
Appendix C

Construction Environmental Management Plan

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Appendix A Schedule of Environmental Commitments / NIS Mitigation

Appendix B Statutory Planning Consent Including Any Additional Environmental Commitments

1. Introduction

Córas Iompair Éireann, hereafter referred to as CIÉ or ‘the Applicant’ is applying to An Bord Pleanála (“the Board”) for a Railway Order (“RO”) under the Transport (Railway Infrastructure) Act 2001 (as amended and substituted) for the DART+ South West Project (“the proposed Project”). The application for a RO is being made by CIÉ, Ireland’s national public transport provider. Iarnród Éireann (IÉ) is a wholly owned subsidiary of CIÉ. Iarnród Éireann is responsible for the operation of the DART, commuter, and intercity rail passenger services throughout Ireland and more specifically for the proposed Project area. Iarnród Éireann provides passenger and some freight rail services along the proposed Project area. Iarnród Éireann have developed the proposed Project from concept to application stage on behalf of CIÉ.

The Transport (Railway Infrastructure) Act 2001 (as amended) provides for the making of a Railway Order application by Córas Iompair Éireann (CIÉ) to An Bord Pleanála (“the Board”). The European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the EIA Directive (EU Directive 2011/92/EU as amended by Directive 2014/52/EU) on the assessment of the effects of certain public private projects on the environment by amending the Transport (Railway Infrastructure) Act 2001 (‘the 2001 Act’).

An examination, analysis and evaluation is carried out by An Bord Pleanála in order to identify, describe and assess, in the light of each individual case, the direct and indirect significant effects of the proposed railway works, including significant effects derived from the vulnerability of the activity to risks of major accidents and disasters relevant to it, on: population and human health; biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives; land, soil, water, air and climate; material assets, cultural heritage and the landscape, and the interaction between the above factors. In carrying out an EIA in respect of an application made under section 37 of the 2001 Act, An Bord Pleanála is required, where appropriate, to co-ordinate the assessment with any assessment under the Habitats Directive or the Birds Directive.

This document is the Construction Environmental Management Plan (CEMP) for the proposed Project and has been prepared by RPS and TTA-JV (Typsa, Tuc Rail and Atkins Joint Venture) on behalf of Iarnród Éireann.

The purpose of the CEMP is to set out the procedures, standards, work practices and management responsibilities required to deliver the environmental mitigation from the EIAR and NIS to ensure that potential environmental effects that may arise from construction of the Proposed Development are addressed. The CEMP documents and describes the main activities that will be undertaken to deliver the proposed Project and to provide a framework of the environmental protection measures that will be implemented prior to commencement of and throughout the construction of the proposed Project. It is intended that the CEMP will be a “live” document which will be reviewed prior to and updated during construction according to site specific conditions on the project and to reflect current construction activities, manage environmental risks and mitigation.

This Planning Stage CEMP has been prepared to inform An Bord Pleanála, statutory consultees, and other project stakeholders of the proposed management methods to be employed during the construction of the proposed Project. Should planning consent be received for the project, the

appointed Main Contractor(s) will assume responsibility for the CEMP including all environmental commitments arising from the EIAR and NIS and any further commitments or conditions from the statutory planning process. The Main Contractor(s) will update the CEMP over the duration of pre-construction and construction of the works.

1.1. Purpose of the CEMP

The CEMP will be a key construction contract document and post planning, the appointed Main Contractor(s) will take ownership of the CEMP to ensure commitments included in the statutory approvals are adhered to and that it integrates the requirements of the CEMP. The mitigation measures, which are considered necessary to protect the environment will be implemented by the appointed Main Contractor(s) and sub-contractors working on the project.

The Planning Stage CEMP presents the minimum environmental management requirements to be adhered to by the Main Contractor(s) and all sub-contractors. The key environmental aspects associated with the construction of the DART+ South West Project, the appropriate mitigation and monitoring controls, are identified in this CEMP and its supporting documentation.

This document presents the approach and application of environmental management and mitigation for the construction of the proposed Project. It aims to ensure that adverse effects from the construction phase of the proposed Project, on the environment and the local communities, are avoided or minimised. It does not describe mitigation measures relating to the operation of the proposed Project. These are provided in the mitigation sections of the EIAR Chapters in Volume 2 of the Environmental Impact Assessment Report (EIAR) and which are summarised in Chapter 27 Schedule of Environmental Commitments.

The implementation of the requirements of the CEMP by the main contractor and subcontractors will ensure that the construction phase of the project is carried out in accordance with the commitments made by CIE/IÉ in the Railway Order application process for the proposed Project, and as required under the Railway Order.

2. Description of Proposed Project

2.1. Project Overview

The proposed Project will consist of the electrification of the existing Cork Mainline from Hazelhatch & Celbridge Station to Heuston Station, and to Glasnevin Junction via the Phoenix Park Tunnel Branch Line [Great Southern and Western Rail Line (GSWR)]. The works extend across the three administrative areas/local authority areas of Kildare, South Dublin and Dublin City. The total length of the proposed Project is approximately 20 kilometres.

The proposed Project will complete four tracking between Park West & Cherry Orchard Station and Heuston Station and will also re-signal and electrify the route. The completion of the four tracking will remove a significant existing constraint on the line (i.e. where four tracks reduce to two / three), which is currently limiting the number of train services that can operate on this route. The proposed Project will also deliver track improvements along the Phoenix Park Tunnel Branch Line, which will allow a greater number of trains to access the city centre. The proposed Project includes a new Heuston West Station located within CIÉ lands at Heuston Station.

The proposed Project will require modernisation and modifications to the existing railway line. A range of design elements, general linear works and ancillary works (drainage and utility diversions) are required along the entire length of the railway corridor to facilitate the electrification of the line and the upgrade of the existing network. Additionally, specific elements are required at specific locations along the route such as electrical substations to provide power to the network.

A detailed description of the proposed Project is provided in Chapter 4 Project Description and in Chapter 5 Construction Strategy in Volume 2 of the EIAR.

2.2. Construction Stage

The overall construction programme is expected to take 50 months, construction is expected to commence in mid-2025, subject to the necessary approvals.

Figure 2-1 provides an indicative programme for the construction phase of the proposed Project. A detailed construction programme is provided in Chapter 5 Construction Strategy in Volume 2 of the EIAR.

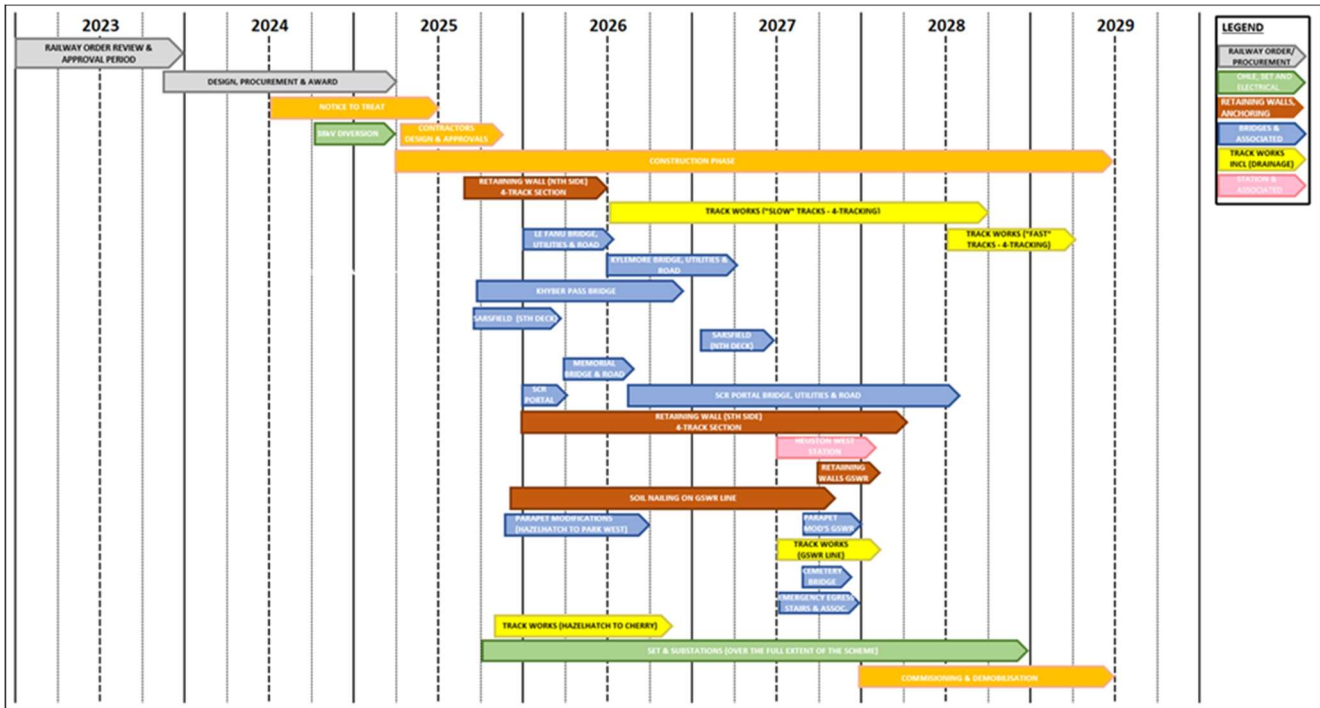


Figure 2-1 Indicative Construction Programme

A critical part of the construction of the works will be the four-tracking between Park West & Cherry Orchard Station and Heuston. Full closure of the line for extended periods of time to facilitate construction is not possible due to the significant disruption to operations and passenger services. The works in this area therefore will need to be undertaken in a number of stages to ensure continuity of railway operations. As the corridor is narrow and full closure of the line cannot be permitted, the works will need to be phased so that only one side will be worked on at a time. A phase comprising one side of the works over a certain length will be completed in its entirety, including all track works and Signalling, Electricity and Telecoms (SET) infrastructure before the opposite side can be commenced. All rail operations will be diverted to the newly widened section to enable works to be continued on the other side.

Twelve stages have been identified for the construction phase to represent changes to track and signalling arrangements proposed to bring the construction to a final conclusion and this is outlined in Table 2.1. The stages will be evolved during the development of the construction stage of the proposed Project.

Table 2.1: Schedule of Railway Construction Management Stages

STAGE 0 – PRE-MAIN CONTRACT	
LINES IN OPERATION	- Normal Operations anticipated until DART+ South West commences.
TRACK WORKS	- No advanced works contract anticipated.
OPERATIONAL IMPACT	- 38kV advanced works diversion contract anticipated that may require limited possessions for safety owing to the proximity of the overhead structures and lines to the existing tracks.
SYSTEM	- No advanced works contract anticipated.

STAGE 1	
LINES IN OPERATION	- From Le Fanu to Heuston: Up Main, Down Main and Relief Line
OPERATIONAL IMPACT	- Only one track for both directions, 40m around Ch.12+000 (East Kylemore)
TRACK WORK	- Removal of existing Up Main between Heuston and East Kylemore (From Ch. 9+250 to Ch. 12+050), except Sarsfield bridge - Down Slow track installation from Ch.9+300 to Ch. 10+280 and from Ch. 11+000 to 12+850 - Up Slow track installation from Ch. 9+250 to Ch. 13+050, except Sarsfield bridge (slew in new track required to tie in with existing Up Main track)
SYSTEM	- SIG: Location Case (LOC's) HN01/18, 01/28, 01/54, 01/79, 02/04, 03/42, 03/15, 02/71 will be relocated from north side tracks to south side, including the cabling (power, LV and FO). Some equipment to be removed, routes must be cancelled from the interlocking (North track will be removed in the section) HN253, HN256 to be removed; gantry to be removed, signals to be relocated: Speed restrictions expected
STAGE 2	
LINES IN OPERATION	- From Le Fanu to East Kylemore: Up Main and Down Main - From East Kylemore to Heuston: Down Main and Relief Line
OPERATIONS IMPACT	- Only one track for both directions, 40m around Ch.12+000 (East Kylemore)
TRACKWORK	- Removal of existing Up Main between Heuston and East Kylemore (From Ch. 9+250 to Ch. 12+050), except Sarsfield bridge - Down Slow track installation from Ch.9+300 to Ch. 10+280 and from Ch. 11+000 to 12+850 - Up Slow track installation from Ch. 9+250 to Ch. 13+050, except Sarsfield bridge (slew in new track required to tie in with existing Up Main track)
SYSTEMS	- SIG: LOC's HN01/18, 01/28, 01/54, 01/79, 02/04, 03/42, 03/15, 02/71 will be relocated from north side tracks to south side, including the cabling (power, Low Voltage [LV] and FO). Some equipment to be removed, routes must be cancelled from the interlocking (North track will be removed in the section) HN253, HN256 to be removed; gantry to be removed, signals to be relocated: Speed restrictions expected
STAGE 3	
LINES IN OPERATION	- From Le Fanu to East Kylemore: Up Main and Down Main - From East Kylemore to Heuston: Down Main and Relief Line
OPERATIONS IMPACT	- Only one track for both directions, 40m around Ch.12+000 (East Kylemore)
TRACKWORK	- Removal of two crossovers between Down Main and Relief Line between Ch. 10+800 to 11+000
SYSTEMS	- Crossover 705A/B 706A/B to be removed: Interlocking modification required; new troughing and niches to be constructed in the new north slow line
STAGE 4	
LINES IN OPERATION	- From Le Fanu to East Kylemore: Up Main and Down Main - From East Kylemore to Heuston: Down Main and Relief Line
OPERATIONS IMPACT	- Only one track for both directions, 40m around Ch.12+000 (East Kylemore) - Closure of Phoenix Park Tunnel Branch Line

	<ul style="list-style-type: none"> - Closure of northern yard area at Heuston station - Closure of platforms 6,7 and 8 at Heuston station
TRACKWORK	<ul style="list-style-type: none"> - Slew of the Down Main towards the South from Ch.10+400 to 11+000 to match with future Down Slow, except at Sarsfield Bridge. - Phoenix Park Tunnel Branch Line works - Removal of Heuston Station northern tracks tie-in (yard and platform 6, 7 and 8)
UTILITIES	<ul style="list-style-type: none"> - Phoenix Park Tunnel Branch Line
RETAINING WALLS	<ul style="list-style-type: none"> - Phoenix Park Tunnel Branch Line
DRAINAGE	<ul style="list-style-type: none"> - Phoenix Park Tunnel Branch Line - Construction of Attenuation Tank #3 (Heuston West) - Installation of northern pipe of network #3 (from South Circular Road to Attenuation tank #3)
TRAFFIC MANAGEMENT	<ul style="list-style-type: none"> - Install TTM diversions for Glasnevin Cemetery & close road - Installation of TTM/Utility bridge - Glasnevin Cemetery - Removal of TTM/Utility bridge -Glasnevin Cemetery
BRIDGES	<ul style="list-style-type: none"> - Phoenix Park Tunnel Branch Line (Glasnevin Cemetery Road Bridge (OBO10) - Glasnevin bridge and PPT tunnel invert reconstruction)
SYSTEMS	<ul style="list-style-type: none"> - Crossover 705A/B 706A/B to be removed: Interlocking modification required; new troughing and niches to be constructed in the new north slow line.
STAGE 5	
LINES IN OPERATION	<ul style="list-style-type: none"> - From Le Fanu to East Kylemore: Down Main - From East Kylemore to Heuston: Down Main and Relief Line
OPERATIONS IMPACT	<ul style="list-style-type: none"> - Only one track for both directions, 1000m from Ch.12+000 (East Kylemore) to Ch. 13+000 - Closure of Phoenix Park Tunnel Branch Line - Closure of northern yard area at Heuston station - Closure of platforms 6,7 and 8 at Heuston station
TRACKWORK	<ul style="list-style-type: none"> - Removal of exiting Up Main from Ch. 12+000 to Ch. 13+450 - Installation of Up and Down Slow from Ch. 12+900 to Ch. 13+450 - Finish Phoenix Park Tunnel Branch Line - Finish Heuston Station northern tracks tie-in (yard and platform 6, 7 and 8) - Removal of crossover between Turnback siding and Fast Line beside Finnstown - Installation of crossover beside Finnstown R120 Road Bridge (OBC19) - Removal of crossover between Turnback siding and Fast Line East of Hazelhatch - Installation of crossovers East of Hazelhatch - Removal of existing Slow tracks West Hazelhatch - Installation of Slow tracks West Hazelhatch
SYSTEMS	<p>'Existing Interlocking to be modified: No new cabling expected.</p> <p>Interfaces with:</p> <ul style="list-style-type: none"> - Heuston South (existing Interlocking) - Adamstown to Hazelhatch.
STAGE 6	
LINES IN OPERATION	<ul style="list-style-type: none"> - From Le Fanu to East Kylemore: Up Slow and Down Main - From East Kylemore to Heuston: Up Slow and Relief Line
OPERATIONS IMPACT	<ul style="list-style-type: none"> - Closure of platform 6 at Heuston station
TRACKWORK	<ul style="list-style-type: none"> - Removal of existing Down Main from Ch. 9+500 to Ch. 11+900, except Sarsfield bridge

	- Installation of Down Slow from Ch. 10+300 to Ch. 11+000, except Sarsfield bridge
SYSTEMS	New interlocking in the NTCC: New cabling from the new OBJ to axle counters, signals and motor points.(Heuston - Adamstown) Fibre optic to be connected and laid in new troughing (Slow line north) LV 650 lines connected to new LOCS through new troughing (North slow lines). Cabling to be laid from PK 13+000 to 25+000, after new troughing has been made
STAGE 7: (Refer to Construction Programme for Sequence of Works)	
LINES IN OPERATION	- From Le Fanu to East Kylemore: Up Slow, Down Slow and Down Main (only access to Inchicore Works from the West) - From East Kylemore to Heuston: Up Slow and Down Slow
OPERATIONS IMPACT	- Closure of platforms 1,2 and 3 at Heuston station - Closure of East access to Maintenance Shed at Inchicore
TRACKWORK	- Removal of existing Relief Line - Removal of southern tracks at Heuston Station to allow future tie-ins - Removal of East access to Inchicore Shed - Removal of sidings from Ch. 11+100 to 11+500 at Inchicore
SYSTEMS	- Projected LOC's to be commissioned, shifted LOCS to be removed from south track (Inchicore to Heuston). - Hazelhatch OB to be commissioned. - Cabling South fast track to be located in North slow track temporarily
STAGE 8	
LINES IN OPERATION	- From Le Fanu to East Kylemore: Up Slow, Down Slow and Down Main (only access to Inchicore Works from the West) - From East Kylemore to Heuston: Up Slow and Down Slow
OPERATIONS IMPACT	- Closure of platforms 1,2 and 3 at Heuston station - Closure of East access to Maintenance Shed at Inchicore
TRACKWORK	- Installation of Fast tracks between Inchicore and Heuston - Tie-in between fast tracks and Heuston Station tracks
SYSTEMS	- Cabling running in south from Inchicore to PK 13*300 diverted to North
STAGE 9	
LINES IN OPERATION	- From Le Fanu to East Inchicore: Up Slow and Down Slow - From East Inchicore to Heuston: Up Slow, Down Slow, Up Fast and Down Fast
OPERATIONS IMPACT	- Closure of West access to Maintenance Shed and sidings at Inchicore
TRACKWORK	- Removal of existing tracks between Cherry Orchard and Inchicore (West access) - Removal of West sidings and access to Maintenance Shed tracks - Removal of existing Fast tracks West Hazelhatch
SYSTEMS	- Cabling running in south from Inchicore to PK 13*300 diverted to North
STAGE 10	
LINES IN OPERATION	- From Le Fanu to East Inchicore: Up Slow and Down Slow - From East Inchicore to Heuston: Up Slow, Down Slow, Up Fast and Down Fast
OPERATIONS IMPACT	- Closure of West access to Maintenance Shed and sidings at Inchicore

TRACKWORK	- Installation of Fast tracks between Cherry Orchard and Inchicore Works. - Installation of new sidings and west access to maintenance shed - Installation of new Fast tracks West Hazelhatch
SYSTEMS	- Minor cabling movements
STAGE 11	
LINES IN OPERATION	- Up Fast and Down Fast
OPERATIONS IMPACT	- Closure of Slow tracks
TRACKWORK	- Installation of Slow tracks at Sarsfield - Slew Slow tracks to tie-in with new tracks at Sarsfield
SYSTEMS	- Minor cabling movements
STAGE 12	
LINES IN OPERATION	- Full DART+ South West in Operation

2.3. Consents and Licenses

A number of consents, permits and licences will be required during the construction phase of the proposed Project. The appointed Main Contractor(s) will appoint a Site Environmental Manager who will maintain a Consents Register which will document all existing consent conditions, record all new applications made and their status.

2.4. Advanced Works and Pre-Construction Surveys

Should the Railway Order be confirmed, a number of advanced works contracts will be required to facilitate construction. These include:

- **Ground Investigations for Detailed Design:** Preliminary ground investigation works have been undertaken to inform the design of the works to date. Further intrusive ground investigation will be required to advance the design for construction. This will include but not be limited to the following along the length of the corridor:
 - Hand dug inspection pits;
 - Cable percussive boreholes with rotary follow-on;
 - Rotary boreholes;
 - Geobore S Rotary boreholes;
 - Windowless sample boreholes;
 - Geophysical survey.
- **Pre-construction Ecological Surveys:** This phase of the construction will address any required pre-construction ecological surveys, consisting of bat surveys and bird nesting surveys. These will be undertaken prior to any vegetation clearance, tree felling and/or other demolition works as required and detailed in the mitigation measures included in this EIAR.

Vegetation clearance will be programmed to avoid the bird nesting season. Further detail on the required pre-construction surveys can be found in **Appendix A** to this CEMP which lists the Environmental Commitments from both the EIAR and NIS.

- **Invasive Species Treatment and Management:** Invasive species have been identified within and adjacent to the rail corridor. Prior to commencing construction, a further invasive species survey will be undertaken within the lands made available and all stands will be tapped off to prevent accidental spread. A treatment plan which will include in-situ chemical treatment and / or excavation and disposal at a suitably licensed facility will be undertaken. Good machinery hygiene will be practiced to ensure invasive species are not spread between sites or along the corridor. Further detail on the required surveys can be found in Chapter 27 of Volume 2 of the EIAR which lists the Environmental Commitments from both the EIAR and NIS.
- **Archaeological Monitoring:** Pre-construction archaeological surveys will be required under Licence by the Department of Housing Local Government and Heritage prior to construction works commencing. An experienced and competent licence-eligible archaeologist will acquire any licenses/ consents as required. Further detail can be found in Chapter 27 of Volume 2 of the EIAR which lists the Environmental Commitments from both the EIAR and NIS.
- **Site Clearance:** Prior to works commencing, vegetation such as trees, climbing plants, shrubs or vines will be removed. Site clearance to remove any unwanted materials and equipment will also be required. Before the site clearance starts, an ecological survey of the area will be completed. Site clearance including vegetation removal will take place between September and February inclusive to avoid nesting birds. If vegetation removal is required between March and August inclusive, the area shall be checked by the Project Ecologist. If nesting birds are found, the works will be postponed until the chicks have fledged.
- **Condition Surveys:** These surveys will be carried out for engineering, property and conservation purposes as follows:
 - Engineering: Site inspection to check the condition of existing foundations existing structures such as bridge decks, walls and abutments. Geometry and properties of materials of the existing structural elements;
 - Property: Structural surveys prior to works with high levels of vibration e.g. piling, wall anchoring and soil nailing; and
 - Conservation: Structural surveys prior to works with high levels of vibration and / or in proximity to features of conservation.

2.5. Construction and Demolition Waste

Any surplus excavated material will be removed off-site either as a waste or, where appropriate, as a by-product. Where the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011.

If the material is deemed to be a waste, removal and reuse/recycling/recovery/disposal of the material will be carried out in accordance with the Waste Management Act 1996 (as amended), the Waste

Management (Collection Permit) Regulations 2007 (as amended) and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). The volume of waste requiring recovery/disposal will dictate whether a Certificate of Registration (COR), permit or licence is required by the receiving facility.

In order to establish the appropriate reuse, recovery and/or disposal route for the surplus soils and stones to be removed off-site, it will first need to be classified. The material will initially need to be classified as hazardous or non-hazardous in accordance with the EPA publication Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous. Environmental soil analysis will be carried out on a number of representative soil samples for a range of parameters to allow the soil to be accurately classified as hazardous or non-hazardous. In addition, soil analysis will also be carried out in accordance with the requirements for acceptance of waste at landfills (Council Decision 2003/33/EC Waste Acceptance Criteria). This legislation sets limit values for acceptance of waste at landfills based on properties of the waste including potential pollutant concentrations and leachability. (Note: Clean inert soils and stones excavated from greenfield sections of the route would generally not require classification/testing but would require a letter of suitability to be provided to the receiving facility.) The surplus soils and stones may be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the event of hazardous material being encountered, be transported for treatment/recovery or exported abroad for disposal in suitable facilities.

Further details regarding waste management are included in Section 9 of this CEMP and operational plans of CIÉ after consent is given to the Project.

2.6. Designing for a Circular Economy

Throughout the design and construction of the proposed Project, solutions will be sought to minimise the consumption of materials and the generation of waste throughout the lifecycle of the proposed Project. The following non-exhaustive list based on the DMRB LA110 guidance (2019) will be implemented throughout the detailed design and construction of the proposed Project:

- Design for reuse and recovery: identifying, securing and using materials that already exist on-site, or can be sourced from other projects and ensuring new materials brought onto site have high recycled content;
- Design for off-site construction: maximizing the use of pre-fabricated structure and components, encouraging a process of assembly rather than construction;
- Design for materials optimisation: through minimising material use, balancing out cut and fill;
- Maximising the use of responsibly sourced materials and materials with recycled content (e.g. Using material from low carbon or sustainable sources);
- Design for resource efficient procurement: identifying and specifying materials that can be acquired responsibly, in accordance with a recognised industry standard (e.g. consider opportunities for materials to be returned to the supplier for future reuse, such as steel and concrete). The contract awarded for the proposed Project will include a requirement for the appointed Main Contractor(s) to select the waste contractor who can offer best overall reuse and recycling performance;

- Design for the future (deconstruction and flexibility): identifying how materials can be designed to be more easily adapted over an asset lifetime and how deconstruction and demounting of elements can be maximized at end of first life;
- Engineering plan configurations and layouts will demonstrate the most effective use of materials and arisings that can be achieved; and
- The Main Contractor(s) will be responsible for sourcing materials for the construction of the proposed project, and where possible in accordance with award criteria for the proposed Project incorporate Iarnród Éireann green procurement principles, will seek to use local suppliers and to re-use materials on site to minimise the attendant environmental impact, cost of transport and support the local economy and local communities in line with the proximity principle.

3. Responsibilities, Correspondence and General Communication

The appointed Main Contractor(s) will develop the CEMP further to meet the requirements of ISO 14001 and all site works will be carried out in compliance with the CEMP and the requirements of the statutory planning approval, if successful. The Planning Stage CEMP includes but is not limited to the topics listed in the following sections. This content will be advanced by the appointed Main Contractor(s) in due course.

The CEMP details all the environmental aspects and impacts associated with this contract such as waste management, pollution prevention and protection of flora and fauna with particular emphasis on the Special Area of Conservation (SAC), Special Protection Area (SPA), proposed Natural Heritage Area (pNHA) and Water Quality in the watercourses. The topic-specific chapters of the EIA provides the framework for identifying the potential environmental impacts generated by construction and the associated works. The Environmental Operational Control Procedures and activity specific method statements will detail the working methods necessary for managing and mitigating these impacts, whether it is by prevention or mitigation. Prior to the commencement of construction activities, the Environmental Operational Control Procedures and activity specific method statements will be completed so as to conform to precise site-specific requirements of the proposed Project which deliver on the environmental commitments made in the EIAR, the NIS and through the statutory planning process.

3.1. Environmental Policy

The appointed Main Contractor(s) will develop an Environmental Policy with consideration for impacts on the natural and built environment. All project personnel will be accountable for the environmental performance of the proposed Project and will be made aware of the Environmental Policy at induction. The environmental policy will consider and make commitments with regard to the protection of Natura 2000, pNHA and NHA sites, emissions to the atmosphere (including dust, noise), maintenance of water quality, resource usage, energy consumption and waste management.

3.1.1. Environmental Management System

Iarnród Éireann maintains an environmental policy to provide a commitment to managing and reducing their effects on the environment. The Iarnród Éireann Environmental Policy (2018) states that there is a commitment “to develop an Environmental Management System (EMS) with existing management systems (Quality, Energy, Safety, etc) for incremental benefit”. The final CEMP will comply with Iarnród Éireann Environmental Policy and the commitments, including ISO 40001:2015 and ISO 9001:2015 international Environmental Management System (EMS) standards.

The appointed Contractor(s) will prepare their own project-based EMS in accordance with Iarnród Éireann Environmental Policy and EMS prior to construction which will be subject to approval by Iarnród Éireann.

This section of the CEMP will be subject to ongoing review and will be updated as required.

3.2. Environmental Aspect Register

Once appointed, the Contractor(s) will prepare an Environmental Aspects Register of all sensitive environmental features which have the potential to be affected by the construction works, together with details of commitments and agreements made within the EIAR, the NIS, Contract Documentation, Railway Order, and any conditions identified by Statutory Authorities with regards to mitigation of potential impacts.

The Environmental Aspects Register will provide the relevant information for the preparation of construction method statements and will be regularly updated during the works.

The Environmental Aspects Register will consider sensitive environmental features such as those listed below - please note this list is not exhaustive and will be required to be amended and expanded upon for site specific features as appropriate by the Contractor.

- Identification of all waterways for the protection against ingress of suspended solids or any pollutant;
- Air emissions;
- Asbestos
- Noise and Vibration emissions;
- Light emissions;
- Waste generation;
- Treatment of contaminated materials;
- Treatment of non-contaminated materials;
- Treatment of hazardous waste materials;
- Treatment of invasive alien species;
- Use hazardous materials;
- Energy usage;
- Water usage;
- Discharge of wastewater;
- Traffic generation;
- Biodiversity - (terrestrial and aquatic habitats, flora and fauna);
- Landscape and Visual impacts;
- Soils, Geology and Hydrogeology;
- Hydrology; and
- Archaeology, Architectural and Cultural Heritage.

3.3. Project Organisation / Duties and Responsibilities

The appointed Main Contractor(s) CEMP will define the roles and responsibilities of the project team. The Contractor is responsible for ensuring that all members of the Project Team, including sub-contractors comply with the procedures set out in the CEMP. The Contractor will ensure that all persons working on site are provided with sufficient training, supervision and instruction to fulfil this requirement.

Key staff will be notified of their appointment and confirm that their responsibilities are clearly understood. The principal environmental responsibilities for key staff can be identified in the following sections. A project Contacts Sheet will provide a list of all Employer, Contractor, and relevant third-party contact details (refer to examples provided in Table 3.1 to Table 3.3). The Contractor will update this sheet and keep it current for the duration of the Contract.

3.3.1. Iarnród Éireann (Employer)

Procurement of the appointed Main Contractor by Iarnród Éireann (the Employer for the construction works), will involve the determination that the appointed Main Contractor is competent to carry out the works, including the effective implementation of the mitigation measures. The appointed Main Contractor will be required to plan and construct the proposed Project in accordance with the Employer's Requirements, and Iarnród Éireann will employ an Employer's Representative team with appropriate competence to administer and monitor the Construction Contract for compliance with the Employer's Requirements.

3.3.1.1. DART+ Programme Archaeologist

In accordance with the relevant Code of Practice¹, Iarnród Éireann (the Employer for the construction works), will appoint an Archaeologist for the overall DART+ Programme. The Programme Archaeologist will:

- Ensure that the nature and quality of all excavation reports are of a standard acceptable to the Minister and are submitted within the agreed timescale.
- Be responsible for overseeing the conduct of the archaeological works to ensure that they are carried out in accordance with approved method statements, in compliance with relevant conditions and within agreed timescales.
- Inspect works in the field to ensure best practice and adherence to agreed methodologies as specified in the Method Statements and licence/consent conditions.
- Ensure that all mitigation is carried out to a standard acceptable to the Minister for Housing, Local Government and Heritage.

The Programme Archaeologist will work closely with the Project Archaeologist appointed by the Contractor to deliver the required mitigation measures identified in the EIAR.

¹ Code of Practice between the Department of the Department of Arts, Heritage and the Gaeltacht and Iarnród Éireann, 2012

3.3.1.2. Employer's Representative

Name: [To be inserted once appointed]

Duties and Responsibilities

The Employer's Representative acts on behalf of the Employer in the course of a construction project. The CEMP will be audited by the Employer's Representative to ensure that the Contractor is compliant with the environmental provisions of the Contract Documents.

3.3.1.3. Community Engagement Manager

Name: [To be inserted once appointed]

The Community Engagement Manager will be responsible for:

- Community liaison to engage with the local communities;
- To provide an avenue for members of the public to contact the project team;
- To prepare and implement the measures set out in the Community Liaison Plan; and
- Liaise with the contractor's Project Manager, Site Environmental Manager and Community Liaison Officer in communicating issues relating to community engagement/ landowners.

3.3.2. Contractor

Name: [To be inserted once appointed]

The appointed Main Contractor(s) will undertake the construction of the proposed Project, within the scope of the contract requirements.

The CEMP as a "live" document will be updated throughout the construction phase to take account of monitoring results, permits, legislative changes, outcomes of third-party consultations, etc. The appointed Main Contractor will be responsible for ensuring the CEMP is kept up to date for the duration of the construction phase and that all mitigation measures are actioned and delivered as intended in the EIAR / NIS/ statutory planning documentation.

3.3.2.1. Contractor's Project Manager

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The Project Manager's main duties and responsibilities include liaising with the Project Team in assigning duties and responsibilities to individual members of the main contractor's project staff for activities and actions identified within the CEMP. The Contractors Project Manger will:

- liaise with the Site Environmental Manager;
- lead the works on site;
- be responsible for the management and control of the activities and will have overall responsibility for the implementation of the CEMP; and
- be assisted by the Site Environmental Manager who will act as his/her deputy.

3.3.2.2. Contractor's Site Manager

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The Site Manager's environmental management responsibilities include, but are not limited to:

- Liaise with the Project Manager, Site Environmental Manager and the Project Team in assigning duties and responsibilities in relation to the CEMP, to individual members of the main contractor's project staff;
- Liaising with the Site Environmental Manager in preparing, reviewing and updating all site-specific method statements for activities where there is a risk of pollution or adverse effects on the environment;
- Liaising with the Site Environmental Manager in agreeing site specific Method Statements with third parties;
- Ensuring that all relevant information on project programming, timing, construction methodology, etc., is communicated from the contractor's Project Team, including the Project Manager, to the Site Environmental Manager in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required;
- Ensuring that the risk assessments for control of noise and environmental risk are prepared and effectively monitored, reviewed and communicated on site; and
- Ensuring that the Site Environmental Manager reviews all method statements, performs regular and frequent environmental site inspections and that relevant environmental protocols are incorporated and appended.

3.3.2.3. Contractor's Site Environmental Manager (Environmental Clerk of Works)

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The Contractor will be required to appoint an independent Site Environmental Manager/Environmental Clerk of Works (ECoW). The Site Environmental Manager must possess sufficient training, experience and knowledge appropriate to the nature of the task to be undertaken; hold and National Framework Qualification Level 8 or equivalent, in Environmental Science or Environmental Management or other relevant qualification acceptable to the Employer.

Separate from the on-going and detailed monitoring carried out by the contractor as part of the CEMP, the Site Environmental Manager shall carry out the inspection/ monitoring regime described below, and report to the Contractor. The results will be stored in the Site Environmental Manager's monitoring file and will be available for inspection/ audit by the Client, National Parks and Wildlife Service (NPWS) or Inland Fisheries Ireland (IFI) staff. All inspections/ monitoring/ results will be recorded on standard forms.

The responsibilities of the Site Environmental Manager include, but are not limited to:

Site Specific Method Statements

- Liaising with the Site Manager in preparing site-specific Method Statements for all works activities where there is a risk of environmental damage. These site-specific Method Statements will incorporate relevant Environmental Control Measures and take account of relevant Environmental Control Measure Sheets;
- Liaising with the Site Manager in reviewing and updating site-specific Method Statements for all works activities where Environmental Control Measures and Environmental Control Measure Sheets have been altered, and
- Liaising with the Site Manager where third party agreement is required in relation to site-specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets.

General

- Being familiar with the contents, environmental commitments and requirements contained within the Reference Documents;
- Being familiar with baseline data gathered and presented in the EIAR and NIS and during pre-construction surveys;
- Referring to all Environmental Commitments and Requirements in an Environmental Commitments Summary Table;
- Assisting the Site Manager in liaising with the PSDP/Engineer and the provision of information on environmental management to the Engineer during the course of the construction phase, and
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project staff.

Third Party Consultations

- Overseeing, ensuring coordination of and playing a lead role in third party consultations on environmental matters required statutorily, contractually and in order to fulfil best practice requirements;
- Ensuring that the minutes of meetings, action lists, formal communications, etc., are well documented and that consultation certificates are issued to the Engineer as required;
- Liaising with all prescribed bodies during environmental site visits, inspections and consultations;
- Where new Environmental Control Measures are agreed as a result of third party consultation, ensuring that the CEMP is amended accordingly;
- Where new Environmental Control Measures are agreed as a result of third party consultation, the Site Environmental Manager should liaise with the Site Manager in updating relevant site specific Method Statements, and

- Where required, liaising with the Site Manager in agreeing site-specific Method Statements with third parties.

Licensing

- Ensuring that all relevant works have (and are being carried out in accordance with) the required environmental permits, licences, certificates, planning permissions, etc.;
- Liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended;
- Liaising with the designated licence holders and “scientific agent” (generally defined in the licence as “the contractor engaged to carry out the scientific direction and monitoring of mitigation measures”) with respect to licences granted pursuant to the European Communities (Natural Habitats) Regulations 1997, as amended;
- Liaising with the Project Archaeologist to ensure the relevant licences from the Department of Housing, Local Government and Heritage required for the project are in place in advance of any construction work taking place and throughout the project as required; and
- Bringing to the attention of the Project, Design and Construction Team any timing and legal constraints that may be imposed on the carrying out of certain tasks.

Waste Management Documentation

- Coordinating the waste management procedure;
- Holding copies of all permits and licences provided by waste contractors;
- Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorisation, and
- Gathering and holding documentation with respect to waste disposal.

Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase;
- Advising the Site Manager of these changes, and
- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the main contractor’s senior management and subcontractors.

Site Environmental Inspections

- Carrying out regular documented inspections of the site to ensure that work is being carried out in accordance with the Environmental Control Measures and relevant site-specific Method Statements, etc, and
- Appending copies of the inspection reports to the CEMP.

Specialist Environmental Contractors

- Identifying requirements for specialist environmental contractors (including ecologists, waste contractors and spill clean-up specialists) before commencement of the project;
- Procuring the services of specialist environmental contractors and liaising with them with respect to site access and report production;
- Ensuring that specialist environmental contractors are competent and have sufficient expertise to coordinate and manage environmental issues, and
- Co-ordinating the activities of all the specialist environmental contractors on environmental matters arising out of the contract.

Environmental Induction Training

- Ensuring that Environmental Induction Training is carried out for all the main contractor's site personnel. The induction training may be carried out in conjunction with Safety Induction Training.

Environmental Incidents/Spillages

- Notifying the Site Environmental Manager of all incidents where there has been a breach of agreed environmental management procedures: where there has been a spillage of a potentially environmentally harmful substance; where there has been an unauthorised discharge to ground, water or air; where there has been damage to a protected habitat, etc.;
- Preparing and implementing an Emergency Response Plan.
- Notifying the relevant statutory authority of environmental incidents, and
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken should be made available to the relevant authority, the Engineer and the Site Manager.

3.3.2.4. Project Ecologist (Ecological Clerk of Works)

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The contractor will appoint a suitably experienced and competent Project Ecologist to supervise all pre-construction ecological surveying, implementation and overseeing of ecological mitigation measures and ensuring that activities on site are conducted in accordance with the planning permission as they pertain to ecological matters and specifically any works that could have an effect on protected habitats or species.

The Project Ecologist must possess training, experience and knowledge appropriate to the role, including:

- An NFQ Level 8 qualification or equivalent or other acceptable qualification in ecology or environmental biology; and,
- Demonstrable experience in the protection of European sites.

The principal functions of the Project Ecologist are:

- To provide ecological supervision of the construction of the proposed development and thereby ensure the full and proper implementation of all the mitigation measures relating to biodiversity prescribed in the EIAR and NIS; and
- To carry out weekly inspections and reporting on the implementation of the Contractor's Biosecurity Protocol.

The Environmental Manager may, as appropriate, assign other duties and responsibilities to the Project Ecologist.

In exercising his/her functions, the Project Ecologist will be required to keep a monitoring file and this will be made available for inspection or audit by Iarnród Éireann, the NPWS or IFI at any time.

3.3.2.5. Project Archaeologist

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

An experienced and competent licence-eligible archaeologist will be employed by the appointed contractor to advise on archaeological and cultural heritage matters during construction, to communicate all findings in a timely manner to Iarnród Éireann, the Iarnród Éireann Programme Archaeologist and statutory authorities, to acquire any licenses/ consents required to conduct the work, and to supervise and direct the archaeological measures associated with the proposed Project.

The Project Archaeologist on site is responsible for the following:

- Relevant licences to the Department of Housing Planning required for the project in advance of any construction work taking place and throughout the project as required
- To supervise works in vicinity of known archaeological sites'
- To supervise any pre-construction archaeological survey works
- Ensure the appropriate course of action is taken in the event that archaeological material is discovered during the works;
- Record and prepare the necessary reports of any archaeological monitoring; and
- Liaison and co-ordination with the Site environmental Manger.

Section 26 of the National Monuments Act 1930 (as amended) requires that excavations for archaeological purposes must be carried out by suitably qualified and experienced archaeologists acting under an excavation licence. Inappropriate excavation of a heritage site could result in damage to, or destruction of, the integrity, setting or historical context of the site, contrary to the public interest.

3.3.2.6. Project Conservation Architect

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

An experienced and suitably qualified Grade 1 Conservation Architect will be employed by the appointed contractor to advise on built heritage matters during construction. The Project Conservation Architect will advise and guide works which interact with national monuments, protected structures and national inventory of architectural heritage (NIAH) features of national or regional importance. The Project Conservation Architect will review contractor method statements to ensure works conform with conservation best practice. The Project Conservation Architect will also ensure the recording of structures that are to be demolished. This will ensure that knowledge of their existence and character is preserved for the future.

3.3.2.7. Design Manager

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The main duties and responsibilities of the Design Manger include:

- Understand the contents and commitments in the CEMP and relevant documentation referred to within;
- Understand the contents, commitments and requirements contained within the reference documents; and
- Participate in Third Party Consultations and liaising with third Parties through the site Environmental Manager.

3.3.2.8. Site Agents

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The main duties and responsibilities of the Site Agent(s) include:

- Ensuring Forepersons under his/her control adhere to the relevant Environmental Control measures and relevant site-specific Method Statements, etc.
- Ensuring that the procedures agreed during third party consultations are followed;
- Reporting immediately to the Site Environmental Manager any incidents where there has been a breach of agreed environmental management procedures, where there has been a spillage of a potentially environmentally harmful substance, where there has been an unauthorised discharge to ground, water or air, damage to habitat, etc.
- Attending environmental review meeting and preparing any relevant documentation as required by Management.

3.3.2.9. Forepersons

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The main duties and responsibilities of the Forepersons include:

- Ensuring personnel under his/her control adhere to the relevant environmental control measures and relevant site-specific Method Statements;
- Reporting immediately to the site agents and Site Environmental Manager any incidents where there has been a breach of agreed procedures e.g. spillages and discharges.
- Providing toolbox talks on Environmental Control Measures associated with site specific Method Statements to those who will undertake the work.

3.3.2.10. Project Supervisor Construction Stage (PSCS)

Name: [To be inserted by appointed contractor]

Duties and Responsibilities

The role of the Project Supervisor Construction Stage (PSCS) is to manage and co-ordinate health and safety matters during the construction stage. The PSCS will be appointed before the construction work begins and will remain in that position until all construction work on the project is completed. It is the responsibility of the PSCS to ensure that the project:

- is designed and is capable of being constructed to be safe and without risk to health.
- is constructed to be safe and without risk to health.
- can be maintained safely and without risk to health during subsequent use; and
- complies in all respects, as appropriate, with the relevant statutory provisions.

The PSCS will maintain contact with the Project Supervisor Design Process (PSDP) throughout the construction phase to communicate any health and safety related issues. The PSDP will prepare a written safety file appropriate to the characteristics of the project, containing relevant health and safety information, to be taken into account during any subsequent construction work following completion of the project.

3.3.2.11. Community Liaison Officer

Name: [To be inserted by appointed contractor]

The Main Contractor(s) shall appoint the Community Liaison Officer (CLO), responsibilities will include:

- During the construction phase, the CLO will work closely with the ground investigations (GI) contractor to communicate with landowners potentially affected by proposed GI works;
- Communicate with landowners regarding any property access requirements;
- Liaison with the Employer's Community Engagement Manager.
- The CLO will also be available to allow for member of the public or interested parties to make complaints about the construction works.

3.3.3. All Project Personnel

All project personnel have the following responsibilities:

- Reporting any operations and conditions that deviate from the CEMP to their Manager. Depending on circumstances it may be appropriate for general operatives and machinery operators to report directly to their Foreperson who will then report to the Site Environmental Manager and Site Agent;
- Taking an active part in site safety and environmental meetings;
- Ensuring awareness of the contents of method statements, plans, supervisors' meetings or any other meetings that concern the environmental management of the site; and
- Attend environmental training as required.

3.3.4. Other

Subject to the environmental commitments / requirements, other environmental specialists will be employed as required during the construction works.

Table 3.1: Employer Contacts Sheet (Example)

Position	Name	Tel / Mobile No.	Email Address
Project Resident Engineer			
CIÉ Design Office Project Manager			
CIÉ Liaison Officer			
Other, as appropriate			

Table 3.2: Main Contractor Contacts Sheet (Example)

Position	Name	Tel / Mobile No.	Email Address
Project Manager			
Site Manager *			
Site Environmental Manager * / Environmental Clerk of Works (ECoW)			
Project Ecologist / Ecological Clerk of Works (EcoW)			
Project Archaeologist			
Project Conservation Architect			
Design Manager			
Site Agents			

Forepersons			
Safety Officer *			
Site Emergency Number *			
Other, as appropriate			

* 24 hour contact details required.

Table 3.3: Third Party Contacts Sheet (Example)

Organisation	Position	Name	Tel / Mobile No.	Email Address
Dublin City Council				
South Dublin County Council				
Kildare County Council				
Inland Fisheries Ireland				
Waterways Ireland				
National Parks & Wildlife Service				
Office of Public Works				
Phoenix Park Office of the Park Superintendent				
An Garda Síochána Headquarters				
Transport Infrastructure Ireland (TII)				
Health & Safety Authority				
Emergency Services				
Other, as appropriate				

3.4. Training and Induction

3.4.1. Site Induction

All employees and subcontractors involved on site will be given a comprehensive induction prior to commencement of the works which will include environmental awareness training. The environmental

training and awareness procedure will ensure that staff are familiar with the principles of the CEMP, the environmental aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

This environmental training can be run concurrently with safety awareness training. Training will include:

- Overview of the role of the Environmental Manager;
- Overview of the Environmental Policy and CEMP, goals and objectives;
- Awareness in relation to risk, consequence and methods of avoiding environmental risks as identified within the Register of Aspects and with the planning conditions;
- Awareness of roles and individual environmental responsibilities and environmental constraints to specific jobs;
- Location of and sensitivity of Special Area of Conservations, Special Protection Areas, protected sites / monuments, structures etc;
- Location of habitats and species to be protected during construction, how activities may affect them and methods necessary to avoid impacts;
- Location of invasive species;
- Requirements associated with community engagement and stakeholder consultation; and
- Procedures associated with incident notification and reporting.

A record will be kept of a signed register on the project files of all attendees of the environmental induction and other training.

3.4.2. Specific Training and Awareness

A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Contractor. Training will be provided by the Contractor to ensure that all persons working on site have a practical understanding of environmental issues and management requirements prior to commencing activities. A register of completed training is to be kept by the SEM. The Site Manager will ensure that environmental emergency plans are drawn up and the SEM will conduct the necessary training/inductions.

3.5. Project Communication and Co-ordination

Environmental issues and performance aspects will be communicated to the workforce on a regular basis. Weekly project meetings, which follow a set agenda incorporating Environment, and can be held alongside overall management meetings.

All staff involved in all phases of the project will be required to report environmental issues to the Site Environmental Manager/ECOW.

3.6. Training and Toolbox Talks

Toolbox talks based on specific activities being carried out will be given to personnel by the nominated project representative. These will be based on specific activities being carried out and will include environmental issues particular to the work that they are performing, such as :

- Oil/Diesel spill prevention and safe refuelling practice;
- Storage of materials including oil/diesels and cement;
- Emergency response processes used to deal with spills;
- Noise controls to minimise disturbance to residents;
- Minimising disturbance to wildlife;
- Emergency response to include water pollution hotline to the EPA / Irish Rail for regulator response. Identification of registered / accredited spill clean-up company for oil etc; and
- Consideration of importance of containment of vehicle washing, containments of concrete /cement / grout washout etc, bank protection using hessian to prevent excessive scour and mobilisation of suspended solids, maintenance of vegetation corridors etc.

The toolbox talks will provide on-going reinforcement and awareness training, the above topics, along with any other environmental issues which arise onsite, will be discussed at regular toolbox talks.

3.7. Notice Boards

The Contractor will provide and maintain project environmental notice board(s) which are positioned to ensure that all construction employees including sub-contractors can review the notice board daily. As a minimum this will include one notice board at the main site compound locations.

Environmental labelling and signage will be used onsite to inform project personnel of key environmental requirements or restrictions, including information to assist good environmental practice across the site.

The environmental notice boards are maintained by the Contractor and will be reviewed and updated as required. As a minimum, the notice boards contain:

- Description of the key environmental risks and intended risk mitigation measures, together with accompanying Environmental Risk Map illustrating the location of the key risks and required exclusion zones / buffer zones and location of emergency response equipment; and
- Key contact numbers and responsible personnel.

3.8. Operational Control

Site works will be checked against the CEMP requirements. Any mitigation measures that have been agreed with the Statutory Authorities, or are part of planning conditions, will be put into place prior to the undertaking of the works for which they are required, and all relevant staff will be briefed accordingly.

Method statements that are prepared for the works will be reviewed / approved by the Employer's Representative and where necessary the relevant qualified and experienced Environmental Specialists (archaeologist, conservation architect etc) engaged by the contractor to support the Site Environmental Manager.

All works in, near (within 15m of a watercourse feature) or liable to impact on a waterway must be notified to IFI and NPWS prior to commencement.

The appointed contractor will implement a Quality Management System (QMS) for the project in accordance with their own company QMS. Document control will be in accordance with this ISO 9001:2015 QMS and copies of all audits, consents, licences, etc will be finalised by the Site Environmental Manager and their team and kept on site for review at any time.

3.9. Risk Assessment and Method Statements

The Contractor will provide risk assessments and method statements (RAMS) for all works and tasks prior to works being undertaken. These documents will consider and address all the environmental aspects of the planned works and will include proposed mitigation measures. Where approval is required from relevant personnel with specific environmental management responsibilities (such as the Site Environmental Manager/ECOW, Project Ecologist, Project Archaeologist etc) to ensure works conform with best practice and legislative/regulatory requirements, the RAMS will be provided at least one week in advance of such works starting.

3.10. Checking and Corrective Action

Daily inspections of the site and the works will be undertaken by the Site Environmental Manager/ECOW to minimise the risk of environmental damage and to ensure compliance with the CEMP. Any environmental incidents are to be reported immediately to the Site Foreman. The Site Environmental Manager will undertake monthly inspections and complete an assessment of the project's environmental performance with regard to the relevant standards/legislation and the contents of the CEMP. Following these inspections, the Site Environmental Manager will produce a report detailing the findings which will be provided to the Employer's Representative and reviewed at the monthly project meeting.

3.11. Correspondence, Records and Reporting

The Contractor will provide a complete record of all relevant communication and reports associated with all aspects of environmental management and implementation of this document. The following records will be maintained:

- Minutes and attendance records of start-up meetings (onsite meeting prior to commencement of construction works). Attendance required by Employer, Contractor, Project Ecologist and all other relevant personnel responsible for environmental management during the project; and
- Weekly rolling Environmental Risk Log – this includes the following components:
 - Environmental Risk Log including look ahead activities with required mitigation (including weather forecasts), discussed and recorded at scheduled weekly construction

meetings. This will cover all environmental sensitivities, including ecology, archaeology, and water quality/drainage mitigation locations/measures.

- Employers and Contractor Audit Reports (according to respective corporate procedures);
- Waste Management Records;
- Water Quality Monitoring Records, documenting the Contractor's visual checks of waterbodies;
- Licences and Consents - copies of all permissions, consents, licenses, and permits, including related correspondence; and
- General Correspondence - all other relevant internal and external communication records relating to environmental management issues and implementation of the CEMP.

3.12. Environmental Control Measures

Licensing requirements will be in place and specific procedures to manage the key environmental aspects of the project will be developed by the contractor prior to work commencing.

3.13. Environmental Audits

The Contractor will undertake a programme of monthly environmental audits, including audits of all sub-contractors, on a quarterly basis and provide an audit report to the Employer within two weeks of the audit being undertaken. The Contractor's Site Environmental Manager should update the CEMP as necessary and advise site personnel accordingly based on the results of these audits. The reports of these audits should be annexed to this CEMP. This CEMP should also be revised between audits as deemed appropriate, particularly with an update of environmental control measures or environmental legislation.

Environmental audits may be completed at any time by the Employer's Representative, but at least one per quarter. The Contractor maintains a record of all completed audit forms, and records of corrective action and close outs.

4. Community Liaison

4.1. Community Liaison

CIE/IE recognises the importance of effective community liaison to ensure public safety and welfare during the construction process, to reduce impact on residents and the local community in as far as is practicable and to help ensure that construction occurs in an efficient manner, while also maintaining cognisance of the fact that work is happening adjacent to people's homes and businesses. To this end, a Community Liaison Plan will be prepared by the Employer-appointed Community Engagement Manager. The purpose of this plan is to ensure good relations with the neighbouring community. Key aims of the Plan are to:

- Provide frequent and timely information to the public during the construction phase, (particularly to nearby residents and building occupants);
- Provide the correct points of contact and be responsive to queries and complaints; and
- Ensure good housekeeping in all aspects of the operations on site to minimise impact..
- Where necessary establish community forums with regular meetings with residents' representatives to give details of upcoming schedule of work and to manage any issues that may arise.

The most effective means of communication is notification of planned works. The Contractor will take all reasonable steps to engage with stakeholders via their CLO in the local community, focusing on those who may be affected by the construction works including nearby residents, businesses, community resources and specific vulnerable groups.

Communication with the local community, with Dublin City Council, South Dublin City Council, Kildare County Council and other relevant stakeholders will be undertaken at an appropriate level and frequency throughout construction. The Employer appointed Community Engagement Manager will be involved throughout and will work with the Contractors Community Liaison Officer on all aspects of community engagement. The Community Liaison Plan will be updated by the Contractor prior to construction, in consultation with the Community Engagement Manager, and will specify obligations in relation to community and stakeholder engagement that the Contractor must adhere to. Where communications are related to environmental issues, the Site Environmental Manager will be involved, if appropriate.

A significant part of the plan is the 'good neighbour' policy. Key aspects of this policy include:

- Implementation of the policy from the commencement of construction;
- Providing a point of contact for queries and complaints;
- Minimising causes of nuisance;
- Maintaining access to neighbouring premises;
- Clear and concise information distributed widely and updated frequently; and
- Undertaking timely liaison with stakeholders.

With regard to liaison, the Contractor will be required to comply with the Plan and develop it further with additional information, which will include providing the details of how the local community, road users and affected residents will be notified in advance of the scheduling of major works, the temporary traffic diversions, bridge and road closures and the progress of the construction works.

Details of the available communication channels/points of contact for members of the public to contact the project team during construction will be established in advance of the commencement of construction.

The contact details for the Community Liaison Officer (CLO) will be posted on all construction site notice boards and on any other information or correspondence, which may be distributed from time to time.

4.2. Advance Notice of Works

The Contractor will ensure that residents, businesses, occupiers, general users of the area and stakeholders are informed in advance of construction activities that may affect them. The Contractor's detailed procedures and the responsible personnel will be identified in the CEMP when it is updated by the Contractor prior to construction.

All notifications will detail the nature of the works, estimated duration and working hours. All notifications will include a project-specific contact number to which any enquires can be directed. The Contractor will be responsible for preparing and issuing the notifications subject to the relevant approval and consents.

4.3. Enquiries and Complaints

The Contractor will establish a process for handling all enquires including complaints which will be agreed with Iarnród Éireann. All enquiries will be recorded, and a log will be maintained to include details of the response and action taken. The log will be available for inspection if requested by Dublin City Council, South Dublin City Council and Kildare County Council. All observations, queries and complaints will be dealt with in a timely manner.

The Employer, including the Community Engagement Manager, Environmental Manager and ECoW will be immediately informed of any environmental-related issues that have been raised. The Environmental Manager will be responsible for informing Dublin City Council, South Dublin City Council and Kildare County Council, relevant stakeholders, and statutory bodies, as appropriate, about such issues.

4.3.1. Complaint's Procedure

The CLO will be available to allow for member of the public or interested parties to make complaints about the construction works. The CEMP will contain details of the complaints procedures and a monitoring system will be implemented to ensure that any complaints are addressed, and satisfactory outcome is achieved for all parties.

5. Site Management

5.1. General Site Management and Pollution Prevention

5.1.1. Responsibility

The Contractor is responsible for pollution prevention for the duration of the contract and until such time as permanent measures, such as permanent drainage and silt mitigation controls, are deemed to be adequate and appropriately constructed.

The Contractor will ensure that all staff and subcontractors working on site will be familiar with pollution prevention and mitigation measures as detailed in this document. This includes subcontractors, Employer's direct contractors and other Employer's representatives working on the site.

It is the responsibility of the Contractor to contact the relevant statutory and non-statutory bodies and stakeholders in the vicinity of the proposed Project, so that the requirements and interests of these parties are adhered to and protected throughout the duration of the Contract.

Prior to works commencing on site, the Contractor will prepare a Pollution Prevention Plan (PPP) in line with the below requirements (as a minimum) and will communicate the contents to all staff (induction / toolbox talks). The PPP covers all potentially polluting activities, considering good practice standards. The Contractor is to provide the PPP to the Employer prior to start of works on site.

The Contractor is required to monitor and record in an onsite log, adherence to the PPP throughout the works. The Contractor is to communicate the PPP and any changes/updates of the PPP to all personnel on site.

5.1.2. Housekeeping Standards and General Pollution Prevention Measures

The Contractor will ensure "good housekeeping" at all times. The following points (not exhaustive) indicate general pollution prevention measures in accordance with published guidance (see Section 10) and project commitments. Pollution prevention measures relating to specific tasks are also detailed in the respective sections of this document. This will include, but not necessarily be limited to, the following measures:

- General maintenance of working areas and cleanliness of welfare facilities and storage areas;
- Provision of site layout map showing key areas such as first aid posts, spill kits, material and waste storage and welfare facilities;
- Maintaining all plant, material and equipment required to complete the construction work in good order, clean, and tidy;
- Keeping construction compounds, access routes and designated parking areas free and clear of excess dirt, rubbish piles, scrap wood, etc. and maintaining dust suppression always;
- Provision of signs giving details of site management contact numbers, including out of hours, and public information at the boundaries of the working areas;
- Provision of adequate welfare facilities for site personnel;

- Installation of appropriate security, lighting, fencing, and hoarding at each working area;
- Effective prevention of oil, grease or other objectionable matter being discharged from any working area;
- Provision of appropriate waste management facilities at each working area and regular collections to be arranged;
- Prevention of infestation from pests or vermin including arrangements for regular disposal of food and material attractive to pests. If infestation occurs the Contractor will take appropriate action to eliminate and prevent further occurrence;
- Maintenance of wheel washing or other similar systems and other contaminant measures as required in each working area;
- No discharge of site runoff or water discharge without agreement of the relevant authorities;
- Prohibition of open fires always;
- Use of less intrusive noise alarms, which meet the safety requirements, such as broadband reversing warnings, or proximity sensors to reduce the requirement for traditional reversing alarms;
- Maintenance of public rights of way, diversions and entry/ exit areas around working areas for pedestrians and cyclists where practicable and to achieve inclusive access;
- All loading and unloading of vehicles will take place off the public network wherever this is practicable; and
- Material handling and/or stockpiling of materials, where permitted, will be appropriately located to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

5.1.3. Hours of Work

There are strict safety restrictions related to working on or adjacent to a live railway line. Due to the importance of the Cork Mainline to commuters, it will remain operational throughout the construction phase. The works will be carried out through a combination of restricted working zones (including sites completely segregated from the live railway) and night-time/weekend possessions (i.e. no trains running). Working possessions along the mainline mean that the work needs to be planned in smaller phases, particularly in the four-tracking section from Park West & Cherry Orchard Station to Heuston Station. The phasing of the rail line closures / possessions required for the construction works will be considered by the appointed contractor in the construction programme. Early engagement with the possession access team and IÉ/CIÉ will be organised to ensure that unnecessary delays are avoided.

To facilitate the widening of the railway corridor in the four tracking section of the route, it is necessary to construct retaining structures at various locations. Due to the nature of this work, it is proposed to carry out the associated construction activities during daytime hours by providing safe working zones, which will minimise nuisance to local residents.

The construction programme is based on the following assumptions:

- The programme is based 10 hour working days (8am - 6pm) Monday to Friday;
- Piling works will take place from 8am – 6pm;
- Large volume haulage and deliveries will be restricted to 9am to 3pm (off peak) in general;
- Track works impacting on operations will require overnight work or possessions;
- Longer shutdown activities may take place over public holidays (Easter or Christmas); and
- The Phoenix Park Tunnel and GSWR Line will be closed for a period of 6 months.

Night-time and weekend possessions (note hours indicate times when track is physically closed to allow for the works, but there will be additional time for mobilisation/demobilisation activities outside of the hours listed) are listed below:

- Night-time track possession (weekdays): 4-hours. From 01:00 to 05:00.
- Night-time track possession (Saturday nights): 6-hours. From 01:00 to 07:00.
- Full weekend track possession: 52 hours. Saturday 01:00 to Monday 05:00.
- Bank holiday weekend track possession: 76 hours. Saturday 01:00 to Tuesday 05:00.
- Total closure: 24 hours per day for a specified duration.

Any restrictions to working hours associated with major events in the area of works will be agreed with Local Authorities and An Garda Síochána. In addition, a Noise and Vibration Management and Control Plan will be included as part of the final CEMP by the contractor.

5.1.4. Site Security

The security of the works areas will be the responsibility of the Contractor who will provide adequate security to prevent unauthorised entry to or exit from any working areas e.g. provision of adequate security guards and patrols; closure and locking of site gates and appropriate site security provisions when no activity on site; prevention of access to restricted areas and neighbouring properties by securing equipment on site such as scaffolding and ladders; and with neighbouring properties and local crime prevention officers including Dublin City Council, South Dublin City Council and Kildare County Council and An Garda Síochána on site security matters as required.

5.1.5. Hoarding and Fencing

The following measures will be applied in relation to hoarding and fencing:

- Adequate fencing and hoardings will be installed to prevent unwanted access to temporary compounds and working areas and provide noise attenuation, screening, and site security where required;
- Appropriate sight lines/visibility splays will be maintained around accesses to temporary compounds and working areas from the public road to ensure safety of both vehicles and pedestrians is preserved;
- Temporary fences may be used in certain areas, such as for short term occupation of working areas;

- Display information boards will be provided with out of hours contact details, a telephone helpline number for comments/complaints and information on the works;
- Notices to warn of hazards on site such as deep excavations, construction access will be installed on site boundaries;
- Hoarding and fencing will be maintained free of graffiti or posters; and
- Additional fencing will be provided for tree protection where required.

5.1.6. Services and Lighting

Where diversions, or modifications, are required to utility infrastructure, service interruptions and disturbance to the surrounding residential, commercial and/or community property may be unavoidable. Where this is the case, it will be planned in advance by the appointed contractor. Required service interruptions will generally not be continuous for full days at a time. Prior to works commencing, advance notification will be given to all impacted properties (including vulnerable customers). This notification will include information on when interruptions and works are scheduled to occur and the duration of such interruption.

Site lighting will typically be provided by tower mounted temporary portable construction floodlights. The floodlights will be cowled and angled downwards to minimise light spillage outside of works areas and to surrounding properties. The following measures will be applied in relation to site lighting:

- The use of artificial lighting on site will be minimised in terms of the area required to be illuminated and the length of time for which any lighting is switched on;
- Lighting will be provided with the minimum luminosity sufficient for safety and security purposes. Where practicable, precautions will be taken to avoid shadows cast by the site hoarding on surrounding footpaths, roads, and amenity areas;
- Artificial lighting will be shut off at night when not in use or when works cease at the end of the day in order to minimise the effects of light pollution and disturbance to nocturnal species;
- Lighting will be positioned and directed so that it does not unnecessarily intrude on adjacent buildings and land uses, ecological receptors and structures used by protected species, nor cause distraction or confusion to motorists.

5.1.7. Temporary Construction Compounds

Works on this linear scheme requires construction compounds at specific locations. The sites will be used to accommodate offices for the Contractor and Employer teams, storage facilities, recycling facilities, parking for cars and plant and potentially fabrication areas. The compounds vary in size and are located as close as possible to the rail corridor and areas where significant works are to be undertaken i.e. bridge reconstruction. The compounds will typically consist of areas of hardstanding for vehicles and materials, the sites will be fully serviced with electricity, water, sewerage and telecoms.

The compounds will be used to support earthworks, ecological clearances, enabling works, site clearance, utility diversions work, civil works, the demolition of bridges, OHLE, track installation, signalling and telecoms equipment and all ancillary works.

Access roads will be required to connect compounds to the public road network. These access roads will be the main route for vehicles entering the site, including deliveries and arrival and departure of the workforce. The haulage routes (external haul and site haul routes) are described in Chapter 5 Construction Strategy in Volume 2 of the EIAR.

5.1.8. Reinstatement of Working Areas on Completion

The contractor will reinstate all working areas and access routes as work proceeds during construction. Any land temporarily acquired for the construction phase of the proposed Project will be returned to its original state following construction, where possible and in agreement with the landowner.

All plant, equipment, materials, temporary infrastructure and vehicles will be removed at the earliest opportunity and the surface of the ground restored as near as practicable to its original condition.

5.1.9. Management of Fuels and Oils

The Contractor will prepare and adhere to a Fuel Management Protocol in line with the below requirements (as a minimum) and communicate the contents to all staff (via induction / toolbox talks).

The Contractor will provide secure oil, fuel, and chemical storage in over-ground bunded areas, limited to the minimum volume required to serve immediate needs with specified delivery and refuelling areas.

The Contractor will ensure protection measures will be put in place to ensure that all hydrocarbons used are appropriately handled, stored and disposed of in accordance with the TII/NRA document “CIRIA Guideline Document C532 Control of Water Pollution from Construction Sites (CIRIA, 2001) and Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016).

Emergency spill kits will be retained onsite in all areas where hydrocarbons are stored or handled with portable kits provided to plant and equipment operators. A detailed spillage procedure, as part of the Environmental Incident and Emergency Response Plan, will be put in place and all staff on site will be trained with respect to the relevant procedures to be undertaken in the event of the release of any sediment, hydrocarbons etc. In the event of spillage of any polluting substance and/or pollution of a watercourse, Dublin City Council, South Dublin City Council and Kildare County Council and other relevant stakeholders in this case shall be notified by the Contractor. A set of standardised emergency response procedures will govern the management of emergency incidents, see reference to Environmental Incident and Emergency Response Plan in Section 8.

The Contractor will ensure that:

- Fuel and oil containers are stored within a secondary containment system e.g., bund to 110% of volume for static tanks or a drip tray for mobile stores;
- Ancillary equipment such as hoses, pipes are contained within the bund;
- Fuel and oil stores including tanks and drums are regularly inspected for leaks and signs of damage;
- Only designated trained operators are authorised to refuel plant on site; and
- Procedures and contingency plans are set up to deal with emergency accidents or spills.

All ancillary fuel pipes on plant, outlets at fuel tanks etc. will be regularly checked and maintained to ensure their good state-of-repair and that no drips or leaks to ground occur. The following precautions will also be installed on fuel delivery pipes:

- Any flexible pipe or tap or valve must be fitted with a lock where it leaves the container and be locked when not in use;
- Flexible delivery pipes must be fitted with manually operated pumps or a valve at the delivery end that closes automatically when not in use. Any leaking oil from ancillary pipework must be held within secondary containment;
- The pump or valve must have a lock and be locked when not in use; and
- Warning notices including “No smoking” and “Close and lock off valves when not in use” shall also be displayed.

Irrespective of the location of refuelling onsite, interceptor drip trays (or similar, e.g., plant nappies, open metal drip trays are not acceptable) will be available and used during all refuelling operations. Interceptor drip trays will be positioned under any stationary mobile plant to prevent oil contamination of the ground surface or water. Plant and site vehicles are to be well maintained and any vehicles leaking fluids must be repaired or removed from site immediately. Any servicing operations will take place over drip trays.

The Contractor will identify a clean-up specialist emergency contractor with defined service levels agreed for emergency response to engage with in the case of a significant pollution event on site. Details of the specialist contractor will be provided to the Employer prior to works commencing. Details of the specialist contractor will be included in the Environmental Incident and Emergency Response Plan (refer to Section 8).

6. Schedule of Environmental Commitments

Project environmental mitigation has been set out in the Railway Order application documentation, specifically the EIAR and NIS. These environmental commitments will be detailed in the final CEMP. The final CEMP will provide a framework for compliance auditing and inspection to ensure that these construction practices and mitigation measures, as set out in the EIAR and NIS and the conditions in the planning approval, are adhered to. The agreed Schedule of Environmental Commitments from the EIAR and the Natura Impact Statement (NIS) mitigation measures will be inserted as an Appendix (Appendix A) into the final CEMP once statutory planning approval is received and will be carried forward into the Contractors CEMP.

7. Statutory Planning Consent

When the Railway Order application is approved by An Bord Pleanála for the proposed Project the entire contents of the statutory approval and any conditions will be complied with as part of the CEMP. The Statutory Planning consent will be inserted as an Appendix (Appendix B) into the final CEMP once statutory planning approval is received and will be carried forward into the Contractors CEMP.

8. Environmental Incident and Emergency Response

8.1. Introduction

The Contractor is responsible for reporting, recording and investigating environmental incidents for the duration of the contract and to ensure that in the unlikely event of an incident, response efforts are prompt, efficient, and suitable for the particular circumstances.

This section of the CEMP describes the procedures, lines of authority and processes that will be followed to ensure that incident response efforts are prompt, efficient, and appropriate to particular circumstances.

This procedure will be updated (by the appointed contractor) to include the relevant personnel responsibilities and reporting structure and the finalised procedure will be communicated to all personnel.

8.2. Objectives

The primary objective of this procedure is to:

- Ensure the health and safety of workers and visitors at and in proximity to the Project;
- Minimise any impacts to the environment and to ensure protection of the water quality and the aquatic species dependant on it;
- Minimise any impacts on utilities and services;
- Protect property and to minimise the impact on the continuity of business; and
- 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.

8.3. Responsibilities

It is the responsibility of the Site Environmental Manager to maintain and update this section of the CEMP. This section of the CEMP will be subject to ongoing review and amended, as necessary, and when one or more of the following occur:

- Applicable regulations are revised;
- The Plan fails in an emergency;
- The project changes in its design, construction, operation, maintenance, or other circumstance in a way that materially increases the potential for impacts on the environment, workers or visitors to the site; and/or,
- Amendments are required by a regulatory authority.

8.4. Other Plans

CIE/IÉ has a Major Emergency Plan prepared in accordance with the Government's Major Emergency Management Framework. This plan details the initial contact that should be made in the case of an emergency incident as well as those responsible for following up once an emergency event is declared. This plan will be available to the Contractor and may be referred to during both the construction and operation phases.

8.5. Response Planning

The Contractor's Environmental Incident and Emergency Response Plan will detail the controls to be adopted to manage the risk of pollution incidents and procedures to be followed in the event of any pollution incidents based on mitigation from the EIAR and NIS and implementation of best practice. This Incident Response Plan will include the following as appropriate:

- Reference to the Method Statements and Management Plans for other construction activities, insofar as they are relevant for the purposes of mitigating against health and safety and pollution incidents;
- Procedures to be adopted to contain, limit and mitigate any adverse effects, as far as reasonably practicable, in the event of a health and safety or pollution incident;
- Details of spill clean-up companies appropriate to deal with pollution incidents associated with the materials being used or stored on site.
- Procedures to be followed and appropriate information to be provided in the event of any incident, such as a spillage or release of a potentially hazardous material;
- Procedures for notifying appropriate emergency services, authorities, the Employer's Representative and personnel on the construction site;
- Procedures for notifying relevant statutory bodies, environmental regulatory bodies, local authorities and local water and sewer providers of pollution incidents, where required;
- Maps showing the locations, together with address and contact details, of local emergency services facilities such as police stations, fire authorities, medical facilities and other relevant authorities; and,
- Contact details for the persons responsible on the construction site and within the Contractor's organisation for pollution incident response.

8.5.1. Incident Investigation and Monitoring

The Contractor will investigate and provide reports on any health and safety or pollution incidents to the Employer's Representative, including, as appropriate:

- A description of the incident;
- Contributory causes;
- Adverse effects;
- Measures implemented to mitigate adverse effects; and,

- Effectiveness of measures implemented to prevent pollution.

The Contractor will undertake appropriate monitoring of the procedures and measures set out in the management plans for construction activities required to prevent health and safety or pollution incidents to ensure they are being adequately implemented.

The Contractor will monitor the effectiveness of the procedures and measures implemented in the event of an incident and the effectiveness of the response procedures set out in the Environmental Incident and Emergency Response Plan to identify any areas where improvement is required.

8.6. Incident Response Planning

The following sets out an example outline for an Incident Response Plan. The contractor will populate the IRP and include for review dates and personnel to which it will be distributed.

Name and address of the Client:		
Iarnród Éireann Iarnród Éireann HQ, Connolly Station, Amien Street, Dublin 1 The contact within the Client organisation: _____ Tel no: _____		
Site Location:		
Overview of the activities on site:		
Description of the proposed Project and surrounding area:		
Potential Incidents:		
Date and version of the Plan:	Name and position of person responsible for compiling/approving the plan:	
Review Date:	Date of next review:	
Objectives of the IRP:		
List of external organisations consulted in the preparation of the IRP:		
Distribution of the IRP		
Recipient	No. of copies	Version

8.7. External Contacts

The table below provides an example record of external contact details to be revised and updated as required by the main Contractor.

External Contacts		
Contact	Office Telephone	Out of Hours
Dublin City Fire Service	0761 10 2982	999 / 112
Phibsborough Fire Station	(01) 673 4000	999 / 112
Dolphin's Barn Fire Station	(01) 222 4000	999 / 112
Tallaght Fire Station	(01) 222 4000	999 / 112
Naas Fire Station	(045) 879 964	999 / 112
Gardaí: Emergency	999 / 112	999 / 112
Gardaí: Mountjoy Garda Station	(01) 666 8600	999 / 112
Gardaí: Cabra Garda Station	(01) 666 7400	999 / 112
Gardaí: Bridewell Garda Station	(01) 666 8200	999 / 112
Gardaí: Kilmainham Garda Station	(01) 666 9700	999 / 112
Gardaí: Ballyfermot Garda Station	(01) 666 7200	999 / 112
Gardaí: Ronanstown Garda Station	(01) 666 7700	999 / 112
Gardaí: Cellbridge Garda Station	(01) 628 8222	999 / 112
Mater Misericordiae University Hospital	(01) 803 2000	(051) 8480000
St. James Hospital	(01) 410 3000	-
Tallaght University Hospital	(01) 414 2000	-
EPA Regional Inspectorate Dublin	(01) 268 0100	-
Dublin City Council Major Emergency Planning Department	(01) 222 2222	
South Dublin County Council Major Emergency Planning Department	(01) 222 2222	(01) 679 6186
Kildare County Council Major Emergency Planning Department	(01) 414 9000	(01) 679 6186

External Contacts		
Contact	Office Telephone	Out of Hours
ESB	(045) 980 200	1800 800 444
Bord Gáis	1800 200 694 / 1850 20 50 50	1850 20 50 50
Waste Management Contractor	TBC	-
Specialist Advice	TBC	-
Specialist Clean up Contractor	TBC	-
Dublin City Council	(01) 222 2222	(01) 679 6186
South Dublin County Council	(01) 414 9000	(01) 679 6186
Kildare County Council	(045) 980 200	1800 800 444
Inland Fisheries Ireland	(01) 884 2600	To be agreed with IFI
National Parks & Wildlife Service	(01) 888 3200	To be agreed with NPWS

8.8. Internal (Contractor) Contacts

The table below provides an example record of external contact details to be revised and updated as required by the main Contractor and its staff.

Internal Contacts		
Contact	Office Telephone	Out of Hours
Names and positions of staff authorised/trained to activate and coordinate the IRP	TBC	TBC
Managing Director	TBC	TBC
Site Manager	TBC	TBC
Health & Safety Manager	TBC	TBC
Site Environmental Manager	TBC	TBC
Other Staff	TBC	TBC

8.9. Chemical Product and Waste Inventory

The below table provides an example for outlining an inventory of chemical products and waste. This shall be populated and updated as required by the main Contractor.

Inventory of Chemical Products and Wastes						
Trade Name / Substance	Solid / Liquid / Gas or Powder	UN Number	Maximum Amount	Location Marked on Site Plan	Type of Containment	Relevant Health and Environmental Problems

8.10. Pollution Prevention Equipment Inventory

The below table provides an example for outlining an inventory of pollution prevention equipment. This shall be populated and updated as required by the main Contractor.

Inventory of Pollution Prevention Equipment (on-site and off-site resources)			

9. Waste Management

9.1. Introduction

The Contractor will develop and implement a Construction Waste Management Plan (CWMP) and a Construction Demolition Waste Management Plan (CDWMP) to ensure that waste arising on-site during the construction and demolition phase of the DART+ South West Project will be managed and disposed of in a way that ensures the provisions of the Waste Management Acts, 1996-2011 and associated Regulations (1996-2011) are complied with and to ensure that optimum levels of reduction, re-use and recycling are achieved.

The CWMP and CDWMP will be prepared for the provision of waste management for the construction phase of the DART+ South West Project, taking into account the many guidance documents on the management and minimisation of construction and demolition waste, including:

- EPA (2021) *Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*;
- DECC (2020) *A Waste Action Plan for a Circular Economy – Ireland’s National Waste Policy 2020-2025*. Department of the Environment, Climate and Communications, Dublin;
- DEHLG (2006) *Best Practice Guidelines on the Preparation of Waste Management Plans for construction and Demolition Projects*. Department of Environment, Heritage and Local Government, Dublin;
- Provisions of the Waste Management Acts, 1996-2011 and associated Regulations;
- Construction Industry Research and Information Association (CIRIA) document 133 Waste Minimisation in Construction; and
- National Construction & Demolition Waste Council (NCDWC) 2006 *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*.

Prior to the commencement of construction works, a Waste Management Co-ordinator (WMC) (who may also be the Site Environmental Manager) will be appointed by the Contractor to assume responsibility for the further development of the CCWMP and CDWMP and the management and treatment of all waste materials generated during the construction of the DART+ South West Project. The WMC is equivalent to a Resource Manager (RM) as described in the EPA Best Practice Guidelines (2021) for Resource & Waste Management Plans (RWMPs). The plan will be regularly revisited throughout the lifecycle of the project so that opportunities to maximise efficiency and waste reduction may be exploited.

The Contractor’s CWMP and CDWMP will include, as a minimum will contain the following:

- Details of waste storage (e.g. skips, bins, containers) to be provided for different waste and collection times;
- Details of where and how materials are to be disposed of, i.e. landfill or other appropriately licensed waste management facility;

- Details of storage areas for waste materials and containers; and
- Details of how unsuitable excess materials will be disposed of, where necessary;

Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects were published in 2021 by the Environmental Protection Agency (EPA). These Guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion and have been followed in the preparation of this procedure. The Guidelines reflect the shift of European waste policy from the established linear economic model to a circular economic model. These interventions focus on increasing recycling, reducing the use of virgin resources, retaining materials in the economy as long as possible, maintaining their intrinsic value/quality as high as possible and, reducing hazardous substances in products and waste. A comparison of the linear economic model and a circular economic model is outlined in Figure 9-1 below. It will be at the discretion of the appointed contractor to determine how material from the proposed Project will be managed.

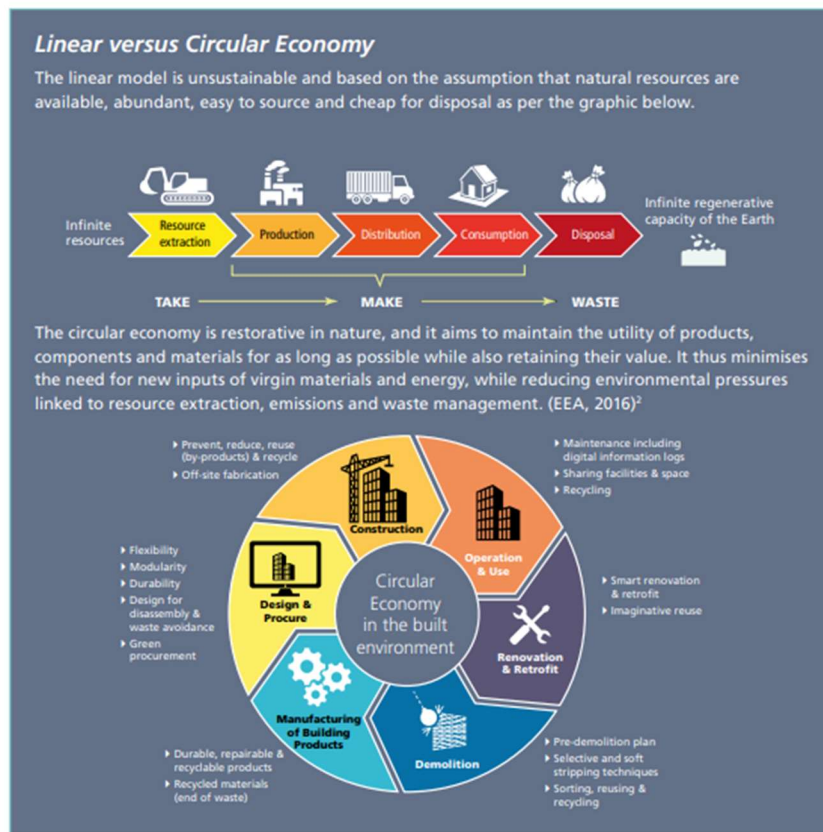


Figure 9-1 Linear vs. Circular Economy²

² <https://www.eea.europa.eu/publications/circular-economy-in-europe>

9.2. Waste Management Strategy

9.2.1. Scope

The management of construction and demolition waste will reflect the waste management hierarchy, with waste prevention and minimisation being the first priority, followed by reuse and recycling. During site clearance and construction works, there are numerous opportunities for the beneficial reuse and recycling of materials. The subsequent use of recycled materials in reconstruction works also reduces the quantities of waste which ultimately needs to be consigned to landfill sites.

The Contractor will develop and implement a plan and manage all waste with a goal of achieving the waste hierarchy in accordance with the relevant statutory provisions as shown in Figure 9-2. This hierarchy is echoed in the EPA's best practice guidelines for RWMPs.



Figure 9-2 Waste Management Hierarchy as outlined in the Directive 2008/98/EC

Source Segregation

Wastes generated on the construction site will be identified and segregated according to their respective categories, as described by the European Waste Catalogue (EWC). Where possible, metal, timber, glass and other recyclable material will be segregated and removed off-site to a permitted/licensed facility for recycling.

In order to achieve this, designated waste storage areas will be created at the construction compound or other suitable locations for the storage of segregated wastes prior to transport for recovery/disposal at suitably licensed/permitted facilities. Suitably sized containers for each waste stream will be provided within the waste storage area and will be supervised by the WMC, who will be appointed by the Contractor. This will be the person responsible for the management of waste during the construction of the DART+ South West Project. The number and sizing of containers will be agreed with Waste Contractors in advance of construction works commencing. Source segregation of waste will result in cost savings to the project as well as providing an environmentally sound route for the management of all construction and demolition wastes.

Re-use

Possibilities for re-use of clean, non-hazardous excavation material as fill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use. Where excavated material is not to be reused within the works, the Contractor will endeavour to send material for recovery or recycling so far as is reasonably practicable. The Contractor will ensure that, if required, any offsite interim storage facilities for excavated material have the appropriate waste licences or waste facility permits in place.

Material Management

In order to prevent and minimise the generation of waste, the Contractor will be required to ensure that raw materials are ordered so that the timing of delivery, the quantity delivered, and the storage is not conducive to the creation of unnecessary waste. The Contractor, in conjunction with the material suppliers, will be required to develop a programme showing the estimated delivery dates and quantities for each specific material associated with each element of construction and demolition works. Following a “just-in-time” approach improves cash flow, better utilises storage space, reduces risk of environmental pollution events and reduces potential loss to theft and accidental damage as well as making the site safer.

The need for informed choices of sustainable and circular materials at the detailed design stage is the optimum approach to implementing the principles of sustainable resource and waste management. To that end, the following should be implemented by the Contractor:

- The contractor shall maximise the use Ground Granulated Blast Furnace Slag (GGBS) as a replacement for Portland cements to increase sustainability and the carbon footprint of civil and structural works. Only where GGBS is unsuitable for structural reasons can traditional Portland cements be employed on the project;
- Iarnród Éireann will pursue procurement of the highest recycled steel content that is available for the particular steel usage. This may vary depending on engineering constraints. The carbon emissions emitted during the production of virgin steel can be higher than some other structural materials on a tonne-by-tonne basis and recycled steel should be used where possible;
- All aggregates required shall be secondary aggregates and virgin aggregates may only be employed where secondary aggregates do not fulfil structural requirements and/or are unavailable; and
- In so far as possible, the contractor will secure the above materials from local/regional sources or sources within the State to minimise material transport emissions.

It is essential that the planning, construction, and demolition works are undertaken in close collaboration with waste management contractors, in order to determine the best techniques for managing waste and to ensure a high level of recovery of materials for recycling. The Contractor will be required to continuously seek to improve the waste management process on-site during all stages of construction and maximise opportunities for re-use and recycling where they exist. For example, in

relation to waste packaging, the Contractor will seek to negotiate take-back of as much packaging waste as possible at source to ensure maximum recycling.

The CEMP will be included as an agenda item at the weekly construction meetings. In addition, the plan will be communicated to the whole team (including the Client) at the monthly meetings. This will include any updates to earlier versions of the document.

Waste Auditing

The Contractor will record the quantity (in tonnes) and types of waste and materials leaving the site during the construction phase. The name, address and authorisation details of all facilities and locations to which waste and materials from the construction phase are delivered will be recorded along with the quantity of waste (in tonnes) delivered to each facility. Records will show all material recovered and disposed of.

The waste management strategy for the project will follow the accepted waste hierarchy and the Contract will implement the following types of measures to reduce waste and maximise opportunities for recycling:

- Wherever possible, materials for construction activities will be ordered as to require the minimum possible storage time;
- Materials will be ordered, where possible, in sizes to prevent wastage;
- Appointment of a WMC, who will be responsible for handling, storage and delivery of materials to the proposed Project;
- Ensure that stored material is protected from damage from plant and environmental factors such as rain and wind;
- Secure storage areas to prevent unauthorised access;
- Establish a waste management compound to handle incoming waste from construction activities – this should facilitate the segregation of key waste streams to maximise the opportunity to re-use, recycle and return wastes generated on-site;
- Provide a separate secured area for dealing with hazardous waste;
- Provide separate facilities for the storage of fuels and chemicals; and
- Retain and and keep as records proof of any material deposited at landfills, etc.

9.3. Waste and Recycling Targets

The Contractor's CDWMP, waste handling and proposed construction methods should endeavour to achieve the following targets:

- The Contractor will be responsible for sourcing materials for the construction of the proposed Project. These materials must comply with specific quality requirements;

- The Employer and the Contractor will pursue procurement of the highest recycled steel content that is available for the particular steel usage. This may vary depending on engineering constraints;
- All aggregates required shall be secondary aggregates and virgin aggregates may only be employed where secondary aggregates do not fulfil structural requirements and/or are unavailable;
- The Employer and the Contractor will support the use of local suppliers and re-use of materials on site to minimise the environmental impact, cost of transport and support the local economy and local communities in line with the proximity principle;
- Where possible materials will be re-used / recycled to reduce the need for procurement of new materials. In accordance with the IE Sustainability Strategy 2021 - 2030, 25% of raw material purchases will come from recycled sources; and
- The above actions and others within the IE Sustainability Strategy 2021 – 2030 will be implemented as part of the proposed Project mitigation.

9.3.1. Waste and Recycling Opportunities

The Contractor will seek opportunities, wherever possible, to reduce the amount of waste generated on site and maximise the potential for recycling materials in accordance with the waste hierarchy through the following:

- Storing materials in designated areas and separate from wastes to minimise damage;
- Returning packaging to the producer where possible;
- Segregating construction and demolition wastes into reusable, recyclable and non-recyclable materials;
- Reusing and recycling materials on site during construction where practicable;
- Recycling other recyclable materials through appropriately permitted/licensed contractors and facilities; and,
- Disposing of non-recyclable wastes to licensed landfills.

9.4. Waste Disposal Licensing

9.4.1. Licensing Requirements

Under the Waste Management (Collection Permit) (amended) Regulations, 2016, a waste collection permit for appropriate EWC Code(s) and designations is required by a waste haulier to transport waste from one site to another. Compliance with the Waste Management (Shipments of Hazardous Waste in Ireland exclusively) Regulation, 2011 is also required for the transportation of hazardous waste by road. The export of waste from Ireland is subject to the requirements of the Waste Management

(Shipment of Waste) Regulations, 2007. The Contractor will ensure that the transport and movement of all waste is carried out in compliance with these requirements.

Waste may only be treated or disposed of at facilities that are licensed to carry out that specific activity, e.g. chemical treatment, landfill or incineration, for a specific waste type. Records of all waste movements and associated documentation will also be held on-site. Generally, operators of waste management sites will facilitate a site visit and inspection of documentation if deemed necessary. Prior to any on-site recovery process, including the operation of mobile plant, an operator must apply to the governing local authority for a waste facility permit under the Waste Management (Facility Permit and Registration) Regulations, 2007. It is planned that waste activities at the site will comprise of source segregation, storage and collection and, therefore, it is highly unlikely that any waste licensable or waste permissible activity will be undertaken.

9.4.2. Exclusion from Legislation

The European Union (Waste Directive) Regulations 2011 (SI. 126 of 2011) (Regulation 4) substitutes new sections 3 and 4 into the Waste Management Act 1996 (as amended) (“the 1996 Act”) and section 3(1)(c) of the 1996 Act now provides that the 1996 Act shall not apply to:

“uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated.”

Materials from the Project which fall within this provision are therefore not subject to the requirements of EU and National Waste legislation. Furthermore, Article 27 of the same regulations allows an economic operator to notify the EPA, under specific circumstances, that material is a by-product and not a waste. The Article 27 process was introduced into Irish law to implement Article 5 of the Waste Framework Directive (2008/98/EU). Article 27 was amended by Article 15 of the European Union (Waste Directive) Regulations 2020 (S.I. No. 323 of 2020) to give effect to Directive (EU) 2018/851.

Excess soil and stone produced during construction projects will be considered a by-product, and not waste, by the EPA if it meets each of the four by-product conditions detailed:

- a) Further use of the substance or object is certain.
- b) The substance or object can be used directly without any further processing other than normal industrial practice.
- c) The substance or object is produced as an integral part of a production; and
- d) Further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

Classification of material as a by-product means that the material is of a type that is not regulated by waste management legislation, and therefore is not required to be managed as per that legislation. For construction projects, excavated soil and stone material that adheres to the conditions stipulated under Article 27 can be categorised under this exemption. The economic operator and destination for the material must adhere to all applicable requirements for this exemption to be permitted.

The EPA has produced the following guidance to assist the completion of by-product notifications:

- (Draft) By-product - Guidance Note (May 2020) – A guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011); and
- Guidance on Soil and Stone By-products (June 2019) (in the context of Article 27 of the European Communities (Waste Directive) Regulations 2011)

9.5. Proposed Construction Methodology and Material Usage

9.5.1. Site Preparation

The construction of the DART+ South West project will require site clearance as part of the Project. Site preparation will include certain diversion works of services and utilities, such as public lighting, power services, watermains, rising main, storm water, electricity, telecommunications, gas mains and traffic light services. Due to the nature of some of the diversions, a number of these service diversions will only be possible during the main construction works.

The Contractor's update of the CEMP will take the following into account:

- The extent of the areas to be cleared and the potential types and volumes of arisings;
- The location of any structures to be demolished;
- Statutory requirements; and
- Specific environmental requirements and seasonal requirements.

9.5.2. Site Offices & Construction Compounds

As outlined in Section 5.1.7, works on this linear scheme requires construction compounds at specific locations.

Construction compounds will only be in place during the construction phase of the project. The location, size and suitability of the compound will ultimately be at the discretion of the contractor once it is located within the project boundary and site access is approved by the Local Authority. The location and layout of the construction compound selected by the contractor will however have to incorporate the protection and mitigation measures outlined in the EIAR and conform to the requirements outlines in the Natura Impact Statement (NIS) and planning conditions.

9.5.3. Material Quantities

Excavation works will be required for the proposed Project. Earthworks which are likely to generate large quantities of material are the excavation activities for the proposed Heuston West Station and four-tracking between Park West & Cherry Orchard Station and Heuston Station. Excavated material will be reused where possible along the Project however a significant portion will be required to be imported. For more details on excavation activities refer to Chapter 4: Project Description and Chapter 5: Construction Strategy in Volume 2 of the EIAR. Further information on waste and resource management, including estimated quantities of materials produced and lists of waste permitted and licenced facilities in the counties surrounding the project, is available in Chapter 19 Material Assets:

Waste Management in Volume 2 of the EIAR. This chapter also identifies significant scope for reuse and recycling of materials and materials optimisation, however, the true potential for this cannot be accurately quantified until a Contractor has been chosen and appointed.

9.5.4. Demolition Plan

A demolition plan must be prepared in advance for each building and structure to be demolished. The plan will be developed by the Principal Contractor and will include the following:

- Details of ground removal and/or backfilling;
- Details of the principal materials of construction and the building condition and plan for handling such materials both non-hazardous or hazardous such as asbestos and plan for disposing by licenced contractor to a licensed waste facility as required under the Waste Management Act 2006 (as amended);
- The procedures for the demolition of the building, with a detailed sequence of demolition;
- Protection and control measures; and
- Methods for the handling and disposal of waste such as the means of transport of waste material from the site, time and frequency of waste material movement offsite and a methodology for recording the materials generated and disposed of.

The plan will also set out requirements for the handling of debris and method of waste disposal to a licensed facility as required under the Waste Management Act 2006 (as amended).

9.5.5. General Construction and Demolition Works

Quantities of general construction and demolition wastes are made up of waste such as wood, packaging, metals, plastics, bricks, blocks, canteen waste, some hazardous waste, e.g. oils, paints and adhesives. Site clearance and residual waste will be generated during the construction phase, primarily from the construction of the proposed Project.

An overview of the methods to manage the primary waste streams expected is presented below. The main types of construction waste produced will be:

Excavated Material

Where short-term temporary storage is unavoidable, the method of storage of material will be key to its potential use as certain types of materials/mud are likely to degrade if left uncovered in wet weather due to its low plasticity and silty nature.

Concrete

Waste concrete is likely to arise during the construction phase of the DART+ South West Project. It is proposed that waste concrete generated will be returned to the supplier for re-use. For every tonne of concrete waste that is recycled for aggregate in new concrete, significant savings are made in energy and carbon dioxide emissions. It also saves money by avoiding disposal costs, which continue to increase. Residual concrete waste will be source segregated and stored in designated containers at the waste storage area for subsequent separation and recovery at a remote facility.

Metals

Metal waste has a significant scrap value. Although it is now common practice for sites to segregate metals for reuse and recycling, there are still sites where metal is thrown away with general rubbish. One of the primary sources of metal waste is steel reinforcement. Wastage of steel reinforcement will be reduced by ordering made to measure steel from the manufacturer and detailed scheduling of all reinforced concrete structural elements.

Skip hire companies may provide free skips for the storage of scrap metal on sites and this will be investigated prior to construction commencing. When metal storage containers are full they will be removed by the waste storage contractor and sent to a metals recycling facility.

Timber

Timber waste will be stored separately as it is readily contaminated by other wastes and if it is allowed to rot will reduce the recyclability of other stored wastes. Any pallets will be returned to the supplier for re-use. Offcuts and trimmings will be used in formwork where possible. A container for waste wood will be covered where possible and will be placed in the waste storage area. The waste wood will be collected by a waste contractor who will forward it to a wood recycling facility for chipping.

Treatment of timber with chemicals and the overuse of nails will be minimised and avoided as this will make it difficult to reuse/recycle the timber afterwards. The utilisation of reclaimed timber products will also be investigated.

Packaging and Plastic

Packaging waste can become a major problem on construction sites. Double handling will be avoided by segregating packaging wastes immediately after unwrapping. Many suppliers are now prepared to collect their own packaging for recycling, and this will also be investigated prior to works commencing. It is intended that, where possible, materials with recycled packaging will be purchased. Waste packaging will be segregated and stored in separate containers, preferably covered, in the waste storage area for collection by the waste management contractor and distribution to packaging recycling facilities.

Blocks, Bricks and Tiles

The careful storage of these raw materials will significantly reduce the volume of these wastes arising on site. The most likely wastes produced will be off-cuts, trimmings and waste arising from breakages. Every effort will be made to use broken bricks and off-cuts.

Hazardous Wastes

Prior to removal from the site, any hazardous waste identified will undergo a comprehensive waste assessment and classification by a suitably qualified person in accordance with the European Waste Catalogue and Hazardous Waste List. It should be noted that if non-hazardous waste becomes contaminated with hazardous waste the entire load will be considered hazardous. It is, therefore, critical to ensure that waste segregation areas are provided and are used properly to separate out hazardous, non-hazardous and inert waste arising. Hazardous wastes will be identified, removed and kept separate from other construction and demolition waste materials in order to avoid cross-contamination. Specific method statements detailing the necessary mitigation measures required during excavation,

handling transportation and disposal of hazardous wastes encountered on the site will be prepared as required.

The likely disposal/treatment options for any hazardous wastes available to the Contractor will depend on the nature of the hazardous material and the concentration of parameters of concern. The costs associated with treatment and disposal will similarly vary depending on the concentration of parameters of concern and on the tonnage involved. There are several operators/facilities in operation within Ireland that could potentially accept the contaminated material depending upon the results of the Waste Acceptance Criteria testing or assist in the export of the material abroad for special treatment where required. Full details of the disposal route for hazardous wastes will be provided in the detailed CDWMP following the appointment of the contract and completion of the further investigations required.

Hazardous Liquids (oils, paints, chemicals)

Hazardous liquid waste arising from the construction process will require careful handling. Oils, paints, bitumen, adhesives and chemicals will be kept in a separate contained storage area which will be locked when not in use. Hazardous liquids will be stored at least 10m from any watercourses. Lids will be kept on containers in order to avoid spillage or waste by evaporation. Waste oils, paints and chemicals, including the containers, will require careful handling and disposal. These will be stored in a containment tray with a capacity to contain 110% of the volume of the largest container.

Fuels and chemical will be stored in double-skinned containers or within a bund, i.e. an impervious structure with the capacity to contain 110% of the volume of the largest tank stored within it. All containers will be carefully labelled.

Food Wastes

Site staff generate food waste and packaging waste. Designated receptacles will be provided to allow for the segregation and storage of individual waste streams. These will include receptacles for food waste, e.g. brown bin for waste foods and peelings, dry recyclables, e.g. green bin for packaging, plastics, metals, wood, paper, cardboard and tetrapack, and residual bin, e.g. black bin for mixed food and packaging waste. Separate receptacles for the recyclable fractions may be provided such as plastics, metals, glass and this will be designed and detailed by the WMC in consultation with the selected waste management contractor.

Other Wastes (Residual)

Waste material other than those outlined above can constitute a significant proportion of the total waste generated by a construction site. This waste is normally made up of residual, non-recyclable waste such as soiled paper, cloth, cardboard or plastics, as well as food waste and general waste found on the site, including plastic bottles, bags, cans etc. Given the heterogeneous nature of this material, it is most important that residual waste is kept separate from the other waste streams to avoid contamination. This material will be stored in a dedicated container in the waste storage area. Container size and collection frequency will be assessed with waste management contractors as works proceed. All residual wastes will be dispatched to a suitably licensed facility for disposal. Other construction and demolition waste material will be collected in receptacles with mixed construction and demolition waste materials for subsequent separation and disposal at a segregation facility.

9.6. Assignment of Responsibilities

It will be the responsibility of the main appointed contractor to appoint a Waste Management Co-Ordinator (WMC) who will have overall responsibility for waste management on the site. The Employer (Iarnród Éireann) will receive summaries of any audit reports, which will be completed within three months of the end of each calendar year. The effectiveness and accuracy of the documentation may also be monitored on a regular basis via routine site visits. Following appointment of the main Contractor, the CEMP will be updated in accordance with the final design and copies of the plan will be distributed to the Employer, the Site Manager and the site sub-contractors. The WMC appointed by the Contractor will be appropriately trained and experienced in all aspects of waste management. In addition he/she and the site crew must be in a position to:

- Distinguish reusable materials from material suitable for recycling;
- Ensure maximum segregation at source;
- Co-operate with site manager on best locations for stockpiling reusable material;
- Separate material for recovery; and
- Identify and liaise with operators of recovery outlets.

The WMC will be responsible for educating all site staff, sub-contractors and suppliers about the available alternative to conventional waste disposal. Training will also be given to all site staff in materials management on sites. The WMC will continually identify waste minimisation actions on sites and this will be updated in the plan.

9.7. Training

Copies of the CDWMP will be made available to all personnel on-site. The CDWMP shall also be included in site induction training and toolbox talks, where required. All site personnel will be instructed about the objectives of the plan and informed of the responsibilities that fall upon them as a consequence of its provisions. This is traditionally carried out during the induction process for new staff members. Where source segregation and material re-use techniques apply, each member of staff will be given instructions on how to comply with the CDWMP. Site notices will be designed to reinforce the key messages within the plan and will be displayed prominently for the benefit of staff.

9.8. Waste Records

When establishing the system for managing the details of all arisings, movement and treatment of construction and demolition waste in the CEMP, the use of electronic tools should be considered to provide for convenient recording of information in a useful format such as “Smart – waste”.

The Contractor will be required to arrange for full details of all arisings, movements and construction and demolition waste to be recorded during all stages of the proposed Project. Each consignment of construction and demolition waste removed from the site will be documented in the form of a Waste Movement Record form, which will ensure full traceability of the material to its final destination. Separate record forms will be completed in respect to each waste transfer that takes place. The Contractor will also receive printed documents/records from waste disposal companies employed,



quantifying the exact amount of waste material removed from site. The sheet from the disposal company also identifies how much material went to landfill and how much went for recycling. All such records will be retained in a designated location and made available for auditing of the CDWMP.

10. References

CIRIA SP133 Waste Minimisation in Construction – Site Guide (1997).

CIRIA C532 Control of Water Pollution from Construction Sites. Guidance for consultants and Contractors (2001)

Department of the environment, Climate and Communications A Waste Action Plan for a Circular Economy – Ireland’s National Waste Policy 2020-2025 (2020).

Department of the Environment Heritage and Local Government Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects (2006).

Environmental Protection Agency Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (2021).

Environmental Protection Agency (Draft) By-product Guidance Note – A guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011) (2020).

Environmental Protection Agency Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011 (Version 3; June 2019).

Highways England design Manual for Roads and Bridges (DMRB) LA 110 - Material assets and waste, version 0, (2019).

Inland Fisheries Ireland Guidance on Protection of Fisheries during Construction in and adjacent to Water (2016)

Appendix A. Schedule of Environmental Commitments

[The Final Schedule of Environmental Commitments will be inserted into the final CEMP once statutory planning approval is received and will be carried forward into the Contractors CEMP].

Appendix B. Statutory Planning Consent Including Any Additional Environmental Commitments

[The Statutory Planning consent will be inserted into the final CEMP once statutory planning approval is received and will be carried forward into the Contractors CEMP].