common Periwinkle (<i>Littorina littorea</i>)
Blue Mussel (<i>Mytilus edulis</i>)
Brown Shrimp (<i>Crangon crangon</i>)
<i>Cancer pagurus</i>
Green Shore Crab (<i>Carcinus maenas</i>)
<i>Buccinum undatum</i>
Common Cockle (<i>Cerastoderma edule</i>)
Common Oyster (<i>Ostrea edulis</i>)
Common Periwinkle (<i>Littorina littorea</i>)
Great Scallop (<i>Pecten maximus</i>)
Pod Razor Shell (<i>Ensis siliqua</i>)

2.6. Observations of fish/ shellfish “Threatened Species: OSPAR Convention”

Observations of fish and shellfish in the vicinity of Ringaskiddy that are listed as “Threatened Species” under the OSPAR Convention” listed by Biodiversity Ireland are shown in Table 2-6. The number of recorded sightings of the following species are: (1) dog whelk (*Nucella lapillus*), (1) thornback ray (*Raja clavate*), (1) Common Oyster (*Ostrea edulis*) and (3) European Eel (*Anguilla anguilla*). These were observed within sites W76X and W76X. However it is important to note that the absence of records for a particular species in an area does not confirm the absence of that species, as not all sightings or data may have been reported or uploaded.

Table 2-6: Significant shellfish species (NBD, 2024).

Species group	Species name	Record count	Date of last record	Title of dataset	Site
bony fish (Actinopterygii)	European Eel (<i>Anguilla anguilla</i>)	3	08/10/2008	River Biologists' Database (EPA)	W76
mollusc	Common Oyster (<i>Ostrea edulis</i>)	1	06/03/2020	Explore Your Shore	W76X
cartilagenous fish (Chondrichthyes)	Thornback Ray (<i>Raja clavata</i>)	1	31/08/1977	Rare marine fishes taken in Irish waters from 1786 to 2008	W76
mollusc	Dog Whelk (<i>Nucella lapillus</i>)	1	14/01/2020	Explore Your Shore	W76X

2.7. Marine Leisure (Fishing)

It is reported that recreational sea angling in Cork Harbour offers a variety of hotspots, including Ballybranigan Beach, Inch Beach, Roches Point, and White Bay, where species such as bass, cod, flounder, and mackerel can be caught. Charter boats, provide deep-sea and shark fishing trips, targeting blue sharks, ling, pollack, and conger eel. Popular pier and shore fishing locations include Aghada Pier and Lynch’s Quay, known for catches of bass, dogfish, and thornback ray. Several slipways, including those at Gyleen, Rostellan, and Crosshaven, make boat launching easy for anglers.

2.8. Aquaculture

Within Cork Harbour, there are two licensed aquaculture sites: one for mussels (T05-522B) and another for Pacific oysters and brown seaweed (T05-294A) (Figure 2-8, Table 2-7).

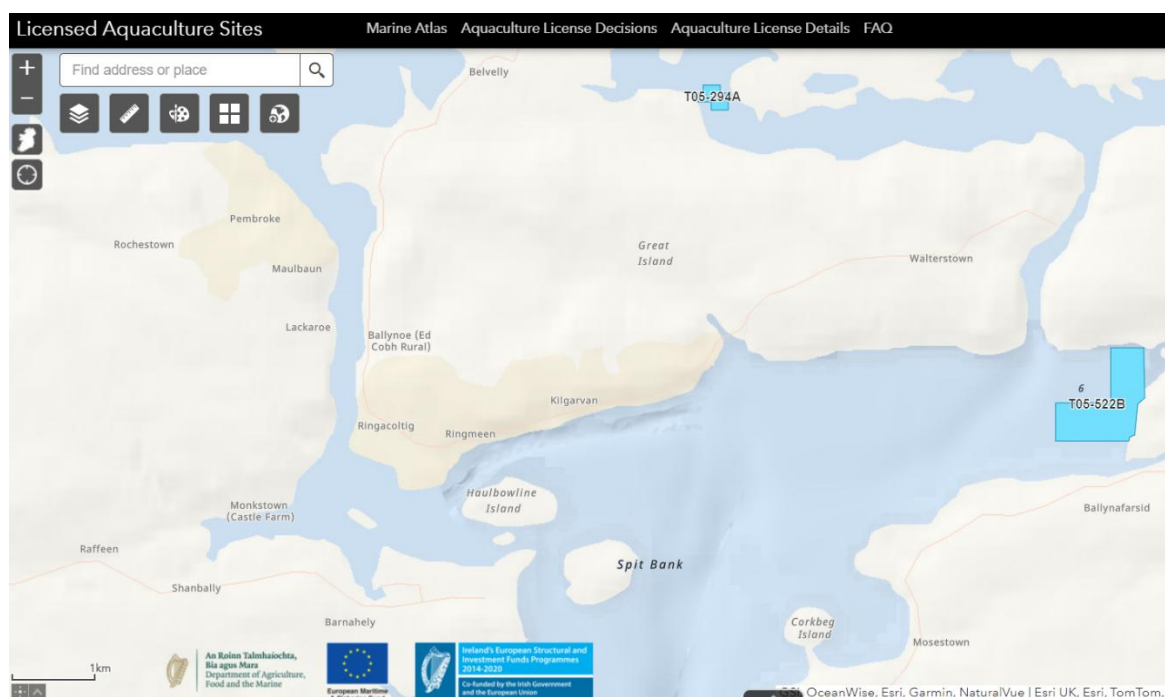


Figure 2-8: Licensed aquaculture sites (T05-522B, T05-294A) in Cork Harbour (<https://dafm-maps.marine.ie/aquaculture-viewer/>).

Table 2-7: Aquaculture sites, licensed species and site references (source <https://dafm-maps.marine.ie/aquaculture-viewer/>)

Aquaculture sites	Species	Site Reference
Bivalve and algae	Blue Mussel	T05-522B
	Pacific Oyster, Brown seaweed	T05-294A

In Cork Harbour there are two Fishery Orders in place, one for blue mussels (Rostellan T05-002OFO) and the other for European flat oysters (T05-017OFO) (Figure 2-9, Table 2-8).

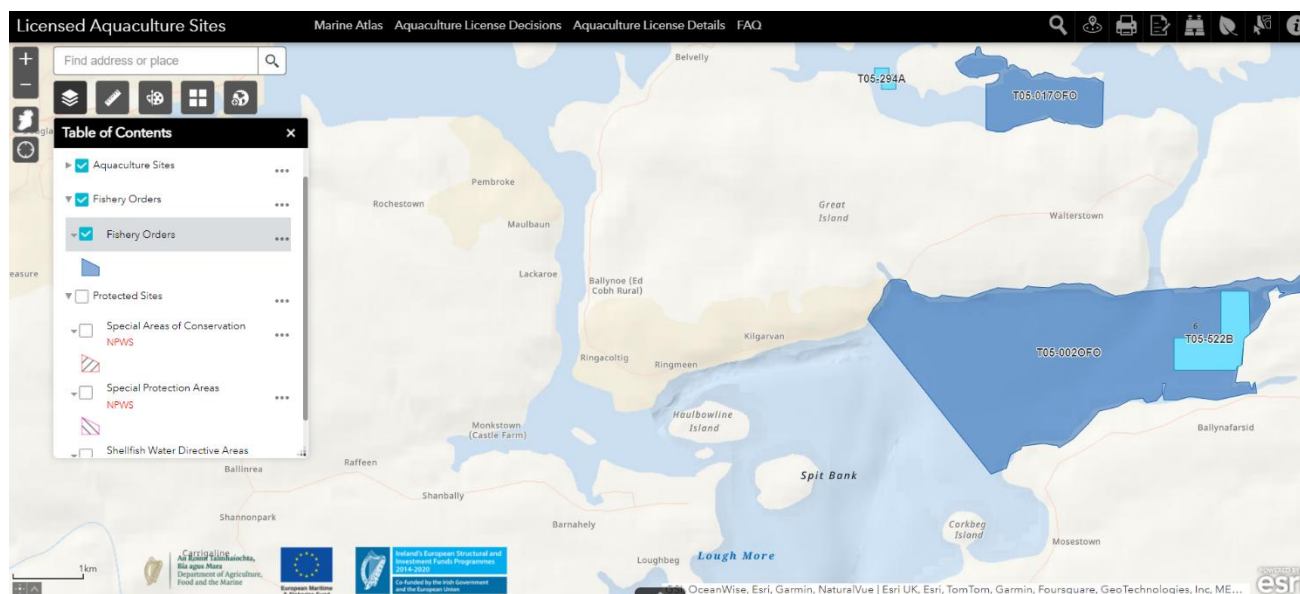


Figure 2-9: Fishery orders in Cork Harbour (T05-002OFO and T05-017OFO) (source: <https://dafm-maps.marine.ie/aquaculture-viewer/>).

Table 2-8: Fishery Orders, species and site reference (source <https://dafm-maps.marine.ie/aquaculture-viewer/>)

Fishery Order	Species	Site Reference
Bivalve	Blue Mussel (Rostellan South, North, West) 926 ha.	T05-002OFO
	European Flat Oyster 129.14 ha.	T05-017OFO

There are also four protected sites, designated under the Shellfish Water Directive: Cork Great Island North Channel (T05-294A), and Rostellan West, South, and North (T05-522B, T05_522B, T05-522B) (Figure 2-10, Table 2-9).

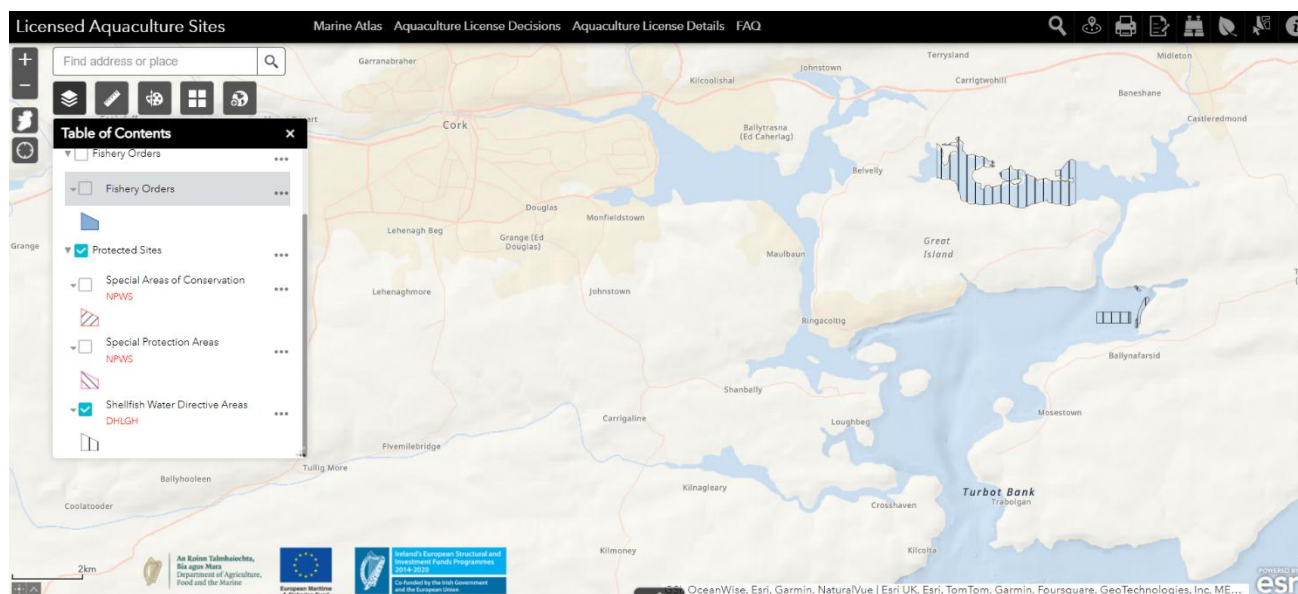


Figure 2-10: Protected sites, Shellfish Waters Directive areas (DHLG)

Table 2-9: Protected sites – Shellfish Water Directive Areas (DHLG) (source: <https://dafm-maps.marine.ie/aquaculture-viewer/>).

Protected sites	Shellfish Water Directive Areas (DHLG)	Site Reference
	Cork Great Island North Channel	T05-294A
	Rostellan West	T05-522B
	Rostellan South	T05_522B
	Rostellan North	T05-522B

EU countries are responsible for designating shellfish waters. The list of designated waters may be amended to take into consideration factors not foreseen at the time of designation.

If waters immediately adjacent to borders with neighbouring EU countries are designated as shellfish waters, these countries must be consulted.

Quality criteria

The directive establishes parameters applicable to designated shellfish waters, indicative values, mandatory values, reference methods of analysis and the minimum frequency for taking samples and measures.

The parameters applicable to shellfish waters are set for:

- pH,
- temperature,
- coloration,
- suspended solids,
- salinity,
- dissolved oxygen and
- the presence or concentration of certain substances (hydrocarbons, metals, organohalogenated substances).

Based on these criteria, EU countries establish the values with which the designated shellfish waters must comply. These limit values may be stricter than those set by this directive. For metals or organohalogenated substances, these values must respect the emission rules originally established in line with Directive 2006/11/EC on the discharge of certain substances into the aquatic environment (and, since 2013, incorporated in Directive 2000/60/EC, the EU's Framework Water Directive).

Samples

The competent authorities for each EU country must take samples from the waters to verify their conformity with the criteria set by the directive. The following proportions of samples must conform to the established values:

- 100 % of the samples for the parameters 'organohalogenated substances' and 'metals';
- 95 % of the samples for the parameters 'salinity' and 'dissolved oxygen';
- 75 % of the samples for the other parameters.

ACT and related act

Directive 2006/113/EC of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters (codified version) (OJ L 376, 27.12.2006, pp. 14–20)

Successive amendments to Directive 2006/113/EC have been incorporated into the original text. This consolidated version is of documentary value only.

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, pp. 1–73). See consolidated version.

Quality of shellfish waters | EUR-Lex (europa.eu)

The SFPA is responsible for regulating the seafood sector, including aquaculture, ensuring compliance with food safety laws. Bivalve molluscs feed by filtering water, which can lead to the accumulation of harmful microorganisms or biotoxins in their flesh. These can pose a risk if consumed, particularly oysters, which are often eaten raw.

In addition, the SFPA conducts a monthly shellfish sampling programme across all active production areas. These results determine the classification of each area for the sale or consumption of shellfish, which falls into three categories (Table 2-10) based on *E. coli* levels.

Table 2-10: Shellfish Classification based on *E. coli* monitoring

Category	Microbiological Standard (MPN 100g-1 shellfish flesh)	Treatment Required
Class A	<230 <i>E. coli</i>	May be consumed directly
Class B	<4,600 <i>E. coli</i> (90% compliance)	Must be depurated, heat treated, or relayed to meet Class A standards
Class C	<46,000 <i>E. coli</i>	Must be relayed for 2 months or heat treated to meet Class A or B standards

There are three classified shellfish waters at North Channel East (native and gigas oysters) and Rostellan (Gigas oysters) (Figure 2-11). All three shellfish waters in Cork Harbour have a B classification (Table 2-11).

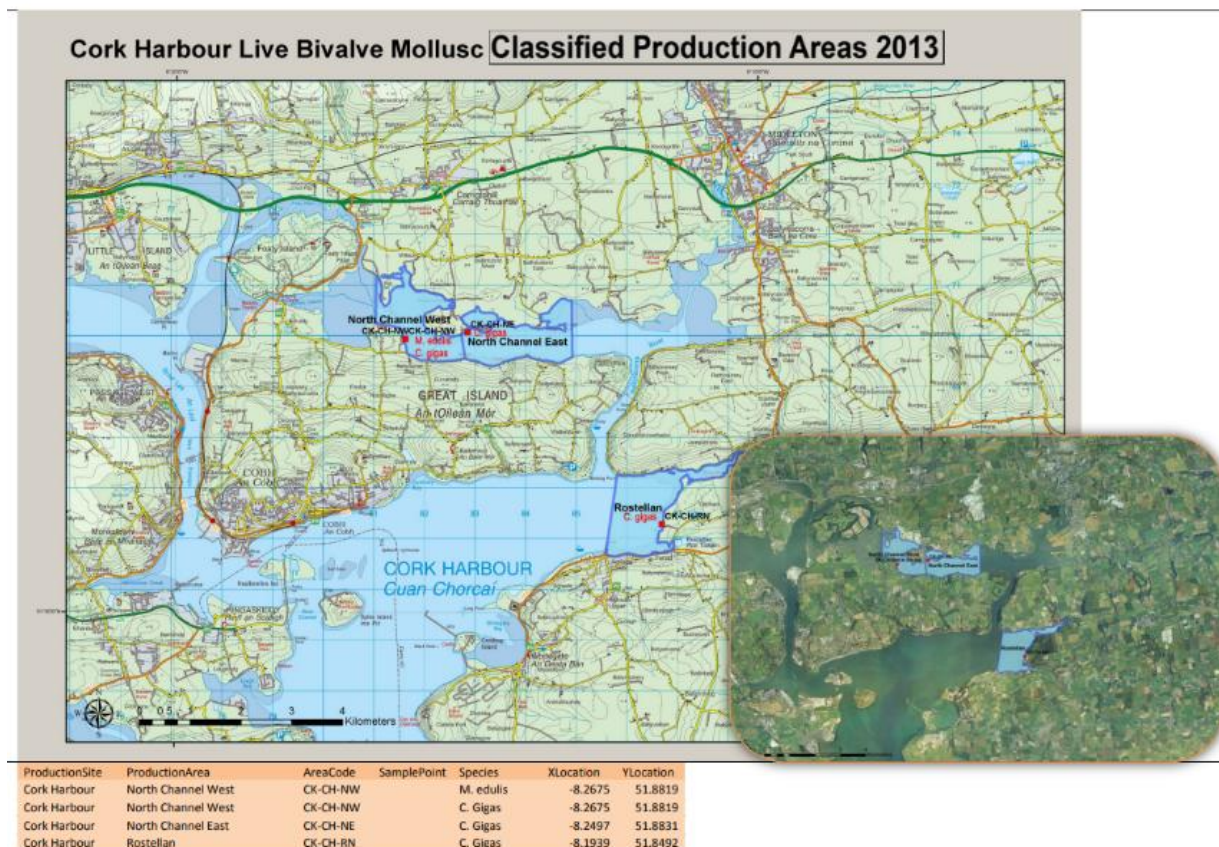


Figure 2-11: Cork Harbour Live Bivalve Mollusc (Classified Production Areas 2013 - (<https://www.sfpa.ie/LinkClick.aspx?fileticket=nyFQqrK86Gk%3d&portalid=0&resourceView=1>).

Table 2-11: Cork Harbour Classified Production areas (<https://www.sfpa.ie/What-We-Do/Molluscan-Shellfish/Classified-Areas>).

Production Area and Link to Map	Boundaries	Bed Name	Species	Class	Notes
Harbour Classified Production Areas	Between 8° 16.4'W and 8° 15.6'W. Between 8° 14.6'W and 8° 13.2'W. Ahada Pier to Gold Point	North Channel East	Native Oysters	B	
		North Channel East	Oysters (Gigas)	B	
		Rostellan	Oysters (Gigas)	B	

2.9. Summary and considerations

This desk study focused on fisheries, aquaculture, and the presence of commercial fish and shellfish species. Sources such as Ireland's Marine Atlas, the National Biodiversity Data Centre, and various reports were used to identify species of ecological and commercial significance, with additional focus on aquaculture activities in Cork Harbour. Commercial fish species such as cod, herring, horse mackerel, and whiting are identified as present in local nursery and spawning grounds, while shellfish species such as blue mussels and oysters are important from an aquaculture perspective. This study investigated local fishing activities, including pot fishing for brown crab, lobster, and shrimp, as well as recreational fishing in the area. Licensed aquaculture sites within Cork Harbour were highlighted, along with fishery orders in place for blue mussels and flat oyster production.

An assessment of dredging and physical construction impacts

Dredging involves removing the surface sediment layers, disrupting the seabed and its associated fauna and infauna. This process also affects mobile species closely associated with the seabed, such as shrimp (*Crangon* species) and harbour/ green crabs, which may be caught in the dredging operation. Also, as the sediment is disturbed, it becomes suspended in the water column, causing a temporary increase in turbidity, the concentration of suspended solids in the water column. This plume of sediment will disperse over time and be diluted by tidal mixing, thereby reducing the impact away from the immediate dredging area.

Entrainment, where fish and invertebrates are sucked up along with the sediment, is another impact for consideration. Suction Dredgers, which use pumps to collect sediment, will inadvertently entrain fish that live near the bottom, such as juvenile flatfish such as flounder, plaice, dab, and sole, which are found around Ringaskiddy. Other species that may be affected include sand gobies, black gobies, dragonets, and pogge. Gadoid fish such as whiting and cod are less affected, as they are not as closely associated with the seabed, while pelagic species like sprat and mackerel, which swim higher in the water column, are at lower risk of being caught up.

Despite the potential for entrainment, the overall impact on fish populations is expected to be minor to moderate. This is because the species involved appear to be abundant and widespread, and much of the intertidal areas of Ringaskiddy will not be affected by the dredging. Also, many of these smaller species have short life cycles and high reproductive rates, allowing for rapid recovery.

The risk to salmon if present, is very low due to their rapid movement, low numbers and the intermittent nature of dredging.

Suspended solids concentrations may reach high levels near a dredging location, particularly around the Ringaskiddy basin, but these concentrations decline with distance due to tidal mixing. The levels expected are

not high enough to cause significant harm to fish, especially since many species are adapted to turbid environments and will probably move away from areas where there is significant activity. For example, bottom-dwelling species such as flatfish and gobies are naturally tolerant of high suspended solids levels, as they often live in areas with fine silts and muds. Migratory species like salmon, which are very unlikely to be in the area, if they were to encounter high levels would pass through such an area quickly.

While the dredging may result in some entrainment of species such as juvenile flatfish, gobies, crabs, and other species, the overall impact is expected to be moderate and have short term consequences. The risk to more valuable species, like salmon, is considered minimal due to their migration routes and the location of dredging activity. The temporary increase in suspended solids is not expected to have a significant adverse effect on fish populations, and the localised nature of the activities means they are unlikely to affect the broader ecosystem of the Ringaskiddy.

Potential Impacts of Noise on Fish and Mitigation Measures

The construction phase of a marine development, such as pile driving and dredging present potential noise impacts on fish populations. As fish have a reliance on sound for communication, predator detection, and navigation, notably in murky waters where visibility is low, noise pollution in marine environments can disrupt these behaviours and adversely affect fish.

Most fish are reported to hear within the range of 30-1000 Hz. Species such as the European eel can detect infrasound, while herrings can perceive ultrasound, which helps them avoid predators like dolphins (Bates, 2012). The sounds produced by construction activities, such as pile driving, can therefore interfere with fish behaviour and cause disorientation. Furthermore, it has been found that exposure to high-intensity sounds have been shown to cause physical harm to fish, including hearing loss, stress responses, and in extreme cases, death (Popper *et al.*, 2010; Weilgart, 2018). The mechanical sounds from dredgers can increase stress levels in fish and disrupt their spawning behaviour (Weilgart, 2018). The sound disturbance may also alter fish distribution patterns, forcing species away from important feeding or breeding grounds.

Mitigation measures are crucial to minimise the impact of noise on fish during both the construction and operational phases. These can include:

- Limiting construction activities to periods when sensitive species, such as migratory fish, are less likely to be present in the area can reduce the risk of noise-related impacts. Though this is not an issue with Ringaskiddy as there are no migratory routes identified.
- Gradually increasing the intensity of noise-generating activities allows fish to vacate an area, reducing the potential of sudden exposure to harmful noise levels.

The proposed redevelopment of Ringaskiddy port may affect local fish populations in the short-term during construction and any subsequent maintenance dredging. However, the fish species identified are expected to move away from the site and migrate back as these activities cease. There are also nursery and spawning grounds for commercial fish species within Cork Harbour, they too will tend to avoid areas of disturbance such as Ringaskiddy and return once the activity has concluded. Regarding aquaculture activities in the harbour, these are situated at a significant distance from the site and will not be impacted.

Table 2-12: SACs designated for Annex II migratory fish species.

SAC [site code]	Conservation Features (Conservation Features Code)			
	Twaite shad (<i>Alosa fallax fallax</i>) (1103)	River lamprey (<i>Lampetra fluviatilis</i>) (1099)	Sea lamprey (<i>Petromyzon marinus</i>) (1095)	Atlantic salmon (<i>Salmo salar</i>) (1106)
Blackwater River (Cork/Waterford) SAC [002170]	●	●	●	●
Blackwater River (Kerry) SAC [002173]				●
Castlemaine Harbour SAC [000343]		●	●	●
Cloghernagore Bog and Glenveagh National Park SAC [002047]				●
Connemara Bog Complex SAC [002034]				●
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]		●	●	
Glenamoy Bog Complex SAC [000500]				●
Killala Bay/Moy Estuary SAC [000458]			●	
Killarney National Park, Macgillicuddy's Reeks and Caragh River Catchment SAC [000365]		●	●	●
Leannan River SAC [002176]				●
Lough Corrib SAC [000297]			●	●
Lough Eske and Ardnamona Wood SAC [000163]				●
Lough Gill SAC [001976]		●	●	●
Lough Melvin SAC [000428]				●
Lower River Shannon SAC [002165]		●	●	●
Lower River Suir SAC [002137]	●	●	●	●

SAC [site code]	Conservation Features (Conservation Features Code)			
	Twaite shad (<i>Alosa fallax fallax</i>) (1103)	River lamprey (<i>Lampetra fluviatilis</i>) (1099)	Sea lamprey (<i>Petromyzon marinus</i>) (1095)	Atlantic salmon (<i>Salmo salar</i>) (1106)
Maumturk Mountains SAC [002008]				●
Mweelrea/Sheeffry/Erriff Complex SAC [001932]				●
Newport River SAC [002144]				●
Owenduff/Nephin Complex SAC [000534]				●
River Barrow and River Nore SAC [002162]	●	●	●	●
River Boyne and River Blackwater SAC [002299]				●
River Finn SAC [002301]				●
River Moy SAC [002298]			●	●
Slaney River Valley SAC [000781]	●	●	●	●
The Twelve Bens/Garraun Complex SAC [002031]				●
Unshin River SAC [001898]				●
West of Ardara/Maas Road SAC [000197]				●

Table 2-13: Observations of fish and shellfish from the national biodiversity data base at sites W76X and W76.

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
crustacean	<i>Cancer pagurus</i>	1	16/01/2020	Explore Your Shore		W76X
crustacean	<i>Elminius modestus</i>	1	08/02/2024	Explore Your Shore	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species	W76X
mollusc	<i>Buccinum undatum</i>	2	08/02/2024	Explore Your Shore		W76X
mollusc	Chequered Carpet Shell (<i>Tapes decussatus</i>)	1	08/02/2024	Explore Your Shore		W76X
mollusc	Common Cockle (<i>Cerastoderma edule</i>)	2	08/02/2024	Explore Your Shore		W76X
mollusc	Common Limpet (<i>Patella vulgata</i>)	1	08/02/2024	Explore Your Shore		W76X
mollusc	Common Oyster (<i>Ostrea edulis</i>)	1	06/03/2020	Explore Your Shore	Threatened Species: OSPAR Convention	W76X
mollusc	Common Periwinkle (<i>Littorina littorea</i>)	1	08/02/2024	Explore Your Shore		W76X

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
mollusc	Dog Whelk (<i>Nucella lapillus</i>)	1	14/01/2020	Explore Your Shore	Threatened Species: OSPAR Convention	W76X
mollusc	Flat Top Shell (<i>Gibbula umbilicalis</i>)	1	08/02/2024	Explore Your Shore		W76X
mollusc	Great Scallop (<i>Pecten maximus</i>)	2	27/02/2024	Explore Your Shore		W76X
mollusc	Grey Top Shell (<i>Gibbula cineraria</i>)	2	13/08/2023	Explore Your Shore		W76X
mollusc	Horse-mussel (<i>Modiolus modiolus</i>)	1	08/02/2024	Explore Your Shore		W76X
mollusc	<i>Mytilus edulis</i>	1	17/12/2019	Explore Your Shore		W76X
mollusc	Netted Dog Whelk (<i>Hinia reticulata</i>)	1	16/01/2020	Explore Your Shore		W76X
mollusc	<i>Peringia ulvae</i>	1	17/08/1997	All Ireland Non-Marine Molluscan Database		W76X
mollusc	Pod Razor Shell (<i>Ensis siliqua</i>)	2	13/08/2023	Explore Your Shore		W76X
mollusc	Prickly Cockle (<i>Acanthocardia echinata</i>)	1	04/02/2021	Explore Your Shore		W76X

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
mollusc	Pullet Carpet Shell (<i>Venerupis senegalensis</i>)	2	08/01/2020	Explore Your Shore		W76X
bony fish (Actinopterygii)	Atlantic Bonito (<i>Sarda sarda</i>)	1	22/07/1913	Rare marine fishes taken in Irish waters from 1786 to 2008		W76
bony fish (Actinopterygii)	Black Goby (<i>Gobius niger</i>)	1	23/10/2022	Explore Your Shore		W76
bony fish (Actinopterygii)	Bull Rout (<i>Myoxocephalus scorpius</i>)	1	21/05/2020	Explore Your Shore		W76
bony fish (Actinopterygii)	Butterfish (<i>Pholis gunnellus</i>)	1	21/05/2020	Explore Your Shore		W76
bony fish (Actinopterygii)	Common Goby (<i>Pomatoschistus microps</i>)	2	26/07/2006	Irish Lagoon Surveys		W76
bony fish (Actinopterygii)	European Eel (<i>Anguilla anguilla</i>)	3	08/10/2008	River Biologists' Database (EPA)	Threatened Species: Critically Endangered	W76
bony fish (Actinopterygii)	Flounder (<i>Platichthys flesus</i>)	1	01/06/2006	Irish Lagoon Surveys		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
bony fish (Actinopterygii)	Horse Mackerel (<i>Trachurus trachurus</i>)	1	10/09/2022	Explore Your Shore		W76
bony fish (Actinopterygii)	Mugilidae	1	11/07/2021	iNaturalist Marine Species Records for Ireland		W76
bony fish (Actinopterygii)	Sand Goby (<i>Pomatoschistus minutus</i>)	1	01/06/2006	Irish Lagoon Surveys		W76
bony fish (Actinopterygii)	Sand Smelt (<i>Atherina presbyter</i>)	1	01/06/2006	Irish Lagoon Surveys		W76
bony fish (Actinopterygii)	Shadefish (<i>Argyrosomus regius</i>)	1	01/08/1840	Rare marine fishes taken in Irish waters from 1786 to 2008		W76
bony fish (Actinopterygii)	Shanny (<i>Lipophrys pholis</i>)	1	21/05/2020	Explore Your Shore		W76
bony fish (Actinopterygii)	Sprat (<i>Sprattus sprattus</i>)	1	18/08/2020	Explore Your Shore		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
bony fish (Actinopterygii)	Stone Loach (<i>Barbatula barbatula</i>)	1	10/08/2005	River Biologists' Database (EPA)		W76
bony fish (Actinopterygii)	Thick-lipped Mullet (<i>Chelon labrosus</i>)	1	24/07/2021	iNaturalist Marine Species Records for Ireland		W76
bony fish (Actinopterygii)	Three-spined Stickleback (<i>Gasterosteus aculeatus</i>)	1	01/06/2006	Irish Lagoon Surveys		W76
bony fish (Actinopterygii)	Tompot Blenny (<i>Parablennius gattorugine</i>)	1	23/10/2022	Explore Your Shore		W76
cartilagenous fish (Chondrichthyes)	Lesser Spotted Dogfish (<i>Scyliorhinus canicula</i>)	1	22/07/2019	Explore Your Shore		W76
cartilagenous fish (Chondrichthyes)	Thornback Ray (<i>Raja clavata</i>)	1	31/08/1977	Rare marine fishes taken in Irish waters from 1786 to 2008	Threatened Species: OSPAR Convention	W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
crustacean	<i>Allomelita pellucida</i>	1	01/06/2006	Irish Lagoon Surveys		W76
crustacean	<i>Balanus improvisus</i>	1	26/07/2006	Irish Lagoon Surveys	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	W76
crustacean	Brown Shrimp (<i>Crangon crangon</i>)	2	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Cancer pagurus</i>	1	16/01/2020	Explore Your Shore		W76
crustacean	Chameleon Shrimp (<i>Praunus flexuosus</i>)	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	Common Prawn (<i>Palaemon serratus</i>)	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	Common Sea Slater (<i>Ligia oceanica</i>)	2	05/06/2022	Explore Your Shore		W76
crustacean	<i>Corophium insidiosum</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Corophium volutator</i>	2	26/07/2006	Irish Lagoon Surveys		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
crustacean	<i>Elminius modestus</i>	2	08/02/2024	Explore Your Shore	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species	W76
crustacean	<i>Gammarus chevreuxi</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Gammarus oceanicus</i>	1	21/05/2020	Explore Your Shore		W76
crustacean	<i>Gammarus zaddachi</i>	1	01/06/2006	Irish Lagoon Surveys		W76
crustacean	Green Shore Crab (<i>Carcinus maenas</i>)	6	05/06/2022	Explore Your Shore		W76
crustacean	<i>Jaera forsmanni</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Lekanesphaera hookeri</i>	1	01/06/2006	Irish Lagoon Surveys		W76
crustacean	<i>Lekanesphaera rugicauda</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Leptocheirus pilosus</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Melita palmata</i>	1	26/07/2006	Irish Lagoon Surveys		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
crustacean	<i>Microdeutopus gryllotalpa</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Neomysis integer</i>	2	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Palaemon elegans</i>	1	26/07/2006	Irish Lagoon Surveys		W76
crustacean	<i>Palaemon elegans/serratus</i>	1	21/05/2020	Explore Your Shore		W76
crustacean	<i>Palaemonetes varians</i>	2	26/07/2006	Irish Lagoon Surveys		W76
mollusc	<i>Buccinum undatum</i>	3	08/02/2024	Explore Your Shore		W76
mollusc	Chequered Carpet Shell (<i>Tapes decussatus</i>)	1	08/02/2024	Explore Your Shore		W76
mollusc	Common Cockle (<i>Cerastoderma edule</i>)	3	08/02/2024	Explore Your Shore		W76
mollusc	Common Limpet (<i>Patella vulgata</i>)	3	08/02/2024	Explore Your Shore		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
mollusc	Common Otter Shell (<i>Lutraria lutraria</i>)	1	21/05/2020	Explore Your Shore		W76
mollusc	Common Oyster (<i>Ostrea edulis</i>)	2	21/05/2020	Explore Your Shore	Threatened Species: OSPAR Convention	W76
mollusc	Common Periwinkle (<i>Littorina littorea</i>)	5	08/02/2024	Explore Your Shore		W76
mollusc	Dog Whelk (<i>Nucella lapillus</i>)	1	14/01/2020	Explore Your Shore	Threatened Species: OSPAR Convention	W76
mollusc	Flat Top Shell (<i>Gibbula umbilicalis</i>)	1	08/02/2024	Explore Your Shore		W76
mollusc	Great Scallop (<i>Pecten maximus</i>)	2	27/02/2024	Explore Your Shore		W76
mollusc	Grey Top Shell (<i>Gibbula cineraria</i>)	2	13/08/2023	Explore Your Shore		W76
mollusc	Horse-mussel (<i>Modiolus modiolus</i>)	1	08/02/2024	Explore Your Shore		W76
mollusc	Lagoon Cockle (<i>Cerastoderma glaucum</i>)	1	26/07/2006	Irish Lagoon Surveys		W76

Species group	Species name	Record count	Date of last record	Title of dataset	Designation	Site
mollusc	Laver Spire Shell (<i>Hydrobia ulvae</i>)	2	26/07/2006	Irish Lagoon Surveys		W76
mollusc	<i>Littorina obtusata/mariae</i>	1	21/05/2020	Explore Your Shore		W76
mollusc	<i>Mytilus edulis</i>	5	24/05/2020	Explore Your Shore		W76
mollusc	Netted Dog Whelk (<i>Hinia reticulata</i>)	1	16/01/2020	Explore Your Shore		W76
mollusc	Pod Razor Shell (<i>Ensis siliqua</i>)	3	13/08/2023	Explore Your Shore		W76
mollusc	Prickly Cockle (<i>Acanthocardia echinata</i>)	1	04/02/2021	Explore Your Shore		W76
mollusc	Pullet Carpet Shell (<i>Venerupis senegalensis</i>)	2	08/01/2020	Explore Your Shore		W76
mollusc	Rough Periwinkle (<i>Littorina saxatilis</i>)	1	26/07/2006	Irish Lagoon Surveys		W76

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¹ <https://atlas.marine.ie>

² <https://dafm-maps.marine.ie/aquaculture-viewer/>

³ [National Biodiversity Data Centre – A Heritage Council Programme, Documenting Ireland's Wildlife](#)

⁴ <http://maps.biodiversityireland.ie>

⁵ <http://www.npws.ie/mapsanddata/>

APPENDIX 10.1 PORT OF CORK PHOTO MONTAGES

Photomontages

Ringaskiddy Port Redevelopment, Co. Cork



Photomontage Views

Rev: 0

PM01 From N28 Ringaskiddy looking NNW

- Existing
- Proposed
- Annotated



PM02 Priests Avenue looking NNW

- Existing
- Proposed
- Annotated



PM03 R613 Ringaskiddy looking NNE

- Existing
- Proposed
- Annotated



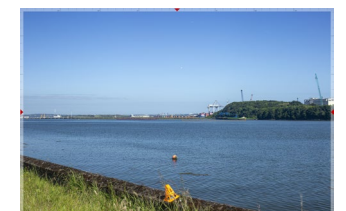
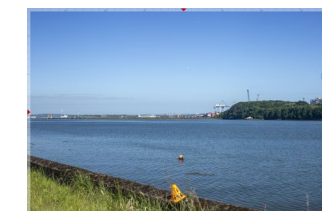
PM04 Strawhill over Monkstown creek looking ESE

- Existing
- Proposed
- Annotated



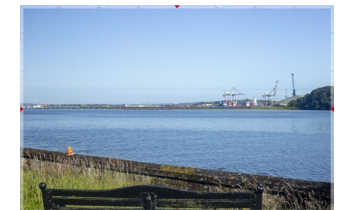
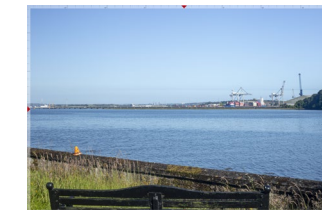
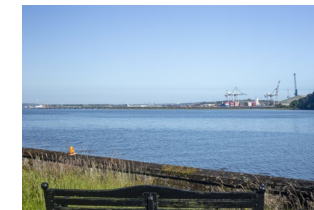
PM05 R610 across Monkstown creek looking ESE

- Existing
- Proposed
- Annotated



PM06 R610 across Monkstown creek looking ESE

- Existing
- Proposed
- Annotated



Photomontage Views

Rev: 0

PM07 Car park Monkstown r610 looking SSE

- Existing
- Proposed
- Annotated



PM08 Diamond road Monkstown looking SSE

- Existing
- Proposed
- Annotated



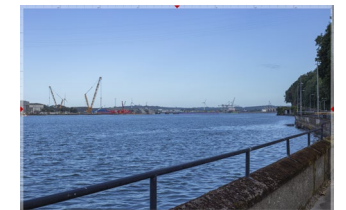
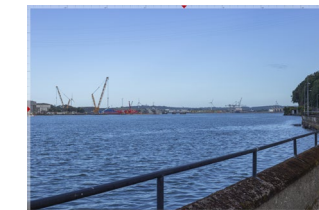
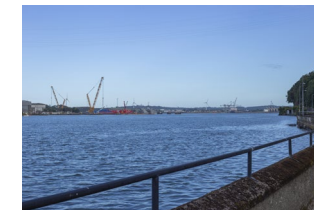
PM09 Scotsman's road Monkstown looking SSE

- Existing
- Proposed
- Annotated



PM10 R610 Passage West looking SSE

- Existing
- Proposed
- Annotated



PM11 Whitepoint Drive looking SSW

- Existing
- Proposed
- Annotated



PM12 Brookvale Cobh looking SSW

- Existing
- Proposed
- Annotated

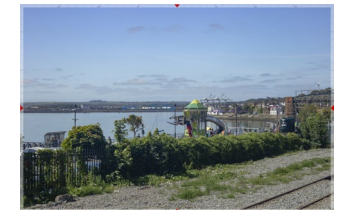


Photomontage Views

Rev: 0

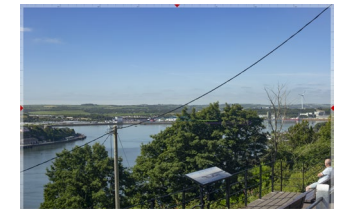
PM13 Lower Road Cobh looking SSW

- Existing
- Proposed
- Annotated



PM14 Lake Road Cobh looking SW

- Existing
- Proposed
- Annotated



PM15 Cathedral Terrace Cobh looking SW

- Existing
- Proposed
- Annotated



PM16 Haulbowline Bridge looking WSW

- Existing
- Proposed
- Annotated



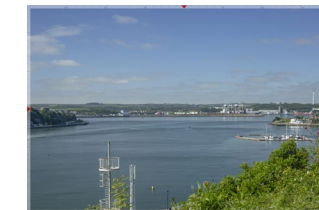
PM17 Martello Tower Ringaskiddy looking NW

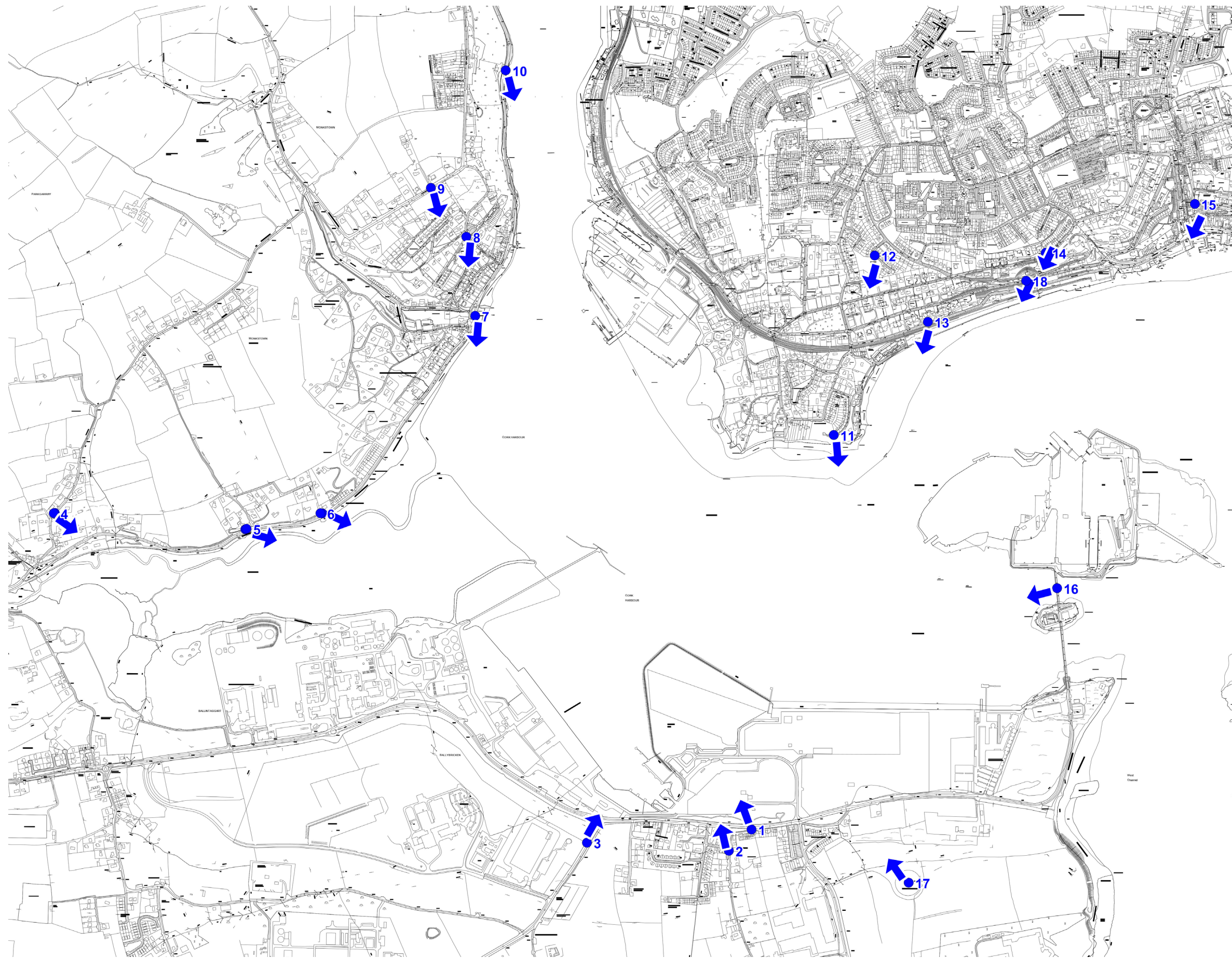
- Existing
- Proposed
- Annotated



PM18 R624 High Road Cobh looking SW

- Existing
- Proposed
- Annotated





Name	Camera Locations							
Status	Photomontage View Locations							
Scale	Not to Scale							
Ringaskiddy Port Redevelopment, Co. Cork								
		Rev: 0						



Name PM01 Status Existing Reference: From N28 Ringaskiddy looking NNW			Camera location 578056,564263,4.2	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 13:10	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 578009,564342,4.5		
Rev: 0		Recommended viewing distance with both eyes is 500mm			



Name PM01 Status Proposed Reference: From N28 Ringaskiddy looking NNW			Camera location 578056,564263,4.2	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 13:10 Recommended viewing distance with both eyes is 500mm	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork	Rev: 0		Target Direction 578009,564342,4.5			



Ringaskiddy West

Container storage

Main Quay extension

N28 Road Connection

Linkspan Pontoon

Name PM01			Camera location 578056,564263,4.2		  	
Status	Annotated		Target Direction 578009,564342,4.5			
Reference:	From N28 Ringaskiddy looking NNW		Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 13:10 Recommended viewing distance with both eyes is 500mm			
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0				



Name PM02 Status Existing Reference: Priests Avenue looking NNW			Camera location 577897,564200,10.8	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 12:52	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577854,564323,11.7	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM02 Status Proposed Reference: Priests Avenue looking NNW			Camera location 577897,564200,10.8	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 12:52	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577854,564323,11.7	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM02			Camera location 577897,564200,10.8	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 12:52	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 www.fr-studios.ie
Status Annotated						
Reference: Priests Avenue looking NNW						
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Target Direction 577854,564323,11.7	Recommended viewing distance with both eyes is 500mm		



Name PM03 Status Existing Reference: R613 Ringaskiddy looking NNE			Camera location 577462,564218,17	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 13:30	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577494,564314,17.3	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM03
Status Proposed
Reference: R613 Ringaskiddy looking NNE

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
577462,564218,17

Target Direction
577494,564314,17.3

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 13:30

Recommended viewing distance with both eyes is 500mm





- Ringaskiddy West
- Container storage
- Main Quay extension
- N28 Road Connection
- Linkspan Pontoon

Name PM03			Camera location 577462,564218,17		  
Status Annotated			Lens 50mm Stock		
Reference: R613 Ringaskiddy looking NNE			HView Angle Nominal 40 degrees		
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Target Direction 577494,564314,17.3		Recommended viewing distance with both eyes is 500mm
			Date/Time: 23/06/2024 13:30		



Name PM04 Status Existing Reference: Strawhill over Monkstown creek looking ESE		 PORT of CORK DEEPWATER MULTI-MODAL PORT	Camera location 575440,565430,31.2	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 17:25	 CSC www.shackleton.ie  Chris Shackleton Consulting info@shackleton.ie  Future Realities www.fr-studios.ie	
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 575637,565360,30.1	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM04			Camera location 575440,565430,31.2		  	
Status	Proposed		Target Direction 575637,565360,30.1			
Reference: Strawhill over Monkstown creek looking ESE			Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 17:25			
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Recommended viewing distance with both eyes is 500mm			



Ringaskiddy West

Container storage

Main Quay extension

N28 Road Connection

Linkspan Pontoon

Name PM04
Status Annotated
Reference: Strawhill over Monkstown creek looking ESE

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
575440,565430,31.2

Target Direction
575637,565360,30.1

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 17:25

Recommended viewing distance with both eyes is 500mm



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Name PM05 Status Existing Reference: R610 across Monkstown creek looking ESE			Camera location 576198,565380,3.7	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 17:48	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 579020,564365,39.8	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM05 Status Proposed Reference: R610 across Monkstown creek looking ESE			Camera location 576198,565380,3.7	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 17:48	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 579020,564365,39.8	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Ringaskiddy West
Main Quay extension
Linkspan Pontoon

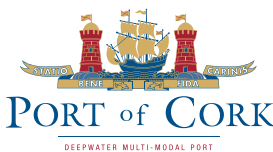
Container storage
N28 Road Connection

Name PM05 Status Annotated Reference: R610 across Monkstown creek looking ESE			Camera location 576198,565380,3.7	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 17:48	 
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 579020,564365,39.8	Recommended viewing distance with both eyes is 500mm	



Name PM06 Status Existing Reference: R610 across Monkstown creek looking ESE			Camera location 576443,565423,4.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:13	  
Ringaskiddy Port Redevelopment, Co. Cork			Rev: 0	Target Direction 579210,564265,-9.7	



Name PM06 Status Proposed Reference: R610 across Monkstown creek looking ESE			Camera location 576443,565423,4.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:13	  
Ringaskiddy Port Redevelopment, Co. Cork			Rev: 0	Target Direction 579210,564265,-9.7	



Ringaskiddy West
Main Quay extension
Linkspan Pontoon
Container storage
N28 Road Connection

Name PM06 Status Annotated Reference: R610 across Monkstown creek looking ESE		 PORT of CORK DEEPWATER MULTI-MODAL PORT	Camera location 576443,565423,4.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:13	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Rev: 0	Target Direction 579210,564265,-9.7		



Name PM07
Status Existing
Reference: Car park Monkstown r610 looking SSE

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
577026,566155,4

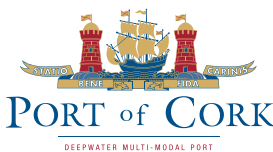
Target Direction
577683,564804,19.6

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 18:30

Recommended viewing distance with both eyes is 500mm





Name PM07 Status Proposed Reference: Car park Monkstown r610 looking SSE			Camera location 577026,566155,4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:30	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577683,564804,19.6	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Ringaskiddy West	Container storage
Main Quay extension	N28 Road Connection
Linkspan Pontoon	

Name PM07 Status Annotated Reference: Car park Monkstown r610 looking SSE			Camera location 577026,566155,4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:30	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577683,564804,19.6	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM08			Camera location 576993,566497,33.9		  	
Status	Existing		Target Direction 577875,564369,32.0			
Reference: Car park Monkstown r610 looking SSE			Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 19:10			
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Recommended viewing distance with both eyes is 500mm			



Name PM08 Status Proposed Reference: Car park Monkstown r610 looking SSE			Camera location 576993,566497,33.9	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 19:10	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577875,564369,32.0	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Ringaskiddy West
Main Quay extension
Linkspan Pontoon
Container storage
N28 Road Connection

Name PM08			Camera location 576993,566497,33.9		  	
Status Annotated			Lens 50mm Stock			
Reference: Car park Monkstown r610 looking SSE			HView Angle Nominal 40 degrees			
Rev: 0		Target Direction 577875,564369,32.0		Date/Time: 23/06/2024 19:10		
Ringaskiddy Port Redevelopment, Co. Cork		Recommended viewing distance with both eyes is 500mm				



Name PM09			Camera location 576844,566643,77.8		  
Status Existing			Target Direction 577916,564536,77.8		
Reference: Scotsman's road Monkstown looking SSE			Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:57		
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Recommended viewing distance with both eyes is 500mm		



Name PM09 Status Proposed Reference: Scotsman's road Monkstown looking SSE		 PORT of CORK DEEPWATER MULTI-MODAL PORT	Camera location 576844,566643,77.8	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 18:57	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577916,564536,77.8	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM09			Camera location 576844,566643,77.8		  
Status Annotated			Lens 50mm Stock		
Reference: Scotsman's road Monkstown looking SSE			HView Angle Nominal 40 degrees		
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Target Direction 577916,564536,77.8		Recommended viewing distance with both eyes is 500mm
			Date/Time: 23/06/2024 18:57		



Name PM10
Status Existing
Reference: R610 Passage West looking SSE

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
577138,567056,4.1

Target Direction
578010,564522,25.9

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 19:29

Recommended viewing distance with both eyes is 500mm



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Name PM10 Status Proposed Reference: R610 Passage West looking SSE		Camera location 577138,567056,4.1 Target Direction 578010,564522,25.9	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 19:29	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie  Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork		Recommended viewing distance with both eyes is 500mm		



Ringaskiddy West	Container storage
Main Quay extension	N28 Road Connection
Linkspan Pontoon	

Name PM10 Status Annotated Reference: R610 Passage West looking SSE			Camera location 577138,567056,4.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 19:29	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork	Rev: 0		Target Direction 578010,564522,25.9	Recommended viewing distance with both eyes is 500mm		



Name PM11 Status Existing Reference: Whitepoint Drive looking SSW			Camera location 578353,565723,9.4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 11:47	 www.shackleton.ie  info@shackleton.ie  www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577651,564577,5.2	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM11 Status Proposed Reference: Whitepoint Drive looking SSW			Camera location 578353,565723,9.4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 11:47	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577651,564577,5.2	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Ringaskiddy West	Container storage
Main Quay extension	N28 Road Connection
Linkspan Pontoon	

Name	PM11		Camera location	Canon 6D	  
Status	Annotated		578353,565723,9.4	50mm Stock	
Reference:	Whitepoint Drive looking SSW		Target Direction	Nominal 40 degrees	
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	577651,564577,5.2	Date/Time: 23/06/2024 11:47	Recommended viewing distance with both eyes is 500mm



Name PM12 Status Existing Reference: Brookvale Cobh looking SSW			Camera location 578519,566427,59.5	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 09:00	 
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577753,564661,60.8	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM12
Status Proposed
Reference: Brookvale Cobh looking SSW

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
578519,566427,59.5

Target Direction
577753,564661,60.8

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 09:00
Recommended viewing distance with both eyes is 500mm





Name PM12 Status Annotated Reference: Brookvale Cobh looking SSW			Camera location 578519,566427,59.5	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 09:00 Recommended viewing distance with both eyes is 500mm	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577753,564661,60.8			
Rev: 0						



Name PM13 Status Existing Reference: Lower Road Cobh looking SSW			Camera location 578743,566153,8.6	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 11:19	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 578531,565824,9.1	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM13 Status Proposed Reference: Lower Road Cobh looking SSW			Camera location 578743,566153,8.6	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 11:19	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 578531,565824,9.1		
Rev: 0		Recommended viewing distance with both eyes is 500mm			



Ringaskiddy West

Container storage

Main Quay extension

N28 Road Connection

Linkspan Pontoon

Name PM13
Status Annotated
Reference: Lower Road Cobh looking SSW

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
578743,566153,8.6

Target Direction
578531,565824,9.1

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 11:19

Recommended viewing distance with both eyes is 500mm





Name PM14 Status Existing Reference: Lake Road Cobh looking SW			Camera location 579130,566400,65.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 10:41	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577832,564597,66.5	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM14
Status Proposed
Reference: Lake Road Cobh looking SW

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
579130,566400,65.1

Target Direction
577832,564597,66.5

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 10:41

Recommended viewing distance with both eyes is 500mm



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Shackleton
Consulting
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Ringaskiddy West	Container storage
Main Quay extension	N28 Road Connection
Linkspan Pontoon	

Name PM14 Status Annotated Reference: Lake Road Cobh looking SW			Camera location 579130,566400,65.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 10:41	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577832,564597,66.5	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM15 Status Existing Reference: Cathedral Terrace Cobh looking SW			Camera location 579759,566602,35.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 09:36	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie  www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577691,564557,37.5	Recommended viewing distance with both eyes is 500mm	
Rev: 0					



Name PM15 Status Proposed Reference: Cathedral Terrace Cobh looking SW			Camera location 579759,566602,35.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 09:36	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie  www.fr-studios.ie	
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577691,564557,37.5	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM15			Camera location 579759,566602,35.1		  
Status Annotated			Lens 50mm Stock		
Reference: Cathedral Terrace Cobh looking SW			HView Angle Nominal 40 degrees		
Date/Time: 23/06/2024 09:36		Target Direction 577691,564557,37.5		Recommended viewing distance with both eyes is 500mm	
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0			



Name PM16 Status Existing Reference: Haulbowline Bridge looking WSW			Camera location 579204,565128,8.4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 15:15	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577927,564857,12.2	Recommended viewing distance with both eyes is 500mm	
		Rev: 0			



Name PM16 Status Proposed Reference: Haulbowline Bridge looking WSW			Camera location 579204,565128,8.4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 15:15	 Chris Shackleton Consulting www.shackleton.ieinfo@shackleton.ie  Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Rev: 0	Target Direction 577927,564857,12.2	

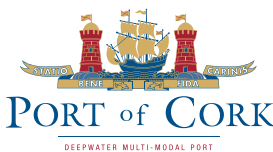


Name PM16 Status Annotated Reference: Haulbowline Bridge looking WSW			Camera location 579204,565128,8.4	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 15:15	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577927,564857,12.2		
Rev: 0		Recommended viewing distance with both eyes is 500mm			



Name PM17 Status Existing Reference: Martello Tower Ringaskiddy looking NW		 PORT of CORK DEEPWATER MULTI-MODAL PORT	Camera location 578633,564065,46.7	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 14:22	 www.shackleton.ie  info@shackleton.ie  www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Rev: 0	Target Direction 578142,564453,49.0	



Name PM17 Status Proposed Reference: Martello Tower Ringaskiddy looking NW			Camera location 578633,564065,46.7	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 14:22	  
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 578142,564453,49.0		
		Rev: 0	Recommended viewing distance with both eyes is 500mm		



Name PM17			Camera location 578633,564065,46.7		  
Status Annotated			Lens 50mm Stock		
Reference: Martello Tower Ringaskiddy looking NW			HView Angle Nominal 40 degrees		
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Target Direction 578142,564453,49.0		Recommended viewing distance with both eyes is 500mm



Name PM18 Status Existing Reference: R624 High Road Cobh looking SW			Camera location 579081,566307,28.1	Camera Canon 6D Lens 50mm Stock HView Angle Nominal 40 degrees Date/Time: 23/06/2024 10:13	 Chris Shackleton Consulting www.shackleton.ie info@shackleton.ie	 Future Realities www.fr-studios.ie
Ringaskiddy Port Redevelopment, Co. Cork			Target Direction 577844,564598,29.8	Recommended viewing distance with both eyes is 500mm		
Rev: 0						



Name PM18
Status Proposed
Reference: R624 High Road Cobh looking SW

Ringaskiddy Port Redevelopment, Co. Cork

Rev:
0



Camera location
579081,566307,28.1

Target Direction
577844,564598,29.8

Camera Canon 6D
Lens 50mm Stock
HView Angle Nominal 40 degrees
Date/Time: 23/06/2024 10:13

Recommended viewing distance with both eyes is 500mm



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Ringaskiddy West

Container storage

Main Quay extension

N28 Road Connection

Linkspan Pontoon

Name PM18			Camera location 579081,566307,28.1		  
Status Annotated			Lens 50mm Stock		
Reference: R624 High Road Cobh looking SW			HView Angle Nominal 40 degrees		
Ringaskiddy Port Redevelopment, Co. Cork		Rev: 0	Target Direction 577844,564598,29.8		Recommended viewing distance with both eyes is 500mm
			Date/Time: 23/06/2024 10:13		

Photomontage Methodology / Method Statement

Work has been completed in accordance with best practice guidelines a summary of which are provided below.

Preparation

Prior to site visit camera locations were identified and located on digital map to enable GPS routing to the correct locations. The site was “scouted” for access using Google Streetview (c) Google.

Photography

- Photographs were taken on site at locations specified using a high-resolution professional digital camera. The Camera, a Canon 6D, is a full frame format (which corresponds to a traditional 35mm film format) as recommended by best practice guidelines.
- Images were taken in RAW format which provides the maximum flexibility in adjustment along with the best quality available, and with bracketed exposure. The images were stored with embedded camera/photo exif data.
- The camera was tripod mounted, spirit leveled and set at a nominal 1.6m above ground level
- A Canon EF 50mm Stock Lens was used for all shot.

Control

A series of survey points were captured on site for each photograph using CHCNAV i89 Visual IMU GNSS survey grade GPS receiver with a 1408-channels, and enhanced RTK. This is a hybrid survey system with dual camera visual survey capabilities.” The following were measured:

- The camera position, plan and height
- Measured points of detail visible when the photograph was taken. On streetscape scenes points of detail (corners of buildings, poles, sign, white lines, structures, etc) are surveyed to provide an accurate orientation base where insufficient existing detail is available we supplement with either with red/white ranging rods or smaller orange cones placed in the camera’s field of view while taking the photograph.
- Regardless of the type of control the configuration shall be non-collinear with a good photogrammetric geometry. This ensures that computational analysis is convergent.

Setting up Photomontage Images

- Survey and OS mapping is imported into 3D software
- A calibrated virtual matching camera was created to match the physical one used to capture the image. The camera was snapped to the surveyed real-life camera locations. The individual photograph frames were loaded into the viewport background.
- Using in-built software algorithms the virtual camera was adjusted so the points of detail on the photograph and the surveyed points in real-life coalesce in the camera viewport. Once complete the virtual camera was be orientated so that it is identical to the physical camera that took the base photograph.
- Checks were made using the surveyed information and project mapping and cross referenced with the photographs to ensure they align.
- A Daylight system was then accurately introduced into the scene at it correct geo-referenced coordinates. Once the time/date and time zone is set the digital sky will match the position of the sun and shadows created by the same in the base photograph.

Verifiable Photomontage & Proposed development modelling

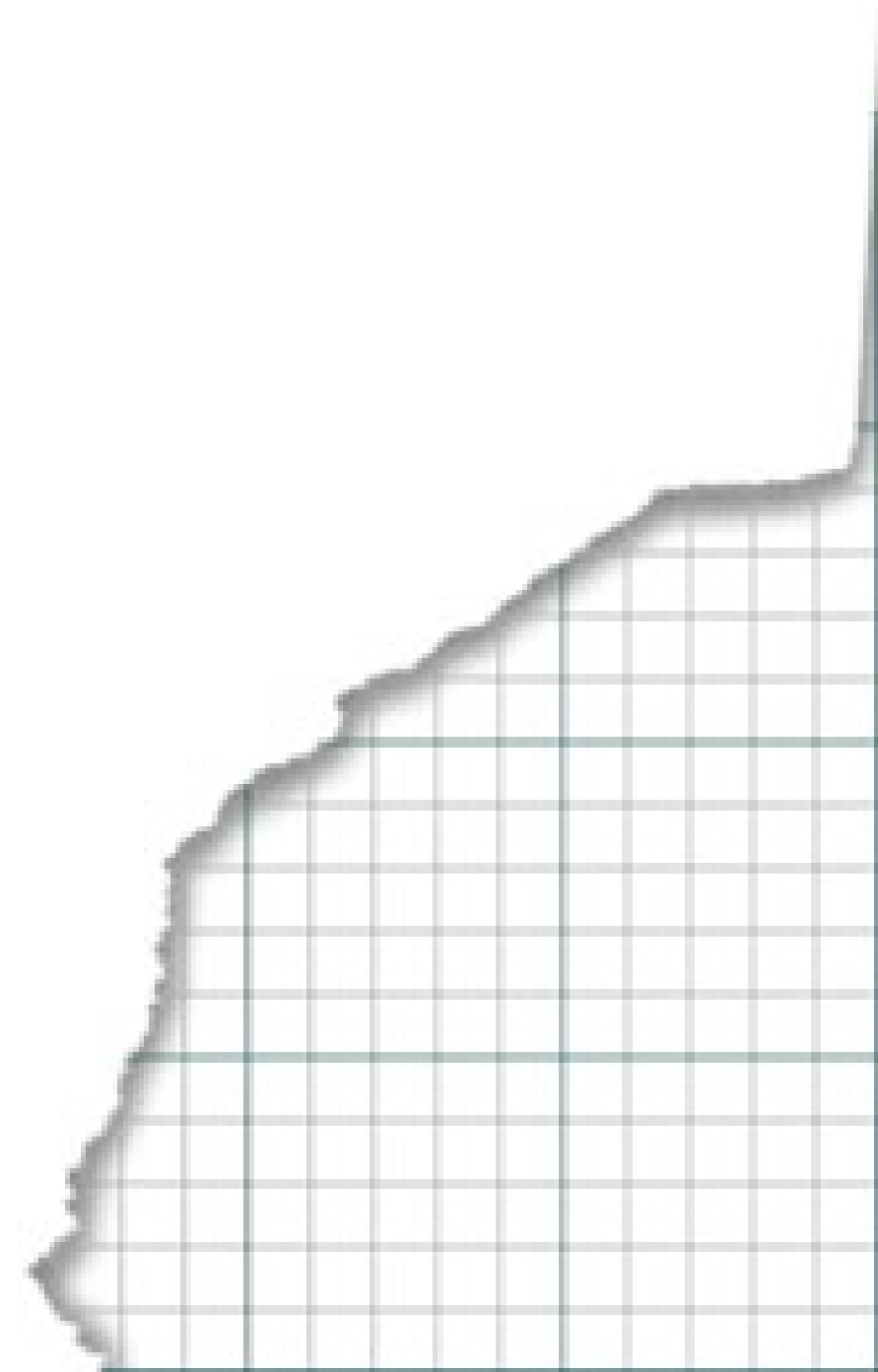
- The proposed models were built from 2d cad information supplied by the design team.
- The proposal was located in accordance with surveyed location and at the correct FFL.
- True life digital materials were designed and assigned to the 3D model elements using reference imagery provided by the client. Sophisticated real world rendering shaders were used in conjunction with the daylight system to produce final renders which will react in a verifiable manner to match the reference photographic base images.
- Finally, the new development image and the existing original photograph were merged with due care for any demolitions/removals, foreground / background existing objects, landscaping, lighting, shadows, etc. to produce a single believable and verifiable composite image.
- Where a majority of the proposal is hidden, a line is used to indicate hidden portions of the development, with different colours used to aid identification.

Viewing instructions

These images are designed to be printed at A3 and taken to site to evaluate the impact of the development.

Images should be viewed with both eyes open from the locations indicated and held at the indicated distance from the viewers eyes depending on the lens used. When held at arms length the viewer should be able to effectively focus not only on the photomontage in hand but also on the surrounding landscape which will give them a much wider field of view.

When used in this fashion the existing landscape will line-up and the photomontage will provide similar perspective and thus enable the viewer to visually evaluate the proposal.



APPENDIX 11.1 PORT OF CORK RMMP OPERATING FRAMEWORK

OPERATING FRAMEWORK

RINGASKIDDY MOBILITY MANAGEMENT PLAN (RMMP)

IDENTIFICATION TABLE

Client/Project owner	Port of Cork Company
Project	Ringaskiddy Mobility Management Plan (RMMP)
Title of Document	300443 20210803 Port of Cork – RMMP Operating Framework_Compliance Document
Type of Document	Operating Framework
Date	06/08/2021
An Bord Pleanála Reference No.	04.PA0035
Project Reference No.	30044312
Number of pages	28



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APPENDIX A: VBS – NOMINAL BOOKING SLOT ALLOCATION

APPENDIX B: WEEKLY MONITORING REPORT TEMPLATE - EXAMPLE



1. INTRODUCTION

- 1.1.1 In May 2015, An Bord Pleanála granted planning permission (Ref 04.PA0035) to the Port of Cork Company for the redevelopment of existing port facilities at Ringaskiddy, Co Cork.
- 1.1.2 This redevelopment is necessary to allow the Port of Cork to overcome the existing physical constraints in handling larger vessels and to adapt to the changing nature of port activities, including the trend towards port-centred logistics. Being able to accommodate larger vessels is vital for the Port of Cork to remain competitive and future proof Cork as an international gateway for trade.
- 1.1.3 Four key areas for development were submitted in the planning application to An Bord Pleanála (ABP), however three areas are now being progressed by the Port of Cork. These include a new container terminal with an initial 360m berth at Ringaskiddy East, internal road improvements and improvements to the external road entrance into the existing Deepwater Berth and the construction of a new amenity area, including a new public pier and slipway at Paddy's Point.
- 1.1.4 The Port of Cork will implement the Ringaskiddy Mobility Management Plan (RMMP) in order to ensure compliance with Condition 5 of An Bord Pleanála's (ABP) planning decision for the Ringaskiddy Port redevelopment (ref 04.PA0035). Details of this Condition can be found in Section 2.
- 1.1.5 This updated RMMP Operating Framework is an update to the February 2020 RMMP Operating Framework, which was developed by the Port of Cork in consultation with Cork County Council over a number of years and formed the final outcome of previous rounds of consultation. The RMMP Operating Framework forms the key details of the operation and scope of the RMMP, which in accordance with ABP Condition 5, shall be agreed in writing with the planning authority at least six months prior to the coming into operation of the development.



2. AN BORD PLEANALA CONDITION 5

- 2.1.1 The Ringaskiddy Mobility Management Plan (RMMP) has been developed as part of the Ringaskiddy Port redevelopment.
- 2.1.2 The RMMP Operating Framework has been developed to comply with Condition 5 of An Bord Pleanála's (ABP) planning decision (Ref 04.PA0035) for the Ringaskiddy Port redevelopment, which states the following:

"Details of the operation of the proposed "Ringaskiddy Mobility Management Plan" (RMMP) (as outlined in section 8.7 of the environmental impact statement, and further described in submissions to the oral hearing) shall be agreed in writing with the planning authority at least six months prior to the coming into operation of the development. The agreement shall include details in relation to:

- a) Management system to be employed.**
- b) Monitoring arrangements to be employed, which shall enable direct remote access by the planning authority to port traffic information.**
- c) Report arrangements (including making information available to the public).**
- d) Review arrangements, whereby the agreement can be revised periodically.**

All freight vehicles using the port facilities at Ringaskiddy shall be included in the vehicle booking system that forms part of the RMMP.

The 'Do Minimum' traffic levels (referenced in section 8.7.1.1 of the environmental impact statement) shall be determined by reference to updated traffic surveys prior to commencement of operations. All costs associated with implementing the agreement shall be borne by the developer.

Reason: In the interest of orderly development and to minimise traffic congestion on the road network."



3. DETERMINING THE 'DO MINIMUM' BASELINE

ABP Condition 5 reference

"The 'Do Minimum' traffic levels shall be determined by reference to updated traffic surveys prior to commencement of operations."

3.1 Background

Planning for the Port of Cork redevelopment was approved on the condition that the 'Do Minimum' levels during the AM and PM peaks are not exceeded until the M28 is in place.

- 3.1.1 All additional Port generated HGV traffic arising from the redevelopment will therefore be managed within the constraints of the AM and PM 'Do Minimum' periods, including operating within the off peak and inter peak periods of the day where there is additional road capacity available.
- 3.1.2 The Ringaskiddy Mobility Management Plan (RMMP) is required for this purpose.
- 3.1.3 In particular, this relates to container operations, which will move from Tivoli docks to Ringaskiddy as part of the Port's redevelopment (as existing HGV traffic currently based at Ringaskiddy forms part of the 'Do Minimum').

3.2 The Do Minimum – methodology

ABP Condition 5 reference

"The 'Do Minimum' traffic levels shall be determined by reference to updated traffic surveys prior to commencement of operations."

- 3.2.1 The Environmental Impact Statement (EIS) for the planning application included a baseline of existing traffic conditions for year 2012 and a forecast for the year 2018, based on an assumption of growth levels to 2018 in a 'Do Minimum' scenario and a 'Do Something' scenario.
 - 'Do Minimum' levels relate to the planning scenario where the Port redevelopment at Ringaskiddy did not take place – i.e. 'business-as-usual' operations, but having regard to anticipated growth over time.
 - The 'Do Minimum' levels will be formed from existing traffic generated by the Port operations at Ringaskiddy i.e. Bulk Material operations, ferry and cruise ships and car deliveries, with 'normal growth'.
 - The 'Do Minimum' traffic levels do not include container traffic currently generated at Tivoli docks.

Baseline traffic monitoring

- 3.2.2 The updated 'Do Minimum' levels are being informed by baseline monitoring from Jan 2018 and will continue until the day before the redeveloped Port opens.

- **Traffic counters installed at Ringaskiddy** providing 24-hour AADT data in 15-minute timeframes and vehicle type classification – including one which identifies Bulk Material Operations related traffic (Counter C below).



C: Truck Wash

D: Deep Water Quay Entrance

E: N28

F: Ferry Port Access Road

Figure 1. Ringaskiddy – location of Do Minimum traffic counters

- **N28 TII counters at Carr’s Hill and Raffeen Bridge to establish background trends** (prior to the impact of the 2020 Covid-19 lockdowns on the road network) to:
 - Determine the AM and PM peak periods.
 - Determine available capacity in the inter-peak and off-peak periods – and to, therefore, determine the available capacity for Port of Cork container traffic.
- **Review of the anticipated ‘normal’ growth levels** of existing Ringaskiddy Port and Bulk Materials operations.

3.2.3 All figures below relate to two-way traffic. The baseline traffic monitoring has identified:

- **Average daily traffic** – average daily total Port traffic for all days of the week
- **Peaks** – timing of AM and PM peaks on the N28; average weekday Port traffic figures during Port AM and PM Peaks
- **Contribution of Port traffic** on the N28.
- **Ranges** – variations in maximum and minimum levels of Port traffic during AM and PM peaks; seasonal variations in Port and N28 traffic by months of the year; and variations by days of the week.
- **Tidal flow** nature of the N28.
- **Normal growth** anticipated in existing Ringaskiddy Port operations = 1%.

3.3 The Do Minimum – determining the peak periods

3.3.1 A review of the background traffic on the N28 (prior to the impact of the 2020 Covid lockdowns on the road network) has been used to determine the peak periods. These are as follows:

- Morning peak = 0700 to 0900 hours
- Afternoon peak = 1600 to 1900 hours.

3.4 Determining the 'Do Minimum' baseline

3.4.1 The **average Port AADT in the peaks** will be the 'Do Minimum' benchmark – and these figures will be used for dashboard reporting to Cork County Council.

3.4.2 A **minimum and maximum range** within both the AM and PM peaks has also been identified (reflecting the seasonality of Port operations), as illustrated in the Tables and Figures below.

	AVERAGE*	RANGE – LOWEST*	RANGE – HIGHEST*
Morning peak 0700 to 0900 hours			
Port traffic**	140	47	219
Afternoon peak 1600 to 1900 hours			
Port traffic**	164	70	284
*AADT two-way vehicles **Based on figures to date from 2018 to May 2021 (excluding 2020, due to the impact of Covid lockdowns on Port operations and usual traffic patterns) Anticipated growth levels = 1% per annum			

Table 1. Do Minimum Range

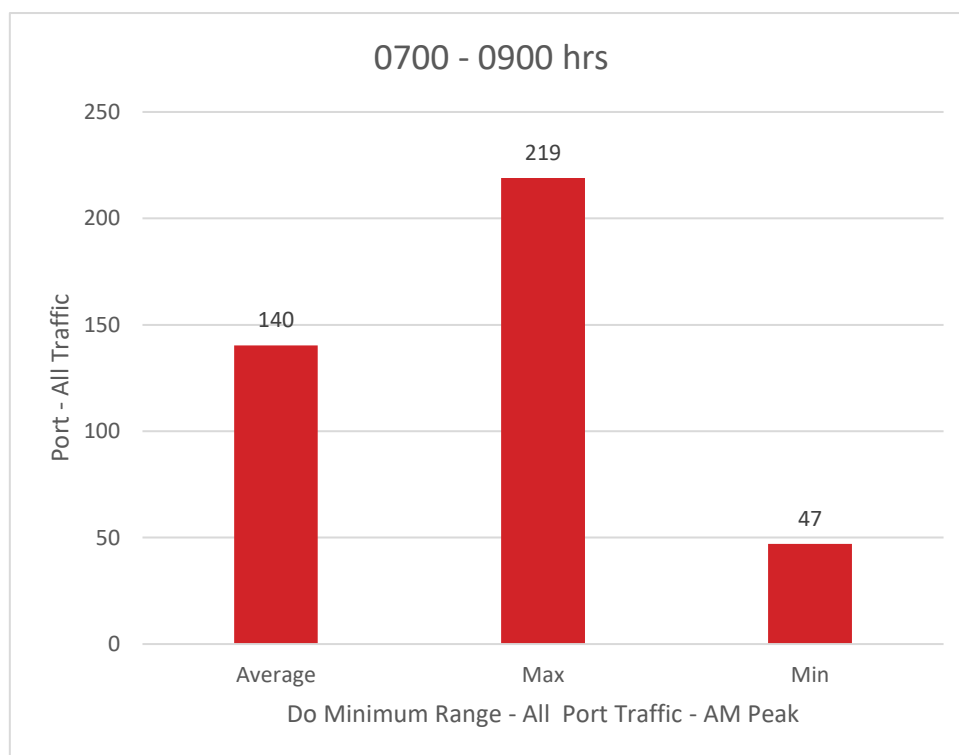


Figure 2. Do Minimum Range – Port Traffic – AM Peak



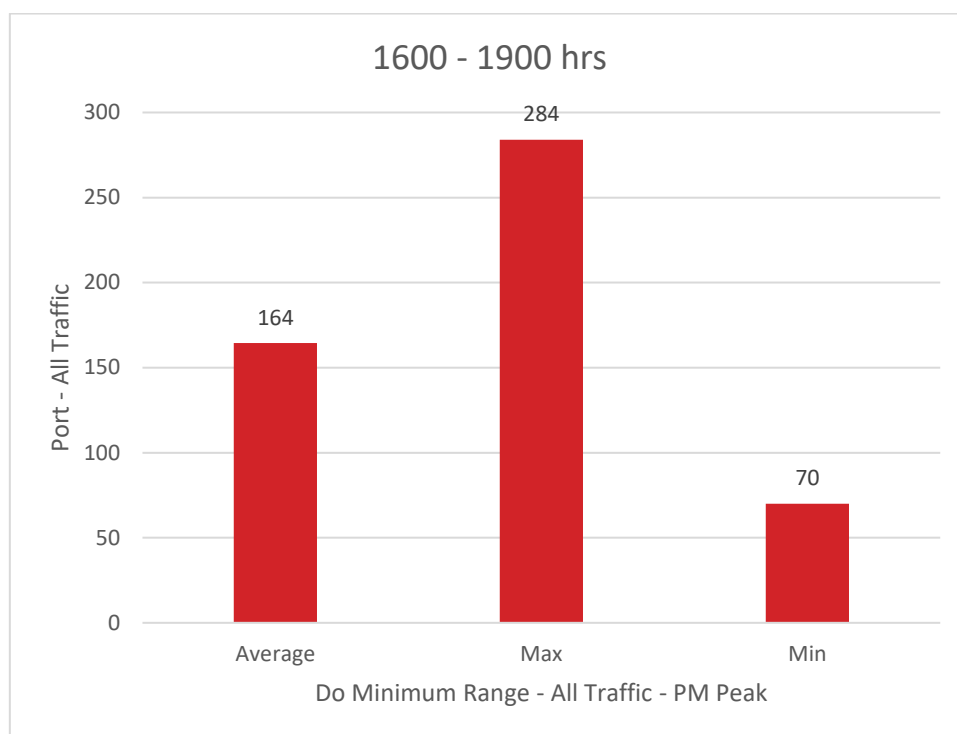


Figure 3. Do Minimum Range – Port Traffic – PM Peak

4. RINGASKIDDY MOBILITY MANAGEMENT PLAN – KEY COMPONENTS

ABP Condition 5 reference(s)

“Management system to be employed.”

“All freight vehicles using the port facilities at Ringaskiddy shall be included in the vehicle booking system that forms part of the RMMP.”

- 4.1.1 The Port of Cork, through the implementation of the Ringaskiddy Mobility Management Plan (RMMP), will operate within the ‘Do Minimum’ traffic levels during the AM and PM peaks. This will be achieved via the key components of the RMMP, which are as follows:

Container Traffic Mobility Management Plan

- **Extended operating hours** – enabling hauliers to spread their arrival and departure times during off-peak periods.
- **Vehicle Booking System (VBS)** – a key enabler of the RMMP. It is a real time HGV appointment system for Container (lo-lo) cargo, which proactively manages arrival patterns utilising pre-booked time slots. The VBS uses traffic information (live or pre-agreed levels) and haulier bookings to be fed in to the system, to ensure real-time optimisation and efficiency – the VBS can be readily adapted in real-time to cope with issues on the road network or Port if required.

- **Automated Gate Operating System** – the delivery of an Automated Gate Operating System forms the nucleus of the VBS, with gated entry and exit lanes placed at a distance back from the public road and the internal Port road network and layby areas designed to mitigate queuing on external roads. In the event of the Automated Gate not working, the Port will proactively manage traffic and revert to manual processing.
- **Operating within the Do Minimum** – container traffic will be managed within the Do Minimum AM and PM levels (as illustrated in Figure 2 and Figure 3), with the majority of VBS slots allocated within the off-peak and inter-peak periods of the day. These slots will be informed by pre-Covid traffic on the network – using an estimation of average weekday two-way vehicle capacity on the N28 by 2021/22, during the off-peak and inter-peak and taking into account existing Port Do Minimum traffic levels.

The existing daily traffic profiles illustrating Do Minimum Port traffic levels as a proportion of traffic on the N28 are shown in the Figures below. It is estimated that the Do Minimum bulk traffic will grow 1% per annum.

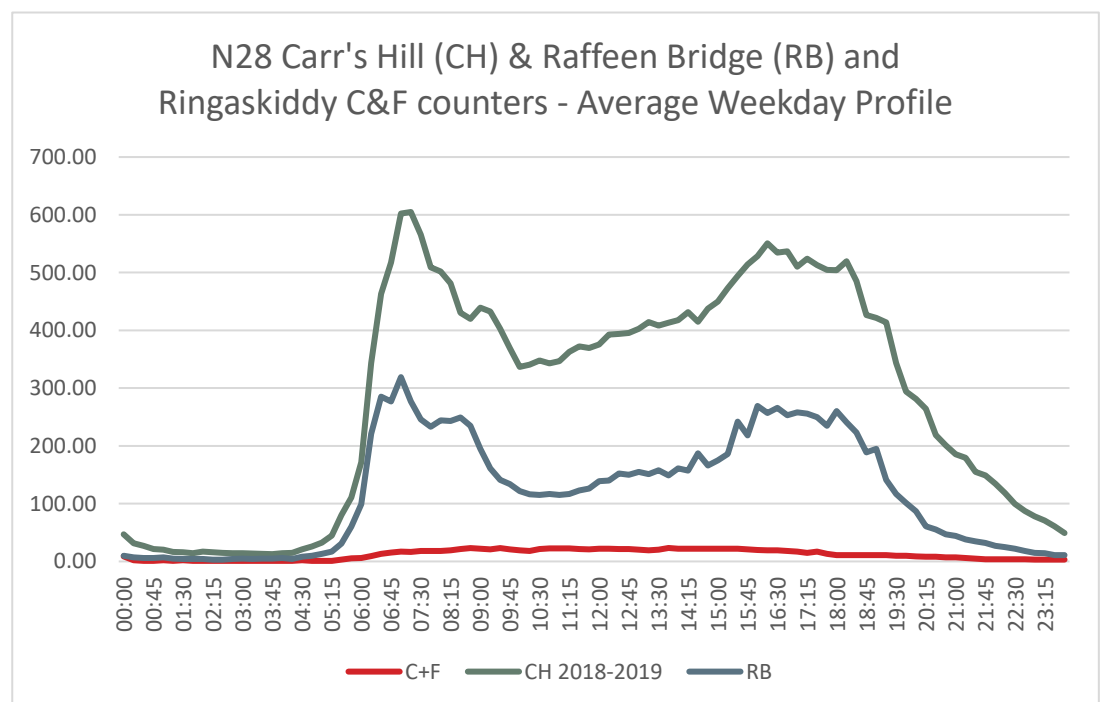


Figure 4. Weekday Average Daily Traffic Profiles – 2018/19 N28 Carr's Hill (CH), N28 Raffeen Bridge (RB), Ringaskiddy counters – by time period.

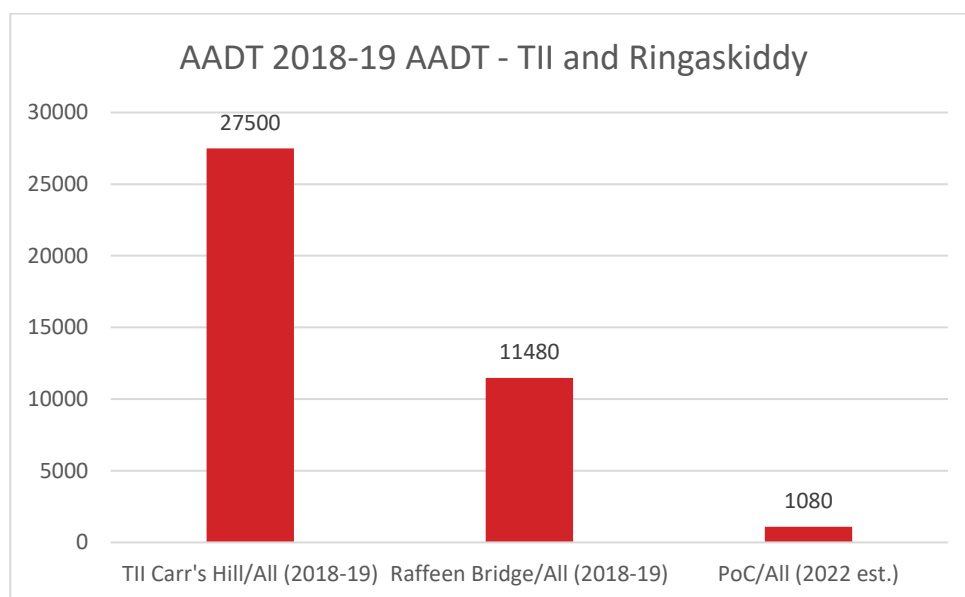
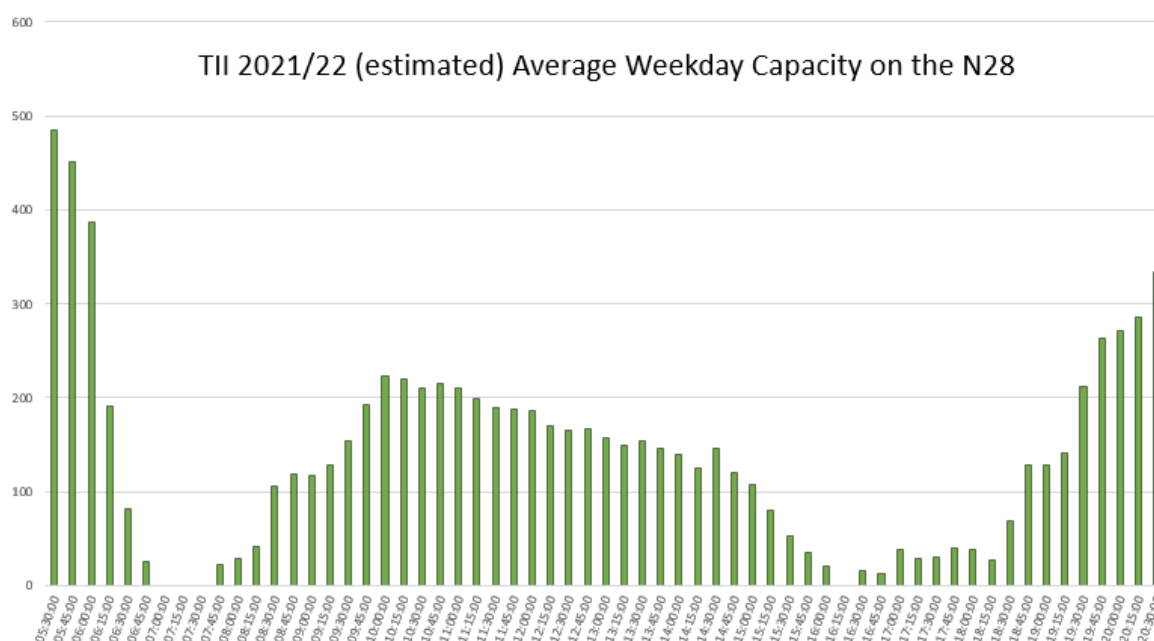


Figure 5. Weekday AADT–N28 Carr’s Hill (CH) & N28 Raffeen Bridge (RB), Ringaskiddy Counters

The majority of VBS slots will be allocated within the off peak and inter peak periods, informed by existing traffic on the network – using an estimation of average weekday two-way vehicle capacity on the N28 by 2021/2022 based on TII counter data up to October 2019. This analysis has indicated that there is significant capacity in the off peak and inter peak period – with the **green bars** on the Figure below representing average daily capacity on the N28 during:

- Off peak periods = 0530 – 0700 hrs; and 1900 – 2030 hrs
- Inter peak period = 0900 – 1600 hrs



There is plenty of spare capacity pre-AM peak and post PM peak – and between the AM and PM peaks, the average spare capacity is 4,370.

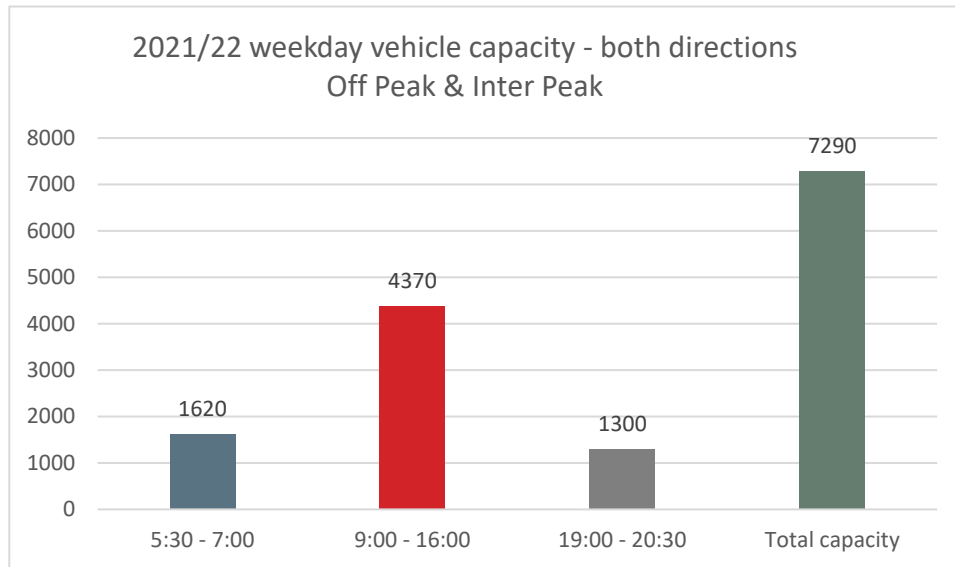


Figure 7. Estimated 2021/22 Average Weekday Vehicle Capacity on the N28 – off peak and inter peak – totals

2020 Port of Traffic forecast – Do Minimum and Tivoli container traffic

As outlined above, it is estimated that by 2021/2022, the Do Minimum bulk materials traffic will grow by 1% per annum from 2020 levels. Projected AADT Do Minimum 2022 traffic levels (i.e. accounting for normal growth) is shown in the Figure below. Data from Tivoli container operations during 2019, 2020 and 2021 has also been used to forecast the projected AADT of the redeveloped Port of Cork in 2021/22, with 3% growth rate in container traffic forecast from 2021 to 2022.

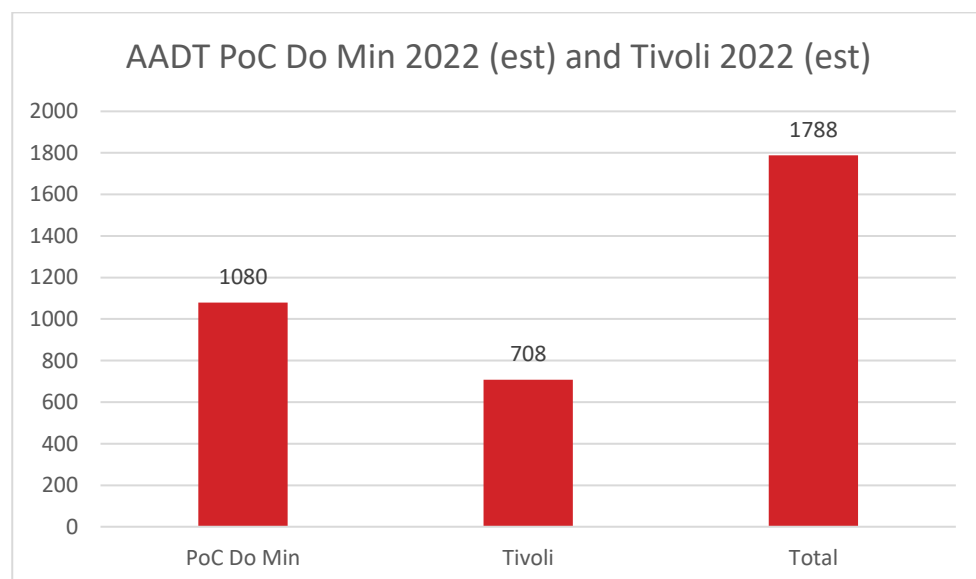


Figure 8. Weekday AADT 2022 forecast – Ringaskiddy Do Minimum and Tivoli container traffic



As discussed above, the majority of VBS slots will be allocated within the off peak and inter peak periods, informed by existing traffic on the network – using an estimation of average weekday two-way vehicle capacity on the N28 by 2021/2022 based on TII counter data up to October 2019. This analysis has indicated that there is significant capacity in the off peak and inter peak period.

A further sensitivity test has been undertaken to identify available capacity on the N28 in 2021/2022 once the relocated Tivoli container traffic is taken into account. This still shows significant capacity during the off peak and inter peak periods.

Taking into account the relocated Tivoli container traffic, the average daily spare capacity on the N28 by 2021/2022 (in the off-peak and inter-peak periods) is estimated to be 6,846. There is plenty of spare capacity pre-AM peak and post PM peak – and between the AM and PM peaks, the average spare capacity is 3,930.

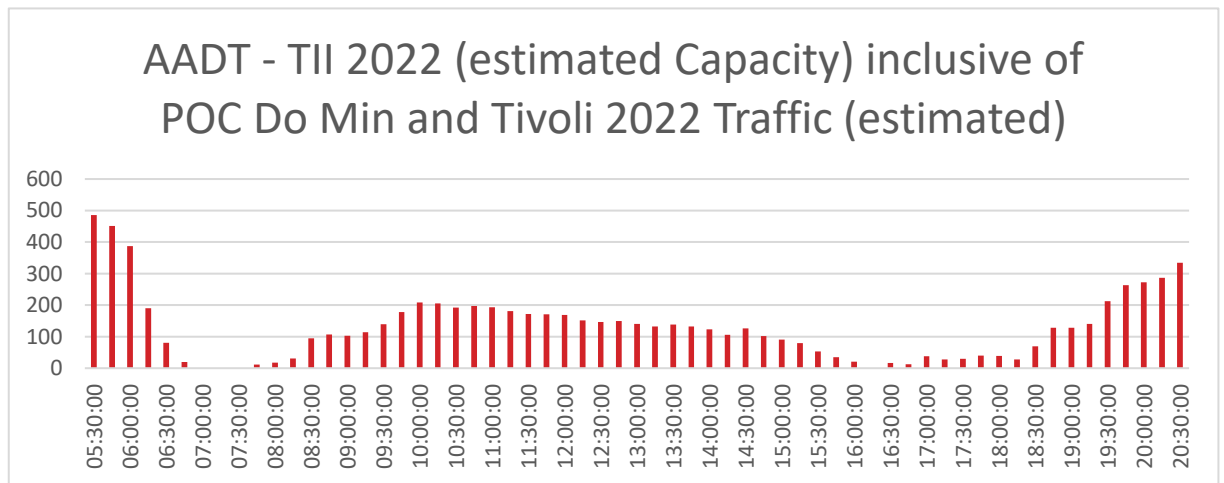


Figure 9. Estimated 2021/22 Average Weekday Vehicle Capacity on the N28 – off peak and inter peak – by 15 min periods. Inclusive of existing Port of Cork Do Minimum and Tivoli relocated container traffic.

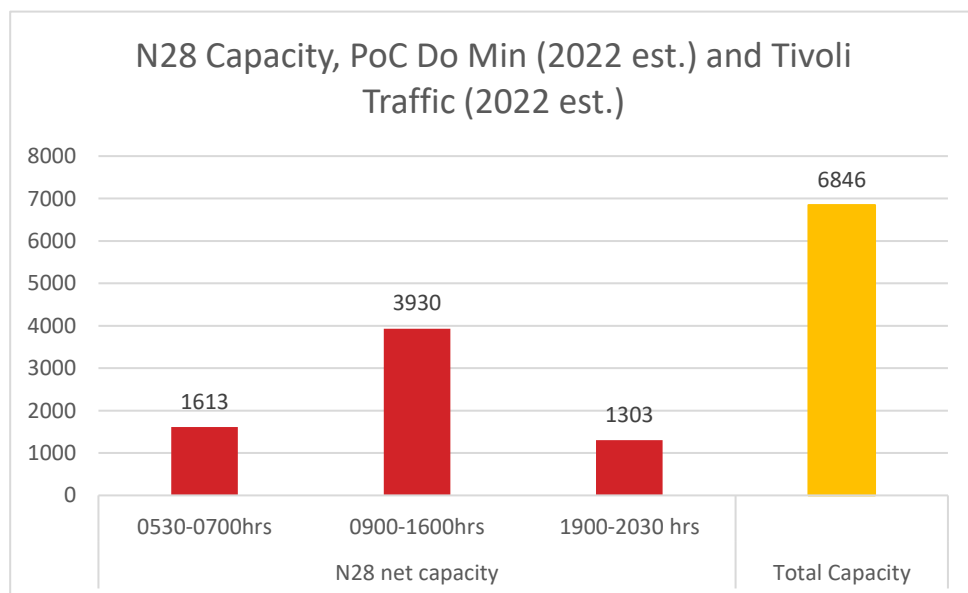


Figure 10. Estimated 2021/22 Average Weekday Vehicle Capacity on the N28 – off peak and inter peak – totals. Inclusive of 2022 forecast Port of Cork Do Minimum and Tivoli relocated container traffic.



○ Vehicle Booking Slot Allocation

A provisional allocation of VBS booking slots is outlined in Appendix A for illustration purposes. It is important to note that this allocation is indicative only and can change hourly/daily depending on the terminal and road conditions. Booking slots will be adjusted in real time to reflect variances in both Port operations by season, month and days of the week, and also live conditions on the external road network.

The Port will utilise the VBS management system and booking slot allocations to manage compliance within the agreed Do Minimum AM and PM peak thresholds. This will be managed within the constraints of the environment the Port operates in i.e. the Port can determine haulier booking slots for arrival at the Port, but does not have influence over the decisions of when individual hauliers may choose to travel.

VBS slots are booked by Hauliers, with the number of booking slots available reflecting available VBS slots within the specified timeframe that the booking is being made.

One hourly VBS booking slots are currently being trialled at Tivoli. These will be refined to half hourly and then 15 minute slots for the move to Ringaskiddy. It is planned that a 15-minute grace period on either side of the VBS booking slot will be the grace period at Ringaskiddy for hauliers in relation to their allocated VBS slot.

Individual hauliers will not be serviced until their allotted VBS booking slot time period. The practice of hauliers arriving earlier than their VBS time will be actively discouraged. Early arrivals will be sent to a Problem Resolution area within the Port terminal and will not be allowed to remain on the public highway. Repeat offenders will be communicated with, as will persistent late arrivals.

A record will be maintained for each incident occurring in relation to 'Problem Resolution' at the Port's new Terminal VBS entry point (e.g. haulage trucks arriving earlier/later than their booking time). The 'Problem Resolution' record is to be included within the weekly / monthly reporting to the Planning Authority, and included in the Agenda of the quarterly Review Meetings (see Section 6 for further information). Measures to reduce repeat 'problem resolution' offenders, should such a situation arise, shall be reviewed and agreed.

In the event that the Terminal has to temporarily close (for example due to a weather event), the Port has a number of methods which they will utilise to communicate with hauliers including:

- a) Text alerts utilising the hauliers' mobile phone database
- b) Emails utilising the Transport Companies database contact details
- c) Port of Cork company website updates
- d) VBS app push out notifications
- e) Live camera feed at Gate.

Communication of any temporary closures will include texts to all hauliers, email notifications to the Transport Companies, and VBS 'push-out' notifications via the VBS app to all hauliers that the Terminal is closed – this will include communication to all hauliers and also those with a VBS booking slot impacted by a specific issue such as that referenced above. Cancelled bookings will be required to rebook at available slots



within other timeframes, either within that day or depending on the nature of the incident, on another day.

Bulk Materials Mobility Management Plan

- 4.1.2 The Bulk Materials operations based at Ringaskiddy form a key element of HGV traffic within the 'Do Minimum' thresholds. A separate approach is required for Bulk operations at the Port, as the companies are independent from Port of Cork. As independent tenants of the Port, they cannot be subject to the Ringaskiddy Container Vehicle Booking System but will be actively encouraged to implement their own HGV management systems. The arrival and departure times for bulk traffic is currently governed by the opening and closing times of the port facility.
- 4.1.3 The following will be implemented as part of the overall Bulk Materials Mobility Management Plan:
- **Extended operating hours** – enabling hauliers to spread their arrival and departure times during off-peak periods e.g. 24-hour self-service operation as introduced by R&H Hall.
 - **Mandatory reporting of collection schedules** – the Port of Cork Company will introduce a mandatory traffic reporting schedule, whereby all facilities will indicate on an advance weekly basis the predicted level of activity. In normal circumstances, traffic movement in the bulk sector is at a consistent level to match the agriculture requirements, however, should there be an unexpected and significant increase in such traffic, the Port will implement capacity allocations for each facility in the AM and PM peaks. If spikes are anticipated over the normal Bulk traffic throughput, the Port can adjust the VBS and/or instruct the Bulk Warehouses to manage their collections over the full day, therefore keeping the AM and PM peaks under control. This will supersede the Bulk Materials MMP Charter if and when required.
 - **Bulk Materials MMP Charter** – ongoing engagement with each Operator, building on the extensive consultation undertaken in Autumn 2017, in order to raise awareness of the AM and PM peak traffic restrictions. Each Bulk Material Operator will be encouraged to implement their own HGV management arrangements via a Bulk Mobility Management Plan (BMMP) Charter which will include:
 - Consistent checklist of actions and measures each Operator can utilise for their own BMMP implementation.
 - Support from Port for each Company to implement their own BMMP measures – for example: extended opening hours; a bulk vehicle booking system; and the use of IT solutions to transfer information and communicate with hauliers.
 - Monitoring framework – as part of the overall FMMP monitoring, the current traffic counter identifying Bulk-related traffic will be retained after the redeveloped Port opens in 2020. This will assess the ongoing impact of Bulk-related traffic (including growth above forecast levels of 1% per annum). A new counter (at the junction of the N28 and R613) will also be installed to measure total two-way traffic entering and exiting both Bulk Material and Container operations at Ringaskiddy – as illustrated in Figure 11 below.

- If monitoring indicates the requirement for further active management measures for Bulk traffic, the Port will work in partnership with the Bulk Material Operators to jointly develop and implement additional measures as part of the Bulk Charter and the wider RMMP.

Staff Mobility Management Plan

4.1.4 The RMMP includes a review of the Staff Mobility Management Plan for Port of Cork employees. This includes staff currently based at Ringaskiddy and employees who will be relocating there as part of the Port redevelopment. This review will be undertaken during 2021 and will include:

- A review of latest Staff Travel Survey data to benchmark travel habits and patterns
- Updated mode split targets for commuting journeys; and
- An updated Mobility Management Plan Action Plan, with a focus on supporting employees relocating to Ringaskiddy.



5. MONITORING AND REPORTING

ABP Condition 5 reference(s)

Monitoring arrangements to be employed, which shall enable direct remote access by the planning authority to port traffic information

Report arrangements (including making information available to the public)

5.1 Monitoring

Ongoing monitoring of the agreed Do Minimum thresholds during the AM and PM peaks will form a key part of the RMMP. This will take the form of a combination of new and existing permanent traffic counters, along with data from the VISY Container VBS system (which will identify traffic related to the relocated Tivoli container operations).

This is summarised in the Table and Figure below, which also illustrates the internal Port road layout.

COUNTER	DESCRIPTION	PURPOSE:
C	Bulk Material Operations Car Imports	Do Minimum
F	Ferry Road Traffic	Do Minimum
E1 (new)	New Terminal Entrance Road – car imports shunting lane only (part of Do Minimum)	N/A – subset of Counter C Do Minimum
E2 & E3 (new)	New Terminal Entrance Road entrance and exit lanes	New Terminal Operations – all traffic
	VISY container VBS system data (subset of E2 & E3 data)	New Terminal Operations – container HGV traffic



Table 2. RMMP Implementation Monitoring

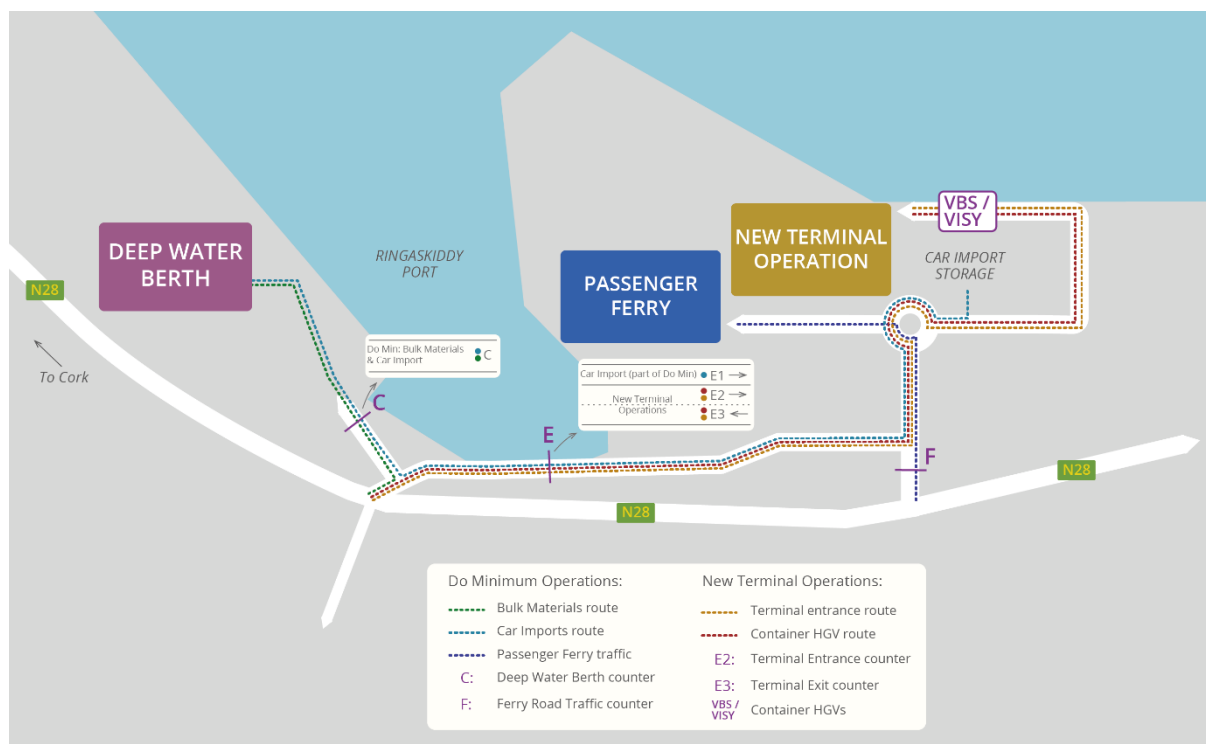


Figure 11. RMMP Management and Monitoring – terminal road layout and counter locations These counters will form the basis of the ongoing Do Minimum and RMMP monitoring and management.

5.2 Information exchange and reporting

5.2.1 A Monitoring and Reporting Framework of ongoing traffic has been developed as part of the RMMP to demonstrate compliance once the Ringaskiddy redevelopment is complete. Regular reports will be provided by email from the Port of Cork to named Cork County Council contacts regarding traffic levels associated with Port operations. Information provided will include:

- **Access to live Port traffic data** – Cork County Council’s role is to have oversight of Port related traffic movements in order to ensure compliance with the approved RMMP and Condition 5 of the Planning Permission. To facilitate this role, immediate and direct information regarding the VBS will be provided to Cork County Council via secure log-in access to the new VBS app to nominated Council Officers, or on request via email or telephone as part of the RMMP, to enable Council Officers to see live data on vehicle bookings. As per discussions with Cork County Council in July 2021, VBS access will be provided initially to the following Cork County Council officers prior to Ringaskiddy Port coming into operation:

- Cormac Ó Súilleabháin (Cormac.OSuilleabhain@CorkCoCo.ie)
- Madeleine Healy (Madeleine.Healy@CorkCoCo.ie)
- Flor O’ Sullivan (Flor.OSullivan@CorkCoCo.ie)
- Aaron Higgins (Aaron.Higgins@CorkCoCo.ie)

Direct access to the live traffic feed of the container gate management system will also be provided to nominated Council Officers. Direct access will also be provided to the online traffic counter portal for the traffic counters at Ringaskiddy for Cork County Council Officer Aaron Higgins (Aaron.Higgins@CorkCoCo.ie).

- **Weekly reports** – a weekly automated short report comprising a dashboard graph showing total traffic volumes entering and exiting the Port during the AM and PM peaks for the preceding week compared to the agreed ‘Do Minimum’ levels. The content will include a breakdown of all Port traffic during the AM and PM peaks, including VBS container traffic, Bulk Materials & Car Import related traffic along with Ferry Port Access Road traffic.

Please see Appendix B for an example of the weekly Do Minimum reporting template.

- **Monthly reports** – a monthly dashboard report showing volumes of traffic for the preceding month compared to the agreed ‘Do Minimum’ levels. This will also note any events that may have had an impact on the volume of traffic that month, and highlight any incidents where thresholds are exceeded.

These monthly reports will include count data from the TII counters on the N28 at Carr’s Hill and Raffeen Bridge, comparing hourly flows pre-development with actual hourly flows on the N28 for the month being reported on (as per Figure 4 above, with a comparison of 2018/19 N28 data and traffic data on the N28 for the month in question).

- **Two-way information exchange** – If Cork County Council has any relevant information relating to the roads network that may have an impact on the efficient operation of the Vehicle Booking System (VBS) and the overall Port operations, then Cork County Council will endeavour to inform the Port of Cork at its earliest convenience.

As part of ongoing traffic management arrangements, the Port will also continue to liaise with An Garda Síochána, Transport Infrastructure Ireland and other relevant stakeholders.

All data and reports will be subject to continuous review.

- 5.2.2 Arrangements will also be made available for providing information in relation to the Ringaskiddy Mobility Management Plan to be made available to the public. Updates will be made available to the public via the Port of Cork Company’s website, articles in regular Port of Cork Company newsletters to the local community and available upon request. The updates to the public made available via the Port of Cork Company’s website (and other external communication channels) will include: a summary overview of the background and purpose of the RMMP; the key elements of the RMMP (including the Vehicle Booking System); a case study from a Haulier of their experience of using the VBS; a Frequently Asked Questions (FAQ) for members of the public in relation to the RMMP; along with progress updates in relation to the development and ongoing implementation of the RMMP.

5.3 Escalation procedures

- 5.3.1 Notification of traffic levels over the agreed Do Minimum – as part of the weekly and monthly reports, the following will be reported to the Council:

- Port traffic levels operating over the average but within the maximum Do Minimum range reported as an ‘**infrequent necessity**’, with an explanatory comment noted within the report where feasible.



- Port traffic levels operating over the maximum Do Minimum range reported. For example, due to ‘**infrequent outliers**’ during times of critical national economic or weather incidents (e.g. grain shortage), where the ‘Do Minimum’ levels are exceeded. Where possible, advance notice will be provided by the Port of Cork to the Council of such outliers.

5.3.2 **Actions following any breach of the Do Minimum** – in regard to incidents where the Do Minimum is breached, a review will take place. This review will identify the causes of the breach, establish any Lessons Learnt that can be utilised to mitigate against future occurrences, and agree any changes to the RMMP as required.

5.4 Collection and retention of data

5.4.1 **Counter data** – traffic count information from the permanent counters at Ringaskiddy will be stored and held for a duration of five years and will form the basis of the weekly, and monthly reports described above. This count information will be available to the Council via the online counter portal.

5.4.2 **VBS data** – immediate and direct information regarding the live Vehicle Booking System will also be provided to Cork County Council via secure log-in access to the new VBS app to nominated Council Officers, or on request via email or telephone as part of the RMMP, to enable Council Officers to see live data on vehicle bookings, with any historical data made available for a period of one year.

6. REVIEW

ABP Condition 5 reference

“Review arrangements, whereby the agreement can be revised periodically.”

6.1.1 **Quarterly review** – the Port of Cork will meet with Cork County Council on a quarterly basis to formally review the preceding quarterly reporting cycle. This meeting will also identify any forthcoming Port operational changes, Council highway works and other developments in Ringaskiddy that may have an impact on the transport network.

6.1.2 **Six monthly review** – a review of the agreement will be conducted on a six-monthly basis, taking place every six months after the redeveloped Port reopens (currently scheduled for Autumn 2021). This will incorporate a review of the RMMP and agreement on any changes required to reflect the conditions that year (for example, the economic climate or the results of the annual staff travel survey that would impact on any Staff related mobility measures), with the RMMP updated accordingly.

6.1.3 **Timeframe for review** – this RMMP review process will continue on a six-monthly basis.



7. SUMMARY

- 7.1.1 The Port of Cork will implement the Ringaskiddy Mobility Management Plan (RMMP) in order to ensure compliance with Condition 5 of An Bord Pleanála's (ABP) planning decision for the Ringaskiddy Port redevelopment (ref 04.PA0035).
- 7.1.2 This updated RMMP Operating Framework is an update to the February 2020 RMMP Operating Framework, which was developed by the Port of Cork in consultation with Cork County Council over a number of years and formed the final outcome of previous rounds of consultation. The RMMP Operating Framework forms the key details of the operation and scope of the RMMP, which in accordance with ABP Condition 5, shall be agreed in writing with the planning authority at least six months prior to the coming into operation of the development. This approach is summarised as follows:
- 7.1.3 The Port of Cork will determine the Do Minimum operating conditions during the AM and PM peaks utilising the permanent Port traffic counters located at Ringaskiddy since January 2018 up to the day the redeveloped Port reopens. The Transport Infrastructure Ireland (TII) counters located on the N28 at Carr's Hill and Raffeen Bridge are being used to determine background traffic levels. The methodology for calculating these 'Do Minimum' traffic levels have been reviewed and agreed with the Council, and are outlined below.
- 7.1.4 The Port of Cork, through the implementation of the Ringaskiddy Mobility Management Plan (RMMP), will operate within the 'Do Minimum' traffic levels during the AM and PM peaks. This will be achieved via the key components of the RMMP, namely:
- The Freight Mobility Management Plan, including the:
 - i. Container Traffic Automated Gate and Vehicle Booking System (VBS)
 - ii. Bulk Materials MMP Charter
 - The Port of Cork Staff Mobility Management Plan.
- 7.1.5 The Port of Cork will provide the Council with an agreed set of regular monitoring and reporting data in relation to the agreed Do Minimum traffic levels within the AM and PM peaks.
- 7.1.6 If Cork County Council has any relevant information relating to the roads network that may have an impact on the efficient operation of the Vehicle Booking System (VBS) and the overall Port operations, then Cork County Council will endeavour to inform the Port of Cork at its earliest convenience.
- 7.1.7 Reviews will be conducted on a quarterly basis to formally review the preceding quarterly reporting cycle. A six-monthly review will also take place of the RMMP, including agreement on any changes required to reflect the conditions that year (for example, the economic climate), with the RMMP updated accordingly.



APPENDIX A: VBS – NOMINAL BOOKING SLOT ALLOCATION

A provisional allocation of VBS booking slots is outlined below for illustration purposes. It is important to note that this allocation is **indicative only** and can change hourly/daily depending on the terminal and road conditions.

The VBS system is dynamic and booking slots are not fixed in stone – they will be adjusted in real time to reflect variances in both Port operations by season, month and days of the week, and also live conditions on the external road network. They will also be allocated to ensure compliance within the Do Minimum AM and PM peak thresholds.

Summary VBS allocation– percentage allocation by time period

TIME PERIOD	HOURS	VBS BOOKING SLOT ALLOCATION
Off Peak 1 (OP1)	00:00 to 05:00	0.0%
Pre-AM	05:00 to 07:00	10.0%
AM Peak	07:00 to 09:00	5%
Inter peak (IP)	09:00 to 16:00	72.5%
PM Peak	16:00 to 19:00	5%
Post-PM	19:00 to 20:30	7.5%
Off Peak 1 (OP2)	20:30 to 00:00	0%

VBS allocation – two-way traffic – by 15-minute time period

Time	Time Period	VBS vehicle allocation	Subtotal
00:00:00 to 05:00:00	OP1	0	0
05:00:00	Pre_AM	4	71
05:15:00	Pre_AM	4	
05:30:00	Pre_AM	17	
05:45:00	Pre_AM	16	
06:00:00	Pre_AM	14	
06:15:00	Pre_AM	10	
06:30:00	Pre_AM	5	
06:45:00	Pre_AM	1	
07:00:00	AM	3	36
07:15:00	AM	4	
07:30:00	AM	4	
07:45:00	AM	4	
08:00:00	AM	5	
08:15:00	AM	5	
08:30:00	AM	5	
08:45:00	AM	6	

Time	Time Period	VBS vehicle allocation	Subtotal
09:00:00	IP	13	513
09:15:00	IP	14	
09:30:00	IP	17	
09:45:00	IP	22	
10:00:00	IP	27	
10:15:00	IP	27	
10:30:00	IP	26	
10:45:00	IP	26	
11:00:00	IP	26	
11:15:00	IP	23	
11:30:00	IP	22	
11:45:00	IP	23	
12:00:00	IP	22	
12:15:00	IP	19	
12:30:00	IP	19	
12:45:00	IP	18	
13:00:00	IP	18	
13:15:00	IP	17	
13:30:00	IP	18	
13:45:00	IP	17	
14:00:00	IP	17	
14:15:00	IP	15	
14:30:00	IP	17	
14:45:00	IP	14	
15:00:00	IP	12	
15:15:00	IP	10	
15:30:00	IP	8	
15:45:00	IP	6	
16:00:00	PM	4	35
16:15:00	PM	3	
16:30:00	PM	3	
16:45:00	PM	3	
17:00:00	PM	3	
17:15:00	PM	3	
17:30:00	PM	3	
17:45:00	PM	3	
18:00:00	PM	3	
18:15:00	PM	2	
18:30:00	PM	3	
18:45:00	PM	2	
19:00:00	Post_PM	5	53
19:15:00	Post_PM	5	



Time	Time Period	VBS vehicle allocation	Subtotal
19:30:00	Post_PM	9	
19:45:00	Post_PM	11	
20:00:00	Post_PM	11	
20:15:00	Post_PM	12	
20:30:00 to 23:45:00	OP2	0	
Total		708	708



APPENDIX B: WEEKLY MONITORING REPORT TEMPLATE - EXAMPLE

Monitoring report – Port of Cork Do Minimum AM and PM Peak Traffic

Week ending: 25.04.22

DASHBOARD RATING	COMMENT
Green	On or below the Do Minimum Average
Amber	Between the Do Minimum Average and the Highest Do Minimum Range
Red	Exceeding the Highest Do Minimum Range

MORNING PEAK 0700 TO 0900 HOURS – DO MINIMUM THRESHOLDS

	Average*	Range – lowest*	Range – highest*
All Port traffic AADT*	140	47	219

Week ending 25.04.22 – two-way traffic

	Number	Rating	Comment
All Port traffic AADT – average across week	132	Green	Below the Do Minimum Average
Monday	122	Green	Below the Do Minimum Average
Tuesday	140	Green	At the Do Minimum Average
Wednesday	137	Green	Below the Do Minimum Average
Thursday	132	Green	Below the Do Minimum Average
Friday	128	Green	Below the Do Minimum Average

Weekday Average Comprising:

Bulk Materials & Car Imports	Counter C (part of Do Minimum)	72
Ferry Port Road entrance	Counter F (part of Do Minimum)	10
Terminal Entrance	Counter E1 (car imports shunting lane)	N/A – part of Do Minimum / Counter C
	Counter E2 & E3 (all other Terminal traffic)	50
	Of which the following is from VBS Container Traffic (via VISY Container System)	36

*Based on figures to May 2021.

AFTERNOON PEAK 1600 to 1900 HOURS – DO MINIMUM THRESHOLDS

	Average*	Range – lowest*	Range – highest*
All Port traffic AADT*	164	70	284

Week ending 25.04.22 – two-way traffic

	Number	Rating	Comment
All Port traffic AADT – average across week	190	Amber	Infrequent necessity – due to incident on N28 during the interpeak
Monday	160	Green	Below the Do Minimum Average
Tuesday	179	Green	Below the Do Minimum Average
Wednesday	270	Amber	Between the Do Minimum Average & the Highest Do Minimum Range due to incident on N28
Thursday	176	Green	Below the Do Minimum Average
Friday	166	Green	Below the Do Minimum Average

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Weekday Average Comprising:

Bulk Materials & Car Imports	Counter C (part of Do Minimum)	130
Ferry Port Road entrance	Counter F (part of Do Minimum)	0
Terminal Entrance	Counter E1 (car imports shunting lane)	N/A – part of Do Minimum / Counter C
	Counter E2 & E3 (all other Terminal traffic)	60
		Of which the following is from VBS Container Traffic (via VISY Container System)
		40

*Based on figures to May 2021.

Problem Resolution (e.g. early / late VBS arrivals)

	Number
Monday	0
Tuesday	2
Wednesday	8
Thursday	5
Friday	3
Total	18



APPROVAL

Version	Name		Position	Date	Modifications
1	Author	A Pickett	Associate Director	13/09/2019	First draft to Port of Cork
	Checked by	I Byrne	Director	16/09/2019	
	Approved by	I Byrne	Director	16/09/2019	
2	Author	A Pickett	Associate Director	25/09/2019	Incorporating amends from Port of Cork
	Checked by	I Byrne	Director	26/09/2019	
	Approved by	I Byrne	Director	26/09/2019	
3	Author	A Pickett	Associate Director	18/11/2019	Incorporating amends from Cork County Council
	Checked by	I Byrne	Director	20/11/2019	
	Approved by	I Byrne	Director	21/11/2019	
4	Author	A Pickett	Associate Director	10/12/2019	Incorporating amends from Cork County Council
	Checked by	I Byrne	Director	12/12/2019	
	Approved by	I Byrne	Director	12/12/2019	
5	Author	A Pickett	Associate Director	24/01/2020	Incorporating amends from Cork County Council
	Checked by	I Byrne	Director	29/01/2020	
	Approved by	I Byrne	Director	29/01/2020	
6	Author	A Pickett	Associate Director	25/02/2020	Incorporating final amends from Cork County Council
	Checked by	I Byrne	Director	25/02/2020	
	Approved by	I Byrne	Director	25/02/2020	
7	Author	A Pickett	Associate Director	17/06/2021	Update from Feb 2020 document to Compliance Document
	Checked by	I Byrne	Director	18/06/2021	

APPROVAL

Version	Name		Position	Date	Modifications
	Approved by	I Byrne	Director	21/06/2021	
8	Author	A Pickett	Associate Director	08/07/2021	Updated text following CCC feedback (section 4.1.3 and Appendix B reporting template to include daily reporting).
9	Author	A Pickett	Associate Director	20/07/2021	Updated text following CCC feedback (sections 4.1.1; 5.2.1; 5.2.2; 6.1.1; 6.1.2 and 7.1.7)
	Checked by	I Byrne	Director	20/07/2021	
	Approved by	I Byrne	Director	20/07/2021	
10	Author	A Pickett	Associate Director	03/08/2021	Updated text following CCC feedback (sections 4.1.1; 5.2.1; 5.2.2; and Appendix B)
	Checked by	Port of Cork Company		05/08/2021	
	Approved by	Port of Cork Company		06/08/2021	



APPENDIX 11.2 CCT OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN



Cork Container Terminal - Ringaskiddy East

Operational Environmental Management Plan



Contents

- 1.0 General Details**
 - 1.1 Introduction
 - 1.2 Details of Operations
- 2.0 Roles & Responsibilities**
 - 2.1 Organisation Chart
 - 2.2 Responsibilities
 - 2.3 Internal Communication
- 3.0 Environmental Management Arrangements**
 - 3.1 Environmental Management
 - 3.2 Communications
 - 3.3 Suppliers & Contractors
- 4.0 Summary of Emergency Procedures**
- 5.0 Environmental Planning Aspects & Control**
 - 5.1 Environmental Risk Assessment
 - 5.2 Environmental Risk Assessment Report
 - 5.3 Environmental Assessment & Management Control
- 6.0 Environmental Compliance Requirements**
 - 6.1 Consultation with Relevant Authorities
 - 6.2 Environmental Licences, Permits & Permissions
 - 6.3 Company Policy & Procedures
 - 6.4 Relevant Statutory Provisions
 - 6.5 Control of Documents
- 7.0 Environmental Objectives & Targets**
 - 7.1 Environmental Management Targets
 - 7.2 Initiatives to ensure compliance with set Targets
- 8.0 Environmental Control Measures**
 - 8.1 Water Pollution
 - 8.2 Noise & Vibration
 - 8.3 Air Pollution
 - 8.4 Habitat (Flora & Fauna) Protection
 - 8.5 Waste
 - 8.6 Hazardous Materials Handling & Storage
 - 8.7 Vermin Control
 - 8.8 Night-time Work
- 9.0 Management Review**

Appendix A	Surface Water Drainage Drawing/ Fuel Tank Location
Appendix B	SHEEQ Policy
Appendix C	ISO 14001:2015 Certificate
Appendix D	Environmental Aspects Register
Appendix E	Environmental Management Programme
Appendix F	Environmental Aspects Scoring System
Appendix G	CCT Operational Waste Management Plan 2021
Appendix H	Sample Procedures

1. General Details

Cork Container Terminal - Ringaskiddy East is owned and operated by Port of Cork Company (POCC). The Terminal forms part of the Ringaskiddy Deepwater Facility which can cater for several modes of cargo: Lift-on Lift-off, Roll-on Roll-off, Dry Bulk, Break Bulk / Project Cargo and Cruise Liners.

1.1. Introduction

This Operational Environmental Management Plan (OEMP) has been prepared to comply with and in accordance to the Port of Cork Company's Environmental Management System (EMS) and procedures which are certified to ISO 14001:2015 and to ensure adherence to the environmental Planning Conditions pertinent to the operation of the Cork Container Terminal - Ringaskiddy East. A copy of the ISO 14001:2015 Certificate is included in Appendix C.

This OEMP is a working document, prepared to ensure the significant environmental aspects associated with Cork Container Terminal - Ringaskiddy East are managed in accordance with our EMS and all legal requirements including the conditions of the Planning Permission.

All POCC Standard Operating Procedures are contained in the Safety & Environment Protection Management System Document (IPSEM). Sample procedures relevant to CCT are attached with Appendix H (CCT procedures are currently being reviewed and signed off prior to opening).

This document has been developed from the pre-existing OEMP for the Tivoli Terminal to address the specific conditions at the Cork Container Terminal - Ringaskiddy East and capture how compliance with the Planning Permission is to be achieved and demonstrated on an ongoing basis during the operational phase of the Terminal.

All POCC environmental documentation and procedures are controlled and circulated in accordance with the POCC Document Control System.

1.2. Details of Operations

The Terminal can cater for several modes of cargo: Lift-on Lift-off, Roll-on Roll-off, Dry Bulk, Break Bulk / Project Cargo and Cruise Liners; however, the predominant operations carried out at Cork Container Terminal are listed and outlined below.

1.3.1. Lift on Lift off (LoLo)

LoLo operations will involve the loading/unloading of containers from vessels and temporary storage on the site before onward transport by road.

1.3.2. Roll on Roll off (RoRo)

The RoRo ramp, once installed will be used to allow direct access by freight HGV traffic to vessels with suitable vehicle loading ramps. Freight traffic may comprise two different types;

Unaccompanied - in this mode the freight trailers are transported on and off the vessel by dedicated port transport tractor units. The trailers are then stored in the port area where they are subsequently collected by road going lorries.

Accompanied – in this mode each trailer on the vessel is accompanied by a road going freight tractor unit. On disembarkation these vehicles will drive directly onto the public road network without being temporarily stored in the port area. During embarkation such vehicles will marshal at the port shortly before the vessel is due to depart.

1.3.3. Dry Bulk

Historically the dry bulk cargo is handled at our Deepwater facility in Ringaskiddy West and the City Quays; it is not intended to discharge bulkers at the Cork Container Terminal – Ringaskiddy East at this time.

1.3.4. General Cargo

The general cargo area will be used to accommodate general break bulk and project cargoes. Cargo will generally be lifted from vessels using a mobile harbour crane or SSG and will then either be placed directly into the storage area or will be placed on the quayside for onward movement and stacking by internal port equipment such as reach stackers.

1.3.5. Cruise Liners

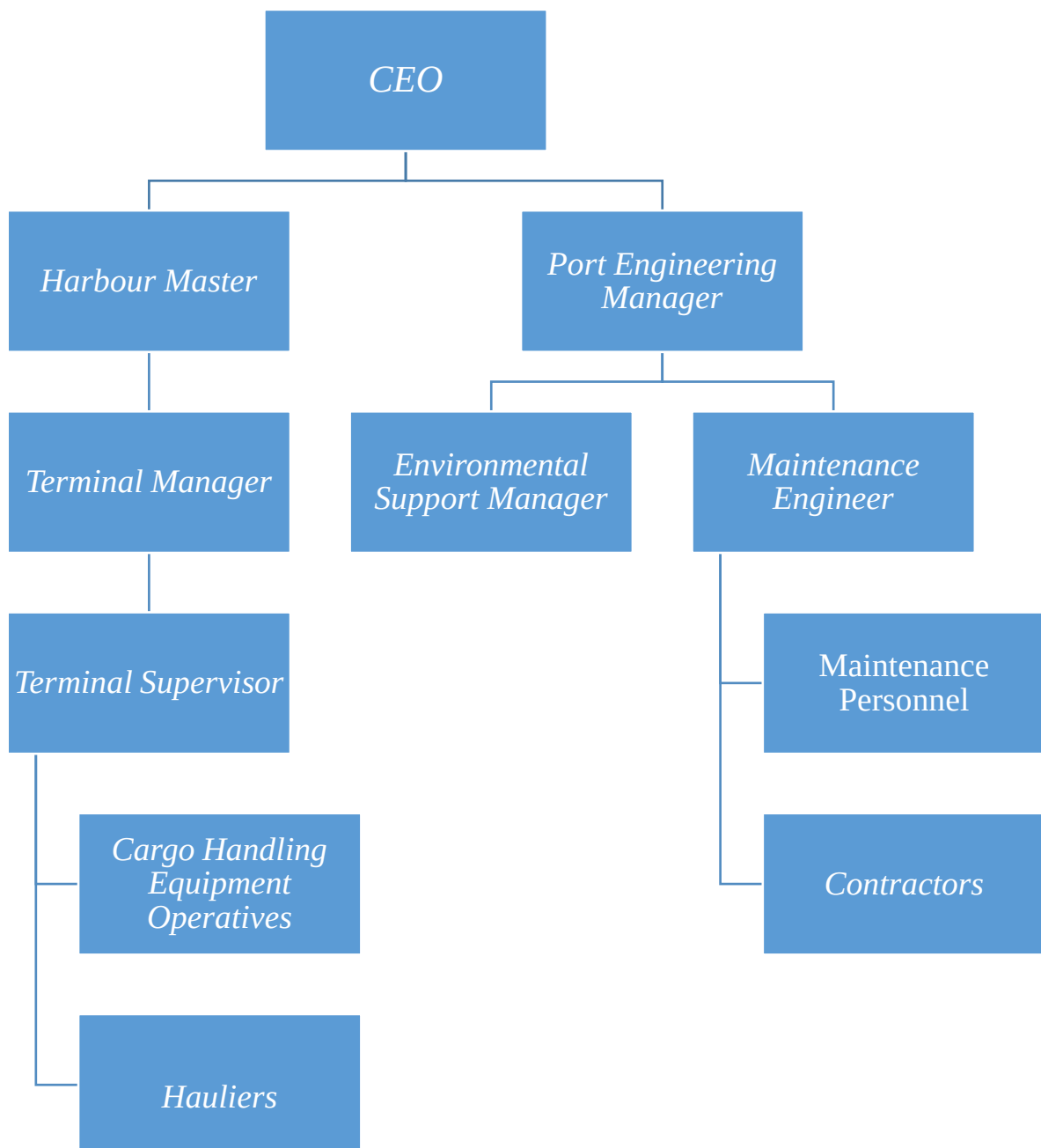
Cruise Liners predominantly berth at the purpose build Cobh Cruise Berth however when two or more liners are in the harbour simultaneously Ringaskiddy East and West are both used. At Ringaskiddy East passengers disembark directly onto the quayside and are escorted out of the Container Terminal or boarded directly onto buses on the quayside.

2. Roles & Responsibilities

2.1. Organisation Chart

The roles in the POCC organisation with responsibilities for implementation of the OEMP are outlined in the diagram below.

The CEO retains overall responsibility for environmental compliance of all port facilities. The Port Engineering Manager has responsibility for the Environmental Management System and together with the Harbour Master they are authorised to implement the OEMP aided by the Environmental Support Manager.



2.2. Responsibilities

The individual areas of responsibility associated with people in the POCC organisation are outlined in the table below.

AREA OF RESPONSIBILITY	NAME / JOB TITLE	DEPARTMENT
Dredging	Henry Kingston Port Engineering Manager	Engineering Services Dept
Port Operations	Capt. Paul O'Regan Harbour Master	Harbour Masters Dept.
Terminal Operations	Michael Kennelly, Terminal Manager	Harbour Masters Dept.
Site Management / Engineering	Henry Kingston Port Engineering Manager	Engineering Services Dept
Supplies Acquisition	Brendan Ormonde Procurement Officer	Engineering Services Dept.
Quality Management	JoAnn Salmon Safety & Quality Systems Manager	Engineering Services Dept.
On Site Contractor Management	John Logan, Maintenance Engineering Manager, Dave Lewis, Project Supt./Shane Kelly, Maintenance Supervisor	Engineering services Dept
Emergency Planning	Capt. Paul O'Regan Harbour Master	Harbour Masters Dept.
Waste Management	Toddy Cuthbert Environmental Support Manager	Engineering Services Dept.
Port Security	Capt. Paul O'Regan Harbour Master	Harbour Masters Dept.
Environmental Documentation & Data	Toddy Cuthbert Environmental Support Manager	Engineering Services Dept
Soil Pollution assessment	Toddy Cuthbert Environmental Support Manager	Engineering Services Dept
Air Quality Monitoring	Toddy Cuthbert Environmental Support Manager	Engineering Services Dept
Energy Monitoring	John Logan, Maintenance Engineering Manager	Engineering Services Dept
Water Quality Monitoring	Toddy Cuthbert Environmental Support Manager	Engineering Services Dept
Noise Management	Terminal Manager	Harbour Masters Dept.
Vehicular Management	Terminal Manager	Harbour Masters Dept.

2.3. Internal Communication

The principal lines of communication in relation to the OEMP are shown in the chart in section 2.1 above.

Environmental issues are communicated to staff through induction, toolbox talks and annual environmental awareness training. Communication with other external parties will take place as required. Complaints will be dealt with as a matter of urgency and in accordance with Section 3.2.1 – Environmental Complaints. In line with condition 9 of planning permission 04.PA0035, the POCC will provide Cork County Council with an annual environmental report (AER). The AER will include at a minimum:

- Summary of complaints (GDPR compliant!) received with CAPAs as appropriate.
- Summary of monitoring undertaken for the year and compliance assessment.
- Assessment of emissions compared to relevant air / water quality standards.
- Summary of EMS Annual Review.
- Any planned monitoring for following year will be informed by this years monitoring results.

Public Information signs are located at the entrance to the Container Terminal.

3. Environmental Management Arrangements

3.1 Environmental Management

The POCC Environmental Management System (EMS) is certified as compliant with ISO 14001:2015 by Bureau Veritas; an independent accredited body of conformity to these specific requirements. The POCC EMS is audited annually to ensure ongoing compliance.

Aspects of the EMS are outlined in this document which also contains references to specific procedures.

3.1.1 Environmental Planning

The environmental planning for Cork Container Terminal is based on information from the relevant Planning Permission and appropriate assessments of all operations in relation to the Cork Container Terminal. Such information has been used in the environmental assessment of the activities of the Cork Container Terminal.

3.1.2 Monitoring & Checking

The significant environmental aspects of the Cork Container Terminal are monitored regularly by carrying out the following at the frequency stated below:

Monitoring & Checking	Frequency
Air	Continuous
Noise	Continuous & Quarterly manned surveys
Emissions to Air	As required
Electricity	Monthly
Diesel	Monthly
Water	Monthly
Waste	Half yearly
Surface Water Monitoring	Quarterly
Internal Audits	2 per year
External 3 rd Party Audits	Annual
Annual Audit Report	Annual

3.1.3 Actions Register

A record of environmental actions is maintained as part of the EMS. The progress of all actions is reported initially to the Environmental Support Manager. If further action is required it is then reported to the Port Engineering Manager. Such actions will include information taken from:-

1. Environmental Inspections
2. Audit actions; non-conformances & observations
3. Progress of actions following environmental incidents
4. Significant communications with stakeholders
5. Significant issues requiring management action
6. Complaints

These actions are closed out, signed and dated by the appropriate person in the appropriate timeframe; as recommended in POCC Environmental Management Plan Section 4.3.3.

3.1.4 Performance

Environmental Performance of the Terminal is monitored by:

1. Six monthly Environmental Review Meetings
2. Site inspections
3. Audit conducted internally or by external organisations

4. External communication and feedback
5. Review of objectives and targets
6. Corporate Social Responsibility

Environmental performance complies with the requirements of ISO 14001:2015.

3.2 Communications

3.2.1 Environmental Complaints

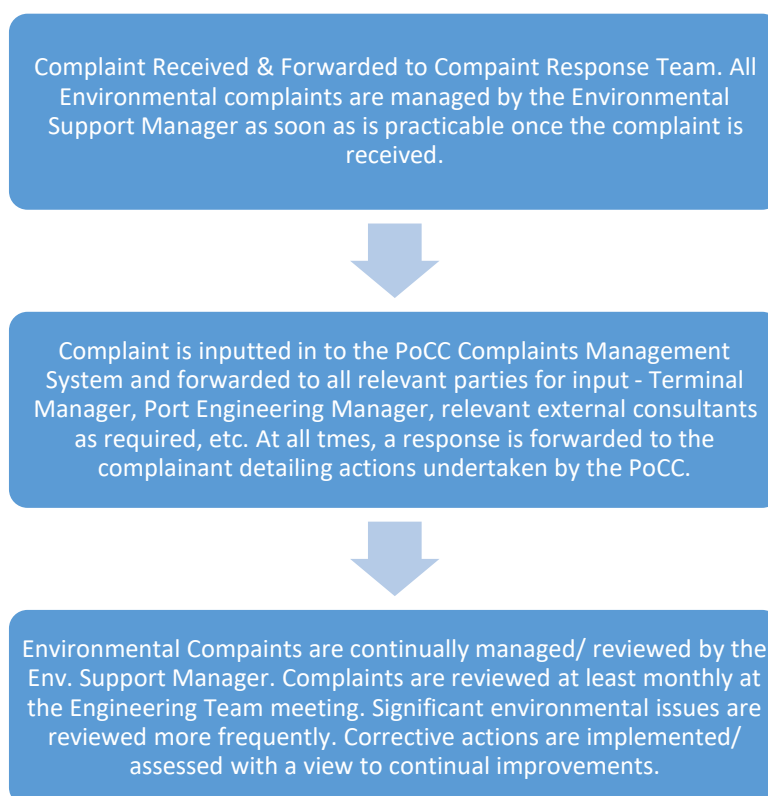
POCC maintains a 24-hour point of contact for complainants. All complaints are forwarded to the complaints' response team. All environmental complaints must be reported to the Environmental Support Manager as soon as possible after they are received. All environmental complaints will be recorded in the PoCC Complaint Register. The register is maintained by the Environmental Support Manager who also allocates responsibility for resolving any issues and follows up on complaints to ensure they are resolved. All complaints are reviewed by the complaints team.

All complaints are followed up with the complainant and are not closed out on the Complaint Register until contact has been made with the complainant.

Any issues that are deemed to be significant will be reported to the Port Engineering Manager &/ or the Harbour Master and the relevant authorities as appropriate.

Complaints are reviewed at least monthly by the engineering team meeting. Complaints are also highlighted to senior management and are reported to the board. A review of complaints is also undertaken during internal audits by the relevant Lead Auditor as internal audits take place (2 per year minimum).

COMPLAINTS FLOWCHART:



3.2.2 Environmental Incidents

Environmental Incidents are categorised as follows:

0 None:	No environmental damage
1 Minor:	Minor local pollution with short term environmental damage. Limited pollution response by Port and Local Authority.
2 Moderate:	Moderate local pollution with medium term environmental damage. Significant response by Port and Local Authority.
3 Major:	Major local pollution but recoverable (in the medium Term) environmental damage over a local area; Significant pollution response by Port and Local Authority
4 Severe:	Severe but recoverable (in the medium to long term) Environmental damage over a large area significant pollution response by Port, Local Authority, National and International Agencies
5 Catastrophic:	Persistent and severe non-recoverable (in the long term) environmental damage requiring long term response from all Local, National and International Agencies.

All environmental incidents must be recorded in the Environmental Incident Register. The supervisor on duty must be informed immediately after the incident takes place. The Environmental Support Manager must be informed as soon as possible after the incident takes place.

For any incidents above Minor, the Port of Cork Emergency Response Plan may be activated.

3.3 Suppliers and Contractors

3.3.1 Contractors

All contractors will be required to work in accordance with the POCC Environmental Management System. Contractors are managed by the relevant Terminal personnel who are responsible for the work that the contractor is employed to carry out. This person is responsible for ensuring appropriate procedures are being followed. ISO 14001 states “consideration should be given to aspects related to the organisations activities, products and services such as environmental performance and practices of contractors and suppliers”. POCC ensure our contractors sign contracts which state they will comply with our SHEEQ Policy and Environmental Management System and work within the Environmental Legal Framework while working at the Cork Container Terminal.

As part of the recruitment process, POCC assess the suitability of contractors with respect to suitability, specifically relating to environmental legislation. POCC also assess the suitability of their environmental management system (or equivalent) to ensure their ability to work in line with the OEMP.

3.3.2 Suppliers

All suppliers and contractors are made aware of the Cork Container Terminal's environmental requirements in particular where the supplier may produce waste or pose an environmental risk.

All deliveries of environmentally hazardous materials are supervised by a designated POCC person.

4 Summary of Emergency Procedures

The PoCC has several detailed plans (www.portofcork.ie/index.cfm/page/incident-management) that can be activated to respond to incidents and emergencies should they arise. As part of our emergency planning and protocols, the Port Company has the following internal emergency plans. The plans are restricted documents due to the nature of the details regarding port security:

- Crisis Management Plan
- Incident Management Plan
- Oil spill contingency plan
- Marine Incident plan
- Port Security Plans

The plans listed above are written in a format developed under the Framework for Emergency Management and dovetail to the wider regional Major Emergency Plan which is under the control of the Inter Agency Emergency Management Office (IAEMO). The IAEMO hold copies of all Port of Cork Company plans which can be used to support the Principal Response Agencies in the event of an incident on or adjacent to the Port.

5 Environmental Planning, Aspects and Control

5.1 Environmental Risk Assessment

All activities and operations within the Cork Container Terminal or influenced by the Terminal have been risk assessed using the following criteria.

Environmental Aspects Evaluation Index

Severity		Occurrence/Existence		Detection Controls	
9-10	Where impact is a legislative requirement and/or has potential to effect a major environmental incident	9-10	Daily activity/Always in existence	9-10	Little or no controls exist
7-8	Where impact is legislative requirement and/or potential to effect a minor environmental incident	7-8	Weekly activity	7-8	Impacts would become evident to the Company but controls are not formally developed
4-6	Where impact is covered by Company Policy and procedures and/or could be nuisance to employees and/or local residents. Impact could result in minor fire or spillage, or have limited environmental effect	4-6	Monthly activity	4-6	Visual and/or mechanical controls exist for this impact
2-3	Where impact could be visual to local community or an eyesore to employees and visitors or have limited environmental effect	2-3	Occurs 2 to 3 times a year	2-3	Records of procedure and/or controls and/or measurements exist for this impact
1	Where impact is of little or no consequence to the environment	1	Occurs once a year or less frequent	1	Comprehensive reports/studies/records exist to demonstrate control

Severity x Occurrence/Existence x Detection/Controls = Risk Priority Numbering (RPN)

Impacts Evaluated as Significant: Where severity rating is >7 and/or where overall rating is >100

5.2 Environmental Risk Assessment Report

This risk assessment meets the requirements of Section 4.3.1 of the POCC Environmental Management System.

Environmental aspects and associated significant environmental impacts are documented in in Cork Container Terminal Environmental Aspects Register (EAR) Appendix D of this manual.

The EAR was established following a review of all operations likely to take place at the Terminal. The EAR is reviewed annually following a formal management review of the EMS and maintained by the Environmental Support Manager.

The Environmental Support Manager is responsible for ensuring that evaluations are conducted to determine the impact of identified environmental aspects (both direct and indirect), in relation to all terminal activities or services.

The company recognises the need to examine periodically and reassess the environmental impacts in light of planned or new developments and or new or modified activities or services at the terminal.

Where deemed necessary, by the Environmental Support Manager/ Port Engineering Manager, external experts will be commissioned to assist in environmental impact assessment (e.g. Environmental Review).

The identified significant environmental aspects form the basis for selection and prioritisation of the Cork Container Terminals Environmental Objectives and Targets (Appendix E of this OEMP).

The terminal activities which are currently deemed to interact with the environment include;

- Bunkering
- Dredging
- Shipping and Navigation
- Land Traffic
- Waste Management
- Cargo Handling
- Cargo Storage
- Port Industry, Stakeholders and Tenants
- Engineering and Port Development
- Port Installation and Maintenance
- Recreation and Tourism
- Past activities
- Administration and Planning
- Emergencies

Activities deemed to interact with the environment are assessed to the following seven categories:

- Air quality
- Energy Conservation & Climate Change
- Water Use & Quality
- Noise
- Waste
- Ground & Seabed Contamination
- Habitats & Ecosystems

5.3 Environmental Assessment and Management Controls

The management controls, which have been put in place, are appropriate to the nature, duration and scale of the activity of the Cork Container Terminal and particular sensitivity of the local environment. They will be revised in the event of any significant changes to the scope of the activity within the Terminal, especially if there is a change in the work practices associated with the Terminal.

Additional management controls shall be adopted when there are changes to the working requirements of the terminal or to stakeholder's interests to the particular local environment sensitivity.

The significant risks which are highlighted in the risk assessment and the management controls in place are communicated to the work force on induction training, Annual Awareness week and through toolbox talks.

6 Environmental Compliance Requirements

Cork Container Terminal complies with:

- all Legislative requirements
- the requirements of ISO 14001:2015
- all conditions as detailed in the Planning Permission for this Terminal

The Terminal ensures compliance with the foregoing by carrying out regular internal audits and inspections.

The Terminal will also carry out a Conformity Review of all Environmental issues to ensure compliance with all Legislation, Planning Conditions and other requirements on a quarterly basis. This review is carried out by the Environmental Support Manager, in association with the Terminal Manager.

6.1 Consultation with Relevant Authorities

Consultation will take place with the following authorities as required;

Cork County Council
National Parks & wildlife
Environmental Protection Agency
Department of the Marine & Natural Resources
Department of Housing, Local Government and Heritage

and any other entities deemed necessary by any of the above Authorities.

6.2 Environmental Licences, Permits and Permissions

The Cork Container Terminal will comply with all conditions set out in Planning Permission.

The Cork Container Terminal will comply with any licences which may be issued for this Terminal in the future.

The Cork Container Terminal operates its own Permit to Work system for specific tasks, Hot Works; Electrical Isolation; Permit to Dig, Confined Space Entry. An induction is required for all Contractors coming to site to ensure they have planned appropriately for the work in hand and are geared up for same. All environmental hazards associated with such work are identified and control measures put in place before the permit to work is issued. This system is implemented throughout the Terminal.

6.3 Company Policy and Procedures

A copy of the Safety, Health, Environment, Energy & Quality (SHEEQ) Policy is attached as Appendix B to this document and is on display in the Cork Container Terminal.

This policy determines the POCC's overall approach to environmental management, which is achieved through implementation of the EMS.

This OEMP has been developed taking into account the;

SHEEQ Policy
Environmental Management Plan (EMP)
Objectives and Targets as specified in the Environment Management Plan and reviewed annually at the Management Review
Requirements of relevant specific procedures as contained in the POCC Safety & Environment Protection Management System (IPSEM)

6.4 Relevant Statutory Provisions

A Register of Environmental Legislation is retained by the Environmental Support Manager. This Register is updated on a regular basis in conjunction with Q-Pulse Software System.

6.5 Control of Documents

All documents relevant to the EMS or the OEMP shall be controlled under the POCC document control system.

Controlled documents will be reviewed at least annually and updated as appropriate; dated and marked with date of revisions marked as superseded once obsolete or destroyed.

7 Environmental Objectives and Targets

Driven by the SHEEQ Policy the Environmental Aspects Register (EAR) identifies the significant environmental aspects (see also Section 5.2).

Significant environmental aspects are subject to environmental objectives and targets to achieve systematic performance improvement. Where appropriate, a single environmental objective can cover more than one significant environmental aspect.

The Environmental Support Manager co-ordinates the setting up of Environmental Objectives and Targets. Environmental Objectives and Targets are recorded in the Cork Container Terminal Environmental Management Programme Annex E attached.

Objectives and Targets are consistent with the SHEEQ Policy commitment to continual environmental performance improvement and take cognisance of the ESPO Green Guide 2012.

Relevant members operating within the Cork Container Terminal are consulted to specify Objectives and Targets relating to their area of responsibility.

In addition to environmental aspects significance the following criteria are considered when establishing Environmental Objectives and Targets:

- Legal and other requirements
- Technological options
- Financial, operational and business considerations
- Views of interested parties

The Environmental Support Manager in conjunction with the Port Engineering Manager and Terminal Manager takes final judgement on all Environmental Objectives and Targets.

The objectives and targets are encapsulated within the Environmental Management Programme (EMP) which is designed to ensure that objectives and targets are achieved. The EMP is included as Annex E.

The Environmental Support Manager collates the EMP.

For each environmental objective the EMP is structured as follows:

- Objective
- EI No. & Priority Issue
- Project Target & ESPO 5E's Category
- Implementation Date
- Senior Responsibility
- Environmental Performance Indicator

The Environmental Support Manager liaises with key management representatives, where appropriate to ensure the EMP is fully supported and that necessary resources are secured to complete EMP projects. Appropriate Environmental Performance Indicators (EPI's) are specified for each stated environmental objective. Each EPI relates to one of the following categories:

- Environmental Effects
- Environmental Effort
- Environmental Quality

The EMP is modified in line with changes to significant environmental aspects and subsequent changes to the established Environmental Objectives and Targets.

Responsibility for OEMP Projects are assigned to Cork Container Terminal personnel. They are responsible for monitoring all associated tasks and report progress to the Environmental Support Manager.

Failure to progress projects as detailed in the OEMP is reported immediately to the Environmental Support Manager. The Environmental Support Manager instigates appropriate action to ensure completion of the project.

The Environmental Support Manager takes final judgement on all OEMP content under the direction of the Port Engineering Manager and Harbour Master.

8 Environmental Control Measures

Control measures are implemented for all activities throughout the Terminal. All procedures in relation to all operations at the Terminal are contained in the Safety & Environment Protection Management System Document (IPSEM). Sample procedures relevant to CCT are attached with Appendix H (CCT procedures are currently being reviewed and signed off prior to opening).

8.1 Water Pollution

All surface water drainage will be throughout the Cork Container Terminal is through Highway Quality Oil Interceptors and Sediment Traps. Make: Klargest, manufactured to British (and European) Standard EN 858-1 and 858-2. Interceptors are fitted with high level alarms (Labkotec OilSET 1,000).

Interceptors are inspected biannually (as per manufacturer's recommendation). Sampling of all discharges will be undertaken on a quarterly basis. The inspection and monitoring regime will be reviewed on an ongoing basis and will include an assessment of environmental risk of cargo /spillage.

Monitoring is carried out quarterly by grab sampling of surface water discharge. There are 25 surface water outfalls associated with the CCT development. All monitoring points on the outfalls are painted to identify the sampling location. PoCC will monitor all outfalls quarterly for Total Petroleum Hydrocarbons¹, Suspended Solids, Total Organic Carbon (TOC) and metals².

Note 1: Total Petroleum Hydrocarbons is sum of volatile petroleum hydrocarbons (C2- C5 range) and extractable petroleum hydrocarbons (C6-C40 range).

Note 2: Arsenic, Cadmium, Chromium⁶, Lead, Mercury, Nickel and Zinc

All waste water will be connected to the Cork Lower Harbour Main Drainage Scheme.

The following will be adhered to with respect to vessels at berth or travelling to or from the Terminal:

- Bilge water shall be treated in accordance with Marpol Standards.
- Ballast water Management shall comply with appropriate National and International Standards.
- Vessels will be equipped with oil water separation systems in accordance with Marpol requirements.
- Spills on deck shall be contained and controlled using absorbent materials.
- Vessels without sewage treatment systems shall have suitable holding tanks and will bring waste onshore for treatment by licenced contractors.
- Chemical shall be stored in suitably bunded areas with material safety data sheets.

8.1.1 Pollution Incidents

If a water pollution incident does occur at the Cork Container Terminal the relevant spill response will be implemented immediately as set out in Safety & Environment Protection Management System (IPSEM) Document, Port of Cork's Major Emergency Plan or Port of Cork's Major Oil Spill Response Plan, whichever is deemed most appropriate to the size of the discharge.

The Environmental Support Manager in conjunction with the Terminal Manager will immediately inspect the environmental control facilities to ascertain whether they are operating effectively. Operations may be stopped to facilitate this inspection and additional controls or measures may be put in place to prevent further discharge to water.

8.2 Noise and Vibration

The primary sources of noise and vibration from the Cork Container Terminal have been identified as follows:

- Ship to Shore Cranes
- Straddle Carriers
- Placing & lifting of Containers
- General Maintenance
- Heavy Goods Vehicles
- Maintenance Plant & Machinery
- Warning Alarms and Sirens

The 4m noise barrier in place at the Terminal is designed to reduce the impact of noise on the local environment. Noise Levels emanating from the Cork Container Terminal, when measured at noise sensitive locations shall not exceed

- 55dBA (30 minute LAR) between 0700-1900 hours
- 50dBA (30 minute LAR) between 1900 -2300 hours
- 45dBA (15 minute LAeq) between 2300-0700 hours

Noise measurements are carried out in accordance with ISO recommendation R1996 parts 1, 2, & 3 "Description and Measurement of Environmental Noise, Part 1: basic Quantities and Procedures".

8.2.1 Noise & Vibration Control Measures

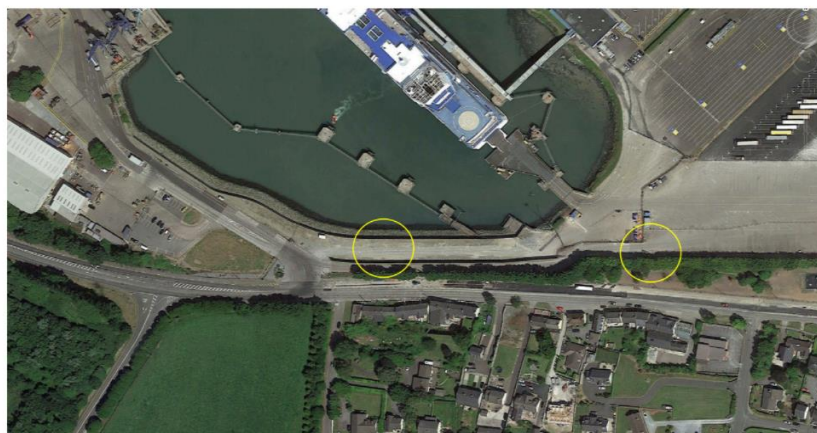
Noise and vibration measures are in place:

- 4m sound barrier constructed prior to commencement of operations in the Terminal.
- All Plant & Machinery fitted with white noise alarm system.
- Staff noise awareness training on induction and also through regular toolbox talks.
- All plant maintained in a good and efficient working order.
- Any plant which is ineffectively silenced shall be removed from operations for repair.
- Mechanical static plant are enclosed by acoustic sheds or screens where appropriate.
- A noise threshold limit of 100dB with tone is set for alarm systems associated with all plant and equipment by a Smart Broadband alarm system.

8.2.2 Noise Monitoring

Continuous noise monitoring will be performed at two permanent monitoring locations (indicative locations below) utilising 2 X NTi Audio NoiseScout systems. Exact locations are to be determined in consultation with Cork County Council and the PoCC noise consultant.

Permanent Monitoring Locations



It is proposed that the terminals will log the LAeqT, LAF10 and LAF90 as per the relevant time interval specified in the planning permission:

- 55dBA (30 minute LAR) between 0700-1900 hours
- 50dBA (30 minute LAR) between 1900 -2300 hours
- 45dBA (15 minute LAeq) between 2300-0700 hours

In addition, the POCC will carry out quarterly manned noise monitoring surveys. The current proposed noise monitoring locations are N1 (Monkstown), N2 (Ringaskiddy Village), N3 (Whitepoint) & N4 (Ringaskiddy Community). Noise monitoring locations and the frequency of monitoring will be reviewed as required in consultation with Cork County Council. Reports will be submitted to Cork County Council within one month of the survey.

8.2.3 Noise Incidents

Should any monitoring indicate that noise or vibration levels have exceeded threshold limits appropriate action shall be taken in consultation with the Environmental Support Manager.

Actions may include:

Servicing and or modifying the plant or equipment

Replacing the plant/equipment

Moving the relevant operation to a new location within the Terminal

Rescheduling the activity

Erecting noise barriers where other measures are not practical

All incidents of noise either through complaints or monitoring shall be logged in the complaints management system (Q-Pulse).

8.3 Air Pollution

The main types of air impacts arising from the Cork Container Terminal are exhaust emissions and dust from plant and machinery, HGV's, shipping activities.

Activities with the potential to produce emissions are:

- Berthing of Vessels
- Vessels in Berth
- Straddle carrier operations
- Crane operations
- Vehicle movement to and from the Terminal
- Maintenance plant and machinery.

Activities with the potential to produce dust are:

- Bulk discharge operations
- Vehicle movement to and from the Terminal
- Internal movement of maintenance vehicles within the terminal
- Maintenance of plant and machinery.
- Tenant activities on the berth.

8.3.1 Emissions Minimisation Plan

Exhaust emissions, where practical, shall be minimised by ensuring that all plant, equipment, vehicles, straddle carriers and cranes are in good working order and are regularly serviced to ensure efficient running by using the smallest engine-sized plant and equipment suitable for the task and by ensuring that engines are not left idling unnecessarily.

A maintenance record of all plant & machinery is maintained.

Emissions to air from berthed vessels will be to limits as set out in Annex VI of Marpol 73/78.

8.3.2 Dust Minimisation Plan

Dust is minimised at the Cork Container Terminal by adhering to the following practices:

Internal roads regularly cleaned and swept

In dry weather a bowser deployed to dampen any dust
Mandatory speed limits imposed throughout the Terminal

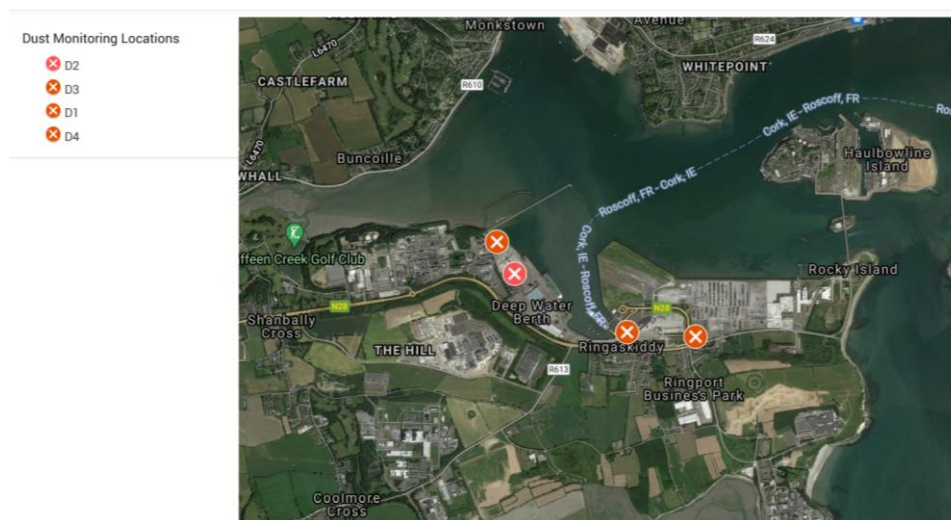
8.3.3 Emission and Dust Monitoring

Continuous air quality monitoring will be undertaken by the PoCC at Ringaskiddy utilising the FIDAS200 monitor certified for PM10 and PM2.5. It is intended that the instrument shall (subject to the agreement of the EPA) be connected to the national ambient air quality monitoring network.

Visual monitoring of dust shall be daily through inspections by the Terminal Manager
Dust monitoring shall take place continuously throughout the year. Dust depositions will be measured in accordance with VDI 2119: Measurement of Dust Using a Bergerhoff Dust Deposition Gauge.

Emissions monitoring will be carried as required.

The proposed dust monitoring locations are identified below:



8.3.4 Light Pollution

Light pollution is minimised by use of directional lighting at locations as set out in in Planning Drawings IBM0474-GA-400 to 405.
All plant is fitted with directional lighting to ensure no overspill of lighting to sensitive receptors.

8.3 Habit (Flora & Fauna) Protection

The main environmental risk to flora and fauna is from spillage of oil or hazardous substances into the water.

There are two European sites (SPA/SAC) located within 15Km of the Cork Container Terminal as listed below:

Code	Site	Distance
SPA Code 004030	Cork Harbour SPA	Monkstown Creek component of SPA is 60m NW of Terminal
SAC Code 001058	Great Island Channel SAC	4.8Km to the North of Terminal

The Cork Harbour SPA has 24 features of interest as listed below:

Cork Harbour SPA (IE0004030) SCI's	
(A004)	Little Grebe <i>Tachybaptus ruficollis</i>
(A005)	Great Crested Grebe <i>Podiceps cristatus</i>
(A017)	Cormorant <i>Phalacrocorax carbo</i>
(A028)	Grey Heron <i>Ardea cinerea</i>
(A048)	Shelduck <i>Tadoma tadoma</i>
(A050)	Wigeon <i>Anas Penelope</i>
(A052)	Teal <i>Anas crecca</i>
(A056)	Pintail <i>Anas acuta</i>
(A065)	Shoveler <i>Anas cypeala</i>
(A069)	Red-breasted Merganser <i>Mergus serrator</i>
(A130)	Oystercatcher <i>Haemalopus ostralegus</i>
(A140)	Golden Plover <i>Pluvialis apricaria</i>
(A141)	Grey Plover <i>Pluvialis squatarola</i>
(A142)	Lapwing <i>Vanellus vanellus</i>
(A156)	Black-tailed Godwit <i>Limosa limosa</i>
(A157)	Bar-tailed Godwit <i>Limosa lapponica</i>
(A160)	Curlew <i>Numenius arquata</i>
(A162)	Redshank <i>Tinga tetanus</i>
(A179)	Black-headed Gull <i>Larus ridlbundus</i>
(A182)	Common Gull <i>Larus canus</i>
(A183)	Lesser Black backed Gull <i>Larus fuscus</i>
(A193)	Common Tern <i>Sterna hirundo</i>
(A999)	Wetlands & Waterbirds

8.4.1 Mitigation Measures in Place

All wastewater is connected to the Cork Lower Harbour Main Drainage Scheme. All surface water drainage throughout the Cork Container Terminal is through Highway Quality Oil Interceptors and Sediment Traps which are subject to regular inspections.

Toolbox talks are carried out with POCC employees on a regular basis to ensure good practice is employed at the Cork Container Terminal.

8.4.2 Fish and Fisheries Habitat Mitigation Measures

All wastewater is connected to the Cork Lower Harbour Main Drainage Scheme. All surface water drainage will be throughout the Cork Container Terminal is through Highway Quality Oil Interceptors and Sediment Traps which are subject to regular inspections.

Toolbox talks are carried out with POCC employees on a regular basis to ensure good practice is employed at the Cork Container Terminal.

8.4.3 Breeding Terns

The Environmental Support Manager will engage with Cork County Council and the National Parks and Wildlife Service to ensure recommendations on Common Tern Nesting Habitat Improvement Measures in Cork Harbour are implemented in full.

8.5 Waste Management (Including Hazardous Waste)

In accordance with the Environmental Management System an Operational Waste Management Plan for Cork Container Terminal is included in Appendix G)

8.6 Hazardous Materials Handling & Storage

The Cork Container Terminal has facilities to store the following:

Diesel

These storage facilities will be bunded and monitored in accordance with the EMS in place throughout the POCC.

All chemicals in use at the Terminal are managed in accordance with the requirements of the Material Safety Data Sheet (MSDS). Hazardous material stored on site is stored as required by the information on the relevant MSDS which is also made available in hard copy close to the storage area and in soft copy on the Touchscreens throughout the Port used for dissemination of SHEEQ information. Hazardous materials are kept in suitable stores.

Spill kits are maintained at appropriate locations on the Cork Container Terminal.

Fuels, lubricants and hydraulic fluids for all equipment used in the Terminal are carefully handled to avoid spillage, properly secured against unauthorised access and provided with spill containment. Fuelling and lubrication of equipment is not carried out in the vicinity of water discharge points. Waste oils and hydraulic fluids are collected in leak –proof containers and stored for disposal or recycling by licenced contractors and at appropriately licenced facilities.

8.7 Vermin Control

The control of vermin in and around the Cork Container Terminal including all buildings is carried out by a specialist vermin control company. Bait boxes are established and regularly replenished, ensuring maximum protection from vermin.

8.8 Night-Time Work

The Port of Cork, shall as soon as practicable, notify the Planning Authority and recognised Resident Associations in advance of any night-time work. Any such communications shall be sent to environ@corkcoco.ie and planning.compliance@corkcoco.ie or as advised by the Planning Authority; and shall follow existing agreed communications protocols with local Residents Associations, as determined in writing by the Planning Authority.

9 Management Review

A review of the EMS is performed annually. The purpose of this review is to ensure that the EMS satisfies the requirements of ISO 14001: 2015 and to maintain the EMS's continuing suitability and effectiveness.

Input to the Management Review includes:

- Results of internal audits and evaluations of compliance with legal and other requirements.
- Communications from external interested parties, including complaints.
- Evaluation of environmental performance.
- The extent to which objectives and targets have been achieved.
- The status of corrective and preventive actions.
- The follow-up actions from previous management reviews.
- Evaluation of changing circumstances, including developments in legal and other requirements related to the environmental aspects.
- Recommendations for improvement.

Outputs from the Management review includes any decisions and actions related to possible changes to the SHEEQ Policy, objectives, targets, and other elements of the EMS to ensure consistency with our commitment to continual improvement.

Appendix A
**Surface Water Drainage Drawing/
Fuel Tank Location**

Appendix B

Port of Cork Company
Safety, Health, Environment, Energy & Quality Policy
(SHEEQ Policy)

Port of Cork Company Safety, Health, Environment, Energy & Quality Policy

The Port of Cork Company (POCC) consider high standards in occupational health and safety, environment, energy and quality management of paramount importance in the ports of Cork and Bantry.

POCC are committed to the provision of a quality service to our customers and the maintenance of innovative and effective safety, health, environment and energy management systems. In an environment where safety, health and welfare are promoted, risks are comprehensively assessed and mitigated we strive to prevent work-related injury and ill health to our workers, provide safe and healthy workplaces and recognise that efficient occupational health and safety arrangements enable staff to work smarter and less stressfully.

POCC are committed to lead the wider port community to minimise environmental impacts and ensure energy efficiency through co-ordinated environmental management, reducing CO₂ emissions and conserving natural resources respecting the principles of environmental sustainability and corporate social responsibility.

Our commitment:

- Safeguard the safety, health and welfare of all our employees and all other stakeholders that may be affected by our activities.
- Provide workplaces that are safe and without risk to health or the environment.
- Operate in compliance with all applicable safety, health, environmental, energy and quality laws, regulations, industry codes of practice and other requirements.
- Promote and develop a positive safety culture in the organisation by consulting with employees and encouraging their participation in the safety management system.
- Provide appropriate training and support to employees and enlist their support in improving the Company's SHEEQ management systems performance.
- Implement Safety, Health, Environment, Energy & Quality (SHEEQ) management systems, in compliance with and certified to ISPO, IPSEM, OHSAS 18001/ISO 45001, ISO14001 & ISO 50001 and compliant with European Sea Ports Organisation (ESPO) ECOPORTS criteria.
- Identify, evaluate and control any safety, health, environmental or energy risks with the principal goal of avoidance of risk and achieving energy performance improvement through a proper mitigation plan.
- Set and regularly review objectives and targets to ensure continual improvement of the management systems.
- Undertake regular safety, environment and energy audits.
- Communicate this policy and associated objectives, targets and procedures with all employees; make this policy available on our website and display it in our facilities.
- Communicate this policy to contractors, suppliers customers and stakeholders, to promote SHEEQ awareness and encourage the implementation of best practices within their operations.
- Prevent pollution, manage emissions, minimise waste, make efficient use of resource and support conservation awareness.
- Minimise adverse impacts of our activities on the environment, through the setting and review of realistic objectives and measurable targets in accordance with the principles of the ESPO "Green Guide".
- Investigate renewable and alternative sources of energy.
- Procure energy efficient products and services; ensure design activities incorporate energy performance.
- Incorporate SHEEQ management and sustainability in all strategic developments and business plans.
- Lead the wider port community through co-ordinated safety, environmental and energy initiatives.
- Encourage local community liaison and public reporting on safety and environmental performance.
- Assign the necessary resources to implement this policy.

Eoin McGettigan
Chief Executive

Appendix C

Port of Cork Company
ISO 14001:2015 Certification

BUREAU VERITAS
Certification



PORT OF CORK COMPANY Ltd
CUSTOMS HOUSE, CUSTOM HOUSE STREET, CORK, T12 CY88
IRELAND

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

THE SERVICES PROVIDED AND ACTIVITIES UNDERTAKEN BY THE PORT OF CORK COMPANY IN RESPECT OF OPERATIONS AT CITY QUAYS, TIVOLI INDUSTRIAL AND DOCK ESTATE, RINGASKIDDY DEEP WATER BERTH & FERRY TERMINAL AND COBH CRUISE LINER TERMINAL

Original cycle start date:	15 November 2018
Expiry date of previous cycle:	N/A
Certification / Recertification Audit date*:	05 September 2018
Certification / Recertification cycle start date:	15 November 2018

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **14-November-2021**

Certificate No. 18LDR1009

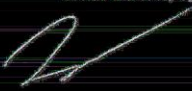
Version: No. 1

Revision date: 15 November 2018

Certification body address: **5th Floor, 66 Prescott Street, London E1 8HG, United Kingdom**

Local office: **BV Marine & Offshore Division, Suite 1 Keel House, Tyne Dock,**

South Shields, Tyne & Wear NE34 9 PY


Ioannis CALOGERAS
UK Marine Chief Executive



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Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: **+44(0)191 4278170**

Appendix D

Environmental Aspects Register



APPENDIX D
ENVIRONMENTAL ASPECTS REGISTER
Cork Container Terminal Ringaskiddy East

CORK CONTAINER TERMINAL ENVIRONMENTAL ASPECTS REGISTER

Introduction

Section 5 and Section 5.2 of the Environmental Management Manual (EMM) details the procedure for identifying, assessing and recording environmental aspects. These are documented in this Environmental Aspects Register (EAR).

The EAR comprises three tables as follows:

- Table 1 (Environmental Aspects Identification List) identifies the Port of Cork activities with specific relevant environmental aspects. These aspects take cognisance of the 'identified priority issues' specified in the ESPO 'Green Guide' 2012; in addition to site-specific issues.
- Table 2 (Aspects Scoring Matrix) details the findings of the Risk Priority Numbering system used to evaluate the significance of each identified relevant environmental aspect.
- Table 3 (Applied Aspects Register) relates significant aspects to areas of responsibility within Port of Cork Company and identifies relevant legislation. In addition, existing procedures and appropriate objectives are referenced.

Table 1 (Environmental Aspects Identification List) t	Applicable (Y/N)	Aspects						
		Air Quality	Energy Conservation & Climate Change	Water Use & Quality	Noise	Waste	Ground & Seabed Contamination	Habitats & Ecosystems
Bunkering	Y	✗	✓	✓	✗	✗	✓	✓
Dredging	Y	✗	✗	✓	✗	✓	✓	✓
Marine Engineering	N	✗	✗	✗	✗	✗	✗	✗
Ship Building & Repair	N	✗	✗	✗	✗	✗	✗	✗
Shipping & Navigation	Y	✓	✓	✓	✓	✓	✓	✓
Land Traffic	Y	✓	✓	✗	✓	✗	✗	✗
Waste Management	Y	✗	✓	✓	✗	✓	✓	✓
Cargo Handling	Y	✓	✓	✓	✓	✓	✓	✓
Cargo Storage	Y	✓	✗	✓	✗	✓	✓	✗
Port Industry Stakeholders & Tenants	Y	✓	✓	✓	✓	✓	✓	✓
Fisheries/Aquaculture	N	✗	✗	✗	✗	✗	✗	✗
Engineering & Port Development	Y	✗	✓	✓	✓	✓	✓	✓
Port Installations Maintenance	Y	✗	✗	✓	✗	✓	✗	✗
Military Use	N	✗	✗	✗	✗	✗	✗	✗
Recreation & Tourism	Y	✗	✗	✓	✓	✓	✗	✓
Past Activities	Y	✗	✗	✗	✗	✗	✓	✗
Administration & Planning	Y	✗	✓	✓	✗	✓	✗	✗
Emergencies	Y	✓	✓	✓	✓	✓	✓	✓

Table 2 (Aspects Scoring Matrix)

Activity	Environmental Aspect	(S) Severity	(O/E) Occurrence/ Existence	(D/C) Detection/ Controls	(R)RPN S x O/E x D/C	Significant S>7 or R>100 (✓/X)	Ref No
Bunkering	Energy Conservation & Climate Change	5	7	3	105	✓	EI-1
	Water Use & Quality	9	7	3	189	✓	EI-2
	Ground & Seabed Contamination	9	7	3	189	✓	EI-3
	Habitats & Ecosystems	9	7	3	189	✓	EI-4
Dredging	Water Use & Quality	7	3	3	63	X	
	Waste	7	3	3	63	X	
	Ground & Seabed Contamination	7	3	3	63	X	
	Habitats & Ecosystems	7	3	3	63	X	
Shipping & Navigation	Air Quality	2	9	4	72	X	
	Energy Conservation & Climate Change	2	9	3	54	X	
	Water Use & Quality	9	9	1	81	✓	EI-5
	Noise	4	9	3	108	✓	EI-6
	Waste	3	9	3	81	X	
	Ground & Seabed Contamination	9	9	1	81	✓	EI-7
	Habitats & Ecosystems	9	9	1	81	✓	EI-8
Land Traffic	Air Quality	2	9	5	90	X	
	Energy Conservation & Climate Change	2	9	5	90	X	
	Noise	4	9	3	108	✓	EI-9
Waste Management	Energy Conservation & Climate Change	2	9	2	36	X	
	Water Use & Quality	3	9	2	54	X	
	Waste	7	9	2	126	✓	EI-10
	Ground & Seabed Contamination	4	9	2	72	X	
	Habitats & Ecosystems	4	9	2	72	X	

Activity	Environmental Aspect	(S) Severity	(O/E) Occurrence/ Existence	(D/C) Detection/ Controls	(R)RPN S x O/E x D/C	Significant S>7 or R>100 (✓/X)	Ref No
Cargo Handling	Air Quality	9	7	2	126	✓	EI-11
	Energy Conservation & Climate Change	3	7	4	84	X	
	Water Use & Quality	7	7	2	98	X	
	Noise	7	9	3	189	✓	EI-12
	Waste	4	7	3	84	X	
	Ground & Seabed Contamination	9	7	2	126	✓	EI-13
	Habitats & Ecosystems	9	7	2	126	✓	EI-14
Cargo Storage	Air Quality	9	9	2	162	X	E-15
	Water Use & Quality	9	7	2	126	✓	EI-16
	Waste	3	7	4	84	X	
	Ground & Seabed Contamination	9	7	2	126	✓	EI-17
Port Industry Stakeholders & Tenants	Air Quality	4	7	3	84	X	
	Energy Conservation & Climate Change	7	7	3	147	✓	EI-18
	Water Use & Quality	7	7	3	147	✓	EI-19
	Noise	7	7	3	147	✓	EI-20
	Waste	7	7	3	147	✓	EI-21
	Ground & Seabed Contamination	7	9	3	189	✓	EI-22
	Habitats & Ecosystems	7	9	3	189	X	EI-23
Engineering & Port Development	Energy Conservation & Climate Change	3	9	3	81	X	
	Water Use & Quality	3	9	3	81	X	
	Noise	4	8	3	96	X	
	Waste	3	9	3	81	X	
	Ground & Seabed Contamination	3	9	3	81	X	
	Habitats & Ecosystems	3	9	3	81	X	
Port Installations Maintenance	Water Use & Quality	5	7	2	70	X	
	Waste	3	9	2	54	X	

Activity	Environmental Aspect	(S) Severity	(O/E) Occurrence/ Existence	(D/C) Detection/ Controls	(R)RPN S x O/E x D/C	Significant S>7 or R>100 (✓/X)	Ref No
Recreation & Tourism	Water Use & Quality	2	7	7	98	X	
	Noise	2	7	7	98	X	
	Waste	2	7	4	56	X	
	Habitats & Ecosystems	2	7	7	98	X	
Past Activities	Ground & Seabed Contamination	7	3	5	105	✓	EI-24
Administration & Planning	Energy Conservation & Climate Change	4	9	4	144	✓	EI-25
	Water Use & Quality	2	9	3	54	X	
	Waste	3	9	3	81	X	
Emergencies	Air Quality	9	2	3	54	✓	EI-26
	Energy Conservation & Climate Change	9	2	3	54	✓	EI-27
	Water Use & Quality	9	2	3	54	✓	EI-28
	Noise	7	3	4	84	X	
	Waste	9	3	3	81	✓	EI-29
	Ground & Seabed Contamination	9	3	3	81	✓	EI-30
	Habitats & Ecosystems	9	2	3	54	✓	EI-31

Table 3 (Applied Aspects Register)					
Ref.	Significant Aspect	Impact On	Responsibility	Legal & Other Requirements	Remarks
EI-1 EI-2 EI-3 EI-4	Bunkering -spillage of fuel	Energy Conservation & Climate Change Water Quality Ground & Seabed Contamination Habitats & Ecosystems	Deputy Harbour Master Senior Engineer – Maintenance	Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 The Fisheries Acts 1959-2010 Sea Pollution Act 1991/99 Sea Pollution (Prevention of Oil Pollution) Regs 1994/2008 The Wildlife Act 1976/2000 EC (Natural Habitats) Regs 1997 EC (Birds & Natural Habitats) Regs 2011 ESPO Green Guide 2012	SEMS 07:06,07:15, 07:16, 07:16A,07:17,07.2007.34E,07.44,07.44A,07.44B,07.44C, Objective 1
EI-5 EI-7 EI-8	Shipping & Navigation-spillage of fuel or cargo	Water Quality Ground & Seabed Contamination Habitats & Ecosystems	Ship Operators Harbour Master	Sea Pollution Act 1991/99 Sea Pollution (Prevention of Oil Pollution) Regs 1994/2008 Sea Pollution (Prevention of Pollution by Noxious Liquid Substances in Bulk) Regs 1994/2008 Sea Pollution (Prevention of Pollution by Sewage from Ships) Regs 2008 Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 The Fisheries Acts 1959-2010 The Wildlife Act 1976/2000 EC (Natural Habitats) Regs 1997 EC (Birds & Natural Habitats) Regs 2011 Ship-Source Pollution Regs 2010 Vessel Traffic Monitoring & Information Systems Regs 2010 ESPO Green Guide 2012	SEMS 03:05, 03:10, 03.11,03.12,03:13,07:03.16 ,07.01, 07:02, 07:05, 07:06,07.06A 07:07,07:07A, 07:08, 07:10, 07:11, 07:12, 07:13,07:33,07:33A, 07:33B,07:34,07.34A, 07.34B,07.34C,07.34D,07.34E, 07:35, 07:36,07.45,07:46,07.57,08.01,09.15,10.35,10.36,10,37 Objective 2

Ref.	Significant Aspect	Impact On	Responsibility	Legal & Other Requirements	Remarks
EI-6	Shipping & Navigation - noise	Noise Nuisance	Ship Operators Harbour Master	EPA Act (Noise) Regs 1994 Environmental Noise Regs 2006 ESPO Green Guide 2012	Objective 3
EI-9	Land Traffic - noise	Noise Nuisance	Harbour Master Terminal Manager Manager Engineering Services	EPA Act (Noise) Regs 1994 Environmental Noise Regs 2006 ESPO Green Guide 2012	Objective 3
EI-12	Cargo Handling - noise	Noise Nuisance	Terminal Manager	EPA Act (Noise) Regs 1994 Environmental Noise Regs 2006 ESPO Green Guide 2012	Objective 3
EI-19	Port Industry, Stakeholders & Tenants - noise	Noise Nuisance	Leaseholders Tenants Company Secretary	EPA Act (Noise) Regs 1994 Environmental Noise Regs 2006 ESPO Green Guide 2012	Objective 3

EI-10 EI-21	Waste Management-ship generated Waste Management- port generated	Waste Management	Harbour Master Manager Engineering Services Terminal Manager	Prevention of Pollution by Garbage from Ships Regs 1994/1997 Port Reception Facilities for Ship Generated Waste & Cargo Residues Regs 2003 Waste Management Act 1996/2001 Hazardous Waste Regs 1998/2000 Shipment of Waste Regs 2007 Collection Permit Regs 2001-2008 Landfill Levy Regs 2002-2013 Licensing Regs 2004-2010 Litter Pollution Regs 1999 Dumping at Sea Act 1996/2004 Facility Permit & Registration Regs 2007 WEEE Regs 2005 -2013 Port Waste Management Plan ESPO Green Guide 2012 Facility Permit No WFP-CK-09-0014-01 Loading and Dumping Permit No 292	Ships Waste Reception Facility SEMS 07.06, 07:18;07:18A; 07:19; 07:20 EMSP 2 Waste logging procedure Objective 4

Ref.	Significant Aspect	Impact On	Responsibility	Legal & Other Requirements	Remarks
EI-11 EI-13 EI-14	Cargo Handling- Dust, Spillage, Nuisance	Air Quality Ground & Seabed Contamination Habitats & Ecosystems	Stevedores & Receivers Terminal Manager	Air Pollution Act 1987 Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 The Wildlife Act 1976/2000 EC (Natural Habitats) Regs 1997 EC (Birds & Natural Habitats) Regs 2011 Vehicle emissions. European Communities(Control of Emissions of Gaseous and Particulate and Particulate Pollutants from Non-Road Mobile Machinery) Regulations 2013 ESPO Green Guide 2012 Cork County Council Notice Register AP (CS26) 01/09 Amended	SEMS 06.04,07:22,07:22A,07:22B,07:2 2C, 07.22C(i),07.22C(ii),07:23, 07:24,07:25,07:25A,07:26,07:25 A,07.26,07:27,07:27A,07:27B,07 .27C,07:28,07:29,07:29A,07:29 B,07:29C,07:29D,07:29E,07:29F ,07.29G,07:30A,07:30B, 07:31.07.33A,07.43,07.50,0751, 07.52,07.53,07.54,07.55,07.55A ,07.56,07.60,07.61,07.62,07.63, 07.64,07.66,07.67,07.68,07.69,0 7.70,07.71,07.72,07.73,07.74,10 .38 Objective 5
EI-15 EI-16 EI-17	Cargo Storage - Spillage	Air Quality Water Quality Ground & Seabed Contamination	Leaseholders Port Company Secretary	Air Pollution Act 1987 EPA (Licensing) Regs 1994 Petroleum Vapour Emissions Regs 1997 Control of Volatile Organic Compound Emissions Resulting From Petrol Storage and Distribution Regs 1997 Emissions of Volatile Organic Solvent Regs 2002-2010 Control of Substances that Deplete the Ozone Layer Regs 2006-2011 COMAH Regs 2006 Vehicle emissions. European Communities(Control of Emissions of Gaseous and Particulate and Particulate Pollutants from Non-Road Mobile Machinery) Regulations 2013	Leaseholders responsible for applying for and holding appropriate licences and permits To be audited (yearly) SEMS 06.04,07.02,07.12,07.13,07.14,0 7.14A,07.21,07.22,07.22A,0722 B,07.22C(i),07.22C(ii),07.23,07. 24,07.25,07.26,07.28,07.29B,07 .29C,07.29D,07.30A,07.30B,07. 31,07.31A,07.42,07.43,07.60,07 .61,07.62,07.63,07.64,07.67 Objective 5

				Lease Agreements ESPO Green Guide 2012 Cork County Council Notice Register AP (CS26) 01/09 Amended	
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Ref.	Significant Aspect	Impact On	Responsibility	Legal & Other Requirements	Remarks
EI-18 EI-19 EI-22 EI-23	Port of Cork, Port Industry, Stakeholders & Tenants – Pollution Risk	Air Quality Energy Conservation & Climate Change Water Quality Ground & Seabed Contamination	Leaseholders Tenants Port Company Secretary	Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 The Wildlife Act 1976/2000 EC (Natural Habitats) Regs 1997 EC (Birds & Natural Habitats) Regs 2011 EPA Integrated Pollution Control Licensing Regs 2013 Lease Agreements	Leaseholders responsible for applying for and holding appropriate licences and permits. Objective 6
EI-24	'Returned Site' – Pollution Risk	Ground & Seabed Contamination	Leaseholders Tenants Port Company Secretary	Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 EC (Natural Habitats) Regs 1997 (Birds & Natural Habitat) Regs 2011 EPA Integrated Pollution Control Licensing Regs 2013 Lease Agreements	To be audited prior to return Objective 7
EI-25	Administration & Planning – Natural Resources Consumption	Energy Conservation & Climate Change	Senior Engineer Maintenance Purchasing Officer	Water Services Act 2007-2013 EIA Regs 1989-2006 EIA & Habitats Regs 2011 Access to Information on the Environment Regs 2007-2011 Energy Performance of Buildings Regs 2005- 2012 Green Purchasing Procedure	Terminal buildings retain Energy Certificates. Energy Action Plan established. Objective 8

Ref.	Significant Aspect	Impact On	Responsibility	Legal & Other Requirements	Remarks
EI-26 EI-27 EI-28 EI-29 EI-30 EI-31	Emergency Risk	Air Quality Energy Conservation & Climate Change Water Use & Quality Waste Ground & Seabed Contamination Habitats & Ecosystems	Harbour Master (Sea) Harbour Master(Land) Manager Engineering Services (Land)	Sea Pollution Act 1991/99 Sea Pollution (Prevention of Oil Pollution) Regs 1994/2008 Sea Pollution (Prevention of Pollution by Noxious Liquid Substances in Bulk) Regs 1994/2008 Water Pollution Act 1977/90 Water Pollution Regs 1978-1999 Water Services Act 2007-2013 The Fisheries Acts 1959-2010 The Wildlife Act 1976/2000 EC (Natural Habitats) Regs 1997 EC (Birds & Natural Habitats) Regs 2011 Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations 1994/1997 Sea Pollution (Prevention of Pollution by Sewage from Ships) Regs 2008 Waste Management Act 1996/2001 Air Pollution Act 1987 EPA (Licensing) Regulations 1994 Petroleum Vapour Emissions Regs 1997 Control of Volatile Organic Compound Emissions Resulting From Petrol Storage and Distribution Regs 1997 Emissions of Volatile Organic Solvent Regs 2002-2010 COMAH Regs 2006 Port Waste Management Plan Port of Cork Emergency Response Plan ESPO Green Guide 2012	SEMS 08:01, 08:02,08:03, 08:04, 08:05, 08:06, 08:07, 08:08, 08:09,08:10,0814,08.15 Objective 9

Appendix E

Environmental Management Programme

ENVIRONMENTAL MANAGEMENT PROGRAMME

Introduction

Section 6.2.2 of the Environmental Management Manual (EMM) details the procedure for developing environmental objectives and targets from identified significant environmental aspects. These objectives and targets are encapsulated in this Environmental Management Programme (EMP), including implementation dates and responsibilities. In addition, Environmental Performance Indicators (EPIs) have been assigned to each objective and specific performance indicator targets set where appropriate.

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
1.	Maintain systems to minimise impacts from the bunkering of commercial and Port of Cork owned vessels	EI-1: Energy Conservation & Climate Change EI-2: Water Quality EI-3: Ground & Seabed Contamination EI-4: Habitats & Ecosystems	1.1 Audit Port of Cork bunkering operations (Enforce) Internal bunkering procedures to be reviewed for PoCC vessels (other than tug). New bunkering form being developed (Exemplify) [Q.3 2020/Q.1 2021] 1.2 Create Bunkering procedure for LNG / new alternative fuel vessels (Enable, Encourage) [Q2] 1.3 Audit Commercial bunkering operations (Enforce)	H.M.'S Dept/ Port Eng. Manger/ Env. Rep	Number of bunkering related pollution incidents
2.	Manage environmental impacts from vessel movements within port jurisdiction	EI-5: Water Quality EI-7: Ground & Seabed Contamination EI-8: Habitats & Ecosystems	2.1 Conduct vessel-specific enviro. audit programme (Exemplify; Enable; Encourage; Engage; Enforce) [Annual] 2.2 Maintain IPSEM procedures (Exemplify; Engage; Enforce) 2.3 Continued provision of MARPOL compliant facilities (Exemplify; Enable; Encourage)	Port Eng. Manager/ Harbour Master/Env. Rep.	Number Of Vessel Related Pollution Incidents

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
3.	Manage noise nuisance	EI-6: Noise (Shipping & Navigation) EI-9: Noise (Land Traffic) EI-12: Noise (Cargo Handling) EI-19: Noise (Port Industry, Stakeholders & Tenants)	3.1 Re-assess potential for noise generation across port & establish Noise Management Plan (Exemplify; Engage) [Q4] 3.2 Conduct annual noise monitoring programme (Exemplify; Engage) 3.3 Enhance noise monitoring & measurement programme. Permanent installation rather than intermittent noise surveys on specific days. [Exemplify, Engage] [Q3] 3.4 Establish procedures for port users (Enable; Encourage; Enforce) [Q4]	Port Eng. Manager/Safety & Quality Systems Manager/Env. Rep.	Number Of Recorded Noise Incident Complaints
4.	Maintain best practice in waste management	EI-10: Waste (Management) EI-20: Waste (Port Industry, Stakeholders & Tenants)	4.1 Maintain electronic waste database (Exemplify) 4.2 Continue to assess potential for additional recycling initiatives (Exemplify; Enable; Encourage; Engage) 4.3 On-going awareness training (Exemplify)	Env. Rep.	Percentage of Port-generated Waste Recycled /Recovered

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
			4.4 Identify further opportunities to prevent/minimise waste. Raise visibility and awareness of waste separation across the organisation. (Exemplify, Enable, Encourage, Engage) [Q3] 4.5 Inspect all interceptors biannually for the first 12 month period. Sample all discharges on a quarterly basis for the first 12 months. The inspection and monitoring regime should be reviewed after 12 months. (Exemplify, Enable, Engage)		
5.	Maintain best practice in cargo handling and storage	EI-11: Air Quality (Handling) EI-13: Ground & Seabed Contamination (Handling) EI-14: Ecosystems & Habitats (Handling) EI-15: Water Quality (Storage)	5.1 Continue Air Monitoring Programme (Exemplify; Engage) 5.2 Continue to monitor/audit discharges and emissions through inspections (Exemplify; Enable; Encourage; Engage; Enforce) 5.3 Invest in continuous 'live' dust monitoring & alarm for sensitive areas, to complement existing static dust monitoring programme. (Exemplify; Enable). 5.4 Continue to investigate dusty cargo procedure for all facilities. (Exemplify; Enable; Engage; Enforce)	Port Eng. Manager/Env Rep.	Number Of Recorded Dust Incident Complaints

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
		EI-16: Ground & Seabed Contamination (Storage)			
6.	Minimise pollution risk from Port of Cork activities; Port Industry and Tenants	EI-17: Energy Conservation & Climate Change EI-18: Water Use & Quality EI-21: Ground & Seabed Contamination	6.1 Request performance information and categorise risk (Exemplify; Engage) 6.2 Conduct annual audits (Enforce) 6.3 Environmental practices in reviewed leases and licences and continue 'polluter pays' (Exemplify; Enable: Engage; Enforce)	Secretary/Manager Finance Env. Rep. Port Eng. Manager / Secretary/ Chief Commercial Officer.	100% tenants audited during the year.
7.	Ensure potential environmental concerns are addressed in respect of 'returned' sites	EI-22: Ground & Seabed Contamination	7.1 Ensure new leases include contamination conditions (Exemplify; Enable; Encourage; Engage; Enforce) 7.2 Ensure agreed site 'clean-up' projects are completed (Encourage; Engage; Enforce) 7.3 Environmental Risk Study (ERS – Environmental Risk Solutions) (Exemplify) [Q3]	Port Eng. Manager/ Secretary	Status of 'Returned' Sites Individual sites returned free of contamination

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
8.	Manage water & energy resource consumption	EI-23: Energy Conservation & Climate Change	8.1 Continue energy and water consumption monitoring (Exemplify) 8.2 Review over-consumption alarm set points on all PoCC monitored water (Exemplify). [Q1] 8.3 Maintain Green Procurement Policy (Exemplify) 8.4 Include environmental 'good practice' clauses in tenders (Exemplify; Encourage; Enforce) 8.5 Improve efficiency of marine vessels (Exemplify) 8.6 Investigate the feasibility of Installing solar panels at New and Existing Facilities (Exemplify) 8.7 Develop targets in line with legislation & SEAI targets. (Exemplify) [Q1]	Maintenance Manager/Env Rep/Energy Team.	Water consumption – sites survey & monitoring -on- going. Meet Energy reduction targets 2020. (See SEAI glidepath: PoCC 37.4% better than the 2009 baseline and ahead of the 33% target for 2020. Energy performance monitored under ISO 50001

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
9.	Maintain emergency procedures	EI-24: Air Quality EI-25: Energy Conservation & Climate Change EI-26: Water Use & Quality EI-27: Waste EI-28: Ground & Seabed Contamination EI-29: Habitats & Ecosystems	9.1 Conduct required audits and maintain procedures (Exemplify; Enable; Encourage; Engage) 9.2 Conduct emergency exercises and awareness training (Exemplify; Enable; Encourage; Engage; Enforce) 9.3 Maintenance of oil spill & response equipment (Exemplify)	Harbour Master/ Safety & Quality Systems Manager/Env Rep.	Number of recorded pollution incidents due to emergency event under control of Port of Cork Company
10.	Maintain Environmental Management System	All	10.1 Review & Revise Environmental Management Manual (Exemplify) 10.2 SMT & Cork Co. Council approval of Operational	SMT	Certification to ISO 14001-2015

ENVIRONMENTAL MANAGEMENT PROGRAMME

	Objective	EI NO. & PRIORITY ISSUE	Project Target & ESPO 5Es	Senior Responsibility	Performance Indicator
			Environmental Management Plan for Cork Container Terminal (<i>CCC Planning Condition</i>). (Exemplify Enable, Encourage, Engage, Enforce) [Q2] 10.3 Enviro. Legislation Review (Exemplify) [Q1] 10.4 Publish Environmental Report taking cognisance of ESPO Green Guide 2012. SMT approval for Environmental Report 2021 – to be published [Q1] (Exemplify; Enable; Encourage; Engage; Enforce) 10.5. Maintain ISO14001 certification (Exemplify; Enable; Encourage; Engage; Enforce) 10.6 Formalise internal Enviro. Management Team to be approved by SMT (Exemplify) [Q1]	SMT Env. Rep/Safety & Quality Systems Manager SMT/Safety & Quality System Manger/ Env Rep. Port Engineering Manager/Env. Rep	

Appendix F

Environmental Aspects Scoring System

(All port facilities including City Quays, Tivoli,
Ringaskiddy & CCT)

ENVIRONMENTAL ASPECTS SCORING SYSTEM –CORK CONTAINER TERMINAL

BUNKERING

Energy Conservation & Climate Change (score 105)

Severity 5 – This area is identified as an area which could have a significant impact in both fuel use and on the environment should a spill occurs. Including clean up cost etc.

Occurrence/ Existence 7 – Occurs less than daily.

Detection / Controls 3 – Lorry deliveries always manned. All deliveries logged and recorded. An Energy Management Team is in place. Work ongoing with ISO 50001 application

EI-1

Water Use & Quality (score 189)

Severity 9 - Significant potential that any spill can discharge into water from the quayside. Any spill onto land could be collected by our surface water system and discharge into water.

Occurrence/ Existence 7 – Occurs less than daily.

Detection / Controls 3 – IPSEM Procedure established & lorry deliveries always manned. Spill kits in place. Audits of bunkering operations take place.

EI-2

Ground & Seabed Contamination (score 189)

Severity 9 - Significant potential that any spill can discharge into water from the quayside. Any spill onto land could be collected by our surface water system and discharge into water. Both of these could have a severe impact on ground or seabed.

Occurrence/ Existence 7 – Occurs less than daily.

Detection / Controls 3 – IPSEM Procedure established & lorry deliveries always manned Spill kits in place in Tivoli and Ringaskiddy. Interceptors in place in Tivoli. Not all of Ringaskiddy covered by interceptors. Audits of bunkering operations take place.

EI-3

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Habitats & Ecosystems (score 189)

Severity 9 - Significant potential that any spill can discharge into water from the quayside. Any spill onto land could be collected by our surface water system and discharge into water. Both of these could have a severe impact on marine ecosystems

Occurrence/ Existence 7 – Occurs less than daily.

Detection / Controls 3 – IPSEM Procedure established & lorry deliveries always manned. Spill kits in place in Tivoli and Ringaskiddy. Interceptors in place in Tivoli. Not all of Ringaskiddy covered by interceptors. Audits have taken place.

EI-4

DREDGING

Water Use & Quality (score 63)

Severity 7 – Type of material and dredging techniques give limited potential to impact.

Occurrence / Existence 3 – 2/3 times annually.

Detection / Controls 3 - Permit to cover this activity is tightly controlled & monitoring undertaken.

Waste (score 63)

Severity 7 – Type of material and dredging techniques give limited potential to impact.

Occurrence / Existence 3 – 2/3 times annually.

Detection / Controls 3 - Permit to cover this activity is tightly controlled & monitoring undertaken. All spoil dumped at sea.

Ground & Seabed Contamination (score 63)

Severity 7 – Type of material and dredging techniques give limited potential to impact.

Occurrence / Existence 3 – 2/3 times annually.

Detection / Controls 3 - Permit to cover this activity is tightly controlled & monitoring undertaken.

Habitats & Ecosystems (score 63)

Severity 7 – Type of material and dredging techniques give limited potential to impact.

Occurrence / Existence 3 – 2/3 times annually.

Detection/ Controls 3 - Permit to cover this activity is tightly controlled and monitoring is undertaken. All spoil dumped at sea.

SHIPPING AND NAVIGATION

Air Quality (score 72)

Severity 2 – Minimal potential to significantly impact. Ships emissions negligent in study carried by UCC in harbour area , most emissions come from domestic fires.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 4 – Any air emissions would be quickly noticed.

Energy Conservation & Climate Change (score 54)

Severity 2 – Fuel is the main resource consumed.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 3 - Shipping lines responsible for monitor fuel use etc. POC monitors pilot launches
- Denis Murphy and Jerry O’Sullivan.

Water Use & Quality (score 81)

Severity 9 - Significant potential that any spill could effect a severe environmental impact.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 1 – Comprehensive controls on shipping and navigation, also MARPOL and IPSEM controlled. Emergency response plan in place. Oil Spill Response Plan in place. All shipping monitored by Port Operations. Spill control exercises carried out annually.

EI-5

Noise (score 108)

Severity 4 – Potential for nuisance impact.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 3 - A procedure is in place to log complaints. Procedure in place to respond to complaints. Noise monitoring has taken place in Tivoli and Ringaskiddy.

EI-6

Waste (score 81)

Severity 3 - Waste from ship movements is minimal and covered under MARPOL (Waste Management Plan).

Occurrence / Existence 9 - Daily occurrence.

Detection/ Controls 3 - Waste produced from shipping and navigation is controlled through MARPOL (Waste Management Plan).

Ground & Seabed Contamination (score 81)

Severity 9 - Significant potential that any spill could effect a severe environmental impact.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 1 – Comprehensive controls on shipping and navigation, also MARPOL and IPSEM controlled. Emergency response plan in place. Oil Spill Response Plan in place. All shipping monitored by Port Operations. Spill control exercises carried out annually.

EI-7

Habitats & Ecosystems (score 81)

Severity 9 - Significant potential that any spill could effect a severe environmental impact.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 1 – Comprehensive controls on shipping and navigation, also MARPOL and IPSEM controlled. Emergency response plan in place. Oil Spill Response Plan in place. All shipping monitored by Port Operations. Spill control exercises carried out annually.

EI-8

LAND TRAFFIC

Air Quality (score 90)

Severity 2 – Minimal potential for impact due to traffic volumes.

Occurrence / Existence 9 - Daily occurrence.

Detection / Controls 5 – Impacts would become obvious (complaints procedure exists for environmental nuisance).

Energy Conservation & Climate Change (score 90)

Severity 2 – Fuel is main resource consumed.

Occurrence / Existence 9 - Daily occurrence.

Detection / Controls 5 – Outside Port of Cork control.

Noise (score 108)

Severity 4 - Noise could be a nuisance to local community but surveys have been conducted which have shown no noise issues (complaints procedure exists for environmental nuisance).

Occurrence / Existence 9 - Daily occurrence.

Detection / Controls 3 - A procedure is in place to deal with any complaints, noise monitoring has taken place in Tivoli and Ringaskiddy.

EI-9

WASTE MANAGEMENT

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Energy Conservation & Climate Change (score 36)

Severity 2 – Port of Cork does not produce large waste volumes (mostly consumable materials e.g. packaging).

Occurrence / Existence 9 – Waste exist daily.

Detection / Controls 2 – Robust procedures and record keeping.

Water Use & Quality (score 54)

Severity 3- Potential for spillage and leaching from containers, oil drums is minimal due to procedures and the use of double skinned tanks and sump pallets.

Occurrence / Existence 9 – Waste exist daily.

Detection / Controls 2 - Controls do exist, awareness training has taken place.

Waste (score 126)

Severity 7 – Potential for significant waste volumes requiring systematic management; port has responsibility for ships waste under MARPOL.

Occurrence / Existence 9 – Daily occurrence.

Detection / Controls 2 - Controls do exist, awareness training has taken place. Waste data base exists. Ships Waste Management Plan in place.

El-10

Ground & Seabed Contamination (score 72)

Severity 4 – Minimal potential to effect sediments due to improved procedures and equipment.

Occurrence / Existence 9 – Waste exist daily.

Detection / Controls 2 - Controls do exist, awareness training has taken place.

Habitats & Ecosystems (score 72)

Severity 4 - Potential for spillage and leaching from containers but no sensitive receptor in vicinity of waste production locations.

Occurrence / Existence 9 – Waste exist daily.

Detection / Controls 2 - Controls do exist; awareness training has taken place

CARGO HANDLING

Air Quality (score 126)

Severity 9 – Potential for on-going problem with dusty cargoes and potential for fumes from hazardous cargoes (e.g. Caustic Soda, L.P.G. etc.). Also potential for odour.

Occurrence / Existence 7 – Occurs less than daily / more than weekly.

Detection / Controls 2 – Visual controls exists for dust, hazardous cargoes also may have mechanical controls (pumps and pipeline checks). Air monitoring in place in Ringaskiddy. Procedures in place agreeing restrictions with Cork County Council for bulk discharges at Ringaskiddy. 'Dust Buster' equipment now in place at Ringaskiddy; in addition to road sweepers and strict hopper procedures.

EI-11

Energy Conservation & Climate Change (score 84)

Severity 3 - Cargo handling only uses electricity/diesel mainly so in the wider scheme it would have minimal environmental effect. Newer cranes etc. at Ringaskiddy are more efficient.

Occurrence / Existence 7 - Occurs less than daily / more than weekly.

Detection / Controls 4 – Energy usage is monitored.

Water Use & Quality (score 98)

Severity 7 – Interceptors etc. now subject to servicing schedule.

Occurrence/ Existence 7 – Occurs less than daily / more than weekly.

Detection/ Controls 2 – Visual controls and some mechanical (e.g. interceptors). No major incident has occurred. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually.

Noise (score 147)

Severity 7 – Greatest potential for noise impact in port is due to this activity.

Occurrence/ Existence 7 – Occurs less than daily / more than weekly.

Detection / Controls 3 – A procedure is in place to deal with any complaints, noise monitoring has taken place in Tivoli and Ringaskiddy.

EI-12

Waste (score 84)

Severity 4 – Spillages and donnage.

Occurrence / Existence 7 – Occurs less than daily / more than weekly.

Detection / Controls 3– Visual controls, waste collected weekly at Tivoli, Cobh and Ringaskiddy and also after specific cargoes at Ringaskiddy.

Ground & Seabed Contamination (score 126)

Severity 9 – Oil, chemicals and dry cargoes have potential to impact ground & to a lesser extent seabed.

Occurrence/ Existence 7 – Less than weekly.

Detection Controls 2 – Visual and mechanical controls of pipelines; also interceptors. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually.

EI-13

Habitats & Ecosystem (score 126)

Severity 9 – Oil, chemicals and dry cargoes have potential to impact habitats & marine ecosystems.

Occurrence/ Existence 7 – Occurs less than daily / more than weekly.

Detection/ Controls 2– Visual controls and some mechanical; also interceptors (e.g. interceptors). Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually.

EI-14

CARGO STORAGE

Air Quality (score 90)

Severity 5 - Potential to discharge to air from hazardous cargoes like Caustic Soda, L.P.G., Zinc etc.

Occurrence / Existence 9 - Cargoes are stored on an on-going basis in the hazardous goods area in Tivoli also around the general area with significant potential that any spill could lead to a major environmental incident. Also dusty cargoes have potential to create dust when in storage.

Detection / Controls 2 – Dusty and Hazardous cargoes are stored internally or in tanks & controls exist, no significant spills of hazardous cargoes have occurred. Inspection (visual) in place in Tivoli.

Water Use & Quality (score 126)

Severity 9 - Significant potential that any spill can discharge into water as any spill will be collected by our surface water system.

Occurrence/ Existence 7 – General cargoes are stored continually including bulk liquids and solids. Hazardous cargo is stored everyday but spills are a very rare occurrence.

Detection/ Controls 2 - Controls are in place for storage, like designated areas, records of cargoes are kept, no record of significant spills. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-15

Waste (score 84)

Severity 3 - Waste produced from cargo storage is minimal and would have a limited environmental effect.

Occurrence / Existence 7 - Waste produced from cargo storage would be infrequent.

Detection/ Controls 4 - Waste produced from cargo storage would become obvious to Port Of Cork personnel i.e. Terminal Managers and would be dealt with by them.

Ground & Seabed Contamination (score 126)

Severity 9 - All discharges will go to our drainage system and as such have potential to be discharged to water, any discharge to water could have a significant effect on sediment.

Occurrence/ Existence 7 - General cargoes are stored continually including bulk liquids and solids. While hazardous cargo is stored on a daily basis the occurrence of spills is rare.

Detection/ Controls 2 - There are procedures in place for storing cargo and no significant spills have occurred. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-16

PORT INDUSTRY, STAKEHOLDERS & TENANTS

Air Quality (score 84)

Severity 4 - There are very few manufacturing industries located on Port Of Cork property but sites with potential to have environmental effect include grain and feedstuffs merchants, Nutribeo, & Jumbotainers in Tivoli & Premier Molasses in Ringaskiddy some other sites carry out spray painting of cars.

Occurrence / Existence 7 - Will occur daily but significant discharges are infrequent and we have had no complaints as regards discharges to air.

Detection / Controls 3 - Air monitoring is in place in Tivoli, Premier Molasses have good controls in Ringaskiddy. We have a complaints procedure in place and records are kept of all complaints. Monitoring has taken place in Tivoli and Ringaskiddy. No complaints received in last number of years.

Energy Conservation & Climate Change (score 147)

Severity 7 – The activities of port industry and tenants could collectively have a significant impact on energy conservation and fossil fuel use.

Occurrence / Existence 7 - Resources are consumed less than daily.

Detection / Control 3 - All organisations within the port will keep records of energy and other resource use.

EI-17

Water Use & Quality (score 147)

Severity 7 - Any discharge of liquids is likely to end up in our drainage system and as such reach the water so there is potential for a limited incident.

Occurrence / Existence 7 – Port industry will be discharging to water at least weekly. Previous spills have contaminated our drainage system while the number of incidents are small the threat is still there.

Detection / Controls 3 - We have interceptors in place on our system and a servicing schedule is established. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-18

Noise (score 147)

Severity 7 – There is potential for noise nuisance from existing port industries and tenants, though this is unlikely to be severe.

Occurrence / Existence 7 - While noise is a daily occurrence, significant noise is unlikely to be more than weekly. Complaints about noise from port related industries / tenants are infrequent.

Detection / Controls 3 - A complaints procedure exists at present and all complaints are logged.

EI-19

Waste (score 147)

Severity 7 – All port industries / tenants produce waste and although responsible for their own waste management there is potential for environmental impact especially in relation to hazardous waste.

Occurrence / Existence 7 – Waste will be produced regularly.

Detection / Controls 3 - Although no monitoring system is in place for waste from port related industries as they are responsible for their own waste and bound by statutory regulations, if there was a problem the impacts would be obvious.

EI-20

Ground & Seabed Contamination (score 147)

Severity 7 - Any discharge of liquids is likely to end up in our drainage system and any damage to our system would result in this filtering to the soil also anything not collected by our system could filter through to cause soil contamination. Potential exists for an environmental incident (e.g. contractor spillage).

Occurrence / Existence 7 - Previous spills have contaminated our drainage system while the number of incidents are small the threat is still there.

Detection / Controls 3 - We have interceptors in place on our system. No incidents have taken place in recent years. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-21

Habitats & Ecosystems (score 84)

Severity 4 - Any discharge of liquids is likely to end up in our drainage system and as such reach the water so there is potential for a minor incident any discharge to water. However, this is unlikely to impact sensitive habitats some distance away.

Occurrence / Existence 7 - Port industry will be discharging to water at least weekly. Previous spills have contaminated our drainage system while the number of incidents are small the threat is still there

Detection / Controls 3- We have interceptors in place on our system. Records are kept of disposal of interceptor waste. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

ENGINEERING & PORT DEVELOPMENT

Energy Conservation & Climate Change (score 81)

Severity 3 - Very little environmental effect in the use of resources in the overall scheme of things.

Occurrence / Existence 9 - Resource consumption takes place on a daily basis. (fuel, electricity, water).

Detection / Controls 3- All resources use are recorded and monitored with a view to ISO50,001 accreditation by Aug/Sept, 2019.

Water Use & Quality (score 81)

Severity 3 – Any specific issues are dealt with in other categories

Occurrence / Existence 9 - Any specific issues are dealt with in other categories

Controls 3 - Any specific issues are dealt with in other categories

Noise (score 96)

Severity 4 - Noise is a limited problem in the existing port facilities and would have limited environmental effect; any coastal engineering would be minimal and would have limited environmental effect.

Occurrence / Existence 8 - The port is existence on a daily basis and although noise isn't significant every day it does exist.

Detection / Controls 3 - While noise controls are not formally in place, any excessive noise would become obvious. There is a complaints procedure in place. Noise monitoring has taken place in Tivoli and Ringaskiddy.

Waste (score 81)

Severity 3 - All waste produced is handled by licensed waste contractor, however waste production still presents a potential environmental impact.

Occurrence 9 - While waste is generated in all facilities it is collected on a regular basis by a licensed waste contractor.

Detection / Controls 3 - Records of all waste are kept so all waste can be accounted for. Licences are checked annually to ensure compliance

Ground & Seabed Contamination (score 81)

Severity 3 - Any specific issues are dealt with in other categories

Occurrence / Existence 9 - Any specific issues are dealt with in other categories

Controls 3- Any specific issues are dealt with in other categories.

Habitats & Ecosystems (score 81)

Severity 3 - Any specific issues are dealt with in other categories

Occurrence / Existence 9 - Any specific issues are dealt with in other categories

Detection / Controls 3 - Any specific issues are dealt with in other categories.

PORT INSTALLATIONS MAINTENANCE

Water Quality (score 70)

Severity 5 – Some potential exists to effect a limited environmental impact.

Occurrence / Existence 7 Maintenance works take place every day but potential for discharges to water is not daily.

Detection / Controls 2 - Records are kept of all maintenance works carried out and parts used.

Waste (score 54)

Severity 3 - All waste generated is disposed of by licensed waste contractors. Lighting tubes, batteries, timber, oily rags etc. are recycled.

Occurrence / Severity 9 - Waste is generated on a daily basis.

Detection / Controls 2 - Records of all waste disposed of are kept. Only fully licensed waste contractors are used.

RECREATION & TOURISM

Water Use & Quality (score 98)

Severity 2 – Minimal potential impact.

Occurrence / Existence 7 - On average tourist related traffic would be weekly.

Detection / Controls 7 - If a discharge to water occurred it should become evident.

Noise (score 98)

Severity 2 - This is only an issue when loading and unloading, it would have very limited environmental effect.

Occurrence / Existence 7 - On average loading & unloading would be on a weekly basis.

Detection / Controls 7 - If there were any problems they would become obvious.

Waste (score 56)

Severity 2 - Very little waste generated mainly litter.

Occurrence / Existence 7 - Only applicable when people are waiting to board the ferries or liners on average once a week.

Detection / Controls 4 - Bins are provided and emptied on a regular basis. Waste from cruise ships and ferries covered under MARPOL.

Habitats & Ecosystems (score 98)

Severity 2 – Minimal potential impact.

Occurrence / Existence 7 - On average tourist related traffic would be weekly.

Detection / Controls 7 - If a discharge to water occurred it should become evident.

PAST ACTIVITIES

Ground & Seabed Contamination (score 105)

Severity 7 - All sites have to be returned to us in good condition but from past experience any sites which are will contain soil contamination and will necessitate remedial works.

Occurrence / Existence 3 - There have already been 3 incidents of soil contamination in Tivoli.

Detection / Controls 5 - Leases now contain clauses to deal with soil contamination on sites (not all). Some site remediation work has recently taken place and more is underway following agreements between the port and former occupants.

EI-22

ADMINISTRATION AND PLANNING

Energy Conservation & Climate Change (score 144)

Severity 4 – Use of resources in administration has potential to cause limited environmental impact. Carbon footprint and energy audit have identified resources as significant

Occurrence / Existence 9 - Admin & planning are on-going activities.

Detection & Controls 4 – More potential exists to consider environmentally sensitive alternatives. Carbon footprint and energy audit have identified resources as significant

Water Use & Quality (score 54)

Severity 2 - Very little discharges to water take place from this activity.

Occurrence / Existence 9 - Admin & planning are on-going but discharges to water are minimal.

Detection / Controls 3 - All discharges from this activity go through our own systems in Tivoli & Custom House to Cork Main drainage & in Ringaskiddy through interceptors.

Waste (score 81)

Severity 3 - Impact of waste could be an eyesore and have limited environmental effect.

Occurrence / Existence 9 - Waste is generated daily as in all office environments

Detection / Controls 3 - All our waste is collected by licensed waste contractors also a limited recycling programme exists. Records of all waste available; more internal recovery is possible.

EMERGENCIES

Air Quality (54)

Severity 9 - Emissions to air from emergencies could be significant, due to the nature of operations and storage of hazardous cargoes.

Detection/Controls 3- Records are kept of incidents. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-24

Energy Conservation & Climate Change (54)

Severity 9 - Emergencies could result in considerable use of resources (water, consumables etc.).

Occurrence 2- Small scale incidents could occur two to three times a year. In 2007 a truck turned over in Tivoli and there was an incident on the Lisheen berth.

Detection/Controls 3- Records are kept of all incidents. Emergency response plan in place. Oil Spill Response Plan in place.

EI-25

Water Use & Quality (54)

Severity 9 - Discharge to waters could be significant depending on the emergency.

Occurrence 2 - Emergencies have occurred very infrequently over the last twenty years. Small scale land based emergencies would occur about three times a year.

Detection/Controls 3- Records are kept of incidents. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-26

Noise (84)

Severity 7 - Noise impacts from any emergency would be very temporary & not hugely significant.

Occurrence 3 - Emergencies have occurred very infrequently over the last twenty years. Small scale land based emergencies would occur about three times a year.

Detection/Controls 4 - Records are kept of incidents. No noise complaints from any incidents have been received for last number of years.

Waste (81)

Severity 9 - Any emergency will generate waste from clean up etc. Such waste could be hazardous and will need to be disposed of correctly.

Occurrence 3 - Small scale incidents could occur two to three times a year. In 2007 a truck turned over in Tivoli and there was an incident on the Lisheen berth.

Detection/Controls 3- Some controls in place (bunkering) but generally incidents are reported from observations of Port personnel and others. It is hard to estimate waste produced from incidents in the future but a considerable amount is going to be hazardous.

EI-27

Ground & Seabed Contamination (81)

Severity 9 - Impacts on ground and seabed could be significant depending on the emergency.

Occurrence 3 - Emergencies have occurred very infrequently over the last twenty years. Small scale land based emergencies would occur about three times a year.

Detection/Controls 3 - Records are kept of incidents and none have occurred in recent years. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-28

Habitats & Ecosystems (54)

Severity 9 – A severe emergency could have an effect on habitats / ecosystems.

Occurrence 2 - No recent emergencies have posed any threat to habitats / ecosystems.

Detection/Controls 3 - Some controls in place (bunkering) but generally incidents are reported from observations of Port personnel and others. Emergency response plan in place. Oil Spill Response Plan in place. Spill control exercises carried out annually

EI-29

Appendix G

Operational Waste Management Plan
Cork Container Terminal (CCT)



OPERATIONAL WASTE MANAGEMENT PLAN

CORK CONTAINER TERMINAL (CCT)

SECTION CONTENTS :

- 1 INTRODUCTION**
- 2 OVERVIEW OF C&D WASTE MANAGEMENT IN IRELAND**
 - 2.1 National Level
 - 2.2 Regional Level
 - 2.3 Legislative Requirements
 - 2.4 Regional Waste Management Service Providers
- 3 DESCRIPTION OF THE PROJECT**
 - 3.1 Location, Size and Scale of the Project
 - 3.2 Proposed Waste Categories
 - 3.3 Waste Storage & Collection
 - 3.4 Tracking and Documentation Procedure
- 4 Conclusion**

REFERENCES

Appendix I Waste Generation 2020

Appendix II Waste Database 2020

1 INTRODUCTION

This Operational Waste Management Plan (OWMP) on behalf of the Port of Cork Company is to ensure that waste arisings during operational phase at the CCT will be managed, reused, recovered or disposed of in a way that ensures the provisions of the Waste Management Acts 1996 as amended, associated Regulations and the Southern Region Waste Management Plan 2015-2021 are complied with. It will also ensure that optimum levels of prevention, waste reduction, re-use and recycling are achieved.

Waste management priorities of this Project are based on the principle of the EU waste management hierarchy as illustrated in Figure 1 below.

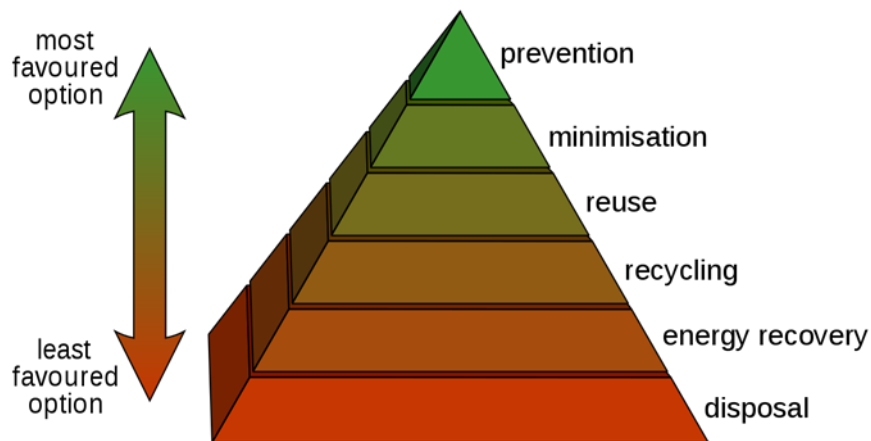


Figure 1: The European waste hierarchy.

In accordance with the EU Waste Hierarchy, the following Waste Management priorities have been established with respect to the Operational Phase of this Development.

- 1.Prevent material wastage
- 2.Minimise the quantity of waste
- 3.Reuse of site materials
- 4.Recycling of waste
- 5.Energy recovery
- 6.Disposal

2

OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Government issued a Policy Statement in September 1998, known as Changing Our Ways, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland.

A further policy document Preventing and Recycling Waste – Delivering Change was published in 2002. This document proposed several programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimization at source was considered a priority. This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, titled Making Irelands Development Sustainable – Review, Assessment and Future Action. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document Changing Our Ways, a review document was published in April 2004 titled Taking Stock and Moving Forward. Covering the period 1998 – 2003 the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in Changing Our Ways. Amongst other things Taking Stock and Moving Forward noted a significant increase in the amount of waste being brought to local authority landfills.

The government's waste policy guidance document - A Resource Opportunity – Waste management policy in Ireland – was issued in 2012 and updated as recently as January 2021. This policy is predicated on the EU waste hierarchy and encompasses a range of measures across all five tiers namely, prevention and minimisation, reuse, recycling, recovery and disposal. The Waste Action Plan for a Circular Economy is Ireland's new roadmap for waste planning and management.

Comprehensive reports regarding the quantities of waste produced in Ireland have been compiled since 1998. The Environmental Protection Agency (EPA) has produced periodic National Waste (Database) Reports detailing among other things estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials.

2.2 Regional Level

The proposed development is located in the Local Authority area of Cork County Council. Cork County Council waste policy is outlined in the Southern Region Waste Management Plan (SRWMP) for the period 2015 – 2021. Operations at the CCT will be support polices set out in the SRWMP.

2.3 Legislative Requirements

The concept of “polluter pays”, whereby the waste producer is liable to be prosecuted for pollution incidents which may arise from the incorrect management of waste produced is a guiding principle of waste management. It is therefore imperative that the site manager and any contractors engaged undertake on and off-site management of waste in accordance with all legal requirements. Waste contractors are typically engaged to transport waste off-site. Each contractor must comply with the provisions of the Waste Management Act 1996 as amended and associated regulations. A waste collection permit to transport waste must be held by the relevant contractor, which is typically issued by the national waste collection permit office (NWCPO).

Waste recovery/ recycling/ disposal facilities must also be appropriately licensed/ permitted. Operators of such facilities cannot legally receive any waste, unless in possession of a waste permit granted by the relevant local authority under the Waste Management (Facility Permit & Registration) Regulations 2007 or a waste licence granted by the EPA. The permit/licence held will specify the type

and quantity of waste that can be received, stored, sorted, recycled and/or disposed of at the specified site.

2.4 Regional Waste Management Service Providers

Various contractors offer waste collection services in the southern waste region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the Offaly County Council – National Waste Collection Permit Office (NWCPO) – www.nwcpo.ie.

A list of waste permitted facilities or waste licences within the region are available on the same website – www.nwcpo.ie.

3 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The CCT facility will operate from Ringaskiddy deep water port at Ringaskiddy, Cork. The Cork Container Terminal will initially offer a 360 metre quay with 13 metre depth alongside and will enable larger ships to berth in Ringaskiddy. The development also includes a 13.5 hectare terminal and associated buildings as well as ship to shore gantry cranes and container handling equipment.

3.2 Proposed Waste Categories

Port of Cork Company does not produce large waste volumes which mostly consist of consumable materials. It is anticipated that Cork Container Terminal will produce in or around the same volumes of waste as the current Tivoli Container Terminal. These waste types and volumes are listed in Appendix I attached.

The Port has responsibility for ships' waste under MARPOL. This is covered by a comprehensive Port Waste Management Plan. The Harbour Master is responsible for the implementation of this plan, a copy of which is available on www.portofcork.ie.

3.3 Waste Storage & Collection

The waste storage areas will be designated. Typical storage areas based on the PoCC experience at Tivoli will be provided.

Current Waste Contractors and Waste Streams

Greenstar? Panda:	General waste and Recyclables
Waste Recovery Services:	Timber
Enva Ireland Ltd:	Waste Oil, Empty Drums previously containing oil/coolant/paint), Solid Oily Wastes.
CTO Environmental:	Residual Cargo (fertilizers)
Rehab Enterprises Ltd:	Paper/ WEEE
Cork Metal Company Ltd:	Scrap Metal
KMK Metals Recycling:	Batteries
Irish Lamp Recycling:	LED/ Fluorescent lamps
Lehane Environmental:	Hazardous Waste Disposal

Only suitably permitted waste contractors will be used to remove waste materials from the facility.

3.4 Tracking and documentation procedures for off-site waste

The PoCC will maintain a copy of all waste collection permits. If the waste is being transported to another site, a copy of the waste facility permit or EPA Waste Licence for that site must be provided to the PoCC. All collection dockets, Waste Transfer Forms (WTF) and waste related documentation is collated into a waste data spreadsheet which is held electronically. Returns are made to the (EPA) Waste Statistics Office on request, for the compilation of National & European waste report.

4 CONCLUSIONS

By implementing this OWMP, a high level of recycling, reuse and recovery will be possible at the site. By segregating the waste streams at source, maximum diversion from landfill will be accomplished, thus achieving and improving on the targets set out in the National Policy Documents. Landfill diversion and waste recovery is a sustainable approach to waste management.

Please note that the PoCC is compliant with waste legislation, its SHEEQ Policy and Procedures (IPSEM) & ISO14001:2015 Environmental Management System.

Waste Management goals are set annually through the Environmental Management System-Annex B, Environmental Management Programme.

REFERENCES

1. Waste Management Act 1996 as amended by the Waste Management (Amendment) Act 2001.
 - Waste Management (Facility Permit and Registration) Regulations, S.I No. 821 of 2007 as amended 2008 (S.I No. 86 of 2008).
 - Waste Management (Collection Permit) Regulations S.I No. 820 of 2007 as amended 2008 (S.I No 87 of 2008).
 - Waste Management (Packaging) Regulations 2003 (S.I. No. 61 of 2003)
 - Waste Management (Licensing) Regulations 2000 (S.I 185 of 2000) as amended 2002 (S.I 336 of 2002)
 - Waste Management (Planning) Regulations 1997 (S.I. 137 of 1997)
 - Waste Management (Landfill Levy) Regulations 2002 (S.I 86 of 2002)
2. Protection of the Environment Act 2003 (S.I 413 of 2003)
3. Litter Pollution Act 1997 (S.I. No. 12 of 1997)
4. Southern Region Waste Management Plan 2015 – 2021
5. Changing Our Ways; A Policy Statement on Waste Management, 1998 Department of Environment, Heritage and Local Government
6. Preventing and Recycling Waste - Delivering Change, 2002, Department of Environment, Heritage and Local Government
7. Making Ireland's Development Sustainable – Review, Assessment and Future Action, 2002, World Summit on Sustainable Development
8. Taking Stock and Moving Forward, 2004, Department of Environment, Heritage and Local Government
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10. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC)
11. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC)
12. European Waste Catalogue and Hazardous Waste List, 2002, Environmental Protection Agency, Wexford
13. A Resource Opportunity, 2012, Department of Environment, Heritage and Local Government
14. The Waste Action Plan for a Circular Economy, 2020, Department of the Environment, Climate and Communications

APPENDIX 1: WASTE GENERATION 2020

General Waste & Recyclables:

General Waste streams comprise:- MSW (municipal mixed), Mixed packaging (100% recyclable), International Catering Waste (from ships), Glass (100% recyclable). The recycled percentage of total general waste varied between 3% and 11% across 2020. Mixed packaging is 100% recycled across all sites - Tivoli, Ringaskiddy DWB, Port Operations Cobh and Custom House.

General waste generated on site for 2020 totalled 75.27 tonnes of which 6.51 tonnes was recycled. Ships' waste (international catering waste) totalled 87.19 tonnes (53% of the overall total). For waste disposal from ships, all bins or skips are ordered on notification of the vessel's arrival and completion of 'Marpol' landing notification section of a Berth Request. The waste contractor will wait and remove the waste immediately. The practise of leaving unattended bins on the quayside is not permitted. These bins consist of dry mixed waste. This procedure is currently monitored by the Shipping Support Manager and audited under ISO14001:2015. [See Appendix 1 'What Panda does with your Waste']

Paper & WEEE

2,159 kgs of paper and 1,099 Kgs of WEEE collected in 2020 across all sites - 100% recycled.



Tivoli Maintenance Base (sulo bins)

Cardboard/Recyclables – 100% recycled

***Ringaskiddy Maintenance Base
General Waste & Cardboard/Plastics Sulo
Bins***



The Port Company operate large garbage compactors at Tivoli and Ringaskiddy Terminals for ship's waste. All other facilities, private and public are supplied with mobile bins and skips that are either removed to landfill sites when filled or are transferred to the port compactors which are emptied as required. ***[see Port Waste Management Plan (Marpol)]***



***Compactor for Ship's
Waste (see Port
Waste Management
Plan)***

Timber

11.8 tonnes, of timber was collected in (18cyd) skips from PoCC sites in 2020. 100% recycled. Waste is shredded by the Contractor, who then sends the waste for recovery to composting or fuel, some of which is exported abroad to be used as fuel.



Timber Skip, Tivoli Maintenance Base
100% recyclable

Waste Oil/Solid Oily Wastes:

Waste Oil tanks are provided in Tivoli and Ringaskiddy. 7,966 litres of waste oil was collected during 2020.

Sulo bins are provided for solid oily waste, oil filters and paint tins, a database is held electronically [See Appendix II]. Quantities as follows:-

Solid oily waste (oily rags): 2,524 kgs

Filters/Hoses: 5,255 kgs

Paint Cans: 487 kgs.



Solid Oily Waste
(sulo bin) -Tivoli



(sulo bin) Paint Tins
- Tivoli



(sulo bin) Oil Filters -
Tivoli



Oil drums (bunded pallets)
Tivoli Maintenance Base



Waste Oil Tank
Tivoli

Flourescent Tubes:

In 2020, 153 kgs fluorescent & LED tubes collected from Tivoli - 100% recycled. There was no collection from Ringaskiddy during the year.



Fluorescent Tube Coffin - Tivoli

Scrap

43.26 tonnes of scrap metal was collected in 2020, which comprised 32.36 tonnes from a 'scrapped' Straddle Carrier.

Residual Cargo:

Residual cargo is collected in a dedicated waste area at Ringaskiddy DWB, loaded into on-site trailer and sent for composting (100%), 756.92 tonnes composted during 2020.

Tyres:

On replacement of tyres, a visible Environmental Management Cost (vEMC) is paid, in line with Government Regulations to ensure legal disposal of tyres by producers/suppliers.

Interceptor Wastes;

65.4 tonnes of debris and waste ('sludge') was collected from interceptors in Tivoli, Ringaskiddy and Hugh Coveney Pier, Crosshaven in 2020. All interceptor wastes are delivered by Contractor to an authorised hydrocarbon disposal facility (Rilta Environmental). Interceptors are inspected at 6-monthly intervals.

APPENDIX II: WASTE DATABASE 2020- Waste Generated On Site

Company Name	Docket No.	Weight (Tonnes)	Quantity kgs / no.	Description
Rehab Recycling (spreadsheet at year end)				
Tivoli			779	WEEE
Tivoli			1715	Paper
Ringaskiddy			589.5	WEEE
Custom House			444	Paper
Custom House			320	WEEE
TOTAL TONNAGE REHAB:			3847.5	
Greenstar (NWCPO-13-11193-05) [online portal]				
Lehane Environmental				
NWCPO-08-04574 -04	CC025952	300 litres	2 x 150 L @ €180	Lead & zinc residue (spill)
KMK Metals Recycling Ltd	WTF C042980			Lead batteries
NWCPO-08-10607-03				
Enva Ireland Ltd (Portlaoise)	WTF C044218	660 L		solid waste contaminated with hydrocarbons / oily rags
NWCPO-08-01116-03				
	WTF C044216	3 x 660 L	3 No. bins	solid waste contaminated with hydrocarbons
	WTF CC24038	2 tonnes		Waste oil from Tivoli waste oil tank
	WTF C045243	1,100 L		Waste Oil from Ringasaskiddy
Veh. Reg. 06 LS 2931	WTF CC024041	1 tonne	3 No. bins	660 L bin of paint cans - waste

				660 L bin wheelie bin for solid waste contaminated with hydrocarbons
				2 x 240 L Filter bin
Veh Reg 04 D 56169	WTF CO46318		2 x 1000 bags	Soils and stones
			4 x 205 litre	solid waste containing flammable liquid
			1 x 120 litre drum	Aerosols
			1 x 205 litre	Waste Paint
			2 x 660 litre bin	Solid waste with hydrocarbons
			1 x 660 litre bin	waste paint
			2 x 240 litres	Filter bin
04D56169 (curtain slider)	WTF CO46489	1		absorbant filter material
				Oil Filters
	WTF 47101		1 X 1100 Litre Bin	hoses
			1 x 660 litre bin	Paint cans- waste
04D 56169 (curtain slider)	WTF CO47101		1 x 660 ltr bin	Solid waste with hydrocarbons
04D 56169 (curtain slider)	WTF CO47933		1 X 1100 L hose bin	Hoses - Tivoli
			660L Wheelie bin	Solid oily waste Tivoli
04D 56169 (curtain slider)	WTF CO47934		660L Wheelie bin	Solid oily waste - Ringaskiddy
06LS3205	WTF CO48310	3,000	3,000 l	Waste Oil
	Dispatch No. 01684			
	WTF CC25352		1,000 L	Waste Oil
See Enva end of year report	TOTAL 2020	7966 l		Waste Oil
		880 l		Waste Diesel
		607 Kgs		Paint Cans
		50 Kgs		Aerosols
		5244 kgs		Solid Oil Wastes

Waste Recovery Services		18.5 cyd Skip	tonnes	Wood Waste
NWCPO-09-04602-02				
			1.7	
Veh Reg 10C43778	WO-089499		1.5	
Veh Reg 10C43778	WO-102426		1.48	
Veh. Reg. 132. C. 5268 (Brian)	WO- 103782		1.62	
Veh. Reg. 132. C. 5268 (Brian)	WO-106761		1.78	
Veh. Reg. 132. C. 5268 (Brian)	WO-108273		1.4	
Veh. Reg. 132. C. 5268 (Brian)	WO-110001		2.32	
	TOTAL :		11.8	
Cork Metal Co.	45560			Iron Shred / Oversize steel
NWCPO 16 - 11798-01	Delivered POC	10.9		Scrap From LHM250 tower
	47822			Commercial Skip
		32.36		Scrap from SC16 (Legs)
	TOTAL:	43.26		
CTO Environmental Solutions				Spent Ration/ Organic Waste
NWCPO-15-11601-01	1819	22.46		
	1856	18.46		
	1857	15.43		
	1862	21.46		
Inv. 164992	1872	19.14		
	1929	22.08		
	1873	18.74		
	1890	28.46		
	1938	18.68		
	1972	14.98		
Inv. 165050	1986	15.46		
	1994	17.86		
	1999	14.56		
	17861	20.24		
	17869	19.26		
Inv. 165101	17873	14.64		

Inv. 165162		84.19		
Inv. 165114		126.46		
	2090	16.48		
	2112	19.58		
	2118	15.86		
	2174	16.32		
Inv. 165204	2178	16.82	85.06	
	2203	16.48		
inv 165248	2240	18.78	35.26	
Inv. 165272	2278	19.46		
	2281	17.86		
	2299	17.42		
	2308	16.48		
	2351	25.66	96.88	
Inv. 22323	35476	14.68		
	35480	12.48		
	TOTAL 2020	756.92		
Irish Lamp Recycling Ltd.,				
NCWPO-08-01115-03	94742			
Veh Reg 191KE959	WTF CC023126	153	2 x steel bins	Flurourscent tubes & LED Lamps
	TOTAL 2020	153		
Company Name	Docket No.	Weight (Tonnes)	Quantity kgs / no.	Description
AQS Environmental Solutions				
Veh Reg 171T3060	WTF C047677	13.52		Crosshaven
Veh Reg 171T3060	WTF C047671	28.02		Tivoli
Veh Reg 171T3060	WTF C047513	22.88		Ringaskiddy
			(Invoiced) 50.9 t	Interceptor sludges 0 - 3% solids
			(Invoiced) 14.5 t	4 - 15% solids
	TOTAL 2020	65.4		

Appendix H

POCC SAMPLE PROCEDURES



SAFETY & ENVIRONMENT PROTECTION MANAGEMENT SYSTEM

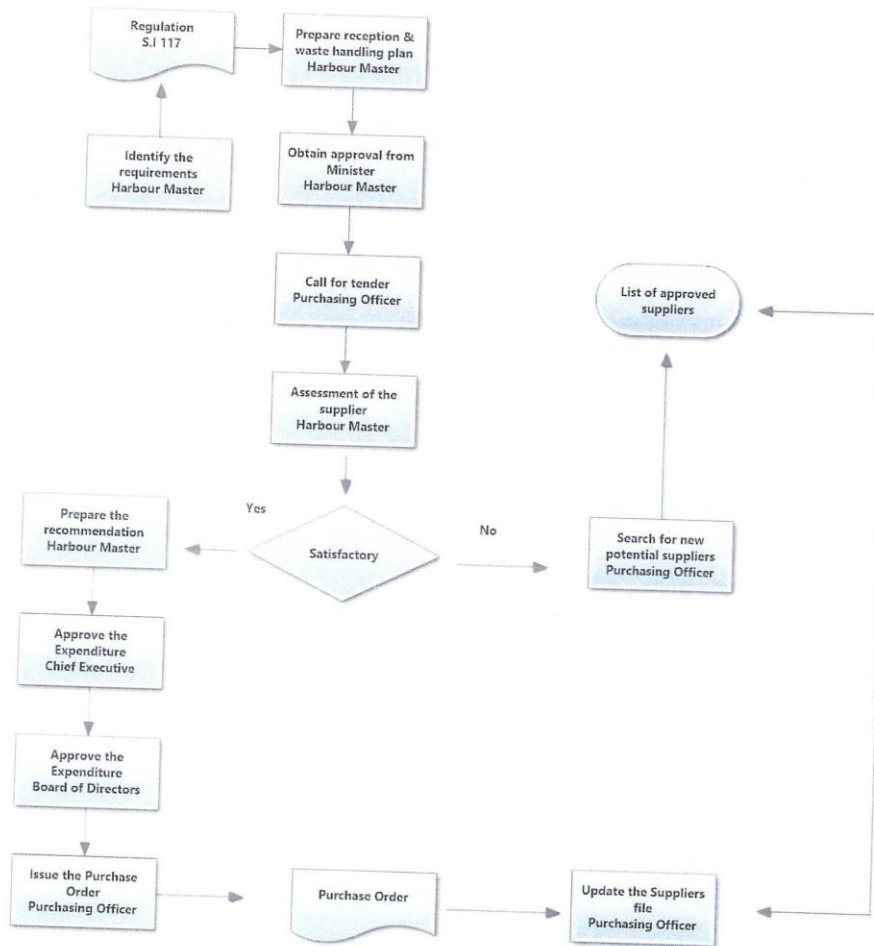
Port Authority Procedures Manual

Issue

23/09/2021

07.18 Procedure to implement Port waste reception regulation

Procedure to implement port waste reception regulations SEMS 07.18



07.18A Procedure for waste disposal for Ships

**Procedure for Waste Disposal from Ships
From the 1st November 2006**

- The "Marpol" Landing Notification Section on the Port of Cork Berth Request must be completed. This is a statutory requirement and non compliance may lead to the detention of the vessel.
- All waste disposal requirements from Green Star Contractors must be ordered through the Senior Berthing Master, Port of Cork.(086 2516676
- All bin or skip requirements must be ordered before 1200 hours on the previous day in order to guarantee a service from the Contractor. Any order received after the above period cannot be guaranteed.
- Bin or Skip orders will no longer be accepted by the Contractor from the Ships Agent or Operator.
- When the bin is delivered to the vessel by the Contractor, the ship's crew shall dispose of their waste immediately. The waste contractor will wait and remove the waste immediately. The practice of leaving unattended bins on the quayside is no longer permitted.
- Vessels are not permitted to leave their waste on the quayside. Any vessel doing so will face an immediate fine and be prosecuted.
- No direct service is available on a Sunday.

07.18B

Procedure to Deal with Damaged Bins for ICW

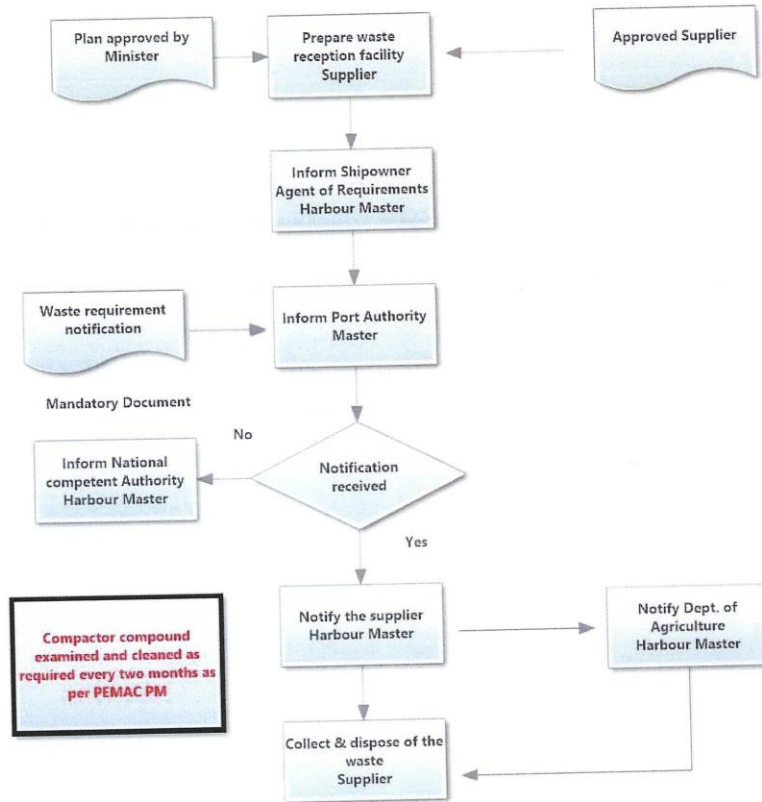
Procedure to Deal with Damaged Bins for ICW

- All damaged bins are stored in the Recycle compound in Ringaskiddy DWB.
- We there are a number of bins in the compound they will be repaired using usable parts from one to the other.
- Any bins or parts that are not repairable will be disposed of by Greenstar.

07.19 Procedure to operate the waste reception and handling plan

Procedure to operate the waste reception and handling plan

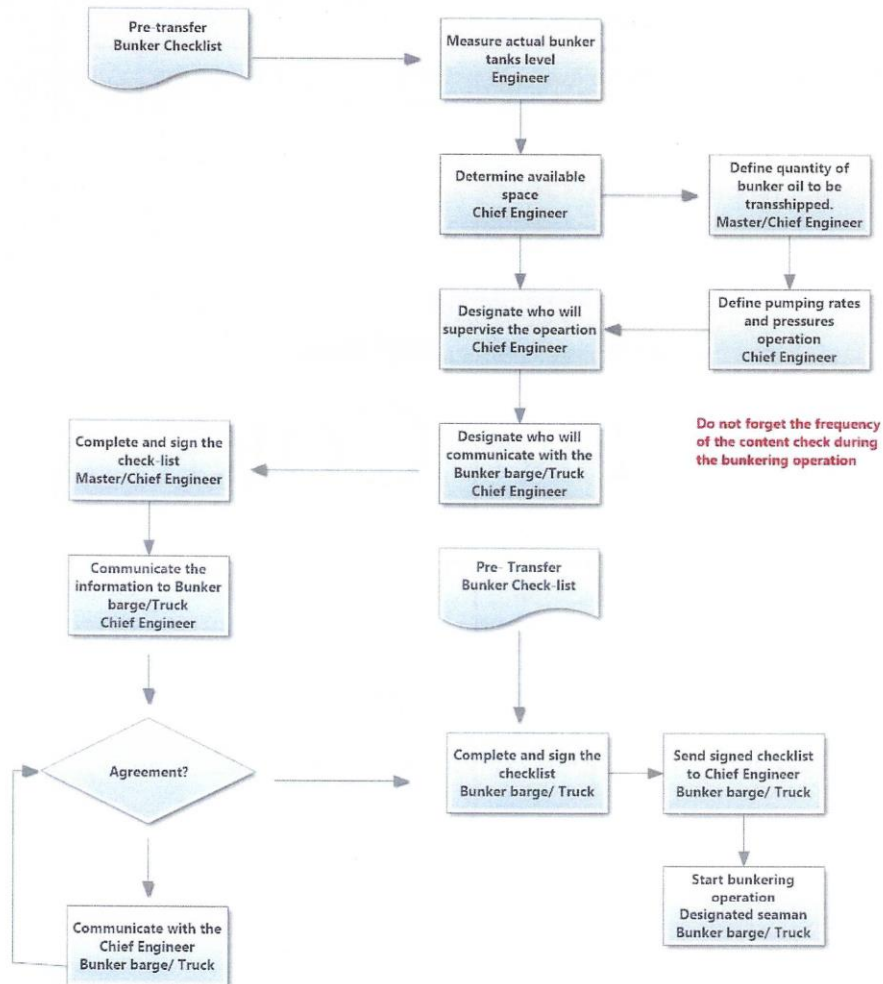
SEMS 07.19



07.15 Procedure to ensure safe Bunkering Operation

Procedure to ensure safe bunkering operation

SEMS 07.15



Plans for port operations

07.16 Bunkering Operation by Bunker Vessel (STS)

Document Reference	SEMS 07.16	Revision	
Title	Bunkering Operation by Bunker Vessel (STS)	Issue Date	13/10/20



Port of Cork Company
Bunkering Operations by Vessel (STS)

Issued by: Harbour Master

Contact: email: harbourmaster@portofcork.ie

Phone: +353 (0)214273125

Plans for port operations

1. Introduction

Port of Cork Company (POCC) implements the following minimum standards for vessels requesting to bunker other vessels via bunker tanker/ barge. The procedures herein will apply to the bunkering vessel / operator and receiving vessel / operator.

The Harbour Master will review each initial application for bunkering and issue permissions or further requirements, as necessary. The Harbour Master's decision will be final on such issues. The instructions of the Deputy / Assistant Harbour Master and VTS are to be deemed as Harbour Master's instructions.

All ship owners, bunker suppliers and bunker vessel operators whose vessels are authorised to operate in the Port of Cork Port should ensure their employees adhere to the procedures and requirements stipulated in the code during every bunkering operation. In order to gain authorisation to undertake bunkering operations within the port, each prospective bunker operator shall seek permission from the Harbour Master. Bunker vessels will be subject to a dynamic risk assessment and berthing trial by a member of the Harbour Master team or Port of Cork safety team. All resulting control measures shall be put into place by the Owner / Operator / Master as appropriate prior to operations commencing.

1.1 Definitions

For the purpose of this Code, the following definitions shall apply:

Bunker Vessel: An authorised bunker vessel supplying bunkers to the receiving vessel.

Bunker Oil: Any hydrocarbon mineral oil including lubricating oil which is carried by a ship and used or intended to be used for the operation or propulsion of that ship and any residues of such oil.

Bunkering Operation: the transfer, between ships, of a substance consisting wholly or mainly of oil for consumption by the engines of the ship receiving the substance.

Bunker Supplier/Representative: The registered bunker supplier or representative responsible for the delivery and documentation hereafter referred to as the Supplier.

Bunkers: Marine Fuel Oil (MFO) or Marine Diesel Oil (MDO) or Marine Gas Oil (MGO).

Cargo Transfer: The transfer between two ships of a substance consisting wholly or mainly of oil which is transported by either or both of the ships for reward (including where bunker

Plans for port operations

fuel is carried as cargo) between ships. Such transfers can only take place with the express written permission from the Harbour Master.

Harbour Master (HM): Harbour Master, or delegate of the Port of Cork Company

Ship's Representative: The ship's officer responsible for receiving bunkers and documentation

SOPEP: Shipboard Oil Pollution Emergency Plan

SMPEP: Shipboard Marine Pollution Emergency Plan

Vessel: The vessel receiving bunkers.

2. General

1. Suppliers shall comply at all times with all the provisions of MARPOL Annex I Regulation 13H (7), the ISGOTT Manual and the ISM Code. They should be familiar with the above provisions and ensure that their employees and contractors both understand and apply them.
2. Suppliers will ensure that their bunker tankers hold an up to date copy of the ISGOTT manual on board at all times.
3. The Supplier may not act or purport to act on behalf of POCC or to represent it in any way. The supplier is not an agent or employee of the POCC. POCC shall not be liable, vicariously or otherwise, for the acts or omissions of the bunker supplier.
4. The Supplier acknowledges and agrees that POCC may disclose any or all of the information provided by the bunker supplier to law enforcement, government and regulatory agencies and the supplier releases and indemnifies POCC from and against all losses, claims, damages, costs, liabilities, actions and causes of action arising out of or in any way connected with the disclosure or release of any information provided by the Supplier to such bodies.
5. The Supplier shall comply with all relevant POCC management systems, policies, bye laws, port charges, procedures, orders, notices to mariners and any such other directions issued.

Plans for port operations

3. Environmental Context

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) as protected under EU Law and Irish Legislation.

3.1 Special Areas of Conservation (SACs)

These are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. Most Special Areas of Conservation (SACs) are in the countryside, although a few sites reach into town or city landscapes, such as Cork Harbour. Conservation management plans are available for many SACs and as additional ones are approved they will be posted.

The legal basis on which SACs are selected and designated is the [EU Habitats Directive](#), transposed into Irish law by the [European Communities \(Birds and Natural Habitats\) Regulations 2011 \(S.I. No. 477 of 2011\)](#), as amended.

4. Policy Requirements

In order to be considered for permission to undertake bunkering operations within Port of Cork the following will be the minimum standards:

- a) Bunker operators must use an approved ships agency company or apply to POCC for an agency status. Such a status will require the operator to have a local office or status and comply with the credit / finance requirements.
- b) Vessels that have not made the relevant per-arrival declarations via the Safeseas system will not be permitted entry to the jurisdiction. See Notice to Mariners No.1 of the respective year which is available on the POCC website.
- c) Bunker vessels will be charged in accordance with the published POCC schedules of charges. These include Tonnage Dues and Charges on Goods for the relevant grade of transferred oil.
- d) All vessels must comply with the Port Company's current Notices to Mariners. Special attention is drawn to the notices relating to standard operating procedures, booking of pilots, tugs or other services, safe access and pilot boarding.
- e) Bunker vessels will only be permitted to come alongside oil berths or vessels to be bunkered. Arrangements for storing, crew changes and the landing of ships waste must be in compliance with these berth assignments.
- f) Port of Cork Company will only accept the highest safety and environmental standards of proposals for consideration and such proposals must have a multi-layer containment capability to protect against the release of oil to the environment.

Plans for port operations

- g) Bunker operators must submit a proposal to the Harbour Master outlining the mooring arrangements, operational procedures, risk assessment, pollution control measures, emergency procedures and equipment details.
- h) Bunker vessels will be required to use oil booms during every operation. Operators must be self-sufficient in the supply and rigging of boom equipment. POCC owns and operates workboats and booms for emergency response but these must not be relied on by an operator for anything other than an urgent situation.
- i) Any release of oil to the environment may warrant a third party response to a Tier 2/3 response level. The bunker operator must have arrangements for such a third party response.
- j) Dependent on the proposed location of a bunkering operation within the Port it may be necessary for the Harbour Master to impose speed restrictions on passing vessels during a particular bunkering operation. If such speed limits hamper the safe manoeuvrability of other vessels to an unacceptable extent, bunkering operations shall not be permitted as it introduces an additional and unacceptable risks to other port users. Examples of such cases may be during conditions where the wind speed results in the speed limit adding to the overall risk of the port operations.

5. Health, Safety and Environment

- a) Bunkering operations must be performed diligently, safely and without deliberate or undue delay.
- b) During operations the Supplier shall ensure that all necessary measures are taken to prevent fuel spillage into the waters of the Port, or onto the quayside. This to include as a minimum a means of booming off the space between bow and stern of the bunker barge and the receiving ship. A SOPEP detailing all spill and pollution control measures must be submitted to POCC upon request.
- c) The Supplier shall have written safety, health, environment and quality programs in place at all times and shall make these available to POCC Harbour Master for inspection upon request.
- d) The Supplier shall undertake annual risk assessments of the bunkering services that it offers within the Port and shall make these available to POCC, HM for inspection upon request.
- e) Any injury, or fatality, shall be immediately reported to the POCC, HM and to any applicable statutory body within the required time-frame.
- f) Any incidents or accidents arising out of the bunkering operations that may impact in any way on the environment shall be reported immediately to the POCC, HM by the Vessel/Bunker Tanker
- g) Master of Vessel – In the event of a spill / loss of containment, the following information must be provided as a minimum:

Plans for port operations

- i. The location of the spill;
 - ii. The type of oil spill;
 - iii. The approximate quantity;
 - iv. The immediate action taken;
 - v. Preventative measures put in place.
 - vi. Completion of POLREP form (see appendix)
-
- h) Any release of oil to the environment may warrant a third party response to a Tier 2/3 response level. The bunker operator must have arrangements for third party response.
 - i) All incidents shall be fully investigated by the Supplier and a written report shall be submitted to the Harbour Master within 7 days of the incident taking place.
 - j) The manifold(s) of the bunker vessel shall be fitted with a save-all to contain any oil spill. A gutter plate shall also be provided on the main deck to contain any oil spill on deck.
 - k) Bunker hoses shall be supported by a catchment tray placed between the vessels so as any hose leak is contained within the tray and collected by the bunker vessel.
 - l) The bunker vessel shall be provided with an adequate fender system which minimises damage to the receiving vessel during bunkering.
 - m) The bunker vessel shall carry anti oil-pollution equipment, absorbents at all times. Note: Oil spill dispersant may not be used without the prior approval of the Irish Coast Guard.
 - n) The bunker vessel shall be of double hulled construction.
 - o) Bunkering during the hours of darkness may only be undertaken following the receipt of written approval from the Harbour Master.

6. Bunker Operations Agreement for Scheduled Ferry Services

Scheduled bunker operations for ferries shall be subject to a joint risk assessment and are to have a detailed set of operating procedures, including wind limitations, agreed between the supplier, the barge/tanker operator, the receiver and the POCC.

Approval in writing must be given by the Harbour Master before the commencement of any agreement for scheduled bunker operations by any supplier.

7. Bunker Operations for Commercial Vessels

Vessels intending to bunker other commercial vessels must provide details of the bunker door position and mooring plan to the Harbour Masters Office in advance and before the bunker vessel booking is confirmed in order to properly prepare a plan. Berthing of the bunker vessel shall not be permitted until the application has been approved by the Harbour Masters Office. On granting

Plans for port operations

approval the HM shall direct each vessel to an appropriate berth, or receiving vessel, depending on operational exigencies, the prevailing and expected meteorological conditions.

8. Employees

Only employees with the applicable training as required by the appropriate flag state may be utilised by the bunker supplier.

All personnel shall don as a minimum the following PPE:

- Safety goggles (where applicable)
- Safety footwear
- Hard hat
- Gloves (where applicable)
- Any other relevant Personnel Protective Equipment as deemed appropriate

9. Insurance

The Bunkers Convention 2001 establishes strict liability on ship owners for preventative measures and pollution damage arising from all types of oil used in the operation of propulsion of ships. The Convention is transposed into Irish Law under: S.I. No. 83/2005 - Oil Pollution of the Sea (Civil Liability and Compensation) (Amendment) Act 2003 (Commencement of Certain Provisions) Order 2005

<http://www.irishstatutebook.ie/eli/2005/si/83/made/en/print?q=Oil+liability>

- a) Owners of ships carrying more than 1,000 tonnes of persistent oil in bulk which trade into a State Party to this Convention are required to maintain insurance to cover their limit of liability.
- b) Vessels are not permitted to enter or leave Port of Cork unless they carry a valid certificate in respect of insurance under the Bunker Convention.
- c) Upon request, the Supplier shall produce the certificate to POCC.

Plans for port operations

10. Equipment

- a) All Bunkering equipment required for the bunkering operation shall be maintained in good order and condition.
- b) All bunkering equipment must be in proper working order and machines and motor vehicles must be inspected regularly for oil leaks and spills. Drip trays must be utilised where necessary. Any spills detected must be cleaned up immediately and disposed of at an appropriate landfill site by the Company to the satisfaction of the Port and the competent authorities.

11. Motor Vehicles

Each motor vehicle used by the Supplier in the Port shall bear the name of the supplier in a conspicuous place on such motor vehicle, or as the Port may from time to time stipulate.

12. Oil Spill Response Procedures

All vessels must maintain on board sufficient oil spill response equipment to respond effectively to the most likely types of spills that could occur during normal operations. An adequate number of personnel to assist in deployment of emergency equipment must also be available. Oil spill dispersants **cannot** be used without prior approval from the Marine Survey Office / Irish Coast Guard.

Spill response procedures outlined in the bunker vessels and receiving vessels SOPEP should include:

- a) Method of raising the alarm.
- b) Responsibilities of personnel on board.
- c) Action to minimise or control the spill.
- d) Method of cleaning up the spill.
- e) Equipment to be used in controlling and cleaning up the spill.
- f) Method of informing appropriate personnel and agencies of the spill and subsequent action taken.
- g) Any release of oil to the environment may warrant a third party response to a Tier 2/3 response level. The bunker operator must have arrangements for a third party response.

Plans for port operations

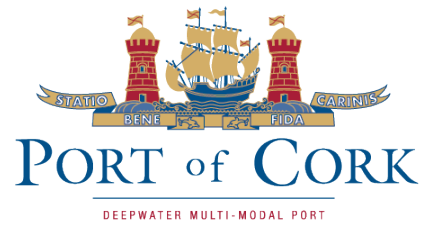
13. Reporting

The master of a ship must report a discharge or probable discharge of any pollutant without delay.

Port of Cork operations centre to be notified immediately in the event of any pollution incident and it can be contacted by VHF on channel 12 at all times.

Notification via VHF is to be followed by the completion of a POLREP (Pollution Report) form (see appendix)

APPENDIX 11.3 OUTLINE CEMP



Outline Construction Environmental Management Plan

Ringaskiddy Port Redevelopment

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1.0 Introduction

1.1 Overview and Objectives of the CEMP

This Outline Construction Environmental Management Plan (CEMP) plan has been prepared to outline how contractors will manage environmental aspects of proposed works on the Ringaskiddy Port Redevelopment.

1.2 Nature and scope of work:

Ringaskiddy East (Container Berth 2)

- Construction of the remaining phases of a 200m Container / Multi-purpose Berth which are not completed by 20th October 2025. The container berth is under construction and being developed in four phases (1. Combi wall quay wall, 2. Concrete deck piling, 3. Structural slab and 4. Upper slab and yard surfacing),
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)
- Installation of link-span comprising a floating pontoon and access bridge
- Installation of container handling cranes
- Lighting and Fencing

Ringaskiddy West (Deepwater Berth Extension):

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB
- Dredging works to varying levels to facilitate navigational access to the new facilities
- Lighting

Road Improvements:

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28
- Lighting and fencing

1.3 Existing Environment

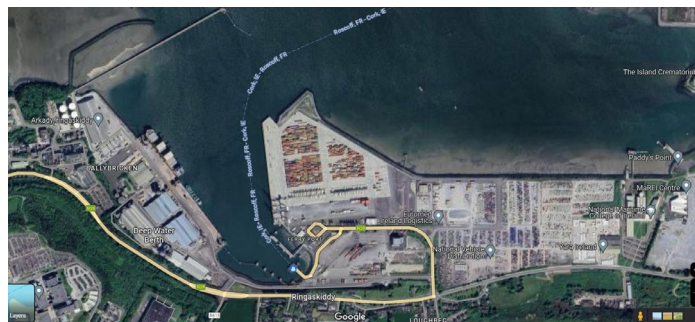


Figure 1 – Existing Port of Cork, Ringaskiddy Site overview

1.4 Project document references

A Site Environmental Management File (EMF) will be prepared for the project detailing the means by which the protection of the environment and compliance with legislative and other requirements will be met, in particular:

- EIAR
- NIS
- Planning Documentation and Drawings
- Tender Documentation
- Foreshore consents
- Waste Classification Report
- Environmental Risk Register

We also ensure adherence to guidance from all specialists:

- Marine Mammal Observer
- Ecologists
- Noise and Vibration Specialist (As required)
- Archaeologists

2.0 Environmental Project Management

The CEMP forms part of the overall project management documentation for the project and as such the activities described will be integrated with the Contractor's other management processes such as environmental management, sustainability training, quality management, emergency procedures and health and safety training.

Environmental responsibilities and duties will be undertaken by various personnel throughout the duration of the project.

2.1 The objectives and targets of this outline CEMP are:

- Adherence to all EIAR, Planning Conditions, Foreshore Consents, Permits and client specifications and requirements
- To set out the responsibilities, roles and key actions required for the successful implementation of best practice environmental management on the project
- Set out the responsibilities of the Site Team
- Management the Environmental Management and control measures in line with the contract Biodiversity Plan, Monitoring plan, Invasive Species Management Plan, specialist guidance and guidelines
- Adhere to Energy Efficiency and Sustainability plans
- Sustainable construction (Inline with UN SDGS, Company policies and procedures)
- Reduce emissions and negative impact on the environment
- Circular Economy Considerations and waste reduction through correct resource management
- Biodiversity Security and net gain

- Detail training and awareness programme to be carried out on the contract
- To maximise potential benefits of the proposed works
- To identify potential negative impacts and put control measures in place
- To set out specific mitigation measures for these impacts
- To provide guidance on compliance with accepted best practice standards
- To inform all parties of environmental sensitivities of site
- To guide works toward best environmental practice
- To provide protection of the site and environs during and after works
- Proposal on plans for monitoring on site
- Detail auditing and inspection requirements
- Detail the management of contract records
- Management of Non-Compliances and Enduring corrective actions and continual improvements.
- Proposal on the management of sub-contractors
- To ensure compliance with accepted best practice standard

2.3 Key roles and responsibilities for Environmental Management on the project are shown below:

Team Member	Responsibilities
Contractors Lead: General Responsibilities	Assume role of a Project Environmental Representative Overall responsibility for environmental management on the site Ensuring there is regular communication with the Client and relevant statutory and non-statutory bodies on environmental matters as necessary.
Environmental and Sustainability Manager:	Hold responsibility for the development, updating and reviewing of the CEMP throughout the construction period Advising the construction team and workforce on best practice to minimise the impact of the works on the environment Ensuring the environmental and sustainability procedures are adequate & appropriate Ensuring the environmental and sustainability procedures are adhered to on site First point of contact for the client in relation to Environmental aspects Chair regular meetings of the environmental team and site management Keeping stakeholders informed of ongoing activities that may affect them

	Logging stakeholder enquiries/complaints & deal with directly or pass to the relevant party for action Ensuring adequate environmental protection measures are included in method statements Ensuring there is a regular review of the environment commitments with the Site Engineers and Foremen Ensuring adequate environment briefings are carried out prior to all activities Carry out regular Inspections and Audits on site Ensuring appropriate Toolbox Talks are given to the workforce as required Management of resources / waste on site and updating of the site waste management plan. Assume the role of Environmental Co-Ordinator, acting as the focal point of contact for all environmental issues on site The delivery of environmental training, as necessary to the workforce Manages environmental specialists Monitoring compliance of construction activities with the CEMP & environmental legislation/licences.
Site Engineers	Managing method statements and work plans in relation to environment aspects, and ensure that method statements & control measures are implemented to protect the environment we are working in Contribute in developing the CEMP; Implementing any on-site actions required from audits or other environmental observations Monitoring and supervising construction activities.
Foremen	Supporting the Environmental Manager in delivery of the environmental components of the works Recording the progress of environmental works Monitoring/supervising construction activities

	Carrying out audits as required by the CEMP. Implementing any on-site actions required from audits or other environmental observations Deliver Toolbox Talks on environmental issues
Environmental Specialists	Specialists such as ecologists, marine mammal specialist, Archaeologist, Noise and Vibration Monitoring, Water Quality Monitoring give guidance on special areas of works
Ecologist	Give guidance on all works on site Control measures to be advised for works on site Approve lighting plans for works
Marine Mammal Observer	Observes works on site to protect all marine mammals in water adjacent to works
Waste Duty Holder	Waste Management will be carried out in accordance with the project specific procedure. A Minimum of two Waste Duty Holders shall be trained and appointed for the duration of the project. Their responsibilities include: Correct handling of all waste management documentation Where appropriate, ensure sub-contractors method statements include waste disposal methods Make him/herself aware of legislation, codes of practice, guidance notes and good environmental working practice relevant to his work. Take advice from the Environmental Advisor in these circumstances Carry out audits on subcontractors waste management practices Ensure waste on site is stored and handled correctly Ensure waste is segregated and skips labelled correctly Carry out checks on waste carriers and disposal sites Source to Destination checks on waste Retain Waste Transfer Notes (WTN) and Hazardous Waste Consignment Notes (HWCN) in waste file for requisite period post-construction Ensure completion of the project waste register.
Employees	Comply with directions and requirements given in the site induction Proactively approach environmental issues whilst on site Report any environmental incidents/near misses immediately to the supervisor or SHQE Advisor Carry out all activities in line with the environmental procedures and requirements detailed in the EMP.
Sub - Contractors	Comply with directions and requirements given in the site induction Follow control procedures as instructed

	Be inducted on site Environmental Management at induction stage Be issued SH Plan , Environmental Management plan at time of appointment and their responsibilities on site Carry out all activities in line within environmental procedures and requirements detailed in the EMP Report any environmental incidents/near misses immediately to the Project Manager or SHQE Advisor. Be audited for Environmental Compliance
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2.4 Environmental Management System Policy, Scope and References

Insert as appropriate

2.4.1 Environmental Policy

Insert as appropriate

2.4.3 Energy Policy

Insert as appropriate

2.4.4 Sustainability Policy

Insert as appropriate

2.4.5 Summary of Environmental Actions and Documents

- Environment Policy**
 The Environmental Policy will be displayed where appropriate and communicated.
- Energy Policy**
 The Energy Policy will be displayed where appropriate and communicated.
- Sustainability Policy**
 The Sustainability Policy will be displayed where appropriate and communicated.
- Environmental Appointments**
 All environmental processes will be dealt with by the site team with support from the SHEQ Advisor.
- Aspect and Impacts Control Register**

The Aspect and Impact register template identifies all environmental aspects and impacts and identifies mitigation measures. These measures will be delivered in form of toolbox talk, client progress meetings, inductions etc. This register will also identify responsibilities for individual mitigation measures.

- **Waste Management Planning**

The Site Waste Management Plan will detail the project waste targets and responsibilities for waste disposal. All waste transfer document e.g. transfer notes/ consignment notes will include the European Waste Code of any waste transfer being made. A list of all permit/ consents/ exemption and licences must be maintained and kept in the Environmental management file.

- **Objectives & Targets**

The Environmental Objectives & Targets are agreed by the senior management and this must be adhered to. All operations will align themselves with these objectives.

- **Emergency Response/ Action Plans**

For each project, potential emergency situations or accidents will be identified with appropriate action plans prepared. This is written in the emergency preparedness and response document which must be communicated and periodically tested, reviewed and modified as appropriate.

- **Environmental Monitoring, Measuring, Inspection & Audit**

Specific monitoring arrangement, where appropriate, will be identified within the CEMP (e.g. water quality sampling, dust monitoring etc.). A regular review of all applicable permits/ licences e.g. waste carrier/ management licences shall be made for legal compliance. Bi - weekly inspection will be completed on the standard HS&E template forms.

- **Non-conformance, Corrective & Preventive Actions**

Non-Conformances will be captured on site and records of same will be populated for tracking. Corrective and Preventative actions will be put in place to prevent reoccurrence on site.

2.5 Environmental and Sustainability Training, Awareness & Competence

All personnel will have the appropriate awareness and competence to meet the requirements of the Environmental and Sustainability Management Process.

- Personnel fully aware of the Environmental Policy and Energy Policy
- Personnel fully aware of potential environmental impact of their work and associated environmental issues
- Energy Management training
- Sustainability training
- Individually and collectively, personnel are committed to leading environmental management and practices
- Effective communication within the organisation on any environmental issues
- Training and Awareness of works and control measures from specialist and stakeholders (EPA, MARA, NPWS, Planning Authority)

2.6 Summary of Environmental Management Process

The Environmental Management Process defines the environmental management requirements and provides links to other key documents defining the systems, controls and forms to be used.

The responsible Site Manager or Agent will ensure all external organisations responsible for any works which could have an environmental impact on their site are involved in the Site Waste Management Plan for the project including a review of their management documentation such as risk assessments and method statements.

2.7 Environmental Records

In order to demonstrate compliance with legal and other stakeholder requirements, and with the Environmental Management Plan, it is essential that all appropriate records are maintained.

2.7.1 Example of records to be kept on site:

- Sampling and Monitoring records
- Stakeholder and Specialist Communications Records
- Environmental Incident Form
- Monthly Environmental Compliance Reports
- Environmental Training Records
- Register of environmental training
- Register of environmental complaints
- Corrective Action Reports
- Environmental inspection and audit reports
- All monitoring data (electronically in Excel)
- Waste Record Sheets
- Safety Data Sheets
- Chemical Inventory
- Energy Usage
- Water sampling records
- Aspects and Impacts Assessments

2.8 Environmental Incident Reporting

Any unplanned event that harms, or has the potential to harm, the environment or breaches environmental legislation/ requirement must be fully investigated in accordance with the investigation and reporting procedures.

2.9 Communication

2.9.1 Internal Communication:

Each site shall put in place the appropriate mechanisms to ensure that internal communication and awareness on Environmental awareness and management between the various levels takes place regarding but not limited to:

- *Site Inductions (Including planned control measures around the biodiversity value of the surrounding landscape, particularly working adjacent to water)*
- *Shine training and quizzes*
- *The Aspect and Impacts register*

- *Environmental complaints and Incidents*
- *Change in the Environmental Management System*
- *Audit results and trends*
- *Results of management review*
- *Feedback on site inspections and audits*
- *Part take in environmental work shops and campaigns on site*
- *Objectives and Target results*
- *Toolbox talks & Workshops*

2.9.2 External Communication:

This will include consultation with, but not limited too:

- National Park and Wildlife service
 - Cork County Council
 - Ecologists
 - Marine Mammal Specialist
 - Archaeologist Specialist
 - Water Quality Monitoring companies
 - Noise and Vibration Monitoring companies
 - Harbour Master
 - Inland Fisheries Ireland

3.0 Biodiversity and Habitat Security

All planning of works will be in line with UN SDG 14 & 15, the Sustainability Policy, Biodiversity action plan, Biodiversity Net Gain plans and Ecological Impact process plans. During planning stages of the contract we will also make considerations for programming of works to adhere to environmental EIAR control measures and planning conditions. Works will be programmed to ensure all these conditions are adhered to. Design will be carried out with views of reducing the footprint of the works and reduce the need for raw materials extraction on site through suitable construction methodologies.

Ahead of works we will carry a pre-construction biodiversity/ecological assessment to gather a data baseline on the existing variety of plant, nesting birds, bats, animals, marine life within the habitats of the site. We also need to identify special areas of conservation and special protected areas that need additional control along with any invasive species that may be present. The pre-construction site assessment will also aid us on the preparation of site construction environmental management plans, aspects and impacts risk assessment, surface water management plans and site invasive management plans. Ecologists will be involved in the review of methodologies and construction methods planned for works.

Restoration plans will include landscaping plans taking guidance from the 'All-Ireland Pollinator Plan' and 'Business for Biodiversity Ireland'. Through these plans we want to ensure that restoration is meaningful and robust to have nature-positive impacts in the areas we work in. Restoration plans will include strict planting guide timelines to ensure the quick reestablishment of the site and start the net gain process. The restoration plan will be monitored to ensure the replanting has been successful and where any planting has not taken to growing, it will be carried out again until successful growth.

4.0 Circular Economy Considerations

The European Unions' incentives to make its economy circular by 2050 are forcing the construction industry to develop new methods and techniques for the transition from a linear to a circular economy. The Government have published *A Waste Action Plan for a Circular Economy*, which sets out how the country will transition to a circular economy by focusing on how we consume materials and resources, design the products that households and businesses use, prevent waste generation and resource consumption, and extend the productive life of all goods and products in our society and economy. Whole life cycle analysis, Cradle to Cradle, will be carried out for the project. All life cycle stages will be considered in line with EN15978:201 and the Circularity Deck and all designs will be in line with UN SDG 12 and 13.

Sustainable construction technologies that reduce the generation of waste need to be optimised on site. Examples include the use of precast concrete elements for the construction of the Pier, correct quantities of concrete to be used and planned to prevent any waste.

The life cycle assessment of the contract will include operation plans and preventative maintenance programmes for the works. This will follow the best practise guidelines of the Circularity Deck of 'Slow' and 'Closed' being implemented into the life cycle of the plant.

Resource (Waste) Management: Ahead of the construction starting, we will develop a Construction Environmental and Sustainability Management plan and a Resource (Waste) Management. The plan will align with the Waste Hierarchy (Prevention, Re-use, Recycling, Recovery and Disposal). Where possible, waste generation will be minimised on site but for the residual C&D waste that cannot be designed out, it will be diverted to land fill. We will identify where we can optimise Article 27 byproduct processes. Waste Acceptance Criteria (WAC) testing will be optimised to classify materials into the correct waste stream.

Segregation of site waste will be carried out through the provision of skips for waste (General food waste, metal, timber, recycling waste, chemical waste, pallet recycling programmes). Segregation bins will be provided in site canteens and offices to allow for ease of segregation at source. We will work with our supply chain on the delivery of their packaging and waste to reduce same.

Reuse of Materials: Reuse of demolition materials on site as crushed concrete fill. Recycling of other demolition materials. Use of recycled aggregates where appropriate. Use of re-usable formwork to reduce waste. Reuse of timber on site.

Material and Equipment Bank: The Material and Equipment Bank will be optimised to use and share materials and equipment across sites. All equipment is serviced and maintained periodically in house to ensure it is kept in operation as long as possible.

Waste Segregation and management: Provision of waste skips to ensure resources/waste can be segregated. Canteen waste will be segregated to ensure recyclable items are segregated and put into the correct waste stream. Additional bins to be provided with bottle return scheme.

Training and Awareness Programmes: On site training and awareness programmes will be completed to raise the awareness of circular economy considerations and waste management on site.

Monitoring and Measuring: Monitoring programmes will be in place to monitor audit reports, waste logs, harm prevention report and monitoring any of trends across site to ensure corrective action plans are put in place to drive continuous improvement.

5.0 Carbon Management and Energy Reduction

The selection of materials to be used is a critical part of the design process. Materials selected need to meet the needs and requirements of the client specimen design parameters while also ensuring carbon is kept to a minimum. The selection of low carbon materials for the project might include such items as: concrete mix with GGBS additives and low carbon steels for construction etc. Materials with Environmental Protection Documents (EPD's) will be used where possible. We have developed libraries and registers of EPD data that can be accessed by procurement and site teams to identify what approved suppliers used within the organisation.

Low carbon procurement involves collaboration with our supply chain to source goods and services that are produced and delivered ethically, with the impact on the environment being considered. This strategy is closely related to the selection of materials step described previously. We have completed supplier surveys to gauge the status of their level of consideration in relation to sustainability and have ranked them internally according to this. Local sourcing of materials where design specifications can be met will be prioritised to reduce the emissions from the transport to site. We will endeavour to order full loads of items to site to reduce the amount and frequency of deliveries.

Low carbon construction is considered as causing the smallest amount of carbon being admitted to the atmosphere when carrying out works. Ways in which we will ensure this is by local sourcing of equipment to reduce emissions for transport of materials to site and use of low carbon materials with EPDs where possible. For example, the use of ground-granulated blast furnace slag (GGBS) in concrete products. GGBS is made by upcycling (as opposed to recycling) an industrial by-product, it can contribute to long service life of buildings and structures, subject to other design factors being suitable; and it can significantly reduce the magnitude of embodied CO₂ in a structure. The design mix for Ringaskiddy Port Development will make considerations for GGBS Content.

Implementation of energy reduction management plans on site in line with our ISO: 50001 certificated Energy Management System. This will include identifying significant energy using equipment and implementing fuel monitoring and energy monitoring in offices and reduction management plans. Use of biodegradable fuels in plant and equipment.

Training and awareness programmes on site with all personnel to raise awareness around carbon emissions on site.

6.0 Project Specific Environmental Issues and Control measures

Information on specific environmental issues and environmental management requirements is given in several documents which accompany the contract documents, in the particular specification and also in background information such as the.

The CEMP establishes the arrangements to manage the environmental risks associated with this Contract and details how monitoring will be used to ensure that the agreed environmental procedures are adhered to and supported operationally by the relevant documentation.

The CEMP also deals with ***Emergency Preparedness and Response***.

All contractors providing a product or service will be required to provide evidence, for example a method statement, to show how they will control environmental risks that may arise from undertaking their works.

Compliance to environmental provisions and controls outlined in this CEMP is monitored on a regular basis by weekly SHEQ inspections, monthly environmental inspections and monthly SHE scored inspections. Issues and observations picked up during these inspections are raised in the weekly planning and progress meeting, attended by site management.

6.3 Identification of Significant Aspects and Associated Impacts

6.3.1 Key Environmental Issues

The Key Environmental Issues identified shall be addressed and mitigated via controls and mitigation measures. Environmental issues for the project are identified in the main Works Information, as well as in additional Background Information.

This CEMP shall be live working document and shall be updated and revised throughout the project as further information becomes available.

7.0 Noise and Vibration Management

As a minimum, all noise levels associated with the Works must be in compliance with the recommended noise threshold limits as specified in TII/NRA Guidelines for the Treatment of Noise and Vibration in National Road Schemes and British Standard BS5228:2009+A1:2014 Noise and Vibration Control on Construction and Open Sites. The TII Guidelines threshold limits are presented in one-hour LAeq and instantaneous maximum values for the various relevant days and times. The BS5228:2009+A1:2014 threshold limits are presented for the various portions of the day.

The TII/NRA Guidelines for the Treatment of Noise & Vibration in National Road Schemes (2004) recommend that vibration is limited to the values set out in Table 3 in order to ensure that there is little or no risk of even cosmetic damage to buildings. As a minimum, the Contractor shall comply with the recommended threshold limits.

7.1 Noise and Vibration Control Measures on site

- Localised noise barriers will be installed adjacent to noisy works areas where practicable.
- All vehicles and mechanical plant used for the purpose of the work shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order. (All plant used will be kept in service and project suitable noise limits for works on site)
- All compressors shall be “sound reduced” models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers.
- All machines in intermittent use shall be shut down in the intervening periods between works or throttled down to a minimum. Noise emitting equipment which is required to run continuously shall be housed in a suitable acoustic enclosure (see BS 5228: 2009+A1:2014)
- Items of plant shall be maintained in good working condition so that extraneous noises from mechanical vibration, creaking and squeaking are reduced to a minimum.

- Hydraulic techniques for demolition will be used in preference to percussive techniques where practical.
- All pile driving/installation shall be carried out by plant equipped with a noise reducing system or by silent driving systems.
- Temporary noise barriers will be used to reduce noise levels where appropriate and practicable. Such measures can be particularly appropriate for stationary or near stationary plant such as pneumatic breakers, piling rigs and compressors. Barriers should be located as close to the plant as possible and, in order to provide adequate attenuation, should have a mass per unit area of at least 7 kg/m².
- Plant must be certified to meet relevant current legislation.
- All Subcontractors must be familiar with current legislation and the guidance in BS 5228: 2009+A1:2014 (Parts 1 and 2) which will form a prerequisite of their appointment. This will be communicated when order placed and reinforced
- Loading and unloading of vehicles, dismantling of site equipment such as scaffolding or moving equipment or materials around the Site must be conducted in such a manner as to minimise noise generation and where practical will be conducted away from noise sensitive areas.
- Noise complaints or exceeding of action levels will be reported to the Engineer and Local Authority and immediately investigated. A record of all communications will be kept on site.
- Equipment and materials will be delivered and waste will be removed during the daytime, where practicable.
- Noisy plant or equipment shall be sited as far away as is practicable from sensitive buildings. Barriers, such as soil bunds, site huts, acoustic sheds or partitions to screen noise-sensitive areas, will be used wherever practicable. Wherever practicable all plant and equipment will be powered by mains electricity in preference to locally powered sources such as diesel generators. Hand tools will also be electrically powered rather than petrol- or diesel-driven.
- Where practicable, rotary drills and busters actuated by hydraulic, chemical or electrical power will be used for excavating hard or extrusive material.
- Adequate planning will be undertaken to avoid noise emissions from double handling of materials and overlapping of high noise activities where practicable.
- The use of reverse beepers shall be avoided as far as reasonably practicable consistent with safe operating practices.

8.0 Dust Control on site

Abatement measures are required to mitigate against any potential air quality impacts on nearby residents or businesses

- Access roads and compound areas will be kept clean and dust suppression will be in place as required in dryer months of the year.
- Skips will be covered
- Dust suppression as required
- Spray suppression systems as required
- Approach roads and all associated construction areas will be regularly cleaned and maintained as appropriate.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface;
- Dust suppression by water spray on access roads and other areas if dust becomes an issue;
- Use of appropriately covered vehicles for transport of potential dust generating material such as sand;
- Access on un-surfaced roads will be restricted to essential traffic only;
- Mandatory speed limits will be enforced within the harbour area particularly in weather conditions which

- are likely to generate dust
- Material handling systems and main site compound stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting shall be applied as required if particularly dusty activities are required during dry or windy periods; and
- All complaints to be reported to the Site Manager and developers Project Manager, and also logged within an on-site register.
- Burning of materials will not be permitted on site.

9.0 Special Area of Conservation

Cork Harbour is a Special Area of Conservation <https://www.npws.ie/protected-sites/spa/004030>

Special Areas of Conservation (SACs) are those which have been given greater protection under The Conservation (Natural Habitats, etc.) Regulations 1995 (Northern Ireland) (as amended).

For Cork Harbour. The list of Qualifying Interests that qualify it as an SAC are:

- Little Grebe (*Tachybaptus ruficollis*) [A004]
- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Cormorant (*Phalacrocorax carbo*) [A017]
- Grey Heron (*Ardea cinerea*) [A028]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Pintail (*Anas acuta*) [A054]
- Shoveler (*Anas clypeata*) [A056]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]

- Common Gull (*Larus canus*) [A182]
- Lesser Black-backed Gull (*Larus fuscus*) [A183]
- Common Tern (*Sterna hirundo*) [A193]
- Wetland and Waterbirds [A999]

Control Measures for working in SAC:

- Ecologist guidance and statutory consent conditions to be adhered to.

10.0 Waste Management

10.1 Waste / Resource Guidance Documents to be adhered to on the contract:

- *Best Practise for the protection of resources and waste management plans for construction and demolition (E9A 2002)*
- *Guidance on waste acceptance criteria of authorised soil recovery facilities (EPA 2022)*
- *National End of Waste Criteria – Recycled Aggregates (EPA 2023)*
- *Waste Management Acts (1996 to 2011)*

Where possible resources generated will be identified as a by product and used on site or used as a byproduct on another appropriate acceptance site. (Article 27 – Site with Planning or Planning Exemption)

If / when suspected contaminated material is encountered, this will be brought off site by a licensed haulier using covered tippers, and brought to a licensed facility, as to be agreed with the RE Team, where further sorting and processing will be carried out prior to final appropriate disposal in inert / non-hazardous / hazardous landfills.

Material which is not thought to be hazardous will be tipped in a bunded area on site, in a location to be confirmed, where samples will be tested to confirm it is inert, and, provided it is, the material will be disposed of directly to landfill. If not, the procedure outlined above will be followed.

10.2 Records of waste removed from site:

- Copies of all Waste Haulier Permits
- Copies of all Waste Facility Permits
- Copies of all Waste dockets for waste removed off site
- Copies of dockets from Waste Facility
- Any additional testing carried out to confirm the waste classification and landfill disposal routes;
- The confirmation by the landfill operators that they are authorised to accept the wastes;
- All wastes consigned from the Site;
- The end destination of the wastes, which in the case of hazardous waste means the facility at which the wastes are disposed;
- Certificates of acceptance and disposal of hazardous waste from the operator of the hazardous waste disposal facility;
- Records of all waste excavated and removed from the Site shall be maintained on Site and will be available for audit by the Employer or its representatives;
- Spot checks on trucks removing material from site.

- A full waste log register will be kept on site for all waste removed, keeping track of all quantities etc.

11.0 Emergency Response and Incident Reporting

All environmental incidents will be recorded including the following:

- Any malfunction of any environmental protection system;
- Any emission that does not comply with the requirements of the contract (e.g. noise and vibration);
- Any occurrence with the potential for environmental pollution; or
- Any emergency (e.g. significant spillages or fire outbreak).

Spillages shall be communicated to the SHEQ Manager via telephone or email as soon as possible.

- *The Emergency plan will be developed and in place in the event of a spill. All plans will be communicated to all staff members;*
- *Emergency Plans will be posted in public areas of the site with all associated emergency contact numbers;*
- *Spill Kits will be provided at all work locations;*
- *Socks will be placed in all water courses to ensure control of a spill.*

As polluting materials will be stored and used on site, an adequate number of spill response measures will be provided.

An emergency flow chart for environmental spillage shall be developed by the project. This flowchart will be discussed as part of the SHQE Induction and will be displayed around the site to ensure appropriate measures to prevent and mitigate damage due to accidents and spillages are communicated.

The flow chart will include the following details:

- Contact names and numbers
- Emergency response actions

Compliance against these requirements will be checked as part of the weekly environmental inspections and the results recorded. This inspection checklist will be reviewed during formal environmental audits.

The project *Emergency Incident Response Plan (EIRP)* has been prepared for contract.

In the event of an environmental incident, the Contractor will ensure that the following actions will take place:

- The Employers Representative must be immediately notified;
- If necessary, the Contractor will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident;
- The Environmental Incident Report will contain details of the incident including the location, known and suspected causes and weather conditions. It will define the scale and actual/ potential impacts (short, medium, long term, temporary/ permanent) as well as required corrective actions and mitigation/ remediation/ compensation measures (as appropriate)
- A record of all environmental incidents will be kept on file by the Contractor. These records will be made available to the Employers Representative and the relevant authorities such as NPWS, if required.

Examples of incidents that need to be reported:

- Any malfunction of any environmental protection system
- Spill on site
- Any emission that does not comply with the requirements of the contract (e.g. noise and vibration)
- Any occurrence with the potential for environmental pollution
- Any emergency (e.g. significant spillages or fire outbreak).

12.0 Training, Communication, Awareness and Competence

Communications will be both Internal and External

12.1 Examples of Internal Communications:

Examples of Form of communication:	Responsibility	Form of Communication
• Communications on site induction, company's significant aspects and impacts, hazards & risks and objectives and targets for continuous improvement. • Company Management Systems to be communicated. • Safety and Environmental Briefings, Toolbox Talks, Method Statements, SHEQ Alerts etc. • Copies of company policies and information on legislation will be posted or available in strategic areas around the Office and on sites	Environmental Manager Sustainability Manager Safety Manager SHEQ Team Site engineers	Presentation Workshop TBT Safety Briefings Communication boards Site Inductions Workwise In house training
• Training and Work shops	Environmental Manager Sustainability Manager Safety Manager SHEQ Team Site engineers	Training courses
• Risk Assessment and Hazard Control • Aspects and Impacts • RAMS • TBT • Workshops	Environmental Manager Sustainability Manager Safety Manager SHEQ Team Site engineers	SHEQ Documentation through TBT
• Incident and Accident Investigation	Environmental Manager Sustainability Manager Safety Manager SHEQ Team Site engineers	Incident or Accident report Meetings Emails Bulletins
• SHEQ Bulletins	Environmental Manager Sustainability Manager	Emails TBT

	Safety Manager SHEQ Team Site engineers	Notice Boards
Site Management – Programme Review, cost management, project performance delivery, KPI Monitoring, planning works, investigation of any incidents	Company Directors Environmental Manager Sustainability Manager Safety Manager SHEQ Team Site engineers Quantity Surveyor	Meetings Emails Conference calls Teams / Zoom Reports

12.2 Examples of External Communications:

Party	Examples of Form of communication:	Responsibility	Form of Communication
Client	Pre-commencement meetings, progress meetings, site audits and close out of same etc	Directors Site Agents Site Engineers Environmental Manager Sustainability Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
Designers – Appointed PSDP	Design Meetings Design workshops Meeting Minutes and actions	Site Agents Site Engineers Environmental Manager Sustainability Manager Safety Manager SHEQ Team	Meetings Workshops Emails Letter
Regulatory Authorities (HSA, EPA)	Site inspections and close out of same, reports	Site Agents Site Engineers Environmental Manager Sustainability Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
Client Audits	Site Inspections and Audits	Site Agents Site Engineers Environmental Manager Sustainability Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
Stakeholders	Presentations, meetings, regular notification updates on works progress	Community Liaison Site Engineers Environmental Manager Sustainability Manager	Meetings Emails Letter VMS Boards Signage Websites and QR Codes Close out of complaints

General Public	Open evening meetings, letter drops, VMS boards etc.	Community Liaison Site Engineers Environmental Manager Sustainability Manager	Meetings Emails Letter VMS Boards Signage Websites and QR Codes Close out of complaints
Interested parties	Meetings, Presentations	Directors Site Agents Site Engineers	Meetings Emails Letter Presentations Workshops
Certification Bodies	Audits	The Director/Management Representative will address all communications with certification bodies. The Health & Safety Manager/Officer will represent the Director as required.	Site Inspection Site Tours Meetings Emails Letter

12.3 Project Inductions

The Project SHQE Manager/Adviser will identify and arrange environmental induction sessions as necessary for Project personnel. During the project induction the requirements of this environmental plan will be explained and discussed as well as any changes to the normal method of working which have been identified for the project. Ongoing induction requirements will also be identified during facilitation audits. The induction will include information relating to the environmental aspects identified on the project such as;

- Specific Environmental Requirements for the contract
- Carbon Management
- Energy Reduction
- Working SAC
- Biodiversity – Birds, Badgers, Bats etc. Invasive plant species
- Environmental Sensitivities for the contract
- Potential archaeological finds
- Waste management and segregation
- Spill response
- Refuelling procedures
- Plant, equipment requirements
- Tree and hedgerow protection

12.4 Environmental Training

The Project will ensure that in accordance with the SHQE Training Matrix all environmental training requirements are identified and a training programme developed.

In house training on environmental management will be carried. Examples of training that will be carried out will include:

- Chemical Management
- Spill Management
- Concrete management
- Surface Water Management
- Noise and Vibration Management
- Sustainability Training
- Energy Management Training

Potential training may develop from non-conformances on site.

12.5 Tool Box Talks and Work shops

Regular environmental toolbox talks (team briefings) will be carried out on site by relevant project personnel. Subjects covered may include:

• Waste Segregation and Management • Handling of Materials • Refuelling • Spill Prevention • Sustainability	• Emergency Response • Housekeeping • Biodiversity and Flora/Fauna • Aqueous Discharges • Energy Management
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13. Social Impacts

Human Beings

The safety of the people involved in the works along with the safety of persons will of the up most importance during the works. In order to ensure this a number of robust control measures will be in place:

- Safety and Health Plans
- Detailed RAMS and Risk Assessments
- Robust Secure site security, suitable fencing, locked and secure, signage in place
- Interface agreement with Port of Cork Operations and Operators
- Suitable controls in place on site
- Clear communication plans on site – Including workshops, toolbox talks etc

14. Complaints procedure

Insert specific Contractors procedure.

15. Auditing

The mitigation measures themselves will be implemented and checked by appointed site personnel together with specialist advisors and will be overseen by the Environmental Manager.

The auditing process will ensure that the CEMP is being implemented correctly, that method statements are being followed, that checks are being carried out where necessary and that records of these actions are made. It will also ensure that the CEMP is achieving its objectives, and if it is not, measures can be taken to ensure that it does achieve its objectives.

In summary, environmental auditing process on this project will involve the inspection of works on site and the inspection of paperwork in the Site Office. This includes the monitoring of waste management – Segregation, Recycling, biodiversity control, resources management, energy management etc.

All paperwork is checked in site offices such as Waste Collection Permits, dockets for waste off site etc to ensure it is in line with the site specific CEMP and Waste Management Plan.

Non-Conformances will be captured on site and records of same will be populated for tracking.

Examples of non-conformances that may arise on site:

- Non-compliance with legal requirements
- Non-compliance with Management System
- Non-compliance with contract requirements
- Non-compliance with environmental controls on site
- Non-compliance with the CEMP
- Non-compliance with Ecologist, MMO guidance on site
- Issues with documentation or records on site.

Corrective and Preventative actions will be put in place to prevent reoccurrence on site.