

Gruggies Burn Flood Alleviation Scheme

Construction Environmental Management Plan

March 2024



Balfour Beatty



FAIRHURST

West Dunbartonshire Council

Gruggies Burn Flood Alleviation Scheme

Construction Environmental Management Plan (CEMP)

Tier 1 - General Requirements

Outline Report
Prepared by LUC March 2024



West Dunbartonshire Council

**Gruggies Burn Flood Alleviation Scheme
Construction Environmental Management Plan
(CEMP)**

Tier 1 - General Requirements

Project Number
12449 Gruggies Burn

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Chapter 1

Introduction

1.1 This document is a **live, strategic Construction Environmental Management Plan (CEMP)** for the proposed flood alleviation scheme of Gruggies Burn in Dumbarton, West Dunbartonshire, hereafter referred to as the 'Scheme'. The CEMP establishes a strategic approach to environmental management and protection whilst creating space for iterative, emerging specialist Management Plans, which will develop as the project proceeds. Once known, Management Plans and Mitigation Requirements will be appended to this CEMP.

1.2 This document adopts a four-tiered structure that is set out as follows in different documents:

- **Tier 1: General Requirements;**
- **Tier 2: Site Specific Requirements;**
- **Tier 3: Appendices (Management Plans etc.)**
- **Tier 4: Annexes (Additional Resources, such as Toolbox talks).**

1.3 Documents should be read in parallel with each other for a full understanding. Wider environmental studies and assessment have informed the development of the Scheme and these should be referred to for further context where required

1.4 The purpose of Tier 1 is:

- To provide **guiding principles** and **governance** of the CEMP;
- To establish those **construction activities** that will be subject to **environmental management measures**;
- To inform the project's **notification process**; and
- To provide a **live, dynamic environmental guidance document** which can be implemented for all work activities as part of the Scheme.

1.5 Tier 2 will be prepared upon completion of the detailed design, in advance of construction works commencing.

1.6 Information contained within the CEMP has several purposes including, but not limited to the below:

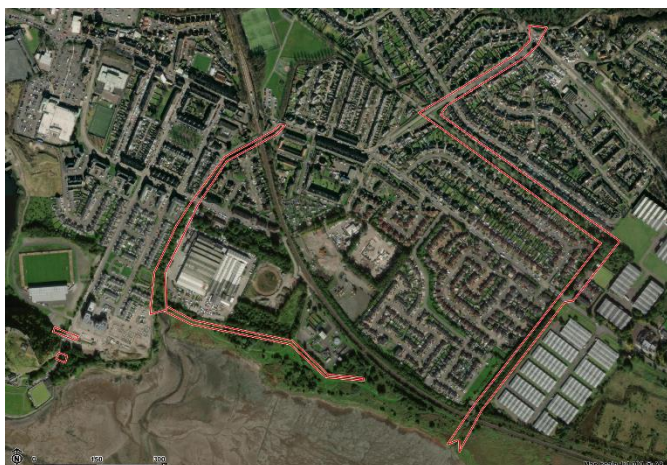
- Detail specific ecological and environmental management required throughout the construction phase of the project;
- Detail monitoring of environmental performance;

- Ensure that required mitigation commitments are implemented;
- Act as a mechanism to reduce the likelihood of potentially significant ecological and environmental incidents that could occur as a result of the Scheme;
- Provide a mechanism for control should unexpected adverse ecological or environmental effects occur during construction;
- To define the role of Environmental Clerk of Works in relation to the Scheme; and
- Provide detail on relevant legislation and good practice which will be adopted and can be used as reference by the Designer and contractors to further reduce environmental impacts during construction of the Scheme.

The Site and the Scheme

1.7 The Scheme is located along Gruggies Burn in Dumbarton, West Dunbartonshire. **Figure 1.1** shows the location of the Scheme in relation to the town of Dumbarton. The red line depicts the construction works areas, hereafter known as 'the Site'.

Figure 1.1: Location of Scheme



1.8 The Scheme is located within the Local Planning Authority (LPA) of West Dunbartonshire.

1.9 It is located within 500m of three designated sites. These are:

- The Inner Clyde Special Protection Area (SPA)/ Ramsar/Site of Special Scientific Interest (SSSI) complex;
- Dumbarton Rock SSSI (a geological site); and

- Overtoun Estate, Overtoun Burn and Barwood Hill Local Nature Conservation Site (LNCS).

1.10 The Scheme aims to deliver improved flood alleviation to the Gruggies Burn and prevent flooding of the A814 and other local roads through Dumbarton as well as commercial and residential properties, and the railway line.

1.11 The Scheme will involve the construction of a flood relief culvert, coastal embankment, tidal gate defence and tidal river walls.

1.12 The duration of the construction phase of the Scheme is unknown at the time of writing, but will comprise the following proposed works:

Enabling Works

1.13 Site preparation works are anticipated to commence as soon as possible in 2025/26. Works will include, but are not limited to:

- Vegetation clearance for access to the Site;
- Traffic management; and
- Potential topsoil stripping.

Gruggies Burn Works

- Diversion of sewers and surface water;
- Watercourse de-silting works;
- Construction of a flood relief culvert;
- Construction of a coastal embankment;
- Construction of a tidal defence gate; and
- Construction of a tidal river wall.

1.14 Further figures are available in the suite of ecological reports and assessments which have been prepared to inform the design process. **Appendix A** illustrates the designated sites and known locations of Invasive Non-native Species (INNS).

Key Environmental Risks

1.15 The key environmental risks associated with the Scheme are:

- Pollution to the water environment through in-channel works;
- The project's relationship and hydrological connectivity to designated sites; and
- Biosecurity.

Chapter 2

Construction Programme

2.1 The earliest commencement of construction will be influenced by completion of statutory processes and approvals with the earliest commencement date anticipated to be mid to late 2025.

2.2 Early works will likely comprise the diversion of strategic utility apparatus and vegetation clearance prior to commencement of the main contract. It is anticipated that the main contract construction period will be in the order of 24 months.

2.3 The construction programme will be influenced by other factors, including:

- Ecologically sensitive periods outlined in **Appendix E**; and
- Environmentally sensitive periods such as seasonal constraints relating to tree removal, soil works and watercourse works.

Chapter 3

Roles and Responsibilities

3.1 This chapter outlines and confirms the roles, responsibilities and communication pathways required for all staff working on Site.

3.2 The key roles and responsibilities pertaining to the implementation of the CEMP are summarised in **Table 4.1** below, with a full list of contacts available in **Appendix D**. Key personnel plus contact details can be added to **Appendix D** at a later date.

3.3 Throughout the course of the construction period, it is possible that key personnel will change; therefore, the CEMP will be updated with the appropriate information as and when required. Responsibility for updating key personnel information sits with the Principal Contractor.

Table 3.1: Roles and Responsibilities

Role	Responsibilities
Client Organisation (the Local Authority or their representative)	<ul style="list-style-type: none"> ■ Provide adequate and timely resources to ensure that the requirements of the CEMP can be fully implemented. ■ Monitor compliance and ensuring instances of non-compliance are managed appropriately.
Principal Contractor	<ul style="list-style-type: none"> ■ Legally and contractually responsible for the implementation of the CEMP and ensuring that the environmental requirements outlined in the CEMP are understood and implemented on Site. ■ Responsible for, but may delegate to the Advisory ECoW, consultation with the Scottish Environment Protection Agency (SEPA) and NatureScot.
Site Management	<ul style="list-style-type: none"> ■ Ensure that the CEMP is implemented; ■ Ensure that environmental/ecological information and issues are included in the site induction, site management meetings and daily briefings; ■ Ensure that site environmental controls are regularly monitored, recorded and reviewed; ■ Ensure that Site Management are aware of their requirements and responsibilities set out within the CEMP; ■ Ensure that the workforce is made aware of environmental/ecological risks relating to the Scheme; ■ Ensure that environmental/ecological incidents are reported to the Advisory ECoW, Environmental Manager and Client Organisation in expected timescales; ■ Ensure that all method statements include an environmental risk assessment;

Chapter 3
Roles and Responsibilities

Construction Environmental Management Plan (CEMP) - Confidential
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Role	Responsibilities
	<ul style="list-style-type: none"> ■ Ensure that all environmental risk assessments are up to date and all mitigation is able to be installed. Ensure that any changes to the works area posing environmental risk are recorded on the risk assessment and mitigation measures appropriately amended; ■ Ensure that mitigation is implemented, monitored and maintained to minimise the impact on environment; and ■ Ensure that the on-site workforce, subcontractors and suppliers comply with the CEMP.
Site Personnel (including contractors)	<ul style="list-style-type: none"> ■ Attend environmental induction(s) and training(s); ■ Carry out all works in accordance with agreed methods, trainings and briefings; ■ Stop works and report anything that deviates from agreed processes; and ■ Follow incident reporting procedures.
Advisory Environmental Clerk of Works	<ul style="list-style-type: none"> ■ Advise and report to the Principal Contractor on works design and mitigation to protect environmental and ecological constraints; ■ Installation, monitoring and maintenance of mitigation; ■ Update all relevant project documentation; ■ Maintain and update the Constraints Register; ■ Monitor compliance with environmental legislation, best practice (Appendix C: Best Practice Register) and project documentation; ■ Report findings to the Local Authority; and ■ Update the CEMP in line with evolving legislation, policy and good practice.

3.4 Key environmental roles from Table 4.1 above are defined below for clarity and key requirements.

3.5 This prevents ambiguity amongst environmental roles and sets out specific responsibilities and clear reporting requirements.

Site Manager

3.6 The Site Manager is responsible for the overarching implementation of the CEMP and environmental communication, including:

- Providing access to all resources and materials in a timely manner for the Advisory ECoW to perform their duties;
- Enabling environmental communication at every step of the process; and
- Regularly (to be defined once the Construction Programme has been finalised) reviewing control measures and checks as part of the Quality Control process.

Advisory Environmental Clerk of Works

3.7 An appropriately qualified Advisory Environmental Clerk of Works (ECoW) will, where possible, be appointed by the Principal Contractor and will be responsible for facilitating the implementation of the CEMP. Advisory ECoW CVs will be subject to approval by West Dunbartonshire Council.

ECoW Qualifications

- Minimum of 5 years ECoW experience.
- Relevant professional body membership (AECOW¹ preferred)
- Recent experience of similar type of projects with freshwater and marine constraints.
- Experience of both Ecological and Environmental Clerk of Works roles.
- Excellent communication and relationship building skills.
- Recent experience in relevant Scottish environmental legislation.
- Ability to write accurate and concise reports in a timely manner.

- CV's for the Advisory ECoW role will be reviewed and require approval by West Dunbartonshire Council.

3.8 The scope of the position is likely to include (but is not limited to) the following aspects:

- Producing, monitoring and updating Site specific Environmental Management Plans;
- Preparing and Delivering Toolbox Talks and issuing specific training to contractors;
- Organising and carrying out pre-construction surveys in-line with advice from the Ecological Survey reports provided by the client;
- Developing, monitoring and updating Species Protection Plans (SPP's) and protected species licences;
- Developing, monitoring and maintaining mitigation measures for environmental constraints;
- Recording and investigating environmental incidents;
- Working with and providing ongoing support to the Designer and the Principal Contractor;
- Liaising with relevant regulators and stakeholders;
- Temporarily stopping works on the Site in order to prevent or reduce the scale of an environmental incident; and
- Remediating and reporting any non-compliance to the Scottish Environmental Protection Agency and LPA where required.

3.9 Should additional expertise in a particular field be required (e.g., a bat licenced ecologist or Schedule 1 ornithologist) the Advisory ECoW will seek additional resource as required.

3.10 The Advisory ECoW will be present during construction on a part-time basis. Increased Site presence may be required when high risk works are taking place, such as in-water works. Additional Site presence requirements will be determined by the Advisory ECoW.

3.11 The Advisory ECoW will provide reporting on a weekly basis. All Advisory ECoW reports will be issued to the Principal Contractor, the Designer and other relevant environmental or operational personnel on a weekly basis also.

¹ The Association of Environmental Clerk of Works (AECOW) [Online] Available at: <https://aecow.org> [Accessed: 18.01.2023].

3.12 Reporting will contain Red-Amber-Green ratings (RAG) for all observations and contain relevant and pertinent photos.

Stopping Works

The Advisory ECoW has the power to stop works where a risk to the environment has been identified or processes have not been followed.

Costs associated with stopping works will be covered by the Principal Contractor as this is not a variation of works or works instruction, but part of normal working process.

Chapter 4

Environmental Communication

4.1 Environmental communication standards are expected to be maintained throughout the duration of the construction of the Scheme. Communications of all types are included from informal verbal conversations to formal progress meetings through to information captured in reporting and on forms.

Communication Pathways

4.2 The Scheme does not enforce a hierarchical communication pathway and all personnel on Site will play an active part in environmental communication.

4.3 We expect a free flow of environmental communication across the Site. However, there will be formal pathways as set out below for activities such as environmental reporting.

4.4 Figure 5.1 shows the expected flow of environmental communication throughout the course of the Scheme.

Figure 4.1: Communication Pathway Model



Recording and Reporting

4.5 Accurate and timely record keeping and reporting requirements are expected as a minimum by all contractors involved. All activities in relation to the environment will have a corresponding record that includes, but is not limited to, the following:

- Minutes and attendance record of start-up meeting(s) (on-site meeting prior to the commencement of construction works) and Site Induction;
- An Environmental Risk Register;
- Minutes of all meetings covering environmental issues (ecology, archaeology, hydrology). Meetings may be combined with regular construction progress meetings);
- A Toolbox Talk (TBT) Schedule plus a record of all TBTs delivered and operatives who attended;
- Site waste and materials management plans and records (Waste Management Plan to be updated with waste volumes on a quarterly basis);

- Water quality monitoring records;
- Details of all licencing requirements, including waste carriers and any relevant protected species licences (if found to be required at a later date);
- A Consents Commitment Register broken down by topic for audit purposes;
- A weekly environmental report to be completed by the Advisory ECoW and shared with all relevant Site staff; including the Designer and the Principal Contractor;
- A CEMP Document Register that will be updated and finalised throughout the pre-construction and construction phases;
- A minimum review and update of the CEMP every 6 months, or at seasonal change points such as March and September, whichever comes first in the project's lifecycle; and
- A copy of the CEMP will be kept in the Site office and will be available for viewing at all times.

Meetings

4.6 Progress and Environmental meetings will be held throughout the construction phase to discuss environmental management, provide updates on the performance of environmental mitigation, and identify actions in line with the construction programme and for performance improvement.

4.7 The meetings will be attended by the Advisory ECoW, the Principal Contractor, Site Manager and any other relevant personnel or regulatory agency representative as required.

Site Induction, Training and Toolbox Talks

4.8 Prior to any work commencing on Site, the Principal Contractor will have the responsibility for communicating the following to all Site operatives:

- A Site Induction covering environmental awareness and constraints for all operatives and visitors;
- Relevant environmental awareness training as required;
- A suite of Toolbox Talks covering a range of relevant environmental topics. TBT Schedule to be agreed with the Designer with a minimum of a 1-month lead time, including seasonal and activity specific topics;
- A Toolbox Talk record of delivery and attendance will be created and maintained throughout construction; and
- Training at the outset of the construction phase and refreshers thereafter as required by the project lifespan on:
 - Designated refuelling operative training;

- Waste Champion training;
- Spill kit and emergency spill drill training; and
- Duty of Care and Waste Regulations training.

Environmental communication is the responsibility of every operative working on the Scheme.

All personnel should remain vigilant for environmental issues and report them immediately to project management and the ECoW.

Risk Assessment and Method Statements

4.9 Risk Assessment and Method Statements (RAMS) will be completed and signed by responsible operatives prior to the commencement of all works. The RAMS will detail any task specific environmental risks, mitigation to be installed prior, during and after works.

4.10 RAMS will also detail the protocol should an environmental incident occur.

Environmental Notice Board

4.11 An environmental notice board will be present on the Site for all operatives and visitors to view and will be updated regularly. The board will include, but not be limited to:

- Relevant environmental risks;
- Mitigation measures;
- Good practice guidelines that are being implemented during construction; and
- A copy of a recent relevant Toolbox Talk.

Construction Phase Review

4.12 This CEMP is a live, dynamic document and will be updated on a regular basis (minimum of every 6 months and at seasonal change points such as March and September, or whichever comes first in the lifespan of the construction phase) throughout the construction phase of the Scheme. It is expected that as construction advances, information within the CEMP will change to reflect the current activities and required mitigation measures on site.

4.13 The Principal Contractor is responsible for the continual development of the CEMP to take account of monitoring and audit results during the construction phase and any changing environmental conditions and regulations.

4.14 All changes to the CEMP are to be approved by the Advisory ECoW.

Chapter 5

Construction Management

General Construction Management

5.1 The Principal Contractor has a responsibility to include environmental risk assessments for all tasks, therefore the below general construction management principles are applicable in relation to the environment regardless of work stage.

5.2 Due to the environmental risks associated with these works, the following elements have been selected for additional management:

- Hours of work;
- Construction Health and Safety and Site Welfare;
- Site Compound Management;
- On Site Concrete Batching;
- Fire and Hazardous Waste Management; and
- Waste Management.

Hours of Work

5.3 Hours of work, delivery and restrictions will be otherwise agreed with the Local Planning Authority, West Dunbartonshire.

5.4 Due to the nature of the works, several activities may need to take place at particular times to coincide with low tide or low water levels.

Construction Health and Safety and Site Welfare

5.5 Health and safety management is of paramount importance and is integral to ensuring the successful construction of the Scheme. Throughout the construction phase the Principal Contractor and other contractors working on Site will report and monitor on health and safety performance.

5.6 Welfare facilities will be in line with current Construction Design and Management Regulations 2015² (CDM Regs as noted in **Appendix B: Legal Register**): These will be serviced by a temporary drainage and sewerage system.

² Available: <https://www.legislation.gov.uk/uksi/2015/51/contents/made> [Accessed: 07/02/2024].

5.7 Smoking is prohibited on Site except in designated smoking areas. Bins for cigarette ends will be provided and used by all operatives. Separate waste bins will be provided for single-use vapes and cartridges, as these are a type of electronic waste.

Site Compound Management

5.8 Details regarding any temporary construction compound(s) uses, parking, machinery and materials storage, and temporary drainage will be detailed in a Compound Layout drawing provided by the Principal Contractor.

5.9 The Site compound will be located at least 10m away from the water environment.

5.10 The Compound Layout drawing will include locations of refuelling areas, spill kits and COSHH storage. Where temporary drainage is installed, locations of silt mitigation also need to be detailed.

On Site Concrete Batching

5.11 Where possible all concrete will be pre-cast and concrete pouring will be done off-site due to the nature of the works and to prevent pollution of the watercourses within the Site and connected to it. Where a pre-cast option is not available, wet concrete and small concrete batching can be used on a case-by-case basis. The locations of these will be specified and pollution prevention measures developed in conjunction with the Advisory ECoW.

5.12 Concrete washout facilities will be created appropriate to the volume of concrete being poured or batched to allow for washout activities to be carried out without the risk of pollution to the ground. Washout areas will require to be double bunded.

5.13 Further details will be specified in a Pollution Prevention Plan (PPP) produced by the Principal Contractor to cover specific works activities that pose a risk to the water environment.

Fuel and Hazardous Material

5.14 The Principal Contractor will prepare and implement a Pollution Prevention Plan (PPP) that will detail the measures adopted to avoid the release of hazardous materials into the environment. This will include, but is not limited to:

- Designated refuelling areas that are double bunded;
- Specially trained refuelling operatives;
- Use of drip trays and plant nappies under all stationary (unused for 30 minutes or more) items of plant (large and small); and

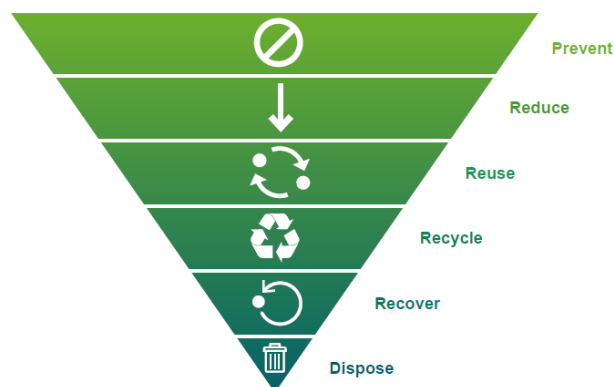
- Provision of standard capacity spill kits across the works area and large capacity spill kits in high-risk areas (e.g., next to generators and refuelling areas).

Waste Management

5.15 The Scheme is anticipated to generate specific types of waste throughout the construction phase and therefore has a responsibility to reduce, reuse and recycle waste. Waste management will follow the Hierarchy of Waste Management as detailed in Figure 5.1 below, where the prevention of waste generation is the priority. Details of waste management and waste streams will be included in a Waste Management Plan to be provided by the Principal Contractor.

5.16 Figure 5.1 below illustrates the hierarchy of waste management.

Figure 5.1: Hierarchy of Waste Management



Chapter 6

Avoidance and Mitigation

Environmental Assessment

6.1 This chapter provides overview of mitigation measures required for the key environmental areas as detailed in section 7.2. Site specific detail for each will be contained within the appropriate Tier 3 appendix.

6.2 Previous environmental assessments of the Site identified the following key environmental areas that may be impacted by the Scheme during the construction phase:

- Ecology;
- Lighting;
- Noise and vibration;
- Soil and ground conditions;
- Traffic and transport; and
- Surface water resources and flood risk.

Ecology

6.3 Previous environmental assessments of the Site identified the following potential ecological receptors that may be directly impacted as a result of the Scheme:

- Statutory and Non-Statutory Designated Sites;
- Habitats;
- Bats;
- Otter;
- Fish; and
- Protected and nesting birds.

6.4 Given the proximity and connectivity of the Site to The Inner Clyde SPA, Ramsar and SSSI complex, a Habitat Regulations Appraisal (HRA) will be required prior to the commencement of works³. The HRA will identify the potential impacts of works on the designated site complex and detail mitigation required in order to avoid or reduce those impacts to an acceptable level.

³ NatureScot (2023) European Site Casework Guidance: How to consider plans and projects affecting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Available online:

<https://www.nature.scot/doc/european-site-casework-guidance-how-consider-plans-and-projects-affecting-special-areas-conservation>. Accessed 07/02/2024.

6.5 The Inner Clyde SPA and Ramsar sites are designated for the assemblage of non-breeding redshank.

6.6 The Inner Clyde SSSI is designated for its assemblage of non-breeding cormorant, goldeneye, red-breasted merganser, eider, oystercatcher, red-throated diver and redshank, as well as its saltmarsh habitat.

6.7 Dumbarton Rock SSSI, designated for its geological features, and Overtoun Estate, Overtoun Burn and Barwood Hill LNCS are also within 500m of the Site.

6.8 The habitat within the Site was generally considered to be in poor condition, however riparian woodland is considered a biodiversity priority at a national level. Complex estuarine grasslands within the southern edge of the Site and overlapping with the designated site complex offer particular biodiversity value compared to the common and widespread habitats which make up the remainder of the Site.

6.9 Habitats within the Site offer suitable potential for foraging and nesting birds, and for foraging and commuting bats, otter and fish. As such, precautionary methods of working will be included in the Species Protection Plans (SPPs) for each of the following species:

- Bats;
- Otter;
- Fish (including eel); and
- Protected and nesting birds.

6.10 At the time of writing, no otter resting sites were identified within the Site, however due to the mobile nature of the species pre-construction survey will be required prior to works commencing.

6.11 Note that the bat surveys require updating, including transferring to 4th Edition Bat Conservation Trust guidance categories prior to works commencing.

6.12 Works should be phased to avoid sensitive ecological timeframes as outlined in **Appendix E: Ecological Survey and Mitigation Calendar**.

6.13 Seasonal constraints may apply to each of the above species. As the timing and duration of works are unknown at the time of writing, this will be highlighted through mitigation detailed in the SPPs.

6.14 Invasive non-native weed species have been identified on the Site. These include:

- Himalayan balsam (*Impatiens glandulifera*);

- Giant hogweed (*Heracleum mantegazzianum*); and
- Japanese knotweed (*Raynouria japonica*).

6.15 An Ecological Constraints plan is included in **Appendix A** illustrating the locations of all known ecological constraints.

6.16 The Advisory ECoW will advise, monitor and report on the management of these features weekly, feeding back compliance with the appropriate legislation.

6.17 All habitat restoration and enhancement will link into the National Planning Framework 4 Policy 3 Biodiversity objectives.

6.18 Works should be carried out in accordance with the appropriate Management Plans. These will be provided in Tier 3: Appendices once complete and detail the avoidance and mitigation measures for the key ecological constraints and any associated licencing requirements.

Lighting

6.19 Measures to control the emission of artificial light throughout the construction phase will be incorporated to:

- Minimise light spill onto the surrounding environment, avoiding light spill onto the watercourses in particular;
- Prevent light spill onto features of ecological importance, such as bat roosts in accordance with the Bats and Artificial Lighting Guidance produced by the Bat Conservation Trust⁴;
- Reduce sky glow from construction lighting of the Scheme; and
- Reduce glare from construction lighting of the Scheme.
- Minimising construction activities at night;
- Working within daylight hours only in accordance with SPP's in work areas that have the potential to disrupt crepuscular or night active species;
- Use of motion detection sensors and timers where possible;
- Construction lighting re-assessment and monitoring where necessary;
- Use of seasonal screening methods when trees and hedges do not provide sufficient coverage during the winter months;
- Utilisation of borrowed lighting from adjacent existing street lighting; and

⁴Bat Conservation Trust (2018) Bats and Artificial Lighting in the UK: Bats and the Built Environment Series (2018).

- Compliance with avoidance and mitigation measures contained within relevant management plans and SPP's. These will be added in the Tier 3 as appendices once ecological surveys have determined the presence of ecological constraints.

Noise and Vibration

Noise control measures required during construction work are required to be adhered to at all times, and the protocol for addressing noise complaints will be described. Measures will include but not be limited to:

- Hours of work to be agreed with the LPA;
- Activities that may give rise to audible noise at the surrounding properties and heavy goods vehicle deliveries to the site would be limited to the hours of 8am to 6pm Monday to Friday and 8am to 1pm on Saturdays. Those activities that are unlikely to give rise to noise audible at the site boundary will continue outside of the stated hours; and
- All construction activities will adhere to the good practice set out in British Standard 5228: Code of practice for noise and vibration control on construction and open sites.

Soil and Ground Conditions

6.20 All Site operatives and personnel will be inducted to alert them to the health, safety and welfare provisions in relation to ground works. Briefings (Site Induction, TBTs and Daily Activity Briefings) will include requirements for working in areas with specific mitigation in relation to soils and ground conditions.

Soil Management

6.21 The following soil management practices will be adhered to:

- Soil segregation;
- Bund creation and sealing;
- Implementation of silt mitigation; and
- Situation of storage facilities kept a minimum of 10m from watercourses.

6.22 It is anticipated that the majority of soil management will be in relation to pollution prevention, therefore all mitigation for soil management will be included in the Pollution Prevention Plan.

6.23 The PPP will ensure that the principles and procedures for good soil management enable soil to be stripped, stored and re-used on site.

6.24 Soil will be managed in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites⁵ and in conjunction with the management plans for control of INNS.

Contaminated Materials

6.25 The Principal Contractor will be responsible for ensuring that ground investigations (including any testing where required) are carried out prior to the commencement of works.

6.26 Ground investigations of potentially contaminated sites will be undertaken in accordance with best practice, including:

- BS 10175: Investigation of Potentially Contaminated Sites – Code of Practice⁶; and
- BS 5930: Code of Practice for Ground Investigations⁷.

Traffic and Transport

6.27 Throughout the construction phase, traffic within the Scheme, on adjacent and connecting public highways will be managed via **the Construction Traffic Management Plan (CTMP)**. This is currently being assessed as part of the design process and will be added as an appendix to the CEMP once finalised.

Surface Water and Flood Risk

6.28 The Site comprises two areas; the western area which is approximately 1km in length, and the eastern area which is approximately 1.5km in length and follows Gruggies Burn. Gruggies Burn flows directly from the Overtoun Estate, Overtoun Burn and Barwood Hill LNCS in the north to the Inner Clyde SPA / Ramsar / SSSI complex in the south (see **Appendix A**).

6.29 In-channel works will be required as part of the flood alleviation scheme. It is assumed that concrete will be pre-cast off-site rather than being poured on Site to protect the watercourse and wider catchment from pollution.

⁵ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf [Accessed: 07/02/2024].

⁶ British Standards (2017) BS10175 [Online] Available: <https://www.en-standard.eu/bs-10175-2011-a2-2017-investigation-of-potentially-contaminated-sites-code-of-practice-code-of-practice/>

[potentially-contaminated-sites-code-of-practice-code-of-practice/](https://www.en-standard.eu/bs-5930-2015-a1-2020-code-of-practice-for-ground-investigations/) [Accessed: 11.01.2023].

⁷ British Standards (2020) BS5930 [Online] Available: <https://www.en-standard.eu/bs-5930-2015-a1-2020-code-of-practice-for-ground-investigations/> [Accessed: 11.01.23].

6.30 Mitigation measures to protect the Inner Clyde SPA / Ramsar / SSSI complex and Overtoun Estate, Overtoun Burn and Barwood Hill LNCS will be implemented throughout the construction phase via a Pollution Prevention Plan following mitigation outlined in the HRA.

6.31 The PPP will include, but is not limited to the following mitigation measures:

- Design drawings of all temporary surface water management systems that may include methods to capture Site run-off including perimeter cut off ditches, settlement lagoons, settlement tanks etc.;
- Surface water management systems will remain isolated from the Inner Clyde SPA / Ramsar / SSSI complex, with drainage infrastructure situated more than 10m away from the water environment;
- Stockpiles of construction materials and temporary toilets will be located at least 10m away from any watercourses or drainage, and perimeter fencing will be erected;
- Designated refuelling area will be installed and double bunded to reduce the risk of spill escapes;
- Interceptors will be installed in the drainage system at high risk areas; and
- Drip trays will be used under all stationary plant and machinery.

6.32 The Principal Contractor will prepare an Emergency Flood and Contingency Plan captured within the Pollution Prevention Plan that all site personnel will be made aware of.

6.33 The Principal Contractor will sign up to SEPA's flood alert system⁸ to ensure the appropriate mitigation to deal with increased run-off is implemented.

⁸ Available at <https://www.sepa.org.uk/environment/water/flooding/floodline/> [Online]
Accessed: 07/02/2024.

Chapter 7

Pollution Prevention

7.1 All activities throughout the Scheme are subject to prevention measures detailed in a Pollution Prevention Plan (PPP). This plan will be provided by the Principal Contractor, therefore this section serves as a guide to the Principal Contractor for creation of said PPP.

7.2 Due to the nature of the works, the PPP will also capture mitigation in relation to the following:

- Soil management (Section 7.19);
- Surface water management (Section 7.26); and
- Flood risk (Section 7.30).

7.3 As works are required in the watercourse, authorisation(s) under The Water Environment (Controlled Activities) (Scotland) 2011 (Controlled Activities Regulations (CAR)), issued by SEPA, will be required prior to the commencement of works.

General Pollution Prevention Measures

7.4 The Principal Contractor has a responsibility to prevent pollution throughout the construction phase, including reporting any pollution incidents to the appropriate statutory body.

7.5 The PPP will be compliant with all relevant guidance in **Appendices B and C**.

7.6 The PPP will include, but is not limited to:

- Emergency training and response requirements;
- Implementation of silt control measurements (e.g. clean and dirty water ditches, cut off ditches, silt fencing, straw bales, stone check dams, sumps);
- Mitigation measures to reduce the risk of leaks and spills from hazardous materials (including fuel and cement-based products as well as chemical substances which fall under the Control of Substances Hazardous to Health (COSHH) Regulations (see Section 8.4 below);
- Emergency mitigation materials are to be available at all times and easily accessible in the case of an environmental incident;
- Clear labelling of tanks and Intermediate Bulk Containers (IBC's);

- Designated refuelling areas (double bunded and concreted);
- Material storage areas will be double bunded or concreted and stored above flood water level and at least 10-metres away from waterbodies;
- Plant and machinery will be switched off when not in use and parked a minimum of 10m away from the water environment;
- Plant nappies will be placed under all plant and machinery when not in use (30 minutes or more) or when parked up overnight;
- All vehicles and plant will have a Daily Check Sheet to ensure that vehicles are in a good state of repair and any damage or leaks are able to be identified and fixed; and
- Large capacity spill kits will be located in high-risk areas such as next to generators or refuelling areas.

Control of Substances Hazardous to Health (COSHH)

7.7 The Principal Contractor has responsibility to ensure that all materials and substances considered to be hazardous under the Control of Substances Hazardous to Health Regulations 2002 are used and stored correctly.

7.8 Controls for usage for COSHH items include but are not limited to:

- All COSHH items are accompanied by a Safety Data Sheet and COSHH Risk Assessment (RA) that is accessible by all contractors, site personnel and visitors in a COSHH Risk Register;
- The COSHH Risk Register is updated every 3 months to ensure current COSHH items have Safety Data Sheets and COSHH RAs available for use;
- All COSHH items are clearly labelled in English and stored in a container that has a bunded 110% spill capacity;
- COSHH containers must be locked when not in use with access controlled by a responsible and suitably trained operative; and
- Appropriate PPE relevant to each hazardous material or substance is available and worn correctly by operatives with appropriate training to use said material or substance.

Biosecurity

7.9 There is a legal requirement throughout the construction phase to implement robust biosecurity measures that aim to protect aquatic and terrestrial habitats on site and in the surrounding environs.

There are three Invasive Non-Native Species (INNS) identified on Site (as noted in Chapter 7), therefore a management plan will be produced by the Principal Contractor to prevent the accidental introduction or spread of these species and any further species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)⁹.

⁹ Available: <https://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [Accessed: 29.11.22].

Chapter 8

Environmental Incident and Emergency Response Plan

Environmental Incident and Emergency Response Plan

8.1 Despite implementation of robust protection measures, there will always be the potential for an environmental incident to occur on site. In the event of an incident, it is imperative that management protocols that enable a quick, efficient and effective response by the correct specialists are in place. Such protocols also enable incidents to be accurately recorded, for lessons to be learned and additional mitigation to be installed where necessary.

8.2 The Principal Contractor will prepare a detailed Environmental Incident Plan and Emergency Response Plan. These will include response and reporting procedures.

8.3 The Emergency Response Plan will include emergency contact details for the roles outlined in **Table 9.1** plus additional relevant contacts.

8.4 Information relating to the Site location, including nearest postcode and Ordinance Survey Grid Reference, will be included for easy access in the case of an emergency.

8.5 The Principal Contractor will ensure systems are in place to record the key information of any incident, including photos, and on-site testimony of any personnel witnessing an incident.

Environmental Incident Definitions

8.6 **Table 9.2** below outlines the definitions used to describe an environmental incident.

8.7 Those definitions shall apply in relation to the classification of environmental incidents during construction of the Scheme.

Table 9.1: Emergency Contact Details

Name	Role	24-Hour Contact Number
	Nominated Site Contact	
	Emergency Services	
	Nearest Hospital Details	
	Specialist 24-Hour Spill Contractor	

Table 8.1: Environmental Incident Definitions

Term	Definition
Environmental Near Miss	<ul style="list-style-type: none"> An event which, if not controlled or due to its nature, could lead to an environmental incident.
Environmental Incident	<ul style="list-style-type: none"> Any event which has potential, due to its scale and nature, to migrate from source and have a negative environmental impact within and/or beyond the Site boundary.
Environmental Exceedance Event	<ul style="list-style-type: none"> An event when monitoring results indicate that limits for a particular environmental parameter have been exceeded; Will immediately trigger an investigation into the reason for the exceedance and the application of suitable mitigation where necessary; and Will only be closed out on achieving a monitoring result below the assigned limit for a particular environmental parameter.
Environmental Non-Compliance	<ul style="list-style-type: none"> Non-fulfilment of a requirement and includes any deviations from established procedures, programmes and other arrangements related to the CEMP.

West Dunbartonshire Council

Gruggies Burn Flood Alleviation Scheme Construction Environmental Management Plan (CEMP) Tier 2 – Site Requirements

Outline Report
Prepared by LUC March 2024



West Dunbartonshire Council

**Gruggies Burn Flood Alleviation Scheme
Construction Environmental Management Plan
(CEMP)**

Tier 2 – Site Requirements

Project Number
12449 Gruggies Burn

Version	Status	Prepared	Checked	Approved	Date
1.	Draft for client comment	L. Hutchison	C. Nisbet	C. Nisbet	20.03.2024
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Chapter 1

Introduction

Introduction to Tier 2

1.1 This tier of the Construction Environmental Management Plan (CEMP) acts as a strategic management document and sets out the overarching site specific ecological and environmental constraints relevant to the Gruggies Burn Flood Alleviation Scheme.

1.2 Chapter 2 captures all of relevant ecological and environmental constraints and presents them in easy to access tables. These tables can be used as tools to view and manage constraint compliance requirements and signposts the reader to all relevant management plans and helpful additional resources.

1.3 Chapter 3 provides a checkpoint tool to plan actions, as well as review and monitor actions taken against them. This chapter also provides a further tool that allows compliance actions, in relation to the CEMP, to be easily tracked.

1.4 These tools are only effective when they are kept up to date, therefore it is the responsibility of the Principal Contractor to add and amend data as construction progresses to ensure reliability and effectiveness of these data.

1.5 There is no mitigation noted within this tier. All mitigation measures are contained within the management plans located in **CEMP: Tier 3; Appendices**.

Introduction to Gruggies Burn Flood Alleviation Scheme

1.6 The Site is located within Dumbarton, West Dunbartonshire, with two narrow strips as shown on **CEMP: Tier 1, Figure 1.1**.

1.7 The Scheme objectives are to alleviate flood risks from high tide storm surges, fluvial flood events and topography directing water directly into Gruggies Burn.

1.8 The Scheme includes the installation of the following:

- A flood relief culvert and inlet structure;
- Coastal embankments;
- A tidal defence gate; and
- River flood walls.

Chapter 2

Environmental Constraints

Introduction

2.1 Due to the combination of aquatic, riparian and terrestrial habitats affected by this works package, the environmental constraints are complex. The Site also includes The Inner Clyde SPA, Ramsar and SSSI complex, into which the Gruggies Burn flows. As such, a Habitat Regulations Appraisal (HRA) is required prior to the commencement of works which will identify the mitigation required to avoid or reduce impacts to the designated site complex to acceptable levels.

2.2 An Ecological Appraisal has been produced by LUC, which sets out the results of the ecological constraints walkover conducted on 20th June 2023¹.

2.3 This section provides a snapshot and quick reference guide to the constraints present within the Site.

2.4 All ecological constraints identified are shown in **Table 2.1** and all environmental constraints are shown in **Table 2.2**.

2.5 It is the responsibility of the Principal Contractor (PC) to update these tables as and when new constraints are identified in alignment with the compliance items outlined in Chapter 3.

How to Use the Constraints Tables

2.6 The Constraints Tables act as both registers and signpost documents. Columns 1 and 2 contain the register information. Column 1 contains the constraint, for example bats, and column 2 details the receptors relevant to that constraint, e.g., the number of bat roosts on Site.

2.7 The subsequent two columns are signposting columns. Column 3: Corresponding Management Plans. All management plans relating to the constraint and its location within **CEMP: Tier 3: Appendices**. For the constraint example of bats, the noted documentation includes the Bat Species Protection Plan.

2.8 Column 4: Relevant Supporting Resource contains relevant documentation that is supportive to the implementation of mitigation measures and corresponding location, such as a Bat Toolbox Talk: **CEMP: Tier 4**.

¹ LUC (2024) Gruggies Burn Flood Alleviation Scheme Ecological Appraisal

Ecological Constraints

2.9 The PC has a contractual obligation to ensure that any works within Site are carried out in accordance with the appropriate legislation and guidelines in relation to Protected Species. Relevant ecological legislation can be found in **CEMP: Tier 3; Appendix B.**

Table 2.1: Ecological Constraints

Constraint	Receptor	Corresponding Management Plans(s)	Relevant Supporting Resource (e.g., Toolbox Talk)
Designated Sites and Habitats			
European and Nationally Designated sites on-site	<ul style="list-style-type: none"> The Inner Clyde SPA / Ramsar / SSSI² 	<ul style="list-style-type: none"> To be captured within the appropriate management plan such as the Pollution Prevention Plan or Species Protection Plan 	<ul style="list-style-type: none"> Designated Sites Toolbox Talk Toolbox Talk Attendance Record
European and Nationally Designated sites within 500m of the Site	<ul style="list-style-type: none"> Dumbarton Rock SSSI 	<ul style="list-style-type: none"> To be captured within the appropriate management plan such as the Pollution Prevention Plan or Species Protection Plan 	<ul style="list-style-type: none"> Designated Sites Toolbox Talk Toolbox Talk Attendance Record
Non Statutory Designated sites within 500 m of the Site	<ul style="list-style-type: none"> Overtoun Estate, Overtoun Burn and Barwood Hill LNCS³ AWI Woodland⁴ 	<ul style="list-style-type: none"> To be captured within the appropriate management plan such as the Pollution Prevention Plan or Species Protection Plan SEPA⁵ permit to allow discharge of de-silted water into the Clyde Estuary (The Inner Clyde SPA / Ramsar / SSSI complex) 	<ul style="list-style-type: none"> LNCS Toolbox Talk AWI Toolbox Talk Toolbox Talk Attendance Record
Habitats	<ul style="list-style-type: none"> Sensitive habitats (riparian woodland and watercourse) present within the Site 	<ul style="list-style-type: none"> Pollution Prevention Plan (PPP) – To be provided by the PC. 	<ul style="list-style-type: none"> National Planning Framework 4 Policy 3 Biodiversity Toolbox Talk Toolbox Talk Attendance Record

² SPA – Special Protection Area, Ramsar – Wetland Habitat Protection, SSSI – Site of Special Scientific Interest

³ LNCS – Local Nature Conservation Site

⁴ AWI – Ancient Woodland Inventory

⁵ SEPA – Scottish Environmental Protection Agency

Constraint	Receptor	Corresponding Management Plans(s)	Relevant Supporting Resource (e.g., Toolbox Talk)
Protected and Notable Species			
Bats	<ul style="list-style-type: none"> No bat roosts or potential roost features have been identified within the Site. However, bats have been included due to being a European Protected Species and trees and buildings being present within 50m of the Site. 	<ul style="list-style-type: none"> Bat Species Protection Plan Ecological Constraints Plan – Appendix A 	<ul style="list-style-type: none"> Bat Toolbox Talk Toolbox Talk Attendance Record
[Redacted]			
Badger	<ul style="list-style-type: none"> Habitats present on site may provide foraging, commuting and sett building opportunities for badger 	<ul style="list-style-type: none"> Badger Species Protection Plan Ecological Constraints Plan – Appendix A 	<ul style="list-style-type: none"> Badger Toolbox Talk
Water vole	<ul style="list-style-type: none"> Habitats present on site may provide opportunities for water vole. 	<ul style="list-style-type: none"> Water vole Species Protection Plan Ecological Constraints Plan – Appendix A 	<ul style="list-style-type: none"> Otter and Water Vole Toolbox Talk
Breeding Birds	<ul style="list-style-type: none"> Breeding birds present seasonally across the Site. 	<ul style="list-style-type: none"> Breeding Birds Protection Plan 	<ul style="list-style-type: none"> Breeding Birds Toolbox Talk Toolbox Talk Attendance Record
Wintering Birds	<ul style="list-style-type: none"> Wintering birds present seasonally across the Site. 	<ul style="list-style-type: none"> Wintering Birds Precautionary Working Method Statement 	<ul style="list-style-type: none"> Wintering Birds Toolbox Talk Toolbox Talk Attendance Record

Constraint	Receptor	Corresponding Management Plans(s)	Relevant Supporting Resource (e.g., Toolbox Talk)
Fish	<ul style="list-style-type: none">■ Fish are likely to be present within Gruggies Burn and The Clyde.	<ul style="list-style-type: none">■ To include strategy for fish rescue where appropriate.	

Environmental Constraints

2.10 The PC has a contractual obligation to mitigate impacts on the environment throughout the construction phase in order to adhere to all relevant environmental legislation. Relevant legislation can be found in **CEMP: Tier 3; Appendix B.**

Table 3.2: Environmental Constraints

Constraint	Receptor	Corresponding Management Plan (s)	Relevant Supporting Resource (e.g. Toolbox Talk)
General Pollution	<ul style="list-style-type: none"> On and off-site ecological, human commercial and residential receptors. 	<ul style="list-style-type: none"> Pollution Prevention Plan 	<ul style="list-style-type: none"> Silt Toolbox Talk Fuel and Oils Toolbox Talk Concrete Toolbox Talk Soil Management Toolbox Talk Toolbox Talk Attendance Record Daily Vehicle Check Sheet Water Quality Monitoring Check Sheet
Biosecurity	<ul style="list-style-type: none"> Rhododendron on-site. Buddleia on-site. Potential for other terrestrial and aquatic Invasive Non-Native Species (INNS). 	<ul style="list-style-type: none"> Outline Biosecurity Policy Statement INNS Management Plan Invasive Species locations – Appendix A 	<ul style="list-style-type: none"> Giant Hogweed Toolbox Talk Japanese Knotweed Toolbox Talk Himalayan Balsam Toolbox Talk Toolbox Talk Attendance Record
COSHH	<ul style="list-style-type: none"> On and off-site ecological, human commercial and residential receptors. 	<ul style="list-style-type: none"> Pollution Prevention Plan 	<ul style="list-style-type: none"> Storage of Hazardous Substances Toolbox Talk Fuel and Oils Toolbox Talk Concrete Toolbox Talk Toolbox Talk Attendance Record COSHH Register COSHH Register Cover Sheet

Constraint	Receptor	Corresponding Management Plan (s)	Relevant Supporting Resource (e.g. Toolbox Talk)
Lighting	<ul style="list-style-type: none"> Task specific and seasonal temporary construction lighting. 	<ul style="list-style-type: none"> Species Protection Plans Pollution Prevention Plan 	<ul style="list-style-type: none"> Lighting Toolbox Talk Toolbox Talk Attendance Record
Noise and Vibration	<ul style="list-style-type: none"> On and off-site commercial and residential receptors. 	<ul style="list-style-type: none"> Noise Management Plan 	<ul style="list-style-type: none"> To be considered on a case by case basis for potential high noise activities. PC responsible for monitoring.
Surface Water	<ul style="list-style-type: none"> On and off-site commercial and residential receptors. Potential for infiltration, leaching, migration and run-off into local drainage, Gruggies Burn and the Inner Clyde SPA / Ramsar / SSSI complex. 	<ul style="list-style-type: none"> Flood Risk Assessment Surface Water Management Plan Map of surface water capture mechanisms and temporary drainage Pollution Prevention Plan Waste Management Plan 	<ul style="list-style-type: none"> Water quality monitoring parameters and reference range document Monitoring Results Report Template Visual water quality monitoring criteria reference document Silt Toolbox Talk Toolbox Talk Attendance Record
Soil and Ground Conditions	<ul style="list-style-type: none"> Soil and soil quality. 	<ul style="list-style-type: none"> Waste Management Plan 	<ul style="list-style-type: none"> Soil Management Toolbox Talk Soil Moisture and Works TBT Toolbox Talk Attendance Record
Traffic and Transport	<ul style="list-style-type: none"> Increase in construction traffic on access routes 	<ul style="list-style-type: none"> Traffic Assessment 	<ul style="list-style-type: none"> N/A
Waste Management	<ul style="list-style-type: none"> 95% reuse, reclaim, recycle target. 	<ul style="list-style-type: none"> Waste Management Plan 	<ul style="list-style-type: none"> Waste Stream Planner Waste duty of care training materials Waste Champion briefing template Waste segregation Toolbox Talk

Constraint	Receptor	Corresponding Management Plan (s)	Relevant Supporting Resource (e.g. Toolbox Talk)
			<ul style="list-style-type: none"> ■ Toolbox Talk Attendance Record ■ SIC Code and EWC Code Register
Weather	<ul style="list-style-type: none"> ■ On and off-site ecological, human commercial and residential receptors. 	<ul style="list-style-type: none"> ■ Winterisation Plan (WP) ■ Detailed Incident Management Plan 	<ul style="list-style-type: none"> ■ Adverse Weather Maintenance Check Sheet ■ WP Maintenance Checklist

Chapter 3

Strategic Checkpoints

Introduction

3.1 This chapter sets out expected and helpful checkpoints over the lifespan of the works package. In this instance, contractors are anticipated to be on-site for a period of 24 months from late 2025 to late 2027.

Checkpoints

3.2 Up to date legislation, best practice and guidance were used to inform this document at the time of writing. Due to the anticipated longevity of the construction works it is possible that these will change and therefore legal requirements, methodologies and recommended mitigation practices will require to be updated to reflect such changes.

3.3 Should any additional documentation or resources be required at a later date, documentation **Table 2.1 Ecological Constraints** and **Table 2.2 Environmental Constraints** can be updated and amended as and when required. All updates and amendments will be agreed with the Advisory Environmental Clerk of Works and added to **Table 3.1: CEMP Compliance Checklist**.

3.4 Where any additional management plans are required, these will require to be formally reviewed by the Advisory ECoW.

3.5 **Table 3.1 CEMP Compliance Checklist** below will be utilised by the PC to prompt review and updates of the required ecological and environmental documents identified in **Tables 2.1** and **2.2**.

3.6 The Compliance Checklist also captures the frequency and confirmed delivery of key environmental communications, such as toolbox talks and incident drills.

How to Use the CEMP Compliance Checklist

3.7 **Table 3.1**, the CEMP Compliance Checklist acts as a tool for the PC to plan and record actions against indicated compliance items.

3.8 An example of how the table can be filled out is provided in red text in the first row.

3.9 Each row details a Compliance Item, with columns noting the expected delivery schedule, details of the month(s) where the action is scheduled to take place, and whether or

Chapter 3
Strategic Checkpoints

Gruggies Burn Flood Alleviation Scheme Construction Environmental
Management Plan (CEMP)

not that obligation has been met. The final column grants the
opportunity to provide further notes or comments.

Table 3.1: CEMP Compliance Checklist

Compliance Item	Item Owner	Delivery Schedule	Completion (✓/✖)												Obligations Met		Notes/Comments	
			Month															
			1	2	3	4	5	6	7	8	9	10	11	12	Yes (✓)	No (✖)		
<i>Example: Delivery of Toolbox Talks</i>	<i>Advisory ECoW</i>	<i>An average of once per month (totalling minimum of 12 per year)</i>																<i>Green cells indicate the months where activity is forecast to meet delivery. Ticks indicate actual activity and whether the obligation has been met over the timeframe set - 12 TBTs delivered over the course of the year.</i>
Delivery of Toolbox Talks	Advisory ECoW	An average of once per month																
Review of Toolbox Talks	Advisory ECoW	Once annually																
Toolbox Talk Refresher Sessions	Advisory ECoW	Once annually																
Environmental Incident Drill – Terrestrial	Principal Contractor																	

Compliance Item	Item Owner	Delivery Schedule	Completion (✓/✖)												Obligations Met		Notes/Comments	
			Month															
			1	2	3	4	5	6	7	8	9	10	11	12	Yes (✓)	No (✖)		
Environmental Incident Drill – Aquatic	Principal Contractor	Once every six months for each drill																
Review of Waste Management Plan	Principal Contractor	Once every six months																
Legislative review of the CEMP	Principal Contractor	Once annually																
Review of Winterisation Plan	Principal Contractor	Once annually																
Review of Winterisation Plan Maintenance Checklist	Principal Contractor	Once annually																
Monitoring of bat mitigation	Advisory ECoW	Monthly																
Monitoring of lighting schedule	Advisory ECoW	Monthly																
Habitat monitoring schedule	Advisory ECoW	Monthly																

Chapter 3
Strategic Checkpoints

Gruggies Burn Flood Alleviation Scheme Construction Environmental Management Plan (CEMP)
March 2024

Compliance Item	Item Owner	Delivery Schedule	Completion (✓/✖)												Obligations Met		Notes/Comments	
			Month												Yes (✓)	No (✖)		
			1	2	3	4	5	6	7	8	9	10	11	12				
Breeding bird monitoring schedule	Advisory ECoW	Monthly																
Invasive Non-Native Species monitoring schedule	Advisory ECoW	Monthly																
Review and update all SPP's	Advisory ECoW	Annually																
ECoW review of the CEMP Compliance Checklist	Advisory ECoW	Quarterly																

West Dunbartonshire Council

Gruggies Burn Flood Alleviation Scheme

Construction Environmental Management Plan (CEMP)

Tier 3 - Appendices

Outline Report
Prepared by LUC March 2024



West Dunbartonshire Council

**Gruggies Burn Flood Alleviation Scheme
Construction Environmental Management Plan
(CEMP)**

Tier 3 - Appendices

Project Number
12449 Gruggies Burn

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1.	DRAFT for client comments	S. Edwards	C. Nisbet	S. Jackson-Matthews	08.03.2024
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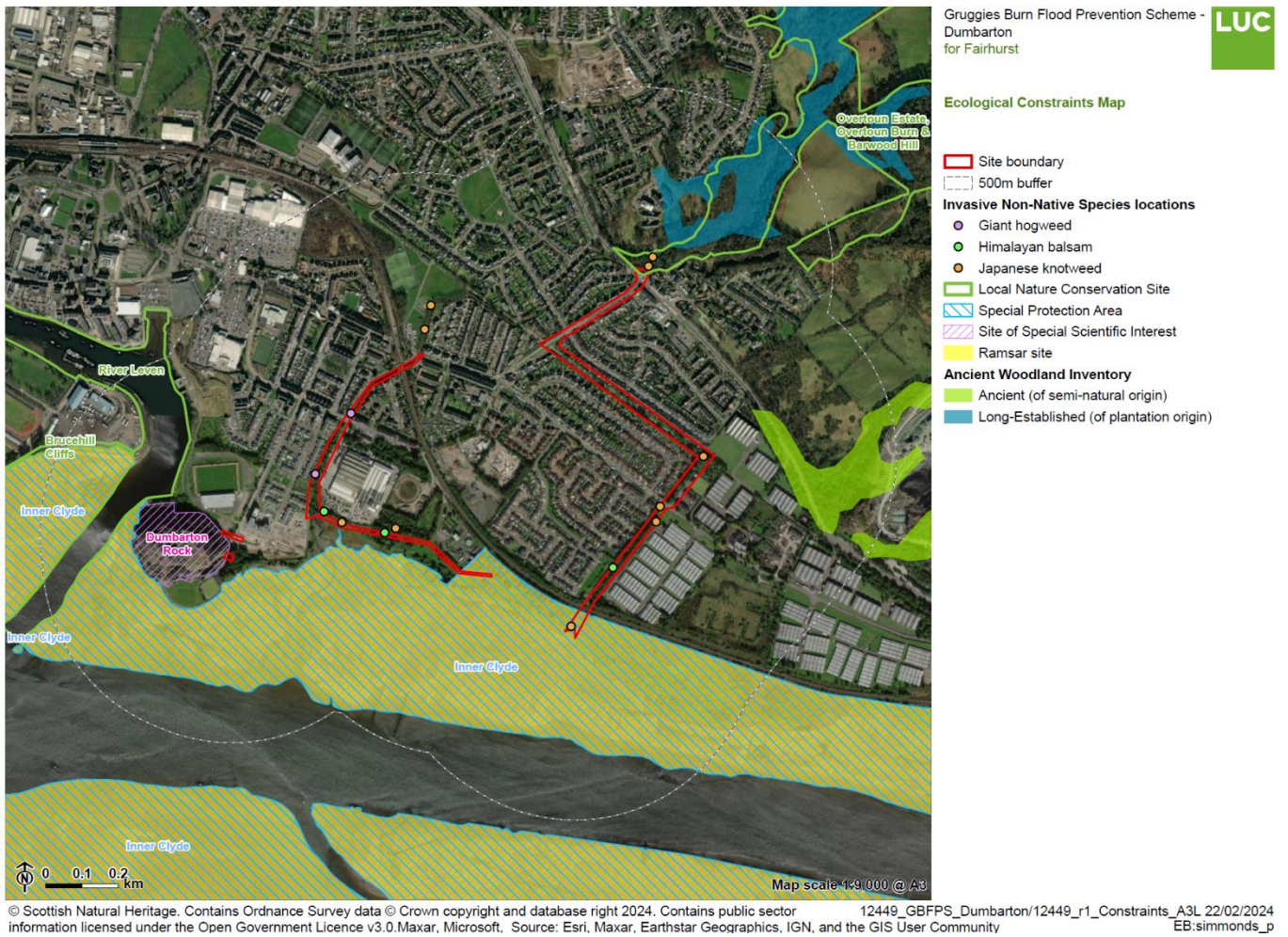
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Appendix A

Site Plan and Constraints Map

Figure A.1: Designated Sites and Ecological Constraints Map



Appendix B

Legal Register

Table B.1: Legal Register

Discipline	Legislation and Policy
General	<ul style="list-style-type: none"> ■ The Health and Safety at Work Act 1974¹ ■ The Environmental Authorisations (Scotland) Regulations 2018² ■ The Environmental Protection Act (1990)³ ■ The Construction (Design and Management) Regulations 2015 (CDM Regs)⁴ ■ National Planning Framework 4 (NPF4) (2023)⁵ ■ The Environment Act 2021⁶
Planning	<ul style="list-style-type: none"> ■ Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997⁷ ■ The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017⁸
Air Quality	<ul style="list-style-type: none"> ■ The Air Quality (Scotland) Amendment Regulations 2016⁹ ■ Part V of the Environment Act (1995)¹⁰ ■ The Ambient Air Quality Directive (2008/50/EC)¹¹ ■ The Air Quality Standards (Scotland) Regulations 2010¹²
Ecology	<ul style="list-style-type: none"> ■ The Conservation of Habitats and Species Regulations 2017¹³ ■ The Natural Environment and Rural Communities Act 2006¹⁴ ■ The Wildlife and Countryside Act (WCA) 1981 (as amended)¹⁵ ■ Nature Conservation (Scotland) Act 2004¹⁶

¹ Available: <https://www.legislation.gov.uk/ukpga/1974/37/contents> [Accessed: 08.02.24].

² Available: <https://www.legislation.gov.uk/sdsi/2018/9780111039014/contents> [Accessed: 08.02.24].

³ Available: <https://www.legislation.gov.uk/ukpga/1990/43/contents> [Accessed: 08.02.24].

⁴ Available: <https://www.legislation.gov.uk/ukksi/2015/51/contents/made> [Accessed: 08.02.2024].

⁵ Available: <https://www.gov.scot/publications/national-planning-framework-4/documents/> [Accessed: 08.02.24].

⁶ Available: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted> [Accessed: 08.02.24].

⁷ Available: <https://www.legislation.gov.uk/ukpga/1997/9/contents> [Accessed: 08.02.24].

⁸ Available: <https://www.legislation.gov.uk/ssi/2017/102/contents/made> [Accessed: 08.02.24].

⁹ Available: <https://www.legislation.gov.uk/ssi/2016/162/contents/made> [Accessed: 08.02.24].

¹⁰ Available:

[https://www.legislation.gov.uk/ukpga/1995/25/section/5#:~:text=\(1\)%5BF1An%20appropriate,of%2C%20pollution%20of%20the%20environment](https://www.legislation.gov.uk/ukpga/1995/25/section/5#:~:text=(1)%5BF1An%20appropriate,of%2C%20pollution%20of%20the%20environment) [Accessed: 08.02.24].

¹¹ Available: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050> [Accessed: 08.02.24].

¹² Available: <https://www.legislation.gov.uk/ssi/2010/204/contents/made> [Accessed: 08.02.24].

¹³ Available: <https://www.legislation.gov.uk/ukksi/2017/1012/contents/made> [Accessed: 08.02.24].

¹⁴ Available: <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed: 08.02.24].

¹⁵ Available: <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed: 08.02.24].

¹⁶ Available: <https://www.legislation.gov.uk/asp/2004/6/contents> [Accessed: 08.02.24].

Discipline	Legislation and Policy
	<ul style="list-style-type: none"> ■ Wildlife and Natural Environment (Scotland) Act 2011¹⁷ ■ Land Reform (Scotland) Act 2003¹⁸ ■ The Conservation (Natural Habitats, &c.) Regulations 1994¹⁹ ■ The Wild Mammals Protection Act 1996²⁰ ■ The Protection of Badgers Act 1992²¹ ■ The Freshwater Fish Conservation (Prohibition on Fishing for Eels) (Scotland) Regulations 2008²² ■ Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003²³ ■ Construction Industry Research and Information Centre (CIRIA) Culvert Design and Operation Guide²⁴ ■ The Environment Agency Fish Pass Manual (2010)²⁵ ■ The Bat Conservation Trust (BCT) Bats and Artificial Lighting Guidance Note (2018)²⁶ ■ National Planning Framework 4 (NPF4) 2023⁵. ■ West Dumbartonshire Local Development Plan 2 (2020)²⁷ ■ West Dumbartonshire Council Strategic Plan 2022-27²⁸ ■ The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017²⁹ ■ Scottish Biodiversity Strategy to 2045³⁰ ■ A Green Future: Our 25 year Plan to improve the Environment (2018)^{31 32}
Lighting	<ul style="list-style-type: none"> ■ Public Health etc. (Scotland) Act 2008³³
Noise and Vibration	<ul style="list-style-type: none"> ■ The Environmental Noise (Scotland) Regulations 2006³⁴

¹⁷ Available: <https://www.legislation.gov.uk/asp/2011/6/contents> [Accessed: 08.02.24].

¹⁸ Available: <https://www.legislation.gov.uk/asp/2003/2/contents> [Accessed: 08.02.24].

¹⁹ Available: <https://www.legislation.gov.uk/uksi/1994/2716/contents/made> [Accessed: 08.02.24].

²⁰ Available: <https://www.legislation.gov.uk/ukpga/1996/3/contents> [Accessed: 08.02.24].

²¹ Available: <https://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed: 08.02.24].

²² Available: <https://www.legislation.gov.uk/ssi/2008/419/contents/made> [Accessed: 08.02.24].

²³ Available: <https://www.legislation.gov.uk/asp/2003/15/contents> [Accessed: 08.02.24].

²⁴ Available: https://www.ciria.org/Training/Training_courses/Culvert_design_and_operation.aspx [Accessed: 08.02.24].

²⁵ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/298053/geho0910btbp-e-e.pdf [Accessed: 08.02.24].

²⁶ Available: <https://cdn.bats.org.uk/uploads/pdf/Resources/llp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349> [Accessed: 08.02.24].

²⁷ Available: https://wdcweb.blob.core.windows.net/wdc-public-live-media/4319308/wdc_ldp2_2020_web-26.pdf [Accessed: 08.02.24].

²⁸ Available: <https://www.west-dunbarton.gov.uk/media/4322598/strategic-plan-2022-27.pdf> [Accessed: 08.02.24].

²⁹ Available: <https://www.legislation.gov.uk/ssi/2017/102/introduction/made> [Accessed: 08.02.24].

³⁰ Available: <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/> [Accessed: 08.02.24].

³¹ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf [Accessed: 08.02.24].

³² Sets out the need for a natural capital approach and the 'Net environmental gain' principle for development incorporated into the Environment Act.

³³ Available: <https://www.legislation.gov.uk/asp/2008/5/contents> [Accessed: 08.02.24].

³⁴ Available: <https://www.legislation.gov.uk/ssi/2006/465/made> [Accessed: 08.02.24].

Discipline	Legislation and Policy
	<ul style="list-style-type: none"> ■ The Control of Noise (Codes of Practice for Construction and Open Sites) (Scotland) Order 2002³⁵ ■ The Noise Emission in the Environment by Equipment for Use Outdoors Regulations 2001³⁶ ■ National Planning Framework 4 (NPF4) (2023)⁵ ■ West Dumbartonshire Local Development Plan 2 (2020)²⁷
Soil and Ground Conditions	<ul style="list-style-type: none"> ■ The Contaminated Land (Scotland) Regulations 2000 (Amendments made in 2005)³⁷ ■ Part 2A of the Environment Protection Act 1990³ ■ The Reservoirs Act 1975³⁸ ■ The Waste (Scotland) Regulations 2011 (as amended)³⁹ ■ The Environmental Authorisations (Scotland) Regulations 2018² ■ Water Environment and Water Services (Scotland) Act 2003⁴⁰ ■ Reservoirs: owner and operator requirements 2021⁴¹.
Traffic and Transport	<ul style="list-style-type: none"> ■ National Planning Framework 4 (NPF4) (2023)⁵ ■ West Dumbartonshire Local Development Plan 2 (2020)²⁷ ■ Transport (Scotland) Act 2005 (Amendments made in 2019)⁴² ■ A Call to Action: The Regional Transport Strategy for the west of Scotland 2023-2038⁴³ ■ National Transport Strategy Third Scottish Government Delivery Plan⁴⁴
Water Resources and Flood Risk	<ul style="list-style-type: none"> ■ Water Resources (Scotland) Act 2013⁴⁵ ■ Water (Scotland) Act 1980 (as amended)⁴⁶ ■ Flood Risk Management (Scotland) Act 2009⁴⁷ ■ The Reservoirs Act 1975³⁸ ■ The Environment Act (1995)⁶ ■ The Environmental Protection Act (1990)³

³⁵ Available: <https://www.legislation.gov.uk/ssi/2002/104/contents/made> [Accessed: 08.02.24].

³⁶ Available : <https://www.legislation.gov.uk/uksi/2001/1701/contents/made> [Accessed: 08.02.24].

³⁷ Available: <https://www.legislation.gov.uk/ssi/2005/658/contents/made> [Accessed: 08.02.24].

³⁸ Available: <https://www.legislation.gov.uk/ukpga/1975/23> [Accessed: 09.02.24].

³⁹ Available: <https://www.legislation.gov.uk/sdsi/2011/9780111012185/contents> [Accessed: 09.02.24].

⁴⁰ Available: <https://www.legislation.gov.uk/asp/2003/3/contents> [Accessed: 09.02.2024].

⁴¹ Available: <https://www.gov.uk/guidance/reservoirs-owner-and-operator-requirements> [Accessed: 09.02.24].

⁴² Available: <https://www.legislation.gov.uk/asp/2019/17/contents/enacted> [Accessed: 09.02.24].

⁴³ Available: https://www.spt.co.uk/media/nr2c0jtt/spt_regional-transport-strategy-2023-2038.pdf [Accessed: 09.02.24]

⁴⁴ Available: <https://www.transport.gov.scot/media/h5omsrtk/national-transport-strategy-third-annual-delivery-plan-2023-24.pdf> [Accessed: 09.02.24].

⁴⁵ Available: <https://www.legislation.gov.uk/asp/2013/5/contents> [Accessed: 09.02.24].

⁴⁶ Available: <https://www.legislation.gov.uk/ukpga/1980/45/contents> [Accessed: 09.02.24].

⁴⁷ Available: <https://www.legislation.gov.uk/asp/2009/6/contents> [Accessed: 09.02.24]

Discipline	Legislation and Policy
	<ul style="list-style-type: none"> ■ The Anti-Pollution Works (Scotland) Regulations 2003⁴⁸ ■ The Water Supply (Water Quality) (Scotland) Regulations 2001⁴⁹ ■ The Water Environment (Oil Storage) (Scotland) Regulations 2006⁵⁰ ■ Water Environment and Water Services (Scotland) Act 2003⁴⁰ ■ The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)⁵¹ ■ The Environmental Liability (Scotland) Regulations 2009⁵² ■ The Environmental Authorisations (Scotland) Regulations 2018² ■ National Planning Framework 4 (NPF4) (2023)⁵. ■ West Dumbartonshire Local Development Plan 2 (2020)²⁷ ■ The River Basin Management Plan for Scotland 2021 - 2027⁵³ ■ The Reservoirs Act 1975³⁸ ■ Reservoirs: owner and operator requirements 2021⁴¹
Pollution Prevention	<ul style="list-style-type: none"> ■ The Anti-Pollution Works (Scotland) Regulations 2003⁴⁸ ■ The Pollution Prevention and Control (Scotland) Regulations 2000⁵⁴ ■ The Control of Substances Hazardous to Health Regulations 2002⁵⁵
Waste Management	<ul style="list-style-type: none"> ■ The Waste (Scotland) Regulations 2011 (as amended)³⁹ ■ Water Environment and Water Services (Scotland) Act 2003⁴⁰ ■ The Special Waste Regulations 1996⁵⁶ ■ The Waste (Circular Economy) (Amendment) Regulations 2020⁵⁷ ■ The National Waste Management Plan for Scotland Regulations 2007⁵⁸ ■ The Clean Growth Strategy 2018⁵⁹ ■ The Industrial Strategy 2017⁶⁰

⁴⁸ Available: <https://www.legislation.gov.uk/ssi/2003/168/contents/made> [Accessed: 09.02.24].

⁴⁹ Available: <https://www.legislation.gov.uk/ssi/2001/207/contents/made> [Accessed: 09.02.24].

⁵⁰ Available: <https://www.legislation.gov.uk/ssi/2006/133/contents/made> [Accessed: 09.02.24].

⁵¹ Available: <https://www.legislation.gov.uk/ssi/2011/209/contents/made> [Accessed: 09.02.24].

⁵² Available: <https://www.legislation.gov.uk/ssi/2009/266/contents/made> [Accessed: 09.02.24].

⁵³ Available: <https://www.sepa.org.uk/media/594086/211217-final-rbmp3-scotland.pdf> [Accessed: 09.02.24].

⁵⁴ Available: <https://www.legislation.gov.uk/ssi/2000/323/contents/made> [Accessed: 09.02.2022].

⁵⁵ Available: <https://www.legislation.gov.uk/uksi/2002/2677/regulation/7/made> [Accessed: 09.02.24].

⁵⁶ Available: <https://www.legislation.gov.uk/uksi/1996/972/contents> [Accessed: 09.02.24].

⁵⁷ Available: <https://www.legislation.gov.uk/uksi/2020/904/contents/made> [Accessed: 09.02.24].

⁵⁸ Available: <https://www.legislation.gov.uk/ssi/2007/251/made> [Accessed: 09.02.24].

⁵⁹ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf [Accessed: 09.02.24].

⁶⁰ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf [Accessed: 09.02.24].

Discipline	Legislation and Policy
	<ul style="list-style-type: none"><li data-bbox="587 427 1050 454">■ The UK Plan for Shipment of Wastes 2021⁶¹<li data-bbox="587 472 1350 499">■ The Environmental Protection (Duty of Care) (Scotland) Regulations 2014⁶²<li data-bbox="587 517 1270 544">■ The Waste Electrical and Electronic Equipment Regulations 2013⁶³

⁶¹ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1017675/UK_plan_shipments_waste.pdf [Accessed: 09.02.24].

⁶² Available: <https://www.legislation.gov.uk/ssi/2014/4/contents/made> [Accessed: 09.02.24].

⁶³ Available: <https://www.legislation.gov.uk/uksi/2013/3113/contents/made> [Accessed: 12.02.24].

Appendix C

Best Practice Register

Table C.1: Best Practice Register

	Publisher	Document
Pollution	Environment Agency (archived)	PPG1: General guide to the prevention of water pollution (2013) ⁶⁴
		PPG2: Above ground oil storage (2011) ⁶⁵
		PPG5: Works in, near or liable to affect water courses (2007) ⁶⁶
		PPG6: Working at construction and demolition sites (2012) ⁶⁷
	Construction Industry Research and Information Association (CIRIA)	C532: Control of water pollution from construction sites ⁶⁸
		C741: Environmental Good Practice on Site ⁶⁹
	NetRegs	GPP 1 Understanding your environmental responsibilities – good environmental practices (2020) ⁷⁰
		GPP 2 Above ground oil storage (2018) ⁷¹
		GPP 3 Use and design of oil separators in surface water drainage systems (2022) ⁷²
		GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer (2017) ⁷³
GPP 5: Works and maintenance in or near water (2018) ⁷⁴		

⁶⁴ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485211/LIT_1404.pdf [Accessed: 09.02.24].

⁶⁵ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485213/pmho0811bucr-e-e.pdf [Accessed: 09.02.24].

⁶⁶ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485199/pmho1107bnkg-e-e.pdf [Accessed: 09.02.24].

⁶⁷ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485215/pmho0412bwfe-e-e.pdf [Accessed: 09.02.24].

⁶⁸ Available: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C532&Category=BOOK [Accessed : 09.02.24].

⁶⁹ Available: https://www.ciria.org/CIRIA/Training/Training_courses/Environmental_good_practice_on_site.aspx [Accessed: 09.02.24].

⁷⁰ Available: <https://www.netregs.org.uk/media/1898/guidance-for-pollution-prevention-1-2022-update.pdf> [Accessed: 12.02.24].

⁷¹ Available: <https://www.netregs.org.uk/media/1890/guidance-for-pollution-prevention-2-2022-update.pdf> [Accessed: 12.02.24].

⁷² Available: <https://www.netregs.org.uk/media/1899/guidance-for-pollution-prevention-3-2022-update-v2.pdf> [Accessed: 12.02.24].

⁷³ Available: <https://www.netregs.org.uk/media/1887/guidance-for-pollution-prevention-4-2022-update.pdf> [Accessed: 12.02.24].

⁷⁴ Available: <https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf> [Accessed: 12.02.24].

	Publisher	Document
		GPP 8: Safe storage and disposal of used oils (2018) ⁷⁵
		GPP 13 Vehicle washing and cleaning (2017) ⁷⁶
		GPP 20: Dewatering underground ducts and chambers (2018) ⁷⁷
		GPP 21: Pollution incident response planning (2021) ⁷⁸
		GPP 22: Dealing with spills (2018) ⁷⁹
		GPP 26 Safe storage - drums and intermediate bulk containers (2019) ⁸⁰
Health and Safety		GPP 6: Working at construction and demolition sites ⁸¹
Traffic and Transport	Transport Scotland	Transport Assessment Guidance ⁸²
Air Quality	Institute of Air Quality Management (IAQM)	Guidance on the assessment of dust from demolition and construction (2014) ⁸³
Lighting	Institute of Lighting Professionals (ILP)	Guidance note for the reduction of obtrusive light (2021) ⁸⁴
		The brightness of illuminated advertisements (2014) ⁸⁵
		Professional Lighting Guide 04, Guidance on Undertaking Environmental Lighting Impact Assessments (2013) ⁸⁶
	The Bat Conservation Trust (BCT)	Bats and Artificial Lighting Guidance Note (2018) ²⁶
	Eurobats	Publication series no.8, Guidelines for consideration of bats in lighting projects (2018) ⁸⁷
	The Conservation Trust	A Review of the Impact of artificial light on invertebrates (2011) ⁸⁸
	International Commission on Illumination	Guide on the limitation of the effects of obtrusive light from outdoor lighting installations (2017) ⁸⁹

⁷⁵ Available: <https://www.netregs.org.uk/media/1900/guidance-for-pollution-prevention-8-2022-update.pdf> [Accessed: 12.02.24].

⁷⁶ Available: <https://www.netregs.org.uk/media/1882/guidance-for-pollution-prevention-13-2022-update-v2.pdf> [Accessed: 12.02.24].

⁷⁷ Available: <https://www.netregs.org.uk/media/1884/guidance-for-pollution-prevention-20-2022-update.pdf> [Accessed: 12.02.24].

⁷⁸ Available: <https://www.netregs.org.uk/media/1436/gpp-21-final.pdf> [Accessed: 12.02.24].

⁷⁹ Available: <https://www.netregs.org.uk/media/1643/gpp-22-dealing-with-spills.pdf> [Accessed: 12.02.24].

⁸⁰ Available: <https://www.netregs.org.uk/media/1885/guidance-for-pollution-prevention-26-2022-updated.pdf> [Accessed: 12.02.24].

⁸¹ Available: <https://www.netregs.org.uk/media/tsybv2y3/gpp6-working-on-construction-and-demolition-sites.pdf> [Accessed: 09.02.24].

⁸² Available: <https://www.transport.gov.scot/media/4589/planning-reform-dpmtag-development-management-dpmtag-ref-17-transport-assessment-guidance-final-june-2012.pdf> [Accessed: 09.02.24].

⁸³ Available: <https://iaqm.co.uk/text/guidance/construction-dust-2014.pdf> [Accessed: 09.02.24].

⁸⁴ Available: <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/> [Accessed : 09.02.24].

⁸⁵ Available: <https://docs.planning.org.uk/20210606/98/QPOWU0LYH8700/x4fvq6s6infxsg8y.pdf> [Accessed: 09.02.24].

⁸⁶ Available: <https://theilp.org.uk/publication/plq04-guidance-on-undertaking-environmental-lighting-impact-assessments/> [Accessed: 09.02.24].

⁸⁷ Available:

https://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_EUROBATS_08_ENGL_NVK_19092018.pdf [Accessed: 09.02.24].

⁸⁸ Available: https://cdn.buglife.org.uk/2019/08/A-Review-of-the-Impact-of-Artificial-Light-on-Invertebrates-docx_0.pdf [Accessed: 09.02.24].

⁸⁹ Available: <https://cie.co.at/publications/guide-limitation-effects-obtrusive-light-outdoor-lighting-installations-2nd-edition> [Accessed: 09.02.24].

	Publisher	Document
		Lighting of Roads for Motor and Pedestrian Traffic (2010) ⁹⁰
	The Royal Commission of Environmental Pollution	Artificial Light in the Environment (2009) ⁹¹
	British Standards Institution (BSI)	Standards for Road Lighting Standards BS EN 13201-1:2015 ⁹²
		Light and Lighting for outdoor workplaces BS EN 12464-2:2014 ⁹³
	Chartered Institute of Building Service Engineers (CIBSE) and the Society of Light and Lighting (SLL)	The SSL Code for Lighting (2012) ⁹⁴
	CIBSE and SLL	Lighting recommendations for the exterior environment (2016) ⁹⁵
	NetRegs	WEEE - Waste Electrical and Electronic Equipment ⁹⁶
Ecology	English Nature (archived)	Great Crested Newt Mitigation Guidelines (2001) ⁹⁷
		Reptiles: Guidelines for developers (2004) ⁹⁸
	Chartered Institute for Ecology and Environmental Management (CIEEM)	Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.1 (2018) ⁹⁹
	CIEEM	Guidelines for Preliminary Ecological Appraisal. 2nd Edition (2017) ¹⁰⁰
	BSI	Biodiversity – code of practice for planning and development, BS 42020:2013 ¹⁰¹
	BCT	Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition. Collins, J. (2016) ¹⁰²

⁹⁰ Available: <https://cie.co.at/publications/lighting-roads-motor-and-pedestrian-traffic-2nd-edition> [Accessed: 09.02.24].

⁹¹ Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228832/9780108508547.pdf [Accessed: 09.02.24].

⁹² Available: <https://www.en-standard.eu/csn-en-13201-1-4-road-lighting/> [Accessed: 09.02.24].

⁹³ Available: <https://www.en-standard.eu/bs-en-12464-2-2014-light-and-lighting-lighting-of-work-places-outdoor-work-places/> [Accessed: 09.02.24].

⁹⁴ Available: <https://www.cibse.org/knowledge-research/knowledge-portal/sll-code-for-lighting#:~:text=This%20edition%20of%20the%20SLL,publication%2C%20the%20SLL%20Lighting%20Handbook> [Accessed: 09.02.24].

⁹⁵ Available: <https://www.cibse.org/knowledge-research/knowledge-portal/lighting-guide-06-the-exterior-environment-2016> [Accessed: 09.02.24].

⁹⁶ Available: <https://www.netregs.org.uk/environmental-topics/waste/weee-waste-electrical-and-electronic-equipment/> [Accessed: 09.02.24].

⁹⁷ Available: https://mokrady.wbs.cz/literatura_ke_stazeni/great_creted_newt_mitigation_guidelines.pdf [Accessed: 09.02.24].

⁹⁸ Available: <https://www2.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/environmentandplanning/countryside/protectedspecies/reptilesguidelinesdevelopers.pdf> [Accessed: 09.02.24].

⁹⁹ Available: <https://cieem.net/wp-content/uploads/2019/02/Combined-EcIA-guidelines-2018-compressed.pdf> [Accessed: 09.02.24].

¹⁰⁰ Available: <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf> [Accessed: 09.02.24].

¹⁰¹ Available: <https://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf> [Accessed: 09.02.24].

¹⁰² Available: https://cdn.bats.org.uk/uploads/pdf/Resources/Bat_Survey_Guidelines_2016_NON_PRINTABLE.pdf?v=1542281971 [Accessed : 09.02.24].

Appendix D

Register of Contacts

Table D.1: Register of Contacts¹⁰³

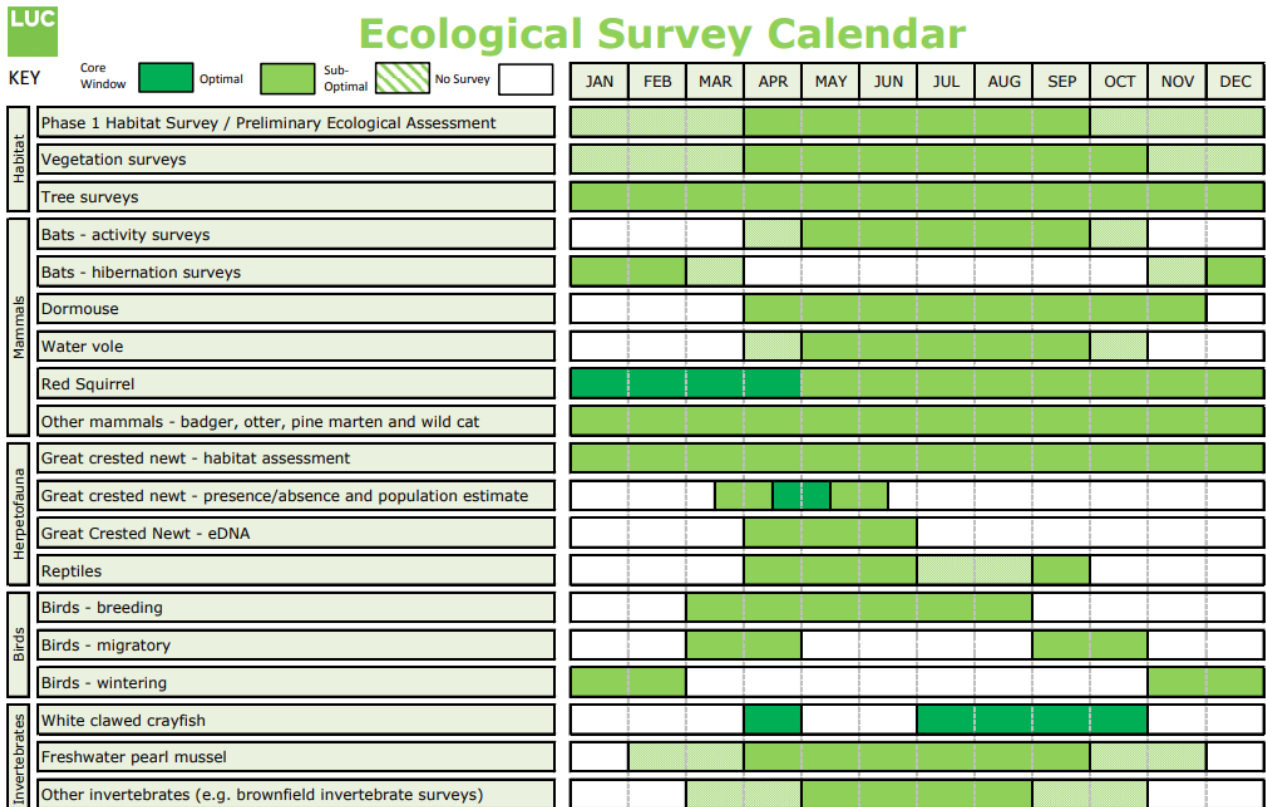
Role	Organisation	Responsible Person	Contact Details
Client Organisation	Fairhurst		
Principal Contractor			
Site Managers			
Advisory Environmental Clerk of Works (Terrestrial) for Enabling Works only			
Advisory Environmental Clerk of Works (Aquatic)			
Principal Designers			
Architects			
Landscape Architect			
Engineers			
Planning Consultant			
Cost Consultants			

¹⁰³ To be updated by the Principal Contractor as the Proposed Development evolves

Appendix E

Ecology Survey and Mitigation Calendar

Figure E.1: Ecological Survey Calendar



Appendix F
Waste Management Plan

Appendix G

Ecological Constraints and Management Register

Constraint	Details
<p>Habitats</p>	<ul style="list-style-type: none"> ■ Adherence to Pollution Prevention Plan (PPP); ■ The Advisory ECoW will conduct regular update surveys, where required, as part of the monitoring process throughout the duration of the construction phase. Survey data should not be more than 12 months old as per best practice guidelines; ■ Training and awareness to construction operatives including inductions and toolbox talks clearly setting out ecological protocol; ■ Adherence to an ecologically sensitive lighting strategies set out in the appropriate management plans that will mitigate impacts to non-statutory designated sites and habitats; ■ Supervision of works tree felling and vegetation clearance, including checks, by the Advisory ECoW throughout the construction phase; and ■ Implementation of and adherence to the Ecological Management Plans, provided in where appropriate.
<p>Protected Species</p>	<ul style="list-style-type: none"> ■ Species Protection Plans (SPPs) set out the approach to the monitoring of protected species and breeding birds during construction. ■ Pre-construction surveys will be completed in a timely manner (e.g., in the appropriate season prior to construction, particularly for mobile species, including bats, badger, breeding and wintering birds, and reptile) in order to update the baseline prior to construction and facilitate any requirement for changes to method statement and licence requirements; ■ Survey results will be captured in weekly reports prepared by the Advisory ECoW and will be made available to all relevant personnel, including Fairhurst and the Advisory ECoW; ■ Where pre-construction surveys find evidence of new protected species, micro-siting will attempt to avoid effects. If this is not possible, the Advisory ECoW will make the necessary protected species licence applications with assistance from a specialist if required; ■ SPP's will also detail proposals for longer-term monitoring where relevant. ■ The level of survey effort and the scope of the SPP's will be proportionate and cognisant of the evidence of protected species which have been identified.

Appendix H

Ecological Management Plans

Appendix I

Bat Species Protection Plan

Appendix J

Otter Species Protection Plan

Appendix K
Fish Species Protection Plan

Appendix L

Protected and Nesting Birds Species Protection Plan

Appendix M
Biosecurity Management Plan

Appendix N
**Construction Traffic
Management Plan**

Appendix O
Surface Water Management Plan

Appendix P
Pollution Prevention Plan

Appendix Q

Waste Management Plan (WMP)

Appendix R

Environmental Incident and Emergency Response Processes

Figure R.1: Environmental Incident Response Process

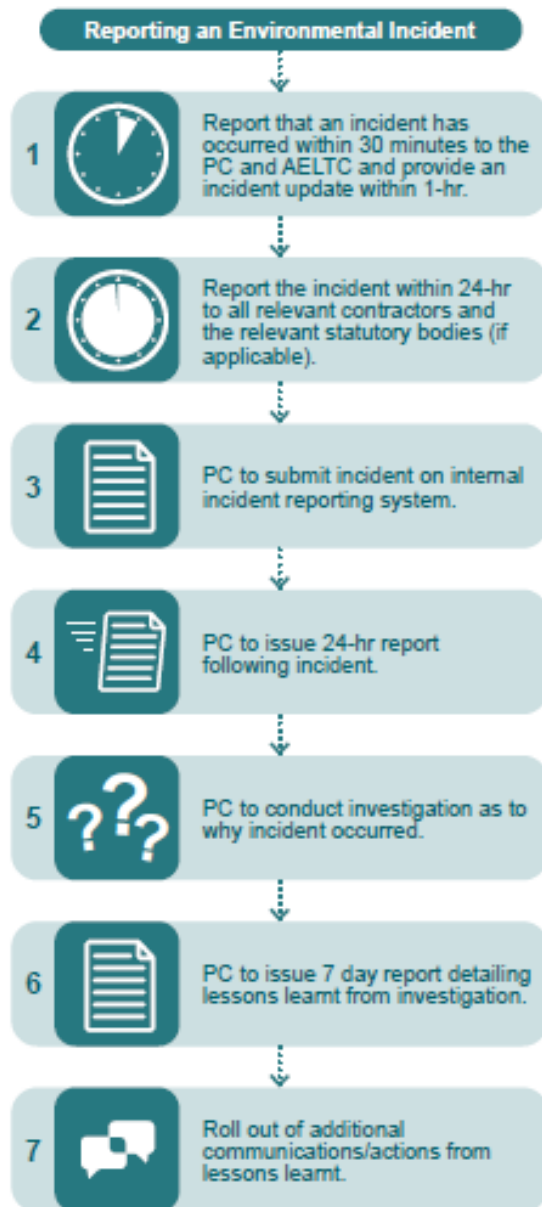


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Figure R.2: Reporting an Environmental Incident

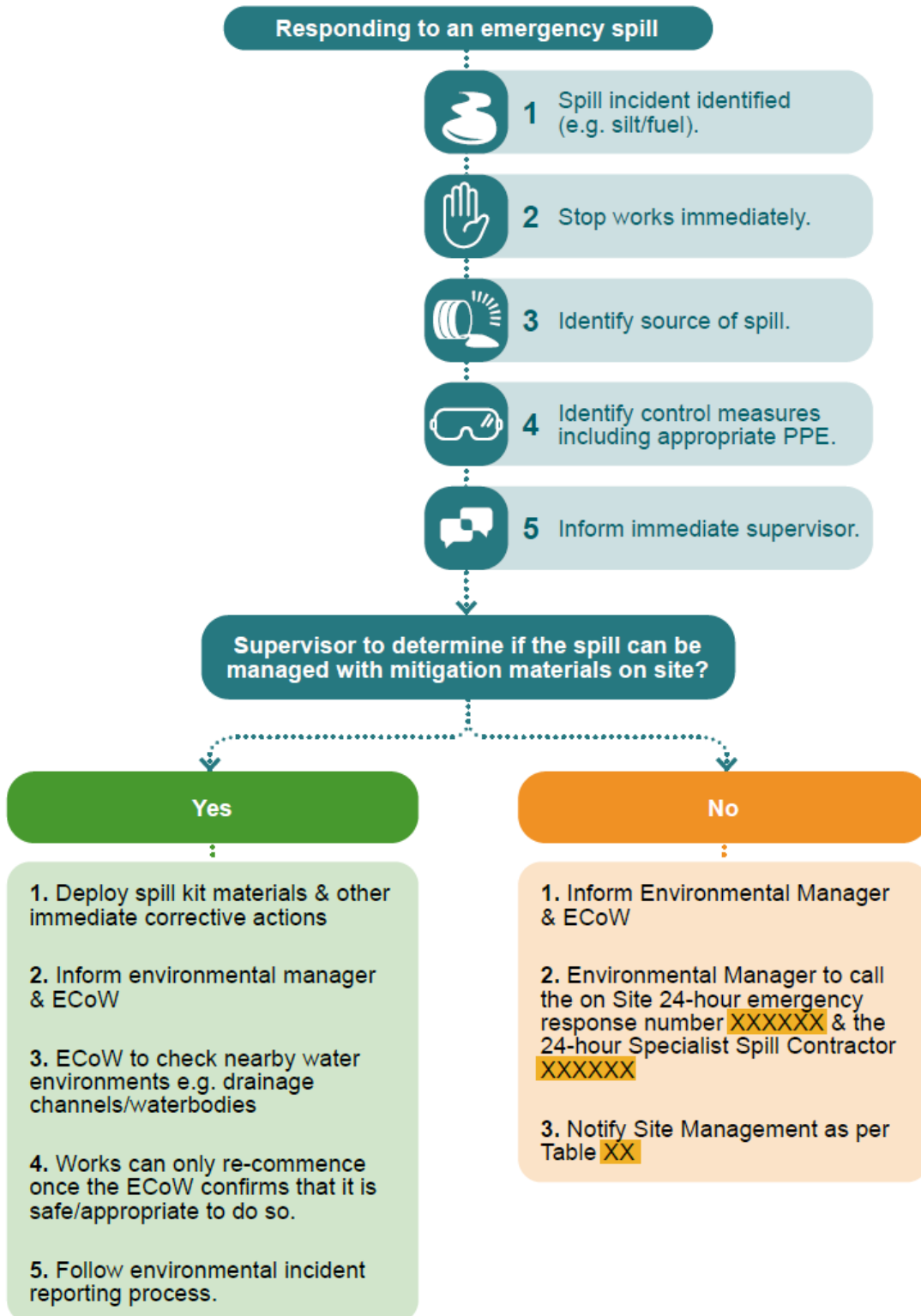


Environmental Incident Response Process



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Figure R.3: Emergency Spill Response Procedures



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Appendix S

Toolbox Talk and Precautionary Working Method Statement Register

Table S.1: Toolbox Talk and Precautionary Working Method Statement Register

Document Title	LUC or Principal Contractor to Provide?	Additional Information	Complete (Y/N)
Ecology			
Environment			

Appendix T

CEMP Document Register

Table 1.1: CEMP Document Register

Document Title	LUC or Principal Contractor to Provide?		Additional Information	Completed
	LUC	PC		(Y/N)
Pre-Construction Phase				
Construction Phase				