

MWP

**Waste Licence Application
For
Howth Harbour Dredging and
Reclamation Project
Closure Plan for Waste Activities**

Department of Agriculture, Food and the Marine

24/11/2023

Contents

1	Introduction	3
2	Step 1 - Scoping	4
2.1	Determination of Closure and or Restoration/Aftercare	4
3	Step 2 - Closure	5
3.1	Closure Plan Summary.....	5
3.2	Facility Description and Operation	6
3.2.1	Site Location	6
3.2.2	Description of the Existing Site.....	7
3.2.3	Overview of the Proposed Development.....	7
3.2.4	Waste Activities	7
3.2.5	Previous Waste Licences.....	8
3.2.6	Nature and Volumes of Waste	8
3.2.7	Date of Commencement of Operations.....	8
3.2.8	Details of any closure requirements specified in the EPA authorisation	8
3.2.9	Details of relevant requirements of planning permissions or other authorisations.	8
3.3	Site Evaluation	8
3.3.1	Operator Performance.....	8
3.3.2	Environmental Sensitivity	9
3.3.2.1	General	9
3.3.2.2	Protected Habitats	9
3.3.2.3	Geology/Hydrology	9
3.3.2.4	Human Receptors	10
3.3.3	Facility Processes and Activities	10
3.3.3.1	Site Infrastructure	11
3.3.3.2	Site Drainage	11
3.3.4	Inventory of Raw Materials, Products and Wastes	11
3.3.5	Maximum Storage Capacity for Raw Materials, Products and Wastes	13
3.3.6	Finishing Works	13
3.4	Closure Tasks and Programmes	13
3.4.1	Introduction.....	13
3.4.2	Construction Demobilisation	14
3.4.3	Ongoing Monitoring.....	14

3.4.4	Programme	15
3.5	Criteria for a Successful Closure	15
3.6	Closure Plan Validation.....	15
3.7	Closure Plan Costing	16
3.8	Future Proofing.....	19
3.8.1	Contingency	19
3.8.2	Inflation.....	19
3.8.3	Bond.....	19
3.8.4	Summary.....	19
4	Financial Provision	20

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
19934	19934-MWP-XX-XX-WL-C-6030	P01	14/11/23	EL	PP/OH	PP	Information

MWP, Engineering and Environmental Consultants

Address: Cork Office: Park House, Bessboro Road, Blackrock, Cork, T12 X251

Tralee Office: Reen Point, Blennerville, Tralee, Co. Kerry. V92 X2TK

Limerick Office: The Elm Suite, Loughmore Centre, Raheen Business Park, Limerick. V94 R578

www.mwp.ie

1 Introduction

A waste licence application is being made to the Environmental Protection Agency in relation to waste activities associated with the reclamation development on the West Pier of Howth Harbour.

The waste activities associated with these works relate to the management of dredge spoil material from the dredging works of the Inner Harbour. The dredge spoil will be solidified and stabilised prior to placement within the reclaimed area, negating the need to import virgin fill material and applying a recovery benefit to the material. The principal waste activity associated with the works is therefore:

R5 *Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.*

The applicant for this application is the Department of Agriculture, Food and the Marine (DAFM).

This document forms an Outline Closure Plan (CP) to inform the identification of the financial commitments required by the DAFM to cover potential liabilities during the closure and aftercare period associated with the works.

This document is submitted as part of the application submission and has been prepared in accordance with the following two EPA guidance documents:

- Guidance on assessing and costing environmental liabilities (2014)
- Guidance on Financial Provision for Environmental Liabilities (2015)

The Guidance outlines 3 steps in the completing of a closure and restoration/aftercare plan:

- Step 1: Scoping.
- Step 2: Closure.
- Step 3: Restoration/aftercare.

2 Step 1 - Scoping

This section determines the extent of plan preparation required for the closure plan associated with the proposed Howth Dredging and Reclamation Project. The scoping process determines whether a closure plan alone or in combination with a restoration/aftercare plan is required – where combined, a closure and restoration/aftercare plan is referred to with the abbreviation CRAMP.

2.1 Determination of Closure and or Restoration/Aftercare

The Guidance identifies the difference between closure and restoration/aftercare as follows:

- Closure and closure plan refer to relatively short-term measures necessary to close a site satisfactorily including decommissioning and residuals management. For many sites, there will be no environmental liabilities once closure, decommissioning and residuals management are completed, and so only a closure plan is required.
- Restoration/aftercare and restoration/aftercare plan refer to longer term measures that are necessary where environmental liabilities remain following closure, e.g., contaminated soil and groundwater, landfills, extractive waste facilities, mines, quarries and soil recovery facilities. Measures may encompass activities such as remediation, rehabilitation, reinstatement, ongoing emissions control and monitoring.

The Guidance states that operators “should refer to the conditions of the authorisation at the scoping stage.”

Given that this outline document accompanies the submission of the licence application, the conditions of the authorisation are not available for reference.

It is noted that it would be the intention of the applicant to surrender any licence within an appropriate timeline, agreed with the Agency and upon demonstration of no environmental impacts resulting from the placement of the processed dredge spoil material.

24-36 months after completion of the construction works may, at this stage, be considered an appropriate timeline for licence surrender.

Given the nature of the works, the waste activity will cease upon completion of placement of the treated dredge spoil material and an ongoing monitoring programme will be required to demonstrate that no environmental impact results. However, ongoing monitoring will be the only licence related activity required post completion of material placement.

Considering the surrender timeline proposed, it is proposed that the closure element be viewed in terms of the aftercare requirements i.e., that a Closure Plan be prepared, which captures the activities related to aftercare (i.e. monitoring), over an identified period, such that the formal closure of the facility would coincide with the surrender of the facility licence.

To this end, this document is presented as a Closure Plan, which includes the aftercare requirements over an extended and to be agreed timeline.

3 Step 2 - Closure

This section provides the detail in relation to the Closure Plan proposed for the facility licence and follows closely the requirements outlined in Section 2.5 of the Guidance document.

3.1 Closure Plan Summary

Activity Name and Address

Howth Harbour Dredging and Reclamation Project

Howth FHC,

Co. Dublin

Name of the Operator

The Department of Agriculture, Food and the Marine

Licence/Permit Number

To be determined.

Name and Address of organisation who prepared the Closure Plan

MWP,

Park House,

Bessboro Road,

Cork City.

Classes of activity (to be) licenced and carried out

Waste activities associated with these works, in accordance with the Fourth Schedule of the European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) are as follows:

- R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
- R11 Use of waste obtained from any of the operations numbered R 1 to R 10
- R13 Storage of waste pending any of the operations numbered R 1 to R12 (excluding temporary storage (being preliminary storage according to the definition of ‘collection’ in section 5(1)), pending collection, on the site where the waste is produced”).

Risk category

To Be Determined

Scope

Closure Plan (incorporating aftercare requirements)

Overall Closure Costs

€2.8million

Details of Previous Closure Plans

Not applicable

Financial Provision mechanism

To be agreed with the Agency following agreement of Closure Plan costing.

Review period

As per the recommendation of the Guidance, this plan shall be reviewed annually.

3.2 Facility Description and Operation

This section provides an overview of the site development, historic use, licensing history, nature of activity.

3.2.1 Site Location

Howth Harbour is situated on the north side of Howth Peninsula, to the north of Dublin Bay (See Figure 1). It is situated 15km east of central Dublin City and approximately 2.4km east of Sutton and 1km south of Ireland’s eye.

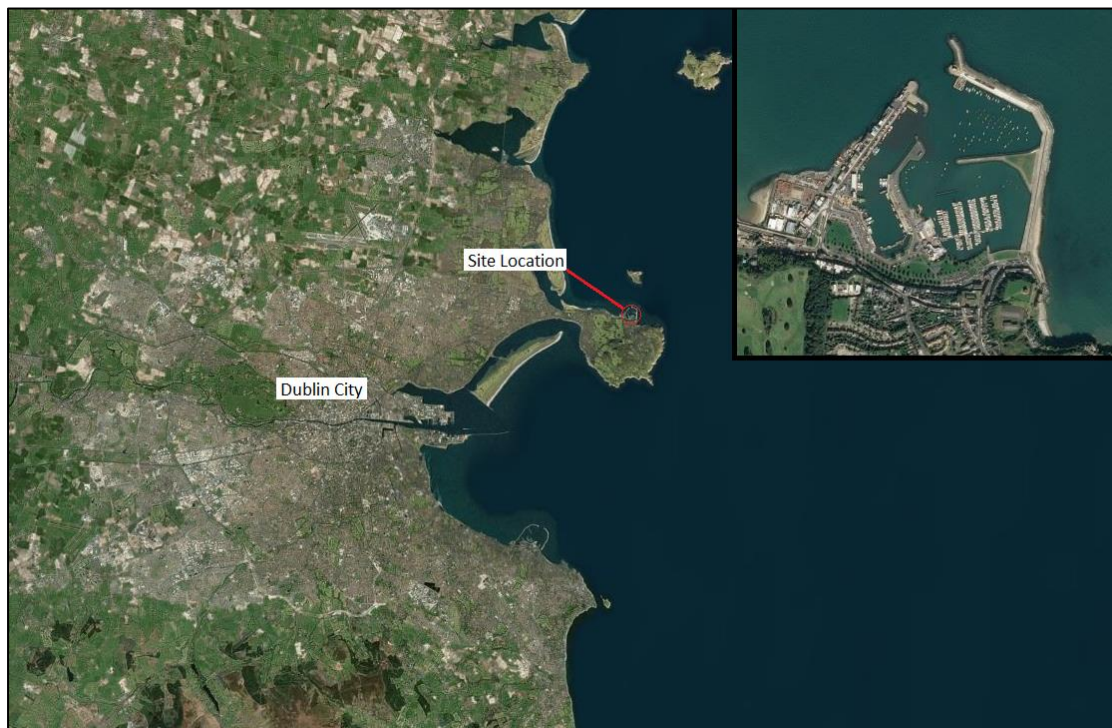


Figure 1 Site Location

To the east of the harbour are Howth Head and the Irish Sea; to the west a large sandy intertidal area towards Baldoyle/Portmarnock. Ireland's Eye, an uninhabited island, lies approximately 1km north of the harbour within the Irish Sea. Howth village lies adjacent to the harbour on its south side.

The proposed site is situated in proximity to several Special Protection Areas (SPA) and Special Areas of Conservation (SAC), the closest of which are Howth Head SAC, Baldoyle SAC, Ireland's Eye SPA and Howth Head Coast SPA. Howth Harbour and the proposed reclamation area did not lie within the boundary of any designated site at the time of lodging the proposal for Fingal County Council in July 2021.

3.2.2 Description of the Existing Site

Howth Harbour operates as a Fishery Harbour Centre under the DAFM. The core fishing fleet is in the order of 50 vessels, and there is significant marine leisure activity including the Howth Yacht Club and the Howth Sailing and Boating Club. There are also a number of restaurants and shops along the West Pier. Fish processing and boat repair works are also undertaken on the harbour.

Howth Harbour itself comprises of three main areas; a trawler basin to the west a boat mooring area to the northeast and the yacht club marina to the southeast.

The current harbour layout was developed in the early 1980s with the construction of the Middle Pier and East Pier breakwater. These works provided segregated areas for fisheries and leisure users, i.e. western trawler basin, boat mooring area and marina area.

3.2.3 Overview of the Proposed Development

The proposed development consists of the following main elements (See application drawings):

- Construction of an embankment and rock armour revetment around the perimeter of the reclaimed area – 520m.
- Construction of a 150m long channel between the reclamation area and the northern section of the West Pier.
- Dredging the harbour -240,000m³
- Processing of the dredged marine material - 240,000m³
- Reclaiming land (4.8 Ha) on the west side of the west pier using processed dredge material.
- Landscaping of the reclaimed area and provision of pavements, including footways, roadways and parking areas.
- Construction of a slipway access to the water.
- Construction of a bridge.
- Provision of storage areas for harbour activities; and
- Provision of services, including surface water drainage, mains water supply, lighting, and associated underground ducting.

3.2.4 Waste Activities

Stabilisation and solidification with cement/GGBS is proposed to render the dredge material suitable as engineering fill and to 'bind' potential contaminants that have been identified in varying concentrations within the 'fine' dredge material, in order to mitigate potential impacts resulting from the reuse of this material. The use of the material as a fill material assigns a 'recovery' status to the waste activity where a 'useful purpose replacing other materials' results.

Waste activities associated with these works, in accordance with the Fourth Schedule of the European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) are as follows:

- R5 *Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials*
- R11 *Use of waste obtained from any of the operations numbered R 1 to R 10*
- R13 *Storage of waste pending any of the operations numbered R 1 to R12 (excluding temporary storage (being preliminary storage according to the definition of ‘collection’ in section 5(1)), pending collection, on the site where the waste is produced)”.*

3.2.5 Previous Waste Licences

There are no previous Waste Licences within Howth FHC.

A waste facility permit was granted by Fingal County Council (FCC) for works to the Middle Pier. FCC Ref: WFP-FG-18-0003-02.

3.2.6 Nature and Volumes of Waste

It is expected that dredging activities will produce c. 240,000m³ in total of dredge spoil material (EWC 17 05 06). This consideration is based on bathymetric surveys and significant site investigation and testing carried out.

3.2.7 Date of Commencement of Operations

To be determined.

Depending on permitting; potentially 2025.

3.2.8 Details of any closure requirements specified in the EPA authorisation

As no EPA authorisations pertain to the site to date, no closure details have been specified.

3.2.9 Details of relevant requirements of planning permissions or other authorisations.

There are no other relevant requirements of planning permission or other authorisations pertaining to the closure of the site.

3.3 Site Evaluation

3.3.1 Operator Performance

Environmental Management Systems

It is not proposed to develop a specific environmental management system for the facility, given the relatively short duration of the ‘operational life’ i.e. construction phase of the facility.

A Construction Environmental Management Plan (CEMP) has been prepared and is included in this application.

3.3.2 Environmental Sensitivity

3.3.2.1 General

The works area spans the interior of Howth harbour and the 4.8ha sea area west of the West Pier. To the east of the harbour are Howth Head and the Irish Sea; to the west a large sandy intertidal area towards Baldoyle/Portmarnock. Ireland's Eye, an uninhabited island, lies approximately 1km north of the harbour within the Irish Sea. Howth village lies adjacent to the harbour on its south side.

3.3.2.2 Protected Habitats

The proposed site is situated in proximity to several Special Protection Areas (SPA) and Special Areas of Conservation (SAC), the closest of which are Howth Head SAC, Baldoyle SAC, Ireland's Eye SPA and Howth Head Coast SPA. Howth Harbour and the proposed reclamation area did not lie within the boundary of any designated site at the time of lodging the proposed development to Fingal County Council for planning approval in July 2021.

In August 2023, DAFM were consulted in relation to a proposed candidate Marine Protection Area that covers much of the northeast Irish Sea. The boundary of the proposed cMPA is within the boundary of the Fishery Harbour Centre at Howth. DAFM have requested that the boundary of the cMPA be kept outside that of the FHC. The proposed reclamation is within the FHC limits.

3.3.2.3 Geology/Hydrology

The bedrock immediately to the south of the site at Howth and extending west towards Dublin city are mostly sedimentary in nature, dominated by limestone and shale. The Howth peninsula itself is dominated by Cambrian greywacke, slate and quartzite, which forms to the east of a north-west diagonal fault line (**Figure 2**). There is an igneous intrusion to the north at Donabate and Lambay Island. (GSI).

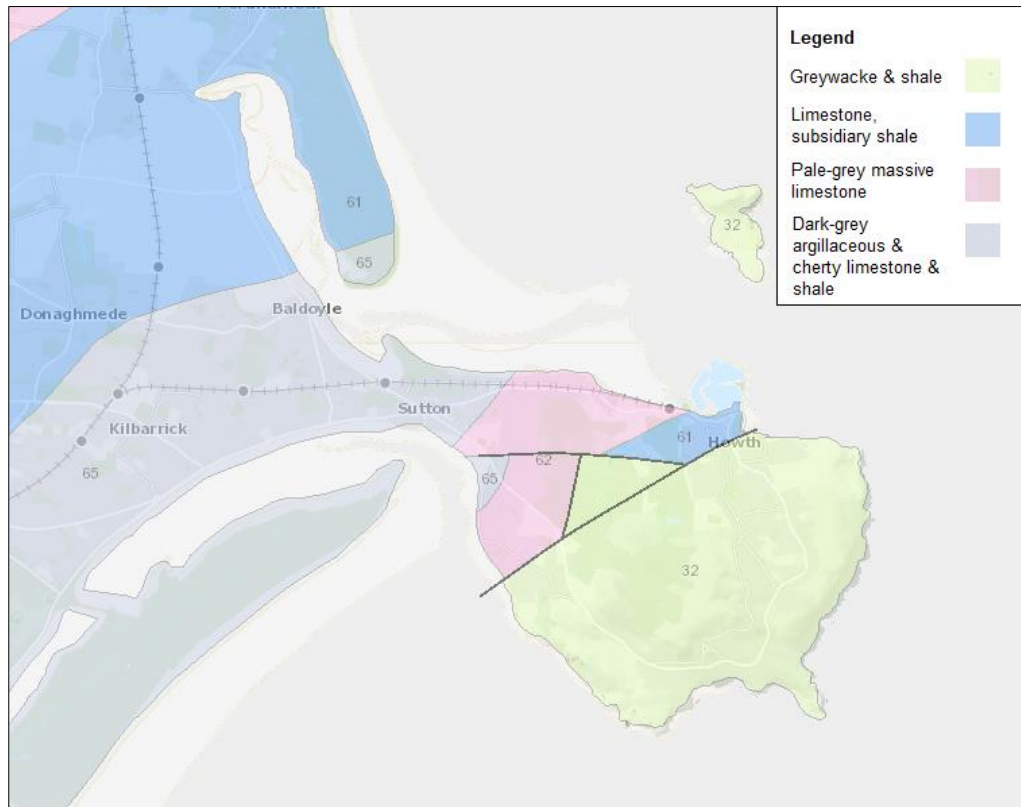


Figure 2 Local and Regional Geology

There is one Irish Geological Heritage site located about 60 meters from the site, namely Balcaddan Bay (DF013), which extends from the south end of the eastern pier along the coast to the east. The area is described in the Fingal County Geological Report as Coastal Cliffs within a small bay area. Other nearby Irish Geological Heritage sites include Claremont Strand (DF014), Hill of Howth (DF010) and Ireland’s Eye (DF011), Bottle Quay (DF009) and North Bull Island (DC007). All are outside the footprint of the proposed reclamation area.

Three rotary core holes sunk within the proposed reclamation area indicate that the underlying ground comprises 1 to 3m of sand, overlying 1.5 to 2m of clay overlying limestone rock. Large bulk samples taken at the same locations indicated that the top 0.5m layer of seabed material consists of soft silt.

3.3.2.4 Human Receptors

The waste activity location is within Howth FHC. Howth FHC is an active fishery harbour with fishery vessels, storage areas, associated maintenance areas, retail and commercial units.

Howth FHC is located adjacent to the town of Howth.

3.3.3 Facility Processes and Activities

The proposed waste activity centres on the dredging activity and the subsequent processing and placement of the dredge spoil material into the reclamation area.

The methodology for the proposed dredging and processing works is included in the CEMP. There is also a more detailed engineering methodology given in the application.

Post completion of reclamation works, the surface will be landscaped with the provision of roads, footways, parking areas, storage areas and amenity areas. A new slipway with adjacent storage will provide access for leisure users.

Ongoing environmental monitoring, required as per the waste licence, should it be granted, will continue until such point as a licence may be surrendered.

3.3.3.1 Site Infrastructure

The infrastructure onsite during the dredging stage of the construction phase will include:

- Hoarding and herras fencing.
- Site compound area on West Pier.
- Site compound area on the Middle Pier.
- Site cabins – welfare, office, drying rooms.
- Hardstanding areas.
- Wheel washing area.
- Hazardous chemical stores (small quantities of fuel).
- Waste quarantine & waste storage areas at site compound and on dump barges.

For detailed plant requirements refer to the Project Construction Methodology document.

3.3.3.2 Site Drainage

Surface water controls will be put in place by the construction contractor during the construction works as specified by the designer and Client. There will be no direct discharge of surface water to the adjacent waterbodies from the works. The methodology for the proposed drainage works is included in the Method Statements as part of the CEMP.

3.3.4 Inventory of Raw Materials, Products and Wastes

Table 1 presents the estimated main construction material quantities which will be required as part of the proposed works.

Table 1 estimated main construction material quantities

<u>Material Type</u>	<u>Estimate Quantity</u>	<u>Estimate Truck Delivery No. Total</u>	<u>Truck Deliveries Daily Average</u>
<u>Element 1 – Perimeter Embankment</u>			
6A Stone Fill (embankment core)	53,000m ³	5,300	30
6A stone fill channel wall	4,800m ³	480	5
Geotextile filter layer on seaward side	10,000m ²	20	<1

<u>Material Type</u>	<u>Estimate Quantity</u>	<u>Estimate Truck Delivery No. Total</u>	<u>Truck Deliveries Daily Average</u>
Rock armourstone	25,000m ³	2,500	14
Impermeable clay liner	10,000m ²	20	<1
Reinforced Concrete Crest Wall	1,800m ³	300	2
Reinforced Concrete Channel wall	1650m ³	275	2
Masonry Facing Crest Wall	300m ³	30	<1
Surface water drains	700m	2	<1
Element 1 Sub-Total		8927	57
<u>Element 2 – Dredging of the Inner Harbour</u>			
Dredge spoil	240,000m ³	Internal harbour movements by barge.	
Element 2 Sub-Total		N/A	N/A
<u>Element 3 – Land Reclamation</u>			
Dredge spoil with binder	240,000m ³	Internal site movements by pump/pipe (sand/silt)	N/A
Cement/GGBS Binder	36,000 tonnes	1,800	5
Fresh water for mixing with binder	15,000m ³	Not applicable	40m ³ /day
Dredged rock/gravel ¹	24,000m ³	1,200 (Internal site truck movements)	4
Reinforced concrete	1400m ³	200	2
Element 3 Sub-Total		2,050	4
<u>Element 4 – Finishings</u>			
Surface water drains	8,000m	20	<1
Stone fill (surface water drains)	12,000m ³	1,200	10
Topsoil (landscaping)	8,100m ³	810	7
Stone fill (pavements)	3,500m ³	350	3

<u>Material Type</u>	<u>Estimate Quantity</u>	<u>Estimate Truck Delivery No. Total</u>	<u>Truck Deliveries Daily Average</u>
Pedestrian Paving	1,500m ²	30	<1
Tar and Chip Paving	7,200m ²	145	1
Element 4 Sub-Total		2,555	23

1 The overall dredge quantity is estimated to be 240,000m³. Given that there is rock close to the base of the soft material there may be some rock and gravel in the dredge spoil. An allowance of 10% is included here. It should be noted that the actual quantity may be less, though the overall dredge quantity remains the same.

3.3.5 Maximum Storage Capacity for Raw Materials, Products and Wastes

There is no significant storage capacity required for construction raw materials, as materials will be delivered on a ‘just in time’ basis to the site. Cement will be stored in one or two cement silos.

Storage capacity for wastes will be provided as part of the overall development works, where the processed dredge spoil is placed will be the final permanent storage location for this material. The dredge spoil material will be temporarily stored in the dredge dump barges from when it is excavated until it is offloaded and placed within the processing area, and the dump barges have a capacity of approximately 300 m³ each.

Construction wastes generated or encountered during dredging will be temporarily stored in skips of varying capacities prior to removal off site by a fully authorised waste management contractor.

3.3.6 Finishing Works

Post placement of processed dredge material, the following finishing works will be required:

- Completion of rock armour protection to the perimeter embankment on the west and north sides of the reclamation area.
- Construction of low reinforced concrete seawall on the west and north sides of the reclamation area.
- Landscaping of areas,
- Installation of surface water drainage, paving of hardstanding areas, construction of footpaths, road, bridge, lighting and channel parapet walls.

3.4 Closure Tasks and Programmes

3.4.1 Introduction

The closure of the facility corresponds to the cessation of construction works onsite but with ongoing environmental monitoring being required until such time as the licence is surrendered.

The applicant is proposing that the closure phase be viewed in terms of the aftercare requirements i.e. that the activities related to aftercare be undertaken over an agreed timeline until such time as the licence may be surrendered, and that this period is the ‘closure period’.

Tasks associated with the extended ‘closure period’ are essentially:

- Those associated with completion of construction works and demobilisation of the construction contractor from site, and
- Ongoing monitoring in accordance with the requirements of the facility licence.

3.4.2 Construction Demobilisation

Construction demobilisation is not an activity directly related to the licensable activity onsite i.e. dredge material placement and stabilisation, but is an activity that will be related to the overall process being undertaken within the wider works and it will occur during the closure period.

Activities to be undertaken during construction demobilisation are likely to include:

- Removal of plant and machinery off site.
- Taking down of hoarding and security fencing.
- Emptying of site accommodation and removal off site.
- Removal of stores and any signage.
- Removal of waste skips, chemical toilets and any remaining construction process and waste materials.
- Disconnection of any services to the site compound.

The demobilisation will be undertaken by the construction contractor and overseen by the Employers Representative for DAFM. The demobilisation will follow substantial completion of the works which will be certified by the Employers Representative.

Following substantial completion, there will be what is termed a 12-month latent defects period during which defects which were not apparent at substantial completion will be repaired by the contractor. Towards the end of this period there will be an inspection by the Employer's Representative during which remaining snags will be noted. Following completion of the repair of these snags a final certificate will be issued by the Employers Representative.

3.4.3 Ongoing Monitoring

Monitoring will continue for the duration of the closure period until such time as the facility licence may be surrendered, which the applicant understands will be a separate, formal procedure to be entered into with the Agency.

Post construction demobilisation, it is not proposed to continue air quality monitoring for dust, or noise and vibration monitoring, given that construction activities have ceased.

Following substantial completion of the works and after the latent defects period it, will be necessary to continue to undertake water quality monitoring at the frequency and with the parameters and duration required by the licence. The monitoring will be of the quality of the sea water in the immediate area of the reclamation and will include sampling and analysis of surface water in the vicinity of the surface water outlet points.

3.4.4 Programme

The EPA will be informed throughout the construction period of significant changes of the progress of works versus the construction programme.

It should be noted that, in the event of unforeseen circumstances that could impact on the construction programme e.g. inclement weather, with the knock on effect of dredging and reclamation and other construction activities being delayed, the construction and hence closure programme may be impacted and extended beyond the timeframe indicated. In such a circumstance, the EPA will be fully informed and kept up to date of applicable programmes and timelines.

It is anticipated that the overall construction programme will take approximately 24 months. The activities requiring licence – processing and placement of the dredge spoil will be complete prior to the completion of the overall works. There will be approximately 6 months of finishing works following completion of the processing and placement of the dredge material.

The following is an indicative decommissioning programme.

- Completion of dredging, reclamation, and finishing works – Month 0
- Demobilisation from Site – Month 1
- Ongoing Monitoring – Months 2 to 36
- Commencement of surrendering process – Month 24 - 36

3.5 Criteria for a Successful Closure

The following criteria will be used to determine whether successful closure of the facility has been achieved:

- Construction works, including dredging, placement and stabilisation/solidification, have been completed in accordance with the requirements of the contract and all relevant authorisations, including the waste licence where relevant.
- Construction demobilisation has been achieved.
- All relevant records relating to waste transfer offsite and dredge spoil materials movement and placement onsite is retained and available for inspection during the closure period.
- No negative impact on surface water / adjacent seawater is demonstrated by the monitoring undertaken over the duration of the closure period.
- Verification through communication with the EPA that it is appropriate to commence entering the licence surrender process.
- Sufficient funds have been provided and made available to complete each task identified in the closure plan.

3.6 Closure Plan Validation

Upon completion of the ongoing monitoring for an agreed duration, the licensee will retain the services of a suitably qualified independent auditor to certify the closure process to determine the success of the closure against the criteria identified in Section 3.5. The auditor will report their findings and certify same.

It is understood by the applicant that this validation relates solely to the ‘close out’ of the closure period and that any formal acceptance of closure and ultimate surrender or transfer of a licence is a separate process that must be formally agreed with the EPA.

The preferred outcome of the submission of this validation report will be the verification by the EPA that it is appropriate to commence the formal surrender process.

3.7 Closure Plan Costing

The Guidance states that the EPA is required to ensure that “necessary measures will be taken upon the permanent cessation of an activity (including such a cessation resulting from the abandonment of the activity) to avoid any risk of environmental pollution and return the site to a satisfactory state”, with a requirement to cost for these measures.

Given the licensable activity forms part of an overall construction project, the ‘worst case’ i.e. most expensive scenario to be costed would be the abandonment of the construction works by the licensee, at a point when dredging works are underway.

Were, for example, the works to be abandoned by the Contractor, the licensee (DAFM), would be required to enter another procurement process to procure a Contractor to complete the works to their design requirement, which would be funded by overall project funding.

However, were the licensee to abandon the overall works, the primary concern would be to undertake works to ensure the environmental protection of the area, which would not require the completion of the dredging works and other construction process, but rather the undertaking of activities to eliminate potential for environmental impacts, at whatever stage the licensable activity may be.

The worst-case abandonment scenario would likely be the cessation of construction activities onsite at a point where:

- Reclamation area is 90% filled with no landscaping, infrastructure etc
- 2 no. dump barges full of untreated dredge spoil material (600 m3)

Works then required would include:

- Completion of remaining 10% of dredging, treatment and placement.
- Seawall
- Drainage
- Landscaping, pavements, hardstanding areas.
- Road, Bridge
- Lighting, power and water
- Parapet rails and Fencing.
- Services.

The following Table 2 shows a matrix of an abandonment scenario and potential associated costs. It is considered that were any other scenario associated with the closure process to arise, this can be financially addressed with the extent of costs identified for this abandonment scenario.

Table 2 Abandonment Scenario Costs –

Task	Estimated Duration	Description	Quantity	Unit	Rate	Cost (€)	
Temporary Works Post Abandonment	6 Months	Site Management ¹	800	hr	100	80,000	
		Site Works – operatives onsite ²	2600	hr	50	130,000	
		Plant and equipment ³	520	hrs	300	155,000	
		Allowance for construction waste material removal ⁴	600	m ³	400	240,000	
		Initial emergency works to ensure the integrity of the works ⁵	1	xxxx	xxxxx	100,000	
		Environmental Monitoring in accordance with licence conditions ⁶					
		Noise – included					
		Dust – included					
		Surfacewater (twice weekly)	550	Per sample	200	110,000	
Site security	182	visits	300	55,000			
Contractor Procurement	6 months	Procurement process – preparation of contract documents, tendering, appointment by consultancy ⁷	1	xxxx	xxxx	40,000	
Civil Engineering Works	9 months	Re-mobilisation to site ⁸	1	Xxxx	xxxx	300,000	
		Completion of dredging and processing ⁹ (extra over)				222,000	
		Finishing works ⁹				750,000	
Environmental Monitoring	36 months (post works)	Monitoring in accordance with the facility licence until surrender ¹⁰ .	36	Site visits and samples	1,400	50,000	
Validation Audit	1 month	Independent Consultant Costs	1	xxxx	xxxx	7,000	
Licence Surrender	N/A	Surrender Fees	1	Per event	5,000	10,000	
		Consultancy Costs	20	Hr	100	60,000	

Sub total						2,309,000
Contingency 10%						230,900
Sub Total						2539,900
Inflation 10%						253,9900
Total						€2,793,890

- 1 *3 Management staff (Consultancy, Client, Emergency works contractor) at 25% utilisation.*
- 2 *5 site operatives to maintain integrity of site, 50% utilisation.*
- 3 *Plant and equipment to maintain integrity of site.*
- 4 *Removal offsite of 2 barge loads of unprocessed material off site to appropriate licenced site.*
- 5 *Initial emergency works to ensure integrity of the site.*
- 6 *Environmental monitoring by external party.*
- 7 *Procurement of alternative main contractor by consultant.*
- 8 *Remobilisation to site; costly because of the type and quantity of equipment required.*
- 9 *Costs relating to the completion of the works are based on the extra over costs(10%) for the remaining work items. These remaining work items would not have been undertaken prior to abandonment and would therefore not have been paid for out of the original tender price.*
- 10 *Based on €800 per site visit and the analysis of 3 samples at €200 each. One sample per month.*

3.8 Future Proofing

3.8.1 Contingency

The Guidance recommends the application of an appropriate contingency to the identified closure costs. At this juncture, a contingency of 10% is applied to reflect the uncertainty associated with the potential closure tasks.

3.8.2 Inflation

The Guidance recommends the application of an appropriate rate for future inflationary pressures that may apply to the costs identified.

Allowing for 10% price inflation per annum for construction costs is considered sufficient.

3.8.3 Bond

It should be noted that the contractor will have a performance bond in place prior to commencing the works. This is a form of insurance policy against non-performance of the contract. It can amount to 10% of the value of the works. The overall cost estimate of the works is approximately €36million. The non-performance bond will therefore be for approximately €3.6million.

3.8.4 Summary

The financial provision to cover an abandonment closure scenario is calculated at €2.8million. As identified, it is considered that these costs will more than cover any other scenario that may relate to closure of the facility in question.

4 Financial Provision

Financial provision ensures that an available source of funding is maintained for:

- Known environmental liabilities that will arise at the time of facility closure.
- Known environmental liabilities that are associated with the aftercare and maintenance of the facility until such a time as the facility is considered to no longer pose a risk to the environment.
- Unknown environmental liabilities that may occur during the operating life of the facility
The EPA has prepared guidance on the matter of financial provision in 2015, entitled “Guidance on Financial Provision for Environmental Liabilities”. The steps in the agreement of the financial provision assessment process are as follows:
 1. Licensee’s environmental liability costings approved.
 2. Licensee submits financial provision proposal (including supporting documentation) to the EPA via EDEN.
 3. Financial provision proposal reviewed.
 4. Licensee executes final document.
 5. Confirmation that financial provision requirement is satisfied.
 6. Licensee maintains and periodically update the financial provision.

Section 4 of the Guidance suggests the following measures as appropriate financial provision instruments:

- Secured fund.
- On-demand performance bond.
- Parent Company guarantee.
- Insurance.
- Charge on Property.

This document presents the worst-case costs to be associated with the closure of the facility, in a closure scenario.

As per Step 1 above, agreement of the environmental liability costings (including closure costings) with the EPA is required prior to identification of the appropriate financial provision instrument.

To this end, this closure plan document is submitted for agreement to facilitate the further stages in the financial provision assessment process.

It should be noted however, that the requirement to make financial provision for the value identified relates to the period during which the licensable activity is being carried out.

This differs considerably from a more typical waste installation where the potential for an abandonment scenario would exist over the operational lifetime of such a facility, which may be 15 – 20 years.

The applicant considers this to be an important consideration in the context of future discussions regarding appropriate financial provision.