P2288

ENVIRONMENTAL IMPACT ASSESSMENT REPORT
VOLUME 3: APPENDICES

CHAPTER 3 APPENDICES

RIVERINE COMMUNITY PARK

LIFFORD-STRABANE

AUGUST 2021

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Appendix 3-1

outline Construction Environmental Management Plan

APPENDIX 3-1

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (oCEMP)

PROPOSED RIVERINE COMMNUNITY PARK

STRABANE AND LIFFORD

DERRY CITY AND STRABANE DISTRICT COUNCIL/ DONEGAL COUNTY COUNCIL

AUGUST 2021

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1.0 INTRODUCTION

This document represents the **Outline Construction Environmental Management (oCEMP)** for the Riverine Project, incorporating lands spanning across Strabane and Lifford. This document will:

- describe the site environmental setting;
- identify local receptors and potential risks to the environment; and
- set out a framework for mitigation of risks during the building construction phase.

The document, covering all construction phases, including all enabling works, main phased and demobilisation, is to be used by the appointed Main Contractor to develop a final CEMP to incorporate company specific personnel detail and specific methods of working that support and attain the measures and objectives presented in this document.

1.1 Existing Site Conditions

The **Lifford** site is situated on lands to the west of Station Road in the Town of Lifford, County Donegal, (IGR 233882, 398765). The **Strabane** site is situated at Barnhill Road, in the north-western area of Strabane, County Tyrone (IGR 234119, 398597). The site boundary is indicated within **Figure 1**.

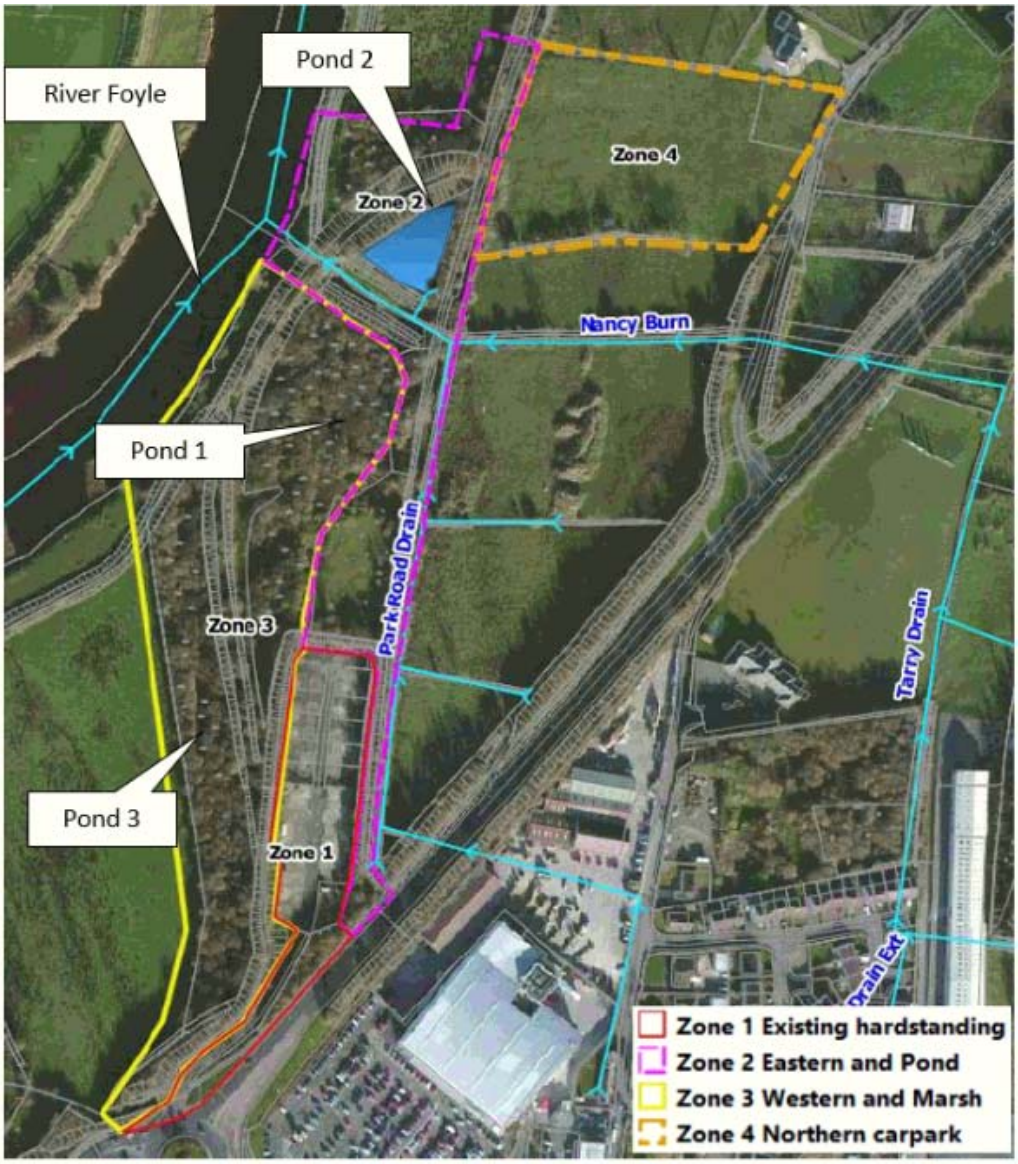
Figure 1 : Site Location with approximate extent of site outlined in red

Various assessments undertaken as part of this proposed development has flagged various potential issues including, flood risk, ecological and invasive species, contaminated land, noise, air and vibration, and general land and construction control. This document incorporates mitigation measures provided from previous assessments into which the contractor can development a final CEMP before construction on site.

A major constraint on the site is the location of various waterways and waterbodies around the sites, especially significant given the River Foyle and its which is significant ecological importance (SAC), and the presence of various protected species in and around the site. The main watercourses passing through the sites are shown in **Fig. 2** (Lifford) and **Fig. 3** (Strabane).

Figure 2: Lifford Water Features

Figure 3: Strabane Water Features



1.2 This Outline CEMP

This oCEMP details the environmental factors and mitigating measures that are to be implemented during construction works to minimise the effects of the site operations on receptors. This document:

- Describes the site environmental setting;
- Identifies of sensitive receptors;
- Provides a framework to ensure that all parties are aware of their responsibilities;
- Describes the main site construction activities that could generate pollution sources;

- Identification of main pollution control techniques expected to be deployed, including details of areas for storage of oils, fuels and chemicals and details of appropriate storage requirements and details of pollution prevention measures to be employed during the pre-construction and construction.
- Includes appropriate control measures for Air, Noise, Vibration, Surface Water, Groundwater, Ecological, Transportation & Waste Management during the Construction Phase of he development, drawing from a programme of mitigation described in ES / EIAr.

Environmental protection during the construction works will be delivered through the implementation of a Construction Environmental Management Plan (CEMP) as set out in this Outline CEMP report. The oCEMP sets out how the commitments will be translated into actions in the field and the means by which they will be monitored and verified.

This document provides the outline of measures to be taken to achieve the objective of environmental protection and is regarded as **a 'live document',** to be implemented and revised as necessary by the appointed contractor.

The oCEMP will be applicable to all works associated with the Proposed Development including those carried out by sub-contractors, however DOES NOT remove or overwrite the legal duties, responsibilities or obligations of the Principal Contractor (and subcontractors) and other parties in accordance with the contract documents and legislation.

The oCEMP includes details on how the works will be carried out and managed to ensure compliance with relevant planning conditions, contractual and legislative requirements and construction industry best practice. The CEMP will form part of the contract arrangements with the appointing contractor in charge of the site will be required to adopt, update with relevant working practice details, and implement the procedures and recommendations, following current industry best practice.

A Final CEMP will be provided to NIEA at least 8 weeks prior to works beginning for review and final agreement.

1.3 Supporting Documents

Associated project-related documents that are relevant to developing this oCEMP include:

- *EIAr Supporting the Planning Application, with particular regard to Construction Phase Mitigation Measures developed for each Chapter.*
- *All Design Drawings and Construction Plans included within the Planning Application.*

1.4 Status of the OCEMP

The status of the OCEMP is as follows:

- **This document comprises the OCEMP and has been prepared during the preliminary design and in parallel with submission of full planning application stage of the Proposed Development.**
- **The OCEMP (and adopted version before onsite works i.e. CEMP) is a 'live' document that can be reviewed on a regular basis and updated where necessary to include the further requirements from the local authority.**
- **The CEMP would identify any further mitigation methods and control measures to be agreed with keystakeholders, including NIEA, Derry and councils within NI and ROI and would be in place before construction begins.**
- **During construction, the CEMP may be revised to consider any modifications to the design, changes in external factors (for example, regulations or standards), any unforeseen circumstances, and any failings in environmental performance arising from routine inspections.**
- **The provisions of the OCEMP would be incorporated into the contracts for construction of the Proposed Development. It would be a mandatory requirement for both the Principal Contractor and all subcontractors to comply with the OCEMP to ensure that best practice is implemented during construction and to safeguard the environment.**
- **The requirements of the OCEMP do not remove or overwrite the legal duties, responsibilities or obligations of the Principal Contractor (and subcontractors) and other parties in accordance with the contract documents and legislation.**
- **The CEMP is the mechanism for ensuring that the Proposed Development adopts relevant best practice management techniques for sustainable construction, which may include the**

following:

a) **Identification of potential opportunities to further reduce the capital carbon (i.e. carbon associatedwith the construction activities) would be progressed prior to construction. Similarly, opportunities for the efficient use of resources (including construction materials and water) may be explored.**

b) **Sustainable procurement methods may be developed during construction to define the principals to be followed in the procurement of materials and services required. This may include appropriate objectives on the responsible sourcing of materials and support to local suppliers and services where feasible.**

2.0 DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 General Description of Proposed Development

The development aims to address the impact of the conflict in the Lifford and Strabane area, and its hinterlands, by regenerating the border riverside area to create an iconic cross-border community park straddling the River Foyle as a shared space to bring communities together from both sides of the border, to re-connect and form new, long-lasting connections and relationships.

Riverine Community Park will be of local and regional importance and will incorporate the core elements of a pedestrian and cycle bridge between Lifford and Strabane, Riverine Park Building, multi-functional outdoor space and external stage provision, play area, river walk and access, landscaped green-spaces interlaced with a network of pathways and cycleways, wetlands supported by car parking provision.

The project will comprise the creation of new community park infrastructure in excess of twenty-five acres by utilising agricultural land and wetlands lying along either side of the border connected through the creation of a new pedestrian and cycle bridge between Lifford and Strabane. The park on the Lifford site will be a designed landscape incorporating indoor and outdoor recreational features, smaller meeting & events spaces for programmed activity, complemented by the use of the naturalised flood plain environment on the Strabane site for informal recreation and environmental education/conservation activities. This diversity of offering makes for a more inclusive and freeing sharing experience.

The proposed project, although not restricted to, comprises the following key components:

- The construction of a Hub Amenity Building in the south of the Central Zone
- Adventure play area
- Managed parkland
- Outdoors events space
- A Maintenance Depot in the south of the Western Zone
- Sewage and clean water supply connections to amenity building and maintenance depot
- Sewage and Stormwater Pumping Stations
- New slipway and fishing points.
- Car parking
- Road vehicle access routes
- Footbridge crossing the River Foyle
- Temporary construction pad for the footbridge in the River Foyle
- Embankment access route to the footbridge
- River access and embankment support
- Landscaping / earthworks (cut and fill)
- New site access roads
- Accommodation Works for Hare Coarsing activities, including the relocation of the Greyhound Coursing spectator stand and the small building structure at the northern extent of the coursing area along with piped stormwater drainage, foul infrastructure and power lines.

2.2 Proposed Site Design

Sustainable development is central to the design, delivery and implementation ethos of both Donegal County Council (DCC) and Derry City and Strabane District Council (DCSDC). It is proposed to design an iconic park to create a welcoming, person centred environment which will optimise the opportunity for person-to-person interaction.

It is proposed to reuse earth material for landform rather than removal off site in order to reduce carbon emissions and landfill. Sustainable Urban Drainage Design System (SUDS) will be employed to harvest rainwater, allow for containment of run-off and deploy attenuation measures for hard

surfaces. Mitigation measures will be put in place, through consultation with Loughs Agency to ensure that the River Foyle remains unaffected throughout the construction and lifespan of the proposed development.

The following elements are to be incorporated into the final design of the proposal in order to minimise environmental impact:

- Use of site contours where possible for new path networks to minimise site impact and the carbon footprint of new path infrastructure.
- Layout of the park and construction methods for piling etc has been designed to minimise impact to protected species.
- Minimisation of cut-fill operations to reduce extent of earthworks.
- Conservation of the wetland areas with proactive biodiversity and environmental training programmes to encourage its enhancement and protection.
- The design must primarily optimise the use and mix of space in terms of functional space, circulation space and provision for services both planned at this stage and provide flexibility to accommodate other potential development schemes in the area.

General Layout for the for the development has been provided at the end of this report in **Appendix A**.

2.3 Specific Proposed Design Elements in Lifford (Republic of Ireland)

2.3.1 Riverine Community Park - Indoor Space (Lifford)

Lifford

A community resource building is to be provided on the Lifford site incorporating meeting/events space, toilets, offices and café. Indoor provision allows for sanitary provision which includes baby changing facilities, Changing Places toilets and fully accessible toilet facilities. Separate meeting spaces will be incorporated to be available for community engagement in a managed multifunctional environment and for the use of the various community groups.

The building will be dual aspect with an emphasis on easy access and interaction between spaces and the people using the spaces, this dual aspect will provide for a diversity of experience, with external space for larger community gatherings on the gravel surfaced formal courtyard, or a more intimate, informal, softer experience for a smaller number of people.

The finished floor level of the Hub Building and the mechanical and electrical elements of any necessary wastewater pumping station will need to be elevated above the level of the 0.1% Fluvial Annual Exceedance Probability Event as indicated by the CFRAM Study.

Internal and external signage will meet the requirements of the visually impaired, (Braille), Section 9(1) of the Official Languages Act (ROI) and bi-lingual signage requirements including English, Irish and Ulster Scots where required. The building will also meet the requirements of TDG Part M 2010 as required under the Disability Act 2005 (ROI).

The expected functional life of the Hub building is estimated to be a minimum of 50+ years with 15 years to the first significant external maintenance works.

The Lifford development will include a Maintenance Depot facility comprising a single storey steel container and external concrete hardstanding yard area, with storage bays. The maintenance depot will include welfare facilities (wash-hand basins and toilets) for council staff use.

A replacement spectator stand for the Coursing activities is proposed in the west of the site, as referred to as 'Accommodation Works'. This will replicate the existing structure (located in the south of the site, to be demolished) in terms of size, scale and use, i.e. covered stand for spectators.

Strabane

There is no indoor space proposed for the Strabane Site, which has ecological sensitivities that must be retained and enhanced, but connectivity to all facilities within the park will be provided via a pedestrian / cycle bridge over the River Foyle.

2.3.2 Riverine Community Park - Outdoor Space

It is proposed to include an outdoor covered stage area and community events space to accommodate up to 3000 people, incorporating a flexible scalable arena with stage provision and easy access to the facilities of the Hub Building (Lifford).

The multifunctional outdoor space and Hub Building (Lifford) will be interconnected, with the stage provision of the larger outdoor space and the indoor spacing being physically linked, allowing for changing provision for arts and cultural events as necessary. The permanent stage will be available with a retractable canopy cover with the future option for canopy cover over the outdoor space.

The events space (Lifford) will frame the Southeast aspect of the arena and will have safe access to car-parking along the boundary. Event space ground cover will be suitably and tastefully selected to allow for efficient percolation in the event of poor weather or flooding.

A toddler and junior play environment with a variety of approved equipment is proposed to be incorporated and sited close to the Hub Building (Lifford). This will provide for a fully accessible play space, including wheelchair inclusive play. Play equipment using pre-treated, high-quality, low-maintenance play-grade timber from sustainable sources may be considered, however, all play equipment will conform to EN1176: Playground Equipment Standard and EN15312: Free Access Multi-Sports Equipment. Safety surfacing of the play area shall also be carefully considered to reinforce the essence of environmental conservation throughout the community parkland while providing a safe ground cover for children to play in.

Walkways and greenways in Lifford will be linked to the Strabane site via the Bridge and will be designed to a minimum of 3.5m wide and to accommodate a 5m minimum underpass height requirement.

River walkways and safe access to the river are integral to the linked path network. The pathways will be finished in bound bitumen or similar to minimise maintenance while encouraging accessibility for all. All paths will be edged, and path gradients will comply with the regulations in both jurisdictions. Some wooden boardwalks will also be provided to provide close access to areas of wetland.

Seating is to be provided along the route to provide resting points. Walkways and cycle paths around the park will connect and inter-relate, framing views and vistas, maximising aspect and orientation to further engage the user. The path network, footpaths and car parking areas must be adequately lit to allow for their use after dark.

2.3.3 East Donegal Hare Coursing Grounds

The extent of the project site on the Lifford side extends to approximately 5.67ha and is to be located on part of a larger (c.12-14.2ha) of agricultural land which accommodates the East Donegal Hare Coursing ("EDHC") grounds. As part of the agreement with EDHC to acquire the 5.67ha site to accommodate the Riverine Project, DCC have agreed to reconfigure the remainder of the EDHC grounds to accommodate their future requirements (the "EDHC Accommodation Works"). These works are relatively modest comprising some drainage works, car parking and a replacement spectator stand. For the purpose of defining the Project in the context of EIA requirements, these works are considered as part of the Project.

2.4 Specific Proposed Design Elements in Strabane (Northern Ireland)

2.4.1 Outdoor Space

Walkways and greenways will be linked to the Lifford Site via the Bridge. River walkways and safe access to the river are integral to the linked path network. All paths will be edged, and path gradients will comply with the regulations in both jurisdictions. The pathways, punctuated with environmental artworks, will be finished in bound bitumen or similar to minimise maintenance while encouraging accessibility for all.

Seating is to be provided along the route to provide resting points. Walkways and cycle paths around the park will connect and inter-relate, framing views and vistas, maximising aspect and orientation to further engage the user. The path network, footpaths and car parking areas will be adequately lit to allow for their use after dark, subject to various ecological mitigation measures to minimise lighting impacts.

In conserving the ecological integrity of the existing wetlands on the Strabane site, the project will, wherever possible remodel existing tracks, contours and gradients, minimising the extent of cut and fill. The authentic character of the wetland must be preserved by developing and retaining existing vegetation where appropriate and supplementing with indigenous varieties as necessary enhances this existing and currently underused environmental asset, maintaining the highest

quality of landscaping and native habitat throughout the project. Planting will be provided throughout the outdoor area including pollinator friendly, indigenous and ornamental plants.

Invasive species management, including excavation and re-location to treatment areas of some areas of Japanese Knotweed / Himalayan Balsam / Giant Hogweed will be necessary to facilitate the development.

2.4.2 Accommodation of A5 Road Scheme

A portion of site consisting of the southern end of the Strabane side falls within the landtake of the proposed A5 road scheme. To accommodate this, car parking has been located in the north of the site and development works within the proposed landtake area have been minimised.

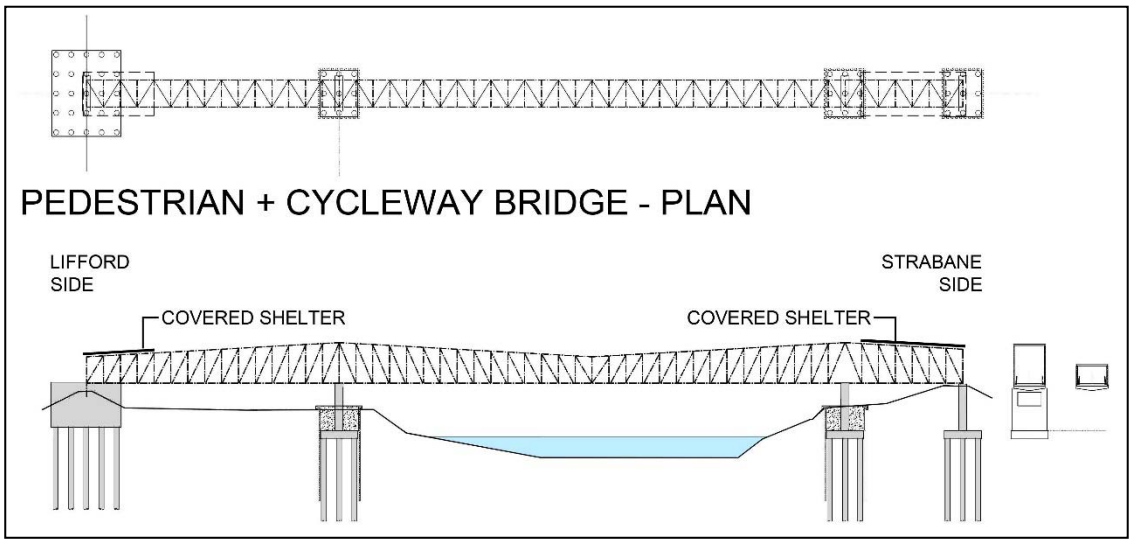
2.5 Bridge Design (Lifford and Strabane)

An outline plan of the proposed bridge is provided in **Figure 4.** The pedestrian and cycle bridge will have an overall span of approximately 115m.

There will be intermediate supports on the riverbanks resulting in an intermediate span of approximately 80m over the River Foyle. The width of the bridge will be a minimum of 3.5m. The bridge will connect the two towns; the design concept has been informed by community consultation and is reflective of a historic railway bridge further along the River Foyle. As such this visual association and reference of the history and heritage of the area reinforces a sense of place, allowing context to inform the design resolution and rooting the project very firmly in the area.

Following consultation with the Loughs Agency, the pedestrian bridge must consist of a single span structure across the river to mitigate against potential negative impact or harm to the river/riverbank and associated habitat, incorporating focussed lighting to minimise the risk of light pollution, with bird collision risk also taken to account within the bridge design.

Figure 4: Pedestrian and Cycleway Bridge Design



3.0 ECOLOGICAL IMPACTS

The subject site straddles the border between Strabane, Northern Ireland (NI) and Lifford, Republic of Ireland (ROI) with the River Foyle flowing between the two towns. The site measures approximately 11.69 hectares in total, with approximately 5.73 hectares on the Lifford side and 5.96 hectares on the Strabane side.

On the Strabane side, the site is accessed via a small access road exiting from a roundabout which connects Lifford Road, Barnhill Road, Railway Street, and Bradley Way. The access road leads to a halt site, with the rest of the site consisting of a combination of woodland and wetland.

On the Lifford side, the site is accessed via a small access road which egresses on to Station Road. The subject site on this side consists mostly of improved grassed land, with a sports pitch located to the northeast and a band of woodland running in a north-south line to the west of the site.

This section is intended to provide a comprehensive description of the aspects of the environment that have the potential to be significantly impacted by the proposed development.

3.1 Biodiversity

A Preliminary Ecological Appraisal (PEA) desk study and walkover survey was undertaken to inform the assessment. This triggered requirements for a range of more detailed species-specific surveys to be undertaken at the site including surveys for birds, bats, badger, otter, newts &

aquatics and invasive species. In addition, a collision risk assessment was undertaken for permanent structures.

A Phase 1 screening for Appropriate Assessment undertaken by Delichon Ecology. This triggered the need for a Stage 2 Appropriate Assessment Natura 2000 process, which has been undertaken for the development**.** This work has deemed that the impacts of the site to the ecological environment are fully mitigated through Construction Phase. It has been necessary to implement a wide range of mitigation measures to protect the ecological environment for this development scheme for the construction (and operational Phases of development). Ecological Mitigation Measures for the Construction Phase are detailed further in this section of the oCEMP.

3.1.1 European Sites within the Project Zone of Influence

A 15km buffer zone of influence (ZoI) has been chosen as a precautionary measure, to ensure that all potentially affected European Sites are included in the screening process, which is in line with Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG, 2009, rev. 2010).

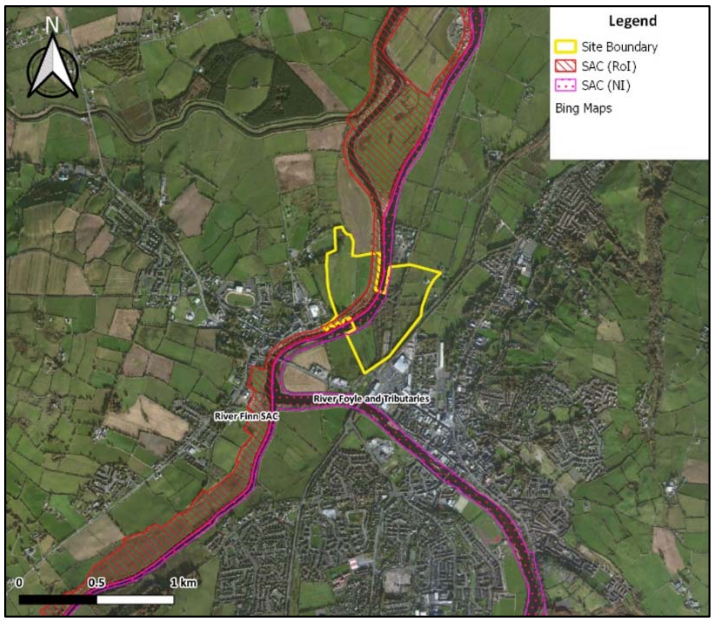
There are four European sites located within 15km of the proposed works. These are as follows:

- River Finn SAC (002301)
- River Foyle and Tributaries SAC (UK0030320)
- Moneygal Bog SAC (UK0030211)
- Owenkillew River SAC (UK0030233)

The proposed development site is partially located within / overlaps two European Sites; i.e. River Finn SAC (002301) and River Foyle and Tributaries SAC (UK0030320) and supports remote hydrological connectivity to two European Sites Lough Foyle SPA (Site Code: UK9020031)[1] and Lough Foyle SPA (Site Code: 004087), as shown in **Figure 5**.

The proposed development site does not support connectivity with any other European Sites within the project Zone of Influence.

Figure 5: European Sites located within the approximate site boundary



River Finn SAC (Site Code: 002301)

This site comprises almost the entire freshwater element of the River Finn and its tributaries the Corlacky, the Reelan sub-catchment, the Sruhamboy, Elatagh, Cummirk and Glashagh, and also includes Lough Finn, where the river rises. The spawning grounds at the headwaters of the Mourne and Derg Rivers, Loughs Derg and Belshade and the tidal stretch of the Foyle north of Lifford to the border are also part of the site. The Finn and Reelan, rising in the Bluestack Mountains, drain a catchment area of 195 square miles. All of the site is in Co. Donegal. The underlying geology is Dalradian Schists and Gneiss for the most part though quartzites and Carboniferous Limestones are present in the vicinity of Castlefinn. The hills around Lough Finn are also on quartzite. The mountains of Owendoo and Cloghervaddy are of granite felsite and other intrusive rocks rich in silica. There are many towns along the river but not within the site, including Lifford, Castlefinn, Stranolar and Ballybofey (NPWS, 2014).

River Foyle and Tributaries SAC (UK0030320)

This area has been designated as a Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The ASSI citation describes the special interests for which the site was notified in the Northern Ireland context. [NB: not for marine interests below mean low water mark. The interests for which the site was selected as ASSI may differ from the interests selected in a European context. The habitats and/or species for which this area has been designated as a SAC are listed below.

- *Lutra lutra* (Otter) for which the area is considered to support a significant presence
- *Salmo salar* (Atlantic Salmon) - for which this is considered to be one of the best areas in the United Kingdom.

This area contains the interests described although it may not contain all the typical features (EHSNI, 2007).

Lough Foyle SPA (004087)

The site comprises a section of the western shore of Lough Foyle from Muff to north of Vances Point in Co. Donegal. The site is part of the larger cross-border Lough Foyle complex which regularly supports in excess of 20,000 wintering waterbirds.

The majority of the wintering waterbirds that utilise this site occur along the southern and eastern shoreline of Lough Foyle in Derry, which is also designated as an SPA in Northern Ireland. The site is selected as a Special Protection Area (SPA) under the E.U. Birds Directive, as it is part of an internationally important wetland site that regularly supports in excess of 20,000 wintering waterbirds (NPWS, 2015).

Lough Foyle SPA UK9020031

This major sea lough is remarkably shallow, with extensive mud and sand flats exposed at low tide. Though considerably diminished by historical reclamation schemes, notably around Myroe, Ballykelly and Longfield, it hosts the second largest area of inter-tidal habitat in Northern Ireland. The shoreline is generally engineered except around the Roe Estuary and northwards. Adjoining agricultural land is of importance as high tide roosts and in supporting wintering geese and swans.

3.2 Existing Environment

The existing environment within the Lifford area comprises improved grassland (GA1), fringed by treelines (WL2), hedgerows (WL1) and woodland areas comprising mixed broadleaved woodland mixed broadleaved / conifer woodland (WD1 & WD2). The northern section of the site also supports a drainage channel which is a tributary of the River Deele (Donegal)_050 (NW_01D010650).

The south-eastern (Strabane) section of the study area is poor draining when compared with the Lifford side of the river and supports rush dominated wet grassland (GS4), improved agricultural grassland (GA1), wet willow-alder-ash woodland (WN6) comprising grey willow (*Salix cinerea*) and hedgerows and treelines. The wet willow-alder-ash woodland supports widespread, but localised occurrences of Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*).

Within the study area, the river is a large open watercourse and is classified by the Environmental Protection Agency (EPA) as a transitional waterbody; i.e. the Foyle and Faughan Estuaries (UKGBNI5NW250010). The river is fringed intermittently by reed and large sedge swamp (FS1) and localised areas of exposed fine aggregates. The higher areas of the riverbank support dry meadows and grassy verge habitat (GS2) that comprise stout, dense growing grasses. Both sides of the river bank supports sporadic growth of three invasive species including Himalayan balsam (*Impatiens glandulifera*) which is the most abundant and widespread, in addition to localised areas of Japanese knotweed (*Fallopia japonica*) and Giant Hogweed (*Heracleum mantegazzianum*).

3.3 Ecological Clerk of Works

An Ecological Clerk of Works (ECoW) will be employed to provide advice both pre-construction and during construction in relation to relevant international and national legislation relating to the protection of ecological receptors; to provide advice on the timing of works and the implementation of mitigation measures; to apply for relevant derogation licences; to monitor identified works; and to produce site inspection reports.

In accordance with BS 42020:2013 Biodiversity, an ECoW is a person who has the ecological qualifications,training, skills and relevant experience to undertake appropriate monitoring and to provide specialist advice to site personnel on the necessary working practices required to safeguard ecological features on site andto aid compliance with any consents and relevant wildlife legislation (BSI 2013). There may be more thanone ECoW required depending on the specialist advice required throughout the project.

An Ecological Clerk of Works must be in place to carry our regular site inspections and be in attendance on a full time basis during site works near to buffer zones for protected species and within the SAC.

3.4 Invasive Species

The site within both Strabane and Lifford is affected by Japanese Knotweed, Himalyan Balsam and Giant Hogweed. The dedicated invasive species section within the EIA has recommended a range of mitigation measures which are set out below. The locations of the references mentioned are indicated within the drawings, attached as **Appendix B**.

It should be noted, an invasive species specialist should be in attendance during all required works. An Invasive Species Clerk of works must be in place to carry out regular site inspections and manage the excavation, removal, stockpiling and treatment of invasive plant species during the works.

3.4.1 Japanese Knotweed

Lifford

The proposed plan is to feature two main objectives to deal with the Japanese Knotweed (JK14, JK15 & JK16):

- The in-situ herbicide treatment of the Japanese Knotweed. (JK16)
- The excavation of Japanese Knotweed contaminated material which lies in areas critical to the development and relocated to a set aside containment area for continued herbicide treatment. (JK14 & JK15).

Table 1 below summarises the management plan approach for each stand of Japanese Knotweed for the construction phase.

Table 1 Management of JK, Lifford

JK	CRITICAL TO DEVELOPMENT	CONSTRUCTION PHASE
14	YES	Excavate & Relocate to CA1
15	YES	Excavate & Relocate to CA1
16	NO	Fenced off & Herbicide applied

Strabane

The proposed plan is to feature 2 main objectives to eradicate/control with the Japanese Knotweed (JK14, JK15 & JK16):

- The in-situ herbicide treatment of the Japanese Knotweed. (JK1, JK2, JK3, JK5 JK01)
- The excavation of Japanese Knotweed contaminated material which lies in areas critical to the development and relocated to a set aside containment area for continued herbicide treatment. (JK4, JK5, JK6, JK8, JK9, JK10, JK11,)

Table 2 below summarises the management plan approach for each stand of Japanese Knotweed for the construction phase.

Table 2 Management of JK, Strabane

JK	CRITICAL TO DEVELOPMENT	CONSTRUCTION PHASE
JK1	NO	Fenced off & Herbicide applied
JK2	NO	Fenced off & Herbicide applied
JK3	NO	Fenced off & Herbicide applied
JK4	YES	Excavate & Relocate to CA2
JK5	NO	Fenced off & Herbicide applied
JK6	YES	Excavate & Relocate to CA2
JK7	YES	Excavate & Relocate to CA2
JK8	PARTIAL	Excavate & Relocate to CA2
JK9	YES	Excavate & Relocate to CA2
JK10	YES	Excavate & Relocate to CA2
JK11	YES	Excavate & Relocate to CA2

3.4.2 Himalyan Balsam

Lifford

The proposed plan is to feature two main objectives to eradicate/control the Himalayan Balsam (HB8-HB10):

- The in-situ herbicide treatment of the Himalayan Balsam. (HB8 Partial, HB10)
- The stripping of lands that contain Himalayan Balsam which lie in areas critical to the development are to be relocated to a set aside containment area for continued herbicide treatment and monitoring. (H8 Partial, HB9)

It is necessary to strip the lands in development critical areas that contain Himalayan Balsam as this is best suited to timescale of the project.

In situ herbicide application is not a viable option in the development critical areas as this requires a 2-year treatment plan, therefore the stripping of these lands and relocation of material is the preferred treatment option.

Table 3 summarises the management plan approach for each area of the Himalayan Balsam for the construction phase.

Table 3 Management of HB, Lifford

HB	CRITICAL TO DEVELOPMENT	CONSTRUCTION PHASE
HB8	PARTIAL	Strip & Relocate to CA1/ Apply herbicide what remains in situ
HB9	YES	Excavate & Relocate to CA1
	NO	Fenced off & Herbicide applied

Strabane

The proposed plan is to feature two main objectives to eradicate/control the Himalayan Balsam (HB1-HB7):

- The in-situ herbicide treatment of the Himalayan Balsam. (HB1 Partial, HB7)
- The stripping of lands that contain Himalayan Balsam which lie in areas critical to the development are to be relocated to a set aside containment area for continued herbicide treatment and monitoring. (HB2,HB3,HB4, HB5, HB6)

It is necessary to strip the lands in development critical areas that contain Himalayan Balsam as this is best suited to timescale of the project.

In situ herbicide application is not a viable option in the development critical areas as this requires a 2-year treatment plan, therefore the stripping of these lands and relocation of material is the preferred treatment option.

Table 4. that follows summarises the management plan approach for each area of the Himalayan Balsam for the construction and operational phases.

Table 4 Management of HB, Strabane

	CRITICAL TO DEVELOPMENT	CONSTRUCTION PHASE
HB1	PARTIAL	Strip & Relocate/ Apply herbicide what remains in situ
HB2	YES	Strip & Relocate
HB3	NO	Fenced off & Herbicide applied
HB4	YES	Strip & Relocate
HB5	YES	Strip & Relocate
HB6	YES	Strip & Relocate
HB7	NO	Fenced off & Herbicide applied

3.4.3 Giant Hogweed

Lifford

- The Giant Hogweed on located on site has already undergone herbicide treatment it is proposed to continue this process and treat the Giant Hogweed (GH2) in situ.
- The herbicide treatment process, the most efficient way is via foliar application through Knap sack spot spraying by certified technicians.
- A glyphosate-based Herbicide (Round up Proactive) will be used as it is approved in both forestry and aquatic environments, the product is also rain safe in 1hr.
- The herbicide will be applied in accordance to the manufacturers' recommendations to the recommended dosage for the treatment of each Invasive Species.
- Appropriate PPE, including Coverall, Face shield, gloves, and rubber boots, will be worn while the carrying out of the spraying.
- Spraying will only be carried out only in suitable weather conditions, to reduce spray drift.
- The Knap sacks used will be calibrated, and the relevant details of spraying will be recorded as industry standard.

Strabane

- It is proposed to treat the Giant Hogweed (GH1) in situ via herbicide application.
- The herbicide treatment process, the most efficient way is via foliar application through Knap sack spot spraying by certified technicians.
- A glyphosate-based Herbicide (Round up Proactive) will be used as it is approved in both forestry and aquatic environments, the product is also rain safe in 1hr.
- The herbicide will be applied in accordance to the manufacturers' recommendations to the recommended dosage for the treatment of each Invasive Species.
- Appropriate PPE, including Coverall, Face shield, gloves, and rubber boots, will be worn while the carrying out of the spraying.
- Spraying will only be carried out only in suitable weather conditions, to reduce spray drift.
- The Knap sacks used will be calibrated, and the relevant details of spraying will be recorded as industry standard.

3.4.4 Biosecurity

To ensure biosecurity on site and reduce the spread of the invasive species throughout the site and on to other sites the following measures are to be implemented:

- Erect fencing around the invasive species (Japanese Knotweed & Giant Hogweed) and place relevant signage.
- Erect Fencing around Containment Treatment Area and relevant signage.

Invasive Species (Plants and Bivalves) Construction Phase

- Before any piece of construction 'machinery' including crane or mobile machinery / plant, (excavators, rollers, dumpers, tele-handlers etc.) is delivered to the site, the invasive species Clerk of Works shall be provided documentation providing details of all sites close to or involving works in water that the machinery has been working on or stored on in the last 60 days.
- The invasive species Clerk of Works may consider the need for additional biosecurity measures, such as quarantining or pre-delivery disinfection, for any high risk machinery that has recently involved in in-river works.

- Biosecurity Process for machinery arriving or leaving the site during the construction phase with regard to invasive plant and invasive bivalve species is as follows:-

    - On arrival at or departure from the site, **ALL** construction machinery and for delivery vehicles travelling within the site beyond the construction compound / delivery bay should be visually inspected and disinfected in the self-contained biosecurity washing area of the Construction Compounds.
    - The disinfection process shall involve dosing of the exterior of the machinery with a diluted solution of 1% Vircon Aquatic solution or an approved alternative.
    - The machinery should then be power-hosed with water of 60 ^{o}C + to remove disinfection solutions and any invasive species debris and any residual treated clams / eggs which may be present, followed by a final off-site visual inspection.
    - The treatment and inspection of machinery shall be overseen and approved by a qualified ecological Clerk of Works, including verification records to confirm completion of the disinfection for each piece of machinery, including any replacement / standby units intended to be used on the project. Records shall be retained for inspection by the client's representatives.
    - Sludge from the self-contained biosecurity facility shall be routinely (on at least a weekly basis) removed from the washing area and transferred to a water-tight covered skip for storage, awaiting off-site disposal to an appropriately licensed landfill site for deep burial.

Mitigation Measures Invasive Species (Plants only) Construction Phase

- The Invasive Species Clerk of Works and Ecological Clerk or Works shall be jointly responsible for the monitoring of biosecurity onsite. These responsibilities include site management, restrict personal and movement to designated areas, restrict access to site, clean maintain PPE, equipment and plant machinery.
- Plant Machinery are to restrict to in movement around the site, and within given work areas and haul routes to from containment areas.
- Plant machinery will remain on site in restricted area until excavation, and replacement to the containment area have been completed.
- Recommend the use of rubber tyre plant wherever possible rather than tracked plant.
- Plant machinery to be thoroughly cleaned down upon completion of works including tracks, tyres, buckets, trailers etc and material place in the containment area.
- PPE especially boots to be deep clean and any material placed in containment area.

- Cleaning of Plant Machinery and PPE will be overseen and undertaken by onsite Invasive Species supervisor who will instruct if the plant and personal are safe to leave.

3.5 Bats and Lighting

It has been concluded that both Strabane and Lifford sides offer little in relation to roosting potential, however, has a high potential for foraging and commuting bats. There is significant nocturnal bat foraging activity on both sites.

Mitigation measure for the construction phase are as follows:-

- No lighting should be directed towards existing mature vegetation i.e. mature trees or boundary hedgerows.
- All lights should be fitted with directional hoods and/or luminaires to direct the light downwards onto targeted areas and to prevent unnecessary light-spill.
- Any external lighting around any structures (e.g. safety lights at the front and rear) should be fitted with motion sensors (timer of up to 60 seconds).
- The intensity of lighting should be kept to the minimum level required for safety. Low-UV LEDs or low / high pressure sodium lamps will be the preferred bulb type, as they have least adverse effect on bats.

3.6 Birds

Habitats within the site support widespread nesting opportunities for a range of common and widespread breeding bird species.

Mitigation measure for the construction phase are as follows:-

- Pre-construction site clearance works and removal of vegetation including immature trees and scrub must take place outside the bird breeding season which extends between 1st March and 31st August inclusive to ensure breeding birds are protected from harm.
- If pre-construction site clearance and removal of vegetation is deemed necessary within the bird breedingseason an ECoW will undertake a survey to check for breeding

birds immediately prior to works and confirm that breeding birds will be protected from harm during works.

A resident nesting owl is present on the Lifford site within a tree line in the Accommodation Works area. Additional mitigation has been put in place to protect this protected species, as follows:-

- It is recommended that the long-eared owl nest be left undisturbed and intact within the coniferous treeline. Proposed plans currently include the relocation of the current hare coursing grounds and proposed drainage pipework systems along the coniferous treeline where the long-eared owl nest is located. Long-eared owls are considered a species which has a moderate ability to co-exist with human populations, confirmed by the nest's close location to Lifford town.

- The hare coursing grounds include an area of land raise at the end of the run, where the hare chase terminates. This land raise is within close proximity to the long-eared owl's location. Development will involve the importation of fill (clay and similar materials) to the area during the construction phase. A proposed new open drainage ditch is being constructed along the inner edge of the retained coniferous treeline along the western boundary of the site. Whilst this treeline is to remain unaltered, some scrub clearance and excavation works to construct the drain will be required during the construction phase. The works will, therefore, include an area close to the foot of the treeline.

- Proposed works and clearance are within 150m of the nest site, therefore, it is recommended that these works will require appropriate wildlife licensing and will need to be conducted outside of the breeding season. It is also recommended that replacement raptor boxes be installed within 200m of the area as a compensatory/mitigation measure to ensure the long-eared owl has appropriate replacement nesting. All works near the long-eared owl nesting site and installation of replacement raptor boxes must be carried out under supervision and installed by a suitably qualified ecologist via the presence of an ecological clerk of works.

- It is also proposed by the Ecological Clerk of Works that due to the presence of the long-eared owl nesting on site as well as the buzzards observed on site that the use of rodenticides for any pest control are prohibited on site.

3.7 Newts

No newts were discovered during survey works, however, the contractor must adhere to best practice since newts may potentially colonise the wetland and ponds.

3.8 Otter

Otters have been identified in the area and the site is used for foraging by otters, moving backwards and forward from the Foyle river corridor in and out of the site in both sides of the river.

Mitigation measure for the construction phase is as follows:-

- If an otter is discovered or any activity suggesting otters have been disturbed during construction, all work must cease immediately, and the ecologist should be notified as soon as possible to detail how to proceed.
- Control measures to protect water quality will minimise risk to foraging habitat.
- Buffer zones to watercourses (10m for all watercourses and 100m for River Foyle SAC), as proposed in any case for surface water management, to protect foraging grounds and allow access.
- Fencing designs should provide unrestricted access to the site from the River Foyle to prevent reducing the otters access to the extended foraging grounds within the site.

3.9 Badgers

Strabane

A number of active sett structures have been identified within the site, with evidence of foraging across the site and surrounding lands.

Lifford

The badger sett located on the Lifford side of the site has been classified as abandoned with no evidence of current activity and sett entrances having become overgrown and covered with vegetation, pine

needles and cobwebs. Currently due to the inactive and abandoned nature of the sett as well as the nature of the current proposed development on the Lifford side the mitigation recommended is reduced to the mitigation protocols outlined below in order to avoid unlicenced destruction of this sett while it is inactive now it may become active again.

Protection Mitigation Measures for Badgers

Strabane

The proposed project will encroach on the exclusion zone of subsidiary / annex setts within the Strabane site. It will be necessary to temporarily exclude badgers from some of their setts during the bridge construction works on the Strabane side and during any works which infringes the 25m exclusion zone. This work to exclude badgers and monitor the badgers during the construction phase must be subject to time constraints as detailed in the Badger Report and must be undertaken by qualified ecologists under NIEA license.

Rotary CFA piling technique to be utilised during bridge construction/installation to minimise vibration impact on nearby badger sett, with continual vibration monitoring requirement in place during these works.

Strabane and Lifford

For the entirety of the development site the following mitigation will apply:-

- During the construction phase noise may cause disturbance, therefore the adoption of best practice as defined by the Control of Pollution Act 1974 should be implemented. All noise caused by machines should be minimised and should operate during daytime hours only as agreed with the council.
- With regards to dust it should be ensured that an adequate supply of water is available on site for effective dust suppression.
- Similarly, no light should be directed onto woodland features during the construction or operational phase.
- During the construction phase management and protection measures should be implemented prior to works commencing on site, these include:

- No excavations are to be left uncovered or without a means of egress (a sloped plank for example) overnight, as badgers may fall in or enter in search of food and become trapped.
- No buildings or storage units are to be left open overnight, as badgers may enter and become trapped.
- No poisonous or potentially harmful substances or materials are to be left unsecured overnight.
- No vehicles or machinery are to be used installing any badger fencing or exclusion gates.

If a badger is discovered or any activity suggesting badgers have been disturbed during construction, all work must cease immediately, and the ecologist should be notified as soon as possible to detail how to proceed.

3.10 Aquatic Ecology

The River Foyle and its banks are designated an SAC based on a number of aquatic species including salmon, a migratory fish which uses the Foyle as a commuting corridor. Mitigation measure for the construction phase are as follows:-

- a soft start approach be implemented when the use and starting of heavy machinery is required. The soft-start methodology will be required every time machinery is started following a 30minute rest period. Once machinery is in full operation associated noise and vibration will keep fish outside of the area of influence allowing them time to leave the area of disturbance.
- All bridge construction, in-river piling, riverbank piling and all piling works within the SAC for both Lifford and Strabane sites must be carried out between May and September must be carried out between May and September. This has been agreed in order to time works to occur before the salmon run begins in autumn, and to avoid impacting on the migrating salmon during the construction phase of the development.

- a minimum of 10 metres should be retained as a buffer between the proposed development and the surrounding water courses to reduce any potential impact (100m for River Foyle SAC).
- Should for any reason, oil or fuel be stored in the area, it must be kept in a bunded area (providing 110% capacity of the largest stored unit), at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC.
- Refuelling should be place on a hardstanding area, at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC.
- No lights from the site compound are to be directed at the river. All lighting, with the exception of safety lighting, should be directed away from the water surface and should be switched off at night once works have stopped.
- The use of silt traps and or curtains is required in order to trap any silt generated despite measures to attempt to reduce its production. It is essential that silt containment measures used are free flowing to avoid the accidental capture and death of fish. These traps should also be inspected on a regular basis to ensure no fish are trapped within them and to ensure they are working correctly.
- Plant nappies and spill kits must be available and in working condition on site at all times with toolbox talks provided to ensure site staff are aware of potential risks and how to correctly use these response tools.

3.11 Seasonal Constraints

Based on the various ecological constraints to the construction works, and to ensure optimal management for invasive plant species, the following seasonal constraints will apply for the construction phase.

Seasonal Constraints for Construction and Associated Works

Seasonal Constraints for Construction and Associated Works

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
In-River Piling, Bridge Construction, In-river works, riverbank Works and piling within SAC												
Tree and Shrub Clearance												
JK Treatment								Opt	Opt	Opt		
Balsam Treatment				Opt	Opt							
Hogweed Treatment				Opt	Opt	Opt						

Opt : Optimal Period Red: Exclusion Period Green: Approved Period

4.0 ENVIRONMENTAL IMPACTS

4.1 Soils and Waters

The Site is located on Alluvium which is typically clay and sand. There may be organic deposits which would be a source of ground gas for any future permanent end structures. These superficial deposits on review of the historical GSNI information are indicated to be +9m of thickness, with water strikes. The deposits are also classified as a Locally Important Sand and Gravel Aquifer. The strata will be hydrologically connected to the Foyle River, with shallow groundwater in these deposits discharging into the river.

There will be some variability of the strata. The ground investigation may confirm the presence of more cohesive layers which would limit the lateral and vertical migration therefore lowering the risk to the water environment which at present is Very High under CIRIA classification risk categories due predominantly to the risk during construction.

The underlying bedrock Dungiven /Claudy Formation (psammite, quartzite, coarse grained grits) which is of limited productivity, however, is classified under the Northern Ireland Groundwater Vulnerability as Class 4e, on a scale from 1 to 5 where 1 is lowest vulnerability and 5 is highest vulnerability. This is due to the expected granular nature of the overlying Alluvium.

Physically within the Strabane side of the site, a historical railway with multiple lines and associated infrastructure was located.

4.1.1 Lifford

There are three aspects to the construction phase where impacts should be considered. These can be summarised as firstly the ground conditions themselves which will be exposed during excavation works. The second is spillage of vehicle fuels or construction materials (e.g. cement) which could have a direct toxicity pollution effect and the third is general mobilisation of sediments and particulates which could smother the water column and base of receiving water courses.

The key civil engineering works which will have potential impact on the land and water environment during construction are summarised below:

- The initial site clearance and demolition works/ topsoil strip;
- Invasive species removal;
- Excavation of cuttings;
- Earthworks (cut/ fill);
- Land contamination remediation works involving excavations and shallow soil removal;
- Construction of pre-earthworks drainage and temporary settlement lagoons;
- Construction of drainage networks, including Sustainable Drainage Systems (SuDS) basins and outfall installation;
- Constructions of buildings / structures;
- Construction of a bridge crossing with pilling support
- Retaining wall construction;
- The construction of material deposition areas;
- The construction of spoil repositories;
- Construction of new / replacement of watercourse crossings; and
- Direct disturbance of the banks and bed watercourses.
- Proposed effluent discharges to the environment at the Spectator Stand and Slipway.

4.1.2 Strabane

The key civil engineering works which will have potential impact on the hydrology and water environment during construction are summarised below:

- The initial site clearance works/ topsoil strip;
- Excavation of cuttings;
- Earthworks (cut/ fill);
- Construction of pre-earthworks drainage and temporary settlement lagoons;
- Construction of drainage networks, including Sustainable Drainage Systems (SuDS) basins and outfall installation;
- Retaining wall construction;
- The construction of material deposition areas;
- The construction of spoil repositories;
- Construction of new / replacement of watercourse crossings; and
- Direct disturbance of the banks and bed watercourses
- Removal of concrete hardstanding (expected to be a late stage operation since it is the proposed site for the Strabane side Construction Compound).

4.1.3 Measures Applicable to Strabane and Lifford

- Pollution Prevention Plan to be prepared prior to the commencement of works.
- Emergency Response Plan to be implemented following spillage events.
- Pluvial flooding management.
- Good stockpile management to prevent erosion.
- Ground surface management to prevent erosion after vegetation/topsoil clearance and during vegetation colonisation following placement of landscaped features.
- Buffer zones of 10m around water courses for stockpiling and concrete mixing / washing and at least 100m away from the boundary of the SAC.
- Silt management prior to sediment laden flow entering watercourses.
- The use of quick setting cements, grout and concrete for use near watercourses
- Concrete pouring near or in watercourses to be within protective barriers to prevent dispersion.
- Fuels and chemicals to be stored within bunded areas with at least 110% storage volume and at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC.
- Spillage kits to be immediate available in working areas.
- Stationary plant to be fitted with drip tray that are regularly emptied or stored within bunded area on an impermeable surface.

- Vehicles to be regularly inspected and maintained.
- On-site Personnel training.
- Obtain relevant consents for all proposed environmental discharges and in-river works.
- Undertake environmental monitoring at sensitive site boundaries for deposited dust.
- Undertake environmental monitoring for surface waters and groundwaters in accordance with the outline Water Quality Monitoring Programme (**Appendix 9-11**).

Earthworks / Excavations

To minimise the risk of erosion, topsoil stripping, cut and fill and other necessary excavation works shall be undertaken in a phased manner and limited to areas where earthworks are immediately programmed.

There shall then be restoration of bare surfaces (seeding and planting) throughout the construction period as soon as possible after the work has been completed or protecting exposed ground with geotextiles if to be left exposed. Existing topsoil and cut materials will be retained on site to be used for the proposed development, subject to stockpiling controls including appropriate buffers (10m for all watercourses, 100m for River Foyle SAC).

Removal of vegetation from the riparian corridor shall be limited and retaining vegetated buffer zone should be considered wherever reasonably practicable. A 10m buffer zone will be in place around watercourses where there are no works currently being undertaken to reduce risk of pollution events or sedimentation.

Dust control measures shall be employed where there is the potential for wind to erode earth works (particularly in exposed areas). Common methods for dust control in soil include; water suppression and the use of covers / screens (where practicable) for fine materials e.g. sand. Deposited Dust monitoring will be required for the duration of the construction works.

Construction Phase Silt Management Drainage Features

All construction runoff water will be passed through treatment facilities prior to outfall to the receiving watercourse. These facilities may be a combination of temporary settlement lagoons,

SuDS ponds (constructed in advance of the main earthworks but may be utilised during the construction stage), and proprietary sediment removal tanks. During the construction stage accumulated sediment will be removed on a periodic basis.

It is inevitable that some water will enter the construction site and runoff will entrain sediment. Measures to control this sediment and minimise the amount travelling off site into the wider water environmental may include the installation of silt fences, check dams, bunds, and other sediment trap structures as appropriate.

Positioning of these measures will be an important aspect of their efficacy i.e., downslope of overland flow paths, sufficiently setback from water edges to minimise pollution in the event of failure. Retaining a grassed buffer zone or compacted earthen berms can also prevent direct runoff of waters from the construction site to watercourses. Any of these control measures will require regular inspection and maintenance to remove sediment that may compromise the efficiency of the measure.

Non-engineering solutions and green engineering (e.g., vegetation, geotextile matting) can also be placed downslope of earth works to help capture silt laden runoff from earthworks.

Timing / Phasing of Works

The timing of specific construction works can help minimise erosion and reduce sediment controls needed on site. For example, checking weather forecasts to avoid heavy rainfall events or take preparatory actions. Programmes of Works should also be mindful of restricted time periods e.g., known migration / spawning periods (where applicable). Refer to Chapter 8: Biodiversity for further detail on specific ecological constraints.

Stockpiling

Unnecessary stockpiling of materials will be avoided. Any required stockpiling should be minimised on site (spatially and in duration) to reduce the amount of contaminated run-off generated.

Areas of stockpiling / material deposition shall be appropriately lined, located away from watercourses (e.g., minimum setback of 10 m). Stockpiles of topsoil / soils will be covered / dampened during dry weather to prevent spreading of sediment / dust.

In advance of construction, silt fences and bunds shall be provided around the footprint of any stockpiles. Any runoff generated on the construction site around the stockpiles shall be captured by peripheral cut-off ditches and directed to settlement lagoons and / or sediment tanks which will be provided upstream of the outfall to the receiving watercourse.

Stockpiles shall be protected against rain splash and wind erosion by geotextile matting. Plastic sheeting should be avoided as this has the propensity to transfer erosion problems because water will sheet flow off the plastic at high velocity.

Works in Watercourses

Works to existing surface watercourses (such as installation of temporary or permanent culverts or bridges) have the potential to cause an obstruction to flow and may alter conveyance capacities, potentially causing temporary restrictions in watercourse channels, affecting upstream water levels and increasing flood risk.

The same principles of good practice that apply to permanent crossings also apply to temporary river crossings. Their design should prevent access track / road run-off from entering watercourse, reduce risk of erosion and not increase flood risk. Inappropriately sized crossings can cause flooding by being too small to cope with the flow and / or becoming blocked by debris, therefore, hydrological calculations and examining available flow and rainfall records should be undertaken when considering crossing design.

Good practice methods should be adhered to in order that installation of outfalls does not cause or generate erosion of land, banks or beds during construction phase.

Concrete, Cement and Grout

The use and management of concrete, cement and grout should be carefully controlled to avoid spillage which could potentially have an adverse impact on the water environment. Quick setting products (cement, concrete and grout) will be used for structures that are in or near to watercourses.

Any concrete mixing and washing areas should be located more than 10m from water bodies (100m for River Foyle SAC) and have settlement and re-circulation systems for water reuse.

Where concrete pouring is required within 10m of a water feature or over a water feature, appropriate protection will be put in place to prevent spills entering the channel (e.g., isolation of working area, protective sheeting, silt fencing, silt matting).

Wash-water should not be discharged to the water environment but should be disposed of appropriately through containment and disposal to an authorised waste disposal site.

Chemical Storage, Handling and Re-use

Chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and at least 10 m from any watercourse (100m from River Foyle SAC). The stores will also be locked and sited on an impervious base within a secured bund with 110% of the storage capacity.

Apart from use for treatment of invasive plant species by suitably licensed specialists, pesticides, including herbicides, will only be used if there are no alternative practicable measures, and will be used in accordance with the manufacturer's instructions and application rates.

Refuelling and Storage of Fuels

Only designated trained and competent operatives will be authorised to refuel plant and all refuelling will be undertaken at designated refuelling areas (e.g., on hardstanding, with spill kits available, and at least 10m from water features, 100m from River Foyle SAC). Appropriate measures will be adopted to avoid spillages.

Oil / Fuel Leaks and Spillages

Stationary plant will be fitted with drip trays and emptied regularly, and plant machinery will be regularly inspected for leaks with maintenance as required. Spillage kits will be stored at key locations on-site, and all construction activities will comply with a Pollution Incident Control Plan to be prepared by the appointed Contractor prior to commencement of works.

Construction Compounds

Compounds will be located at least at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC. Measures will also be implemented to manage silt laden surface water runoff from the compound to direct water to

treatment facilities as not to discharge directly to nearby watercourses. The compounds shall not be constructed in areas known to be at risk of flooding.

There will be no discharge of effluent to surface water during the construction phase. All wastewater from the construction facilities will be stored for removal off site for disposal and treatment.

Wheel Washes / Plant Washes

For vehicles and plant leaving material deposition / stockpile areas, self-contained wheel wash facilities shall be installed at the exit and all vehicles will be required to pass through them.

To prevent the spread of hazardous Invasive Species and pathogens, high pressure steam cleaning of all items of plant and equipment to be used at and adjacent to waters must be undertaken prior to use.

Monitoring

Daily visual water quality assessments should be undertaken by the appointed Environmental Clerk of Works (ECoW) who will remain on site to monitor construction activities for signs of pollution and advise on the deployment of control measures. A Pollution Prevention Plan (PPP) must be prepared by the Contractor prior to the commencement of works.

An outline Water Quality Monitoring Programme has been developed which sets out locations and sampling schedules for appropriate surface water quality and groundwater sampling points. This programme will be implemented to monitoring for any degradation of water quality during the works, with procedures in place to manage any breaches. Baseline monitoring is included to establish relevant Control and Trigger levels of key parameters. Post-Construction monitoring is included for confirmation against baseline conditions.

On Site Personnel Training

The CEMP will form part of the site induction for site operatives and a record of inductions will be kept in the site compound and be available for inspection. All site personnel will be made aware of the importance of the requirement to avoid pollution of all types, throughout all stages of the construction phase.

The Contractor will be obliged to ensure no deleterious discharges are released from the site to surrounding watercourses during the construction stage. Throughout the works the Contractor will also take account of relevant legislation and best practice guidance including but not limited to the following:

- CIRIA C649: Control of water pollution from linear construction projects (2006);
- CIRIA C741 Environmental Good Practice on Site Guide (2015);
- CIRIA C753 The SuDS Manual (2015);
- CIRIA C769 Guidance on the construction of SuDS (2017);
- DEFRA Good Practice Guide for Handling Soils (MAFF 2000);
- BS 8582:2013 Code of practice for surface water management for development sites; and
- Guidance on Pollution Prevention (GPP) SEPA & NIEA, 2018.

4.1.4 Ground Gas Protection (Lifford)

Ground gas protection measures should be installed under the community hub building in Lifford in accordance with the requirements of the GQRA. One of the following measures should be implemented with all joints and penetrations sealed;

- Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with at least 1200 g DPM^2.
- Beam and block or precast concrete slab and minimum 2000 g DPM/reinforced gas membrane.
- Underfloor venting or pressurisation in combination with a) and b) depending on use.

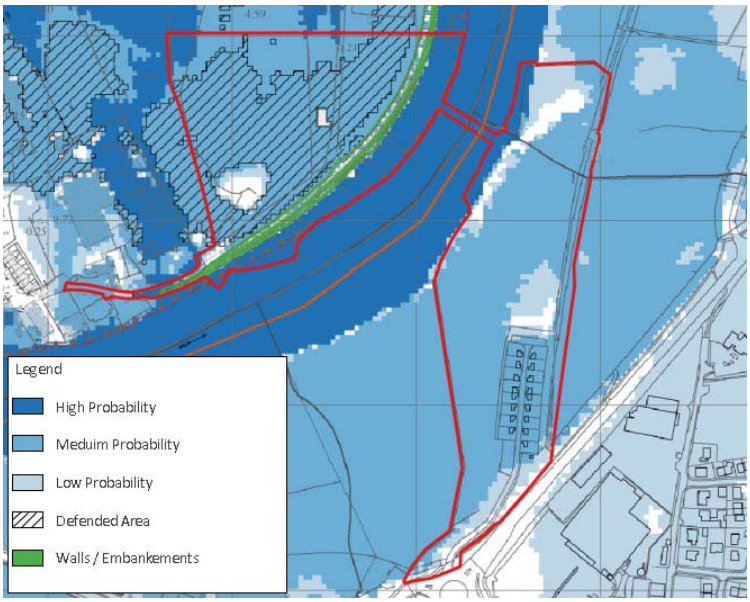
4.1.5 Ground Remediation (Strabane)

A limited programme of ground remediation works is required at the Strabane site. This involves the excavation and off-site removal of contaminated shallow soils (asbestos and metals) from two small areas.

4.2 Flood Risk

OPW (ROI) and DfI Rivers (NI) flood mapping shows that most of the proposed development site is affected by fluvial or coastal / tidal flooding). Estimated flood mapping, for OPW and Dfi Rivers is indicated within Figure 6.

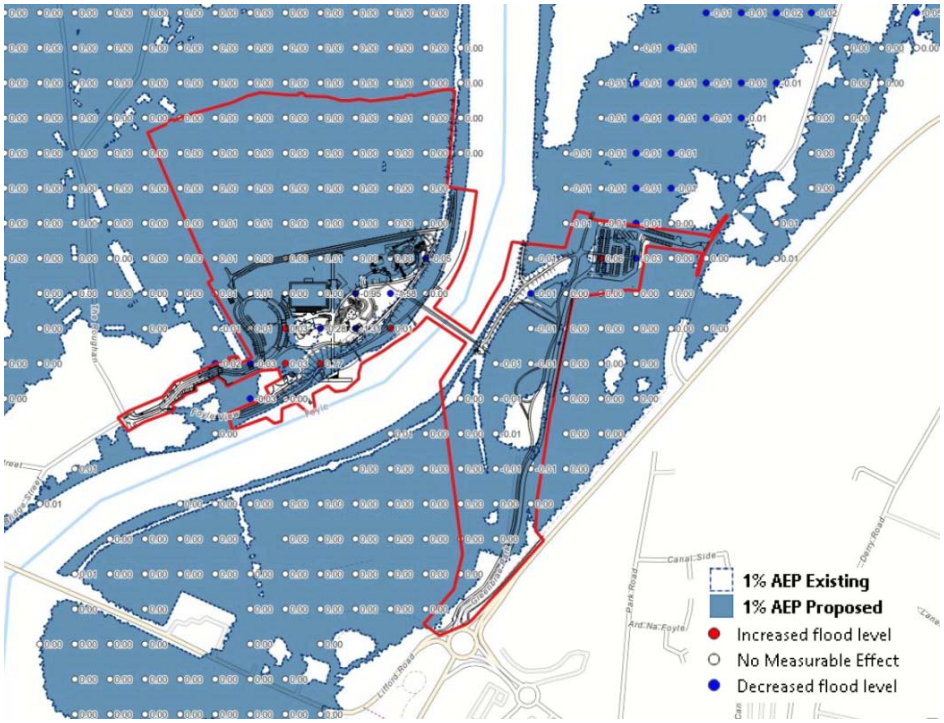
Figure 6: River flood extents (1%AEP) – present day



Detailed hydraulic modelling has since been undertaken, accounting for both pre-development and post-development scenarios. The post development scenario accounts for infilling portions of the site, with cut provided elsewhere to provide compensatory flood storage – see **Appendix C**.

As indicated within Figure 7, analysis of the whole model dataset confirms that for the scenario considered (relevant to planning policy / guidelines in both jurisdictions) there is no measurable affect attributable to the development outside the application site in either jurisdiction. Localised effects within the site are predicted, however these are acceptable in principle and are reflected in proposed predicted water levels that inform mitigation and flood resilience.

Figure 7: Flood level increase because of the proposals



Estimated flooding levels for the post development scenario is indicated within the following tables.

Lifford

Location	1% AEP		0.1% AEP	
	Water Level (mOD)	Mean / Max Flood Depth (m)	Water Level (mOD)	Mean / Max Flood Depth (m)
Community Hub	N/A (4.61 adjacent)	N/A	N/A (5.05 adjacent)	N/A
Outdoor Events Space / External Stage	4.55	1.1 – 1.5	4.95	1.5 - 1.9
Car Parking	4.57	1.1 - 1.7	5.05	1.5-2.0
Junior Play Area	4.55	N/A	4.95	0.3 - 1.4
Senior Play Area	4.55	1.4 - 2.1	4.95	0.8 - 2.5
Maintenance Building	4.55	1.4 – 1.5	4.95	1.8 - 1.9
Fishing Stands	5.55 – 5.28	2.1 - 2.4	5.85 – 5.67	2.5 – 2.7
Accommodation Works – Spectator Building	4.55	2.5 – 2.7	4.95	2.9 - 3.2

Strabane

Location	1% AEP	
	Water Level (mOD)	Mean / Max Flood Depth (m)
Car Park	4.7 – 4.5	0.73 / 1.16
Boardwalk	4.9	0.6
Site Entrance Road (Greenbrae Park)	5.19 – 4.8	1.2 / 3.0
Site Entrance Road (Park Road)	4.6	1.0 – 1.27

Furthermore, any watercourse crossing will be required to comply with OPW Section 50 and DfI Rivers Schedule 6 requirements, including gaining consent from the relevant body. Various mitigation measures relating to flood risk are listened within Section 5.1 – Soils and Waters.

4.3 Pollution Prevention

To address potential impacts upon nearby designated sites arising because of the Proposed Development, in respect of potential emissions to the Foyle water system including pollutants and sediments and aerial noise and visual disturbance during construction, a range of mitigation measures will be implemented.

The following mitigation measures will be implemented to prevent pollutants entering the storm drainage system on site and reaching the River Foyle downstream of the site of Proposed Development:

1. New drainage infrastructure will be bunged at the end of each working day to prevent water ingress and accidental contamination. Final connections will be made post-completion of road construction. Self-contained recirculating wheel washes will be used by the contractor at the entrance and egress points of the site.
2. The contractor will dedicate specific areas for oil storage and refuelling, at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC. and comply with legislation, including providing bunds sized to contain 110% of fuel storage capacity. The contractor will use fill point drip trays, bunded pallets and secondary containment units. The site will be enclosed and secured, and fuel storage areas will be secondarily secured,
3. All fuel, oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring.
4. There will be no stockpiling of materials within 10m away from any minor watercourse, ditch or drainage channel.
5. External concrete and cement mixing will take place on an impermeable designated area.
6. Equipment, such as chutes, portable mixers, barrows, pump lines, shovels, will be washed out in adesignated area of hard standing drained to a sealed sump and subsequently removed from site (no environmental discharge).

4.4 Noise

The assessment of construction noise impacts from the proposed development has indicated that construction noise limit criteria will not be exceeded at the nearest residential properties during daytime. Very occasionally elevated construction noise may occur when heavy construction activity occurs near noise sensitive receivers.

Noise from construction works will fluctuate throughout the course of a typical working day as well as over the course of the construction works being undertaken in any one location. Therefore, the daytime construction noise limit of 65 dB $L_{Aeq,12\,Hour}$ will be achieved at the nearest residential properties. The construction noise impacts will be short-term and will not be significant.

Also, while the overall construction activities for the Riverine Community Park will occur over 9 - 12 months, the nature of the proposed works and its duration will mean that noise sensitive receivers will not be exposed to continuous construction noise impact during the construction period. Appropriate construction mitigation measures have been outlined and once implemented, the residual impacts from the construction period will not be significant.

4.4.1 Construction Noise Mitigation Measures

Appropriate mitigation measures have been identified to ensure the Construction Phase target noise limits are not exceeded. The contractor will be required to implement the control measures recommended in BS 5228 and apply the appropriate measures where applicable. Other measures will include:

- Working hours during site construction operations will be restricted to daytime hours from 07:30 hours to 18:00 hours (Monday to Friday) and, as may be required, from 08:00 hours to 13:00 hours (Saturdays). Evening and night-time work is not expected to take place although it is possible that limited 24 hours working may be required to take place on occasion. This will only take place with the prior agreement of Derry & Strabane District Council and Donegal County Council.
- An on-site speed limit will be enforced for all traffic. Drivers of vehicles will be advised of the speed limits through the erection of signs *i.e*. a typically recommended on site speed limit is 10 km/hr.

- Where practicable, the use of quiet working methods and the most suitable plant will be selected for each activity having due regard to the need for noise control.
- Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228. To this end operators will use "*noise reduced"* plant and/or will modify their construction methods so that noisy plant is unnecessary.
- By positioning potentially noisy plant as far as possible from noise sensitive receivers the transmission of sound can be minimised. Earth mounds and/or stockpiles of material or ecology-friendly perimeter hoarding (only in areas of the site where hoarding is absolutely necessary) can be used as a physical barrier between the source and the receiver.
- Mechanical plant used on site will be fitted with effective exhaust silencers. Vehicle reverse alarms will be silenced appropriately in order to minimise noise breakout from the site while still maintaining their effectiveness.
- All plant will be maintained in good working order. Where practicable, machines will be operated at low speeds and will be shut down when not in use.
- Compressors will be of the "noise reduced" variety and fitted with properly lined and sealed acoustic covers.
- In all cases engine and/or machinery covers will be closed whenever the machines or engines are in use.
- All pneumatic percussive tools will be fitted with mufflers or silencers as recommended by the equipment manufactures. Where practicable, all mechanical static plant will be enclosed by acoustic sheds or screens.
- Employees working on the site will be informed about the requirement to minimise noise and will undergo training on the following aspects:
- The proper use and maintenance of tools and equipment.
- The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receivers.
- Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment.
- The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.
- Where excessive noise levels are recorded, further mitigation measures will be employed which may include temporary wooden ecology-friendly hoarding /

acoustic screening to be installed to a height of no less than 2.5m around areas of construction where loud noise levels occur.

- The contractor will ensure that the TII Guidelines which identify limits for protection against cosmetic damage as a function of vibration frequency are not exceeded using the selected low vibration piling method.
- Responsible Person –The Contractor will appoint a responsible and trained person who will be present on site and who will be willing to answer and act upon complaints and queries from the local public.
- Night-time Working - If there are items of plant (*e.g*. dewatering pumps and similar) in use during night-time hours they will be chosen, sited and enclosed such that levels at the nearest properties do not exceed the measured background noise levels.
- Where deemed necessary due to excessive impact or complaints received, noise monitoring will be undertaken during construction works to determine noise and vibration levels at sensitive receivers. Based on the findings of such noise monitoring, appropriate mitigation measures will be implemented to reduce impacts.

4.5 Vibration

- Agree working hours for piling activities for less sensitive time or days i.e. during the daytime between 07.30h and 18.00h for Monday to Friday, avoiding weekends.
- Use of minimal vibration piling equipment i.e. using a CFA piling method for bridge construction and any other piling works within the SAC or in close proximity to badger setts.
- An alternative low vibration method for removal of the hardstand not involving the use of rock hammers or similar percussive methods must be deployed,
- Carry out a baseline vibration survey to determine current ambient vibration levels at the proposed piling and vibration-sensitive receptor locations,
- The measurement location at the vibration-sensitive receptor should be close to, but far enough away so not to disturb i.e 10 m away,
- Identify vibration levels the vibration-sensitive receptors are currently exposed to, and assess the potential impact from CFA piling and Silent Sheet piling on the vibration-sensitive receptors,

- Determine action and limit values based on the baseline vibration survey and available guidance from international standards,
- Install continuous vibration monitoring equipment at the piling location and the vibration-sensitive receptor location measuring the vibration levels,
- Monitor the vibration levels and compare with the agreed action and/or limit values,
- It is recommended the PPV is measured and if possible, the weighted acceleration and hence the VDV could also be measured (and/or determined).

4.6 Air Quality and Dust

The main existing impact on air quality in the vicinity of the proposed development site is due to emissions from traffic on the A5 (The Great Northern Link) and N14 roads in Strabane and Lifford respectively along with domestic and industrial emissions. The existing air quality in proximity to the site is 'good'. No air quality management areas are currently declared in the area.

Continuous automated dust monitoring must be undertaken at key locations, including bridge crossing points, within the site for the duration of the works.

There will be a potential for construction dust to be generated due to construction activities and the movement of construction vehicles during the construction phase. The approximate 12-month construction duration will have a short-term and localised negligible impact on air quality. The mitigation measures outlined will reduce the potential for construction dust impact to negligible.

4.6.1 Construction Phase Mitigation Measures

These mitigation measures are deemed necessary in addition to those detailed elsewhere within this oCEMP. In accordance with the IAQM Guidance, for proposed mitigation measures, the highest risk category should be applied. Therefore, the mitigation measures applicable to a High-Risk site should be applied. These are outlined as follows:

General Measures

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.

Dust Management

- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections.
- Continuous automated dust monitoring must be undertaken at key locations, including bridge crossing points, within the site for the duration of the works.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks

of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.

- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and inspect logs available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.

- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

The IAQM Guidance Mitigation Measures applicable to the specific works undertaken are as follows:

Measures specific to demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.

- Bag and remove any biological debris or damp down such material before demolition.

Measures specific to construction.

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures specific to trackout.

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a self-contained wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible

5.0 CONSTRUCTION SPECIFICS

5.1 Proposed Duration of Works

The proposed construction programme is an estimated 12 months, whilst some site preparation may also be necessary to remove and manage invasive species and create access etc. There are no other timeframe details available at this stage of the Proposed Development.

There are a number of seasonal constraints for construction and related works which must be adhered to in order to protect ecology. In addition, the treatment of various invasive plants has to be undertaken during specific periods of the growing season to be most effective. These seasonal constraints are presented below:-

Seasonal Constraints for Construction and Associated Works

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Piling and Bridge Construction, In-river and riverbank Works												
Tree and Shrub Clearance												
JK Treatment								Opt	Opt	Opt		
Balsam Treatment				Opt	Opt							
Hogweed Treatment				Opt	Opt	Opt						

Opt : Optimal Period **Red: Exclusion Period** **Green: Approved Period**

5.2 Security

The access points and compound areas will operate within a secure hoarded perimeter regulations and will be controlled by the General Contractor. All access will be monitored and recorded. The compound area shall exclude local wildlife such as otter and badger.

All construction support activities will be controlled within the site construction compound including office facilities, toilets, canteen etc. Materials and waste handling and storage will be within the confines of the site.

The work area will be protected from the public at all times. CCTV may be installed and compliant Health & Safety information signs will be installed. The external facade of the solid hoarding panels will have a mixof Health & Safety warning signs.

Perimeter hoarding through the rest of the site shall be avoided where possible to allow unrestricted movement of local wildlife, but where it is necessary, shall include animal gates at key locations to be agreed by the ECoW.

5.3 Site Access and Construction Compound

The approximate locations for construction compounds are shown in **Figure 8**. For the Strabane side, site access for plant and delivery lorries will be controlled via a manned access point using the existing access, just off the adjacent roundabout on the A5. A dedicated construction compound will be set up on the existing hardstanding area. Although area had been previously constructed to accommodate travellers' caravans, and therefore it is expected to be fully serviced with foul and storm connections, all effluent and runoffs shall be collected for appropriate disposals off site.

Likewise, the Lifford side have a manned access point utilising the existing access (down the side of the cinema). The construction compound on this side will be located at the existing spectator stand – there are no known services in this area and therefore all runoffs shall be collected for offsite disposal.

Figure 8 – Compound and Access Arrangements (Locations of Compounds may vary)

5.4 Construction Hours

It is anticipated that the construction hours will be:

- **07:30 to 18:00 Monday to Friday;**
- **From 08:00 to 13:00 on Saturdays,**
- **Closed on Sundays and Bank Holidays.**

5.5 Deliveries

Delivery of equipment and materials will be carefully controlled and managed at the site. Access and egress to the proposed area will be managed by the General Contractor. Delivery times will be planned with consideration to surrounding businesses.

There will be occasions whereby materials are needed to be delivered to site, a banksman will be in placeto ensure safe access is provided. The times of deliveries will be limited to arrive on site during off peak periods of time.

There will be periods of time during the construction programme whereby larger piling and lifting equipment will be needed to be delivered and the demobilsed by special arrangement (wide loads anticipated) to construct various elements of the development including the bridge and associated temporary and permanent infrastructure, Hub Building and Spectator Stand. The bridge itself will be brought to the site by road (again wide loads anticipated) in sections.

A number of piling techniques have been selected as appropriate for the site such as CFA (requiring concrete deliveries) and silent sheet piles (requiring steel deliveries).

A self-contained wheel washing facility will be positioned near to access and egress points to ensure that debris or lose inertmaterials are removed from any vehicle leaving the site. A Biosecurity process (detailed in Section 3.4.4) necessary for invasive species management, will also be in place for any machinery entering or leaving the site. Any delivery vehicle

travelling beyond the Construction Compound / delivery bays will be subject to the washing process as detailed in the Biosecurity process (Section 3.4.4).

5.6 Traffic Management

A series of traffic management measures may be included as part of the project, these include:

1. Temporary Signage - The Contractor is required to provide appropriate signage
2. Operation of a Contra Flow - There are no proposals to operate a Contra Flow system.
3. Temporary Road Closure - There are no proposals to introduce temporary road closures. Any roadclosure can only be operated under agreement with the appropriate authorities.
4. Temporary Traffic Signals - There are no proposals to operate Temporary Traffic Light Signals.
5. Arrangements for Local Access, Pedestrian and Cyclist Access - There are no proposals to alter theexisting local access to the surrounding areas.

Dust and Dirt

During the construction phase the increase in dust and dirt will be minimised by effective site management. The construction routes will be discussed and agreed with respective roads departments and disruption will be mitigated. The construction routes and the phasing of the scheme will be agreed with respective roads departments.

Self-contained wheel washing facilities will be provided for all construction vehicles and construction areas will be fenced-off with wildlife excluded. It should be noted that a OCEMP has been undertaken and has been included as part of the planning submission.

Any impact will be ameliorated using best practice including damping down excavated material and haul roads when the roads are dry and covering loads of surplus material leaving and entering the site. Self-contained wheel washing will be provided on site.

Operatives Travel Behaviour

The Contractor will be required to develop a Construction Travel Plan to ensure operatives vehicles use are kept to a minimum with the use of mini-buses and shared vehicle trips.

5.7 Piling

An environmental Piling Risk Assessment (Chapter 9, **Appendix 9-9**) has been undertaken based on anticipated foundation designs for bot temporary infrastructure required for the construction phase and for piling necessary to construct permanent infrastructure across the site.

Overall, the Piling Risk Assessment has concluded a low risk associated with the use of permanently installed CFA piles as the foundation solution for the Hub Building, Spectator Stand and Construction Platform (outside the river channel).

The CFA piling solution (permanent installations not to be removed) would appear to be good practice and an appropriately conservative approach in terms of ensuring protection of groundwaters close to the baseflow recharge zone, the bridge landing sites being close to the River Foyle. The CFA Pile method, being a low vibration option, also provides adequate protection for ecological purposes.

The use of Silent sheet piles for other temporary works to the flood embankment and within the river channel, which will be withdrawn following completion of the bridge structure, meets all of the environmental objectives to minimise environmental impact.

If an alternative piling solution is considered at the detailed design stage, all piling methods must be low vibration during installation and removal (where necessary), and must offer similar degree of environmental protection to the piling solutions assessed at the planning stage.

Following consultation with Loughs Agency regarding concerns over impacts to migratory fish species particularly salmon, all bridge construction, in-river piling, riverbank piling and all piling works within the SAC for both Lifford and Strabane sites must be carried out between May and September, as per the seasonal constraints detailed as follows-.

Seasonal Constraints for Construction and Associated Works

Seasonal Constraints for Construction and Associated Works

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
In-River Piling, Bridge Construction, In-river works, riverbank Works and piling within SAC												
Tree and Shrub Clearance												
JK Treatment								Opt	Opt	Opt		
Balsam Treatment				Opt	Opt							
Hogweed Treatment				Opt	Opt	Opt						

Opt : Optimal Period Red: Exclusion Period Green: Approved Period

6.0 PROJECT RESPONSIBILITY AND COMMUNICATION

6.1 Communications

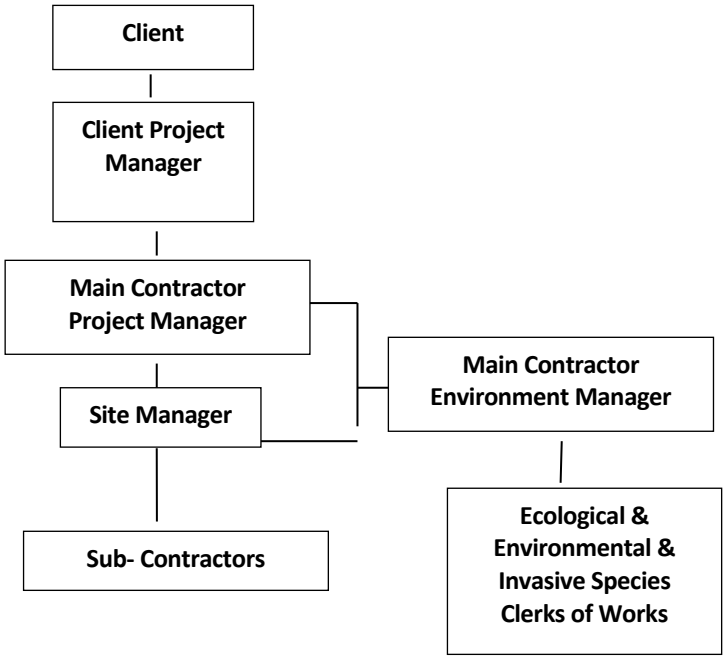
Effective communication is essential to ensure the appropriate employment of environmental standards and relaying of information, assessments, and data. The following points are some of the key forms of communication required:

- Statutory and Non-Statutory Bodies - During the construction works, communication will be required with external parties such as, statutory authorities, interest groups and the public/business owners.
- Public/businesses - The Site Manager shall ensure that the public/businesses within the localisty are kept informed of operations that may have an effect upon them. This may involve letter drops and meetings to keep local commercial premises owners up to date with progress with the Proposed Development and any new operations that are to be carried out. The Site Manager will provide details of contacts within the project team for the public/businesses to contact should any issues arise;
- Consents, Licences and Permits - The provisions for controlling, pumping and discharging water will be agreed with the relevant statutory body. The Contractor will ensure that any licences required are in place prior to works commencing;
- Changes in legislation or guidance - Legislative changes or proposed improvements to manage processes on site that have a bearing on the commitments given in the supporting environmental documents or other consultations will be communicated by the Site Manager to the Client;
- Meetings & Records - Environmental issues relevant to the project will be discussed during weekly Site Progress Meetings attended by the Site Manager and Environment

Manager. Environmental performance will also be discussed at regular HSEQ meetings. This will include dissemination and discussion of the findings of audits, environmental reports and other inspections where appropriate.

6.2 Responsibilities

This oCEMP defines the follows roles and responsibility relevant to environmental protection on the proposed project.



The Client Project Manager (OR persons nominated by the Client to manage the project) will be responsible for ensuring the CEMP requirements are represented within the tender process and are communicated to and acknowledged by the main contractor representative and will have an overview role in checking that they are being implemented during the works.

The Main Contractor Project Manager will be responsible for final development of the CEMP, including any detailed working method statements, and for obtaining approval for these from the client project manager and NIEA. The Main Contractor/Project Manager or appointed representative will be responsible for ensuring the CEMP requirements are being implemented on site through site visits and communication with the Site Manager and will be responsible for ensuring correct procedures are followed in the event of any environmental incident including reporting on the risk, alerting relevant authorities and the client project manager if required and documenting the response.

The appointed contractor will be required to identify one or more accredited emergency spill contractors that will be available to call upon in the event of a significant incident, for example the Emergency Preparedness and Incident Response forms. An example incident response form is attached as Appendix D.

The main contractor will be informed that they may be held liable for any pollution incident or adverse impact on designated features.

The Site Manager will be responsible for ensuring that the final CEMP is implemented during all phases of the site works and that all contractor workers and sub-contractors are aware of the environmental sensitivity of the site and the CEMP requirements. The Site Manager will be responsible for ensuring appropriate emergency response spill kit supplies are maintained on-site and for directing /implementing pollution incident responses to any incidents.

Site Manager will also be required to or delegate to competent staff:

- Promote a Health & Safety culture on site, to read, understand and implement the CEMP ensuring contractors are aware of their responsibility to ensure correct working methods where there are environmental risks;
- Ensure that environmental matters are taken into account when considering Contractors' construction methods and materials at all stages;
- Be aware of any potential environmental risks relating to the site, plant or materials to be used on the premises and bring these to the notice of the appropriate management;
- Ensure materials/waste register is completed as appropriate and ensure Contractors method statements include correct waste disposal methods

An Ecological Clerk of Works will be required to oversee the pre-construction creation of all ecology aspects of Phases 1, 2 and 3 of construction, as part of the creating of compensation areas of the CWW butterflies.

All site personnel, on the project will adhere to the following principal duties and responsibilities:

- To conduct all their activities in a manner consistent with regulatory and best environmental practice as laid out in the CEMP;
- To participate fully in the environmental training program and provide management with any necessary feedback to ensure effective environmental management at the site; and,
- Adhere fully to the requirements of the site environmental rules.

6.3 Health and Safety

In developing the final CEMP the appointed contractor will be responsible for reviewing the relevant reports produced for the site to inform development of safe site practices and environmental protection during the construction phase.

6.4 Project Planning and Co-ordination

Prior to the works beginning, project members shall meet to review the Final CEMP requirements (as agreed with NIEA) and plan in detail implementation of working methods to ensure CEMP compliance. At that time a programme for works shall have been designed.

Any mitigation measures that have been agreed with the Statutory Authorities 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.

Specific method statements required for all phases of the works will be prepared by the main contractor for submission with the final CEMP, to be issued to NIEA at least 8 weeks prior to works beginning.

Method statements and risk assessments produced by sub-contractors will be reviewed / approved by the Main Contractor and incorporated within the Final CEMP. Where required, input from a relevant Environmental Specialist will be obtained. An example method statement and risk assessment is shown in **Appendix E**.

6.5 Communication and Implementation

The Main Contractor Environmental Manager will be responsible for communicating the Final CEMP to the project management team and all contractors/sub-contractors as part of site induction and prior to any works being undertaken.

All contractors/sub-contractors will be required to attend site induction and will not be permitted to undertake works until attendance is recorded. Relevant persons appointed by the contractor will be required to demonstrate previous knowledge or undertake relevant training with respect to use and application of pollution incident response and other pollution prevention equipment.

The induction procedures will include as a minimum:

- The requirements and use of the CEMP;
- Key risk activities and sensitive areas which will be clearly marked out with posts and tape;
- The site communication system;
- Incident reporting plan/forms;
- Identification of personnel responsible for dealing with site incidents;
- Use of spill kits.

The environmental sensitivity of the site and required working practices will be briefed to site workers as a Toolbox Talk on site, prior to works beginning and at the beginning of each main phase of works. Regular review meetings will be held to monitor implementation of the CEMP and update/modify working practices as required to ensure compliance. Induction of sub-contractors on site will include communication of the CEMP requirements.

7.0 SITE CONTROL SEQUENCE

7.1 Physical Site Works

The main site works will comprise:

- Site Set-up – Pad Foundation for crane etc.
- Phased Construction with associated services trenching;
- Final access roads, surrounding hard-standing and landscaping;

7.2 Pollution Guidance

Based upon the nature of the work, a major risk to the water environment would be from spills of cements, chemicals or oils and migration of suspended solids/dirty water via overland flow to the watercourses or infiltration to the highly vulnerable groundwater. Working methods will follow standard industry guidance for construction sites as set out in guidelines including:

- CIRIA C532 Control of Water Pollution from Construction Sites;
- CIRIA C650 Environmental Good Practice on Site;
- DAERA Standing Advice Pollution Prevention Guidance.

Guidance for Pollution Prevention (GPP's) (Environment Agency/SEPA/NIEA):

- GPP 1: Understanding your environmental responsibilities - good environmental practices;
- GPP2: Above Ground Oil Storage Tanks;
- GPP5: Works and Maintenance in or near Water;
- PPG6: Working at Construction and Demolition Sites;
- PPG7: The Safe Operation of Refuelling Facilities;
- GPP8: Safe Storage and Disposal of Used Oils;
- GPP 13 Vehicle washing and cleaning;
- GPP 20: Dewatering underground ducts and chambers;
- GPP21: Pollution Incident Response Planning;
- PPG22: Dealing with spills.

7.3 Additional Pollution Prevention Measures

All site workers including sub-contractors will only be permitted to undertake work on-site following attendance of a site induction which will:

(a) emphasise the sensitivity of the site
(b) define the roles and responsibilities relating to pollution prevention and incident response;
(c) outline the pollution prevention measures that must be followed and marked out buffer zone;
(d) describe the location and use of emergency response spill kits.

- Contractors will be required to immediately report all pollution incidents or 'near misses' to the Site Manager. The Site Manager will be required to maintain a log of all such incidents and incidents will be reported to the Client's Project Manager and relevant authorities as required.
- Access to the construction areas will only be via the agreed access routes.
- Any storage of fuel, oil and chemicals will be within the construction compound within appropriate and secure storage areas. It is not considered likely there will be any need to store on-site any significant quality of oils or chemicals. These will be sited beyond the 10m buffer of the ditch and watercourse (100m for River Foyle SAC).
- Fuels and oils (including waste oils) will be stored in fit-for purpose containers in impermeable bunded areas which comply with the Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010 (110% secondary containment).
- Fuel and Oil storage will take place in dedicated locations at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC.
- Rainwater will be managed to ensure the containment capacity within the bund structures is not compromised.
- All storage tanks and containers will be appropriately labelled with their contents and storage capacity.
- No temporary use (refilling, topping up) of oils, chemicals or other hazardous substances will be undertaken within the 10m watercourse buffers (1oom for River Foyle SAC).
- Re-fuelling will take place in a dedicated location at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of

the SAC. Refuelling of plant will generally be through use of purpose designed bowser and pump, or by small container using a funnel, with the equipment used only by a trained operator. Drip trays will be deployed during refuelling procedures. All funnels etc. will be stored on an impermeable bunded area or drip tray.

- Drip trays will be utilised beneath any non-mobile machinery and spill kits and adsorbent materials will be stored on site for rapid deployment by trained staff. Spills will be cleaned up as quickly as possible with waste materials bagged and disposed of through appropriate waste carrier and disposal arrangements.
- Regular inspection of plant and equipment will be undertaken, and preventative maintenance undertaken to reduce the risk of spills and drips.
- Regular inspection of the security and integrity of containers and bunds will be undertaken and regular checks made that spill response equipment remains available and appropriate at relevant locations.
- Any waste oil/chemical/ containers will be placed in a secure impermeable facility (covered skip or other container) or removed from site on the same day.
- Vehicles and equipment will be left secure during periods of non-working and site security measures implemented to manage the risk of any adverse disturbance to plant or equipment.
- Where concrete is not brought to site ready mixed, mixing of concrete shall take place at least 10m away from any minor watercourse, ditch or drainage channel and at least 100m away from the boundary of the SAC (unless associated with piling works for bridge construction, where a 10m buffer to watercourses will apply). Cement wash-out of delivery vehicles will take place off-site. Wash-out works associated with vehicle chutes, contractor equipment and tools shall be collected in suitable containers for, following settlement, off-site disposal. Wet concrete waste from construction plant buckets/dumpers will be emptied into containers and, when dried, it will be transported by a registered waste carrier to a licensed landfill site for disposal.
- Any wet concrete waste from construction plant buckets/dumpers will be emptied into containers and, when it has dried, be transported to a licensed landfill site for disposal.
- Cleaning of equipment and tools used in concrete production/use shall not take place within the northern portion of the site and should ensure no discharge of contaminated water to the surrounding environment, through use of a specified, contained washdown area.

- Where concrete is poured on the surface adequate shuttering/bunding shall be used to prevent any lateral escape away from the construction area.
- Foul sewage from any temporary portaloo facilities will be collected and disposed of by a registered contractor at the appropriate design frequency of the facilities.
- The site will be secured, and potentially polluting materials stored safely or removed from site overnight such that the risk of impact from vandalism is controlled.
- Contractors will only be permitted to undertake work on-site following attendance of a site induction which will describe the pollution prevention measures and methodologies that must be followed.
- Contractors will be required to immediately report all pollution incidents or 'near misses' to the Environmental Manager. The Environmental Manager will maintain a log of all such incidents and incidents will be reported and response actions reviewed at project meetings.
- A pollution response procedure should be displayed at the site incorporating actions to be followed including use of the **NIEA emergency pollution hotline 0800 80 70 60.**
- A spill response procedure is attached as Appendix F

7.4 Emergency procedures

A Site Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and emergency services. A Pollution Incident Emergency Response Plan would be developed in accordance with the guidance set out in the Guidance for Pollution Prevention GPP 21: Pollution Incident Response Plans (NIEA, July 2017). The Response Plan would setout the procedures to be followed and measures to be implemented in the event of a pollution incident. These incidents may be the result of:

1. **delivery and use of materials;**
2. **spillages of oils or chemicals;**
3. **discharge of silty water or other pollutants to watercourses;**
4. **flooding event; and,**
5. **fire (emissions to air) and failure to contain firewater runoff.**

Emergency procedures are developed to support the response plan. The procedures define the circumstances when the plan should be activated and include:

1. **the names and contact details of staff trained in incident response,**
2. **clearly defined roles and responsibilities,**
3. **the types and location of emergency response equipment available,**
4. **the location of the emergency assembly point, and,**
5. **Procedures for recovering spilled product.**

Responsible staff will be trained in emergency procedures to form an Emergency Team, so that theseprocedures can be implemented swiftly and effectively.

- Periodic testing of emergency procedures will be undertaken by the Site Manager.The Environmental Manager will observe the test and to report on results.
- Any corrective actions are taken forward for review and approval.
- Should an emergency incident occur, the Environmental Manager will be notified immediately.The emergency response will be co-ordinated by the Site Manager.
- Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation andshall be put into place, having regard for the sensitivities of the environment.

A record of the emergency incident will be kept showing the nature of the corrective action undertaken. An example emergency response plan is shown in Appendix G.

7.5 Waste Management

Given the extent of cut and fill required within the site, and the required removal of materials, the appointed/Principal Contractor will be required to further develop a Site Waste Management Plan (SWMP) for incorporation within the final CEMP.

This SWMP will specify the procedures for collection, storage and disposal of all waste products and materials associated with the development.

The procedures will be developed to be compliant with relevant legislation and best practice guidance including the *Environmental Protection (Duty of Care) Regulations 1991* (and

amendments), Article 5(9) of *the Waste and Contaminated Land (Northern Ireland) Order 1997*; NIEA *Waste Management: The Duty of Care – A Code of Practice for Northern Ireland* and PP6: *Working at Construction and Demolition Sites.*

All handling, transport and final disposal of waste off-site will be undertaken only by authorised and registered companies and complying with legal responsibilities such as Duty of Care.

In future developing the SWMP, the contractor will be required to consider:

- Identification of potential waste streams and volumes.
- Planning for waste generation minimisation through pre-construction planning and design including reuse and recycling of materials.
- Ensuring all necessary permits and authorisations are applied for in a timely manner.
- Developing of management systems for the recording and archiving of all associated documentation including plans, procedures, transfer notes, etc.
- Identifying necessary contractors and waste management infrastructure required to deal will all waste arisings, including foul sewage.
- Ensuring all procedures and methodologies adopted meet the objectives of the PPIP.
- Personnel training and measurement and monitoring of site waste management procedures to ensure waste minimisation opportunities are achieved and implementation of the agreed plan procedures is occurring.

The bulk of demolition works proposed to facilitate this development is as follows:

<u>Lifford</u>

- Demolition of existing Spectator Stand in southern area of the site, comprising an open-sided blockwork structure with concrete base and steel-clad roofing with steel uprights and lean-to with toilets and washing facilities.
- Draining and removal of underground pipework and septic tank – soakaway associated with the spectator stand.
- Demolition of small single storey outbuilding in northern area of the site comprising blockwork walls and steel-clad roof.

Strabane

- Clearance of concrete and other barriers blocking site access from the ASDA roundabout entrance.
- Breaking up and lifting of large area of concrete and bitmac hardstand, including granular substrate in the southern area of the site, including demolition of small control room building.
- Excavation and removal of existing underground services infrastructure underlying the concrete area, including foul sewage, storm and water supply systems.

There will be a dedicated central waste storage area within each construction compound in Strabane and Lifford. Appropriate facilities will be put in place to ensure no air or water pollution from waste materials can occur. Waste materials generated on-site such as wooden pallets, waste oil, paper, waste batteries, etc. will be segregated to ensure appropriate disposal through authorised recycling and disposal routes. Waste materials generated at construction areas will be collected and transported to the central waste storage area within the construction compound on a regular basis. Appropriate offsite disposal shall then be arranged.

Foul sewage from the construction compound will be collected and disposed of by a registered contractor at the appropriate design frequency of the facilities.

8.0 ENVIRONMENTAL PERFORMANCE

8.1 Daily Checking and Corrective Action

The Site Manager with the Environmental Clerk of Works during the CWW PP will establishment to undertake daily checks of the works being undertaken to ensure compliance with agreed working practices and to identify any new environmental risks or harm/damage that requires corrective action or development/modification of working practices.

Such requirements will be reported to the Project Manager, with subsequent actions agreed with the Client Project Manager and implemented into the CEMP working document on-site.

In addition, where necessary daily records of the site activities, records, complaints and incidents, will be kept ensuring that all site operatives adhere to the prevention and protection requirements.

8.2 Environmental Risk Register

The Environmental Manager/Officer will prepare and maintain an Environmental Risk Register having regard for legal requirements, project environmental commitments the potential for aspects of works to cause significant environmental impact.

The Environmental Manager will record responsibilities assigned for actions required for mitigation and control of the environmental risks in the Environmental Risk Register.

The Environmental Risk Register will be subject to regular review by the Environmental Manager togetherwith the Site Manager.

8.3 Consents

The Proposed Development may require consents from various regulatory bodies in advance of construction activities. These may include discharge consents / licenses for construction runoff, where any construction-phase discharges are being proposed. Copies of legal consents, permits and licences obtained will be held in the site environmental file by the Environmental Manager.

8.4 Construction Method Statements

This document provides the basis for the Final CEMP to be implemented by the Contractor, incorporating the items outlined above and other requirements identified during site works. It should be regarded as a 'live document' to be updated as necessary to ensure the stated environmental objectives are achieved.

The appointed building contractor will be required to develop a series of method statements, to be agreed with the Client Representative, which integrate and supplement the information provided in the CEMP.

The method statements are to be developed for each main construction task and/or other activities that could potentially result in an adverse impact on soils, surface water or groundwater or have the potential for accidental release of fuels, oils or other hazardous substances.

The method statements will:

- Describe how each specific task will be undertaken and what pollution prevention/mitigation measures are to be adopted, including excavation along the proposed stormwater discharge route;
- Contain a detailed risk assessment of each task;
- Contain a list of pollution prevention and control equipment to be provided, where it will be stored and how it is to be used in the event of an incident; and
- Identify training and communications procedures.

8.5 Notices of Non-conformance

In instances where the requirements of the CEMP are not upheld a non-conformance and corrective actionnotice/procedure will be produced. The notice/procedure will be generated during the inspections conducted by the Supervisors, the Site Manager, Environmental Manager or any external third-party audits.

The Site Manager will be responsible for ensuring a corrective action plan is established and implementedto address the identified shortcoming.

8.6 Complaints Handling

The response to any complaints will be managed by the Site Manager, who will inform the Environmental Manager of any environmental complaints. A Complaints Register will be maintained to detail the name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover.

The Environmental Manager will ensure that all environmental complaints and concerns will be responded to within 24 hours of the complaint being received. An example complaints form is show in Appendix H.

8.7 Key performance indicators and objectives

The Contractor should set environmental objectives to continuously improve environmental performance on the site. The Contractor will set objectives based on each significant environmental impactand they will be reviewed, and revised, if necessary, on a monthly basis. Procedures, monitoring requirements and key performance indicators will be measured against achievable targets.

Appendix A

LEGEND

SOFTWORKS

- Existing Trees & Planting — To be retained and protected during works in accordance with BS5837
- Existing Trees & Planting — To be removed. Groups identified in the absence of individual trees
- Proposed Native Trees — Refer to planting schedule
- Proposed Native Wetland Trees — Refer to planting schedule
- Proposed Specimen Trees — Refer to planting schedule and details
- Proposed Hedgerow planting — Refer to planting schedule and details
- Proposed Amenity Grassland — Refer to planting schedule
- Proposed Wildflower (WF1) — Refer to planting schedule
- Proposed Woodland Wildflower (WF2) — Refer to planting schedule
- Proposed Riverside Edge Mix — Refer to planting schedule. To be pregrown and supplied as turf
- Proposed SUDS Mix — Refer to planting schedule. To be pregrown and supplied as turf
- Proposed Native shrubs — Refer to planting schedule.
- Proposed Ornamental shrubs — Refer to planting schedule.
- *Proposed Grass Mounding — Refer to planting schedule (Amenity Grassland)

SURFACES

- Proposed Asphalt — To pedestrian and Cycleway. For detail refer to engineers drawing
- Proposed Asphalt — Vehicular. For detail refer to engineers drawing
- Proposed High Friction Surface — To pedestrian crossing Strabane carpark For detail refer to engineers drawing
- *Natural Stone Paving — Refer to detail
- Proposed Boardwalk — Refer to detail
- Reinforced Grass — Refer to detail
- Proposed Gravel Path — Refer to detail
- *Proposed Slipway Surface — Refer to detail also engineers drawings for detail.
- *Wetpour Safety Surfacing — Refer to detail
- *Reinforced Grass Safety Surfacing — Refer to detail
- *Play Bark Safety Surface — specifically for play areas
- Stone Clusters — Refer to detail

FEATURES

- Existing Walls — To be retained
- Existing Fencing — To be retained / replaced as required
- 2.4m Security Fencing — Paladin fencing
- Metal Estate Fencing — Refer to detail
- Stock Proof Fencing — Refer to detail
- Steps and Terracing — Refer to detail
- Proposed Benches — Refer to detail
- Bicycle stand locations — Typical Sheffield stand
- Proposed Litter Bins — 100L Bins with single 300L recycled bin adjacent to Community Pavilion
- Proposed Metal Gates — Refer to detail
- Vehicular Upstand Kerb — 125mm upstand. Pre Cast Concrete
- Vehicular Flush Kerb — Pre Cast Concrete
- Pin Kerb — Pre Cast Concrete

MISCELLANEOUS

- Riverine Community Park Boundary
- Accommodation Works
- Proposed Bridge
- Water

LEVELS

- (4.3) — Existing Levels
- +5.3 — Proposed Levels

NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated
2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.
3. All hatches are indicative and do not relate to the actual laying or planting pattern
4. Layout should be read in conjunction with all other drawing information and reports
5. All new kerbs adjacent to existing roads will require a 300mm reinstatement strip within the carriageway running the entire length
6. For proposed drainage refer to engineers layout
7. For lighting, electrical requirements refer to M&E drawings
8. Walking Routes & Connections
All main routes within the park boundary will be accessible to the broadest range of abilities. In accordance to Countryside Access code
9. Riverside Access
Riverside access to be retained.
10. Planting
The general planting strategy is to use a primarily native planting palette introducing some specimen trees within the new car park to add formality. Where possible existing areas of native planting will be increased and supplemented to create diversity and improve ecological benefit. This planting will be suggested from the naturalised fauna surveyed.
11. Suds
Attenuation basin locations and extents shown indicatively. Basins will be planted with a mix of native wet woodland (indicated with trees) and marginal type planting (indicated with hatch) to highlight their location and integrate them as an attractive feature within the overall site context.
12. Bridge
Refer to engineers proposals
13. Invasive Weeds
Refer to invasive weed management plan
14. Topographic Survey Information
Planting
There are substantial areas of the Project boundary that remain unsurveyed (due to poor access). In this respect assumptions have had to have been made with regard detail of;

Planting Loss:
The extents of existing vegetation and wetland are shown indicatively. In this regard the amount of trees (shown within a group) identified as removed is unclear.

Guarding
is not identified on the layouts but will be located on pathways adjacent to an immediate level change of 600mm or greater or slopes steeper than 1:2. Guarding will be 1100mm high responding to building regulations and countryside access code. As an example please refer to Boardwalk drawing ref: 2072
15. Play Areas
The Play areas have been located next to the existing embankment making the most of connecting paths and using graded terracing to maximise accessibility through the play spaces. Play equipment within both the Junior / Senior play areas will also be considered to ensure broadest age range and ability is catered for. Also refer to the section drawing which illustrates section through the inclusive Hightower in the Senior Play Area.
16. Accommodation Works
For layout & detail please refer to engineers and architects packages

17. Legend
*All items with * are only relevant to Lifford*

The revision cloud highlighted areas of the park which were inaccessible for the

This is a concept design that illustrates the main elements to be delivered within the park. The exact location, layout and smaller details of the park may change during the detailed design phase.

Rev	Date	Description	App
P00	16.02.2021	Issued for screening	DM
Draft	10.06.2021	Issued for Information	DM
Draft	30.07.2021	Approval Comment	HB
Draft	05.08.2021	Approval Comment	DM

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Funder
Peace Northern Ireland - Ireland
European Regional Development Fund

Client
Comhairle Contae Dhún na nGall
Donegal County Council
Derry City & Strabane District Council
Comhairle Chathair Dhoire & Cheantar an tSratha Báin
Derry Cittie & Strabane Destrict Council

Project Status: PLANNING

Project: RIVERINE COMMUNITY PARK

Drawing: LIFFORD LANDSCAPE LAYOUT

Scale: 1:500@A0

Drawn	Checked	Approved
DM	DM	AH
Date 12.02.2021	Date 12.02.2021	Date 15.02.21

Project - Organisation - Zone - Level - Type - Role - Number - Revision
1383 · TPHC · ZO · XX · DR · LA · 2001 · DRAFT

Project Number: 1383
Status code & Description: PLANNING

River Foyle

Marsh

Wetland

Existing Water Level +(2.00)

SUDs

Overhead Electric Lines

Park Road

Barnhill Road

Strabane North Greenway
Will be progressed separately to Riverine Community Park but coordinated ensuring that connections are considered.

Emergency / Event Entrance & Exit
Emergency access onto Park Road, as required aswell as an overflow on event days.

Access to Headwall / Flow Control
Existing access to Headwall Downstream to be retained
Perimeter fence will be repaired as needed.

Proposed Car Park
A sufaced car park which will provide 121 spaces and 11 disabled bays. There is also be provision for 3 coach parking bays. Run off from the car parking will be managed by integrated sustainable drainage through attenuation and swales.

Bridge Landing
At the bridge landing point there is a proposed seating area to ensure that there is an opportunity to appreciate the spectacular vantage point looking along the River Foyle, also overlooking the parkland on both sides.

Riverside Access
Existing riverside access will be retained

Proposed Boardwalk
The existing landscape in Strabane has naturalised, having benefited from many years of neglect. In this respect it holds many important ecologically sensitive assets. To ensure that these can provide visitor experience at a distance the boardwalk enables access at a sensible distance and is elevated to ensure that wildlife retains uninterrupted and safe passage.

Pathway Converging
To make the most of connections both to the Strabane North Greenway and pathway routes within the park. Junctions ensure that desire lines are managed so that walking routes are identifiable. This also mitigates the possibility of people walking over planted areas.

Wildlife Passage Gates
Gates to be located at three points within proposed fenceline and hedging. These will provide safe access for specific wildlife to ensure access to their feeding ground to the east. The gates are designed to ensure that livestock cannot use the access points as a means of escape.

Existing Planting
The Strabane site is typified by a naturalised and overgrown landscape evolved from its former use as a quarry. The site now represents an ecologically sensitive landscape that brings along many benefits which contribute positively to the proposed parkland. Existing planting provides a unique and biodiverse habitat which is acknowledged within the proposals ensuring that these identified areas are safeguarded. Access therefore is limited and planting will be encouraged to continue to grow. Where required and not affected by A5 route - additional native whip planting will be planted to help reinforce benefit of this natural resource.

Tree Planting
New Tree Planting will be proposed in areas that does not conflict with the proposed A5 and where it is agreed beneficial.

Halting Site
The former halting site is identified as the location for the approach road to the proposed carpark. The proposals include removing the existing concrete base and reinstating in a mixture of wildflower native grass. This can be aloud to naturalise until such timel the proposed A5 link road commences the arrangement.

Entrance
it is proposed that the site will be accessed from the Barnhill Road roundabout both for vehicles, cyclists and pedestrians.
Existing access to the agricultural lands to the west will be retained.

Match Line to drawing ref: 1383-TPHC-ZO-XX-DR-LA-xxxx_revP00

Match Line to drawing Insert (see right)

Match Line to drawing Insert (see left)

Drawing Insert
Scale 1:500 @ A0

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- Accommodation Works
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Refer to engineers proposals

13. Invasive Weeds
Refer to invasive weed management plan

14. Topographic Survey Information
Planting
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The revision cloud highlighted areas of the park which were inaccessible for the

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Funder
Peace Northern Ireland - Ireland
European Regional Development Fund

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Comhairle Chathair Dhoire & Cheantar an tSratha Báin
Derry Cittie & Strabane Destrick Council

Project Status: PLANNING

Project: RIVERINE COMMUNITY PARK

Drawing: STRABANE LANDSCAPE LAYOUT

Scale: 1:500@A0

Drawn	HB	Checked	DM	Approved	AH
Date	12.02.2021	Date	12.02.2021	Date	15.02.21

Project · Organisation · Zone · Level · Type · Role · Number · Revision
1383 · TPHC · ZO · XX · DR · LA · 2002 · DRAFT

Project Number: 1383
Status code & Description: PLANNING

Appendix B

Key:

JK1 — Japanese Knotweed ID & Location

Potential Rhizome Spread (3.5m)

HB1 — Himalayan Balsam ID & Location

GH1 — Giant Hogweed ID & Location

Riverine Lifford & Strabane

DWG.1

Invasive Species Location
(JUNE 2021)

Scale		Date
1;2500		20/06/21

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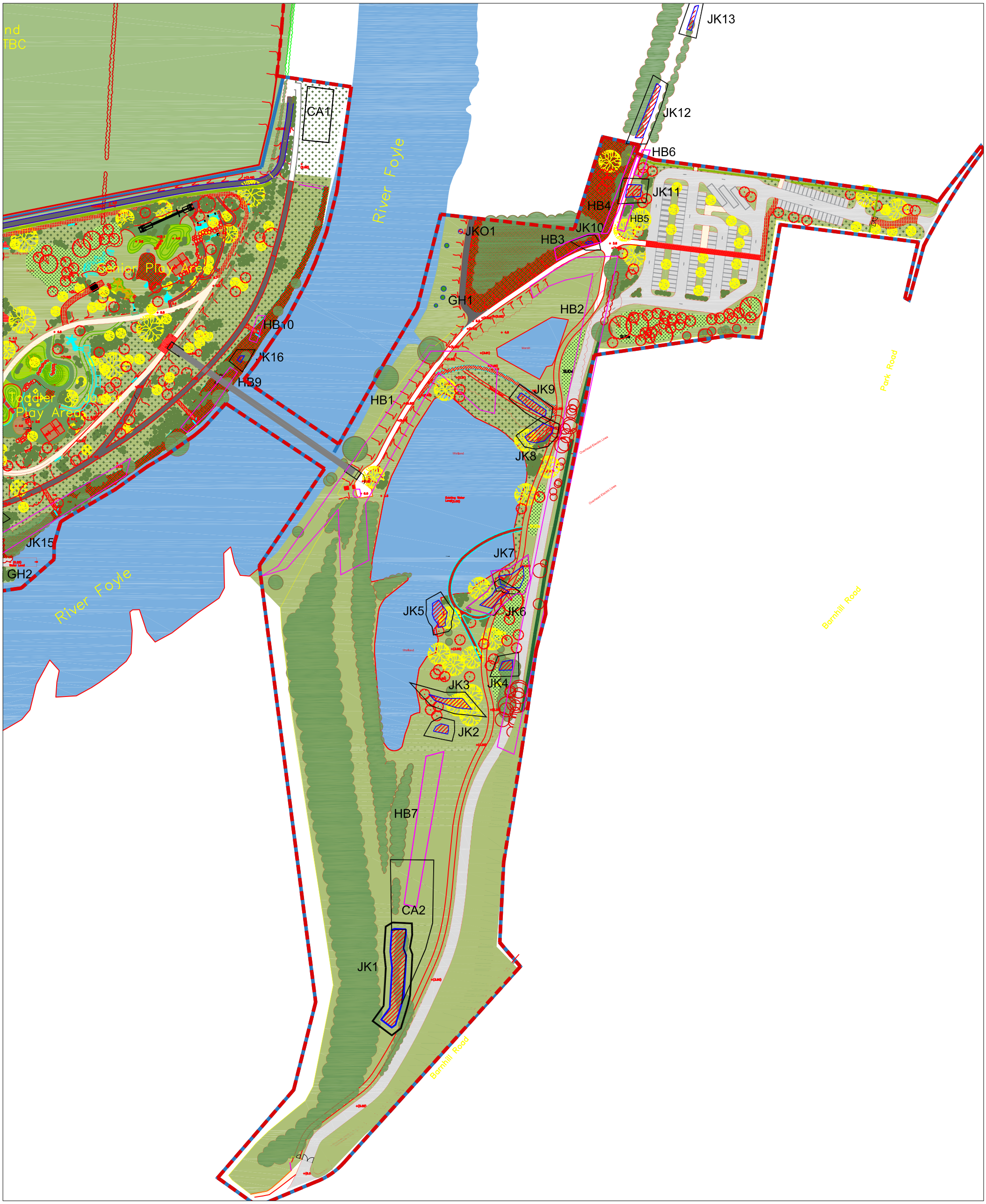
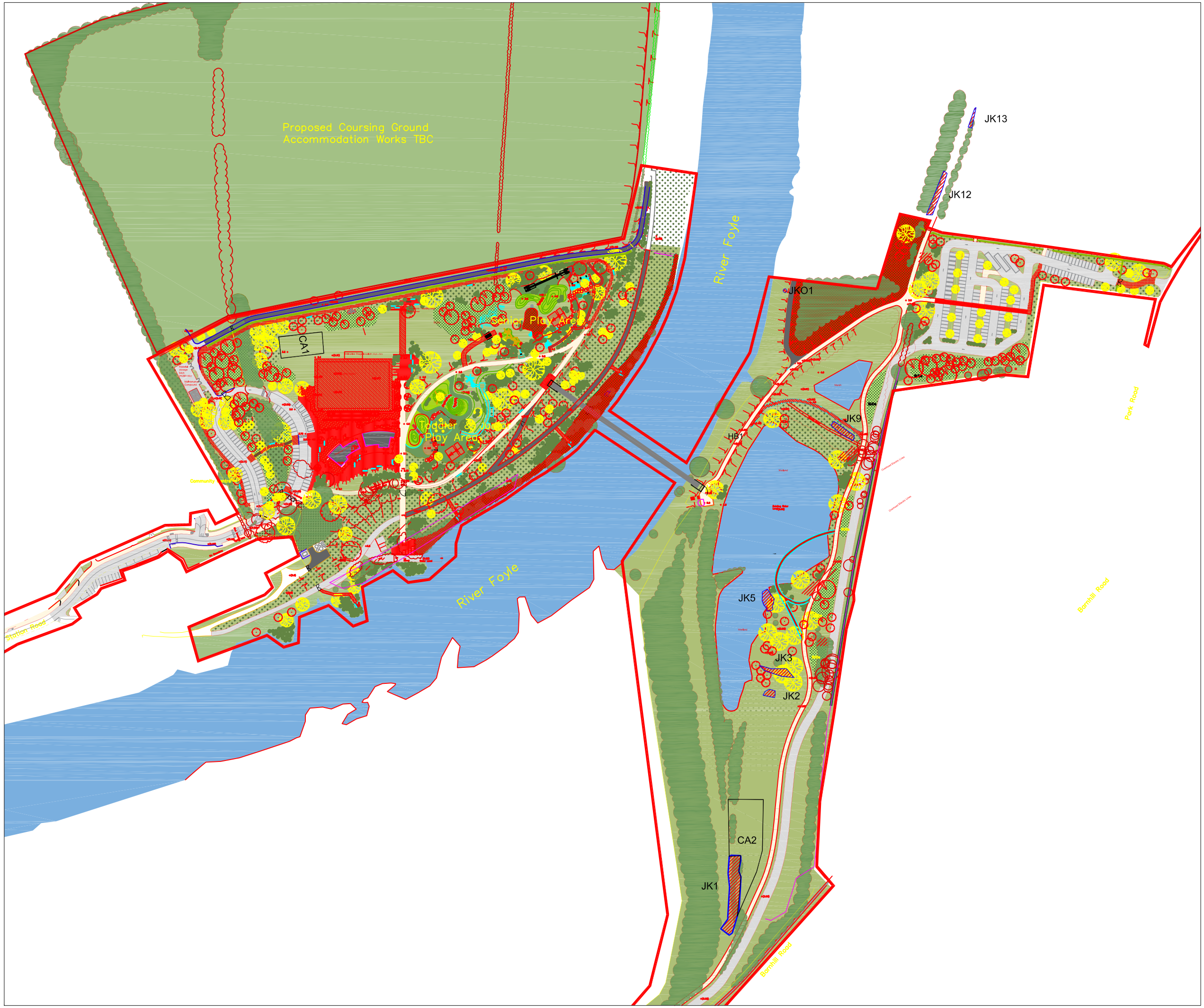


Key:

- JK1 — Japanese Knotweed ID & Location
- Potential Rhizome Spread (3.5m)
- GH1 — Giant Hogweed ID & Location
- HB1 — Himalayan Balsam ID & Location
- CA2 — Containment Treatment Area (1250m2)

DWG.3	Riverine Lifford & Strabane	
Scale 1;2000	Strabane Invasive Species Location with Containment Treatment Area (JUNE 2021)	
Date 20/06/21		

Multidisciplinary Environmental Consultants
MCL CONSULTING
Unit 5, Forty Eight North, Duncrue Street, Belfast
BT3 9BJ
Tel: 028 9074 7766



Key:

- JK1 — Japanese Knotweed ID & Location
- Potential Rhizome Spread (3.5m)
- HB1 — Himalayan Balsam ID & Location
- GH1 — Giant Hogweed ID & Location
- CA1 — Containment Treatment Area Lifford
- CA2 — Containment Treatment Area Strabane

Riverine Lifford & Strabane

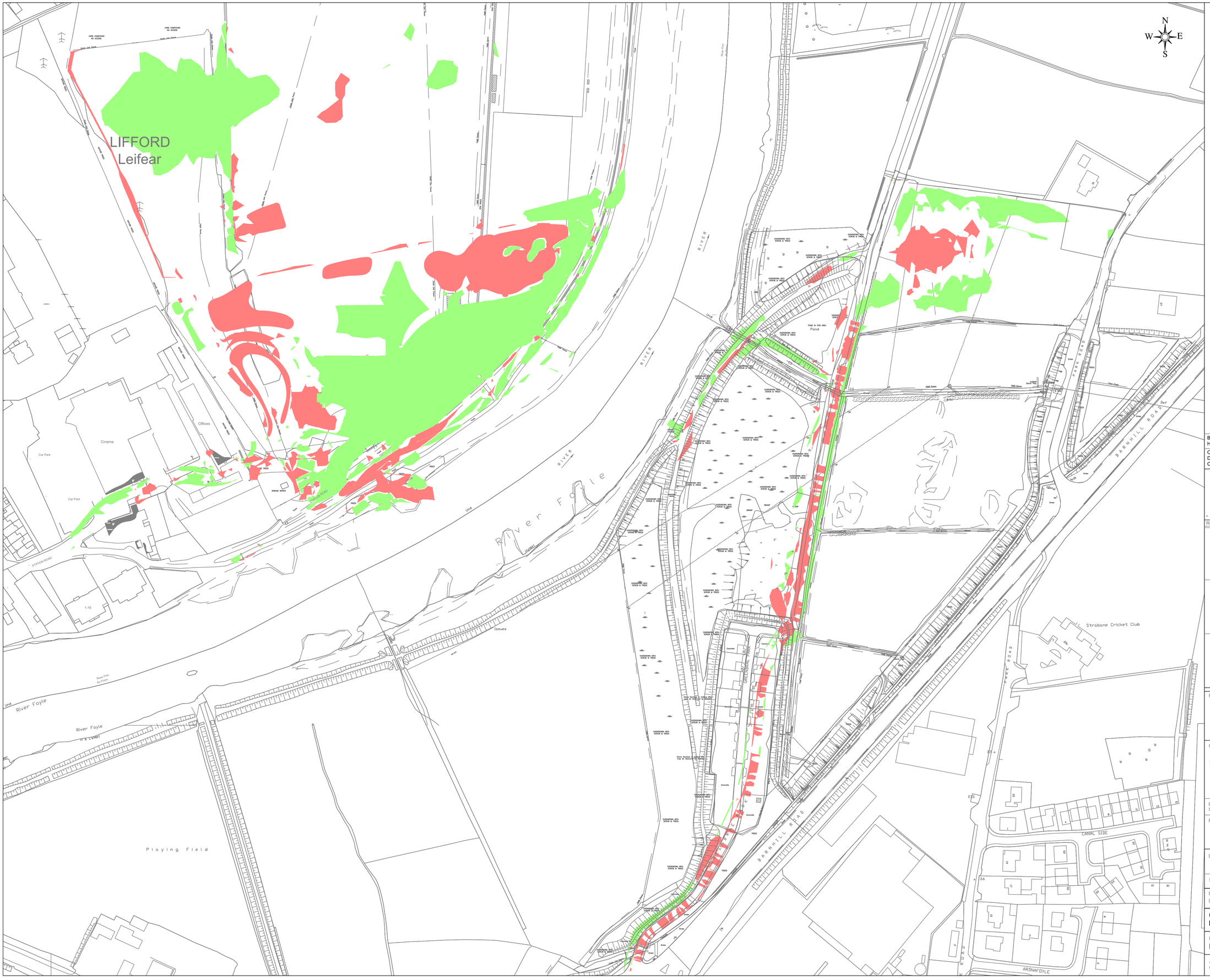
DWG.4

Proposed Site Layout
with Containment Treatment Area
(Post Relocation & Treatment)

Scale		Date
1;2500		20/06/21

Multidisciplinary Environmental Consultants
MCL CONSULTING
Unit 5, Forty Eight North, Duncrue Street, Belfast
BT3 9BJ
Tel: 028 9074 7766

Appendix C



NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated

2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.

LEGEND

CUT

FILL

CUT / FILL STATISTICS

Area	Cut Vol (m^3)	Fill Vol (m^3)	Balance (m^3)
Accommodation Works	549	5492	4943 [fill]
Lifford Riverine	4823	20122	15,299 [fill]
Strabane Riverine	2578	2400	179 [cut]
Overall	7241	28,036	20,796 [fill]

Rev	Issue Date	Description	App
-	-	-	-

Quantity Surveyors
Sammon
Sammon
9-11 Corporation Square
Belfast, BT1 3AJ
T 028 7127 1323
info@sammon.eu
www.sammon.eu

Landscape Architects
thepaulhogarthcompany
The Paul Hogarth Company Ltd
Potter's Quay, 5 Ravenhill Road
Belfast, BT6 8DN
T 028 9073 6690
belfast@paulhogarth.com
www.PaulHogarth.com

Project Manager, Civil & Structural Engineers
McAdam
ENHANCING LOCAL COMMUNITIES
1c Montgomery House
478 Castlereagh Road
Belfast, BT5 6BQ
T: 028 9040 2000
E: admin@mcadamdesign.co.uk
www.mcadamdesign.co.uk

Funder
Peace
Northern Ireland - Ireland
European Regional Development Fund

Client
Comhairle Contae Dhún na nGall
Donegal County Council
Derry City & Strabane District Council
Comhairle Chathair Dhoire & Cheantar an tSratha Báin
Derry Cittie & Strabane Destrick Cooncil

Project Status: STAGE 3 - DEVELOPED DESIGN

Project: RIVERINE COMMUNITY PARK

Drawing: CUT / FILL ANALYSIS

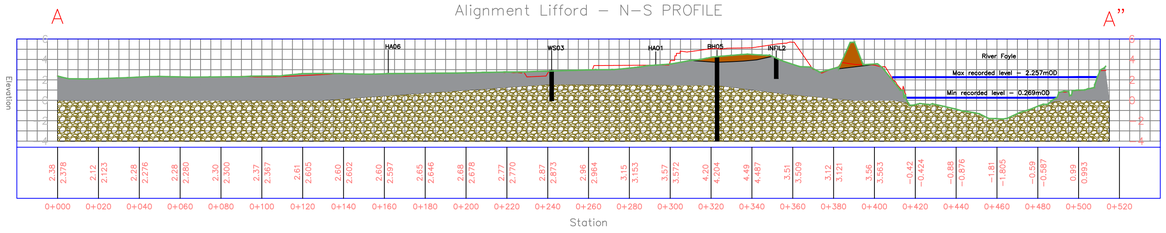
Scale: 1:1250 @ A1

Drawn	Date	Checked	Date	Approved	Date
DSA	06.08.21	CM	06.08.21	KOS	06.08.21

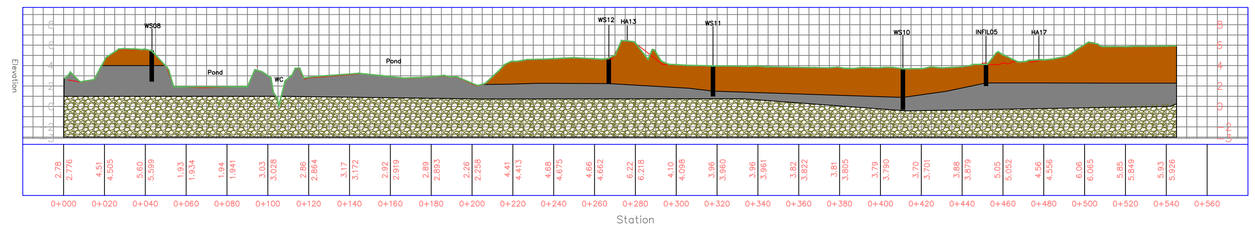
Project	Organisation	Zone	Level	Type	Role	Number	Revision
E2256	-	-	-	-	-	SK-142	-

Project Number	Status code & Description
E2256	- -

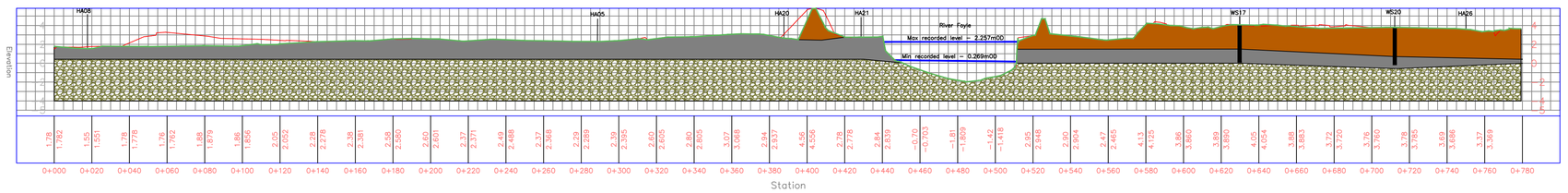
Alignment Lifford – N–S PROFILE



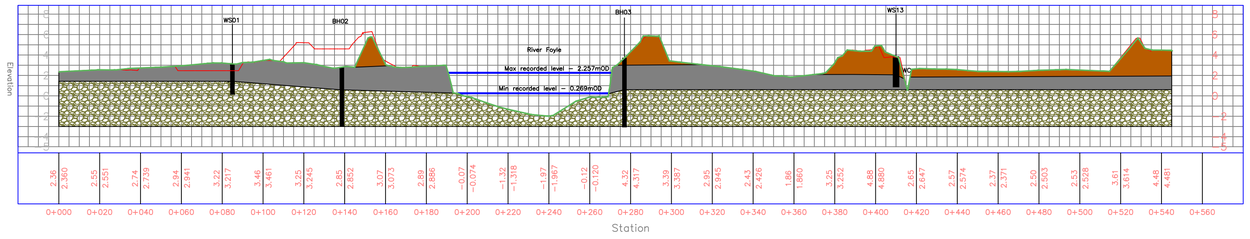
Alignment Strabane N–S PROFILE



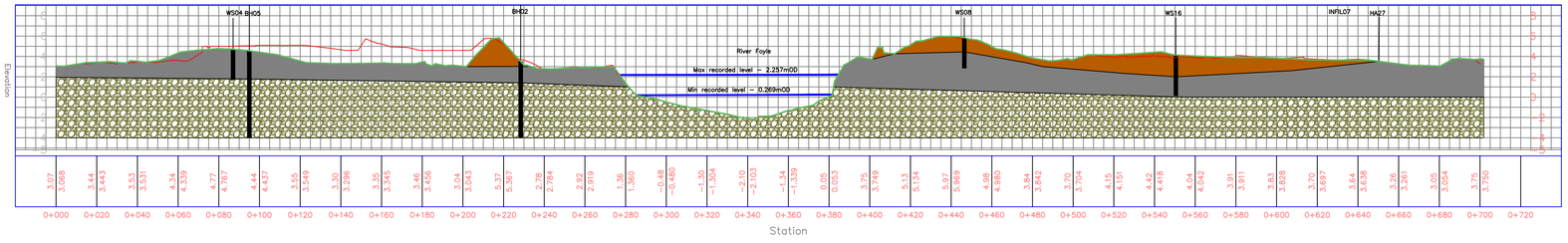
Alignment 1 – W–E PROFILE



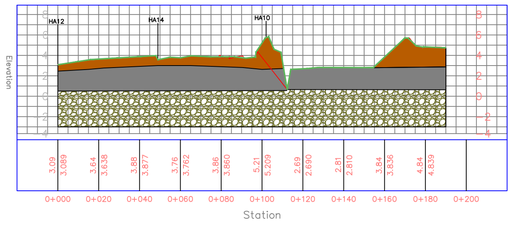
Alignment 2 – NW–SE PROFILE

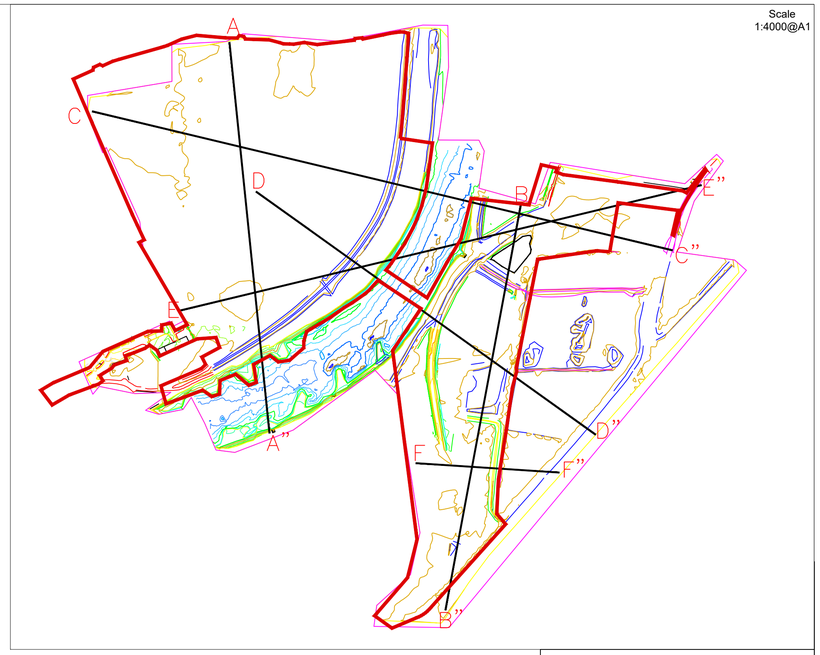


Alignment 3 – SW–NE PROFILE



Alignment 4 – W–E PROFILE





Scale
1:4000@A1

Notes:

- Made Ground
- Alluvium
- Sands and Gravel
- Existing Ground Level
- Proposed Ground Level

McAdam Design

Riverine Community Park - Strabane/Lifford

Appendix 9-10

Geological Cross Sections

Scale	Drawing No.	Date
1:1500@A1	P2288-SW-F2	08/08/21

Multidisciplinary Environmental Consultants
MCL CONSULTING

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BT3 9BJ
Tel: 028 9074 7766

Appendix D

Incident date	Incident time	Report date	Report time

Incident Ownership		
Division	Sub Division	Unit or Dept

Description of what happened

Exact incident location			
On or off site		Location	Sub-area

PERSON INVOLVED

Category of person (✓)
Employee ( ) Contractor ( ) Visitor ( ) Environmental ( ) Member of public ( )

Nature of involvement (✓)
Witness ( ) First person on scene ( ) Other ( )

Person's name					
Name:	Mr/Mrs/Miss/Ms	First name:		Last name:	

OTHER INFORMATION

Site Manager in attendance (If applicable)	
Reported in Duty Log/Site Book?	Yes ( ) No ( ) N/A ( )

Type of Incident (✓)
Breach of limits/Licence Cond. ( ) Oil & Chemical Storage ( ) Spillage/Spillage Response ( ) Waste Storage & Disposal ( ) Serious Public/Other Complaint ( ) Water Abstraction/disposal ( ) Third Parties and Supply Chain ( ) Smoke, Fumes & Odour ( ) Natural Environment & Wildlife ( ) Light Pollution ( ) Noise Nuisance ( ) Other ( ) If 'Other', please describe:

Is this a reportable incident?	Yes ( ) No ( ) Unknown ( )
If yes, which agency?	

What are the actual or foreseeable potential consequences known at this time? (✓)
Prosecution ( ) Enforcement Notice (Imp/Proht) ( ) Civil Claim ( ) Clean Up/Restoration ( ) Breach of Licence Requirements ( ) Adverse Publicity/Reaction ( ) Adverse Customer Reaction ( ) Contamination of Water ( ) Habitat or Species ( ) Health Effects ( )

Please provide any other relevant material

What immediate actions have been taken?

Incident reported by			
Name:	Tel No:	Date:	

Sample Employee's Report of Injury Form

Instructions: Employees shall use this form to report all work related injuries, illnesses, or "near miss" events (which could have caused an injury or illness) – *no matter how minor*. This helps us to identify and correct hazards before they cause serious injuries. This form shall be completed by employees as soon as possible and given to a supervisor for further action.

I am reporting a work related: ❑ Injury ❑ Illness ❑ Near miss	
Your Name:	
Job title:	
Supervisor:	
Have you told your supervisor about this injury/near miss? ❑ Yes ❑ No	
Date of injury/near miss:	Time of injury/near miss:
Names of witnesses (if any):	
Where, exactly, did it happen?	
What were you doing at the time?	
Describe step by step what led up to the injury/near miss. (continue on the back if necessary):	
What could have been done to prevent this injury/near miss?	
What parts of your body were injured? If a near miss, how could you have been hurt?	
Did you see a doctor about this injury/illness? ❑ Yes ❑ No	
If yes, whom did you see?	Doctor's phone number:
Date:	Time:
Has this part of your body been injured before? ❑ Yes ❑ No	
If yes, when?	Supervisor:
Your signature:	Date:

Supervisor's Accident Investigation Form

Name of Injured Person _____

Date of Birth _____ Telephone Number _____

Address _____

City _____ State_____ Zip _____

(Circle one) Male Female

What part of the body was injured? Describe in detail. _____

_____

What was the nature of the injury? Describe in detail. _____

_____

_____

Describe fully how the accident happened? What was employee doing prior to the event? What equipment, tools being using? _____

_____

_____

Names of all witnesses:

_____ _____

_____ _____

Date of Event _____ Time of Event _____

Exact location of event: _____

What caused the event? _____

_____

_____

Were safety regulations in place and used? If not, what was wrong? _____

_____

Employee went to doctor/hospital? Doctor's Name _____

Hospital Name _____

Recommended preventive action to take in the future to prevent reoccurrence.

_____

_____

_____

_____ _____

Supervisor Signature Date

Incident Investigation Report

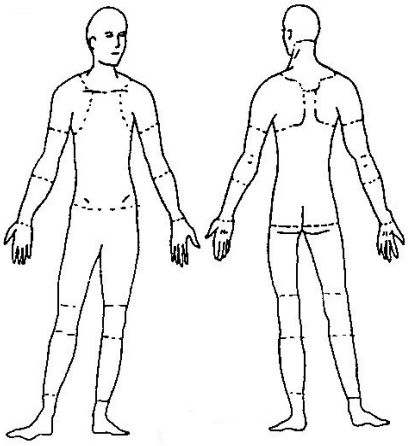
Instructions: Complete this form as soon as possible after an incident that results in serious injury or illness. (Optional: Use to investigate a minor injury or near miss that *could have resulted in a serious injury or illness*.)

This is a report of a: ❑ Death ❑ Lost Time ❑ Dr. Visit Only ❑ First Aid Only ❑ Near Miss	
Date of incident:	This report is made by: ❑ Employee ❑ Supervisor ❑ Team ❑ Other_____

Step 1: Injured employee (complete this part for each injured employee)

Name:	Sex: ❑ Male ❑ Female	Age:
Department:	Job title at time of incident:	

Part of body affected: (shade all that apply)



Nature of injury: (most serious one)
- ❑ Abrasion, scrapes
- ❑ Amputation
- ❑ Broken bone
- ❑ Bruise
- ❑ Burn (heat)
- ❑ Burn (chemical)
- ❑ Concussion (to the head)
- ❑ Crushing Injury
- ❑ Cut, laceration, puncture
- ❑ Hernia
- ❑ Illness
- ❑ Sprain, strain
- ❑ Damage to a body system:
- ❑ Other _____

This employee works:
- ❑ Regular full time
- ❑ Regular part time
- ❑ Seasonal
- ❑ Temporary

Months with this employer

Months doing this job:

Step 2: Describe the incident

Exact location of the incident:	Exact time:

What part of employee's workday? ❑ Entering or leaving work ❑ Doing normal work activities ❑ During meal period ❑ During break ❑ Working overtime ❑ Other_____

Names of witnesses (if any):

Number of attachments:	Written witness statements:	Photographs:	Maps / drawings:

What personal protective equipment was being used (if any)?

Describe, step-by-step the events that led up to the injury. Include names of any machines, parts, objects, tools, materials and other important details.

Description continued on attached sheets: ❑

Step 3: Why did the incident happen?

Unsafe workplace conditions: (Check all that apply)
- ❑ Inadequate guard
- ❑ Unguarded hazard
- ❑ Safety device is defective
- ❑ Tool or equipment defective
- ❑ Workstation layout is hazardous
- ❑ Unsafe lighting
- ❑ Unsafe ventilation
- ❑ Lack of needed personal protective equipment
- ❑ Lack of appropriate equipment / tools
- ❑ Unsafe clothing
- ❑ No training or insufficient training
- ❑ Other: _____

Unsafe acts by people: (Check all that apply)
- ❑ Operating without permission
- ❑ Operating at unsafe speed
- ❑ Servicing equipment that has power to it
- ❑ Making a safety device inoperative
- ❑ Using defective equipment
- ❑ Using equipment in an unapproved way
- ❑ Unsafe lifting
- ❑ Taking an unsafe position or posture
- ❑ Distraction, teasing, horseplay
- ❑ Failure to wear personal protective equipment
- ❑ Failure to use the available equipment / tools
- ❑ Other: _____

Why did the unsafe conditions exist?

Why did the unsafe acts occur?

Is there a reward (such as "the job can be done more quickly", or "the product is less likely to be damaged") that may have encouraged the unsafe conditions or acts? ❑ Yes ❑ No
If yes, describe:

Were the unsafe acts or conditions reported prior to the incident? ❑ Yes ❑ No

Have there been similar incidents or near misses prior to this one? ❑ Yes ❑ No

Step 4: How can future incidents be prevented?

What changes do you suggest to prevent this incident/near miss from happening again?

❑ Stop this activity ❑ Guard the hazard ❑ Train the employee(s) ❑ Train the supervisor(s)

❑ Redesign task steps ❑ Redesign work station ❑ Write a new policy/rule ❑ Enforce existing policy

❑ Routinely inspect for the hazard ❑ Personal Protective Equipment ❑ Other: _____

What should be (or has been) done to carry out the suggestion(s) checked above?

Description continued on attached sheets: ❑

Step 5: Who completed and reviewed this form? (Please Print)

Written by: Department:	Title: Date:
Names of investigation team members:	
Reviewed by:	Title: Date:

Appendix E

The Method of Works Statements references in this appendix is based on advice and guidance contained in Guidance for Pollution Prevention Works and maintenance in or near water: GPP 5 Version 1.2 February 2018

What should a Method Statement include?

There is no universal format for the contents of a method statement as every job is different and therefore all method statements should be job or site specific. This Method Statement is presented in this appendix and main points are highlighted on these introductory pages and also references other measures set out in other appendices.

Basic Contract/Job Information

Site of Proposed Development: The extent of the site area is shown on the enclosed proposed site plan in **Appendix A** of this OCEMP.
Description of Proposed Development: Proposed intercommunity development

Contract/Job Details

Required Information	**Details**
The name and address of the company undertaking the works	
The intended start date on site	
Details of the nature of the work that is to be undertaken	To be completed with updated info from detailed design baaed on details presented in Appendix A of this OCEMP
The number of operatives/workers who will be involved in the works	
The name (s) of the supervisor(s) or person(s) responsible for health and safety	
The anticipated date for completion of the works	

Method of Work

Information Required	**Details**
A description of how the works are to be carried out in relation to the task and site-specific hazards	
A schedule of the works and a sequence of the operations/tasks	
Details of where the work is to take place and whether this designated area requires segregation.	Appendix A details the site location
Where applicable the inclusion of details regarding other subcontractors who may affect your works or details of how you will affect the works of other subcontractors	
For high risk works provide a detailed description of intended emergency procedures	
A description of how the works are to be carried out in relation to the task and site-specific hazards	

Site Specific Risk Assessment

R.A. No 01

General Risk Assessment			
Created by:		Full Address and OS Reference	
Tel:			
Job Ref:			
Start Date and Time			
End Date and Time			

Emergency	
Designated Meeting Place:	
Nearest Access Point:	
Means of Access (4x4, On Foot, etc:)	
Suitable for Helicopter Operations:	
Nearest Hospital and Tel:	

Description of Work Environment and Activity Undertaken

Select Hazards Likely to be Encountered			
Working at Height [ ]	Slips Trips Falls [ ]	Manual Handling [ ]	Entanglement in Rotating Plant [ ]
Impact Injury [ ]	High Pressure Injection [ ]	Hot Surface / Liquid [ ]	Electricity [ ]
Cutting Grinding [ ]	Hazardous Atmosphere [ ]	Access / Egress [ ]	Ingestion of Hazardous Chemicals [ ]
Asphyxiation [ ]	Noise [ ]	Entrapment [ ]	Wells Disease [ ]
Contact with Chemicals [ ]	Exposure to Biological Dangerous Agents [ ]	Fire [ ]	Explosion
Adverse Weather [ ]	Crushing [ ]	Leakage / Spills [ ]	Safety Equipment Failure [ ]
Collapsed Structure [ ]	Environmental Contamination [ ]	Vibration [ ]	Aggressive Behaviours [ ]
Water / Drowning [ ]	Plant / Vehicle movement [ ]	Stress [ ]	Hot Works [ ]
Aggressive Animals [ ]	Confined Space Entry [ ]	Compressed Gases [ ]	Working at Night [ ]
Lifting / Slinging [ ]	Falling Objects [ ]	Lone Working [ ]	Other [ ]
If Other Specify:			

Site Specific Risk Assessment

R.A. No 01

Risk Register			
Key	**Low Risk**	**Medium Risk**	**High Risk**

Identify Hazard	Associated Risk	Control Measure	Risk Rating

Site Specific Risk Assessment

R.A. No 01

Attach Rescue Plan if Required

N/A

Permission to Work

I agree to work within the conditions indicated on this permit and accept the responsibility as the person directly in charge of the work. I declare that all work at height will be carried out in accordance with the requirements published in the most current version of Health and Safety at Work (Northern Ireland) Order 1978 and in consideration of the SMS that applies to my workplace.

Performing Authority	**Name**		
	Signature		**Date**

I hereby declare that the person identified on this permit is authorised to carry out the work at height subject to the terms and conditions of this permit

Area Authority	**Name**		
	Signature		**Date**

Job Completion / Cancellation

All work associated with this permit has been completed. All equipment associated with this permit has been returned in serviceable condition and the job site is clear of any hazards associated with this work.

Performing Authority	**Name**		
	Signature		**Date**

Work completed and area inspected and satisfactory.

Area Authority	**Name**		
	Signature		**Date**

Were there any incidents or near misses associated with this work?

[ ] No [ ] Yes (Near Miss report to be completed if so)

Appendix F

INFORMATION WITHIN THIS APPENDIX IS EXTRACTED FROM: GUIDANCE FOR POLLUTION PREVENTION DEALING WITH SPILLS: GPP 22 Oct 2018 (VERSION 1)

Common causes of spills include

- overfilling or poor handling of containers
- damaged containers
- containment failure
- failure of pipework or underground tanks
- collision or accident
- weather related problems e.g. flooding, fires, vandalism

Assess the risk

Risk assessment that needs to be considered:

- physical, chemical and biological properties of any material that maybe spilt;
- how materials are stored or transported and the condition of storage containers;
- possible effects of accidents, flooding, vandalism and failure of containment;
- location, including how close you are to local water courses, sensitive groundwater locations, public
- water abstraction points and environmentally sensitive areas;
- surface water drains and foul sewers that flow off your site;
- any sustainable drainage systems you have on your site;
- operations and layout of your site, or factors to look out for in road traffic collisions;
- risks posed to people and the environment and the extent of the possible damage;
- local landscape and different weather conditions and the flood risk that could be reasonably
- expected at and around your site.

A risk assessment can be carried out in stages:
A. identify the materials you store or handle on site and activities that may be a hazard;
B. identify and assess potential links between each hazard source, pathways and receptors;
C. assess the likelihood and magnitude of any potential harmful effects.
Refer to Part D of this Appendix for risk assessment forms.

Most Preferred Response

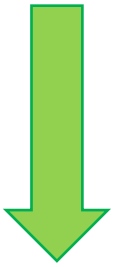
Contain at source

Contain close to source

Contain on the surface

Contain in the drainage system

Contain on/in the watercourse



Least Preferred Response

- The most effective place to stop a spill is where the spill is happening, **at the source**.
- If you can't stop the spill where it's happening, aim to stop it **as close to** the source as possible.
- If the spill is spreading, aim to **stop the material** getting into drains or onto any unsurfaced ground.
- If the spill has entered the drainage system, try to **keep it there** and stop it entering the environment.
- If the spill has escaped into a watercourse, you may be able to limit the environmental damage by
- **containing it** on or in the watercourse

Spill Response Procedure

If the spill cannot be safely contained or if the spill is causing a threat to life, evacuate the area and call 999 from a safe location

IF SAFE TO DO SO

STOP > CONTAIN > NOTIFY > CLEAN-UP

STOP

- Stop work immediately
- Stop the leak or elimimate the source of the spill
- Eliminate ignition sources and provide natural ventilation

CONTAIN

- Use pollution control equipment (e.g. spill kits, drip trays, bunds of earth and sand) to contain the spill
- Check the spill has not reched any drains, water courses or other sensitive areas
- Cover all drains / manholes to prevent the spill from entering the drainage system

NOTIFY

- Once the spill has been contained notify your emergency contact. Details at the bottom of the page:.

CLEAN-UP

- Attempt to soak up the spill using absorbent material
- Always follow your Duty of Care for waste when disposing of contaminated materials including spill kit/equipment.

EMERGENCY CONTACT DETAILS (Complete with your business details)

NAME	TELEPHONE	NEAREST SPILL KIT

Remove this page and complete for own use.

Appendix A: Example Risk Assessment

Hazard *What has the potential to cause harm?*	**Source** *Source(s) of hazard*	**Pathway** *How can the hazard reach the receptor?*	**Receptor(s)** *What/who is at risk?*	**Risk management actions** *What measures will be taken to reduce the risk?*	**Exposure probability** *How likely is this to happen?*	**Consequence** *What harm can be caused?*	**Overall Risk** *What is the risk?*
Fuel/ chemicals/ oil leak	Fuel oil storage areas Refuelling areas Site plant/ machinery	Land, groundwater and air	Ground Surface water/ groundwater Local school to the north of the site Local residents (located in the residential area to the north west of the site)	Follow refuelling protocol at all times Only use suitable containers to store fuel/oil and store these according to the oil storage regulations and away from sensitive receptors Store solvents, chemicals and pants in accordance with the COSSH data sheets Bulk fuel storage should be integrally bunded or kept within a bunded area Use drip trays/plant nappies for plant / machinery Implement and follow procedures for storage, use, delivery, inspection and monitoring of polluting substances	Possible	Water pollution Contaminated ground Odour nuisance	Low if the risk management techniques are applied
Dust / Particles	Site surfaces (dry and windy weather) Soil stockpiles Earthworks using mobile plant	Air	Site personnel/ visitors Local school Local residents	Damp down earthworks during dry weather Locate stockpiles out of the wind (or if necessary provide wind breaks) Vegetate soil stockpiles Minimise the height of fall of materials during earthworks	Likely – esp. during summer months	Dust nuisance	Low if the risk management techniques are applied

Hazard *What has the potential to cause harm?*	**Source** *Source(s) of hazard*	**Pathway** *How can the hazard reach the receptor?*	**Receptor(s)** *What/who is at risk?*	**Risk management actions** *What measures will be taken to reduce the risk?*	**Exposure probability** *How likely is this to happen?*	**Consequence** *What harm can be caused?*	**Overall Risk** *What is the risk?*
Odours	Biodegradable waste on site	Air	Site personnel/ visitors Local school Local residents	Store waste away from site boundary, main access roads and downwind of sensitive receptors Use covered containers for organic waste (e.g. food, weeds and other vegetation) and remove wastes frequently	Likely	Odour nuisance	Low if the risk management techniques are applied
Leachate	Stored wastes	Ground	Surface water/ groundwater	Use covered containers suitable for their contents Ensure waste storage containers are in good order i.e. not corroded or worn out Store waste away from sensitive receptors i.e. water environment, drains. Store waste in areas away from vehicle movements to minimise the risk of impact	Possible	Water pollution	Low if the risk management techniques are applied

Appendix G

Emergency service		Hospital	
PSNI (local station)		Fire Station	
Environmental Emergency Response		Emergency Response time	
Person in charge during an emergency		Contact no.	
Health & Safety Manager		Contact no.	
Health & Safety Representative		Contact no.	
First Aiders on site		Contact no.	
Fire Warden on site		Contact no.	
Quality & Environmental Manager		Contact no.	
Local Pollution Officer		Contact no.	

NIEA's Pollution Prevention Hotline Number
0800 80 70 60

Responsibilities & Duties of Personnel during an emergency

Identification of Potential Accidents/ Incident & Emergencies	**Duty of Individual first on scene**	**Duties of First Aiders/ Fire Wardens**	**Duties of Site Agent**	**Duties of all individual on site**	**Location of drawings, Plant layout, Procedures etc**	**Protection of vital records and equipment**	**Comments**
Fire and/or explosion	Raise the alarm and cut power supply to the area	Clear area	Contact Fire Brigade Clear access for Fire Brigade Check all individual have been evacuated Contact H/O	Go to nearest fire point and follow instructions	Site Office	N/A	
Serious Accident	Raise the alarm	Assess and make comfortable	Contact ambulance, Clear access for ambulance. Contact H/O	Make area safe	Site Office	N/A	
Collapse of Structures/	Raise the alarm and assess the	Check for injured persons	If no injured persons	Assist in site investigations	N/A	N/A	

Excavation collapse	area for further failures		reported, clear area and establish potential causes. Make area safe. Contact H/O				
Oil Spillage	Contain the spill. Inform site agent. Clear up immediately using appropriate equipment	N/A	Clear up immediately using appropriate equipment	Assist in site investigations	N/A	N/A	
Uncontrolled silt discharge	Contain the spill/ Inform site agent/ Clear up immediately using appropriate equipment	N/A	Clear up immediately using appropriate equipment	Assist in site investigations	N/A	N/A	
Electrocution	Raise the alarm and cut power supply to area	Clear area	Contact ambulance, Clear access for ambulance. Contact H/O	Make area safe	Site Office	N/A	

Polluting/Hazardous Materials			Emergency Action/Disposal	
Material	**Hazard**	**Storage**	**Emergency Action Required**	**Disposal**
Oil	Fire & Pollution	Oil drums	Emergency spill kit	Waste Oil and Absorbants to waste contractor
Petrol	Fire & Pollution	Metal jerry can	Smother with sand/blanket	Empty storage containers placed in skip for removal by waste contractor
Gas	Explosion	Metal cylinder	Isolate, spray with water, evacuate immediate area	
Solvent/Paints	Fire & Pollution	Metal tins	Familiarise with guidance on side of tin	Sub-contractor to remove all tins off site
Sewage			Smother with sand/blanket, Emergency spill kit	Regularly emptied by local disposal contractor
Silty Water			Follow PPGs	Discharge or pump over grassland or soakaway. Contractor disposal or license to discharge

Incident response plan KEY POINTS (from GPP 21: Pollution Incident Response Plans)

Procedure	Included?
Clearly define when you will activate the plan.This will depend on the nature of your site and the type of the incident.	
Ensure all relevant staff know how and when to contact other emergency responders; emergency services; environmental regulator, local authority, sewage undertaker and others identified in your plan	
Agree contact procedures, if possible, with nearby properties, downstream abstractors, agricultural land or environmentally sensitive sites that could be affected by an incident on your site.	
Put in place staff evacuation procedures – your local authority emergency planning department will help you with these	
Identify any special methods you need with substances posing particular health or environmental risk	
Train your staff in the use of spill kits, drain blockers and other pollution control equipment and the operation of pollution control devices	
Identify procedures for recovering spilled product and the safe handling and legal disposal of any waste associated with the incident Have staff available who are trained to deal with media enquiries	

Appendix H

	Example Complaints Forms
1	Have any complaints been received? If so, please detail:
2	The name and contact details of the complainant
3.	Date and time of the complain
4	Nature of complaint
5	Action taken to resolve issues
6	Date of complaint handover
7	Name of person addressing the complaint Company Signature

Appendix 3-2

Bridge Construction Phasing Works

Phase 1: Haul Road & Working Area Construction	
This information is indicative only, for details refer to the outline Construction Environmental Management Plan, Volume 3, Appendix 3-1 of the EIA/EIS	
Activities	Construction of Access Roads and Realignment and Construction of Temporary Flood Embankments
Materials	Aggregates, geotextiles, geogrids, sheet piles (if applicable)
Plant	Standard Construction Plant (Excavator, dumpers etc) Delivery Lorries, Rollers, hydraulic ram, tracked piling rig.
Environmental Considerations	River Foyle SAC, biodiversity, traffic management, flood risk
General Environmental Mitigation Measures	• double skinned fuel bowsers only to be used • diesel bowsers to be locked at all times • spill kits to be retained on site at all times • drip trays to be provided when required • wastage to be discarded appropriately in skips provided or in refuse bags • plant to be inspected for hydraulic leaks prior to commencement • designated concrete washout areas to be used as advised by Main Contractor • Ensure tracks are clean and any loose debris is cleaned off the road
Environmental Mitigation Measures	•Geogrid to be used reduce depth off road make up and therefore excavation. •Access Road to be unbound mixtures to Specification for Highway Works Series 800and NRA addendums to reduce the risk of contaminated material import to site. •Geotextile to be used as a protective layer / barrier between existing ground and River Foyle. •Temporary alignment of flood embankment, sheet piled to be installed by vibration free methods if required, e.g., silent piling. •All works within the SAC to be completed within May to September to mitigate ecological risk. •Temporary working platform within River Channel to facilitate Main Crane and bridge lift to be contractor designed following proposed ground investigation works. A containment method must be provided to prevent infiltration, siltation and contamination of the river channel. If used, sheet piles must be installed and removed using silent piling techniques (no vibrations). • Contractor to Provide and Implement Flood Management Plan •Works to be completed under the supervision of an Ecological Clerk of Works

LIFFORD

STRABANE

RIVER FOYLE

To be retained for park works.

Haul Road embankment, for construction vehicles to exit the site. Road to be temporary, and removed following completion of bridge.

Access Road 2 and Bridge Assembly Area:
From Working Areas

Access road to be Contractor Designed following proposed Ground Investigation Works. Refer to Phase Specific Environmental Mitigation Measures.

Temporary Works to Flood Embankment

Temporary works to Lifford flood embankment to be contractor designed. If sheet piles are to be utilized, these must be installed and removed using silent piling techniques (no vibrations).

Access Road 4:

Access Road to Strabane Bridge Abutment site. Traffic movements – reverse in, drive out.

Access road to be Contractor Designed following proposed Ground Investigation Works. Refer to Phase Specific Environmental Mitigation Measures.

Access Road 3:
From Working Areas

Access road to be Contractor Designed following proposed Ground Investigation Works. Refer to Phase Specific Environmental Mitigation Measures.

Containment of Temporary Platform

Temporary crane pad, extending into the river channel to support the large crane used for the bridge lift to be contractor designed. This pad must bear the weight of the crane whilst it is lifting the bridge, and will be of sufficient dimension to facilitate safe lifting of the bridge structure.

Temporary Works to Flood Embankment

Temporary works to Strabane flood embankment to be contractor designed. Sheet Piles are restricted.

Piling Platforms / Working Platforms to be Contractor Designed following proposed Ground Investigation Works. Refer to Phase Specific Environmental Mitigation Measures

Access Road 1:
To Working Areas

Access road to be Contractor Designed following proposed Ground Investigation Works. Refer to Phase Specific Environmental Mitigation Measures.

Existing Flood Embankment

Existing Flood Embankment

HWM

HWMT

Rock Gabions

NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated

2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.

LEGEND

- Crane & Bridge Assembly Working Area
- Proposed Access Road to be moved prior to Main Works
- Proposed Access Road to be retained for Main Works
- Temporary Works to Flood Embankment
- Existing Flood Embankment
- Containment of Temporary Platform
- SAC Boundary

Rev	Issue Date	Description	App
-	-	-	-

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European Regional Development Fund

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Derry City & Strabane District Council
Comhairle Chathair Dhoire & Cheantar an tSratha Báin
Derry Cittie & Stràbane Destrick Cooncil

Project Status: STAGE 3 - DEVELOPED DESIGN

Project: RIVERINE COMMUNITY PARK

Drawing: BRIDGE CONSTRUCTION PHASING WORKS - PHASE 1

Scale: 1:500 @ A1

Drawn	Date	Checked	Date	Approved	Date
CR	25/08/21	DA	25/08/21	CM	25/08/21

Project	Revision
RVCP - MCA - Z1 - XX - DR - CE - 2141	P01

Project Number	Status code & Description
E2256	S2 - For Information

Phase 2: Temporary Working Platform Abutments

This information is indicative only, for details refer to the outline Construction Environmental Management Plan, Volume 3, Appendix 3-1 of the EIA/EIS

Activities	Piling, dig to base formation Level and cut off piles, place reinforcement for base and wall starters, base concrete pour, place reinforcement for walls, formwork for walls, walls concrete pour, infill between walls and path makeup.
Materials	Piles (If required) in-situ concrete, rebar, aggregates, geogrids.
Plant	Standard Construction Plant (Excavator, dumpers etc) Delivery Lorries, Tracked Pilling rig. Mobile Crane to supply & manage piles.
Environmental Considerations	River Foyle SAC, biodiversity, traffic management, flood risk
General Environmental Mitigation Measures	• double skinned fuel bowsers only to be used • diesel bowsers to be locked at all times • spill kits to be retained on site at all times • drip trays to be provided when required • wastage to be discarded appropriately in skips provided or in refuse bags • plant to be inspected for hydraulic leaks prior to commencement • designated concrete washout areas to be used as advised by Main Contractor •Ensure tracks are clean and any loose debris is cleaned off the road
Environmental Mitigation Measures	•All works within the SAC to be completed within May to September to mitigate ecological risk. • Permanent Piles are prohibited within the watercourse •Refer to Piling Risk Assessment, Volume 3, Appendix 9-9 of the EIA/EIS. • Contractor to Provide and Implement Flood Management Plan •Works to be completed under the supervision of an Ecological Clerk of Works

LIFFORD

STRABANE

RIVER FOYLE

Proposed cast in situ bridge Abutment with piled foundations assumed 4-6nr at no more than 750mm diameter and at depth of circa 14-17.5m deep. Pile Type to be Continual Flight Auger. Pile requirements to designed in response to the ground investigation results.

Proposed cast in situ bridge pier with piled foundations assumed 4-6nr at no more than 750mm diameter and at depth of circa 14-17.5m deep. Pile Type to be Continual Flight Auger. Pile requirements to designed in response to the ground investigation results (Refer to Ground Investigation Requirements Drawing - 2145).

Proposed cast in situ bridge Abutment with piled foundations assumed 4-8nr at no more than 750mm diameter and at depth of circa 14-17.5m deep. Pile Type to be Continual Flight Auger. Piles designed to be in accordance with Ground Investigation Report provided under chapter 9 of the environmental assessment report.

Box Culverts

HWM

HWMT

Strabane Road

NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated

2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.

SAC Boundary

Proposed Access Road to be moved prior to Main Works

Crane & Bridge Assembly Working Area

DRAFT

Rev	Issue Date	Description	App
-	-	-	-

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Comhairle Chathair Dhoire & Cheantar an tSratha Báin
Derry Cittie & Strábane Destrick Cooncil

Project Status	STAGE 3 - DEVELOPED DESIGN
Project	RIVERINE COMMUNITY PARK
Drawing	BRIDGE CONSTRUCTION PHASING WORKS - PHASE 2
Scale	1:500 @ A1

Drawn	Checked	Approved
CR	DA	CM
Date 25/08/21	Date 25/08/21	Date 25/08/21

Project	Organisation	Zone	Level	Type	Role	Number	Revision
RVCP	MCA	Z1	XX	DR	CE	2142	P01

Project Number	Status code & Description
E2256	S2 - For Information

Phase 3: Bridge Assembly, Crane Assembly and Bridge Lift

This information is indicative only, for details refer to the outline Construction Environmental Management Plan, Volume 3, Appendix 3-1 of the EIA/EIS

Activities	Bridge Assembly, Main Crane Assembly Bridge Lift
Materials	Construction Waste, Aggregates, geotextiles, geogrids, sheet piles (if applicable)
Plant	Standard Construction Plant (Excavator, dumpers etc) • Delivery Lorries • Service Crane (Type TBC) 200-300T approx. • Main Crane AK680 1200T approx. • Ballast - approx. 300T • Outriggers approx. 14.5m x 14.5m • Lorries delivering bridge in pre-fabricated sections for assembly.
Environmental Considerations	River Foyle SAC, biodiversity, traffic management, flood risk
General Environmental Mitigation Measures	• double skinned fuel bowsers only to be used • diesel bowsers to be locked at all times • spill kits to be retained on site at all times • drip trays to be provided when required • wastage to be discarded appropriately in skips provided or in refuse bags • plant to be inspected for hydraulic leaks prior to commencement • designated concrete washout areas to be used as advised by Main Contractor •Ensure tracks are clean and any loose debris is cleaned off the road
Environmental Mitigation Measures	•All works within the SAC to be completed within May to September to mitigate ecological risk. •Permanent Piles are prohibited within the watercourse • Contractor to Provide and Implement Flood Management Plan •Works to be completed under the supervision of an Ecological Clerk of Works

LIFFORD

STRABANE

Bridge Lift 2:
Assembled Bridge Span
Approximately 27m.

Bridge Lift 1:
Assembled Bridge Span
Approximately 88m.

Proposed Crane

RIVER
FOYLE

River Foyle

HWM

HWMT

Box Culverts

N
W
E
S

NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated

2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.

LEGEND

- Crane & Bridge Assembly Working Area
- Proposed Crane
- Proposed Access Road
- Bridge Sections for Assembly on Site
- Assembled Bridge
- SAC Boundary

Rev	Issue Date	Description	App
-	-	-	-

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Derry Cittie & Strábane Destrick Cooncil

Project Status	STAGE 3 - DEVELOPED DESIGN
Project	RIVERINE COMMUNITY PARK
Drawing	BRIDGE CONSTRUCTION PHASING WORKS - PHASE 3
Scale	1:500 @ A1

Drawn	Checked	Approved
CR	DA	CM
Date 25/08/21	Date 25/08/21	Date 25/08/21

Project	Organisation	Zone	Level	Type	Role	Number	Revision
RVCP	MCA	Z1	XX	DR	CE	2143	P01

Project Number	Status code & Description
E2256	S2 - For Information

Phase 4: Demobilisation

This information is indicative only, for details refer to the outline Construction Environmental Management Plan, Volume 3, Appendix 3-1 of the EIA/EIS

Activities	Demobilisation including: • excavation of materials, • cutting down of piles • reinstatement of river bank,flood embankment and surfaces
Materials	Construction Waste, Aggregates, geotextiles, geogrids, sheet piles (if applicable)
Plant	•Standard Construction Plan (Excavator, dumpers etc) •Service Crane (Type TBC) 200-300T •Ballast - approx 300T •Outriggers 14.5m x 14.5m
Environmental Considerations	River Foyle SAC, biodiversity, traffic management, flood risk
General Environmental Mitigation Measures	• double skinned fuel bowsers only to be used • diesel bowsers to be locked at all times • spill kits to be retained on site at all times • drip trays to be provided when required • wastage to be discarded appropriately in skips provided or in refuse bags • plant to be inspected for hydraulic leaks prior to commencement • designated concrete washout areas to be used as advised by Main Contractor
Environmental Mitigation Measures	•All works within the SAC to be completed within May to September to mitigate ecological risk. •Permanent Piles are prohibited within the watercourse • Contractor to Provide and Implement Flood Management Plan •Works to be completed under the supervision of an Ecological Clerk of Works

LIFFORD

STRABANE

RIVER FOYLE

Access Path to be retained for park works.

Temporary Works to Flood Embankment

Previous embankment to be reinstated. Any piles to be cut below ground to 1m

Temporary crane pad

Area to be reinstated as per existing.

Containment of Temporary Platform

Temporary Works to Flood Embankment

Previous embankment to be reinstated.

Box Culverts

HWM

HWMMT

N W E S

NOTES

1. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated

2. All Coordinates are to Irish Grid (TM65), unless otherwise noted.

LEGEND

- Access Road to be excavated and removed
- Access Road to be retained as sub-base to proposed pathway infrastructure
- Proposed Bridge
- Temporary Crane Pad to be excavated and removed and rive bank made good
- Temporary Works to Existing Flood Embankment to be removed and original alignment to be reinstated
- Temporary Containment Measures to be removed
- SAC Boundary

Rev	Issue Date	Description	App
-	-	-	-

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Project Status	STAGE 3 - DEVELOPED DESIGN
Project	RIVERINE COMMUNITY PARK
Drawing	BRIDGE CONSTRUCTION PHASING WORKS - PHASE 4
Scale	1:500 @ A1

Drawn	CR	Checked	DA	Approved	CM
Date	25/08/21	Date	25/08/21	Date	25/08/21

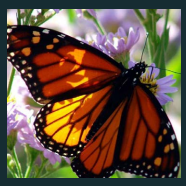
Project	Organisation	Zone	Level	Type	Role	Number	Revision
RVCP	MCA	Z1	XX	DR	CE	2144	P01

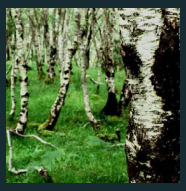
Project Number	Status code & Description
E2256	S2 - For Information

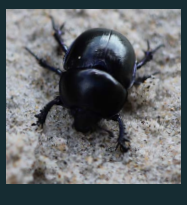
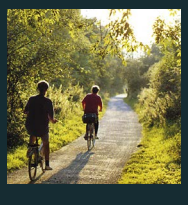
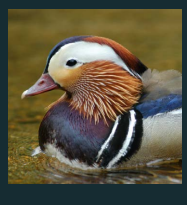
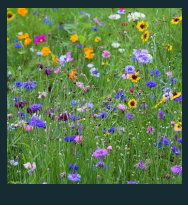
Appendix 3-3

The Paul Hogarth Company Climate and Biodiversity Action Plan

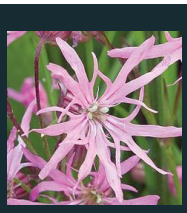
2020 - 2021

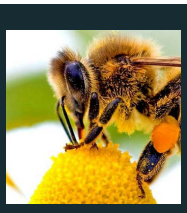
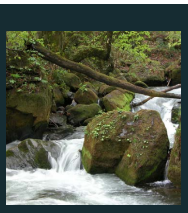
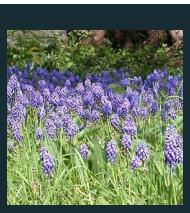
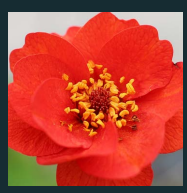
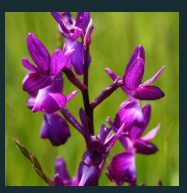
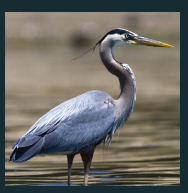





The Paul Hogarth Company Climate and Biodiversity Action Plan



thepaulhogarthcompany

Our commitment

"We can make a difference. The time to deliver is now."

Adam White , President of the Landscape Institute

In June 2019, the Landscape Institute Board declared a climate and biological diversity emergency. In its public statement, the LI committed to take real, tangible action.

In being a signatory to the UK Landscape Architect's declaration of the emergency, The Paul Hogarth Company committed the practice to action and has engaged with all employees to ensure alignment with this commitment.

As a dedicated team of landscape architects, urban designers and planners, we understand our unique position in being able to facilitate change, build environmental resilience and promote biodiversity. Our ability and desire to respond to this emergency is a position we take very seriously.

The Paul Hogarth Company Action Plan

This Action Plan outlines the targets and measures that the practice is establishing in response to the climate and biodiversity emergency. This document is kept under constant review in order that it maintains momentum, evolves in line with guidance, and captures opportunities that present themselves.

Preparatory workshops identified that there is consensus across all staff as to the importance of action going forward, and equally a recognition of the good work that we already do. A key aspect to this plan that came across strongly was that our response to the crisis had to sit alongside a broad variety of project contexts with differing opportunities, other social and cultural pressures and the very real constraints of project specific priorities and issues.

As such, whilst it is important to be ambitious, in order that actions are achievable as part of our commercial activities, it is recognised that they need to be practical, realistic, and integrated into the day-to-day life and work of the practice. So too is it recognised that our response is not the bailiwick of any one professional area or project stage, the way we work from project inception to delivery (and beyond), is influenced by everyone across the practice and everyone has their own part to play.

The identification of a series of thematic action areas and associated aims have structured the actions of this plan as follows:

- Procedure & the way we work
- Administrative, resources and business operation
- Technical work and upskilling
- Collaborating, sharing, influencing and educating
- Recording and monitoring

We seek to bring climate change and biodiversity to the top of the agenda and to the forefront of everyone's thinking, such that it retains priority in the myriad of other project pressures and external factors.

We are ready to stand up and make a difference.

Action Plan aims

Procedure & the way we work

At a fundamental base level, this plan seeks to include measures by which we, during the course of normal business, ensure that the aims and objectives of this Action Plan retain importance on projects, so that we can contribute towards shaping the design and decision making process to achieve the best outcomes.

Aims:

- Embed the TPHC Climate and Biodiversity Action Plan into our work;
- Evaluate all projects against the aspiration to contribute positively to the crisis;
- Preserve and protect existing irreplaceable landscapes and habitats whilst protecting and optimising areas of functional and biodiverse landscape in all developments;
- Champion specialisms and legal requirements.

Administrative, resources & business operation

We need to "Practice what we Preach". In the course of our business, it is important that we act in a responsible and sustainable manner in line with the fundamental purpose of this plan. Practical measures to improve and reduce our footprint will establish a basic standard against which the credibility of this plan and our other work cannot be criticised.

Aims:

- Review internal processes and supply chain;
- Practice sustainable behaviours;
- Minimise wasteful use of resources.

Technical work and upskilling

Our work involves a broad range of technical knowledge and expertise. In our role as designers, we are in a position through our thought process, actions and decisions to directly contribute to the efforts of the climate and biodiversity crisis. It is impossible to have expertise in all areas and so it is important to disseminate and educate ourselves on constantly evolving guidance and best practice, such that we embed this in the advice we give to others and in the projects we work on.

Aims:

- Adopt a whole systems approach to landscape design recognising that soils, bacteria and mycorrhizal fungi are key factors for ecosystem survival and carbon sequestration;
- In addition to working with mitigation, adaptation and resilience as primary tools, look to using regenerative design principles in the design of places;
- Translate understanding into practice with competency in the use of language, terms, definitions and meanings around specific issues;
- Share knowledge and research on an open source basis.

Collaborating, sharing, influencing and educating

We work closely with the public as well as other built environment professionals, are well connected on platforms with a wide reaching potential and occasionally have public speaking / presenting roles, some with media coverage. As such we have an opportunity to play an influencing and educating role and must recognise our role in being able to reach out and influence those whose life and work are not necessarily focused on the climate and biodiversity emergency, but who can, however big or small, make a difference.

Aims:

- Raise awareness internally;
- Increase awareness, engagement and collaboration externally and promote the need for practical action amongst our clients and supply chains;
- Advocate for faster change in our profession towards resilient and regenerative design practices and a higher Governmental funding priority to support this;
- Collaborate with architects, engineers, contractors and clients to further reduce construction waste;
- Translate understanding into practice with competency in the use of language, terms, definitions and meanings around specific issues;
- Share knowledge and research on an open source basis.

Recording and monitoring

It is recognised that actions towards this crisis are not static and that the required targets are ambitious. As part of this longer term change in behaviours and approach, it is important that we embed a means of capturing information so that we can understand the successes and failures of this plan, develop targets, and monitor progress. Recording and monitoring will also enable us to determine where we are having an impact, where we need to focus our attentions and enable us to share successes.

Aims:

- Align with the Landscape Institute's objective of reducing our Carbon Footprint to net-zero by 2029 (LI objective 4.1);
- Work to provide assessment tools for life cycle costing, carbon usage, biodiversity gains. Develop and promote post occupancy tools and measures to assist in the management of landscapes;
- Measure the impact of our work;
- Monitor the plan.

Climate and Biodiversity Action Plan

The Company

IMMEDIATE ACTION

ONGOING ACTIVITY

Action	Responsibility		Task	
	Management	Individual	Assigned?	Who? Date?
Undertake an internal briefing of the Action Plan and Charter, outlining responsibilities and tasks.	✓		✓	
Create a Practice Climate Statement to be incorporated into the website and email footer.	✓		✓	
Incorporate the TPHC Climate and Biodiversity Action Plan within tender responses.	✓		✓	
Bulletin / communication in line with our 30th anniversary highlighting commitment.		✓	✓	
Report success/challenges to TPHC internally through inclusion in a monthly office meetings.		✓	✓	
Undertake a comparative critical review of business of Covid period March-September 2020. Workshop the findings and identify next steps re: remote working, printing, travel etc.		✓	✓	
Undertake a review of our energy suppliers and switch to renewable suppliers for offices.		✓	✓	
Undertake a review of internal processes and supply chain (including printing, vehicle hire, courier, catering). Develop a document to capture information and identify areas to address.		✓	✓	
Ensure we are using sensitive products (biodegradable wrapping, plant-based inks, and low-carbon recycled paper). Capture change in the crib sheet so as we maintain a record.		✓	✓	
Develop a Corporate Carbon Strategy to identify how we can align with the Landscape Institute's objective of reducing our Carbon Footprint to net-zero by 2029 (LI objective 4.1). Review online carbon calculation tools and assess efficacy (LINK).	✓		✓	
Research corporate accreditation tools such as Carbon neutral certification. (LINK)	✓		✓	
Research and consider a company approach to an annual company carbon offsetting contribution, such as community tree planting.	✓		✓	
Liaise with landlords to review the energy efficiency of our offices and reduce our in-office electricity usage. Research options for Solar panels / mini-wind turbines etc.	✓			
Implement a "Switch it off" policy - Lights / computers / heating.		✓	✓	
Annual monitor of the TPHC Climate & Biodiversity Emergency action plan, learning about what we did well and what we can improve. Clear focus on establishing targets for the year ahead.	✓	✓	✓	

Climate and Biodiversity Action Plan

The Work

IMMEDIATE ACTION

ONGOING ACTIVITY

Action	Responsibility		Task	
	Management	Individual	Assigned?	Who? Date?
Create and communicate a Climate and Biodiversity opportunity statement for use at the inception of all projects highlighting early identified opportunities and targets. In order to establish the principle of "make every project better", develop an associated record sheet to catalogue all relevant decisions and their benefits.		✓		
Develop and promote post occupancy tools and measures to assist in the management of landscapes.		✓		
On all existing projects no matter what stage pre-start / design / decision making, identify and communicate opportunities where these are present.		✓		
Put it on the Agenda - Integrate the practice approach into what we do and make the crisis a headline topic. Include on all agendas and/or request it to be put on other's meeting agendas.		✓		
Engage proactively with neighbouring professions (e.g. planning, ecology, landscaping, architecture) to co-ordinate and share resources.		✓		
Increase use of VC facilities and use this as the default for team / project meetings.		✓		
Champion early engagement of suitably qualified climate and biodiversity specialists (e.g. ecologist) to guide design and maximise climate and biodiversity benefits.		✓		
Demand clearer information on embodied carbon/sequestration for hard and soft landscape materials, and sustainable specification guidance from supplier organisations.		✓		

Climate and Biodiversity Action Plan

The 'Getting Better'

IMMEDIATE ACTION

ONGOING ACTIVITY

Action		Responsibility		Task	
		Management	Individual	Assigned?	Who? Date?
Integrate within the company's CPD Programme a minimum of 5hrs of CPD per year to skills relating to Climate and biodiversity in line with LI CPD Policy (July 2020)			✓		
Hold external CPD on our approach to Climate action. Potentially invite RTPI or other relevant external parties.		✓		✓	
CPD Assign Research task and presentation Presentations to be simple and include links, dates and references such that these can be readily consulted and edited annually.	Carbon – Glossary and explanation of terms with links such as low embodied carbon and carbon sequestration	✓		✓	
	Biodiversity Net Gain	✓		✓	
	Climate and biodiversity mitigation principles - Mitigation, adaptation and resilience principles, responsible and sustainable use of water and biodiversity net gains including wildlife corridors, rewilding, and habitat connectivity.	✓		✓	
	Whole systems approach, to include specialist input on soils and carbon sequestration	✓		✓	
	Low-carbon material specification. Create as an updatable entity.	✓		✓	
	Designing and managing for adaptation	✓		✓	
	Regenerative design principles	✓		✓	
Liaise with Edinburgh and Belfast Climate Commissions and explore external CPDs being provided.		✓		✓	
Liaise with Climate Northern Ireland and source opportunities and avenues for communications and external CPD event LINK.		✓		✓	
Assign research task to any new climate and biodiversity specific LI/RTPI policy development, to ensure an understanding of it in its basic terms to all staff.		✓		✓	
Share and communicate internally and externally (where appropriate) any guidance and resources that are considered important. Timing and method of communication to be appropriate to the information i.e. email / office meeting / telephone call.			✓	✓	
Communicate challenges externally to raise awareness and highlight potential solutions (via social media etc).			✓	✓	
Source opportunities to communicate successes and practical steps in response to Climate declaration in press and publications.			✓	✓	