Appendix 4.2

Construction Environmental Management Plan (CEMP) Cork County Council and Office of Public Works

Glashaboy River (Glanmire/Sallybrook) Drainage Scheme

Construction Environmental Management Plan

EIAR - CEMP

Issue | May 2018

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 234334

Ove Arup & Partners Ireland Ltd

One Albert Quay Cork T12 X8N6 Ireland www.arup.com



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			Prepared by	Checked by	Approved by
		Name	Almudena Rodero	Fiona Patterson	Clodagh O'Donovan
		Signature	Joa Pattern	Joa Patterson	Cladge Dance
		Filename		<u>.</u>	
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
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Contents

			Page	
1	Introd	luction	1	
2	Projec	Project Description		
3	Constr	Construction Activities		
	3.1	Introduction	5	
	3.2	Construction Schedule	5	
	3.3	Site Preparation Works	8	
	3.4	Construction Traffic	8	
	3.5	Construction Compound	9	
	3.6	In-stream works	10	
	3.7	Utilities	11	
	3.8	Construction of Services	11	
	3.9	Health and Safety	13	
	3.10	Materials – Source and Transportation	14	
4	Constr	ruction Environmental Commitments	15	
5	Incide	nt Response Plan	16	
	5.1	Introduction	16	
	5.2	Implementation	16	
	5.3	Resources	17	
	5.4	Environmental Emergency Response Procedures	18	
	5.5	Fire Control Measures	20	
	5.6	Training and Testing	20	
	5.7	Corrective Action	20	
	5.8	Summary Checklist	21	

1 Introduction

Cork County Council, on behalf of and as Agents of the Commissioners of Public Works in Ireland (Office of Public Works), intend to develop the proposed Glashaboy River (Glanmire/Sallybrook) Drainage Scheme in accordance with the provisions of the Arterial Drainage Acts of 1945 and 1995, (as amended).

This scheme is being undertaken for the purpose of preventing or substantially reducing the periodical localised flooding of lands and properties in the area of this watercourse.

This Construction Environmental Management Plan (CEMP) summarises the overall environmental management strategy that will be adopted and implemented during the construction phase of the proposed drainage scheme. The purpose of the CEMP is to demonstrate how the proposed construction works can be delivered in a logical, sensible and safe sequence with the incorporation of specific environmental control measures relevant to construction works of this nature. The CEMP sets out the mechanism by which environmental protection is to be achieved during the construction phase of the proposed development. Implementation of the CEMP will ensure disruption and nuisance are kept to a minimum.

The CEMP has been prepared in accordance with industry best practice guidance including:

- TII's Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan
- Construction Industry Research and Information Association (CIRIA) in the UK, Environmental Good Practice on Site Guide, 4th Edition (CIRIA 2015)

The CEMP has been prepared in conjunction with the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS), having regard to consultations with a range of specialists and environmental organisations, in particular, the National Parks and Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI). It is noted that this CEMP must be read in conjunction with the construction details already provided in the EIAR and in the NIS.

The CEMP is a working document and will be finalised by the Contractor following appointment and prior to commencing works on site. As stated previously, this CEMP must be read in conjunction with the construction details already provided in the EIAR. All of the content provided in this CEMP will be implemented in full by the Contractor and the finalisation of the CEMP by the Contractor will not affect the robustness and adequacy of the information presented here and relied upon in the EIAR and in the NIS.

Some information (such as project details and the schedule of environmental commitments from the EIAR) has already been provided in full in the EIAR and is not repeated in full in this version of the CEMP. Similarly, specific mitigation measures are detailed in the NIS in relation to the protection of European Designated Sites. All of this information will be included in the CEMP which is

finalised by the Contractor. Refer to Chapter 17 (Summary of Mitigation Measures) of the EIAR and refer to Section 7.3 (Avoidance and Mitigation Measures) of the NIS for further details on the schedule of commitments.

In addition to the items listed above, the following information will also be provided by the Contractor when finalising the CEMP:

- Statutory consent If approval is granted for the proposed development, the entire contents of the planning consent will be included in the CEMP.
- Comprehensively incorporate all Environmental Commitments set out in the Contract documents (in particular the Works Requirements), those presented in the EIAR and NIS and any additional commitments which may arise as part of the conditions to the Minister for Finance and Public Expenditure and Reform (DFPER) statutory confirmation of the Scheme under the Arterial Drainage Acts.
- Relevant Environmental Performance Criteria prescribed in environmental legislation and in Contract documents.
- Register of all applicable legislation, including relevant standards, Codes of Practice and Guidelines.
- Description of the Environmental Management System of the proposed development, which shall be devised according to the criteria of ISO 14001:2004 Environmental Management Systems. The CEMP will be complemented by General Procedures, Work Procedures and Operations Instructions. These documents will be in place within the site administration offices and appropriate site locations during works.

The CEMP is a dynamic document and the Contractor will ensure that it remains up to date for the duration of the construction period. The CEMP may need to be altered during the lifecycle of the construction period to take account of monitoring results, legislative changes, outcomes of third-party consultations etc. Additional appendices may be added to the CEMP to accommodate monitoring results, permits etc.

All of the content provided in this CEMP will be delivered in full by the Contractor and the finalisation of the CEMP by the Contractor will not affect the robustness and adequacy of the information presented here and relied upon in the EIAR and NIS.

The Employer's Representative will have a construction management team on the project site for the duration of the construction phase. The team will supervise the construction of the scheme including monitoring the contractors' performance to ensure that the proposed construction phase mitigation measures are implemented and that construction impacts and nuisance are minimised. The construction management team will liaise with residents and the general community during the construction phase to ensure that any disturbance is kept to a minimum and to ensure that all anticipated nuisances are minimised and that the construction activity will have the lowest possible impacts on the residents and other properties.

It is also proposed that a Community Liaison Officer will be appointed who will coordinate communications and liaise with the local community during the construction phase.

2 **Project Description**

Cork County Council, on behalf of and as Agents of the Commissioners of Public Works in Ireland (Office of Public Works), intend to develop the proposed Glashaboy River (Glanmire/Sallybrook) Drainage Scheme in accordance with the provisions of the Arterial Drainage Acts of 1945 and 1995, (as amended).

This scheme is being undertaken for the purpose of preventing or substantially reducing the periodical localised flooding of lands and properties in the area of this watercourse.

The proposed Glashaboy River (Glanmire/Sallybrook) Drainage Scheme will include the construction of direct flood defences and conveyance improvement measures along the Glashaboy River and its tributaries. The direct defences proposed include flood walls and embankments with the conveyance improvements consisting of channel widening, channel deepening and the introduction of or replacement of culverts. The proposed drainage scheme is located within the Glashaboy River Catchment. Specifically, the drainage scheme is proposed to be implemented along the Glashaboy River and its tributaries in Glanmire and Sallybrook, Co. Cork. Construction works will take place in seven separate areas as presented in Error! Reference source not found..**1**:

- Area 1Sallybrook Industrial Estate
- Area 2 Hazelwood
- Area 3 Meadowbrook
- Area 4-1 Butlerstown Stream
- Area 4-2 Glenmore Stream
- Area 5 O'Callaghan Park to Glanmire Bridge
- Area 6 Downstream of Glanmire Bridge (Channel maintenance only)

The northern boundary of the proposed scheme area is along the Bleach Hill stream and along the Glashaboy River, north of Sallybrook Industrial Estate. The southern boundary extends as far as downstream of the Glanmire Bridge. Works will be required along a total of approximately 4.76 km of the Glashaboy River. Works are also required along some of the tributaries of the Glashaboy River, within the scheme area including the Butlerstown Stream, Glenmore Stream, Springmount Stream, Cois na Gleann Stream, Bleach Hill Stream, Sallybrook Stream and a number of mill races. (Refer to **Drawings no GR101 – GR503 (Confirmation Drawings)** in **Appendix 3.1 of EIAR**).



Refer to **Drawing No GR_103 Channel Codes** in **Appendix 3.1** which shows the extent of the proposed development along the Glashaboy River and its tributaries.

Figure 1.1: Site Location and Drainage Scheme Construction Works Overview (Refer to drawings GR_201 to GR_217 for channel maintenance locations) | not to scale | © Bing maps

The main aspects of the drainage scheme comprise construction works entailing the following:

- Replacement of a number of existing culverts with either new culverts or bridges and culvert extensions;
- Replacement of Hazelwood Shopping Centre bridge;
- New flood relief channel and culvert at Hazelwood Avenue;

- Replacement of existing flood defence walls and construction of new flood defence walls;
- Construction of a new earthen flood defence embankment at Sallybrook;
- New surface water pumping stations and one foul pumping station;
- Localised in-channel conveyance improvements at culvert/bridge structures;
- Local channel widening, deepening, realignment and regrading of river channel;
- Provision of civil works such as road/footpath re-grading at a number of locations;
- Protecting drainage outlets along the line of flood defence works with non-return flap valves;
- Retaining walls;
- Flow control structure on a millrace;
- Removal of vegetation and trees to facilitate construction works;
- Reinstatement of boundary walls and fences and landscaping and replanting of trees on completion in agreement with landowners; and

Once construction is completed, ongoing maintenance of the river channel

3 Construction Activities

3.1 Introduction

This section describes the main activities involved in the construction of the proposed development. As detailed previously, this CEMP must be read in conjunction with the construction details already provided in the EIAR. Refer also to **Chapter 4 Construction Activities** of the EIAR. The CEMP is a working document and will be finalised by the Contractor following appointment and prior to commencing works on site.

3.2 Construction Schedule

Construction works are expected to commence in Quarter 1 of 2019 and the proposed construction period is estimated at circa 18-24 months. The total 18-24 month construction period has been estimated to allow for poor weather over the winter months, mobilisation between sites and seasonal ecological restrictions. The estimated period for individual locations is presented in **Table 3.1** below.

Area of Works	General Location	Overview of Works	Estimated construction period (weeks)
1	Sallybrook	Culvert replacement along Bleach Hill stream at Cuil Chluthair, direct defences (embankment & flood walls) along Glashaboy River, Infilling of existing ditch along Sallybrook stream and provision of culvert. Flow control structure at Mill race at Grandons Garage and pumping Station	16 – 20 weeks
2	Hazelwood	Culvert replacements at Cois na Gleann Stream (R615 & R639), flood wall along R639 and curving around onto Hazelwood Avenue, across Hazelwood Avenue bridge. Flood relief channel parallel to river under Hazelwood Avenue, bridge replacement at Hazelwood Shopping Centre and flood wall along Glashaboy River, Road re-grading and pumping stations. Gas main diversion underneath Glashaboy River	32 – 40 weeks
3	Meadowbrook	Flood Walls along Glashaboy River, culvert replacement and extension along Springmount stream (R639) and road re-grading works along Riverstown Bridge and approaches, removal of existing manhole from the bridge arch and pumping stations	16 – 20 weeks
4-1	Butlerstown Stream	Minimal landscaping and re-grading of ground levels, to facilitate overland flow from the Butlerstown stream back into the Glenmore Stream	2-3 weeks
4-2	Copper Valley Vue Brooklodge Grove	Culvert upgrades, road re-grading and new flood defence walls, channel modification flood walls along Glenmore Stream, re-grading of small area of land adjacent to Glenmore stream to facilitate overland flow	12 – 16 weeks
5	The Grove	Flood wall along Glashaboy River (parallel to R369)	4-8 weeks

 Table 3.1: Estimated Duration of Construction Works. Refer also to Figure 1.1 for location of works areas

As discussed above, the construction works themselves will last approximately 18 to 24 months and will be subject to the following programme constraints:

- The construction of the drainage scheme will be undertaken using industry standard construction methodologies. The anticipated construction methodology for the major elements of the scheme is described hereunder.
- Traffic management will be set up for the works as required. Temporary road diversions and closures are likely to be required. Alternative access routes will be agreed with Cork County Council and An Garda Síochána. Refer also to the relevant chapters for specific construction details such as construction traffic management (**Chapter 14 Roads and Traffic**).
- There will be a number of trees and vegetation which will require removal to facilitate the works throughout the drainage scheme area. The trees to be

removed are shown in **Figure 1** (**Appendix 3.2b**) to **Figure 5** (**Appendix 3.2b**), detailed in **Appendix 3.2** of this EIAR. Where possible, tree roots will not be pulled from the river bank. Silt controls will be put in place to minimise silt generation into the river channel and banks will be stabilised. Further details are presented in **Appendix 4.2**.

- To avoid impacting on bird nesting sites, all vegetation clearance works and site preparatory works will be conducted outside of the bird nesting season (1 March to 31 August inclusive) where possible. However, in the event that vegetation clearance works and/or site preparatory works are required during the bird nesting season, these will only be carried out once an advance survey has been carried out, and the area proposed for clearance has been approved by suitably qualified and experienced ecologist.
- In-stream works (including preparatory work) on the Glashaboy River and its tributaries will be undertaken in a window from July to September (inclusive) and in consultation with Inland Fisheries Ireland (IFI) to avoid accidental damage or siltation of spawning beds. In-stream works associated with the drainage scheme will be carried out under the supervision of a suitably qualified and experienced ecologist. All in-stream works will be designed and carried out in consultation with Inland Fisheries Ireland (IFI) and in accordance with the IFI 2016 *Guidelines on protection of fisheries during construction works in and adjacent to waters*
- There are a number of otter holts in the vicinity of Sallybrook, Hazelwood and Meadowbrook on the Glashaboy River. Otter activity has been observed both on the Glashaboy River and on the Glenmore Stream. Consultation is ongoing with the NPWS in relation to a specific otter mitigation strategy in the form of a derogation licence for disturbance, temporary closure of holts, installation of artificial holts and seasonal restrictions of works. A derogation licence for otters from the NPWS is provided in **Appendix 6.3**. A derogation licence for bats from the NPWS is also provided in **Appendix 6.4**. Further details are provided in **Chapter 6 Biodiversity** of the EIAR.
- The co-ordination of people and materials on site will be one of the key activities throughout the construction phase. In order to ensure that construction workers do not create undue disruption, there will be a requirement that the Contractor provide adequate site supervision to co-ordinate, monitor and implement site regulations.
- Normal construction working hours will be observed. These are 08.00 19.00 Monday to Friday; 09.00 – 16.00 on Saturday. It may be necessary to work outside these hours, including at weekends and at night, at certain stages. Working outside normal hours may be necessitated through consideration of safety or weather and sub-contractor availability. Heavy or noisy construction activities will be avoided outside normal hours and the amount of work outside normal hours will be strictly controlled. Approval from Cork County Council will be obtained for works outside normal hours.
- It is envisaged that the average number of construction personnel on site will be circa 30 personnel but this will vary depending on the construction

activities required, seasonal constraints and will likely peak during the summer months when up to 50 construction personnel are envisaged.

3.3 Site Preparation Works

Site preparation works will include the 'site establishment' set up by the contractor which will include the following:

- Setting up of access control to the site;
- Erection of site office;
- Site facilities (canteen, toilets, etc.);
- Office for construction management team;
- Secure compound for the storage of all on-site machinery and materials;
- Permanent and temporary fencing;
- Erection of signage.

The proposed scheme will be a linear development along the various watercourses. The proposed access routes and works areas are presented in **Series 5 (Drawing No.'s GR_501 to GR_503)**. In general, the proposed construction works will be limited to these areas however, landscaping and reinstatement works for landowners may take place outside these areas with their agreement. Enabling works will typically consist of the following steps:

- Construction of the temporary site access.
- Once access is achieved the Contractor will install secure hoarding approximately 2.4m high around each of the working areas that will remain in-situ during the construction of the works in each area.
- Vegetation, tree and topsoil removal to take place as necessary.

Refer to Section 3.2 above in relation to vegetation clearance, tree removal and instream works in general.

Similar enabling works will be required at each of the areas and are detailed in **Chapter 4** of the EIAR. Works specific to individual working areas are detailed in separately in Chapter 4 where necessary.

Construction compounds will be located within the 'Indicative Extent of Works' areas as shown in Drawings No.'s **GR_501 to GR_503**. Some of the works areas will be used to accommodate site offices and welfare facilities as required.

3.4 Construction Traffic

A detailed construction traffic management plan will be prepared and agreed with Cork County Council by the Main Contractor in advance of any works taking place on site. Refer to **Chapter 14 Roads and Traffic** for further details on same. As discussed previously, every effort will be made to carry out the works as quickly as possible in order to minimise impacts on the residents in the area. It is envisaged that traffic measures such as a stop-go system, temporary one-way traffic systems or similar will be implemented to allow the construction works and utility diversions to be constructed and at the same time to manage traffic. It is expected that the majority of the intense works on the public road will be programmed to be carried out in the summer months to avoid school traffic etc. It is not anticipated at this stage that full road closures will be required, however, if they are required, they will be for a very short duration only and will take place at night or other suitable times to minimise the impact on traffic in the area.

Traffic movement at the site will be planned to ensure traffic movements to and from site are managed efficiently and in accordance with Health and Safety requirements. In addition, any impacts on the local environment including local residents, road users and pedestrians will be minimised.

The following provisions will be adhered to as a minimum;

- All trucks entering and exiting the site will be covered with tarpaulin;
- Adequate parking will be provided to avoid queuing at the site entrances and prevent disruption to neighbouring businesses;
- Deliveries of materials will be planned and programmed to ensure that the materials are delivered only as they are required on site. Works requiring multiple vehicle deliveries to site, such as concrete pours, will be planned so as to ensure there will no queuing on the public roadways. Deliveries will be limited to outside of peak hours;
- Trucks will not be allowed to park on the public road either outside the site or on any of the approach roads leading to the site;
- All trucks entering the site will be restricted to suitable speed limit and will be directed to the relevant area by the site manager;
- Trucks required to wait on site will switch off engines to avoid unnecessary fuel usage and noise;
- All trucks exiting the site will be required to pass through a wheel wash. All water from the wheel wash will be collected, treated to remove silt or other contaminants, and discharged via an approved discharge licence to a local water course or drainage network. A lance will be provided to clean down the bodies and sides of the truck prior to leaving site; and
- Roads outside the site will be visually inspected on a daily basis and power swept and washed as and when required.

3.5 Construction Compound

A number of potential locations for the construction compounds, in the immediate vicinity of the works, have been considered.

Construction compounds will be located within the 'Indicative Extent of Works' areas as shown in **Drawing No.'s GR_501** to **GR_503**.and are shown in **Series 5**

(**Drawing No.'s GR_501** to **GR_503**) of **Appendix 3.1**. The final selection of the compound(s) will be made by the Contractor appointed to construct the works in consultation with the OPW, Cork County Council and the project ecologist. Due to the length of channel involved, the Contractor may choose to move the compound during the construction period, in which case the same selection process shall apply. Site compounds will comply with the mitigation measures identified within this EIAR.

3.6 In-stream works

- Where access to the river channel is required, detailed method statements will be drawn up which deal specifically with the works proposed. Detailed silt control methods will be required for all in-stream works. Most works along the river banks will require effective control of silt and it is expected that a variety of methods may be required i.e. silt curtains, dewatering, silt sumps etc. The method statements will be drawn up in consultation with the supervising ecologist. Consultation will take place with the NPWS and Inland Fisheries Ireland (IFI) prior to the commencement of works.
- All concrete works will be carried out in dry conditions with no in-stream pouring of concrete. It may be necessary therefore to effectively sheet-pile or cofferdam sections of the river and pump out the river water during the construction of the proposed works. If required, fish populations which become isolated, will be salvaged via electrofishing under licence from the Department of Communications, Climate Action and Environment and in consultation with Inland Fisheries Ireland.
- It is expected that most of the equipment used will be standard construction plant for a project of this nature, e.g. mechanical excavators, dump trucks, dewatering pumps, ready mix concrete lorries, pile drivers, rock breakers etc. All machinery will be maintained in good condition to prevent leakage of hydrocarbons. Fuelling and lubrication of equipment will not be carried out within 30m of any watercourse.
- All contractors, sub-contractors and in particular machinery operators will be made aware of the provisions for protecting water quality as outlined in the method statements.
- Where possible excavated material will not be stockpiled within 10m of a watercourse. Where this measure is not implementable, then specific silt control measures will be planned as part of the detailed method statement for site works in each specific area. Precautions will be taken to minimise the run off of soil into watercourses.
- All culverts and walls will be designed to minimise impacts on fish and macroinvertebrate populations. Where possible, gravel substrates and as natural a flow pattern as possible under low water/ low tide conditions will be provided in channels affected by site works. The structure and flow pattern with culverts on minor streams will be designed to allow fish to move through them. The slope of culverts will follow the existing gradient and trash screens are not currently envisaged as part of the Scheme.

• Input from a qualified fisheries/aquatic ecologist with experience in the design of in-stream structures is required for the design of culverts and the post works flow patterns and channel structure. The specialist in conjunction with the supervising ecologist will be required to visit the watercourses prior to the commencement of site works to assess the existing channel structure, fish holding features, substrate composition, flow patterns etc. Where feasible such structures will be incorporated into the channels following completion of work

3.7 Utilities

Temporary planned utility diversions will be required in most of the working areas during the construction phase. The works are in built up areas which are serviced with utilities such as gas, water, electricity, telecoms, foul and surface water drainage etc. In particular, a gas main which currently crosses over the Glashaboy River parallel to Hazelwood Avenue Bridge will need to be buried and installed underneath the Glashaboy River. Refer to Section 4.3.9 above for further details. The most likely impacts on utilities will be during the diversion works. It is possible that a short term disruption to some services may occur when the diversion is being undertaken. However, it is not considered that these disruptions will result in significant negative impacts on customers. All utility diversions will be carried out in consultation with the relevant utility company. The Contractor will be required to submit diversion proposals to the relevant utility company for their approval prior to works being carried out. Refer to **Chapter 15 Material Assets** for further details on utilities.

3.8 Construction of Services

3.8.1 Electrical Connections

Power will be required for the construction compound. It is anticipated that power will be required for temporary lighting and temporary signals during the works. If a connection to the existing network is not available a generator will be used.

3.8.2 Site Lighting

Temporary construction lighting may be required at some locations especially during the winter months where daylight hours are short. Site lighting will generally be provided by tower mounted 1000W metal halide floodlights, which will be angled downwards to minimise spillage of light from the site. These will be powered by mains supplies in general. Lighting will be provided on the exterior of hoarding for walkways for public safety where required. Specific lighting requirements which are close to residential properties will be discussed with the residents in advance.

3.8.3 Construction Compound Site Drainage

The construction site drainage within the construction compounds will be designed in such a manner so as to minimise the risk of contamination of the surrounding soil, surface water and groundwater. Rainwater run-off from the contractor's compounds will be controlled via a temporary surface water control system comprising measures such as swales (ditches) and settlement ponds (or similar system) which will minimise the risk of pollution to soil, surface water or groundwater. The temporary surface water control system will be subject to a daily visual inspection as well as routine maintenance. The inspection frequency will be increased during periods of exceptional high rainfall. Written procedures will be maintained and a log recorded for the inspections.

The contractor facilities will contain toilets, canteen, construction containers and site office. A grease trap will also be installed at the canteen. The disposal of sanitary effluent during construction will be via tankers to a suitable wastewater treatment facility.

Storm water will be managed carefully during construction. Any areas which will involve the storage of fuel will be paved and bunded and hydrocarbon interceptors installed to ensure no spillages will get into the surface water or groundwater.

Daily plant and machinery checks will be carried out as per contract requirements on all construction plant and machinery. Drip trays will be used both for refuelling and overnight parking and spill kits will be on hand at all times. Further details are provided below in **Section 4.7** of **Chapter 4** of the EIAR.

3.8.4 Cranage

Some of the construction works will require the use of standard mobile cranes on site in order to install the pre-cast bridge and culverts.

The cranes will generally be required for the moving of building materials on site such as concrete pipes, formwork for concrete, reinforcement, precast concrete, plant and general building materials. Heavy machinery movements will be restricted to outside of peak hours.

3.8.5 Hoarding

Where possible, a site boundary in the form of hoarding or fencing or similar where appropriate (approx. 2.4m), will be established around working areas before any significant construction activity commences.

Construction site hoarding is used to provide a secure site boundary to what can be a dangerous environment for people who have not received the proper training and are unfamiliar with construction operations.

Hoarding works will be of the same nature as that carried out for similar operations at most construction sites.

Site hoarding also performs an important function in relation to minimising some of the potential environmental impacts associated with construction, namely:

- Noise;
- Visual impact; and
- Dust minimisation.

Excavation for mounting posts for hoarding will be carried out by a mini-digger. The size and nature of the posts and hoarding will be dependent on the requirements for any acoustic mitigation as well as Contractor preference.

3.9 Health and Safety

As required by the Safety, Health and Welfare at Work (Construction) Regulations 2013, a Health and Safety Plan will be prepared which will address health and safety issues from the design stages through to the completion of the construction and maintenance phases. This plan will be reviewed as the scheme progresses. The contents of the Health and Safety Plan will comply with the requirements of the Regulations.

The Regulations require the developer of a project to appoint a "Project Supervisor Design Process" (PSDP) and "Project Supervisor Construction Stage" (PSCS). Cork County Council has appointed Arup as PSDP in accordance with the current legislation.

The PSDP will assemble the Safety File as the project progresses. The Safety File will be incorporated into the overall technical record system at the end of the project.

Safety on site will be of paramount importance. During the selection of the contractors and subcontractors, their safety records will be investigated. Only contractors with high safety standards will be selected.

Prior to working on site, each individual will receive a full safety induction and will be provided with all of the safety equipment relevant to the tasks the individual will be required to perform during employment on site.

Safety briefings will be held regularly and prior to any onerous or special task. 'Toolbox talks' will be held to ensure all workers are fully aware of the tasks to be undertaken and the parameters required to ensure the task will be successfully and safely completed.

All visitors will be required to wear appropriate personal protective equipment prior to going on to the site and will undergo a safety briefing by a member of the site safety team.

Regular site safety audits will be carried out throughout the construction and the complied with at all times.

At any time that a potentially unsafe practice is observed, the site safety manager will have the right as well as the responsibility to halt the work in question, until a safe system of working is again put in place.

Appropriate site personnel will be trained as first aiders and fire marshals. In addition, appropriate staff will be trained in environmental issues and spill response procedures. Tanks and drums of potentially polluting materials will be stored in secure containers or compounds which will be locked when not in use.

Secure valves will be provided on oil and fuel storage facilities. Equipment and vehicles will be locked, have keys removed and be stored in secure compounds.

The Main Contractor will be required to maintain an emergency response plan which will cover all risks i.e. fire, flood, collapse etc.

In preparing this plan the Contractor will be required to liaise with the emergency response services.

3.10 Materials – Source and Transportation

In so far as is feasible, all construction materials will be sourced from local suppliers if these are available within the Cork area. The selection and specification of construction materials will be informed by local availability of these materials. Within the necessary constraints of performance, durability and cost, construction materials will be sourced from local suppliers and manufacturers, where possible. The coordination and logistics of construction traffic will be captured within the construction traffic management plan which will be agreed with CCC and An Garda Síochána

4 **Construction Environmental Commitments**

The environmental commitments are the proposed construction control measures that are provided in **Chapter 17** (Summary of Mitigation Measures) of the EIAR and in Section 7.3 (Avoidance and Mitigation Measures) of the NIS. These mitigation measures will minimise potential environmental impacts during the construction period. Refer to the above sections of the EIAR and NIS for full details of the Environmental Commitments

5 Incident Response Plan

5.1 Introduction

The focus of including all of the stringent measures in this CEMP is on prevention of the incident arising in the first place. However, an Incident Response Plan has been prepared to ensure that in the unlikely event of an incident, response efforts are prompt, efficient, and suitable for particular circumstances. This plan is a working document and will be finalised by the Contractor following appointment and prior to commencing works on site. All of the content provided in this Plan will be delivered in full by the Contractor and its finalisation by the Contractor will not affect the robustness and adequacy of the information presented here and relied upon in the EIAR.

The Incident (Emergency) Response Plan (IRP) describes the procedures, lines of authority and processes that will be followed to ensure that incident response efforts are prompt, efficient, and suitable for particular circumstances. The objective of this IRP will be to:

- Ensure the health and safety of workers and visitors along the site.
- Minimise any impacts to the environment and ensure protection of the water quality and the aquatic species dependent on it.
- Minimise any impacts on properties, services etc.
- Establish procedures that enable personnel to respond to incidents with an integrated multi-departmental effort and in a manner that minimises the possibility of loss and reduces the potential for affecting health, property, and the environment.

The information provided in this section is based on best practice including the following documentation:

CIRIA (C648) Control of water pollution from linear construction projects, technical guidance (2006).

CIRIA (C649) Control of water pollution from linear construction projects, site guide (2006)

CIRIA (C532) Control of water pollution from construction sites, guidance for consultants and contractors (2001).

CIRIA (C741) Environmental good practice on site guide (fourth edition) (2015).

5.2 **Implementation**

The likelihood of an incident or emergency can be minimised by effective planning through development of an IRP. The Plan will be reviewed and updated regularly so that it continues to apply to construction activities. The Plan will identify the on-site risks and appropriate responses. It will be the responsibility of the Contractor to maintain and change the IRP as required. The Incident Response Plan will be reviewed on an on-going basis and immediately amended, as necessary, when applicable regulations are revised or when amendments are required by a regulatory authority.

The IRP in terms of health and safety will also require updating and submissions from the various contractors and suppliers as the proposed development progresses. The IRP details the initial contact that should be made in case of an emergency incident as well as those responsible for following up once an emergency event is declared.

The emergency services (particularly fire service) will be consulted to establish safe and appropriate access points to site compounds and other areas where there may be a risk of spillage etc. (e.g. outfalls, fuel storage). In an emergency, knowing the relevant people to contact for help can save time and minimise the impacts.

To cover the full length of a route, more than one contact may be needed, so the IRP will indicate which contacts apply to which sections of the site.

Numbers will be obtained for the following:

- radio/mobile contacts for site management and trained staff
- out-of-hours contacts
- environmental regulators (hotline or local contact)
- Irish Water (for spills to foul sewer)
- Cork County and City Councils
- Inland Fisheries Ireland and National Parks and Wildlife Service
- Environmental Protection Agency
- North Lee HSE South
- spill response and clean-up contractors

5.3 **Resources**

Relevant staff, including cover staff, shall be trained in the implementation of the IRP and the use of any spill kit/ control equipment as necessary.

The Contractor shall provide a list of all such staff to the Employer's Site Representative detailing the name, contact number, and training received, and the date of that training.

The Contractor shall provide a full list, including the exact locations, of all pollution control plant and equipment to the Employer's Site Representative. All such plant and equipment shall be maintained in place and in working order for the duration of the works.

5.4 Environmental Emergency Response Procedures

The best way to manage pollution incidents is to prevent them. Emergency procedures will be developed – either project specific, site specific or activity specific and all on site will be required to know these procedures.

An effective pollution IRP relies on the following elements:

- Identification of all possible emergency scenarios.
- Effective planning, e.g. availability of booms, spills kits at appropriate locations.
- Identification of receptors/pathways (e.g. surface water drains/river).
- Identification and dissemination of contact numbers.
- Definition of site-based staff responsibilities.
- Appropriate site-based staff training.
- Exercise of incident scenarios spill drills.
- Availability of suitable spill kits at appropriate locations on the site.
- Implement lessons learnt from previous incidents.
- Ensure that all appropriate site staff are aware of the site emergency procedure(s) (e.g. spillage, leakage, fire, explosion and flooding), that drain covers and spill kits are available, and they know how to use them.

In terms of pollution spill response procedures, these will vary depending on the sensitive receptor and nature of construction activities but the following information will be included as a minimum and displayed at appropriate locations on the whole site, at river crossings, near outfalls etc.:

- Instruction to stop work and to switch off sources of ignition.
- Contain the spill; location of spill clean-up material.
- Name and contact details of responsible staff (these staff should assess the scale of the incident to determine whether the environmental regulator needs to be called).
- Measures particular to that location or activity (for example, close pond outlet valve).

Emergency equipment will be obtained from a reputable supplier and site staff will be trained in its correct use. Material Safety Data Sheets and best practice assessments will be used for advice on appropriate spill measures. The type of equipment required will depend on the activity taking place. The CIRIA document C648 Control of water pollution from linear construction projects, technical guidance (2006) provides details on the types and applications of emergency equipment. Refer to Table 15.2 of same document.

Every effort will be made to prevent an environmental incident during the construction and operational phase of the project.

The focus of including all of the stringent measures in this CEMP is on prevention of the incident arising in the first place. Oil/Fuel spillages are one of the main environmental risks that will exist on the proposed site which will require an emergency response procedure. The importance of a swift and effective response in the event of such an incident occurring cannot be over emphasised. An example of the steps to follow in the event of a spillage to ensure that the environmental risk is reduced to as low as reasonably practical. This procedure can be tailored to be site/location/activity specific as required:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill
- If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses or sensitive habitats
- Clean up as much as possible using the spill control materials
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited
- Notify the Site Environmental Manager (SEM) immediately giving information on the location, type and extent of the spill so that they can take appropriate action
- The SEM will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring
- The SEM will notify the appropriate regulatory body such as Cork County Council, NPWS, Department of Communications, Climate Action and Environment (DCCE) and Department of Housing, Planning, and Local Government (DHPLG), if deemed necessary

Environmental incidents are not limited to just fuel spillages. Therefore, any environmental incident will be investigated in accordance with the following steps.

- The SEM must be immediately notified.
- If necessary, the SEM will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Environmental Incident Form which will provide information such as the cause, extent, actions and remedial measures used following the incident. The form will also include any recommendations made to avoid reoccurrence of the incident.

- In the very unlikely event of an incident occurring which may impact on a sensitive receptor, the relevant persons/authorities will immediately be informed (such as the Project Archaeologist, NPWS, IFI, EPA, North Lee HSE South etc.)
- A record of all environmental incidents will be kept on file by the Site Environmental Manager and the Contractor. These records will be made available to the relevant authorities such as Cork County Council, Cork City Council, DCCE and DHPCLG if required.
- The SEM will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Contractor as appropriate.
- By carrying out the above steps, a proper system will be in place to investigate, record and report any potential accidents or incidents.

5.5 Fire Control Measures

Every effort will be made to prevent the outbreak of a fire during the construction and operational phase of the proposed development. Fire extinguishers and first aid supplies will be available in the work area.

In the event of such an incident, the health and safety of all personnel will be a priority. All relevant legislation and guidance on health and safety of people and in particular fire safety will be complied with.

5.6 Training and Testing

Staff responsible for action in an emergency need to know their responsibilities. Staff will be trained to use the necessary equipment such as spill kits or outlet valves.

Emergency arrangements will need to be reviewed and tested periodically (and always after an incident) to ensure that measures are effective and that the workforce is aware of what to do in the event of an incident. Emergency drills will be recorded and improvements noted and actioned accordingly.

5.7 Corrective Action

When an incident happens, it is important to learn from it and ensure that such an incident does not occur again. This may involve changing the method of work for a particular activity, providing containment or treatment materials, or simply training staff so they are aware of the correct method of work. Similarly, if an audit of planned arrangements indicates that measures are not in place, or those in place need to be improved, action will be taken immediately.

A record of corrective actions and lessons learned will be kept and communicated to all relevant persons, teams, sub-contractors etc. across the proposed development.

5.8 Summary Checklist

- The focus of including all of the stringent measures in this CEMP is on prevention of the incident arising in the first place.
- The Contractor shall finalise the IRP. This plan is a working document and will be finalised by the Contractor following appointment and prior to commencing works on site. All of the content provided in this Plan will be delivered in full by the Contractor and its finalisation by the Contractor will not affect the robustness and adequacy of the information presented here and relied upon in the EIAR.
- Assess the pollution risks and develop emergency and spill response procedures for site specific activities.
- Obtain details of key people that may need to contact for help.
- Provide equipment for dealing with pollution incidents.
- Train staff to follow procedures and use equipment correctly.
- Audit the emergency plan.
- Take action following an incident to ensure it does not occur again.

Appendix 6.1

Habitat Maps









