

The Highland Council Guidance Note

Construction Environmental Management Process for Large Scale Projects

**Nòta Stiùiridh
Chomhairle na Gàidhealtachd
Pròiseas Stiùiridh Àrainneachd
Togail airson Phròiseactan Mòra**

PLANNING and DEVELOPMENT SERVICE

Makíng Places
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Acknowledgement:

Policy developed in partnership with Scottish Environment Protection Agency, Scottish Natural Heritage and representatives from the Energy Industry.

Introduction Ro-ràdh

- 1 In the decade since the introduction of the Environmental Impact Assessment (Scotland) Regulations 1999 environmental legislation on issues such as sustainability, species protection, pollution prevention and control has grown significantly. This has required developers to introduce environmental management processes within project development procedures.
- 2 Throughout the lifecycle of any construction project, environmental management is regarded as an invaluable approach to ensure that all appropriate legislation is complied with and the environmental impact of a development is minimised. The Highland Council (THC) along with statutory consultees including Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA) has noticed however that there has been differing terminology and practices to the delivery of environmental management particularly through the construction phase of development. This has led to varying levels of success in the minimisation of environmental impact during the construction phase of a development.
- 3 Environmental management is important for all construction projects, however the detail required for a particular project is directly proportional to the perceived risks from the project. This guidance note has therefore been prepared to set out a robust Project Environmental Management Process (PEMP) for large scale (e.g. Major and Environmental Impact Assessment (EIA)) projects. It concentrates on the construction stage and commends a procedure which takes forward the prior stages of environmental management to the necessary final level of detail. In adopting such an approach there will be benefits to the developer in terms of speedier authorisations of detailed matters at the critical stage of project construction and greater confidence for statutory authorities and the general public that the means to safeguard the environment are in place. It can be used as a best practice guidance for use in association for other projects which are perhaps smaller in scale.

Aims and Objectives Amasan is Mion-amasan

- 4 This guidance is designed to assist with environmental management in large scale construction projects, meeting in full the policy requirements as set out in the Highland Council's Development Plan. The key purpose of this note is to: -
 - offer ideas for adopting an approach to construction environmental management, consistent with the requirements of regulatory authorities, to improve project delivery.
 - highlight the benefits of following a defined 'Project Environmental Management Process' (PEMP) throughout the lifecycle of the project.

- provide clarity to the individual processes involved in PEMPs with specific detail on requirements within the construction stage of a project.
- highlight key responsibilities placed on developers and statutory agencies associated with environmental management and common requirements imposed through the planning process.
- help recognise timescales involved, including pre and post construction.

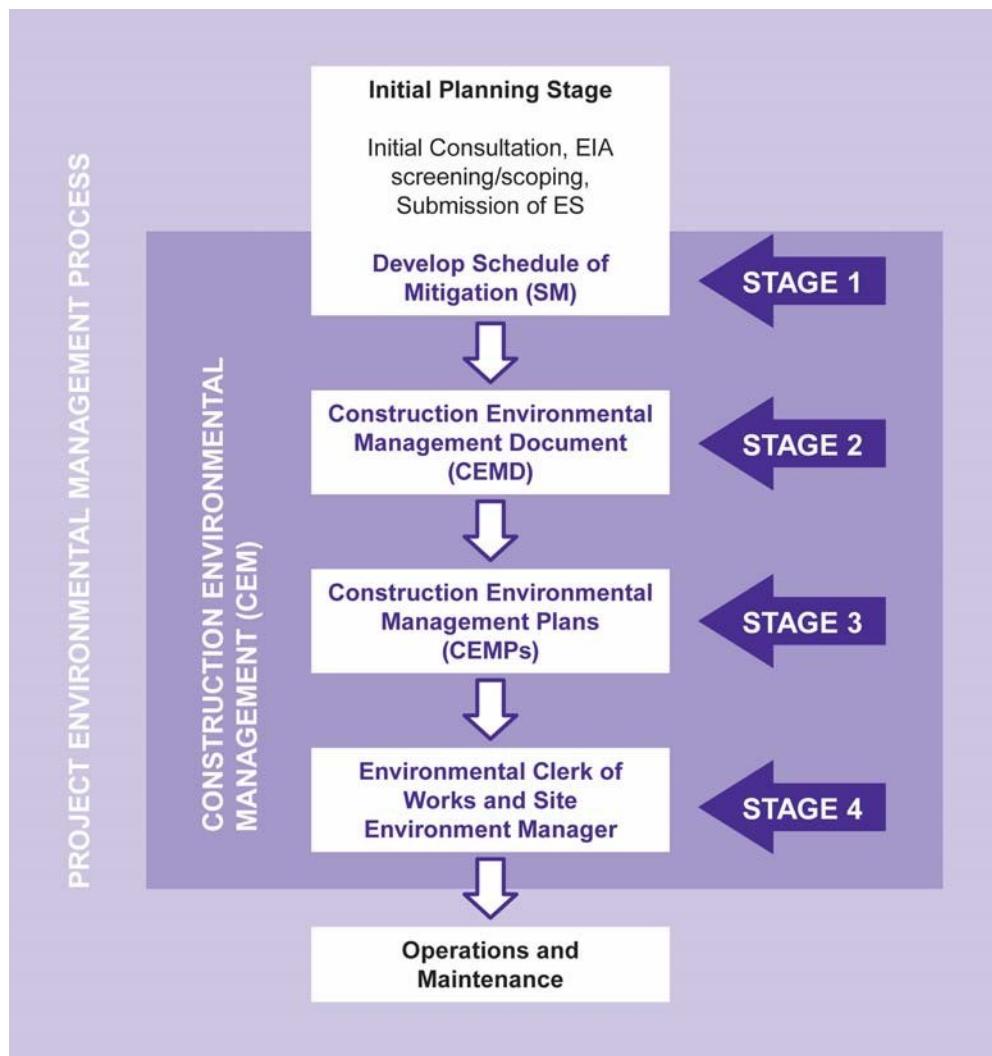


Figure 1

- 5 It is important to recognise that the processes and guidance highlighted in this document are not fixed. PEMPs will be risk based and proportional to the likely environmental concerns associated with a development site or that could emerge from the development project. This should be discussed with the Highland Council's Planning and Development Service and other relevant statutory consultees at an early stage e.g. at the EIA - Scoping Stage and/or prior to the submission of a Pre - Application Consultation (PAC) or Pre Application Discussion (PAD).
- 6 Reference throughout this document is made to the planning application process leading to the grant of planning permission. It is hoped however that this approach will equally apply to other similar applications such as Section 36 and 37 applications

under the Electricity Act 1989 that are approved by Scottish Ministers and thereafter deemed to have been granted planning permission.

7 Annexed to this guidance is a glossary of the terminology and abbreviations that have been used. A number of example documents are also provided to explain some of the more detailed points in illustrative form. Further technical advice is also available from web sites of The Highland Council, Scottish Environment Protection Agency and Scottish Natural Heritage.

Overview of 'Project Environmental Management Process' (PEMP) Tar-sealladh de 'Phròiseas Stiùiridh Àrainneachd Pròiseict'

8 The protection and enhancement of the environment as part of any development project will involve a process that runs through from the initial design stage, planning application process, construction, commissioning through to the operational stage, including management schemes that are put in place alongside the completed project (e.g. habitat management plans). Figure 1 illustrates the Generic Project Environmental Management Process. A variety of mechanisms (see more details of these in Appendices) are likely to be used to ensure this process is successfully devised, approved and implemented. A critical stage within this extended process and the one that this guidance is principally concerned with, is 'Construction Environmental Management' (CEM) including the reinstatement of temporary works associated with construction.

Construction Environmental Management (CEM) Stiùireadh Àrainneachd Togail

9 Construction Environmental Management (CEM) can help to ensure that all mitigation to protect the environment agreed at the time of the grant of planning permission of a particular project is implemented during construction. However it is important to recognise that the project environmental management process for many projects will have begun at the scoping stage for EIA development or preapplication discussion stage for any other development.

10 CEM starts with the preparation of a Draft Schedule of Mitigation (SM), first set out in the project's supporting Environmental Statement (ES) and continues through to the construction phase including the completion of the Construction Environmental Management Document (CEMD) and the Construction Environmental Management Plans (CEMP), if required. In addition these stages can include obtaining various consents and licences e.g. European Protected Species (EPS), Water Environment (Controlled Activities) (Scotland) Regulations (CAR) as well as appointment of an Environmental Clerk Of Works (ECoW) / Site Environment Manager to manage the impacts and requirements of the CEMD and contract, through construction. Within the attached Appendices Figure 2 shows how these stages fit within the overall Construction Environmental Management process.

Schedule of Mitigation (SM) Clàr Maothachaidh

- 11 For projects requiring an Environmental Statement (ES) or supporting documents in the case of non-EIA developments, a Schedule of Mitigation (SM) (Stage 1 in the flow diagram in Fig 1 and 2), should be produced as part of this process. This brings together all the identified mitigation measures to avoid or minimise the

BUSINESS STAGES	ENVIRONMENTAL MANAGEMENT PROCESS	REGULATORY STAGES
		PLANNING
Planning consent	<p>Identification of all likely environmental effects of a development proposal, including during construction, and associated mitigation, either detailed or "outline"</p> <p>State in Scoping response that ES to include Draft Schedule of Mitigation</p> <p>ES/Environmental Appraisal/Planning Permission etc. including Draft Schedule of Mitigation</p> <p>Conditions attached to relevant consent requiring the submission of CEMD including Schedule of Mitigation and CEMPs</p>	Input/sign off ES planning
Main contractor award	<p>Draft up the Construction Environmental Management Document (CEMD) including the draft Schedule of Mitigation and then input into tender documentation for main contractor</p> <p>Complete 1st set up of CEMPs</p> <p>Apply for consents and licences ie EPS, CAR</p> <p>Set environmental criteria and requirements in the contract with the main contractor</p> <p>Appoint client and/or main contractor ECoW</p> <p>Following input from main contractor finalise CEMD including final mitigation register to be signed off by statutory bodies/planning authority</p> <p>Review and if necessary revise consents and licences i.e. EPS, CAR, with input from main contractors</p> <p>Review 2nd of CEMPs with main contractor input and final EPD and Schedule of Mitigation including updates from consents and licences</p>	<p>Discharging of conditions</p> <p>Input/sign off consents and licences</p> <p>Input/sign off CEMD</p> <p>Input/sign off consents and licences</p>
Start on site	<p>Client ECoW to audit and record the works and main contractor monthly against CEMD, Schedule of Mitigation and CEMPs</p> <p>Reinstatement and restoration of temporary works in accordance with CEMD and CEMPs</p>	
Handover to operations	Monitoring Operations to be carried out in line with CEMD, CEMPs and/or O&M Manual	

anticipated environmental effects of the development. It should set out in broad terms how mitigation agreed at the planning stage and during preparation for construction, can be appropriately managed and implemented during construction.

12 If the development would have a likely significant effect on a Natura (European) site it is essential for mitigation to be agreed with the planning authority after consultation with Scottish Natural Heritage (SNH). The planning authority requires a sufficient level of detail regarding mitigation before the application is determined so they may be able to conclude that there would be no adverse effects on site integrity in the appropriate assessment. Similarly if European Protected Species are likely to be present on the construction site the necessary survey information and proposed mitigation work must be submitted by the developer prior to any planning application being determined so that any licence requirements can be considered by the planning authority prior to planning permission being granted.

Any mitigation works should then be included in the updated Schedule of Mitigation.

Construction Environmental Management Document (CEMD) Sgrìobhainn Stiùiridh Àrainneachd Togail

13 One of the key management tools to implement the agreed Schedule of Mitigation, and to incorporate other requirements from consents and licences, is the Construction Environmental Management Document (CEMD) (Stage 2 in the flow diagram). This document sets out the various guidance and policy requirements, both from the Schedule of Mitigation in relation to the project and with reference and incorporation of the client's own corporate environmental management systems / sustainability requirements. This document may be required as part of a condition of planning permission, including its approval by the Planning Authority prior to the start of construction following consultation with relevant agencies if significant environmental interests are raised. The detailed needs for completion of the CEMD will be advised by the planning authority. The CEMD may contain the following –

- The approach the client has taken with regard to the environmental assessment thus far on the project.
- The updated Schedule of Mitigation (SM) including mitigation proposed in support of the planning application, other relevant authorisations under different regulatory regimes, and agreed mitigation (e.g. as required by agencies) and relevant planning conditions.
- Specific mitigation plans and associated documents, (to include good/best practice) e.g. species protection plans, habitat management plans, special area plans, landscape management plans, surface water management plans, site waste management plans and schedule of watercourse crossings, access arrangements and general environmental management plans
- First level Construction and Environmental Management Plans – (CEMPs)
- Roles and responsibilities for the environment including the ECoW/Site Environment Manager.
- A change control process for proposed amendments/alterations to the agreed mitigations and CEMD.

- Statement of responsibility to ‘stop the job / activity’ if in potential breach of a mitigation or legislation occurs.
- Methods of monitoring, auditing, reporting and communication of environmental management on site and with the client, planning authority and other relevant parties.
- Good practice and relevant legislation register.

14 Procurement processes deployed by a developer can have a critical impact on the implementation of specific environmental mitigations and requirements. It is recommended that the CEMD (draft and finalised) should be used as a contractual adherence within the Client and main Contractor’s formal contract.

Construction and Environmental Management Plans (CEMPs)

Planaichean Stiùridh Togail is Àrainneachd

15 One of the main delivery components of the CEMD for effective environmental mitigation is the detailed production of Construction and Environmental Management Plans (CEMPs) prior to specific elements of construction work commencing. The production and submission of CEMPs (Stage 3 in the flow diagram) for the prior approval of the planning authority may be required as a condition of planning consent.

16 These will relate to particular individual specific site / aspects of the construction work (e.g. for a wind farm development CEMPs will normally be prepared for each access track, each wind turbine tower base, each borrow pit, each watercourse crossing, etc) and will apply the principles of the agreed mitigation as set out in the CEMD to show how the mitigation is implemented effectively down to the specific site / aspect level.

17 The first draft of any CEMPs should be prepared in conjunction with the draft CEMD prior to contract award of the main contractors, and can be included, if required, as an Appendix to the CEMD. It will then be reviewed and revised, in conjunction with the client and the main contractor in collaboration if necessary with the appropriate authorities prior to construction.

18 The CEMPs will include a site / aspect level map, where required, with clear instructions for site workers (ie showing buffered off areas, and specific mitigation for that site/aspect (see example). CEMPs are different to the more traditional Construction Method Statements (CMS), as the latter are more engineering in format and primarily are concerned with the contractor’s methodology rather than site constraints and consultee, planning authority or developer requirements. The CEMD may incorporate CMS and the information from the CMS can feed into the CEMPs.

Environmental Clerk of Works (ECoW)

Clàrc Obraichean Àrainneachd

19 A further key construction environmental management tool is for the appointment, if required, of an appropriately qualified Environmental Clerk of Works (ECoW) / Site Environment Manager (Stage 4 in the flow diagram). This appointment is expected

to be led by the client to ensure effective control. Contractors may share with this appointment or appointing their own person to enable a specific role or task to be undertaken as set out within a site specific CEMP. As should be mentioned in the CEMD there will be clear roles and responsibilities for the ECoW, an example of which can be seen in the Annex 1.

Consents and Licences **Aontaidhean is Ceadan**

20 The CEMD and CEMP do not negate the need for various licences and consents, eg CAR, EPS, if required. The requirements from the obtained licences and consents should be included within the final CEMPs.

Construction **Togail**

21 Prior to start of construction, the Planning Authority in consultation with other statutory bodies as necessary will need to discharge pre construction planning conditions, see Annex 2 - example of conditions relating to construction environmental management.

22 The final CEMPs may not require the prior approval of the planning authority, but will need to be signed off by the Environmental Clerk of Works (ECoW) / Site Environment Manager, prior to construction and revised during construction, depending on changing circumstances / information. Some CEMPs may be required to be forwarded to the Planning Authority for monitoring purposes, during construction.

23 The ECoW / Site Environment Manager will then implement the requirements of the developer's CEMD and CEMPs including monitoring, auditing etc. during construction, prior to hand over to operations.

Post Construction **Às Dèidh Togail**

24 Project environmental management may continue after the commissioning stage with any long term habitat management plans and monitoring arrangements.

Conclusion Co-dhùnadh

25 The procedure and stages outlined above will ensure that necessary mitigation measures identified and agreed at early stages of a project for the safeguarding of the environment will be effectively taken through to implementation with the efficient involvement of all parties at the relevant stages.

Glossary of Terms **Beag-fhaclair**

Terminology

Acronym

Definition / Meaning

Client		Lead developer, commissioner of all studies, planning application, works, etc.
Conditions of (Planning) Consent	CC	Conditions set by the Planning Authority or Scottish Government with which the development must comply.
Contractor		Party undertaking construction activity on behalf of the project Client
Construction Environmental Management	CEM	Process through which a developer sets out the environmental controls over the construction of a development
Construction Environmental Management Document	CEMD	Document setting out (in full) the approach to be taken by the development to safeguard all environmental interests during construction, particularly as highlighted within the ES, planning permission, CC and SM.
Construction Environmental Management Plan	CEMP	Site specific plans setting out detailed aspects of construction works, having full regard of localised environmental features, and derived from the CEMD.
Construction Method Statement	CMS	Subject specific statements on construction methods to be adopted by the contractor.
Controlled Activities Regulations	CAR	Regulations (The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended) (CAR)) which protect Scotland's water environment
Development Plan	DP	Comprises plans adopted by the Council addressing Highland wide land use policy or local development policies
Environmental Clerk of Works	ECoW	Person on site with responsibility for ensuring the development complies with environmental legislation and planning conditions and secures full implementation of the SM.
Environmental Impact Assessment	EIA	Assessment of anticipated impact of a development on the Environment and mitigation to avoid or minimise these as set out by the Regulations.

Environmental Statement	ES	A document derived from the EIA, submission assessing the environmental impact of a proposed development as set out in a planning (or other) application, with proposed mitigation.
European Protected Species	EPS	Species protected by the Conservation (Natural Habitats, &c.) Regulations 1994 as amended and listed in Schedules 2 (animals) and 4 (plants) of these regulations. Examples are bats, otters and great crested newts.
Habitat Management Plans	HMP	Site specific plans highlighting existing habitat together with agreed proposals / management to enhance particular habitat features.
Planning Permission	PP	Consent issued by the Local Planning Authority or deemed planning permission issued under a consent by Scottish Ministers. Usually subject to conditions.
Pre Application Consultation	PAC	Pre application consultation with communities required in advance (12 weeks) of a major planning application.
Pre Application Discussions	PAD	Formalised discussion during the preparation of a planning application between planning authorities, developers, agencies and other authorities who will be consulted on a subsequent planning application.
Project Environmental Management Process	PEMP	The whole process beginning with initial project feasibility studies and ending with operational management/post operational decommissioning to ensure that the environment is safeguarded from any negative effects of the development.

Schedule of Mitigation (Mitigation Register)	SM	<p>Output from the EIA setting out in the ES a clear statement of commitments, which will be deployed by the development to protect the environment. Mitigation measures have three main categories: avoidance (involves making the maximum effort to have development avoid areas or features that are especially environmentally sensitive or coming up with alternative plans for development), minimization (used only when avoidance is not possible and involves the maximum extent possible for reducing the effects of development), and compensation (used only where mitigation is unable to reduce adverse effects to an acceptable level and involves the creation of alternative ecological areas to an equivalent value).</p>
Scoping		Decision by relevant authority of the likely significant impacts resulting from a proposed development and what the applicant should address within the supporting EIA.
Screening		Formal decision of relevant authority to require (or not) a supporting EIA with the planning application.
Site Environmental day to day environmental issues in additional to	Designated person with responsibility for site's Manager	Manager

SOURCES OF INFORMATION FROM STATUTORY BODIES

Advice for planners and developers on the following themes of relevance to construction -

The Highland Council - www.highland.gov.uk

- Planning and Development including – development plans, archaeology, biodiversity; coastal development and heritage
- TEC Services Construction including - Noise; Roads; Contaminated Land, Flooding and Waste.

Scottish Environment Protection Agency - www.sepa.org.uk

- Protection of people, property and infrastructure from flood risk
- Promotion of sustainable waste management
- Protection of the water environment (both surface water and ground water)
- Risks to the environment or human health arising from development on or near radioactively contaminated land and on or near a designated Part IIA Special Site
- Protection of the marine environment
- Good air quality
- Noise and odour in relation to processes regulated by SEPA (protection of residential amenity, sensitive receptors)
- Potential consentability under SEPA's regulatory regimes

Scottish Natural Heritage - www.snh.gov.uk/planning-and-development

- Birds, protected areas; protected animals; biodiversity; landscape; greenspace and access; soils, rocks and minerals.
- The protected animals page provides further information on - great crested newt; bats; otter; badger; red squirrel; water vole
- Information for types of development are provided for - Housing; renewables; minerals; river engineering.
- Good practice guidance during windfarm construction –
<http://www.snh.gov.uk/planning-and-development/renewable-energy/onshorewind/good-practice-during-windfarm-const/>

Historic Scotland - <http://www.historic-scotland.gov.uk/>

- Listed Buildings
- Scheduled Monuments
- Repair and Maintenance

Annex 1 Typical Roles and Responsibilities of an Environmental Clerk of Works (ECoW) on a Major Construction Project

Leas-phàipear 1 Dreuchdan is Dleastanasan Àbhaisteach Chlàrc Obraichean Àrainneachd air Pròiseact Togail Mòr

Qualifications

The ECoW should be qualified to degree level in a suitable Environmental discipline (e.g. environmental science, environmental management/assessment, Ecology etc...). The exact discipline will differ depending on the type of project and the key environmental impacts/risks.

Experience

The ECoW should have a proven track record and experience of acting as an ECoW on projects of similar type and scale. The experience should be broad, across the suite of environmental issues likely to be present on site, ie able to manage waste management, pollution prevention, EMS, ecology, archaeology etc. Other environmental specialists may be used ie an ecologist in addition to the EcoW, the EcoW will manage these specialists on site on behalf of the Client/Contractor, but specialists should not be used instead of a fully experienced and qualified EcoW. Where there are specific environmental concerns/issues in relation to the project, the ECoW should be appointed with due consideration given to their specific experience in these disciplines.

Roles, Responsibilities and Communications

The Client should be responsible for appointing an Environmental Clerk of Works (ECOW) to work with the Principal Contractor throughout the construction phase to ensure environmental impacts are kept to a minimum.

The ECOW duties will include:

General

- Liaise with the client Project Manager and client Environmental Manager in preparing documentation for all work activities where there is a risk of environmental damage;
- Liaising with the Client Project Manager and client Environmental Manager in reviewing and updating the CMS for all works activities where environmental control measures and CEMPs have been altered, and
- Liaising with the Client Environmental Manager where third party agreement is required in relation to the CMS, CEMPs or the Change Control System.
- Being familiar with the contents, environmental commitments and requirements contained within the Reference Documents and Regulatory Requirements section;
- Being familiar with the baseline data gathered during the Environmental Appraisal and pre-construction surveys e.g. EPS surveys, watercourse crossings, CAR licencing etc.;
- Listing all environmental commitments and requirements to the Client Environmental Manager; and

- Liaising with the Client Environmental Manager in assigning duties and responsibilities in relation to this handbook to individual members of the team.

Licensing

- With the Client Environmental Manager, ensure that all relevant works have (and are being carried out in accordance with) the required permits, licenses, certificates, planning permissions, etc; and
- Bringing to the attention of the project team any timing and legal constraints that may be imposed on the carrying out of certain tasks.

Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase.

Site environmental inspections

- Carrying out regular documented inspections/audits of the site to ensure that all work is being carried out in accordance with the CEMPs and CMS.

Specialist environmental contractors

- Liaising with the Client Environmental Manager to Identify requirements for specialist environmental contractors before commencement of the project;
- Ensuring that specialist environmental contractors are competent and have sufficient expertise to co-ordinate and manage environmental issues, and managing their activities on site.

Environmental Induction Training and Environmental Tool Box Talks

- Liaise with the Contractors Environmental Representative/Manager to ensure that Environmental Induction Training is carried out for all site personnel under the Contractor. The induction training may be carried out in conjunction with Safety Induction Training.

Environmental Incidents/Spillages

- Ensuring the Client Environmental Project Manager is notified of all incidents where there has been a breach of agreed environmental management procedures; where there has been a spillage of a potentially environmentally harmful substance; where there has been an unauthorised discharge to ground, water or air and where there has been damage to a protected habitat, etc.;
- Be ready to assist in implementing at all times an Emergency Response Plan;
- Be responsible for notifying the relevant statutory authority of environmental incidents; and

- For carrying out an investigation and producing a report regarding environmental incidents and non-conformances. The report of the incident and details of remedial/corrective action actions taken should be made available to the Client Environmental and Project Managers.

Annex 2 Typical Planning Conditions

Leas-phàipear 2 Cumhaidhean Dealbhaidh Àbhaisteach

1. The Development shall be constructed and operated in accordance with–

- (a) the Application; and
- (b) the Environmental Statement (as revised by the Addendum and Supplementary Information to the Environmental Statement, and
- (c) in accordance with the terms of the conditions set out hereunder.

Reason: - Statutory provision.

2. Development shall not commence until a Construction Environmental Management Document is submitted to and approved in writing by the Planning Authority in consultation with SNH, SEPA and other Council Services. Construction of the development shall thereafter proceed in accordance with the approved Document, unless otherwise agreed in writing by the Planning Authority. The Document will be expected to address in full: -

- The updated Schedule of Mitigation (SM) including all mitigation proposed in support of the planning application, other relevant agreed mitigation (e.g. as required by agencies) and relevant planning conditions.
- Processes to control / action changes from the agreed Schedule of Mitigation.
- Specific mitigation plans and associated documents as relevant, e.g. species, surface water, waste, watercourse crossings, private water supplies, access arrangements, peat management, pollution prevention, borrow pits, noise, dust, etc. (to include good / best practice construction method statements)
- Frameworks for the production of detailed plans for on-site components of the construction work – Construction and Environmental Management Plans.
- Special Study Area Plans as relevant for larger works.
- Appointment of an appropriately qualified Environmental Clerk of Works / Site Environment Manager with roles and responsibilities.
- Methods of monitoring, auditing, reporting and communication of environmental management on site and with the client, planning authority and other relevant parties.
- Statement of responsibility to 'stop the job / activity' if in potential breach of a mitigation or legislation occurs.

Reason: To protect the environment (specify particular elements).

Annex 3 Sample Construction Environmental Management Document

Leas-phàipear 3 Sgrìobhainn Sampail Stiùireadh Àrainneachd Togail

Likely Contents:

PROJECT OVERVIEW

AIMS OF ENVIRONMENTAL POLICY DOCUMENT APPROACH

TO ENVIRONMENTAL MANAGEMENT

LEGISLATIVE REQUIREMENTS REFERENCE

DOCUMENTS

ENVIRONMENTAL APPROVALS AND CONSENTS

CHANGE CONTROL PROCESS

CHECKLIST FOR MICRO-SITING WORKS

GENERAL ENVIRONMENTAL MANAGEMENT PLANS (GEMPS)

SPECIES PROTECTION PLANS (SSPS)

ENVIRONMENTAL MANAGEMENT PLANS (CEMPS)

ENVIRONMENTAL TRAINING

EMERGENCY RESPONSE PROCEDURES

KEY CONTACTS

APPENDICES

Eg *Project Timetable*

Mitigation Register

Site Specific GIS Plans

Designs Plans (ie Forestry and Landscape)

Traffic Management Plan

Waste Management Plan

Noise Management Plan

Community Liaison Plan

Watercourse Schedule

Restoration Plans

Private Water Supplies information

Borrow Pit information

Access Management/Rights of Way plan

Annex 4 Sample Construction Environmental Management Plan

Leas-phàipear 4 Plana Sampaill Stiùireadh Àrainneachd Togail

		Project Name Construction Environmental Management Plan - CEMP number or access track, tower, turbine etc		EMP 21		APPENDIX B	
Environmental Risks	Mitigation Register reference	Mitigation Measure /Requirement		Action During Construction		Responsibility	Comments
Proposed Engineering Works		1. Removal and reinstatement of boundary features 2. Construction and removal of temporary access track 3. Construction and removal of temporary Bailey bridge 4. Reinstatement works	Toolbox Talks.	1. Possible PWS distribution pipework identified. 2. Where PWSs are identified ensure they are protected from damage, or ensure temporary mitigation is in place prior to start of works. 3. Individual A3 PWS sheets will be prepared where a PWS has been identified.		THE CONTRACTOR	
Hydrology	H16	It will be the responsibility of the contractor to ensure that all private water supplies (PWS) are located prior to works commencing on site, and protected during operations.		1. A dusk and/or dawn bat survey must be undertaken two months prior to construction between May to September where tree works are required from grid ref XX and XX at XXX. 2. Should the presence of a tree root be confirmed, no works would proceed on the tree until a development licence is obtained. 3. Arrange for replanting of appropriate native tree species where required.		Client	Remove if no tree works required.
EG2 and ES5		1. Road improvement works would avoid semi-mature and mature trees wherever practicable, with priority given to trees with high risk features that may support bat roosts such as cavities, dead branches, splits or loose bark. 2. Where trees of significant ecological value are removed, provision would be made for replacement planting within the local area on completion of construction works in that area.		1. During site visit assess the need for a pre-construction squirrel survey. 2. Where required undertake pre-construction survey. 3. If an active drey is found within the construction corridor the route would be micro-routed to avoid disturbance to the tree. 4. Alternatively it may be possible to proceed by working to an agreed method statement, to minimise the risk of reckless disturbance, in consultation with SNH.		Client	Remove if no tree works required.
Ecology and Nature Conservation	EG3	A checking survey for active dreys would be conducted by a suitably qualified ecologist within wooded sections of the construction corridor prior to the start of works.		Between November and May arrange a pre-construction salmonid survey by a suitably qualified ecologist to assess the watercrossings and only proceed where there is a low risk of fish spawning and emergence of juvenile fish.		THE CONTRACTOR	1. If salmonids present replace / add mitigations and actions as appropriate 2. If no salmonids present remove from CEMP.
	EG5	Timing constraints would be put in place to ensure that no watercourse crossings would be carried out when migratory salmonids are likely to be spawning in the said watercourse or in the period between spawning and the emergence of juvenile fish.					

Environmental Risks	Mitigation Register reference	Mitigation Measure /Requirement	Action During Construction	Responsibility	Comments
	EG6 and ES9	<p>A checking survey for otter holt sites would be conducted at the temporary bridge over the XX River at XX (watercrossing 4) by a suitably qualified ecologist prior to the start of works.</p> <p>The proposed temporary bridge over the River XXXI is via a small island, which has tree cover, but a central wayleave has been cleared under an existing overhead cable route. The wayleave, which extends across both banks negates the requirement for the felling of bankside trees. Otter spraint has been recorded upstream of the island</p>	<p>1. Arrange a pre-construction otter survey at watercrossing 04.</p> <p>2. Amend route to avoid otter hols or apply for licence, as appropriate.</p>	Client	<p>1. If otter present replace / add mitigations and actions as appropriate</p> <p>2. If no otter present remove from CEMP.</p>
Landscape Character	ES7, LU6, LU7, LU8 and L3	<p>1. Precautions relating to the exclusion of stock would be combined with due care and attention by the client or subcontract staff to prevent the straying of livestock.</p> <p>2. There would be provision of temporary fences in appropriate locations for the protection of the health and safety of the public and animals and to avoid trespass.</p> <p>3. Where boundary features such as fences, walls and hedges have to be removed to allow construction or ongoing maintenance these would be reinstated with appropriate materials or replanted with appropriate species in each case.</p> <p>In areas considered to be of moderate or high archaeological potential, the route would be resurveyed once the route has been marked out and cleared of forestry and undergrowth. Topsoil would then be stripped under archaeological supervision and further work undertaken as appropriate. This programme would allow for a degree of flexibility in the actual route and would allow features that may have been hidden by gorse and similar vegetation to be identified. Any further work would allow for sites to be excavated and recorded appropriately and hence mitigate any impacts.</p>	<p>1. Identify / locations where boundary features are to be removed or where temporary fencing is required.</p> <p>2. Take photographs of each location prior to start of works to identify the requirements for reinstatement.</p> <p>3. Contractor must reinstate boundary features to the same or better standard.</p> <p>4. Contractor to follow GEMP 11 at all times during planning and construction.</p>	THE CONTRACTOR	
Cultural heritage	CH3		Where soil stripping is to be undertaken an archaeology watching brief must be present.		<p>The client - however the Contractor's work programme must allow time for an archaeological survey following the top soil.</p>
Access and recreation	AR3	The contractor would be required to provide any necessary temporary diversions of the public rights of way, east of Dundonnell House.	A3 Access sheets are attached to this EMP detailing required mitigations.	THE CONTRACTOR	
Construction traffic and transport	CT-1	Local communities would be given advance notice of any major leads to be transported through these areas.	Contractor to inform local community where major loads (E.g. arrival of bailey bridge) are to be brought to the area as and when required	THE CONTRACTOR	
Construction noise	CN1	<p>1. Where construction approaches residential property, the contractor would liaise with residents, to explain the nature and duration of the planned construction works, and the measures employed to reduce any noise impact.</p> <p>2. If necessary, construction work would be limited to the less-sensitive periods of the day, e.g. after 0900 and before 1800, in order to minimise the noise impact.</p>	<p>1. Contractor to liaise with the local community in Dundonnell to keep them informed of the location and type of works.</p> <p>2. Where required ensure works kept to agreed working hours.</p>	THE CONTRACTOR	

Environmental Risks	Mitigation Register reference	Mitigation Measure /Requirement	Action During Construction	Responsibility	Comments
SEPA - Misc	SEPA6	<p>Each watercourse shall be assessed by a Hydrologist prior to being crossed. The assessment should provide information to inform as a minimum:</p> <ul style="list-style-type: none"> - Re-establish appropriate riparian vegetation to reduce the risk of erosion. - Ensuring appropriate provision to deal with anticipated flow in watercourse 	Mitigations and actions to be amended upon completion of hydrological survey.	THE CONTRACTOR	<ol style="list-style-type: none"> 1. Add detail where required from hydrological survey. 2. Remove from CEMP if no issues.

Sign on:- I have understood the environmental risks and controls, and the briefing given to me for this location/site.

Company	Position	Name	Signature	Date
Client	Environmental Manager			
Contractor	Environmental Representative			

