North East 400 kV Overhead Line
Reinforcement Works
Environmental Impact Assessment

Scoping Report

September 2018
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<th>Description</th>
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<td>33 kV</td>
<td>33 kilovolt (33,000 volt) operating voltage electrical circuit</td>
</tr>
<tr>
<td>132 kV</td>
<td>132 kilovolt (132,000 volt) operating voltage electrical circuit</td>
</tr>
<tr>
<td>275 kV</td>
<td>275 kilovolt (275,000 volt) operating voltage electrical circuit</td>
</tr>
<tr>
<td>400 kV</td>
<td>400 kilovolt (400,000 volt) operating voltage electrical circuit</td>
</tr>
<tr>
<td>AAAC</td>
<td>All Aluminium Alloy Conductor</td>
</tr>
<tr>
<td>ACSR</td>
<td>Aluminium Conductor Steel Reinforced</td>
</tr>
<tr>
<td>ATV</td>
<td>All-terrain Vehicle</td>
</tr>
<tr>
<td>AWI</td>
<td>Ancient Woodland Inventory</td>
</tr>
<tr>
<td>BGL</td>
<td>Below Ground Level</td>
</tr>
<tr>
<td>BGS</td>
<td>British Geological Survey</td>
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<tr>
<td>CEMP</td>
<td>Construction Environmental Management Plan</td>
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<tr>
<td>CHMP</td>
<td>Cultural Heritage Management Plan</td>
</tr>
<tr>
<td>CIEEM</td>
<td>Chartered Institute of Ecological and Environmental Management</td>
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<tr>
<td>CIRIA</td>
<td>Construction Industry Research and Information Association</td>
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<tr>
<td>CTMP</td>
<td>Construction Traffic Management Plan</td>
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<tr>
<td>CVIA</td>
<td>Cumulative Visual Impact Assessment</td>
</tr>
<tr>
<td>DTI</td>
<td>Department of Trade and Industry</td>
</tr>
<tr>
<td>DWPA</td>
<td>Drinking Water Protection Area</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>ECIA</td>
<td>Ecological Impact Assessment</td>
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<tr>
<td>ECoW</td>
<td>Ecological Clerk of Works</td>
</tr>
<tr>
<td>ECU</td>
<td>Energy Consents Unit</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment. A formal process codified by EU directive 2011/92/EU, and subsequently amended by Directive 2014/52/EU. The national regulations are set out in The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. The EIA process is set out in regulation 4(1) of the regulations and includes the preparation of an EIA Report by the developer to systematically identify, predict, assess and report on the likely significant environmental impacts of a proposed project or development.</td>
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<tr>
<td>EMF</td>
<td>Electromagnetic Field</td>
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<tr>
<td>ENA</td>
<td>Energy Networks Association</td>
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<tr>
<td>EPZ</td>
<td>Equipotential Zone</td>
</tr>
<tr>
<td>ES</td>
<td>Environmental Statement</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FRA</td>
<td>Flood Risk Assessment</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>GDL</td>
<td>Garden and Designed Landscape, as listed on the Inventory of Gardens and Designed Landscapes held by Historic Environment Scotland</td>
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<tr>
<td>GEMP</td>
<td>General Environmental Management Plan</td>
</tr>
<tr>
<td>GIS</td>
<td>Gas Insulated Switchgear</td>
</tr>
<tr>
<td>GVLIA3</td>
<td>Guidelines for Landscape and Visual Impact Assessment 3rd Edition</td>
</tr>
<tr>
<td>GW</td>
<td>Gigawatt</td>
</tr>
<tr>
<td>GWDTE</td>
<td>Groundwater Dependent Terrestrial Ecosystems</td>
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<tr>
<td>HES</td>
<td>Historic Environment Scotland</td>
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<tr>
<td>HESPS</td>
<td>Historic Environment Scotland Policy Statement</td>
</tr>
<tr>
<td>HSI</td>
<td>Habitat Suitability Index</td>
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<tr>
<td>HVDC</td>
<td>High Voltage Direct Current</td>
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<tr>
<td>ICNRIIP</td>
<td>International Commission on Non-Ionising Radiation Protection</td>
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<tr>
<td>IEMA</td>
<td>Institute of Environmental Management and Assessment</td>
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<tr>
<td>JNCC</td>
<td>Joint Nature Conservation Committee</td>
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<tr>
<td>LCT</td>
<td>Landscape Character Type</td>
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<tr>
<td>LF</td>
<td>Low Frequency</td>
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<tr>
<td>LVIA</td>
<td>Landscape and Visual Impact Assessment</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt</td>
</tr>
<tr>
<td>NETS SQSS</td>
<td>National Electricity Transmission System Security and Quality of Supply Standards</td>
</tr>
<tr>
<td>NVZ</td>
<td>Nitrate Vulnerable Zone</td>
</tr>
<tr>
<td>OHL</td>
<td>Overhead Line. An electric line installed above ground, usually supported by lattice steel towers or wooden poles.</td>
</tr>
<tr>
<td>OPGW</td>
<td>Optical Ground Wire</td>
</tr>
<tr>
<td>OS</td>
<td>Ordnance Survey</td>
</tr>
<tr>
<td>PAN</td>
<td>Planning Advice Note</td>
</tr>
<tr>
<td>Planning Application</td>
<td>An application for planning permission under the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006</td>
</tr>
<tr>
<td>Proposed Development</td>
<td>The Proposed Development is taken to be the description of: the location of the development; the physical characteristics of the OHL, proposed access arrangements and any associated construction activities and land-use requirements.</td>
</tr>
<tr>
<td>PWS</td>
<td>Private Water Supply</td>
</tr>
<tr>
<td>Section 37</td>
<td>An application for development consent under Section 37 of the Electricity Act 1989</td>
</tr>
<tr>
<td>SBN</td>
<td>Scoping Briefing Note</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>----------</td>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td>SEPA</td>
<td>Scottish Environment Protection Agency</td>
</tr>
<tr>
<td>SHE Transmission</td>
<td>Scottish Hydro Electric Transmission plc – part of Scottish and Southern Electricity Networks, and the transmission licence holder for the transmission of electricity in the north of Scotland</td>
</tr>
<tr>
<td>SLA</td>
<td>Special Landscape Area</td>
</tr>
<tr>
<td>SNAWI</td>
<td>Semi-natural Ancient Woodland Inventory</td>
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<tr>
<td>SNH</td>
<td>Scottish Natural Heritage</td>
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<tr>
<td>SPP</td>
<td>Scottish Planning Policy</td>
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<tr>
<td>SPPs</td>
<td>Species Protection Plans</td>
</tr>
<tr>
<td>SSSI</td>
<td>Site of Special Scientific Interest – designated by SNH under the Nature Conservation (Scotland) Act 2004</td>
</tr>
<tr>
<td>SuDS</td>
<td>Sustainable Drainage System</td>
</tr>
<tr>
<td>UHF</td>
<td>Ultra-high Frequency</td>
</tr>
<tr>
<td>VHF</td>
<td>Very High Frequency</td>
</tr>
<tr>
<td>ZTV</td>
<td>Zone of Theoretical Visibility – the computer generated theoretical visibility of an object in the landscape</td>
</tr>
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EXECUTIVE SUMMARY

Scottish Hydro Electric Transmission plc (SHE Transmission) is a wholly owned subsidiary of the SSE plc group of companies. SHE Transmission, hereafter referred to as ‘the Applicant’ holds a licence under the Electricity Act 1989 (the Electricity Act) for the transmission of electricity in the north of Scotland, and has a statutory duty under Section 9 of the Electricity Act to develop and maintain an efficient, coordinated and economical electrical transmission system in its licence area.

The Applicant is proposing to submit an application for consent to reinforce the existing 275 kV overhead line (OHL) connecting substations at Blackhillock, Kintore and Peterhead to enable operation at 400 kV. This would involve re-insulating and re-conductoring the OHL, replacement of the existing earthwire with an equivalent Optical Ground Wire (OPGW), and reconfiguration of the OHL on the outskirts of Keith.

An Environmental Impact Assessment (EIA), supported by appropriate surveys and specialist assessments, will be carried out to inform an EIA Report. This will form part of an application to Scottish Ministers under section 37 of the Electricity Act 1989 for permission to construct the project.

This Scoping Report is provided to support a formal request under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 by the Applicant for a Scoping Opinion to determine the information to be provided within the EIA Report.

The Applicant invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

Responses to this Scoping Report should be directed to the Energy Consents Unit (ECU) of the Scottish Government to ensure all responses are collated and included within the Scoping Opinion. Responses should be directed to:

Email: representations@gov.scot

OR

Energy Consents Unit
Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow, G2 8LU

When submitting a response to the Scoping Report, the Applicant would be grateful if you could also send a copy of your response to the address below:

Email to: heather.gray@sse.com

OR

For the Attention of Heather Gray
Scottish and Southern Electricity Networks
200 Ashgrove Road West
Aberdeen
AB16 5NY

Copies of this document can be found online at: www.ssen-transmission.co.uk/projects/north-east-400kv/
1. INTRODUCTION

1.1 The Proposals

1.1.1 Scottish Hydro Electric Transmission plc (SHE Transmission) is a wholly owned subsidiary of the SSE plc group of companies. SHE Transmission, hereafter referred to as ‘the Applicant’, owns and maintains the electricity transmission network across the north of Scotland, and holds a license under the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

1.1.2 The Applicant is proposing to submit an application for consent to reinforce an existing 275 kV overhead line (OHL), connecting substations at Blackhilllock, Kintore and Peterhead to enable operation at 400 kV. This would involve replacing the existing conductors, along with their associated fittings and insulators, and reconfiguration of the existing line on the outskirts of Keith.

1.1.3 The project is referred to as the North East 400 kV Reinforcement Works (and hereafter as ‘the Proposed Development’). The location of the Proposed Development is shown on Figure 1.1.

1.1.4 The requirement for the Proposed Development has been necessitated by a planned significant increase in electricity generation capabilities in the north-east of Scotland. Connections for the 900 MW Moray East Offshore Windfarm, 750 MW Moray West Offshore Windfarm and the 1.2 GW North Connect HVDC Interconnector are required, as well as increased network capacity to accommodate an increase in generation capability at Peterhead Power Station from 400 MW to 1.18 GW. These projects are currently scheduled to be completed by 2024, with the first connection due in 2021.

1.1.5 As a result of this increasing generation, in conjunction with the recent increases in smaller, background generation such as onshore windfarms, the Applicant is progressing a number of transmission reinforcement schemes in the north-east of Scotland to provide the necessary transmission capacity in accordance with the National Electricity Transmission System Security and Quality of Supply Standards (NETS SQSS). The Proposed Development is technically and economically justified to meet the future requirements of SHE Transmission and the wider UK transmission system.

1.2 The Regulations

1.2.1 An application for consent for the Proposed Development will be made to the Scottish Ministers under section 37 of the Electricity Act 1989, along with a request for a direction that planning permission be deemed to be granted under section 57 (2) of the Town and Country Planning (Scotland) Act 1997, as amended.

1.2.2 The Proposed Development is classified as Schedule 1 under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, hereafter referred to as the ‘EIA Regulations’ by virtue of it being classed as:

“1. The carrying out of development to provide any of the following –

(3) construction of overhead electrical power lines with a voltage of 220 kilovolts or more and a length of more than 15 kilometres.

2. Any change to or extension (including a change in the manner or period of operation) of development listed in paragraph 1 of this schedule where such a change or extension in itself meets the thresholds, if any, or description of development set out in this schedule.”

1.2.3 As such, the Proposed Development will be subject to Environmental Impact Assessment (EIA).
1.3 Scoping Briefing Note

1.3.1 A Scoping Briefing Note (SBN) was prepared to initiate discussion on the proposed scope of the EIA Report with stakeholders comprising the Energy Consents Unit (ECU), Aberdeenshire Council, Moray Council, Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and Historic Environment Scotland (HES). Following issue of the SBN, the Applicant invited feedback from stakeholders and organised a meeting with stakeholders on the 16th August 2018 to discuss, ahead of preparation of this Scoping Report.

1.3.2 The feedback obtained from stakeholders, either via email in response to the SBN or at the meeting, is summarised in Table 1.1.

Table 1.1: Summary of Consultee Responses

<table>
<thead>
<tr>
<th>Statutory Consultee</th>
<th>Response Summary</th>
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<tbody>
<tr>
<td>Energy Consents Unit</td>
<td>Provided comments on certain aspects of the proposed scope, requesting that SNH’s comments in response to the SBN are addressed and that commentary be provided for justification of scoping out topics.</td>
</tr>
<tr>
<td>Aberdeenshire Council</td>
<td>Generally comfortable with approach presented in SBN. Points of clarification raised in relation to the SBN are addressed in this Scoping Report.</td>
</tr>
<tr>
<td>Moray Council</td>
<td>Generally comfortable with approach presented in SBN. Points of clarification raised in relation to the SBN are addressed in this Scoping Report.</td>
</tr>
<tr>
<td>Scottish Environmental Protection Agency</td>
<td>Clarification requested in relation to the identification and assessment of private water supplies within the vicinity of the Proposed Development.</td>
</tr>
<tr>
<td>Scottish Natural Heritage</td>
<td>SNH confirmed that the proposed scope in the SBN appears to be appropriate, as does the list of issues to be scoped out and the rationale behind them. SNH also noted that where existing access routes are not present, or where existing routes require a significant upgrade, Extended Phase 1 and protected species surveys should cover the routes, including temporary access. A note of clarification was also requested with respect to the desk-based ornithological study which is addressed in this Scoping Report.</td>
</tr>
<tr>
<td>Historic Environment Scotland</td>
<td>HES confirmed that the proposed scope of the EIA as set out in the SBN is appropriate in terms of historic environment interests.</td>
</tr>
</tbody>
</table>

1.4 Purpose of the EIA Scoping Report

1.4.1 The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the key impacts likely to give rise to significant adverse effects. As well as identifying aspects to be considered in the EIA, this document also identifies those aspects that are not considered necessary to assess further.

1.4.2 In accordance with the “EIA Regulations”, this EIA Scoping Report contains:
- a plan sufficient to identify the Site which is the subject of the Proposed Development;
- a brief description of the nature and purpose of the Proposed Development and its possible effects on the environment; and
- such other information or representations as the person making the request may wish to provide or make.

1.4.3 SHE Transmission invites consultees to comment on the following:
- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?
1.5 Scoping Report Methodology

1.5.1 This EIA Scoping Report presents the findings of an initial appraisal of the likely environmental effects of the Proposed Development on the receiving environment, informed by the findings of the previous Environmental Statement (ES) (see Section 1.6), and an initial appraisal of potential impacts as a result of the proposed works. It provides a basic overview of the baseline conditions as understood at the time of writing and the likely potential effects as a result of the Proposed Development. Where site survey and further assessment are deemed necessary, the methodologies are outlined in that section. Environmental topics included for initial assessment in this EIA Scoping Report are:
   - Landscape Character and Visual Amenity;
   - Ecology, Biodiversity and Nature Conservation;
   - Ornithology;
   - Cultural Heritage;
   - Traffic and Transport;
   - Hydrology, Hydrogeology, Geology and Soils;
   - Population and Human Health;
   - Forestry;
   - Land Use;
   - Recreation and Tourism;
   - Socio-economics;
   - Accidents and Disasters; and
   - Air Quality and Climate.

1.6 Previous Environmental Assessment

1.6.1 Previous environmental assessment of the Proposed Development has been undertaken and documented within the East Coast 400 kV Reinforcement Project ES (April, 2013) and the Rothienorman to Peterhead Overhead Line 400 kV Reinforcement Project ES (May 2013).

1.6.2 The East Coast 400 kV ES considered the length of OHL further south beyond Kintore substation to Blairingone (at the licence border with Scottish Power Transmission) and the proposed construction and alteration of substations, which are not part of the current proposals. Neither ES considered the re-conductoring of the OHL, and assumed retention of the current conductors.

1.6.3 The EIAs covered many of the environmental topics discussed within this Scoping Report and identified the anticipated significance of environmental impacts, both beneficial and adverse. A number of localised, significant adverse impacts were identified in relation to the substation developments; however, the OHL works were assessed as having limited potential environmental effects, with the majority considered to be minor and non-significant.

1.6.4 The only identified potential long term significant effect related to radio and television interference at nearby residences from the increased electric field strength of the OHL. The assessment concluded that this would be limited to reception of medium and long wave (AM) radio signals; however reception of digital TV, digital radio and FM radio would be unaffected. Mitigation was proposed in the form of the provision of digital radios for affected residences, where necessary.
2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Introduction

2.1.1 The Proposed Development consists of reinforcement of approximately 106 km of the existing 275 kV OHL between Blackhillock, Peterhead and Kintore substations to enable operation at 400 kV, as illustrated on Figure 1.1.

2.1.2 Specifically, the works would involve:
- replacement of insulators and fittings on the existing steel lattice towers;
- replacement of all the conductors (wires) and replacement of the existing earthwire with an equivalent Optical Ground Wire (OPGW) (i.e. the wire on top of the tower);
- reconfiguration of the existing OHL on the outskirts of Keith, including a reduction in the number of towers;
- connection of the existing double circuit OHL into the Blackhillock 400 kV Gas Insulated Switchgear (GIS) substation; and
- connection of the existing double circuit OHL into a proposed new temporary 400 kV substation extension at Kintore substation, which would be removed upon completion of the consented 400 kV Kintore substation extension.

2.1.3 Associated works required to facilitate the construction and operation of the Proposed Development would include vegetation clearance, tower access route upgrades, temporary site compounds, and temporary measures to protect road, rail and water crossings. Deemed consent would be sought for these under the Town and Country Planning (Scotland) Act 1997, as amended.

2.1.4 The Proposed Development would link five substations as follows:
- the existing Blackhillock substation, south of Keith in Moray;
- the proposed Rothienorman 400 / 275 / 132 / 33 kV substation, Aberdeenshire. Consent for this substation was granted by Aberdeenshire Council on 6th February 2012 (Application Number APP/2011/2038 and APP/2017/3238). Due to a change in the site layout, a revised application for this substation is currently being progressed in parallel to the Proposed Development, and will be the subject of a separate planning application made by the Applicant under the Town and Country Planning (Scotland) Act 1997, as amended; and
- the proposed New Deer 400 / 275 kV substation, Aberdeenshire. This substation is being developed by Moray Offshore Windfarm (East) Ltd and has been granted consent by Aberdeenshire Council under Town and Country Planning permissions APP/2014/2430, APP/2015/0478 and APP/2018/0624. Tie-in of the existing double circuit 275 kV OHL into this new substation is currently being progressed in parallel to the Proposed Development, and will be the subject of a separate application by the Applicant for consent under section 37 of the Electricity Act 1989, as amended;
- the proposed Peterhead 400 kV substation, Aberdeenshire. Consent for this substation was granted by Aberdeenshire Council on 13th June 2014 (Application Number APP/2014/1437). This is due for completion by 2022. Tie-in of the existing double circuit 275 kV OHL into this substation will be progressed in parallel to the Proposed Development, and will be the subject of a separate application by the Applicant for consent under section 37 of the Electricity Act 1989, as amended; and
- a proposed new temporary 400 kV substation extension at Kintore substation. This substation extension is being progressed in parallel to the Proposed Development and will be the subject of a separate planning application made by the Applicant under the Town and Country Planning (Scotland) Act 1997, as amended.

2.1.5 The proposed substations do not fall within the scope of this EIA, however cumulative effects will be considered as part of the EIA, where appropriate.

2.1.6 Appendix 2.1 contains photographs of the OHL tie in locations at existing and proposed substation sites for context.
2.2 Construction Programme

2.2.1 It is anticipated that the OHL reinforcement works would be conducted over three outage seasons (April to October) with works commencing in April 2020 (subject to approvals being granted), which would allow completion by October 2022.

2.2.2 The detailed construction programme is subject to change as the design progresses and is subject to statutory consents and wayleaves being granted.

2.3 Construction Environmental Management

2.3.1 A contractual management requirement of the Principal Contractor would be the development and implementation of a Construction Environmental Management Plan (CEMP). This document would detail how the Principal Contractor would manage the site in accordance with all commitments and mitigation detailed in the EIA Report, statutory consents and authorisations, and industry best practise and guidance.

2.3.2 The CEMP would also reference General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs), which have been developed by the Applicant and are included as an appendix to this report for reference (see Appendix 2.2). The implementation of the CEMP would be managed on site by a suitably qualified and experienced Environmental Clerk of Works (ECoW), with support from other environmental professionals as required.

2.4 Enabling Works

Site Compounds

2.4.1 It is currently anticipated that construction compounds would be required for each section of work, the location of which would be confirmed by the Principal Contractor.

2.4.2 In addition, it is likely that a ‘rolling’ arrangement for the provision of small sub yards, offices and welfare facilities would be required at convenient positions throughout the route, each for a short period of approximately 4 to 6 weeks duration to supply the work within each local section. The sub yards would be fed from the bulk delivery site. The use of smaller multiple yard sites would minimise the quantity and lengths of journeys required to supply to and recover from each work area.

Access Arrangements

2.4.3 Access would be required to each tower for delivery of fittings, fixtures, working platforms and plant. Access requirements to each tower would depend on the tower type and the operations required at the tower.

2.4.4 Existing tower access routes utilised by SHE Transmission operation and maintenance teams would be used whenever possible. Many individual tower sites would be accessible from public roads and farm tracks and in such circumstances normal site vehicles such as 4x4 Hiab wagons, transit vans, 4x4 pickup trucks, quad bikes and tractors would be utilised.

2.4.5 Where there are no public roads or farm tracks, should ground conditions permit, it may be possible in dry weather for the vehicle types indicated above to gain access to certain sites without causing ground surface damage. If damage is likely it may be necessary to undertake access upgrades to allow the use of the above vehicles, or alternatively to use specialist low ground bearing pressure vehicles.

2.4.6 Access upgrades and protection can be undertaken in a number of ways. The preferred method for each site would be selected based on the suitability to withstand expected construction loads, cause least environmental damage and be installed / recovered at the lowest cost.
2.4.7 The range of construction access options likely to be considered include:

- installation of temporary metal or plastic roadway panels (e.g. Trakway);
- installation of temporary stone roads on a geo-textile fabric base;
- patching of existing accesses (for light use only); or
- use of specialised low ground bearing pressure vehicles.

2.5 Re-conductoring Works

2.5.1 The existing twin Zebra 400 mm$^2$ Aluminium Conductor Steel Reinforced (ACSR) phase conductors (28.62 mm diameter) would be replaced with Totara 425 mm$^2$ All Aluminium Alloy Conductor (AAAC) conductors (28.42 mm diameter).

2.5.2 The existing 175 mm$^2$ ACSR Lynx earthwire (19.53 mm diameter) would be replaced with Keziah Equivalent Optical Ground Wire (OPGW) (20.58 mm diameter).

2.5.3 Re-conductoring is generally undertaken in sections of between 5 to 15 towers in length, with each section taking approximately one to two weeks to complete depending on the number of towers within the section. Re-conductoring teams usually consist of 20 to 25 suitably trained and qualified personnel.

2.5.4 For each section to be re-conducted, the towers at either end would be set up for positioning of winching and tensioner equipment, conductor drums and reels. This machinery requires to be set up on an Equipotential Zone (EPZ) to protect the workers from potential electric shock. The EPZ would typically consist of metal trackway panels covering an area of approximately 12 m by 8 m. Some towers may require two EPZ areas to be set up, depending on location.

2.5.5 All towers within the pull section would be accessed to prepare the tower site and to prepare the conductors for pulling. This would involve setting up demarcation around the tower base and working areas using warning cones, ropes or temporary barriers. The tower peaks and arms would be accessed to remove existing fittings and dampers, and to transfer the conductors into a running out block attached to the tower steelwork.

2.5.6 The towers at either end of the pull would be set up with a winch at one end and a tensioner machine at the other. These machines would be positioned on the EPZ and anchored. The conductor drum with the new conductor would be set up at the tensioner end tower, while empty drum reels would be set up at the winch end to spool the conductor being replaced. The towers at both ends would be accessed and rigged to the equipment on the ground. Photograph 2.1 illustrates a typical EPZ with equipment set up for re-conductoring.
2.5.7 Once works are set up, the pulling out of the new conductors would be carried out. This is done by pulling in the old conductor which in turn is connected to the new conductor. As the old conductor is pulled through and reeled up from one end of the section, the new conductor is pulled through behind it. During the pull, operatives with radio communication would be positioned at key locations within the section to observe the operations and monitor progress. The operation would continue until the new conductor has been pulled through all towers in the section with the old conductor now spooled. The winch and tensioner machines would be used throughout this operation to control the sag until the new conductor is connected into the conductor fittings at either end of the section, along with a tail formed down each end tower in preparation for jointing the conductors.

2.6 Replacement of Insulators and Fittings

2.6.1 Insulators and fittings would be replaced along each pull section at the same time as the restringing works are undertaken, in order to minimise the number of visits required to each tower location.

2.6.2 The exact method of working would be determined by the appointed contractor. Typically, once the conductor has been transferred to a running out block attached to the tower steelwork, the old insulator string would be disconnected from the tower crossarm and lowered to the ground. The new insulator string would be lifted up, and attached, to the crossarm.

2.6.3 This work is typically carried out by a team of four operatives plus a chargehand and a plant operator using a transit type van and / or low ground bearing pressure vehicles, where necessary. A small winch may also be used to lift and lower the insulator strings. Pull lifts would likely be used to lift and support the conductors whilst the insulators are replaced.

2.6.4 For suspension towers, the operatives would typically access the conductor beneath the tower crossarms by using lightweight aluminium hook ladders. The ladders may be hoisted up the tower manually or by using a small winch.

2.6.5 For tension towers, a tower working platform would be required to enable the operatives to access the conductors and insulators. This would be lifted into place utilising the winches set up for conductor restringing, and securely attached beneath the appropriate tower crossarm and stabilised with temporary ground anchors.
2.6.6 It is likely that one suspension insulator changing team would be able to change the insulators on two towers on one circuit (i.e. six suspension insulator sets) per day. Tension insulators would take longer to replace (approximately three insulator sets per day), due to the requirement to install a working platform.

2.6.7 **Photograph 2.2** shows a team of operatives replacing insulators on an existing overhead line tower.

![Photograph 2.2: Replacing insulators on an existing overhead line tower](image)

2.7 **Conductor Clipping In**

2.7.1 On completion of re-conductoring and insulator replacement, the conductors would be clamped into new suspension clamps at each suspension tower, commonly referred to as ‘clipping in’.

2.7.2 Typically teams of four operatives, with one van and one all-terrain vehicle (ATV), would carry out clipping in operations.

2.8 **Scaffolds and Crossings**

2.8.1 In some instances, where there are no hazards in the spans beneath the conductor section, it may be acceptable to use safety slings as a precaution to restrain the conductors in the event of a failure on the primary equipment. However, where there are major road, rail or built up area crossings under the section of the route
being uprated, it is likely that a form of mechanical protection, such as scaffolding or other approved method, would need to be supplied and erected to provide protection to members of the public and property in case of equipment failure. **Photograph 2.3** shows an example temporary construction scaffold at a road crossing.

**Photograph 2.3: Illustrative Image of Temporary Construction Scaffolds**

### 2.9 Traffic Management

2.9.1 The appointed contractor would determine where access is required, and for which items of plant, and prepare Traffic Management Plans in consultation with the Applicant and the local authorities. Traffic Management Plans would describe all mitigation and signage measures that are proposed on the public road accesses based on access maps and subsequent site assessments.

2.9.2 Temporary traffic lights may be required at some locations (e.g. for delivery of scaffold materials). For minor tracks and other crossings, the installation of appropriate warning signs and provision of staff with stop / go boards to control any passing traffic may be adequate.

### 2.10 Mobile Security

2.10.1 Mobile security would be required to patrol at all non-working times where materials, plant and equipment are positioned outside the main store facilities to deter theft and vandalism.

2.10.2 Static or mobile security may also need to be considered at the main stores site and at any satellite storage sites. Security staff would typically be hired as required from an approved specialist subcontractor.

### 2.11 Reconfiguration of OHL at Keith

#### Overview

2.11.1 The Applicant proposes to divert a section of the OHL between Blackhillock – Keith and connect into the existing Keith – Kintore 275 kV overhead line as shown in **Figure 1.1**.

2.11.2 The proposed work would involve constructing and stringing four new towers in the proposed new section of line and dismantling seven existing towers in the section of lines to be decommissioned.
2.11.3 The proposed tower design for the line diversion connection is the L8(c) steel lattice tower, which is similar to those currently supporting the line.

2.11.4 Connection of the proposed new section of line would require the dismantling of approximately 1,200 m of existing OHL and the construction of approximately 850 m of new OHL on steel lattice towers.

2.11.5 Dismantling of the existing line section would require removal of tower foundations and the re-establishment of ground cover. The steel towers and surplus aluminium conductors would be recycled.

2.11.6 The line diversion construction works would follow a typical standard sequence of events:
- prepare access;
- install tower foundations;
- erect / dismantle towers;
- string conductors; and
- reinstate tower sites and remove temporary accesses.

Site Access

2.11.7 At Keith substation the main access for delivery of materials, plant and equipment would be along Edindiach Road, which exits off the A96. This is a single track road with limited passing places.

2.11.8 Access to the proposed new tower sites would be via Tarnash Farm off Edindiach Road, subject to landowner agreement. The existing track is not considered suitable for heavier and wide vehicle use. A sufficiently wide area with a solid surface usable for heavy lorries would have to be secured for every new tower position, and detailed access route arrangements agreed with landowners.

2.11.9 Existing accesses would be used as far as practicable, however there may be a need to construct new accesses to tower sites where none exist or upgrade existing accesses, including passing places or to widen gates to accommodate the proposed higher loads and vehicle sizes for construction of the Proposed Development.

2.11.10 Crane pads and working platforms would be required to level the site for operatives to safely work on and to support heavy plant such as cranes, diggers, piling rigs and concrete mixers.

2.11.11 Access along the line would also be required for pulling pilot wires between towers as the first stage of stringing operations.

2.11.12 Appropriate access to each tower location would be developed as per the methods outlined in Section 2.4 above.

Foundation Works

2.11.13 All new tower positions would require new foundations at each tower leg, which may take the form of standard reinforced concrete pad and chimney designs, or, in poorer soils such as peat, piled foundations may be recommended. Foundation types and designs for each tower would be confirmed following detailed geotechnical investigation at each tower position.

2.11.14 Dimensions of each foundation would be confirmed following micrositing. For the purposes of this report, it has been assumed that each foundation would be buried to depths of up to 2.5 m below ground level (BGL), although extending up to 4 m depth where ground conditions require. They would extend over an area suitable to deliver the loading characteristics required (which would be a function of the underlying ground conditions and the weight of the structures to be supported). Piled foundations may be required where low strength
ground conditions exist, particularly where peat is encountered at over 1 m depth or where the groundwater table is close to the surface.

2.11.15 Working areas around each tower are anticipated to be 2,500 m² (50 m x 50 m) around each individual tower location.

2.11.16 Where encountered, top soil (including peat) would be stripped from the tower working area to allow installation of tower erection pads, as necessary, to accommodate construction plant. Concrete would likely to be brought to site ready mixed with no requirement for concrete batching at individual tower locations. Once the concrete has been cast and set, the excavation would be backfilled, using the original excavated material where possible. Any surplus subsoil or rock would be removed from the site using a licensed waste carrier and deposited at a licensed site.

2.11.17 It is anticipated that formation of each tower foundation would take approximately four weeks.

2.11.18 Photograph 2.4 provides an illustrative image of tower foundation construction.

Photograph 2.4: Illustrative Image of Tower Foundation Construction

Tower Construction

2.11.19 Tower construction could commence two weeks after the foundations have been cast, subject to weather conditions and concrete curing rates. Tower steelwork would be delivered to each site either as individual steel members or as prefabricated panels, depending on the method of installation and the available access.

2.11.20 The preferred method of assembly and erection would use a crane, as shown in Photograph 2.5.
Conductor Stringing Works

2.11.21 Prior to stringing the conductors, temporary protection measures, as described in Section 2.8, would be required across public roads and highways.

2.11.22 Conductor stringing equipment (i.e. winches, tensioners and ancillary equipment) would be set out at either end of the section to be strung, as described in Section 2.5 above.

2.11.23 Pilot wires would be pulled through the section to be strung. These would be hung on running out blocks at each suspension tower and connected to a winch and tensioner at the respective end of the section. The winch, in conjunction with the tensioner, is used to pull the pilot wires between the structures. The conductor is pulled via the pilot wires through the section under tension to avoid contact with the ground and any underrunning obstacles. Once the conductor has been strung between the ends of the section it is then tensioned and permanently clamped at each tower.

Dismantling of Existing Overhead Line

2.11.24 The existing line sections would be decommissioned, conductors would be removed, towers dismantled and the upper part of foundations removed on the existing lines.

2.11.25 De-stringing would be carried out as the reverse process of stringing operations. Winch and tensioner positions would need to be established to reel in the conductors.

2.11.26 Towers are generally dismantled by felling and breaking up with an excavator mounted hydraulic cutter or by hand with a blowtorch. Where felling may cause damage, it may be necessary to dismantle by crane in manageable panels which can then be broken up on the ground. The steel is bundled on site and removed by tractor and trailer or dumper to a central store for bulk removal. Insulators strings are taken to a large skip at the main store for separate disposal.

2.11.27 Existing concrete foundations would be broken down to a depth of approximately 1 m and stubs cut off. Waste material would be removed from site using a licensed waste carrier and deposited at a licensed site.
2.12 Substation Tie-ins

Blackhillock Substation Tie-ins

2.12.1 The works at Blackhillock substation would comprise installation of new downleads from the existing tower VH/XH2 500 into the Blackhillock 400 kV GIS substation. The existing conductors strung between towers VH/XH2 500, 500A and 500B would be removed and tower VH/XH2 500A would be dismantled. Dismantling works would be conducted following the procedure outlined in Section 2.11.

Kintore Substation Tie-ins

2.12.2 At Kintore substation the existing double circuit OHL will be connected into a proposed new temporary 400 kV substation extension adjacent to Kintore substation. The temporary extension would house two 275 / 400 kV transformers and a small control building. The temporary extension would be removed on completion of the consented 400 kV Kintore substation extension, which is currently scheduled for completion by 2026.

2.12.3 The temporary substation extension and associated OHL tie-ins are currently being designed and further details of the proposed layout will be provided in the EIA Report. Any OHL dismantling and new tower construction works would be conducted following the procedures outlined in Section 2.11.

2.13 Reinstatement

2.13.1 Following commissioning of the Proposed Development, all construction sites would be reinstated. Reinstatement would form part of the contract obligations for the Principal Contractor and would include the removal of all temporary tower access routes, all work sites around the tower locations and the re-vegetation of all construction compounds and decommissioned structures.

Reinstatement of Tower Access Routes

2.13.2 Reinstatement would involve replacement of subsoil and topsoil, and grading and installation of drainage, as required, with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion, or where landowner requirements dictate otherwise.

Reinstatement of Tower Sites

2.13.3 Soil would be stored within the working area for each tower during construction. Subsoils and topsoil removed to enable the construction of the foundations would be temporarily stockpiled in separate bunds within the working area, with stripped turves stored on top of the bunds.

2.13.4 Reinstatement would involve replacement of subsoil and topsoil, with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to re-vegetate naturally.

Reinstatement of Construction Compounds

2.13.5 Construction compound sites would be reinstated at the end of construction with all buildings and materials removed and soils appropriately reinstated.
2.14 Construction Employment and Hours of Work

2.14.1 The Applicant takes community responsibilities seriously. The delivery of a major programme of capital investment provides the opportunity to maximise support of local communities. Employment of construction staff would be the responsibility of the Principal Contractor; however, SHE Transmission would encourage the Principal Contractor to make use of suitable labour and resources from areas local to the location of the Proposed Development.

2.14.2 It is envisaged that there will be a number of separate teams working at the same time at different locations within the Proposed Development corridor. The resource levels will be dependent on the final construction sequence and will be determined by the Principal Contractor.

2.14.3 Construction activities would in general be undertaken during daytime periods only. For weekdays, this would involve work between approximately 07:00 to 19:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter. At weekends, the working hours would be approximately 07:00 to 17:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter.

2.14.4 Any variation in these working hours would be agreed in advance with the appropriate local authorities.

2.15 Operation and Maintenance of the Transmission Overhead Line

2.15.1 In general, an OHL requires very little maintenance. Regular inspections are undertaken to identify any unacceptable deterioration of components, so that they can be replaced.

2.15.2 From time to time, inclement weather, storms or lightning can cause damage to either the insulators or the conductors. If conductors are damaged, short sections may have to be replaced. Insulators and conductors are normally replaced after about 40 years, and towers painted every 15 to 20 years.
3. METHODOLOGY

3.1 Introduction

3.1.1 The EIA Report will be prepared in accordance with the EIA Regulations and Scottish Government Good Practice Guidance\(^1\). Consideration will also be given to advice contained in the Scottish Government’s Planning Advice Note (PAN) 1/2013 (revision 1.0)\(^2\) and Planning Circular 1/2017\(^3\), where relevant.

3.1.2 The EIA will comprise a series of specialist environmental studies targeted to assess the potential significant effects which the Proposed Development is likely to have on the environment. Each topic included within the EIA process will be incorporated as a separate chapter in the main body of the EIA Report, or included as an appendix if the assessment of the subject matter requires to be more detailed.

3.1.3 On receipt and consideration of this Scoping Report, the ECU of the Scottish Government will issue their Scoping Opinion confirming the scope of the EIA Report. Throughout the EIA Report, where an issue raised in the Scoping Opinion is addressed, this will be clearly referenced in the relevant chapter. A scoping matrix will also be included in the EIA Report which will detail all consultation responses received during the scoping and EIA process, with a reference to where these responses have been addressed. A schedule of mitigation measures will also be included as an appendix and cross-referenced in the relevant chapters.

3.2 Structure of the EIA Report

3.2.1 It is anticipated that the EIA Report will be produced as four volumes:
- Volume 1: Non-Technical Summary;
- Volume 2: Written Statement;
- Volume 3: Figures; and
- Volume 4: Technical Appendices.

3.2.2 Volume 2 will include a set of introductory chapters that describe the background and rationale to the Proposed Development, set out the relevant policy context and provide information with regard to the construction and operation of the Proposed Development.

3.2.3 For each of the environmental topics assessed in Volume 2, the following information will be included in the respective chapters:
- a summary;
- an introduction to the environmental feature;
- scoping and consultation responses;
- assessment scope, methodology and study area;
- baseline conditions;
- impact assessment and proposed mitigation; and
- references.

3.2.4 The description of the likely significant effects will cover direct effects and indirect (including secondary) effects. The description of effects will identify the effect duration (short-term, medium-term and long-term), whether effects are permanent or temporary, and if effects can be categorised as adverse or beneficial.

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\(^1\) Scottish Government Energy Consents and Deployment Unit (2013) Good Practice Guidance.


3.2.5 Consideration will also be given to the potential for cumulative effects, where the assessment will describe the additional effect associated with the Proposed Development when considered in combination with other reasonably foreseeable projects of a similar type (defined as those which are the subject of a valid consent or application for consent). The basis for this is that only these developments have the potential to result in significant cumulative effects in combination with those arising from the Proposed Development. The final list of developments to be considered in the cumulative effects assessment will be finalised three months prior to publication to allow sufficient time to compile the EIA Report.

3.2.6 Volume 2 will be concluded with a summary chapter outlining the main committed mitigation measures and an overall summary of significance in the context of the EIA Regulations.

3.2.7 It is considered that there will be no potential for transboundary effects associated with the Proposed Development, therefore no further assessment of transboundary effects is proposed.

3.2.8 A more detailed overview of the guidance and methodology adopted for each technical study is provided within Sections 4 to 10 of this EIA Scoping Report.

3.3 Scoping Methodology

3.3.1 The following sections of this Scoping Report aim to provide sufficient detail to characterise the potential interactions between the Proposed Development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The Scoping Report has also been prepared with reference to the potential magnitude of impacts, considering the typical construction and operational activities, physical characteristics and potential emissions / residues associated with the Proposed Development.

3.3.2 Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented. Otherwise, where it is considered that there is the potential for likely significant effects, the Scoping Report provides details of the proposed scope or detailed impact assessment, including the approach to further baseline data collection and brief details of the proposed methodology for impact assessment which would be employed for each topic.

3.3.3 Within each section of this report, an overall description of the baseline environment is provided, followed by a summary of the potential effects, and the proposed scope of survey and assessment work required as a result.
4. LANDSCAPE CHARACTER AND VISUAL IMPACT

4.1 Introduction

4.1.1 Where appropriate, a Landscape and Visual Impact Assessment (LVIA) is carried out to identify, predict and assess the likely effects a proposed development could have on the landscape character and visual amenity of the immediate and surrounding area.

4.1.2 The assessment process firstly establishes the sensitivity of the project relevant landscape resources and visual receptors before quantifying the magnitude of change that the development would have on each of these. Consequently, the outcome of the process is the formation of a judgement of the significance of the effect caused by the development upon each resource and receptor.

4.2 Baseline Conditions

Landscape and Visual Context

4.2.1 The Proposed Development crosses through a large part of north-east Aberdeenshire, and a small part of the Moray Council area. This area is predominantly part of the Agricultural Heartlands Landscape Character Type (LCT), which makes up approximately 50% of Aberdeenshire. It is characterised as an intensively managed, vast rolling plain of mixed agriculture, containing most of the settlements and main transport routes in the region. Fields are medium to large in size, while tree cover varies; scattered broadleaf shelterbelts run along hill ridges and around farms, and a number of old estate policy woodlands are present throughout the landscape. The shallow valleys of the Straths and River Valleys, and the coastal features of the Coast and Coastal Farmland LCTs, are also present along the OHL route. Scattered individual farmsteads and residences are located along the route, with the settlements of Keith, Peterhead, Kintore and Rothienorman situated at the nodal points of the OHL. The Proposed Development passes over, or near to, a number of roadways and tracks. Several Core Paths are present in the area around Keith near the route of the OHL.

Landscape Designations and Protected Areas

4.2.2 Several designated and protected landscape areas have been identified within 5 km of the Proposed Development, as shown on Figures 2.1a to 2.1c.

Special Landscape Areas

4.2.3 The OHL between Blackhillock substation and the Rothienorman T-junction passes through the Deveron Valley Special Landscape Area (SLA). The Rothienorman T-junction to Kintore substation section skirts the eastern edge of the Bennachie SLA. The Rothienorman T-junction to Peterhead OHL section terminates approximately 1.4 km from the North East Aberdeenshire Coast SLA.

Country Parks

4.2.4 The Rothienorman T-junction to Peterhead section of the OHL passes approximately 3.8 km south of the Aden Country Park.

Gardens and Designed Landscapes

4.2.5 The Rothienorman T-junction to Peterhead section of the OHL passes approximately 0.5 km from the Fyvie Castle Garden and Designed Landscape (GDL). Within 5 km of the Rothienorman T-junction to Kintore OHL are the Keith Hall, Castle Fraser, Newton House and Williamston House GDLs. Hatton Castle GDL is situated within 5 km of the Rothienorman T-junction to Peterhead OHL.

4.2.6 Due to the nature of the proposed works, effects on these landscape designations are considered to be negligible.

Landscape Character Types

4.2.7 Each section of the Proposed Development passes through a number of LCTs, as laid out below. The LCTs are derived from the Aberdeenshire Council Local Landscape Designation Review and the Moray Council Landscape Classifications in the instance of the last LCT of the Rothienorman T-junction to Blackhillock section of OHL.

Kintore – Rothienorman T-junction
- 28 – Central Wooded Estates;
- 17 – Insch Basin;
- 15 – Northern Rolling Lowlands; and
- 4 – Deveron and Upper Ythan Valleys.

Rothienorman T-junction – Peterhead
- 4 – Deveron and Upper Ythan Valleys;
- 16 – Upland Ridges South of the Deveron;
- 8 – Agricultural Heartland;
- 9 – Wooded Estates Around Old Deer;
- 10 – Eastern Coastal Agricultural Plain; and
- 11 – Dunes and Beaches from Fraserburgh to Peterhead.

Rothienorman T-junction – Blackhillock
- 4 – Deveron and Upper Ythan Valleys;
- 16 – Upland Ridges South of the Deveron;
- 15 – Northern Rolling Lowlands;
- 18 – Deveron and Bogie Straths; and
- 8 – Upland Farmlands and Forests.

4.2.8 Potential visual receptors include settlements, such as Keith, Peterhead and Kintore, as well as various residential receptors in smaller settlement clusters. Main transport routes within the vicinity of the existing line include the A95, A96, A97, A920 and B992. Numerous other minor roads and private tracks are present along the route, as well as rail infrastructure. Other receptors include GDLs, Core Paths, other walking routes and elevated vantage points present within the landscape.

4.3 Potential for Significant Effects

4.3.1 The potential for significant effects on the landscape and visual resource as a result of the Proposed Development is expected to be small given the nature of the works. Potential effects are anticipated to be associated with new infrastructure (for example the reconfiguration of the OHL on the outskirts of Keith and substation tie-ins) and could relate to temporary or long term direct or indirect effects on landscape character and views from sensitive receptors, such as residences, Core Paths or important viewpoints.

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4.4 **Proposed Scope of Assessment**

4.4.1 It is proposed that a targeted visual impact assessment is carried out, focusing on the new infrastructure that is proposed to tie into the existing substation at Kintore, as well as the reconfiguration of the OHL network on the outskirts of Keith.

4.4.2 In light of the context within which new infrastructure is proposed, it is considered that a 2.5 km study area is appropriate to accommodate any potential significant visual or cumulative visual effects. Within this study area the following aspects have the potential to be affected and will therefore be considered within the assessment:
- views from residential properties and other buildings; and
- views from public roads and recreational routes.

4.4.3 A Cumulative Visual Impact Assessment (CVIA) will also be carried out for the Proposed Development. It is proposed that the CVIA will adopt a similar study area to the visual assessment and will include consideration of the effects of the Proposed Development in relation to other similar infrastructure which is either operational, consented or for which a valid planning application has been submitted. Similar infrastructure is defined as either OHL or substation development.

4.5 **Issues Scoped Out**

**Landscape**

4.5.1 Due to the nature of the works, there will be no material change to the OHL as the conductors, insulators and associated fittings will be visually similar to those present already. Access arrangements will predominantly make use of existing tracks to minimise any required new tracks and their associated landscape impacts. Amended connection arrangements at substations and the reconfiguration of the OHL on the outskirts of Keith will have minimal influence on the OHL’s overall landscape impacts. Consequently, it is proposed that an assessment of the Proposed Development on landscape is scoped out of the EIA Report in its entirety.

**Visual**

4.5.2 Visual impact assessment of the re-conductoring works is proposed to be scoped out. Given the nature of the Proposed Development, there would be no material change to the appearance of the OHLs following re-conductoring works. Some visual impacts would arise from the construction phase, however these would be localised and short term. As such, it is proposed that a visual impact assessment of the OHL re-conductoring works is scoped out.

4.6 **Assessment Methodology**

4.6.1 The visual assessment will be completed by Chartered Landscape Architects in line with the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) published by the Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) (3rd edition, 2013). The assessment will identify key receptors, provide an appraisal of sensitivity of these to the Proposed Development type and include an assessment of likely Magnitude of Change. A judgement on the significance of the resultant effect will be made, giving consideration to these aspects and using professional judgement.

4.6.2 To aid the assessment a Zone of Theoretical Visibility (ZTV) map will be produced to indicate where the new infrastructural elements of the Proposed Development may be potentially visible within the study area. The visual assessment will give consideration to views from visual receptors as detailed above where potential visibility is indicated by the ZTV and site survey.
4.7 Summary

4.7.1 Due to the nature of the Proposed Development, it is proposed that landscape assessment be scoped out of the EIA, and that the visual impact assessment be targeted to those areas around tie-ins to substations and reconfiguration of the OHL on the outskirts of Keith. Potential effects on sensitive visual receptors, inclusive of nearby settlements and main paths and roadways, would form the basis of this assessment. Cumulative effects with separately proposed substations at Rothienorman, New Deer and Peterhead will also be considered as part of the assessment.
5. **ECOLOGY, BIODIVERSITY AND NATURE CONSERVATION**

5.1 **Introduction**

5.1.1 The EIA will consider the potential effects of the Proposed Development on habitats and species along the route and within the wider local area. Evaluation of the existing baseline environment will be made through a combination of desk-based study, field surveys and consultation.

5.1.2 This section:
- describes the key ecological issues associated with construction and operation of the Proposed Development;
- presents the proposed survey methods that will be used to generate ecological baseline information; and
- outlines the proposed approach to the ecological impact assessments.

5.2 **Baseline Conditions**

**Designated Sites**

5.2.1 There is one site designated for nature conservation within 500 m of the OHL. Mill Wood Site of Special Scientific Interest (SSSI) is located approximately 300 m east of the OHL near Keith and is designated for Upland Birch woodland.

5.2.2 There are a small number of other nationally designated sites for nature conservation within 5 km of the OHL, including Shiel Wood Pastures SSSI, designated for a range of lowland grassland communities, Whitehill SSSI, designated for lowland grassland and fen communities, Moss of Crombie SSSI, designated for intermediate blanket bog, and Bullers of Buchan Coast SSSI.

5.2.3 The Buchan Ness to Collieston Coast Special Area of Conservation (SAC), an internationally designated site, is situated within 2 km of the OHL, and overlaps with the Bullers of Buchan Coast SSSI.

5.2.4 The OHL passes through a number of woodlands listed on the Ancient Woodland Inventory (AWI), with the majority being listed as plantation of long-standing origin, but with several listed on the Semi-Natural Ancient Woodland Inventory (SNAWI) and which may have been continuously wooded since the 17th century.

5.2.5 Designated sites are indicated on Figures 2.1a to 2.1c.

**Habitats**

5.2.6 The OHL route crosses large areas of intensively farmed agricultural land utilised for arable crops and pasture. Other open ground habitats are characterised by semi-improved / unimproved grasslands and marshes. Woodland areas are typically small and fragmented, being utilised as shelterbelt or commercial plantation and dominated by coniferous woodland.

5.2.7 The OHL route crosses several habitats that qualify as Groundwater Dependent Terrestrial Ecosystems (GWDTE), e.g. marshy grassland and fen.

**Protected species**

5.2.8 Woodland areas, scrub and field boundaries have potential to support badger (*Meles meles*). Woodland areas have potential to support red squirrel (*Sciurus vulgaris*). Drains, watercourses and lochans have potential to support otter (*Lutra lutra*) and water vole (*Arvicola amphibius*). Ponds located within 500 m of the OHL may have the potential to support great crested newt (*Triturus cristatus*).
Terrestrial Invasive / Non-native species

5.2.9 There is potential for presence of invasive / non-native species within the vicinity of the OHL route and proposed accesses. The most significant risk would be the spread of invasive alien plant species, e.g. Japanese knotweed (*Fallopia japonica*) or Himalayan balsam (*Impatiens glandulifera*).

5.3 Potential for Significant Effects

In general, the potential significant effects which may arise from the Proposed Development relate to the construction phase. These effects are summarised below:

- Permanent or temporary loss of habitat;
- Permanent or temporary disturbance to habitat;
- Temporary disturbance to protected species; and
- Spread of invasive / non-native species.

5.4 Proposed Scope of Assessment

5.4.1 The following surveys are proposed to be undertaken as part of the EIA Report:

- an Extended Phase 1 survey will be undertaken to identify vegetation communities along the OHL (buffered to 250 m) and proposed tower access routes, and the location of any habitats of conservation importance (listed on Annex 1 of the EU Habitats Directive) following methods as described in JNCC (2010);
- GWDTE will be identified, mapped and their dependence on groundwater assessed (moderate or high) as per SEPA LUPS Guidance Note 31;
- Protected Species Survey: comprising walkover survey for badger, red squirrel, otter and water vole. Surveys will occur in areas of suitable habitat as highlighted in Phase 1 Habitat surveys and will also extend to 250 m, or more where a greater distance is relevant to their protection from displacement or disturbance. This would be reduced to 200 m in the instance of Scottish wildcat. Surveys for great crested newt will occur at all ponds identified within 500 m of the OHL route and will use the Habitat Suitability Index (HSI) to assess likelihood of great crested newt being present. All protected species surveys will occur within the optimal time of year; and
- presence of terrestrial invasive / non-native species: will be highlighted through the course of Extended Phase 1 Habitat surveys.

5.4.2 Where new accesses are proposed outwith the survey buffer distances noted above, or existing access routes require notable upgrade, habitat and species surveys will be extended to cover these proposed access routes.

5.5 Issues Scoped Out

5.5.1 It is proposed that the following surveys be scoped out of assessment:

- Freshwater Habitat Survey: it is anticipated that construction will be undertaken in accordance with best practice measures and pollution prevention guidelines, and significant impacts are not anticipated; and
- specific surveys for reptiles and amphibians will not be required. With implementation of best practice construction methodology and adoption of the Applicant's Species Protection Plans (SPPs), significant effects on these ecological receptors are not anticipated.
5.6 Assessment Methodology

5.6.1 The ecological impact assessment (ECIA) will be completed in accordance with the (chartered) Institute of Ecological and Environmental Management (CIEEM) Ecological Impact Assessment Guidance, 2016\(^7\). The assessment will use the ecological baseline to identify the sensitive ecological receptors that could be affected by the construction or operation of the Proposed Development. Each receptor will be assigned a geographic level of importance based on its national and local conservation status and population / assemblage trends and other relevant criteria (including size, naturalness, rarity and diversity). Details of the Proposed Development will then be used to assess what level of effect each receptor would be likely to receive and whether or not that impact would be beneficial or adverse, significant or negligible, and temporary or permanent.

5.6.2 Where appropriate, mitigation measures will be recommended within the EIA to remedy any adverse impacts, and measures to enhance the local ecology will also be incorporated within the assessment. An assessment of residual effects will then be undertaken and reported within the EIA Report.

5.7 Summary

5.7.1 It is proposed that an Extended Phase 1 survey be undertaken of the whole OHL route (buffered to 250 m) and the proposed tower access routes, in addition to a protected species survey in areas of suitable habitat highlighted by the Extended Phase 1 survey. As part of these surveys, GWDTEs would be identified and mapped, along with the presence of terrestrial invasive / non-native species. It is proposed that freshwater habitat surveys would not be required, nor would specific surveys for reptiles or amphibians, and instead potential impacts would be controlled through implementation of best practice methodologies and adoption of the Applicant's SPPs. A full assessment of the potential impacts of the Proposed Development will be completed in line with EIA methodology guidance (CIEEM, 2016).

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\(^7\) Chartered Institute of Ecology and Environmental Management (2016). Guidelines for Ecological Impact Assessment in the UK And Ireland, 2nd Edition
6. ORNITHOLOGY

6.1 Introduction

6.1.1 This section sets out the potential effects of the Proposed Development on ornithological interests, and the proposed assessment scope to be carried out as part of the EIA.

6.2 Baseline Conditions

6.2.1 The OHL does not pass through any sites designated for ornithological interests. The termination point at Peterhead Substation is, at its closest point, within 1 km of the Bullers of Buchan Coast Special Protection Area (SPA), designated for its breeding sea bird assemblage.

6.2.2 The locations of identified SPAs within 20 km of the Proposed Development are displayed on Figures 2.1a to 2.1c.

6.2.3 Breeding bird surveys have been undertaken within the vicinity of Kintore substation and the reconfiguration of the overhead line on the outskirts of Keith (i.e. where new infrastructure is proposed). A summary of the survey results is provided below.

   Kintore Substation Tie-ins

6.2.4 Twenty seven species were recorded during the course of breeding bird surveys. Seven species of conservation importance were recorded: Skylark, Song thrush (Red listed as species of conservation concern) and Barn swallow, Dunnock, Oystercatcher, Mistel Thrush, Willow warbler (Amber listed). No Schedule 1 or Annex 1 species were recorded.

   Reconfiguration of OHL on outskirts of Keith

6.2.5 Nineteen species were recorded during the course of breeding bird surveys. Seven species of conservation importance were recorded: Linnet, Skylark, Song thrush, Yellowhammer (Red listed as species of conservation concern) and Black-headed gull, Meadow pipit, Willow warbler (Amber listed). No Schedule 1 or Annex 1 species were recorded.

6.3 Potential for Significant Effects

6.3.1 The potentially significant effects arising from the Proposed Development on ornithological interests are limited to displacement of bird species from key habitats due to disturbance during construction activities.

6.4 Proposed Scope of Assessment

6.4.1 A desk study and data review of the whole OHL route will be carried out to collate background data on nature conservation interest within the vicinity of the Proposed Development.

6.4.2 Breeding bird surveys have been carried out of at the proposed substation tie-in at Kintore and at the proposed OHL reconfiguration on the outskirts of Keith. Surveys have comprised a walkover of each site, buffered to 30 m, undertaken on two visits: the first in June 2018 and second in July 2018.

6.4.3 The results of the desk study and breeding bird surveys will be included in the EIA Report, an assessment carried out and any appropriate mitigation measures identified.
6.5 **Issues Scoped Out**

6.5.1 It is proposed that a collision risk assessment would be scoped out of the EIA Report. The proposed works involve replacement of insulators and conductors along the existing OHL and there will be no material change to the existing arrangements. In areas where new infrastructure is proposed, it is not anticipated that this would result in a significant collision risk.

6.6 **Assessment Methodology**

6.6.1 An appraisal of potential effects would be completed in line with guidance developed by CIEEM, 2016\(^8\).

6.7 **Summary**

6.7.1 Overall, impacts upon ornithological interests are likely to be minimal due to the nature of the Proposed Development. Breeding bird surveys have been completed in areas where new infrastructure is proposed, and the results of these, together with a desk-based review of ornithological interests across the whole OHL route, will help inform the assessment and any recommended mitigation measures.

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\(^8\) CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK And Ireland, 2nd Edition
7. CULTURAL HERITAGE

7.1 Introduction

7.1.1 Cultural heritage assets include those with both statutory and non-statutory designations and other non-designated assets as described in Scottish Planning Policy (SPP) and Historic Environment Scotland Policy Statement (HESPS). Those relevant in the context of the Proposed Development are:

- Scheduled Monuments and other archaeological features;
- Listed Buildings and other buildings of historic or architectural importance;
- Conservation Areas and other important historic townscapes;
- Inventory Gardens and Designed Landscapes (GDL) and other important historic landscapes; and
- Inventory Historic Battlefields.

7.2 Baseline

7.2.1 From initial desk review, a relatively small number of Scheduled Monuments and Category A and B Listed Buildings have been identified within the vicinity of the Proposed Development. The locations of these cultural heritage assets are displayed on Figures 2.1a to 2.1c.

7.2.2 There are no significant cultural heritage constraints at the locations where new infrastructure is proposed to tie into the existing substation at Kintore, or at the proposed reconfiguration of the OHL network on the outskirts of Keith. There are no heritage assets with statutory designation and protection (Scheduled Monuments, Listed Buildings, Conservation Areas) or non-statutory designations (GDL, Historic Battlefields) within the vicinity of these locations, where the proposed new infrastructure could adversely affect their setting.

7.2.3 There are six Category A Listed Buildings along the section of OHL between Blackhillock to Rothienorman T-junction.

7.2.4 There are limited potential constraints identified along the Rothienorman T-junction to Peterhead section of the OHL. There is one Category B Listed Building along this section of the OHL and none of the other cultural heritage assets are of high sensitivity. The cultural heritage assets identified include a wide variety of site types, ranging from prehistoric burial and ritual sites through to 20th Century military remains.

7.2.5 There is a greater density of undesignated cultural heritage assets, including buried archaeological remains, along the Rothienorman to Kintore section of the OHL; in particular in the section between Durno and Kintore. Along this section, archaeological investigations have revealed the presence of prehistoric activity from the Neolithic to Late Iron Age periods in the area around Inverurie. These findings, derived from works in advance of housing developments, indicate a higher level of archaeological potential to the south-west of Inverurie.

7.2.6 There are three Category A Listed Buildings along the Rothienorman T-junction to Kintore section of the OHL. There are also five Scheduled Monuments along the Rothienorman T-junction to Kintore OHL section.

7.3 Potential for Significant Effects

7.3.1 Direct effects have potential to arise prior to any mitigation from any groundbreaking works that might be required for the re-conductoring works, such as creation of new tower access routes (permanent or temporary), or where working areas around towers (existing or new) are located in close proximity to cultural heritage assets. However, any such potential effects may be avoided, reduced or offset through mitigation, principally through the avoidance of important assets or through monitoring of ground works at affected assets.

7.3.2 Indirect effects relate to the potential for a proposed development to affect the setting of a cultural heritage asset.
7.4 Proposed Scope of Assessment

7.4.1 A Cultural Heritage Management Plan (CHMP) is proposed to be completed as part of the EIA Report, which would then form part of the CEMP. The CHMP would comprise a desk-based study to identify known cultural heritage assets that lie within close proximity to existing towers and along, or close, to proposed access routes. Assets that lie within a 100 m wide corridor centred on the proposed access routes and along the OHL would be identified. Assets would be identified on plan, and recommendations provided in the form of a tabulated assessment for asset specific mitigation measures, where appropriate.

7.5 Issues Scoped Out

7.5.1 Given the nature of the Proposed Development and its limited potential to give rise to effects on cultural or historic assets, it is proposed that an assessment of effects in the form of a cultural heritage chapter is scoped out of the EIA Report.

7.5.2 With the implementation of appropriate mitigation measures (documented within the CHMP), it is not anticipated that direct impacts would occur as a result of construction activities on known cultural heritage assets. It is also considered that any effects on the settings of heritage assets during the construction period would be temporary and not be significant.

7.5.3 During operation, the OHL reinforcement works would result in no substantive change to the arrangement of the OHL and, as such, would not materially alter the existing baseline setting of heritage assets in its vicinity.

7.5.4 Initial appraisal of the potential for indirect effects in relation to the Kintore tie-in, and the reconfiguration of the overhead line on the outskirts of Keith (i.e. where new infrastructure is proposed), indicates that there are no heritage assets with statutory or non-statutory designations within the vicinity of these works which may be indirectly affected.

7.6 Summary

7.6.1 The Proposed Development is not likely to give rise to any significant effects on cultural heritage assets, either directly or upon their setting. In lieu of assessment, effects on cultural heritage interests would be controlled through development of, and adherence to, a CHMP, which would identify assets within a 100 m corridor along the OHL and proposed tower access routes, and set out mitigation measures where required.
8. TRAFFIC AND TRANSPORT

8.1 Introduction

8.1.1 This section outlines the potential effects of the Proposed Development upon traffic and transport, and presents the proposed scope of assessment to be included within the EIA Report.

8.2 Baseline

8.2.1 An initial review of traffic volumes across the area has been carried out, using published figures estimated through a combination of manual and automated counts. The main roads nearest to the existing OHL had annual average daily traffic counts in 2017 of the following:

- A96: 7,800 near Keith, 19,000 near Inverurie;
- A97: 1,900 near Huntly;
- A95: 1,800 near Keith;
- A920: 5,100 near Oldmeldrum (anticipated to be fewer near to Rothienorman); and
- B992: 6,200 at Rothienorman.

8.2.2 Traffic counts vary over time, and thus the baseline information would be reviewed in further detail during the EIA phase of the Proposed Development.

8.3 Potential for Significant Effects

8.3.1 Potential significant effects which may arise on traffic and transport from the Proposed Development are limited to the construction phase only.

8.3.2 In accordance with the IEMA Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993), the thresholds above which there is considered to be the potential for significant effects are:

- on road links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%); and
- traffic flows are predicted to increase by 10% or more in any other specifically sensitive areas.

8.3.3 Potential effects could include: severance; fear and intimidation; accidents and safety; driver delay; pedestrian amenity; and pedestrian delay.

8.4 Proposed Scope of Assessment

8.4.1 It is not considered likely that traffic volumes associated with the Proposed Development would breach the percentage increases as set out in IEMA guidelines which constitute potential for significant impact in relation to road traffic. As such, it is proposed that a Construction Traffic Management Plan (CTMP) be developed and used to control vehicle movements and numbers during the construction phase of the works.

8.4.2 Construction traffic estimates would be confirmed through the EIA process. Should the relevant thresholds be exceeded, an assessment would be provided as part of the EIA Report to include the likely number of construction traffic movements and the capacity of local roads to accommodate construction traffic. No abnormal loads will be transported as part of the Proposed Development.

8.5 Issues Scoped Out

8.5.1 Unless traffic estimates exceed the thresholds set by IEMA, an impact assessment would be scoped out of the EIA Report.

8.5.2 The potential for the Proposed Development to give rise to traffic impacts would be limited to the construction phase only. Negligible traffic would be associated with the operational phase. On that basis, it is proposed that operational traffic assessment be scoped out.

8.6 Assessment Methodology

8.6.1 If the general thresholds for traffic flow increases were breached, an assessment would be completed with reference to best practice guidelines in addition to other related technical and planning guidance and in consultation with Aberdeenshire Council, Moray Council and Transport Scotland.

8.7 Summary

8.7.1 The Proposed Development’s potential effects on traffic and transportation are considered likely to be minimal and may not necessitate the need for assessment. Should construction traffic volumes be predicted to exceed the thresholds as set by IEMA, an impact assessment of construction phase works would be carried out. Otherwise, an outline CTMP would be developed to set out the controls and mitigation measures to minimise potential impacts.
9. HYDROLOGY, HYDROGEOLOGY, GEOLOGY AND SOILS

9.1 Introduction

9.1.1 The EIA report will assess the potential effects relating to Hydrology, Hydrogeology, Geology and Soils in relation to the construction and operation phases of the Proposed Development.

9.2 Baseline

9.2.1 The OHL crosses largely agricultural land, comprising both arable and pasture uses.

9.2.2 Published mapping shows that the soils beneath the OHL comprise of predominantly ‘mineral gleys’ and ‘mineral podzols’, with localised areas of ‘peaty podzols’ and ‘brown soils’ also recorded. Localised areas of alluvial soils and mineral gleys are identified along river channels.

9.2.3 British Geological Survey (BGS) mapping confirms the superficial geology beneath the OHL primarily is Glacial Till (typically silts and clays with some sands and gravels) with localised alluvial deposits or glacial sands and gravels along river valleys. No peat deposits are recorded.

9.2.4 Many watercourses are present flowing under or close to the OHL, a large number of which are field drains. The SEPA Scotland River Basin Management map indicates that surface waters are generally classified as having Moderate or below status within the vicinity of the OHL, with a small number classified as having Good status.

9.2.5 The Hydrogeological Map of Scotland (BGS, 1988) indicates that the vast majority of the OHL route is underlain by an aquifer of limited potential comprising low permeability rocks, generally without groundwater except at shallow depth.

9.2.6 SEPA flood mapping identifies flood extents associated with the larger watercourses crossed by the OHL, whilst localised flood extents with smaller watercourses can be expected.

9.2.7 The OHL and proposed tower access routes do not pass through any sites designated for hydrological or geological sensitivities, although they do pass through areas designated as Drinking Water Protected Areas (DWPA) and Nitrate Vulnerable Zones (NVZ).

9.3 Potential for Significant Effects

9.3.1 Potentially significant effects may arise during construction phase only, associated with the following:

- damage to soils arising from movement of vehicles to access the OHL;
- temporary earthworks, welfare facilities and compounds and the storage of fuels, oils and paints etc. which could contaminate soils in the event of a leak or spillage;
- impacts of erosion from tracking of machinery across farmland;
- generation of suspended solids from erosion impacting surface water quality (and indirectly fisheries);
- impacts on surface water / groundwater quality from leakages from vehicles / machinery used; and
- increase in flood risk at watercourse crossings and from runoff shed from temporary welfare facilities.

9.4 Proposed Scope of Assessment

9.4.1 A desk-based review will be carried out, including review of current development plans and baseline soils, geology, hydrogeology and hydrology. The review will collate publicly available information including meteorological data, historic hydrological and flooding information, and data on public and private water abstraction from SEPA, Aberdeenshire and Moray Councils.
9.4.2 The desk-based review will be complemented by targeted site walkovers to areas of higher sensitivity, including larger watercourse crossings and areas of GWDTE.

9.4.3 An assessment to determine what the likely effects of the proposed works are on the soils, geology, hydrogeology and hydrological regime will be carried out and reported on within a chapter of the EIA Report. Mitigation measures to safeguard the water environment will also be outlined.

9.4.4 Private water supplies (PWS) will be identified through the desk-based review and consultation exercise. An assessment of potential risk to PWS as a result of the Proposed Development will be carried out, and any mitigation measures will be highlighted. Where mitigation measures suggest that further protection of a particular PWS is required, this would be carried out as part of pre-construction design and mitigation works following the determination of the application. Such measures would form part of the CEMP.

9.4.5 Given the nature of the works it is proposed that a basic Flood Risk Assessment (FRA) screening will be prepared to satisfy Scottish Planning Policy and used to inform the location of any site compounds outside any areas of flood risk.

9.5 Issues Scoped Out

9.5.1 Hydraulic modelling of watercourses is proposed to be scoped out. Works are largely focused on existing OHLs and towers only, and all appropriate measures will be taken to avoid the requirement for watercourse crossings. In the event that crossings are required, it is anticipated that these will be temporary structures and constructed in accordance with best practice which would not warrant detailed hydraulic modelling.

9.5.2 It is proposed that peat probing be scoped out, as no peat deposits are recorded by published mapping.

9.5.3 Detailed FRA is also proposed to be scoped out, as the works include no new permanent structures or features which could be susceptible to flooding or impact flood risk elsewhere.

9.6 Assessment Methodology

9.6.1 In addition to the Applicant’s GEMPs, the EIA Chapter would be prepared in accordance with best practice guidance and legislation, including the following, where applicable:

- Scottish Planning Policy (SPP), Scottish Executive, June 2014;
- EC Water Framework Directive (2000/60/EC);
- Water Environment and Water Services (Scotland) Act 2003;
- Water Environment (Controlled Activities) Regulations 2011;
- Land Use Planning System – SEPA Guidance Note 31 (GWDTEs and Groundwater Abstractions), SEPA, October 2014;
- Control of Water Pollution from Linear Construction Projects – Technical Guidance, C648, CIRIA, 2006;
- The SuDS Manual C753, CIRIA, 2016;
- Environmental Good Practice on Site C692, CIRIA, 2010; and

9.6.2 The significance of the impacts upon the baseline environment would be defined as a function of the sensitivity of receptors and the magnitude of change. The impact assessment would be undertaken in accordance with the EIA Regulations.

9.6.3 This assessment would also include the impacts of any works required along the access route upon the baseline environment. Attention would be paid to the potential hydrological and water quality impacts upon any...
water supplies within the vicinity of the Proposed Development and any aquatic ecological features identified within the ecology chapter.

9.7 Summary

9.7.1 Desk based review and targeted site walkovers are proposed as the basis for assessment, alongside a basic FRA. Following identification of potential effects, mitigation measures will be set out to control environmental impacts and minimise the Proposed Development’s effects on soils and hydrology. These will be set out in line with best practice and the guidance documents outlined herein.
10. **POPULATION AND HUMAN HEALTH**

10.1 **Introduction**

10.1.1 This section of the scoping report covers factors considered to fall under the heading of population and human health, as referenced under regulation 4(3) of the EIA regulations. Given the nature of the Proposed Development, the potential and perceived effects on population and human health include:

- nuisance related to noise and vibration during construction and operation;
- perceived health effects related to electromagnetic fields (EMF); and
- potential effects of operation of the OHL on television and radio reception.

10.2 **Baseline Conditions**

10.2.1 The Proposed Development is located within a predominantly rural area. The main settlements within the vicinity of the Proposed Development include Keith, Peterhead and Inverurie. Smaller settlements, individual dwellings and clusters or properties are also distributed along the length of the Proposed Development.

**Noise and Vibration**

10.2.2 Ambient noise surveys were undertaken in 2010 and 2012 at a number of locations along the length of the OHL during daytime, evening and night-time periods in order to get an overview of the typical background levels experienced along the route. Baseline noise level measurements were recorded in the absence of rain or significant wind. Noise measurements were approximately 22 to 30 dB $L_{A90}$ overnight, approximately 27 to 39 dB $L_{A90}$ during the evening and generally greater than 40 dB $L_{A90}$ during the day.

10.2.3 No significant vibration sources have been identified.

**EMF**

10.2.4 EMFs arise from electric charges and current flow. Exposure guidelines have been developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) to ensure protection of human health in different situations, occupational exposure and public exposure, which were adopted by the UK National Radiological Protection Board (now Public Health England and devolved administration bodies) for application in the UK.\(^{10}\)

10.2.5 The typical field strengths for 275 kV and 400 kV OHLs (shown in Table 10.1) are well within the ICNIRP exposure guidelines.

**Table 10-1: Typical EMF and UK Exposure Guidelines**\(^{11}\)

<table>
<thead>
<tr>
<th>Source</th>
<th>Electric Field (kV/m)</th>
<th>Magnetic Field (μT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum beneath OHL</td>
<td>Typical field beneath OHL</td>
</tr>
<tr>
<td></td>
<td>Typical field 25m from OHL</td>
<td>Maximum beneath OHL</td>
</tr>
<tr>
<td>ICNIRP 1998 public exposure basic restriction</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Typical field 275kV and 400kV OHL</td>
<td>11</td>
<td>3 - 5</td>
</tr>
</tbody>
</table>


\(^{11}\) URL: http://www.emfs.info/sources/overhead/
Television and Radio Interference

10.2.6 Corona discharge occurs due to the breakdown of air insulation surrounding the circumference of charged conductors; which is a potential source of interference on the long wave (LW) and medium wave (MW) radio bands which typically reside in the low frequency (LF, kHz) range or lower, but is of little or no significance to very high frequency (VHF) i.e. FM radio or digital radio and televisions which operate in the ultra-high frequency (UHF) range.

10.2.7 Micro-gap discharge is the term describing the breakdown of air insulation between electrodes within a very small air gap. It is usually an intermittent phenomenon and is associated with either a faulty electrical connection or a faulty component. It is rarely found on steel-structure lines, as hardware tends to remain tightly fastened though bad contacts due to corrosion or pollution can lead to discharge. It is not considered a source of long term annoyance as equipment is built and maintained to high standards and any such discharge would be the subject of remedial action.

10.2.8 The Radio Investigation Service of the Department of Trade and Industry (DTI) undertake investigations into complaints of radio and television interference of all kinds and from all sources. Available statistics indicate few cases of interference attributable to OHLs of 100 kV and over, and the number of complaints has reportedly fallen over recent years.

10.3 Potential for Significant Effects

10.3.1 At this preliminary stage, possible effects associated with construction and operation of the Proposed Development include:

- operational effects of noise from the OHL, which has the potential to increase following installation of the new conductors and the increased operational voltage of the lines;
- perceived effects on human health associated with EMF; and
- operational effects of additional electromagnetic interference to medium and long wave (AM) radio signals.

10.3.2 OHL noise is generally associated with a phenomenon known as “corona discharge”. This is essentially a limited electrical breakdown of the air which, in the main, occurs during damp weather. Corona discharge will create a source of audible noise (a crackling sound occasionally accompanied by a low frequency hum in certain wet conditions). Power transmission line conductors are designed to minimise corona discharge, but this may be affected by minor surface irregularities caused by damage, insects, raindrops or pollution.

10.3.3 Although significant effects associated with EMF are not expected, the conclusions of the national and international bodies who have reviewed the evidence for possible health effects will be stated.

10.3.4 Upgrade of the operating voltage of the OHL from 275 kV to 400 kV is likely to lead to additional electromagnetic interference to medium and long wave (AM) radio signals at properties within close proximity of the OHL.

10.4 Issues Scoped Out

Construction Noise

10.4.1 Construction noise will be short term and intermittent and can be controlled through the implementation of a noise management plan, which would be developed as part of the CEMP prepared by the Principal Contractor.

10.4.2 As such, no detailed assessment of construction noise associated with plant noise or traffic is proposed as part of the EIA.
Noise from Operational Maintenance

10.4.3 Any operational maintenance works required along the line will be short term and intermittent and are not anticipated to give rise to significant effects relating to noise and vibration. As such, this topic is proposed to be scoped out of the EIA.

Digital Radio and Television Interference

10.4.4 Corona discharge is unlikely to cause significant interference to VHF reception (i.e. FM radio or digital radio and television which operate in the UHF range). Micro-gap discharge can affect digital television and radio reception, but is not considered to be a source of long term annoyance as equipment is built and maintained to high standards and any such discharge would be the subject of remedial action. It is therefore proposed to scope out impacts to digital television, digital radio and FM radio reception from the EIA.

10.5 Assessment Methodology

Operational Noise

10.5.1 The results of the 2010 and 2012 noise surveys will be reviewed as part of a desk-based study to ensure they are representative of current background noise levels along the route, and to identify any additional noise sensitive receptors not included in the previous study.

10.5.2 Additional background noise surveys are not proposed to be undertaken unless the desk top study identifies significant changes to land use or sensitive receptors along the route.

10.5.3 The noise impact from the OHL during dry conditions will be assessed using the British Standard 4142:2014 noise assessment approach.

10.5.4 During wet conditions, the noise output from OHLs varies according to the number and size of rain droplets accumulated on the surface of the conductors. Therefore, there is a strong relationship between the rainfall rate and the noise output from an OHL. Background noise levels also increase with rainfall rate, such that during very heavy rain noise is generally inaudible. For these reasons an alternative noise assessment method to deal with rain-induced noise is required. The external rain-induced noise levels will be assessed using the methodology developed by National Grid and detailed in their Technical Report TR(T) 94\textsuperscript{12}, which is recommended by the Department of Energy & Climate Change for the assessment of rain induced noise.

10.5.5 Predictions will be undertaken using a spreadsheet tool or computer noise model (CadnaA), whichever is deemed to be more appropriate. The predicted noise level at the receptors will be compared with criteria as agreed with the local Environmental Health Department.

10.5.6 Mitigation measures will be outlined where required, should there be any significant impacts at the noise sensitive receptors.

EMF

10.5.7 An assessment of the change in electric and magnetic field strengths due to the reconductored and reinsulated OHL operating at 400 kV will be undertaken. Maximum field strengths will be calculated based on a minimum ground clearance of 7.6 m for the lowest 400 kV conductor, in accordance with the Energy Networks Association (ENA) Technical Specification 43-8 (ENA, 2004).

10.5.8 The nearest buildings to the OHL within a 100 m corridor of the centre line will be identified using Ordnance Survey (OS) maps. Expected field strengths will be calculated at these locations, taking into consideration the

lateral distance of each building from the OHL and the specific height of the conductors at the nearest point along the OHL span. EMF strengths at each building location will be evaluated against the ICNIRP Guidelines (1998).

Medium and Long Wave Radio Interference

10.5.9 Radio interference from corona discharge will be determined by calculating the maximum electrical field stresses on the surface of the OHL conductors, at altitude, for fair and wet conditions using empirical formulae compiled by CIGRE\textsuperscript{13}.

10.5.10 From the magnitude of interference, and by assumed mainstream signal strength as defined by the International Telecommunications Union\textsuperscript{14}, distance boundaries will be calculated corresponding to the items of the CIGRE scale shown in Table 10.2 to establish the extent of impact on the quality of reception at dwellings.

<table>
<thead>
<tr>
<th>CIGRE Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Interference not audible</td>
</tr>
<tr>
<td>4</td>
<td>Interference just perceptible</td>
</tr>
<tr>
<td>3</td>
<td>Interference audible, but speech perfectly received</td>
</tr>
<tr>
<td>2</td>
<td>Unacceptable for music, but speech intelligible</td>
</tr>
<tr>
<td>1</td>
<td>Speech understandable only with severe concentration</td>
</tr>
<tr>
<td>0</td>
<td>Spoken word unintelligible, noise swamps speech totally</td>
</tr>
</tbody>
</table>

10.5.11 Mitigation measures will be outlined where required, should there be any significant impacts on radio reception at nearby receptors.

10.6 Summary

10.6.1 The proposed noise assessment will consider potential significant effects from OHL noise due to “corona discharge”, during both dry and wet conditions. It is proposed that construction noise and noise from intermittent operational maintenance are scoped of the EIA, as no significant effects are predicted.

10.6.2 Although significant effects associated with EMF are not expected, the conclusions of the national and international bodies who have reviewed the evidence for possible health effects will be stated. An assessment of the change in electric and magnetic field strengths due to the re-conducted and reinsulated OHL operating at 400 kV will be undertaken, with the predicted field strengths evaluated against the ICNIRP Guidelines (1998).

10.6.3 It is proposed to assess the impact upon medium and long wave radio frequencies at properties in close proximity to the OHL. Digital television, digital radio and FM radio reception would likely be unaffected by the Proposed Development; and the impact upon these systems is proposed to be scoped out of the EIA.

\textsuperscript{13} CIGRE Working Group 36.01, 2000. Interferences produced by corona effect of electrical systems.

\textsuperscript{14} CISPR18-2:2010. Radio interference characteristics of overhead power lines and high-voltage equipment – Part 2: methods of measurement and procedure for determining limits.
11. ISSUES SCOPED OUT OF EIA

11.1 Introduction

11.1.1 The sections below provide the rational for excluding certain effects on specified environmental topics from the EIA.

11.2 Land Use

Baseline Conditions

11.2.1 The majority of towers along the route are on land which is used for agricultural activity. Other common land uses within the vicinity of the Proposed Development include moorland, scrub and forestry. Access is maintained by SHE Transmission to existing towers for operation and maintenance purposes.

Potential for Significant Effects

11.2.2 Potentially significant effects which can arise on land use from developments of this type include temporary or permanent loss of publicly used land; temporary or permanent severance and impact on the viability of existing activities; re-utilisation of redundant and vacant land; and impacts on land designated for future development.

Issues Scoped Out

11.2.3 Land use impacts associated with the Proposed Development are anticipated to be minimal. Many of the existing towers already possess tower access routes in good condition; for those without, upgrade of existing tracks or temporary track solutions would be preferred over the construction of new tracks. It is thus proposed that this topic is scoped out of the EIA Report in its entirety.

11.2.4 Dialogue would be maintained by SHE Transmission and the Principal Contractor with landowners, local tenants and property owners throughout the construction period to ensure any potential disruption as a result of the proposed works is kept to a minimum.

11.3 Recreation and Tourism

Baseline Conditions

11.3.1 Various sections of land close to or under the OHL are currently used for recreational activities. These primarily include walking and horse riding. Several Core Paths are present in the vicinity of the OHL near the settlement of Keith. A number of other footpaths are also present in the landscape along the OHL route. Some elevated positions within the landscape provide opportunities for hiking.

Potential for Significant Effects

11.3.2 Potentially significant effects which can arise on local recreation and tourism from developments of this type relate mainly to temporary or permanent loss of publicly used land.

Issues Scoped Out

11.3.3 Due to the nature of the Proposed Development, disruption of recreational activities would be limited to short term construction effects upon Core Paths and other walkways. Where new infrastructure is proposed, the potential for significant effects on the visual amenity of recreational tourist receptors would be considered through the visual assessment. It is therefore proposed that an assessment on recreation and tourism is scoped out of the EIA Report in its entirety.
11.3.4 It is anticipated that an Outdoor Access Plan would form part of the CEMP for the project, within which details of recreational routes would be provided and appropriate signage or practices put in place to mitigate impacts on recreational users during construction. If required for safety, and in accordance with the Health and Safety requirements of the site, measures may be put in place to separate recreational users from the works.

11.4 Air Quality and Climate Change

Baseline Conditions

11.4.1 Local air quality is a combination of background air quality, representative of general levels of pollution away from busy roads and industrial activity, and added emissions from local emission sources such as road traffic. Due to the generally rural nature of the Proposed Development and sensitive receptors, contribution from road traffic and polluting industrial sources are minimal. Current and predicted annual average and short term NO2 and PM10 within the region are compliant with all applicable objectives.

Potential for Significant Effects

11.4.2 Potentially significant effects which can arise on air quality and the climate change from developments of this type relate primarily to generation and dispersal of dust and airborne particulate matter from plant, construction traffic and construction activities.

Issues Scoped Out

11.4.3 The Proposed Development has limited potential to impact upon air quality and climate change. There is a potential to give rise to some localised and temporary construction related releases associated with dust and construction traffic exhaust emissions. However, the nature of construction activities means these would be localised, short term and intermittent. Potential effects would further be minimised through the implementation of mitigation measures described in Section 2.3, in particular the project CEMP and relevant GEMPs (see Appendix 2.2). It is therefore proposed that an assessment on air quality and climate change is scoped out of the EIA Report in its entirety.

11.5 Accidents and Disasters

Baseline Conditions

11.5.1 No accidents or disasters have resulted from the existing OHL, its supporting lattice towers, or associated infrastructure.

Potential for Significant Effects

11.5.2 Potentially significant effects which can arise in relation to accidents and disasters from developments of this type include severe weather events and structural damage to towers, as well as the potential for risks during the construction phase.

Issues Scoped Out

11.5.3 Given the nature of the Proposed Development, the potential for effects related to the vulnerability to accidents and disasters are likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage. Crisis management and continuity plans are in place across the SSE Group. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events. Where there are material changes in infrastructure (or the management of it) additional plans are developed.
11.5.4 Furthermore, the Principal Designer would need to fully assess risks and mitigate as appropriate during the construction stage as part of the requirements of the Construction (Design and Management) Regulations (2015).

11.5.5 As described in Section 2.8, where there are major road, rail or built up area crossings under the section of the route being uprated, it is likely that a form of mechanical protection, such as scaffolding or other approved method, would need to be supplied and erected to provide protection to members of the public and property in case of equipment failure.

11.5.6 Potential significant effects relating to the vulnerability of the Proposed Development to accidents and disasters is therefore proposed to be scoped out of the EIA Report in its entirety.

11.6 Socio-economics

Baseline Conditions

11.6.1 Manufacturing, wholesale and retail trade, professional scientific and technical activities, human health and social work activities are the main sectors of employment within Aberdeenshire. Approximately 6% of Aberdeenshire’s workforce are employed or involved with agriculture and forestry, and 4% in accommodation and food service\(^{15}\). Moray has a similar employment profile, with manufacturing, wholesale and retail trade, education, human health and social work activities being the main sectors of employment. Approximately 2.3% of Moray’s workforce are employed or involved with forestry\(^{16}\), 1.2% in agriculture\(^{17}\), and 7.1% in accommodation and food service.\(^{18}\)

Potential for Significant Effects

11.6.2 Developments of this type can potentially give rise to beneficial socio-economic effects including from direct employment and indirect spend in the local economy.

Issues Scoped Out

11.6.3 The Proposed Development is expected to provide local employment opportunities during construction to local tradesmen and labourers. In addition, the Proposed Development would result in some local revenue generation through demand for accommodation providers, spend in local shops and material supplies. These socio-economic effects are likely to be negligible to minor on a local and regional scale and thus not considered to be significant. There may be individual secondary effects of displacement on local employers, i.e. the number of jobs accounted for by the loss of jobs elsewhere in the locality. These effects, should they occur, would be highly localised and on an individual basis. Due to the location and the scale of the Proposed Development, it is considered that effects on socio-economics during both construction and operation to be minor. Whilst beneficial effects will be highlighted within the EIA Report, it is considered there would be no significant effects on socio-economic conditions and it is proposed this topic be scoped out.


11.7 Forestry

Baseline Conditions

11.7.1 The existing OHL passes through (via managed wayleaves) or adjacent to a number of areas of commercial forestry. Existing tower access routes pass along the outside edge of woodland, or make use of open ground.

Potential for Significant Effects

11.7.2 Potentially significant effects which can arise on forestry from developments of this type include temporary or permanent woodland cover loss and fragmentation; impact on current Forest District Design Plans including areas identified as Native Woodlands; and loss of timber volume production due to early felling.

Issues Scoped Out

11.7.3 The construction effects on areas of commercial forestry are anticipated to be minimal. It is not anticipated that the Proposed Development will require the extension of existing, or creation of new, operational wayleave corridors through any areas of commercial forestry. Furthermore, existing tracks would be utilised where possible, whilst the upgrade of existing tracks or temporary track solutions would be preferred over the construction of new tracks. Impacts on other areas of woodland are not anticipated to be significant, but would be considered within the terrestrial ecology chapter. As such, it is proposed a forestry assessment is scoped out of the EIA Report in its entirety.
### TABLE 12.1 Issues Scoped In and Out

<table>
<thead>
<tr>
<th>Topic</th>
<th>Scoped In</th>
<th>Scoped Out</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Landscape and Visual</strong></td>
<td>Visual impact assessment of reconfiguration of OHL at Keith, and Kintore substation tie-in.</td>
<td>Landscape assessment; and Visual impact assessment of OHL re-conductoring.</td>
</tr>
<tr>
<td><strong>Ecology, Biodiversity and Nature Conservation</strong></td>
<td>Desk-based review; Extended Phase 1; GWDTE assessment; Protected species survey; and Invasive / non-invasive species survey.</td>
<td>Freshwater habitat survey; and Specific reptile and amphibian surveys.</td>
</tr>
<tr>
<td><strong>Ornithology</strong></td>
<td>Desk-based review and data review; and Breeding bird survey.</td>
<td>Collision risk assessment.</td>
</tr>
<tr>
<td><strong>Cultural Heritage</strong></td>
<td>Cultural Heritage Management Plan.</td>
<td>Direct Impacts; and Impacts upon setting.</td>
</tr>
<tr>
<td><strong>Traffic and Transport</strong></td>
<td>Construction Traffic Management Plan.</td>
<td>Construction (unless thresholds exceeded) and operational traffic assessment.</td>
</tr>
<tr>
<td><strong>Hydrology, Hydrogeology, Geology and Soils</strong></td>
<td>Desk-based review; Targeted site walkover; Impact assessment; Mitigation measures; and Basic FRA.</td>
<td>Hydraulic modelling; Peat probing; and Detailed FRA.</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
<td>-</td>
<td>Land use assessment.</td>
</tr>
<tr>
<td><strong>Recreation and Tourism</strong></td>
<td>-</td>
<td>Recreation and tourism assessment.</td>
</tr>
<tr>
<td><strong>Air Quality and Climate Change</strong></td>
<td>-</td>
<td>Air quality and climate change assessment.</td>
</tr>
<tr>
<td><strong>Accidents and Disasters</strong></td>
<td>-</td>
<td>Accidents and disasters assessment.</td>
</tr>
<tr>
<td><strong>Socio-economics</strong></td>
<td>-</td>
<td>Socio-economic assessment.</td>
</tr>
<tr>
<td><strong>Forestry</strong></td>
<td>-</td>
<td>Forestry assessment.</td>
</tr>
</tbody>
</table>
13. NEXT STEPS

13.1.1 SHE Transmission invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

13.1.2 All responses should be addressed to:

Energy and Consents
Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

13.1.3 The Scoping Opinion provided will be used to finalise the terms of the EIA and the specific approach to the individual assessments.

13.1.4 All comments received will be included in the EIA Report for reference, unless consultees request otherwise.
Appendix 2.1 (1 of 2) Photo Titles:

1. Route of proposed new OHL, viewed east from Edindiach Road
2. Keith Substation, as viewed from the north
3. OHL proposed to be removed, viewed southeast from Keith substation
4. OHL proposed to be removed, viewed north from Edindiach Road
Appendix 2.1 (2 of 2) Photo Titles:

5. Blackhillock Substation, as viewed from the east
6. Rothiemerson T-junction, as viewed from the west
7. Kintore Substation Site, as viewed from the northeast
8. Peterhead Substation, as viewed from the northwest
Appendix 2.2:

Relevant SHE Transmission plc General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs)
GEMP 1 - Watercourse Crossings

Construction of these structures presents potential risks to the environment. These include:

- interference with fish migration and spawning, mammal movement, rare plants and their habitats and with riparian and linear wildlife corridors;
- loss of aquatic and riparian habitat;
- alteration of the flow regime; and
- harmful discharges during construction and operation.

All watercourse crossings will require some level of authorisation under The Water Environmental (Controlled Activities) (Scotland) Regulations 2011 (CAR). The Contractor must submit outline drawings for each watercrossing prior to the start of works for the Employers acceptance allowing sufficient time for review and amendment.

The Contractor is required to comply with the following:

General:

- Plan all works in accordance with best practice;
- The Contractor will consult SEPA on proposals, if necessary;
- Seek to avoid watercourse engineering works wherever possible;
- Where this is not possible, seek to use existing crossings, upgrading as required;
- Only build new crossings where there is no other reasonable option;
- Ensure all necessary consents under the Controlled Activities Regulations (CAR) are in place;
- Ask the Employer environmental team for advice in planning water crossings and adhere to approved plans / crossing locations;
- All reasonable steps shall be taken to prevent the transport of sediments or other matter disturbed by the works;
- Where possible works should be undertaken during drier periods (subject to other ecological timing conditions) and avoid periods of high rainfall. The weather forecast should be consulted 3 days in advance of works commencing on the water crossing;
- Ensure all required pre-construction surveys have been completed before starting works (these will include, where appropriate, fresh water pearl mussel (FWPM), otter, and water vole);
- Vehicles should not work within the water unless no other reasonable options exist;
- All crossing locations should be reinstated to a condition that replicates the conditions prior to commencement of the works unless otherwise agreed with The Employer;
- Any temporary dams used should be designed to accommodate periods of high watercourse discharge and dried out sections of bed should be check for stranded fish;
- Where pumps are also used, back up pumps should be available. Pumps should also be fitted with screens to prevent fish mortalities and ingress of debris;
- Where possible, flume pipes should be used for temporary works in areas where migratory fish are present;
- Vegetation removal should be minimised wherever possible.

Temporary watercourse crossings

- Must not impede fish passage through the system;
- Should have access constructed of suitable material and in a manner that will not give rise to rutting, ponding and silt run-off;
- Should have silt laden run-off directed to treatment facilities;
- Carefully store any disturbed materials;
• Comply with General Binding Rule (GBR) 6. This includes a requirement to reinstate the banks and bed of the watercourse to the condition prior to the commencement of the works.

**Fording of watercourses**

• Should be avoided if possible;

• If required, access should be restricted to one crossing point;

• If required, movements should be limited to the minimum required;

• Reinstatement will be required to a condition prior to the commencement of the works.

• Where fording of a watercourse is required the Contractor must agree the method statement with the Employer prior to the start of works; and

• The Contractor shall consult with SEPA to obtain the relevant agreement or authorisations (as required).
**GEMP 2 – Working in or near surface waters**

Construction activities in or near water have the potential to cause serious pollution or impact on the bed and banks of a watercourse and on the quality and quantity of the water. Most pollution incidents are avoidable. With careful planning the risk of site work causing pollution can be reduced. Many measures needed to prevent pollution are not expensive, especially if they are included at the planning stage of any activity.

Major causes of environmental harm associated with working in or near watercourses include:

- silt e.g. disturbance of river bed or bank, dewatering and pumping of excavations, run-off from exposed ground, plant washing, roads and river crossings;
- cement and concrete – which is very alkaline and corrosive and can cause serious pollution;
- chemicals and solvents – oil storage, refuelling, trade materials etc;
- bridge cleaning debris – e.g. dust, debris & wastewaster;
- herbicides – aerial and non-aerial applications;
- waste materials (including special waste) e.g. oily wastes, spent acids and solvents.

Most activities with the potential for affecting watercourses or groundwater will require an authorisation under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR).

The **Contractor** is required to comply with the following:

**General:**

- Identify all activities that will be undertaken in or near watercourses (including all identifiable drainage paths);
- Plan all works in accordance with best practice;
- Avoid works within 10m of a watercourse unless no other practical options exist, and leave a vegetated buffer strip;
- Where works are undertaken within 10m of any watercourse or drain, ensure specific pollution prevention controls are in place;
- Communicate risks associated with working in or near watercourses to all personnel and include control measures in the site specific construction method statements;
- Seek to avoid or minimise watercourse engineering works wherever possible;
- Ensure all necessary consents under the Controlled Activities Regulations (CAR) are in place;
- Ask the environmental project manager for advice in planning works in and near watercourses;
- Vehicles should not work within the water unless no other reasonable options exist;
- All construction machinery operating in-stream should be mechanically sound to avoid leaks of oils, hydraulic fluid, etc;
- Machinery should be steam cleaned and checked prior to commencement of in-stream works;
- All reasonable steps shall be taken to prevent the transport of sediments or other matter disturbed by the works;
- Keep site tidy and do not store materials too close to watercourses or surface water features;
- Check if there are any timing restrictions to works because of protected species (e.g. spawning salmonids, otter, water vole etc) or landowner commitments;
- Ensure all required pre-construction surveys have been completed before starting works (these will include, where appropriate, FWPM, otter, water vole);
- Any temporary dams used should be designed to accommodate periods of high watercourse discharge and dried out sections of bed should be check for stranded fish;
- Where pumps are also used, back up pumps should be available. Pumps should also be fitted with screens to prevent fish mortalities and ingress of debris, and the outfall to pumps be designed to prevent erosion of the receiving waters (i.e. by dissipating the flow);
• Care should also be taken to avoid pollution of watercourses with sediment and to ensure that any de-silting works would not interfere with the bank sides;

• Vegetation removal should be minimised wherever possible;

• Where stock has access to the works fencing may be necessary in order to allow the regeneration of native riparian and aquatic marginal vegetation;

• Ensure construction works minimise disturbance to the current run-off regimes.

**Surface water control:**

• Locate areas of high risk activities away from watercourses and drainage paths. Areas of high risk include:
  
  o fuel and chemical storage;
  o refueling areas;
  o material stockpiles;
  o vehicle and equipment washing areas;
  o site compounds / parking areas.

• Minimise the volume of contaminated run-off being created by:
  
  o Diverting clean surface water away from areas using cut-off drains, catch pits and bunds (where necessary these can be lined);
  o Do not allow water to drain down the length of a haul road. Roads should have adequate cambers to shed water quickly and if necessary cut-off drains installed across the road.

• Minimise erosion of exposed soils and working areas;

• Minimise the area of exposed working area through phased construction;

• Reinstate exposed soil as soon as practical;

• Roughen exposed surface;

• Prevent water from leaving site prior to treatment;

• Ensure adequate buffer zones are identified between working areas and surface waters;

• Diversion drains should be used to catch sediment laden run-off and direct it to treatment facilities (where necessary these can be lined);

• Catch dirty run-off and treat through silt fences, silt traps, bunds, settlement tanks / lagoons, straw bales and geotextile etc. (see CIRIA C648);

• Maintain all protective measures (e.g. change bales once sediment laden etc);

• Depending on the level of contamination, silty water can be pumped over land to filter through vegetation and infiltrate into the ground provided it is carried out in line with the CAR regulations. An appropriate buffer distance must be agreed with the Employer to allow sufficient distance for the vegetation to filter the silty water prior to reaching a watercourse.

**Vegetation removal:**

• Trees and shrubs should not be removed without agreement from the Employer;

• Avoid un-necessary vegetation removal;

• Where necessary leave a vegetated buffer distance of 10m between works and a watercourse;

• Only break the ground surface when works are required and initiate a phased approach;

• Comply with agreed buffer zones of vegetation as this will allow further treatment of surface water;

• Do not dispose of cleared vegetation into the watercourse and avoid debris from clearance;

• Vegetation removal can impact on bank stability and increase erosion. Ensure that all banks are restored to a condition prior to works commencing and assess what further protection may be required.

**Other:**
Identify all field drains, drainage risks and ensure reinstatement is provided to the satisfaction of all interested parties;

Ensure that all watercourses are routinely monitored for changes in water quality. If water quality deteriorates, immediately inform the site supervisor and a member of the SHE, identify the source of the problem and implement appropriate mitigation measures;

Further information is available in:

- SEPA Pollution Prevention Guidelines: PPG5 – Works and maintenance in or near water;
- DETR (2000) Environmental handbook for building and civil engineering projects;
- CIRIA (2005) Environmental Good Practice – site guide;
GEMP 3 – Private Water Supplies

Civil Engineering Works has the potential to disturb drainage patterns (horizontally or vertically) and / or the quality of water that would otherwise sustain a private water supply (PWS).

The Contractor is required to comply with the following in addition to any specific measures identified:

Planning:

- The Contractor shall undertake an assessment on all properties with a PWS that have the potential to be affected by the works. Should the results of this assessment indicate a risk to the PWS then mitigation shall be developed for inclusion in a site specific PWS protection plan;
- At the earliest stage the Contractor shall consult the Employers EPM about monitoring and communicating the implementation of mitigation measures to protect private water supplies;
- It will be necessary to undertake water quality testing of the private supply before any possible activity takes place that could affect the water supply, to establish a baseline of current water quality to act as a benchmark (at least two occasions). This will be need to be included in the CEMP;
- Prepare a contingency plan to deliver an alternative water supply (on a temporary or permanent basis) in the event of an unforeseen problem with the existing supply;
- Liaise in advance with the private water supply users regarding details of the proposed works, the contingency measures put in place to protect the supply and any diversion works that may be needed in relation to their water supply.

Operations:

- Each PWS will have specific mitigations developed. Mitigation may include some / all of the following:
  - fence off the private water supply intake (to avoid accidental damage and to deter animals) and identify relevant buffer distances;
  - survey and peg out the route of the distribution main in the vicinity of the overhead line works and avoid / minimise activity within this area.
- Put in place measures to protect the distribution main where it crosses beneath an roads / access tracks (having discussed these in advance during the planning stages). This might include:
  - setting the existing pipe work within mass concrete;
  - upgrading or rerouting the existing pipe work;
  - ensure there are adequate pollution control and emergency response measures in place to deal with any accidents that could affect a water supply (e.g. spill response, leak or discharge of oily waste, sediment control etc); and
  - provision of an alternative supply (temporary / permanent).
- Undertake regular health and safety briefings to construction staff. Include information on:
  - presence and importance of water supply intake and distribution main nearby;
  - need to protect these from accidental damage;
  - need to act promptly if an accidental spill or pollution incident poses a threat.

What to do if Unknown Water Supplies are identified:

- It is possible that private water supplies may be found which have not as yet been identified;
- If this happens stop work in that location and inform the site supervisor and Employers EPM;
- Necessary protection measures will be identified in consultation with the PWS owner, specialists and relevant authorities and implemented before work can resume again in that location;
- Works should only resume within the vicinity of the PWS following written agreement with from the Employers EPM.
**GEMP 4 - Soil removal, storage and reinstatement**

Soil is a precious resource and can provide the following functions:

- support a diverse ecological systems and provide the growing medium for crops and timber;
- absorb rainfall, delaying its movement into watercourses;
- filters or transforms chemicals that pass through it, preventing them from ending up in water or air.

Any damage to soil quality affects the long-term functioning of the soils and has an impact not only on ecological diversity and the performance and visual quality of the vegetated areas but can have impacts off-site such as on flooding, aquifer recharge and water quality.

It is therefore essential that impacts to the resource are reduced to the minimum necessary for the works and that all work is undertaken in accordance with best practice. The methods or stripping, storage, reuse and disposal of soil can have significant impacts on both the soil resource and other environmental receptors.

The **Contractor** is required to comply with the following:

**General principles**

**Soil Management Process**

- Unless agreed otherwise with the **Employers EPM** and within agricultural fields, all striping must follow the following process:
  - Turfs stripped to 300mm using large toothed bucket;
  - Turfs stored vegetation side up and watered if drying out;
  - Any remaining top soil and all subsoil layers to be removed and stored separately;
  - Subsoil, topsoil and turfs replaced in same order as removed;
  - Turfs reinstated vegetation side up;
  - The toothed bucket should not be used to smooth over the excavation as it results in greater initial damage and slower recovery of the vegetation;

- The **Contractor** will adhere to industry best practice relating to biosecurity, including undertaking all reasonable precautions to minimise the risk of contamination and the spread of animal and plant diseases, pests, parasites and non-native species.

**Stripping**

- Plan soil stripping carefully in advance;
- Check all necessary pre-construction surveys have been completed prior to stripping;
- Follow all identified mitigation requirements for the location and method of stripping;
- Check whether the project archaeologist should be on site during the soil stripping; and
- Where possible, strip soil during drier periods. Do not strip soil during periods of very heavy rainfall.

**Storage**

- Topsoil should be stripped and stored within the pre-identified areas to ensure safe storage and swift and successful reinstatement;
- If space does not allow storage and the surplus is to be stored elsewhere on the site, consult the environmental project manager in advance to agree appropriate areas;
- Separate areas must be created for the different layers and topsoil must not be mixed with subsoil layers;
- Soil storage areas should be located away from watercourses (10m) protected from run-off from adjacent areas;
- Storage areas should be reinstated to the condition prior to use for storage;
- If soil storage is being carried out on sensitive habitats, consideration should be given to storage on top of a geotextile mat and storage duration should be minimised;
- Best practice would be adopted in order to minimise the amount of compaction or other disturbance of the general structure of the superficial deposits;
• Other site works should not impact on stored soil (e.g. Construction traffic must not track over stored soils);
• Record where all removed soils are stored including the different subsoil layers (this is important as subsoil layers will need to be reinstated in the order they are removed);
• If significant soil erosion is occurring from storage piles during periods of heavy rain consideration should be given to covering the stockpiles;
• If any stored soil is contaminated it should be disposed of in accordance with the contaminated land GEMP; and
• In periods of dry weather check the need for bowsing to reduce dust and potential nuisance.

Reinstatement
• Stripped soil should be reinstated as close to where it was removed as possible. This will help to maintain a local seed base and the local geological/hydrological characteristics;
• Unless otherwise agreed, turfs should be reinstated following the works and orientated vegetation side up;
• Where turfs are not available, areas would be left to revegitate naturally unless circumstances require otherwise;
• Any soil found to be contaminated should not be used for reinstatement and dealt with in line with GEMP 5 relating to unexpected contaminated land;
• The reinstatement of the construction areas are to be undertaken to a high standard, using the existing soil and vegetation material wherever possible, in accordance with best practice.
GEMP 5 - Unexpected Contaminated Land

It is the Contractor's responsibility to investigate, excavate and dispose of any potentially contaminated areas in accordance with contaminated land, environmental and health and safety legislation. Know contaminated land areas are identified in the CEMPs.

Contamination could however be encountered in areas where it has not been expected and the Contractor must check for such areas to ensure that any risks to the environment are controlled.

The Contractor is required to comply with the following:

Planning the Works:

- Plan works taking account of recognised best practice and all relevant waste regulations.

Be on the look out for:

- Signs of contamination during boring, excavating, soil stripping and similar operations (these could include discoloured soil, unexpected odours, a fibrous texture to the soils (e.g. asbestos), presence of foreign objects (e.g. chemical/oil, containers/waste), evidence of previous soil workings, underground structures or waste pits, evidence of made ground, old drain runs and contamination within buildings).

If contamination is suspected:

- Stop work immediately;
- Report the discovery to the site manager and Employers EPM within 30 minutes who must seek expert advice and provide guidance on required measures / mitigation;
- Where an environmental incident is understood to have breached legislation the relevant authority shall be contacted within 24 hours;
- Seal off the area to contain spread of contaminants;
- Undertake risk assessment to minimise the risk to health and safety of site workers. This should identify acceptable working methods, PPE, contact, and other required procedures;
- Clear site to ensure there is nothing that could cause fire or explosion;
- Any unexpected contaminated land that has been disturbed by construction activities will need to be dealt with as hazardous waste and disposed of to a suitably licensed site in line with all relevant waste management regulations;
- Ensure that the suspected contamination is tested and characterised and agree changes to the existing site proposals and method statements;
- Inform landowner / occupier;
- Avoid causing or spreading contamination;
- Do not stockpile contaminated soil unless it cannot be avoided. If it is necessary stockpile only on an area of hard standing to prevent contamination of the underlying area;
- Cover the stockpile with plastic sheeting to prevent infiltration of precipitation and spread of soluble contaminants and to prevent potentially contaminated wind-blown dust;
- Control surface drainage from stockpiled area. Remember water draining from a stockpile may be contaminated and require controlled off-site disposal.

Japanese Knotweed:

- Is an extremely invasive and competitive plant.
- Since there are no natural pests in the UK, the highly invasive and competitive nature of the plant makes it a problem not only for native wildlife but also for the built environment and relating infrastructure. Once established Japanese Knotweed is difficult to control.
- It grows extremely densely and shades out native plants; provides poor habitats for insects, birds and mammals; devalues natural landscape; increases the risk of riverbank erosion when it dies back in the autumn; creates a potential flood hazard if dead stems fall into watercourses.

On-site management:
• Japanese Knotweed should not be stockpiled within 10m of a watercourse; any movement of contaminated soil and Japanese Knotweed for treatment within the site boundary, within a designated area, could involve the treatment of waste and may require a waste management license; the relevant local SEPA office should be contacted prior to any such movement and treatment of Knotweed material or associated contaminated soil.
GEMP 6 - Working with Concrete

Cement and concrete will be used during the construction. Water contaminated with cement and concrete can be highly alkaline and can be toxic to fish, plants and animals.

If cement or concrete is allowed to enter a watercourse in an uncontrolled manner it can have a devastating impact on wildlife. There is also a physical effect since cement particles can choke the gills of fish and also destroy their spawning grounds.

Due to the sensitive nature of the site concrete batching plants will not be allowed, and concrete must be brought to site by the Contractor as required.

The Contractor is required to comply with the following:

- Should the Contractor identify the requirement to use concrete and cement within 10m of a watercourse, this should be agreed with the Employers EPM in advance of the works;
- Areas which have been identified with important habitats or species should be avoided, where possible;
- Concrete washout should be removed from site at the time of delivery or collected in sealed containers for off-site disposal by a licensed waste disposal contractor.
- Concrete washout will only be permitted in designated areas. No concrete contaminated water should be discharged to the water environment (including groundwater);
- Ensure all staff are briefed on the risks of working with concrete;
- Store bulk and bagged cement and concrete additives at least 30 metres away from watercourses, gullies and drains in properly secured, covered and bunded areas;
- Ensure dust from storage areas is controlled;
- NOTIFY the site manager IMMEDIATELY if you see any concrete spillages or concrete washout likely to cause pollution;
- Immediately implement the identified emergency response procedures. These include:
  - Stop the action which is causing pollution immediately;
  - Take immediate remedial action – block spill, place booms and absorbent materials to help soak up the spill;
  - Inform the Employers EPM to identify more detailed required actions;
  - The Employers EPM to Inform SEPA and landowners / occupiers as relevant;
  - Monitor effects of spill; and
  - Learn from the experience and plan site works to avoid pollution happening again.
GEMP 7 - Oil Storage and Refuelling

Petrol, diesel and oils inappropriately used, stored or disposed of can give rise to pollution of the environment. Oil and fuel can be released into the environment through:

- spillages during delivery or use;
- spillages during refuelling operations;
- spillages from hose bursts;
- inadequate storage facilities;
- spillages during attempted theft or vandalism; and
- waste materials being poured directly to drains or gullies, or being burned.

Petrol, diesel and oil are all highly harmful to plant, animals and humans. If pollution is caused, prosecution may follow. The cost of clean up and legal proceedings following a spillage / pollution incident is likely to far exceed the cost of putting proper control measures in place.

The Water Environment (Oil Storage) (Scotland) Regulations 2006 apply to any kind of oil including petrol, diesel, mineral oil, heating oil, lubricating oil, waste oil, vegetable and plant oil (except uncut bitumen) stored above ground at premises such as construction sites. The relevant provisions of Waste Management Licensing Regulations 1994 also apply to handling and storage of waste oil.

The Contractor is required to comply with the following:

Protection Plan

General

- Compile a protocol for oil storage operations on site, including emergency response procedures;
- Personnel carrying out refuelling are aware of the protocol, trained in the use of spill kits and know what actions to take in an emergency; and
- Spill kits should be located and maintained at all oil storage and refuelling locations and all site vehicles.

Storage

- On-site storage of oil and fuels should be avoided if possible;
- Where on-site storage of oil and fuels is required, the volumes to be stored should be minimised as far as practical through efficient management of resource;
- Clearly defined areas for the storage of oil should be identified as part of the site establishment process. The following should be considered when identifying a sites for storage:
  - suitability of ground conditions e.g. can the area be protected against flood damage/inundation/subsidence;
  - proximity to sensitive environmental receptors such as surface waters, surface water drainage systems; (minimum of 30m from surface waters);
  - ease of access to proposed storage area for oil deliveries / refuelling;
  - ability to secure proposed oil storage areas (to prevent theft / vandalism);
  - Ensure no fuel stores are sited where they could be hit by moving vehicles and plant; and
  - Ensure all site staff are aware of designated fuelling areas and also those areas where fuelling is not permitted

Storage areas should:

- have an impermeable base in areas of groundwater risk (where necessary, discuss with SEPA);
- have control measures in place and have adequate spill kits easily accessible;
- be secured against damage / theft / vandalism;
- spill kits should be located and maintained at all oil storage and refuelling locations.
- storage containers should:
- comply with the requirements of the Water Environment (Oil Storage) (Scotland) Regulations 2006;
- comply with the Pollution Prevention Guidelines (PPG) 2 – above ground oil storage tanks;
- static oil storage tanks to be surrounded by an impervious bund with no surface water outlet. The bund to be capable of retaining at least 110% of the volume of the tanks;
- valves and couplings connected to oil storage tanks to be located within the bund and delivery;
- hoses to be fitted with trigger-type handles suspended back within the bund after use;
- valves and trigger filler handles to be kept padlocked when not in use;
- mobile fuel tanks (including those for generators) should be double skinned and locked when not in use;
- be of appropriate type and capacity for the contents and in good condition;
- be appropriately labelled identifying the contents.

**Refuelling**

- Vehicles and plant should be refuelled, where possible, at designated refuelling bays;
- Where this is not possible for operational reasons, refuelling should not be undertaken within 30m of surface waters;
- Spill kits should be easily accessible for all re-fuelling operations and drip trays / plant nappies used during refuelling operations.

**Construction plant**

- Oil, oil powered pumps, generators etc. to be positioned an impervious drip trays surrounded by earth or sand bunds or plant nappies, and located at least 30m from any watercourse;
- Drip trays / plant nappies to be used to contain leakages from stationary plant equipment on site including generators, winches, compressors etc.;
- Drip trays / plant nappies to be used to contain leakages from stationary plant equipment on site including generators, winches, compressors etc. They should be regularly inspected.

**Further information available from:**

- SEPA Pollution Prevention Guidelines – Above Ground Oil Storage Tanks: PPG2;
- The Water Environment (Oil Storage) (Scotland) Regulations 2006.
**GEMP 8 - Dust Management**

Dust arising from a site may frustrate local residents / landowners and can cause air pollution. At very high concentrations, dust may cause health problems. There is also the potential for legal action, which will have cost, programme and reputation implications.

**Likely issues:**

- Annoyance to neighbours and bad publicity for the site;
- Claims from farmers for dust damage to crops;
- Impact on project programme and budget (e.g. compliance with statutory notices relating to dust levels / abatement notices);
- Impacts on ecology (e.g. plant growth, watercourses);
- Under the Clean Air Act 1993 and Part 3 of the Environmental Protection Act 1990, local authorities can impose limits on dust generated from a site (see Section 9).

The **Contractor** is required to comply with the following:

**Protection Plan**

**Likely sources of dust:**

- Haul roads and access tracks;
- Soil storage areas;
- Construction corridor (exposed areas following stripping);
- Material transportation;
- Loading and unloading materials;
- Crushing/screening activities;
- Transport of mud onto the public highway;

**Control methods:**

- The site compound areas will be ‘hardstanding’;
- Inspect areas at risk daily, especially during dry weather;
- Vehicles carrying bulk materials should be sheeted if could give rise to dust;
- Keep all public roads well swept and bowse if required;
- Limit vehicle speeds along dusty haul roads;
- Do not use drills that are powered by compressed air unless appropriate control measures are in place;
- Mud should not be deposited on roads. Where applicable, have wheel cleaning facilities prior to vehicles leaving site;
- Suppress dust from soil stockpiles, haul roads, stripped working corridors and material storage areas, by bowsing with water, where required;
- Water used in dust suppression can be obtained from either a Scottish Water supply or abstracted in line with the CAR Regulations;
- Run-off from dust suppression activities shall be controlled in line with GEMP 2;
- Hand-sweeping and a road sweeper would be employed to clear up any deposited material to roads;
- Wind conditions should be monitored throughout the works, and backfill material would be dampened down when dust generation which could affect the public and road users is likely;
- Keep height of soil stockpiles to a minimum and gently grade the side slopes;
- Store materials away form the site boundary;
- Minimise the height of fall of materials;
- Reduce the height that materials are unloaded from;
• Planning activities to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (i.e. very dry / windy) unless suppression is in place;

• Identifying any nearby dust sensitive receptors and adopt appropriate measures;

• Communicating dust management procedures to all relevant personnel and training if required;

• Follow-up any complaints immediately and take action to avoid a repeat complaint;

Further information available in:

• BRE (2003) Control of dust from construction and demolition activities;

• DETR (2000) Environmental handbook for building and civil engineering projects;

GEMP 9 - Waste Management

Waste is defined as “any substance or object which the holder discards, intends to discard or is required to discard”. This includes materials that other people want, or for which they can find a beneficial use i.e. material that is to be recovered / recycled. In any construction project, there may be a variety of different wastes, from office and canteen waste to construction materials, waste oils, asbestos and clinical waste that will require management.

The Contractor is required to compile a Site Waste Management Plan (SWMP) in accordance with the principles below:

Principles of waste management

Waste management priorities and practical actions that can be undertaken on site should follow the principles of the waste hierarchy as illustrated below:

- Eliminate
- Reduce
- Reuse
- Recycle
- Recover
- Dispose

  Design out waste
  Minimise waste generation
  Reuse materials on site if possible
  Reprocess materials for off-site use
  Recovery of energy from waste sent off site
  Least desirable option – last resort

A SWMP will be compiled by the Contractor and agreed with The Employer 12 weeks prior to construction works starting. This plan should be based on the above principles and include the following minimum requirements:

- Waste minimisation;
- Allocate a waste champion – who is responsible for the SWMP;
- Record types and quantities of waste that will be produced during the project;
- Decide how waste arising will be managed in line with the waste hierarchy;
- Plan for efficient materials and waste handling and set reduction targets (KPIs);
- Measure quantities and types of waste produced and compare against targets;
- Monitor the implementation of the SWMP and update as necessary; and
- Compile a waste budget.

Duty of Care

All those who produce or handle waste legal responsibilities – a “Duty of Care” - for its safe keeping, transport and subsequent recovery or disposal.

Failure to comply is an offence as the “Duty of Care” is a legal requirement under Section 34 of the Environmental Protection Act 1990.

‘Duty of Care’ requires the producer to:

- ensure those transporting waste are registered with SEPA;
- Ensure the waste is being treated, re-used or disposed of at a suitably licensed site in line with current legislation;
- Keep a waste transfer slip for all waste being transported off site;
- Ensure that all waste on site is properly stored and secured;
- Take all reasonable steps to prevent unauthorised handling or disposal by others;
- If you are dealing with hazardous / special wastes, such as asbestos, chemicals, oils or contaminated soils, you have extra legal responsibilities and may be required to complete detailed special waste consignment notes; and
- Should there be uncertainty over whether a waste is hazardous / special advice should be sought from the Employers EPM.
Storage:

- All waste should be stored in designated storage areas;
- The site should be kept tidy and free from litter at all times;
- Waste storage areas should be appropriately secured to ensure to prevent pollution;
- Controls to prevent wind blow (e.g. covered skips);
- All wastes that could leach or be entrained in water run-off should be stored in a sealed container or on an impervious surface with barriers to lateral flow;
- Storage of liquid wastes should be stored in a sealed container on impermeable surfaces within a secondary containment system in a bund with 110% capacity of the container;
- Segregation of waste at the point of generation should be provided for site offices / welfare facilities and for construction activities by the use of designated storage areas / containers to ensure cross-contamination is reduced;
- All storage areas / containers should be clearly labelled to identify the waste type and properties;
- Keep the duration of storage to the minimum required.

Special waste storage:

- Weekly inspections should be undertaken for leaks, corrosion etc;
- Separate all waste streams at source. Incompatible wastes such as chemicals that, if mixed, may react together;
- Provide written instructions for storing and disposing of each type of waste; and
- Maintain an inventory of the special wastes stored on each site, quantities, and location.

Movement:

- All movement of waste should be undertaken in line with the relevant waste regulations;
- Any waste being transported off site should be done so by a registered waste carrier;
- A waste transfer note / special waste consignment note should be completed and retained prior to waste leaving the site;
- Before waste is allowed to leave site, the producer should ensure that the site it is being transported to as appropriately licensed; and
- Vehicles transporting waste should be suitably secured so as not to allow waste to escape.

Reuse, Treatment, Disposal:

- All re-use, treatment and disposal of waste must be undertaken in line with an appropriate waste management licence (WML) or an exemption to require a waste management licence (WMX);
- If it can be proven that the material is not waste, it will not fall within these requirements;
- The Contractor must apply for or register WML’s and WMX with SEPA prior to undertaking the activity;
- No burning of waste is permitted on site;
- No fly-tipping is permitted.

Monitoring/Auditing:

- Regular audits should be undertaken to ensure that the SWMP is being fully implemented.

Zero Waste Scotland Regulations:

- The regulations aim to ensure that the minimum level of service on offer to households and businesses across Scotland is better than that of today and signal the end of landfilling biodegradable municipal waste in Scotland.
- The Waste (Scotland) Regulations 2012 were passed by the Scottish Parliament on 9 May 2012. The following provisions relate to the construction industry.
Businesses to present metal, plastic, glass, paper and card for separate collection from 1 January 2014.

- Waste contractors to provide collection and treatment services which deliver high quality recycling.
- A ban on any metal, plastic, glass, paper, card and food collected separately for recycling from going to incineration or landfill from 1 January 2014.

- The Contractor must adhere to these regulations at all times.
- Resources relating to the implementation of the Zero Waste regulations in relation to the construction industry can be found at: http://www.zerowastescotland.org.uk/category/sector/construction

Some useful links on waste management are:

- www.zerowastescotland.org.uk
- www.wrap.org.uk
- www.bre.co.uk
- www.smartwaste.co.uk
- www.dti.gov.uk
- www.ciria.org.uk
- www.netregs.gov.uk
- www.envirowise.gov.uk
GEMP 10 - Working in Peat, Blanket Bog, Wet Heath and Dry Heath habitats

This section of the CEMD includes plans for specific on-site activities in peat. These guidance plans are generic and should be developed and further detailed before construction begins for each particular location where working in peat is a constraint.

The Contractor is required to comply with the following:

General

- Peat stripping and removal should be kept to an absolute minimum;
- The access track routes and tower locations have been selected to avoid, wherever possible, areas of deep peat;
- Maintain local hydrological conditions necessary for peat formation, maintenance and regeneration whilst taking into account sensitive habitats adjacent to works area;
- Ensure that large loads do not compress peat and create a barrier to water movements which could cause pooling at one side of corridor and drying out at the other, or cause peat slump by displacement;
- Consider how site will be restored/reinstated on completion of the works;
- Define a water management strategy for working peatland areas in consultation with the EPM;
- Vehicle movements on untracked ground should be limited to reduce the impact of construction on soil compaction and surface vegetation loss;
- Access to the site must be done as efficiently as possible avoiding unnecessary movements back and forth. The use of multiple parallel access track-ways should be avoided where possible as this will cause damage over a wide area leading to possible damage to sensitive areas;
- For transportation across peat areas, use temporary matting (E.g. Terrafirma Dura-Base or Eve Trakway), geotextile membranes, timber log mats or bog mats unless agreed otherwise with The Employer;
- Access to peatland habitats is restricted to low ground pressure vehicles / plant at all times;
- Always seek advice from the project Employers EPM on working methods within peat areas;
- Areas where rain water has been flowing over the surface should be identified in advance. Post-installation inspections should be made to identify whether any of the pre-construction areas show signs of soil erosion where water is flowing over large tracks of the trenches. Locally designed drainage channels or pipe systems to conduct water across cable trenches should be constructed to minimise post-construction damage and to allow better opportunities for re-vegetation.

Access track construction

- A tracked excavator should proceed the trenching works and remove turfs to a depth of 300mm using as large a toothed bucket as is practical;
- Turfs and soil should be stored to the side of the excavation. Where this is on good quality blanket bog storage should be on top of a geotextile membrane;
- Turfs should be stored root side down an should remain in the storage location until required for reinstatement (this is to avoid multiple handling and reduce the potential for turfs becoming unstable);
- Turfs, peat and subsoil should be stored separately;
- Stored peat should be regularly checked for signs of drying out. If drying out is occurring the storage areas should be sprayed with water to maintain moisture content;
- Subsoil layers and peat layers should be reinstated in the order they were removed and the turfs should be reinstated root side down;
- Design of works should avoid the potential for concentrated discharges of water onto the hill slopes;
- In particularly susceptible areas, the use of drainage ditches may be necessary upstream of the construction corridor. These should only be installed following advice from hydrological specialists and The Employer's EPM;
- Working in areas of peatland should be avoided, as far as practicable during times of the year with the highest rainfall, and stripping of peat/reinstatement should stop during periods of sustained heavy rainfall.
**GEMP 11 - Bad Weather**

It is important to consider the implications of poor weather conditions and associated environmental risks. Bad weather, particularly heavy rain, can cause significant environmental impacts during construction (for example, on sensitive habitats and increased risk of sediment laden run-off into surface waters).

The **Contractor** is required to comply with the following:

- Identify an action plan before construction starts with a protocol of measures to implement in times of bad weather. This should include heavy rain, high winds, snow and frost;
- The weather forecast should be checked on a daily basis and thought should be given to possible sudden changes;
- Ground conditions should be checked regularly and assessment made as to whether they are suitable for the proposed site activities;
- Check whether plant is causing unacceptably high damage on site because of poor ground conditions (involve the **Employers EPM**);
- Consider whether plant could be at risk if used in areas which are too wet;
- Plan for high run-off in advance and Identify protection measures (silt traps, straw bales and booms etc);
- Check for any materials stored close to watercourses during construction activities which could be washed into the water in times of storm;
- During times of excessive rainfall and ground saturation, stripping and reinstatement works should not be undertaken.
- Emergency response plans should take account of bad weather.
**GEMP 12 - Restoration**

In order to undertake restoration to an acceptable standard (ensuring that the previous habitat and vegetation is reinstated to as near the original condition as possible), it is important to plan the works in such way as reinstatement is achievable. The way in which stripping, storage and replacement of soils / turfs is undertaken can significantly increase the successfulness of any reinstatement. The following guidance should form a basis of the restoration plan for the project.

A site restoration plan should be included with the CEMP. It is noted that the Contractor is to assume that unless authorised by the Local Planning Authority all access is to be restored to original condition. It is recommended that the Contractor assume a pro-active approach to restoration i.e. use of temporary access materials such as Trackway panels and appropriate low pressure construction vehicles particularly in areas of wet ground is encouraged. The Contractor is to assume that all decommissioned tower foundations will be removed to 1.5 m below grade.

### Planning Construction Works

In planning the detailed construction works seek to avoid intrusive work wherever possible. There will be less restoration required once construction is finished.

**Seek to:**

- avoid major earthworks wherever possible;
- retain natural features such as rocky outcrops wherever possible to aid in successful restoration;
- avoid loss of mature trees wherever possible; for example, remove young regenerating birch in preference to mature trees which may have biodiversity and landscape value and will give structure to the finished works;
- site tracks and micro-site route around groups of trees where possible to leave natural features rather than dissecting groups/copses which again will reduce the necessary restoration works;
- when crossing hedges or walls plan to use gaps to avoid reinstatement works;
- where possible plan to push trees over which require to be removed and leave on site (unless not considered appropriate by the environmental representative) which again will reduce the necessary restoration works;
- take account of archaeological resources and seek to avoid;
- design any permanent drainage ditches to be as natural as possible (not too straight and engineered but with varied banks and alignments etc);
- design drainage measures carefully to avoid unnecessary long term effects on adjacent habitats which could be difficult to restore; and
- plan all site activities to reduce the need for vehicle movements. This will help in final restoration by minimising compression etc.

### Planning Restoration:

- Restoration at the end of the works will always be more successful if planned in advance.

**Always:**

- ensure that detailed restoration plans take account of specific habitat types and locations;
- plan restoration in advance of working on-site - this will save time and money at a later stage and will ensure that opportunities are not lost and a more successful outcome is achieved;
- identify where soils and peat and turfs will be stored with input from the site environmental representative(s);
- discuss restoration proposals with the environmental representative(s);
- take account of all agreements included in this CEMD and commitments register;
- take account of all environmental interests, for example, seek to enhance local biodiversity but not by planting on sensitive archaeological or geological sites;
- If any seeding is required this will need to be agreed with the Employers EPM and SNH. Remember different seed mixes will give different colour in the final design-seek to avoid creating ‘stripes’;
• plan how monitoring of restoration will be undertaken and by whom and when;
• consider how deer pressures (grazing and wallowing) may affect the success of planting and plan restoration works accordingly; and
• plan restoration taking account of run-off erosion risks on steep slopes in poor conditions; be aware of the potential for sediment rich run-off to smother sensitive or newly established communities in poor weather conditions and seek to curtail this.

Early Works:

Some early works will help in achieving more successful final restoration. These include the following:

• always take photographs of the site before works start to guide later restoration including of any drainage that will be disturbed;
• strip turfs and vegetation carefully and use in temporary works to prevent erosion;
• turfs can be stored successfully in cut-off ditches in some locations which can aid attenuation and prevent turfs / vegetation from drying out;
• store top soil and subsoil separately according to best practice;
• store stripped materials in immediate location or as close as feasible for future re-use in site restoration as close as possible to the location from which they were removed from;
• keep a record of where all soils and turfs are stored;
• remove large boulders (rather than cover) to replace in restoration works;
• remove noxious weeds in accordance with best practice. Do not allow unnecessary spread or this will compromise the success of final restoration works;
• seek to avoid compression of soils as much as possible on restoration. Drainage may impeded and may result in extensive rush areas being created; and
• during construction seek to avoid creating eroded areas which can be difficult to restore successfully.

Final Restoration

At the end of construction in any area the site must be restored carefully and sympathetically taking account of all required mitigation and of the conditions. The following principles should also be adopted where appropriate:

General

• undertake restoration works in suitable weather conditions - wet ground conditions can be difficult as can hot dry and windy spills;
• restoration should ensure the successful integration of the site with surrounding land uses and habitats;
• all field, roadside or other boundaries disturbed during construction operations would be reinstated using the original materials (in the case of stone dykes, this having been carefully set aside for re-use) or to the original specification and to at least the pre-existing condition, or better;
• natural regeneration of habitats should be promoted in all appropriate areas;
• where hedgerow field boundaries are removed they are to be replanted with the same species and at the same spacing intervals;
• any required replanting and / or reseeding should be undertaken at appropriate times of the year and with the agreement of landowners / occupiers (and SNH if within designated sites);
• identify the most appropriate machinery to use for restoration in any area (small digger or large machine etc) according to the sensitivity of the habitats and the extent of areas to be restored (take advice from the site ecologist);
• undertake small sections of the site for restoration and monitor success with input from the site environmental representative(s) before restoring large areas;
GEMP 13 - Forestry

The Employer requires that best practice is implemented at all times by the Contractor. The following is provided as a guide to the standards that will be expected during forestry works:

- All tree works should comply with BS 5837 (2012) – Trees in Relation to Design, Demolition and Construction.
- Vegetation should be left well balanced with natural crown shapes.
- Pruning must also take into account the vegetation re-growth expected in the interval between cuts. This will vary widely between plant species and sites.
- Avoid all recognised injurious practices such as:
  - Topping or lopping to an arbitrary height or branch length.
  - Flush cuts.
  - Unbalancing a tree crown by excessive one-sided pruning.
- Climbing damage - Care shall be taken to avoid injuring thin and weak barked species by inappropriate use of rope access techniques on trees (such as use of climbing irons) on trees to be retained.
- Access damage - Vehicle access and treatment of arisings shall avoid injury to low branches, stems, root buttresses and feeder roots.
- Spreading Disease - Appropriate regard shall be given to avoiding spreading fungal diseases. Forestry Commission Biosecurity Guidance should be followed. Consideration should be given to landowners’ requirements for treating stumps.
- If the only pruning option is to severely reduce or unbalance a tree, then coppicing, or felling and replacement planting are often better options and shall be agreed with the landowner.
- Presentation of produce should be in neat, safely stacked piles ready for forwarder/tractor pick-up, where required.
- Cut and present material as agreed with the Environmental Project Manager and defined in the scope of works.
- Sites shall be left tidy, with brash and stumps cut low and neatly with any hinge or jagged spikes removed, to prevent them becoming a trip hazard or an obstacle to vehicles. Remove all litter from site.
- Utilise brash to assist with the access requirements for felling and construction machinery and give consideration to rights of way by transient wildlife. Small piles of brash and timber may be left on site at specific, identified locations in the interest of increasing biodiversity.
- Leave watercourses, culverts and ditches undamaged and clear of arisings. No felling into watercourses is allowed. The Forestry Commission publication ‘Forest and Water Guidelines’ (Ver 4) should be followed.
- Local drainage systems to be maintained and not damaged or interrupted by the felling works.
- Avoid damaging those standing trees which are to be retained.
- No fires should be lit on site.
- A root protection zone should be identified around all trees to remain on site that are within close proximity to the works area to ensure that no accidental damage is caused to the tree roots.
- No material arising from access works or another site works must be stored within the root protection zone or stacked against trees.
- Mulching should be used where there is a need to clear the site of tree residue or where trees or areas are too small to fell commercially (typically, a minimum top diameter of 7cm will be commercially recovered). The resultant mulch is to be partially incorporated with the vegetation layer.
Badger Species Protection Plan
Badger Species Protection Plan

Revision: 1.01  Classification: Internal  Issue Date: March 2018  Review Date: March 2023

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Francis Williams</td>
<td>Environmental Project Manager</td>
</tr>
<tr>
<td>Alistair Watson</td>
<td>Environmental Advisor</td>
</tr>
<tr>
<td>Richard Baldwin</td>
<td>Head of Environment</td>
</tr>
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</table>

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Appendix A  Project Licence Method Statement Template ................................................................. 15
1 Introduction

Badger is a protected species under the Badger Protection Act and is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of badgers and their shelters during construction works on SHE Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for badger to be present (Part 1), and where a Project Licence for badger has been issued by SNH to cover the project (Part 2):

1.1 Part 1: General Protection Plan

This Part applies to all projects where badger may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of badger. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This is provided to Contractors in addition to Part 1 for large projects where a Project Licence has been issued by SNH to cover the work and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Error! Reference source not found., below should be used in conjunction with this document

<table>
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</tr>
<tr>
<td>SNH’s &quot;Scotland’s Wildlife: Badgers and Development (2001)&quot;</td>
<td></td>
</tr>
</tbody>
</table>

3 Part 1: General Protection Plan

3.2 Background

Badgers (*Meles meles*) are members of the weasel family with a very widespread distribution in Scotland. They normally live in small family groups (clans) in sometimes large underground structures called setts.
are closely associated with woodland and sloping ground, but badgers can exploit many diverse types of habitat including upland moorland. Although they typically consume large numbers of earthworms, they are omnivorous and will forage on a wide variety of foods including grains and carrion. The distance from the sett which they travel varies widely, with those in upland areas having to exploit large areas. Four kinds of setts are recognised – main, annexe, subsidiary and outlier although badgers are also known to use above ground nests and rock crevices.

The badger breeding season is generally acknowledged to run between 1\textsuperscript{st} December and 30\textsuperscript{th} June with cubs born in February.

Signs of badger:

- Dung heaps or latrines – small pits are dug and large faeces of variable consistency are deposited. Dung tends to have an inoffensive odour.
- Badger prints and tracks – badger paths are often well worn and lead from setts to and along boundaries such as fences. They may be marked at strategic points with dung heaps where they constitute the edge of a home range. Badger prints are about 4.5 – 6.5 cm wide and have five toes with very prominent claws.
- Guard hairs – stiff, long, elliptical, hairs with black and white bands.
- Setts – typically large D-shaped burrows with large spoil heaps of excavated soil often with discarded bedding mixed in.
- Snuffle holes – indentations in the ground where badgers have been rooting for food such as bulbs and invertebrates.

3.3 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Protection Plan where badger may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.4 Legislation

Badger is protected under The Protection of Badgers Act 1992. Under this Act it is illegal to intentionally or recklessly\(^1\) damage a badger sett or cause a dog to enter a sett, to obstruct access to a sett and to disturb a badger while occupying a sett, or for any person to kill, injure or take a badger. It is also an offence to cruelly ill-treat a badger, to dig for or to snare a badger.

\(^1\) Reckless acts would include not having or disregarding a mitigation plan aimed at protecting badgers resulting in killing, injury, and/or disturbance of any badger or badger resting place, or carrying out an activity which would result in an offence where the presence of badger was foreknown.
This legislation means that badgers are fully protected in Scotland. Under Section 10 (1) of The Protection of Badgers Act 1992, Licences may be granted to interfere with a badger sett within an area specified in the Licence by any means so specified.

3.5 Surveying for Badger

Surveys for badger must be undertaken in all works areas containing suitable badger habitat, a maximum of 12 months prior to the works commencing, (this includes site investigations), to ensure the availability of up-to-date information on shelter locations. A preconstruction check should also be made of works areas a maximum of three weeks prior to the start of works, to check for any changes to sett location / status.

Surveys must extend for a minimum of 30 m beyond working areas, including access tracks increasing to 100 m in areas of potential high noise and vibration (piling, blasting, etc.) for high noise activities.

The preconstruction surveys will be carried out by suitably qualified and experienced ecologists who will identify whether the sets are Active, Inactive or Defunct.

- **Active** - the presumption in Scotland is any suitable site that could be used for shelter in active badger territory is considered an active sett unless proven otherwise, through a lack of supporting evidence of current use, and by appropriate monitoring.

- **Inactive** - these can be characterised by tunnels looking disused (e.g. cobwebs and overgrown vegetation / leaves in the entrance) and no presence of signs of current use by badger (e.g. hairs, footprints, snuffle holes etc.). Appropriate monitoring is required to provide absolute certainty that the sett is not in current use by badger.

- **Defunct** - these are characterised by a loss of the structural integrity of the tunnel entrance (such as when they have been trampled by cattle) and/or roots growing through the tunnel, (i.e. the hole could not be used for shelter by a badger in its current state), and no other signs of current use by badger being present

Appropriate monitoring (e.g. the use of suitable camera traps) should be undertaken where required to determine if any sett is being used for breeding. Camera trap monitoring may also require a Licence from SNH.

3.6 Review of Badger Survey

Once a badger survey has been carried out, the ecologist / ECoW should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / ECoW.
Relevant site documentation and project information sources should be updated with new and amended information on badger constraints as it is produced, with changes communicated to appropriate staff immediately.

3.7 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb badgers in their setts or to destroy / exclude any sett. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any sett that may be affected (See Figure 1):

Avoidance

This is the preferred option for active / inactive setts identified within 30 m of works (or 100 m for high noise / vibration activities), an initial protection zone of either 30 m (or 100 m) will be marked on the ground and appropriately signed to restrict work access.

Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited outwith the protection zone. If badger disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

Disturbance

For any works required within 30 m of active setts, and for high noise / vibration activities such as pile driving or blasting within 100 m of setts, a Licence from SNH will be required (either Individual or Project).

Individual Licence applications to SNH should be accompanied by a Species Protection Plan which outlines how disturbance will be minimised and setts protected, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a breeding sett will be disturbed during the breeding season (1st December – 1st July), a Method Statement must be submitted to SNH licensing team for written approval in accordance with Part 2 of this document, prior to any works commencing.

Destruction

Destruction of setts should only be undertaken as a last resort. For destruction of active setts a Licence will be required from SNH (either Individual or Project) Individual Licence applications to SNH should be accompanied by a Species Protection Plan which outlines how disturbance will be minimised and individuals protected.

The plan should include appropriate monitoring to ensure breeding is not taking place and provision for the creation of an artificial sett if required. Any sett subject to works under Licence will be monitored during and after those works. If a Project Licence is in place, a Method Statement must be submitted to SNH licensing team in accordance with Part 2 of this document for written approval prior to any works commencing.
3.8 Mitigation Measures

3.8.1 General Mitigation

- Any temporarily exposed pipe system should be capped when staff are off site to prevent badgers from gaining access.
- All exposed trenches and holes should be provided with mammal exit ramps e.g. wooden planks or earth ramps when Contractors are off site.
- An emergency procedure should be implemented by site workers if badger / badger setts are unexpectedly encountered. All work within 30 m (100 m for high noise/vibration activities) should cease until a suitably qualified and experienced ecologist has inspected the site and determined the appropriate course of action.
- An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH licensing team if required).

3.8.2 Monitoring and Reporting

- The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to badger is delivered.
- Reports will be submitted to SNH as required by the relevant Licence.

3.8.3 Exclusion / Destruction of Inactive Setts at any time of year

Where there is a structure that requires to be excluded or destroyed which may be used by badger, a survey to determine whether the feature is in active use is required to determine whether a licence. For guidance see the SNH website (https://www.nature.scot/sites/default/files/2017-07/A1391121%20-%20Badgers%20Current%20use%20-%20Guidance%20-%20September%202014.pdf).

Should the structure be deemed to be inactive the following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing. A licence from SNH is not required.

**Monitoring**

a. Any potentially inactive sett must be monitored for a minimum of 14 days where weather conditions are favourable (up to 28 days if unfavourable) to check for current use by badger.

b. A combination of the following methods will be used, as appropriate:
   - An appropriately positioned camera trap to monitor badger activity at the sett.
   - Small pencil-sized sticks placed in the floor of the tunnel just inside the entrance(s), pointing upright.
   - Checks for other badger sign (e.g. hair, snuffle holes, latrines and fresh scuff marks).
   - Sand placed at the sett entrance(s).
Exclusion

c. Following adequate monitoring, and where the named Agent is confident that there is no sign of use by badger, the sett will be excluded for 7 days using a gate set in the one-way position.

d. Exclusions must be overseen by a named Agent on the Project Licence.

Monitoring Exclusion

e. The sett will be visited regularly through the exclusion process to check activity and to check on the integrity of the exclusion materials and make good any damage. If it is apparent that badger(s), or other animals, have breached the exclusion any necessary repairs will be made and exclusion period will be restarted.

Exclusion / Destruction of the Sett

f. Following exclusion, temporary blocking by wiring the gate shut, or destruction of the sett will be undertaken, where required, under the supervision of the Agent.

g. Where the sett is not required to be destroyed the exclusion gate / sheeting may be left whilst works proceed around the sett and removed once works have finished.

h. Where the inactive sett is required to be destroyed, this will be carried out using appropriate plant or hand tools.

i. For setts on distinct slopes, the excavation will start at least 1 m away from the entrance spoil heap on the down-slope side (up to 4-5 m in front of the entrance itself). For setts on flat ground the excavation will start in front of the entrance hole and hand digging will be utilised to assess the direction and number of tunnels in all directions. Once this has been established a appropriate plant can be used to further progress the excavation. A trench will be dug under direction of the Agent. In the unlikely event that badgers are found during this process all excavation will cease and the badger(s) will be allowed to freely move away from the area. The Agent / ECoW will decide on when the excavation can re-commence.

j. The excavation will continue slowly, working forwards into the tunnels and chambers until the Agent is satisfied the entire sett has been excavated. Once fully excavated the soil will then be backfilled and compressed to deter animals from excavating further holes.

k. Construction works will be programmed to commence as soon after this process as possible to reduce the probability of animals returning to the area.

3.9 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 40 days) to ensure the licence is in place prior to any work commencing.

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2 The specification of gates, fencing and materials would be in accordance with DMRB and the Natural England Technical Information Note 25 (Appendix 2). The badger mesh fence specification is as described in SNH's "Scotland's Wildlife: Badgers and Development (2001)".
3.10 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and / or long running Project, which may result in a large number of minor unavoidable badger offences.

For example, multiple instances of disturbance to a number of badger setts over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-development surveys within 12 months of the planned project start date, and pre-construction surveys within 3 weeks of works commencing. Any Project Licence application will need to be accompanied by the Mitigation Plan and procedures for badger included in Parts 1 and 2 of this SPP.

3.11 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable badger offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing.

Further guidance and details of how to apply for a badger Licence can be found on the SNH website (https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing).
### Badger Mitigation Decision Tree

1. **Undertake agreed pre-construction surveys for badger**

2. **Is there an active badger sett within 30 m of the proposed work (or within 100 m of high noise/vibration work such as blasting or pile driving)?**
   - **Yes**
     - **Can work be micro-sited so that it is out with these distances?**
       - **Yes**
         - **Mark out protection zone (30 m or 100 m for high noise/vibration activities), proceed with revised works, keeping all personnel, equipment and machinery out with protection zone at all times.**
       - **No**
         - **Mark out appropriate protection zone (30 m or 100 m for high noise/vibration activities). Apply for an Individual Licence or check if the planned activities are covered by a Project Licence. If a Project Licence is in place see Part 2 of this document. Ensure a Licence is in place and conditions of the Licence are adhered to before proceeding with works.**
   - **No**
     - **Proceed with works as proposed**
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

4.1 Works Allowed under the Project Licence

Under the Project Licence there is a general presumption against works being carried out which could disturb badgers in their setts, or to destroy / exclude any sett unless it can clearly be demonstrated that either it is inactive (i.e. through monitoring) or that there is no alternative solution against Project timescales and requirements.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved by SNH prior to any works commencing:

a. Destruction of any active setts within the breeding season (1st December – 30th June inclusive).
b. Destruction of a breeding sett, or a sett which cannot be discounted as a breeding sett, at any time of year.
c. Disturbance (i.e. works within 30 m, or 100 m for high noise / vibration works) to a breeding sett, or a sett which cannot be discounted as a breeding sett, during the breeding season.
d. Where it is proposed to exclude (even temporarily) such a proportion of setts in a given clan’s territory as to cause a significant impact on the clan.
e. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions.

Proposed mitigation works should be agreed with SNH.
4.3 Activities not requiring additional SNH approval

The following works may be carried out under this SPP and / or specific Method Statements without the prior approval of SNH when a Project Licence is in place, using the prescribed methodologies:

4.3.1 Exclusion / Destruction of a non-breeding active sett from July – November inclusive

The following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing:

Pre-works Assessment

a. In advance of any ground-breaking or use of construction machinery within 30 m of a sett entrance (or 100 m for blasting operations) an Agent on the Project badger licence will consider in detail the scope of the proposed works, type of sett and topographical location to determine if exclusions can be avoided without placing badgers at risk.

Exclusion

b. As agreed with SNH, badger gates and appropriate materials will be used for the exclusion of setts, unless in rare circumstances, in which case SNH licensing team will be consulted beforehand. Exclusions must be overseen by a named agent on the Project badger licence.

c. The gate would be set to the two-way position for at least 7 days and then set to one-way for 14 days.

Monitoring Exclusion

d. To monitor use of the sett the a combination of the following methods may be used.

- An appropriately positioned camera trap to monitor badger activity at the sett.
- Small pencil-sized sticks placed in the floor of the tunnel just inside the entrance, pointing upright.
- Threads pinned to the gate and gate frame to confirm if the gate has been opened.
- Sand placed at the sett entrance (inside and outside the gate).

e. The sett will be visited regularly through the exclusion process to check activity and to check on the integrity of the exclusion materials and make good any damage. If it is apparent that badger(s) have breached the exclusion any necessary repairs will be made and exclusion period will be restarted.

Destruction of the Sett

f. Destruction will proceed as per the method outlined for destruction of inactive setts.
4.3.2 Disturbance to a non-breeding active sett from July – November inclusive

The following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing:

Tree Felling and Scrub clearance

All tree and scrub clearance will be undertaken in accordance with the conditions of a Standard Forestry Operations Licence (see https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/badgers-and-licensing/badgers-licences-land).

Track Construction

- Track construction can be carried out within the 30 m protection zone under the Project Licence providing it does not impact on the “Critical Zone”, as shown in the diagram above, and lie within 5 m of the sett entrance. An Agent / ECoW on the Project badger licence will carry out a risk assessment and mark out the maximum protection zone to ensure the integrity of the sett is protected. If works are proposed in the critical zone between 20 and 30m from an entrance, careful hand-digging of a cross trench at the edge of proposed access track route or tower compound will be performed to confirm the tunnels do not extend under the works.

- The Agent / ECoW will be present immediately before construction starts to re-check for any ecological constraints including newly dug badger setts. Details of any ecological constraints, and associated mitigation, not related to badger will be communicated separately to this plan to all site workers.
Tower Compound Establishment

c. A tower compound can intrude within the 30 m protection zone under the Project licence, where there is no alternative, providing it does not impact on the “Critical Zone” and the sett entrance is a minimum of 5 m out with the compound boundary. The An Agent / ECoW on the Project badger licence will carry out a risk assessment and mark out the maximum protection zone to ensure the integrity of the sett is protected.

d. Badger proof fencing / gates will be used for the compound to reduce the risk of badgers entering the works area. One-way badger gates will be installed at the nearest corner of the compounds to allow animals to escape.

e. The Agent / ECoW will be present immediately before construction starts to re-check for any ecological constraints including newly dug badger setts. Details of any ecological constraints, and associated mitigation, not related to badger will be communicated separately to this plan to all site workers.

5 Revision History

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<td>TG-PS-LT-707 (Rev 1.00)</td>
<td>1.00</td>
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<td>Hyperlink to “Current use” guidance 'What is a badger sett?' has been added under newly created paragraph 3.8.3. 4.3.1 ‘Exclusion / Destruction of Inactive Setts at any time of year’ (Rev 1.00) has been moved under 3.8.3 to represent Licensing Team changes in accordance with legislation.</td>
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Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

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<th>Northing</th>
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<th>Description</th>
<th>Date works exclusion zone demarcated &amp; distance</th>
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Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: <insert description>

Reference number: <insert species record reference>

Client: SHE Transmission

Task: <insert description of works>

Prepared by: <insert individual or Company name>

Licensed Agent: <insert name>

Method statement for <insert works description>

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor’s name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative: .................................................. Date ....../ .... / ....

Print name in full: .................................................................
Bat Species Protection Plan
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Appendix A  Project Licence Method Statement Template ................................................................. 15
1 Introduction

All bat species occurring in Britain are European Protected Species (EPS), protected under Annex II and IV of EC Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) and are afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of bats and their shelters during construction works on SHE Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for bats to be present (Part 1), and where a Project Licence for bats has been issued by SNH to cover the project (Part 2):

1.1 Part 1: General Protection Plan

This Part applies to all projects where bats may be present and is issued to Contractors. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of bats. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This is provided to Contractors in addition to Part 1 for large projects where a Project Licence has been issued by SNH to cover the work and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Error! Reference source not found., below should be used in conjunction with this document

<table>
<thead>
<tr>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation (Natural Habitats &amp;c.) Regulations 1994</td>
</tr>
<tr>
<td>Conservation (Natural Habitats &amp;c.) Amendment (Scottish) Regulations 2007</td>
</tr>
<tr>
<td><a href="https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing">https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing</a></td>
</tr>
</tbody>
</table>
3 Part 1: General Protection Plan

3.2 Background

Bats are a diverse group of mostly nocturnal flying mammals of which there are generally recognised to be 9 different species in Scotland. There are four more common or widespread species; common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), Daubenton’s bat (*Myotis daubentonii*), and brown long-eared bat (*Plectotus auritus*). The two pipistrelle species mentioned above are the ones most likely to be encountered.

The other less common species are Natterer’s bat (*M. nattereri*), Nathusius pipistrelle (*Pipistrellus nathusii*), Leisler’s bat (*Nyctalus leisleri*), whiskered bat (*M. mystacinus*), and Noctule bat (*N. noctula*).

Identification can be made by using bat detectors and recording devices to differentiate the characteristic echolocation signals (used to navigate and catch prey) as well as flight patterns, morphology and DNA analysis of droppings.

Bats exploit a wide variety of natural and semi-natural habitats such as woodlands, pasture, water and hedges in pursuit of insect prey such as moths and midges. They use a variety of strategies to catch their prey. For example brown long-eared bats glean insects from foliage, whereas Daubenton’s bats gaffe insects from near the surface of water.

Bats rest up during the day in roosts within sheltered voids or cavities. Although all bat species in Scotland rely heavily on man-made structures, roosts can be found in; buildings and ruins, trees (woodpecker holes, cracks, flaky bark and callused flush cuts), bridges, caves and tunnels. Signs of an active roost may include urine staining, presence of flies, scratch marks, strong odour and droppings, however not all roosts have such features. Tree roosts can be particularly difficult to identify.

Roosts are communal structures which are in use at different times and many different types of roosts exist varying from temporary day roosts to more permanent maternity and hibernation roosts. The most sensitive periods for maternity roosts are from early May to late August and hibernation roosts are in use from October until March. Bats are particularly vulnerable to disturbance during hibernation which could result in mortality due to cold temperatures and lack of food resource.

3.3 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Protection Plan where bats may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.4 Legislation

All bat species (*Chiroptera*) in Britain are European Protected Species (EPS), protected under Annex II and IV of EC Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive). The Habitats Directive is transposed in Scottish law by the Conservation (Natural Habitats

The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 enhanced this protection. As EPS, it is an offence to deliberately or recklessly\(^1\) kill, injure or take (capture) bats, deliberately or recklessly disturb or harass bats, and damage, destroy or obstruct access to a breeding site or resting place of any bat. It is important to note that bat roosts are protected even at times of year when not in use.

### 3.5 Surveying for Bats

1. Surveys for bats must be undertaken in all works areas containing suitable bat habitat, at a suitable time of year a maximum of 12 months\(^2\) prior to the works commencing, (this includes site investigations), to ensure the availability of up-to-date information on shelter locations.

2. Surveys must extend for a minimum of 30 m beyond working areas.

3. Pre-construction surveys will be undertaken for all potential roosting features likely to be affected (i.e. built structures and trees). If evidence of roosting bats is encountered further survey may be required to confirm species, roost type and usage.

### 3.6 Review of Bat Survey

Once a bat survey has been carried out, the ecologist / ECoW should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on bats constraints as it is produced, with changes communicated to appropriate staff immediately.

---

\(^1\) Reckless acts would include not having or disregarding a mitigation plan aimed at protecting Bats resulting in killing, injury, and/or disturbance of any Bat or Bat Roost, or carrying out an activity which would result in an offence where the presence of Bats was foreknown.

\(^2\) Note: Information from any previous surveys (e.g. surveys carried out to provide data for EIA or other Assessments) can be a useful guide to bats activity in an area, particularly if roosts were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing.
3.7 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb bats or to destroy / exclude or obstruct access to any bat roost. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any roost that may be affected:

**Avoidance**

This is the preferred option for roosts identified within 30 m of works, an initial protection zone of either 30 m will be marked on the ground and appropriately signed to restrict work access.

Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited out with the protection zone. If bat disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

**Disturbance**

Works required within 30 m of an active roost may constitute disturbance and therefore may require a Licence from SNH (either Individual or Project) this needs assessing on a case by case basis. In these circumstances the ecologist / EcoW must be tasked to assess the likelihood of disturbance to bats, and therefore the need for a licence (in consultation with SNH licensing team if required). Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance will be minimised and roosts protected, for example through timing works for when bats are least likely to be present, screening of works and modifying protection zones.

If a Project Licence is in place, part 2 of this document should be used to ascertain whether a formal Method Statement is required to be submitted for approval to SNH prior to works commencing which could disturb bats.

**Roost Destruction**

Destruction of roosts should only be undertaken as a last resort. For destruction of roosts a Licence will be required from SNH (either Individual or Project). Destruction of maternity roosts and hibernation roosts will only be licensed outside of the seasons when they are in use.

Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance of bats will be minimised, roosts compensated for, and individual bats protected. Roost destruction may not always be permitted; this will depend on roost type and rarity of species (see species matrix in part 2 of this document)

If a Project Licence is in place the following activities require a formal Method Statement to be submitted and approved by SNH in accordance with Part 2 of this document, prior to any works commencing:

- Destruction of a breeding / hibernation roost of a Brown long-eared or Daubenton’s bat.
- Destruction of any roost of an uncommon species (Natterer’s, Leisler’s, Whiskered, Noctule, Narthusius’s pipistrellae) at any time of year.
For all other scenarios (such a destruction of a non-breeding roost of a more common species outside of the active season) works should be carried out in accordance with part 2 of this document. Any roost subject to works under Licence will be monitored during and after those works.

3.8 Mitigation Measures

3.8.1 General Mitigation

1. An emergency procedure will be implemented by site workers if signs of bat (e.g. urine staining, droppings or animals) are encountered. All work within 30 m will cease and the Ecologist / ECoW will inspect the site and define mitigation (if required) in line with this SPP.

2. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH if required).

3.8.2 Monitoring and Reporting

3. The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to bats is delivered.

4. Reports will be submitted to SNH as required by the relevant Licence.

3.9 Licensing Requirements

Licence applications must be sent into SNH species licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.

3.10 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and / or long running Project, which may result in a large number of minor unavoidable bat offences.

For example, multiple instances of disturbance to a number of bat roosts over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-development surveys within 12 months of the planned project start date, and pre-construction surveys within 3 weeks of works commencing. Any Project Licence application will need to be accompanied by the Mitigation Plan and procedures for bats included in Parts 1 and 2 of this SPP.

3.11 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable bats offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing.
Further guidance and details of how to apply for a bat Licence can be found on the SNH website (https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing).
Bat Mitigation Decision Tree

1. Undertake agreed pre-construction survey for bats

2. Is there a roost within 30 m of the proposed work?
   - Yes: Can work be micro-sited so that it is out with these distances?
     - Yes: Mark out protection zone (30 m) from the roost. Use a qualified and experienced bat ecologist to determine whether disturbance can be avoided by timing works, screening, or modification of protection zones. If not apply for an Individual Licence or check if the planned activities are covered by a Project Licence. If a Project Licence is in place see Part 2 of this document. Ensure a Licence is in place and conditions of the Licence are adhered to before proceeding with works.
     - No: Proceed with works as proposed.
   - No: Proceed with works as proposed.

3. Mark out appropriate protection zone (30 m).
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

4.1 Works Allowed under the Project Licence

Under the Project Licence there is a general presumption against works being carried out which could disturb bats, or to destroy / exclude or obstruct access to any bat roost unless it can clearly be demonstrated that either it is inactive (i.e. through monitoring) or that there is no alternative solution against Project timescales and requirements.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved by SNH prior to any works commencing:

a. Disturbance of breeding or hibernation roosts of Common Pipistrelle, Soprano pipistrelle, Brown long-eared, and Daubenton’s bat during the seasons when they are likely to be in use;

b. Disturbance of breeding or hibernation roosts of all non-common bat species (i.e. Natterer’s, Leisler’s, Whiskered, Noctule, Nathusius’s, and any other species not normally found in Scotland) at any time.

c. Disturbance of non-breeding and non-hibernation roosts for all non-common bat species (i.e. Natterer’s, Leisler’s, Whiskered, Noctule, Nathusius’s, and any other species not normally found in Scotland);

d. Destruction of a Brown Long-eared or Daubenton’s breeding or hibernation roost

e. Destruction of any roosts for all non-common bat species (i.e. Natterer’s, Leisler’s, Whiskered, Noctule, Nathusius’s, and any other species not normally found in Scotland)); and

f. Any exceptional circumstances not covered in this SPP or Points a to c above.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions.

Proposed mitigation works should be agreed with SNH.
**Species Matrix**

This matrix summarises which activities at which time of year can be carried out under this SPP or require an approved method statement. For explanation see text of this SPP.

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<thead>
<tr>
<th>Species</th>
<th>Breeding / Hibernation Roosts</th>
<th>Non-breeding / non-hibernation Roosts</th>
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<tr>
<td></td>
<td>Disturbance</td>
<td>Destruction</td>
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<tr>
<td>Common Pipistrelle</td>
<td>SPP (outwith seasons)</td>
<td>SPP</td>
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<tr>
<td>Soprano Pipistrelle</td>
<td>SPP (outwith seasons)</td>
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<td>Brown Long Eared</td>
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<tr>
<td>Daubenton’s</td>
<td>SPP (outwith seasons)</td>
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</tr>
<tr>
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<td>Approved MS</td>
</tr>
<tr>
<td>Nathusius’s Pipistrelle</td>
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</tr>
<tr>
<td>Leisler’s</td>
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</tr>
<tr>
<td>Whiskered</td>
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<td>Unlikely to be allowed</td>
</tr>
<tr>
<td>Noctule</td>
<td>Approved MS</td>
<td>Approved MS</td>
</tr>
<tr>
<td>Other species not normally found in Scotland</td>
<td>Approved MS</td>
<td>Approved MS</td>
</tr>
</tbody>
</table>
4.3 Activities not requiring additional SNH approval

The following works may be carried out under this SPP and / or specific Method Statements without the prior approval of SNH, using the prescribed methodologies:

a. Disturbance to non-breeding (note according to European guidance mating roosts are considered to be breeding roosts) and non-hibernation roosts, and disturbance to maternity / hibernation roosts (outwith the seasons they are in use), for the more common species (i.e. common and soprano pipistrelle, Brown long-eared, and Daubenton’s bats) Destruction of any common or soprano pipistrelle roosts (including breeding and hibernation) at an appropriate time of year for the type of roost (i.e. When bats are not likely to be present and avoiding sensitive seasons).

b. Destruction of non-breeding and non-hibernation roosts for brown long-eared and Daubenton’s bats, at an appropriate time of year for the type of roost when bats are not present, or avoiding sensitive seasons.

4.3.1 1. Disturbance to non-breeding and non-hibernation roosts at any time of year, and disturbance to maternity and hibernation roosts outwith the seasons they are in use,

a) This methodology applies to the following:
   - Disturbance to non-breeding and non-hibernation roosts of Common pipistrelle, Soprano pipistrelle, Brown long-eared and Daubenton’s bats.

b) If works are to be completed within the protection zone when bats are present the following measures will be adopted in order to minimise potential disturbance to the roost:
   - Works will be completed in a manner to reduce and ensure minimal disturbance;
   - No use of directional lighting; and
   - No site compounds and/or vehicle parking areas will be permitted within 30 m of the roost.

c) Prior to the commencement of Project works, a protection zone will be established to retain the maximum possible distance between Project works and the roost in order to prevent damage. In most cases this protection zone will be no less than 1 m from the drip line of the tree or 5 m for buildings or cave entrances, and will be set up by the Ecologist / ECoW who is an Agent on the Project bat Licence, or a suitably qualified bat worker under their supervision. No construction works will be completed within this zone.

d) All site construction staff will be made aware of the presence of the roost and the requirement to remain outwith the protection zone at all times through a Toolbox Talk and the site EMP.
e) A watching brief would be undertaken by the ECoW as required to ensure that the protection zone has not been breached and that the roost/roost feature has not been inadvertently damaged.

f) No specific ecological mitigation is considered to be required for the disturbance to non-breeding and non-hibernation sites.

4.3.2 2 & 3. Destruction of roosts at an appropriate time of year

a) This methodology applies to the following:
   - Destruction of roosts of Common and Soprano pipistrelle bats; and
   - Destruction of non-breeding and non-hibernation roosts of Common pipistrelle, Soprano pipistrelle, Brown long-eared and Daubentons’s bats.

b) Destruction of these roosts will only be completed at an appropriate time of year (dependent on roost status, avoiding sensitive seasons and if presence/absence of bats can be confirmed).

c) Prior to the commencement of Project works within 30 m of non-breeding and non-hibernation roosts, a protection zone will be set up by the ECoW. No works will be completed within this area until the roost has been destroyed in a controlled manner.

d) All site construction staff will be made aware of the presence of the roost and the requirement to remain out with the protection zone at all times through a Toolbox Talk and the site EMP.

e) Prior to licensed destruction of the roost, appropriate mitigation / compensation shall be provided on a like-for-like replacement basis (e.g. provision of roost features that would match the roost to be destroyed). Replacement roost features would be sited as close as possible to the roost to be destroyed but out with any potential disturbance distances. Compensatory roost provision would be agreed with SNH.

f) The destruction of the roost will be completed in a controlled manner under the supervision of the ECoW (who is an Agent on the Project Licence, or a suitably qualified bat worker under their supervision), in order to ensure that no bats are injured and/or killed. The following measures will be adopted during the controlled destruction of the roost:
   - Prior to any works being completed that will result in the destruction of non-breeding and non-hibernation roosts, a survey will be completed to determine whether bats are present or absent, the status of the roost and the species involved (through visual or lab analysis of droppings).
   - Where a roost is to be destroyed during the active period, and the presence of bats is confirmed or cannot be discounted, bats will be excluded from the roost using an appropriate exclusion device. (e.g. a cotton sleeve) which will be fitted to the observed entrance/exit point by the ECoW.
   - A dawn survey will be undertaken on the day of the exclusion to confirm the absence of bats returning to the roost. These surveys will be undertaken when the dawn
temperature is > 8° C. Should bats be seen entering the roost the exclusion will be postponed for 3 days and the process repeated.

- The exclusion device will remain in place for 7 days, unless this corresponds to a period of cold or adverse weather (where the temperature at dusk is < 8° C or heavy rain), then the excluder must stay in place for a further 7 days.
- In the event of bats being identified within the roost during destruction, the ECoW is responsible for determining the best course of action with respect to the welfare of the animals.

5 Revision History

<table>
<thead>
<tr>
<th>No</th>
<th>Overview of Amendment and Text affected</th>
<th>Previous Document</th>
<th>Revision</th>
<th>Authorisation</th>
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<tbody>
<tr>
<td>01</td>
<td>Transfer to new template and Nomenclature</td>
<td>TG-PS-LT-708 (Rev 1.00)</td>
<td>1.00</td>
<td>Richard Baldwin</td>
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<tr>
<td>02</td>
<td>Sentence 3.8.2 (1) has been replaced by the equivalent sentence of precursor TG-PS-LT-708. Paragraph 3.10 has been replaced by the equivalent paragraph of precursor TG-PS-LT-708. Paragraph 3.11 has been replaced by the equivalent paragraph of precursor TG-PS-LT-708 (with exception of update to SNH hyperlink)</td>
<td>TG-NET-ENV-502 (Rev 1.01)</td>
<td>1.01</td>
<td>Richard Baldwin</td>
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</tbody>
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Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

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<tr>
<th>Reference</th>
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<th>Northing</th>
<th>Date recorded</th>
<th>Description</th>
<th>Date works exclusion zone demarcated &amp; distance</th>
</tr>
</thead>
</table>

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: <insert description>

Reference number: <insert species record reference>

Client: SHE Transmission

Task: <insert description of works>

Prepared by: <insert individual or Company name>

Licensed Agent: <insert name>

Method statement for <insert works description>

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor’s name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative: ........................................ Date  ..../      /

Print name in full: ..........................................................
Otter Species Protection Plan
Contents

1 Introduction ...................................................................................................................................... 3
2 References ........................................................................................................................................ 3
3 Part 1: General Protection Plan ........................................................................................................ 4
4 Part 2: Project Licence Protection Plan .......................................................................................... 10
5 Revision History .............................................................................................................................. 12
Appendix A Project Licence Method Statement Template ................................................................. 13
1 Introduction

Otter is a European Protected Species and is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of otters and their shelters during construction works on Scottish Hydro Electric (SHE) Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for otter to be present (Part 1), and where a Project Licence for otter has been issued by Scottish Natural Heritage (SNH) to cover the project (Part 2).

1.1 Part 1: General Protection Plan

This Part applies to all projects where otter may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of otter. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This is provided to Contractors in addition to Part 1 for large projects where a Project Licence has been issued by SNH to cover the work and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 below, should be used in conjunction with this document.

<table>
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</tr>
</tbody>
</table>
3 Part 1: General Protection Plan

3.2 Background

Otters (*Lutra lutra*) are members of the weasel family with a widespread distribution in Scotland. They are largely solitary, semi-aquatic and obtain most of their food from rivers or the sea. Otters living on rivers may travel distances of 16 km or more at night. They use two kinds of shelter – underground holts and above ground couches. Otters may dig their own holts but they often enlarge existing structures such as rabbit holes so identification can be difficult. Couches may be nest-like structures or simply a depression in a stick pile or under a windblown tree. Each individual will use multiple shelters and holts can be located up to 500 m from watercourses. Otters may have cubs at any time of year.

Breeding sites are generally found in areas with the following characteristics:

- Relatively undisturbed by humans / ungrazed by stock.
- Close (<50 m) to water but rarely flooded or just above the floodplain level.
- Containing patches of dense cover (e.g. scrub thickets, deciduous woodland, young conifer plantation, heather, log piles, tree roots, rock piles, stands of tussocky tall fen vegetation, or reed beds).

Signs of otter:

- Spraints (droppings) which have a high mucus content and are often formless, generally black or greenish –black in colour and may contain obvious fish bones or scales.
- Otter prints and tracks – otter paths are 12-15 cm wide and normally connect with water and holts they are marked with spraints. Otter prints are about 6 cm wide and have five toes.
- Feeding remains – hard parts of crustaceans, unpalatable bits of amphibians and bony parts of fish.
- Otter shelters - holts or couches.

3.3 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Protection Plan where otter may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.4 Legislation

Amendment (Scotland) Regulations 2007 enhanced this protection. Current Legislation means that otters and their shelters are fully protected in Scotland. In summary it is illegal to:

- Deliberately or recklessly kill, injure or take (capture) an otter;
- Deliberately or recklessly disturb or harass an otter;
- Damage, destroy or obstruct access to a breeding site or resting place of an otter (i.e. an otter shelter).

### 3.5 Surveying for Otter

1. Surveys for otter must be undertaken in all works areas containing suitable otter habitat, a maximum of 12 months\(^1\) prior to the works commencing, (this includes site investigations), to ensure the availability of up-to-date information on shelter locations.

2. Surveys must extend for a minimum of 200 m beyond working areas, including access tracks.

3. Surveys must be carried out by suitably qualified and experienced ecologists and will identify whether any active holts or places of shelter are likely to be affected by the works. Normally work within 30 m of a non-breeding shelter is regarded as likely to cause otter disturbance and will therefore require to be covered by a licence from SNH. However, works generating high noise / vibration levels (such as pile driving or blasting) can cause disturbance to non-breeding sites up to 100 m. Any work within 200 m of a breeding otter holt / shelter should also be regarded as capable of causing disturbance.

4. Appropriate monitoring (e.g. the use of suitable camera traps) should be undertaken where required to determine if any holt / place of shelter is being used for breeding. Camera trap monitoring may also require a Licence from SNH.

5. Active shelters will be classified as:
   - **Holt:** Underground or other fully enclosed structure (can range from enlarged rabbit holes and cavities amongst tree roots to rock piles and man made structures).
   - **Place of Shelter:** Can be either a Couch / Lie-up - an above ground semi-enclosed resting place (e.g. under overhanging river banks / tree root plates); or Hover – a nest-like structures (0.3 - 1 m in diameter) constructed from nearby vegetation or a depression in a stick pile or under a windblown tree.

### 3.6 Review of Otter Survey

Once an otter survey has been carried out, the ecologist / Ecological Clerk of Works (EcoW) should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

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\(^1\) Note: Information from any previous surveys (e.g. surveys carried out to provide data for Environmental Impact Assessment (EIA) or other Assessments) can be a useful guide to otter activity in an area, particularly if holts were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing.
Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on otter constraints as it is produced, with changes communicated to appropriate staff immediately.

3.7 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb otters in their place of shelter or to destroy / exclude any holt. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any holt / place of shelter that may be affected (See Figure 1):

Avoidance

This is the preferred option for active holts / places of shelter identified within 30 m of works (100 m for high noise / vibration activities) or 200 m for confirmed breeding sites or. Protection zones of either 30 m, 100 m or 200 m should be marked and signed on the ground with appropriate material to restrict work access.

Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited outwith the protection zone. If otter disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

Disturbance

For any works required within 30 m of active holts / places of shelter (or 200 m for confirmed breeding sites), and for high noise / vibration activities such as pile driving or blasting within 100 m of holts / places of shelter, a Licence from SNH will be required (either Individual or Project).

Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance will be minimised and holts protected, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a breeding holt will be disturbed, a Method Statement must be submitted to SNH for written approval in accordance with Part 2 of this document, prior to any works commencing.

Destruction

Destruction of holts / other places of shelter should only be undertaken as a last resort. For destruction of active holts / places of shelter a Licence will be required from SNH (either Individual or Project) Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance will be minimised and individuals protected.

The plan should include monitoring to ensure breeding is not taking place and provision for the creation of an artificial holt if required. Any holt / place of shelter subject to works under Licence will be monitored.
during and after those works. If a Project Licence is in place, a Method Statement must be submitted to SNH in accordance with Part 2 of this document for written approval prior to any works commencing.

3.8 Mitigation Measures

3.8.1 General Mitigation

1. All works close to waterbodies and watercourses showing signs of regular use by otters should not take place at night or within 2 hours of sunset / sunrise, if possible.

2. Where works close to waterbodies and watercourses are required at night, lighting should be directed away from riparian areas.

3. All works close to water courses and waterbodies must follow best practice measures to ensure their protection against pollution, silting and erosion.

4. Any temporarily exposed pipe system should be capped when staff are off site to prevent otters from gaining access.

5. All exposed trenches and holes should be provided with mammal exit ramps e.g. wooden planks or earth ramps when Contractors are off site.

6. An emergency procedure should be implemented by site workers if otter / otter shelters are unexpectedly encountered. All work within 30 m (100 m for high noise/vibration activities) or 200 m for breeding sites should cease until a suitably qualified and experienced ecologist has inspected the site and determined the appropriate course of action.

7. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH if required).

3.8.2 Monitoring and Reporting

8. The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to otter is delivered.

9. Reports will be submitted to SNH as required by the relevant Licence.

3.9 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 40 days) to ensure the licence is in place prior to any work commencing.

3.10 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and / or long running Project, which may result in a large number of minor unavoidable otter offences.

For example, multiple instances of disturbance to a number of otter places of shelter over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency
across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-development surveys within 12 months of the planned project start date, and pre-construction surveys within 3 weeks of works commencing. Any Project Licence application will need to be accompanied by the Mitigation Plan and procedures for otter included in Parts 1 and 2 of this SPP.

3.11 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable otter offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing.

Further guidance and details of how to apply for an otter Licence can be found on the SNH website (https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing).
Otter Mitigation Decision Tree

1. Undertake agreed pre-construction survey for otter

2. Is there an active non-breeding otter holt within 30 m of the proposed work (or within 100 m of high noise / vibration work such as blasting or pile driving). Or is there an active breeding otter holt within 200 m of the proposed work?

   - Yes
     - Can work be micro-sited so that it is out with these distances?
       - Yes
         - Proceed with works as proposed
       - No
         - Mark out appropriate protection zone (30 m for non-breeding holt, 100 m for high noise / vibration activities, 200 m for breeding holt). Apply for an Individual Licence or check if the planned activities are covered by a Project Licence. If a Project Licence is in place see Part 2 of this document. Ensure a Licence is in place and conditions of the Licence are adhered to before proceeding with works.

   - No
     - Proceed with works as proposed
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

4.1 Works Allowed under the Project Licence

Under the Project Licence there is a general presumption against works being carried out which could disturb otters in their place of shelter, or to destroy / exclude any holt unless it can clearly be demonstrated that either it is inactive (i.e. through monitoring) or that there is no alternative solution against Project timescales and requirements.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved by SNH prior to any works commencing:

a. Destruction of a holt at any time of year.

b. Disturbance to a breeding holt at any time of year.

c. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions.

Proposed mitigation works should be agreed with SNH.
4.3 Activities not requiring additional SNH approval

The following works may be carried out under this SPP and / or specific Method Statements without the prior approval of SNH, using the prescribed methodologies:

4.3.1 Disturbance / Destruction of places of shelter at any time of year

The following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing:

**Disturbance to a non-breeding holt / place of shelter at any time of year**

i. Appropriate monitoring will be undertaken to ensure the place of shelter is not being used for breeding.

ii. The Agent or their representative will check, prior to works each morning, that suitable access / egress between the holt / place of shelter and a watercourse is maintained. A check will also be made of the works area to check no otter is present within construction plant / materials.

iii. Works can commence once the Agent or their representative is satisfied that no otter is present within the works area.

iv. The Agent or their representative will set up a suitable protection zone as far from the holt/place of shelter as is reasonably practicable to prevent damage and minimise disturbance.

v. The Agent or their representative will monitor the works to ensure compliance with the licence conditions.

vi. The emergency procedure detailed will be implemented if an otter is found during works.

**Destruction of a place of shelter at any time of year**

i. Appropriate monitoring will be undertaken to ensure the place of shelter is not being used for breeding.

ii. The Agent or their representative will check to ensure that the place of shelter is not being used immediately prior to its destruction.

vii. If it can be determined that the place of shelter has not been used recently, no exclusion will be required prior to destruction.

viii. The Agent or their representative will monitor the destruction works to ensure compliance with the licence.

ix. The emergency procedure will be implemented if an otter is found during the works.

x. A report will be sent to SNH detailing the destruction works undertaken (in line with the reporting process outlined above).
### 5 Revision History

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<th>Previous Document</th>
<th>Revision</th>
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<td>01</td>
<td>Transfer to new template and Nomenclature</td>
<td>TG-PS-LT-709 (Rev 1.00)</td>
<td>1.00</td>
<td>Richard Baldwin</td>
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<tr>
<td>02</td>
<td>Updated links and replaced references to badger with otter. Other minor formatting issues corrected.</td>
<td>TG-NET-ENV-503 (Rev 1.00)</td>
<td>1.01</td>
<td>Richard Baldwin</td>
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Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

<table>
<thead>
<tr>
<th>Reference</th>
<th>Easting</th>
<th>Northing</th>
<th>Date recorded</th>
<th>Description</th>
<th>Date works exclusion zone demarcated &amp; distance</th>
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</table>

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: <insert description>

Reference number: <insert species record reference>

Client: SHE Transmission

Task: <insert description of works>

Prepared by: <insert individual or Company name>

Licensed Agent: <insert name>

Method statement for <insert works description>

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor’s name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative:........................................... Date   ..../    /

Print name in full: .................................................................
Red Squirrel Species Protection Plan
Contents

1 Introduction........................................................................................................................................3
2 References........................................................................................................................................3
3 Part 1: General Protection Plan........................................................................................................4
4 Part 2: Project Licence Protection Plan ............................................................................................10
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Appendix A Project Licence Method Statement Template ............................................................13
1 Introduction

Red squirrel (*Scirius vulgaris*) is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures, for the protection of red squirrels and their shelters, during construction works on Scottish Hydro Electric Transmission (SHE Transmission) projects. The Plan contains two parts and details the procedures that must be followed where there is potential for red squirrel to be present (Part 1), and where a Project Licence for red squirrel has been issued by Scottish Natural Heritage (SNH) Licensing Team to cover the project (Part 2).

1.1 Part 1: General Protection Plan

This Part applies to all projects where red squirrel may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of red squirrel. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing.

1.2 Part 2: Project Licence Protection Plan

This Part is provided to Contractors in addition to Part 1, for large projects where a Project Licence has been issued by SNH to cover the work, and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require an additional Method Statement to be submitted to SNH Licensing Team for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence, to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 – Miscellaneous Documents below, should be used in conjunction with this document

<table>
<thead>
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<th>Title</th>
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<tr>
<td>Wildlife and Countryside Act 1981 (as amended)</td>
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<tr>
<td>The Nature Conservation (Scotland) Act 2004</td>
</tr>
<tr>
<td>Wildlife and Natural Environment (WANE) [Scotland] Act 2011</td>
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<td><a href="https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide">https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide</a></td>
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</table>
3 Part 1: General Protection Plan

3.1 Background

Red squirrels are rodents with a widespread distribution in Scotland, although as they are predominately woodland animals they are largely absent from the Scottish islands (with the exception of Arran) and the far North West. They are currently under pressure, particularly in southern areas, due to a number of factors including competition from the non-native grey squirrel (*Sciurus carolinensis*), disease (squirrel pox virus – SQPV), and habitat loss and fragmentation. Grey squirrels are not protected by law, and it is an offence to release them into the wild if caught.

Red squirrels are largely solitary, not strictly territorial, and generally arboreal, spending up to 70% of the time in the tree canopy. Densities generally vary from 1 per hectare, to 1 per 10 hectares of suitable habitat. They obtain most of their food from seeds or fruits from trees, although they are opportunistic. They build dense spherical nest structures called dreys, which are generally about 30cm in diameter and consist of an outer layer of twigs often with leaves still attached with an inner layer of softer materials such as moss and/or leaves. Dreys tend to be in the forks or against the trunks of trees such as spruce (*Picea abies*), Scots pine (*Pinus sylvestris*) or oak (*Quercus* spp.). Squirrels can also use holes in trees, nest boxes and other cavities as dreys. Several dreys may be in used at the same time, and it can take less than a day for a new drey to be built.

Red squirrels have two peak breeding seasons, the first litters being born between February and April with a second litter from May to August. The exact timing is however dependent on food availability and weather. In winter red squirrels do not hibernate, but are less active particularly in bad weather (high winds, heavy rain and cold). In summer, they have two periods of peak activity; one in the early morning and one in the evening, whereas in winter this shifts to one main activity peak earlier in the day.

Signs of red squirrel:

- Feeding signs – stripped cones or cleanly split nuts often in piles on tree stumps.
- Squirrel prints and tracks – characteristic squirrel tracks show the hind feet (with five toes) in front of the forefeet (four toes), in hops of less than 1 meter. Hind feet are 35mm wide and 40mm long.
- Squirrel shelters - dreys

It is not possible to distinguish between field signs of red and grey squirrels in the field therefore visual surveys, cameras and/or hair tubes (with appropriate biosecurity measures in place), may be required in areas where the two species are present. Red squirrels can vary in colour and there can be confusion with grey squirrels; adult grey squirrels are much larger and lack ear tufts.

3.2 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Species Protection Plan where red squirrel may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with this Species Protection Plan. The responsibility for applying for any licence, including a
project wide licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.3 Legislation

Red squirrel is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981, (as amended), most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011. This makes it an offence to kill, injure or take a red squirrel or to intentionally or recklessly\(^1\) damage, destroy or obstruct access to any place used for shelter or for breeding. Disturbance to this species in its drey also constitutes an offence.

SNH can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to red squirrels and their dreys, subject to the following:

a) That undertaking the conduct authorised by the licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and

b) That there is no other satisfactory solution.

In granting a licence SNH has to take into account the consequences for red squirrels at a local population level, to assist this assessment SNH will need to see maps of the area of operations and also surrounding areas of suitable red squirrel habitat.

3.4 Surveying for Red Squirrel

1. Surveys for red squirrel must be undertaken in all works areas containing suitable red squirrel habitat, a maximum of 12 months\(^2\) prior to works commencing, (this includes site investigations). As squirrels can rapidly build new dreys, pre-felling surveys a maximum of 3 weeks prior to works commencing, must also be undertaken to ensure the availability of up-to-date information on squirrel drey locations.

2. Surveys must extend for a minimum of 50 m beyond working areas, including access tracks.

3. All drey trees must be marked to permit easy identification.

4. All dreys found must be assumed to be red squirrel, unless definitive evidence exists that they are grey squirrel only.

5. Surveys must be carried out by suitably qualified and experienced Ecologists and must identify whether any squirrel dreys are likely to be affected by the works.

If works during the breeding season (February to September inclusive) cannot be avoided, and dreys may be disturbed by works, it may also be important to establish if dreys are being used for breeding. The non-

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\(^1\) Reckless acts would include disregard of mitigation aimed at protecting red squirrels, resulting in killing, injuring and/or disturbance of any red squirrel or red squirrel resting place.

\(^2\) Note: Information from any previous surveys (e.g. surveys carried out to provide data for EIA or other Assessments) can be a useful guide to red squirrel activity in an area, particularly if dreys were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing. Pre-felling surveys a maximum of 3 weeks prior to works are recommended.
An invasive method must be used in the first instance: Visual observation and camera surveillance from the ground, for a period of three days used to establish if the drey is in regular use. If regular use is established the drey must be assumed to be being used for breeding purposes. Where this type of drey monitoring is not practical for example in situations of poor visibility it is recognised that more invasive methods may be required, if this situation arises SNH licensing team must be contacted for advice on whether a survey licence will be required: licensing@snh.gov.uk.

### 3.5 Review of Red Squirrel Survey

Once a red squirrel survey has been carried out, the Ecologist / Ecological Clerk of Works (ECoW) must review the survey results, apply the mitigation hierarchy outlined below and decide if a licence is required from SNH (either Individual or Project) for the works.

If required, licences (individual or project), must be obtained by SNH prior to any works commencing.

Construction teams should be advised of existing / new constraints, together with mitigation / compensation, and licensing requirements by the Ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on red squirrel constraints as it is produced, with changes communicated to appropriate staff immediately.

### 3.6 Mitigation Hierarchy

There should be a general presumption against works being carried out which will disturb red squirrels in their drey, or which will require the destruction of any red squirrel drey. A hierarchical approach to minimise the works impact on red squirrel should be established as follows:

#### Avoidance

This is the preferred option. Appropriately sized protection zones must be marked and signed on the ground by the Ecologist / ECoW, with appropriate material, around all squirrel dreys identified during the pre-works surveys. The breeding season (February to September inclusive) is the most sensitive time for disturbance, during this time a 50m radius protection zone must be established around all squirrel dreys. Out with the breeding season, a protection zone of one tree from the drey tree (or 5 metres radius - whichever is lesser) must be established. For high noise / vibration activities (pile driving or blasting) a 100m radius protection zone around drey trees must be established at any time of year.

All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until all works are completed. Site staff must be briefed of their purpose through a Toolbox Talk by the Ecologist / ECoW. If red squirrel disturbance can be avoided in this way, there is no need to obtain a licence from SNH for the works.

#### Disturbance

If works within protection zones boundaries cannot be avoided, a Licence for disturbance from SNH will be required. For small scale projects the licence may be specific to the site, for larger scale works a Project Licence may be appropriate.
Individual licence applications for disturbance must be accompanied by a Mitigation Plan which outlines how the disturbance will be minimised, and dreys protected from damage, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a drey being used in the breeding season will be disturbed, a Method Statement must be submitted to SNH for written approval in accordance with Part 2 of this document, prior to any works commencing. The Method Statement must state how works will be carried out in a way which ensures no abandonment of young.

**Destruction**

Destruction of dreys must only be undertaken as a last resort and requires a Licence from SNH. Individual Licence applications to SNH must be accompanied by a Mitigation / Compensation Plan which outlines how disturbance will be minimised and individual squirrels protected from injury, and may include provision for the creation of an artificial drey if appropriate. If destruction of a drey during the breeding season is required, the plan should include details of non-invasive monitoring which will take place to ensure breeding is not taking place prior to any drey destruction.

Any drey subject to works under Licence must be monitored during and after those works.

### 3.7 Mitigation Measures

#### 3.7.1 General Mitigation

1. An emergency procedure will be implemented by site workers if squirrel dreys are encountered. All work within 5 m (non-breeding season) or 50 m (breeding season) will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.

2. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH Licensing Team if required).

#### 3.7.2 Monitoring and Reporting

3. The Ecologist / ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to red squirrel is delivered.

4. Reports will be submitted to SNH as required by the relevant Licence.

### 3.8 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 40 days) to ensure the licence is in place prior to any work commencing.
3.9 Project Licence

An SNH Project Licence is likely to be the most appropriate form of licence for any large scale and/or long running project, in red squirrel areas. For example, where multiple instances of disturbance to a number of red squirrel dreys is anticipated over several months/years. A Project Licence can be used to standardise protected species mitigation/compensation, creating consistency across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-construction survey within 12 months and three weeks of the planned project start date.

Any Project Licence application will need to be accompanied by a red squirrel survey carried out within 12 months of the proposed works start date, and procedures for red squirrel included in Parts 1 and 2 of this SPP.

3.10 Individual Licence

For small scale projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable red squirrel offences an Individual SNH Licence is most likely to be appropriate. All licence applications must be accompanied by a red squirrel survey carried out within 12 months of the proposed works start date, and a mitigation/compensation plan.

Further guidance and details of how to apply for a red squirrel Licence can be found on the SNH website https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/red-squirrels-and-licensing.
Red Squirrel Mitigation Decision Tree

Undertake agreed pre-construction survey

Is there a drey within 50m (Feb-Sep incl.) or 1 tree / 5m (Oct-Jan incl.) or 100m (high noise / vibration activities all year round) of the works?

- Yes: Establish relevant protection zones and proceed with works as proposed.
- No: Re-schedule works and destroy / disturb drey under Project Licence / SPP or Individual Licence (Mitigation / Compensation Plan required) application.

Can work be micro-sited to avoid disturbance or destruction of drey under Licence?

- Yes: Establish relevant protection zones and proceed with revised works.
- No: Re-schedule works and destroy / disturb drey under Project Licence / SPP or Individual Licence (Mitigation / Compensation Plan required) application.

Can the works be re-scheduled out with breeding season (Breeding season is Feb-Sep incl.)?

- Yes: Establish relevant protection zones and proceed with works as proposed.
- No: Re-schedule works and destroy / disturb drey under Project Licence / SPP or Individual Licence (Mitigation / Compensation Plan required) application.

Project Licence – submit MS to SNH in accordance with Part 2.

Individual Licence - apply to SNH for a Licence to destroy / disturb drey (to include MS and Mitigation / Compensation Plan).

Note: A Licence will not be issued at this time of year, unless monitoring can prove drey is not being used for breeding.)
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

Mitigation activities permitted under Project Licence are included in this Part of the SPP (section A). More disruptive activities, listed in Section B below, will require a specific Method Statement to be submitted to SNH Licensing Team for approval, prior to works commencing (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

In advance of, and during construction at any location where there is the potential for red squirrel to be present, it is essential that this plan is followed.

4.1 Works Allowed under this SSP

The following works may be carried out under this SPP without further approval from SNH, using the prescribed methodologies:

1. Disturbance to red squirrel dreys out with the breeding season (October to January inclusive)

Red squirrel dreys must not be damaged or destroyed, but protected from potential damage by setting up a modified protection zone (size determined by the site Ecologist / ECoW). Protection zones must be clearly marked on the ground and signed, and must exclude all works personnel, machinery, vehicle and storage. The protection zone must be maintained until all works are finished.

A licence return must be sent to SNH licensing team detailing all disturbance works under the Project Licence.

2. Destruction of red squirrel dreys out with the breeding season (October to January inclusive)

Destruction of squirrel dreys must only be undertaken as a last resort. Prior to a drey being destroyed, the Ecologist / ECoW must satisfy themselves that no squirrel is present within the structure. Dreys must be destroyed in a controlled manner to ensure no injury or killing of animals. All works must be overseen by an experienced Ecologist / ECoW.

A licence return must be sent to SNH Licensing team detailing all drey destruction works carried out under the Survey Licence.
4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved in writing by SNH licensing team prior to any works commencing:

a. Disturbance or destruction of a drey during the breeding season.

b. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions. The methodology used should be based on the following:

A. Destruction or disturbance to a drey within the breeding season (February to September inclusive)

a. There must be a presumption against disturbance or destruction of a squirrel drey during the breeding season, if unavoidable this work requires that a detailed Method Statement is agreed in writing with SNH Licensing Team prior to works commencing.

b. Non-invasive survey methods must be used to establish if the drey is in regular use. An experienced and qualified Ecologist / ECoW must use visual observation and video surveillance from the ground for a period of three days of daytime observations, to establish if the squirrel drey is in regular use. If the drey is in regular use it must be assumed that it is being used for breeding purposes.

c. If the survey establishes that there is no regular use by squirrel, destruction of the shelter can be carried out as for during the non-breeding season.

d. Dreys being used for breeding must not be destroyed or disturbed and no works carried out within 50 m of the structure, until the site Ecologist / ECoW has confirmed that dependent young are no longer present. The young begin leaving the drey at c. 7 weeks and are weaned at 8-10 weeks old.

e. Once completion of breeding has been confirmed through monitoring, and the site Ecologist / ECoW has satisfied themselves that no squirrel are present within the structure, the drey can be destroyed in a controlled manner to ensure no injury or killing of animals.

f. A licence return must be sent to SNH Licensing team detailing all drey destruction works carried out under the Project Licence.
4.3 SNH Survey Licence

The Ecologist / ECoW must obtain a survey licence from SNH licensing team prior to using the following invasive survey methods:

a. Where squirrel dreys are not clearly visible from the ground, and the Ecologist / ECoW needs to establish whether they are being used for breeding (i.e. non-invasive methods as described above cannot be used), camera traps mounted on adjacent trees may be employed (under survey licence from SNH) as an alternative in suitable weather conditions. Camera survey must be carried out for at least three consecutive days. The ECoW / Ecologist must be confident that this method is appropriate for detecting use at the given location.

b. Where the above survey methods are inappropriate, inspection of squirrel dreys may be undertaken by tree climbing or cherry picker and endoscopic inspection (under survey Licence from SNH) to confirm the presence/absence of young squirrels.

5 Revision History

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Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

<table>
<thead>
<tr>
<th>Reference</th>
<th>Easting</th>
<th>Northing</th>
<th>Date recorded</th>
<th>Description</th>
<th>Date works exclusion zone demarcated &amp; distance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: <insert description>

Reference number: <insert species record reference>

Client: SHE Transmission

Task: <insert description of works>

Prepared by: <insert individual or Company name>

Licensed Agent: <insert name>

Method statement for <insert works description>

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor’s name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative:........................................... Date .... / .... / ....

Print name in full: .................................................................
Bird Species Protection Plan
Contents

1 Introduction .................................................................................................................................................. 3
2 References .................................................................................................................................................. 3
3 Responsibilities ......................................................................................................................................... 3
4 Legislation .................................................................................................................................................. 3
5 Protection Plan .......................................................................................................................................... 5
6 Revision History ...................................................................................................................................... 9
Appendix A  Summary Guidance on Species Specific Disturbance Distances ....................................... 10
Appendix B  Protected Species Risk Assessment Template ........................................................................ 13
1 Introduction

Construction works have the potential to negatively impact on breeding birds as a result of either direct destruction of nests or disturbance which may result in breeding failure. In addition, some particularly sensitive species are liable to disturbance outwith the breeding season.

This Species Protection Plan (SPP) outlines the procedures that must be followed where there is a potential for breeding birds to be affected. It explains the responsibilities of Scottish Hydro Electric Transmission (SHE Transmission) and its Contractors, the legislative protection for birds, and the measures required to minimise impacts on birds and thereby the risk of criminal offences being committed.

2 References

The documents detailed in Table 2.1 – Miscellaneous Documents below, should be used in conjunction with this document

<table>
<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Wildlife and Countryside Act 1981 (as amended)</td>
</tr>
<tr>
<td><a href="https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing">https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing</a></td>
</tr>
</tbody>
</table>

3 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this plan and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with the plan.

4 Legislation

All wild birds

All wild birds are protected by law under the Wildlife and Countryside Act (WCA) 1981 (as amended). Recent and significant changes have been made to the protection of wild birds in Scotland by The Nature Conservation (Scotland) Act 2004.
It is an offence to intentionally or recklessly¹:

- kill or injure any wild bird;
- capture or keep [alive or dead] any wild bird;
- destroy or take the egg of any wild bird;
- sell or advertise for sale any wild bird or its eggs;
- destroy, damage, interfere with, take or obstruct the use of the nest of any wild bird while it is in use or being built.

**Schedule 1 birds**

Additional protection is given to rare breeding birds listed under Schedule 1 of the WCA. It is an offence to intentionally or recklessly;

- Disturb any Schedule 1 species while they are nest building, or at a nest containing eggs or young;
- Disturb the dependent young of such birds.

Also with specific reference to capercaillie the Act makes it an offence to:

- Intentionally or recklessly disturb capercaillie at lekking sites.

**Schedule 1A and A1 birds**

Further protection is given to birds listed on Schedule 1A and A1 of the Act, making it an offence at any time of year to:

- Harass a white-tailed eagle, golden eagle, hen harrier and red kite (1A); and
- Damage a nest of a white-tailed eagle or golden eagle (A1).

At present, it is not possible to obtain a derogation to disturb Schedule 1 breeding birds or destroy nests of any wild breeding birds for the purposes of development. However, the control of certain species is licensable in a restricted number of circumstances such as for reasons of public health and safety. A licensing system is also in place for surveying protected species if a disturbance offence is possible.

Further advice is available on the Scottish National Heritage (SNH) website: [https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing](https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing).

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¹ Reckless acts would include disregard of mitigation aimed at protecting birds, resulting in killing, injury, and/or disturbance of birds or their nests.
5 Protection Plan

In advance of construction at any location where breeding birds may be present, it is essential that this plan is followed.

5.1 Pre-construction/dismantling surveys and data collation

1. Pre-construction / dismantling surveys for breeding birds will be completed a maximum of 12 months prior to start of any works in a particular area, and at an appropriate time of year, to ensure availability of up-to-date information to inform any mitigation measures required.

2. Surveys will be carried out by suitably experienced ecologists / ornithologists using methods agreed with SNH under Survey Licences where required.

3. Pre-construction / dismantling surveys will:
   - include up to 1000 m either side of Limits of Deviation (LOD’s) / boundaries for substation construction areas and access tracks; and
   - be undertaken in accordance with SNH’s Guidance on Assessing the Impact of Overhead Power Line Proposals on Birds for overhead lines.

4. Relevant local recorders/field workers, e.g. raptor workers, will be contacted at the pre-construction phase for recent records of sensitive species that might be affected.

5.2 Review of works and impact assessment

1. The Ecological Clerk of Works (ECoW) will review whether construction activities are likely to affect breeding birds and, if so, what mitigation options are available. A hierarchical approach to mitigation will be applied to any occupied bird habitat that may be affected under the Project works, as detailed in the “General mitigation” section below. Priority will be given to assessing and mitigating impacts to species listed on Schedule 1.

2. Construction teams will be advised of existing / new constraints together with mitigation options by the ECoW.

3. Project Geo-databases and / or relevant site documentation, e.g. Environmental Management Plans (EMP’s), will be updated with new and amended information as it is produced, with changes communicated to appropriate staff as required.

5.3 General Mitigation

1. This SPP is designed to provide the Contractor and Ecological Clerk of Works (ECoW) with an approved methodology for protecting breeding birds.
2. The ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to breeding birds is delivered.

3. A hierarchical approach to mitigation of Programme / Avoid / Risk Assess will be applied to any birds that may be affected under the Project works.
   - Where practicable, works will be programmed outwith breeding season see [https://www.nature.scot/bird-breeding-season-dates-scotland](https://www.nature.scot/bird-breeding-season-dates-scotland) for information on breeding seasons for areas likely to contain numerous breeding sites (e.g. forestry areas).
   - For key specially protected or sensitive species, appropriate protection zones (see table in Appendix A) will be established upon confirmation of nest building / breeding taking place. Protection zones will also be set out by a suitably qualified ECoW for all breeding birds and those species whose roost sites are also protected i.e. red kite and hen harrier. No works will be carried out within these zones whilst birds are:
     1. building or using their nest,
     2. still dependent on the nest site, or
     3. present at roost sites. The ECoW will advise when it is safe for works to be carried out.
   - During the breeding season (or whilst birds are roosting at other times of year) where programme critical works must be carried out within the protection zones, the ECoW will carry out a Protected Species Risk Assessment (Appendix B) to assess whether disturbance can be avoided during the works. Considerations will include the species involved, local topography, natural screening, type of works and existing levels of human activity, e.g. farming, forestry and habitation.

4. The protection zone may then be reduced if it can be demonstrated, and agreed by a Specialist Adviser and / or SNH as required, that works will not cause disturbance.

5. Monitoring will be undertaken by the ECoW or Specialist Adviser, where appropriate, to ensure no disturbance is caused.

6. An emergency procedure will be implemented by site workers if breeding birds are encountered. All work within 50 m (non-scheduled species) or the relevant maximum protection distance for species listed in Appendix A will immediately cease, and the ECoW will inspect the site and define any mitigation in line with this SPP.

7. In exceptional cases, standard mitigation measures (as outlined above) may be insufficient. In such scenarios, mitigation will be determined on a case- specific basis. No construction works would be undertaken within the protection zone until mitigation has been agreed (in consultation with SNH if required).

5.4 Specific Mitigation

1. Dissuasion Techniques

Dissuasion techniques may be used to make areas less attractive to nesting birds or birds returning back to a previous nesting location (dissuasion will not be carried out where there is potential to harass Schedule 1A
species, or interfere with / damage a Schedule A1 nest). Dissuasion may include felling of trees / clearance of scrub prior to the breeding season commencing or placement of bird scarers / frightening devices.

Should any bird nesting attempts be found within the footprint of construction, an appropriate protection zone will be marked around the nest. A suitably qualified ecologist will then ensure that works do not affect any nest, bird, eggs or young at this location, through micro-siting or re-programming of works as per the general mitigation outlined in this SPP.

Habitat management

a) Scrub clearance / felling / strimming may be used to discourage birds nesting prior to the start of the breeding season in suitable areas. This method has a dual purpose in also in dissuading reptiles / small mammals. For strimming a sward is cut to a height of 2-5cm depending upon vegetation type and ground conditions and this can be achieved by hand strimmers or mechanical means depending upon the ground conditions. The advantage of this method is that the vegetation can be cleared in advance of the works and in slow growing areas, i.e. heath, there is a potential for the site to remain free of constraints for a longer period of time. The ECoW will advise on the potential for other ground nesting species to occupy these areas; in such instances, scaring may be appropriate in conjunction with the management of sward height.

b) Clearance of habitat will be undertaken outwith the breeding season; scarers will be placed no later than 10 days before construction commences. Weekly walkover checks by a suitably licenced and experienced ecologist shall then be undertaken to ensure that the mitigation measures are being effective.

Active dissuasion / disturbance

a) At sites where there will be a high level of human activity, noise and possible vibration from construction activities this should dissuade some nesting activities; and

b) Areas identified to be at risk of nesting birds will be identified and disturbance levels at these locations will be increased. Sites will be visited regularly to dissuade birds from nesting (this may include tower climbing on overhead line projects).

c) Several types of bird scarer/ frightening device can be used, and are detailed below. The use of each should be determined by the ECoW.

d) Hawkeyes are probably the most effective of the bird scarers that have been used on the previous projects. A small number of these have been effective in deterring birds from nesting within construction areas. These will be deployed prior to the start of the breeding season and moved around the compound to stop the birds becoming accustomed to them.

e) Ticker tape can be used in more sheltered areas and can work well however they can be difficult to attach to poles/canes and work best on fencing such as that for the compounds.

f) Scarecrows can be constructed using old PPE and are a cheap way to supplement the Hawkeyes.
g) Once deployed, scarers will be kept on site for a period sufficient to minimize the risk of birds settling on site during the works.

h) As construction commences, suitable nesting sites within the construction footprint will normally be reduced. The frequency of ongoing checks will then be decided by the ECoW on a site by site basis.

2. Removing Disused Bird Nests

The objective of this mitigation is to provide specific guidelines for the protection of birds and their nesting places before and during construction works, but also to facilitate the removal of old or disused nests where required for construction or maintenance works, such as:

a) in substations where birds have nested on equipment causing a fire risk;

b) in order to allow dismantling of redundant towers; or

c) where the presence of a nest interferes with construction, maintenance or upgrading of overhead transmission lines.
Not specially protected birds

a) It is an offence to remove any birds nest while it is being built or in use and it is an offence to take, destroy or possess the egg of a wild bird.

b) If a bird nest is to be removed, then it must be shown to be disused.

c) Before a nest of any species is removed, where there is any doubt as to whether the nest is in use or not, it will be monitored by the ECoW over a period of a week. Direct observations of nests will be made on the 1st, 3rd and 5th days as well as monitoring from suitable vantage points and where necessary with camera traps. The nest will be removed only when there is clear evidence that the nest is disused and no eggs are present.

d) Should eggs be found, the nest will not be moved until a licence has been obtained from SNH for the taking of the eggs.

Schedule 1 species

a) For white-tailed eagle and golden eagle (Schedule A1) it is an offence to remove or damage a nest at any time, regardless of whether it is currently in use.

b) The disused nests of any other Schedule 1 or Schedule A1 species needing to be removed will be subject to an assessment and agreed with SNH. The assessment will detail the needs case for removal, bird species involved, monitoring, information about the nest and clarification of whether it is in habitual use, habitat and any further nests within the area associated with that bird. Nest monitoring will be undertaken by a suitably licensed and experienced ecologist and / or Specialist Adviser.

6 Revision History

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### Appendix A  Summary Guidance on Species Specific Disturbance Distances

Note: the protection zone distances given here are indicative - specific distances will vary depending on individual sites and will require expert advice informed by information provided in Ruddock & Whitfield (2007).

<table>
<thead>
<tr>
<th>Species</th>
<th>Min-Max Protection Zone (m) (3,10,14)</th>
<th>Indicative Protection Zone dates</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black grouse</td>
<td>300 - 500</td>
<td>March - May (2)</td>
<td>Males lek mainly around dawn and dusk and therefore the presence of a lek would not necessarily represent a constraint. In terms of disturbance, avoid the two hours after sunrise and two hours before sunset.</td>
</tr>
<tr>
<td>Barn owl</td>
<td>50 - 100</td>
<td>Mid Feb - June (1) (see notes)</td>
<td>The period of mid Feb-June has been given to emphasise the fact that Barn Owls can begin nesting earlier than many other species and if eggs were laid in mid to late March the young would have left the nest by the end of June. Where barn owls are nesting in sites with a relatively high current level of human disturbance it may be possible to reduce the offset distance further.</td>
</tr>
<tr>
<td>Black-throated diver</td>
<td>500 - 750</td>
<td>April - Sept (see notes) (1)</td>
<td>This nesting season is slightly longer than that given in Currie and Elliott (1997) and includes the pre-egg-laying period when the birds arrive at the breeding lochs in April. Note that adults often remain at the lochs until September (some young may not fledge until September) and can arrive in March (2,4).</td>
</tr>
<tr>
<td>Capercaillie</td>
<td>500 – 750</td>
<td>March - August (1)</td>
<td>Capercaillie lekking takes place sporadically from January onwards increasing into late winter and peaking in spring. Males lek mainly around dawn and dusk and therefore the presence of a lek would not necessarily represent a constraint. In terms of disturbance, between the times of two hours after sunrise and two hours before sunset are best avoided. Eggs are laid usually from mid-April to early May and young fledge by mid-June to late July (1,4).</td>
</tr>
<tr>
<td>Crested tit</td>
<td>50 - 100</td>
<td>April - mid July (3)</td>
<td>The nesting period for this species is variable, being affected by factors such as spring temperatures, altitude and incidence of second broods (although these are rare in Scotland). The period given allows for this variability but generally chicks will have fledged by early June (1, 2, 4, 6).</td>
</tr>
<tr>
<td>Common crossbill</td>
<td>100 - 150</td>
<td>Feb - May (3)</td>
<td>It should be noted that this represents a typical peak nesting period but that the species can effectively nest all year round depending on the abundance of cone crops.</td>
</tr>
<tr>
<td>Scottish crossbill</td>
<td>100 - 150</td>
<td>Feb - May (1), (3)</td>
<td>The breeding season can occasionally be later than this with eggs recorded into June which could mean young not leaving the nest until early August, assuming a late June laying date and an incubation and fledging period of 13 days and 21 days respectively (1). Typically, however young would have fledged before the end of June (1 &amp; 4).</td>
</tr>
<tr>
<td>Golden Eagle</td>
<td>750 - 1000</td>
<td>All year round</td>
<td>Golden eagles are present in their breeding territories all year round. Nest building takes place from autumn to late winter with mating occurring between January and April (mainly March). For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.</td>
</tr>
<tr>
<td>Goldeneye</td>
<td>100 - 300</td>
<td>April - July (2)</td>
<td>The young of goldeneye leave the nest soon after hatching (in May) and are taken to the water by the female. They can often be taken a considerable distance from the nest site to the rearing area by the female (1, 2, 4).</td>
</tr>
<tr>
<td>Species</td>
<td>Min-Max Protection Zone (m)</td>
<td>Indicative Protection Zone dates</td>
<td>Notes</td>
</tr>
<tr>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Goshawk</td>
<td>300 - 500</td>
<td>April-July (1), (3) (see notes)</td>
<td>This does not include the pre-egg-laying period with birds occupying their territories from March. Most young fledge in July and are independent at about 70 days (approximately one month after fledging) (1, 4).</td>
</tr>
<tr>
<td>Greenshank</td>
<td>300 - 400</td>
<td>April-July</td>
<td>Eggs are laid from late April to late May with the average around mid-May in Scotland. Incubation period is around 24 days and chicks fledge at between 25 and 31 days old (7).</td>
</tr>
<tr>
<td>Golden Plover</td>
<td>200 - 400</td>
<td>April - July (1)</td>
<td>In Northern Scotland, the first eggs are laid from mid-April but up to 2-3 weeks later.</td>
</tr>
<tr>
<td>Hen Harrier</td>
<td>500 - 750</td>
<td>All year round (1), (8) (see notes)</td>
<td>The species is not fully migratory in Scotland and birds can be seen on breeding grounds in almost any month, although generally the return is in March. The first egg is usually laid between late April and mid-May but sometimes earlier. Early failures can see the replacement clutch not complete until mid-June. Non-breeding roosts are important in pair formation and the 750 m buffer should be maintained as a minimum 1 hour before and 1 hour after sunset and sunrise respectively to avoid disturbance. Sudden noisy works should also be avoided at these times.</td>
</tr>
<tr>
<td>Honey Buzzard</td>
<td>500 - 600</td>
<td>Mid May-Sept (1), (4)</td>
<td>Birds usually arrive on breeding grounds in mid- to late-May. Eggs are laid in June to July with incubation lasting up to 37 days and the fledging period 40-44 days, meaning young usually fledge in September. Young return to the nest for food until they are about 55 days old and become independent from 75-100 days (1, 4).</td>
</tr>
<tr>
<td>Kingfisher</td>
<td>50 - 100</td>
<td>April - July (1)</td>
<td>The breeding season of kingfisher is prolonged by multiple broods (normally 1-2 in Britain). Incubation is 19-21 days and the fledging period 23-27 days with young independent within a few days (1).</td>
</tr>
<tr>
<td>Merlin</td>
<td>300 - 500</td>
<td>April - July (1)</td>
<td>Adults return to breeding sites in April (but sometimes earlier) with peak egg laying late May to early June in Scotland. Incubation is 28-32 days and fledging period 25-27 days, becoming independent two to four weeks later. This means young birds will often still be dependent on their parents for food in August (1, 10).</td>
</tr>
<tr>
<td>Osprey</td>
<td>500 - 750</td>
<td>March - August (2)</td>
<td>Birds arrive at the nest site in late March/early April with eggs typically laid from mid-April to mid-May, although they can be laid in early April. Incubation takes five to six weeks (35-43 days) and fledging 50-55 days, young being dependent for a further 10-20 days at least. Early nesters would therefore fledge in July with later birds fledgeing in August with young possibly still being dependent in early September (1,11,12).</td>
</tr>
<tr>
<td>Peregrine</td>
<td>500 - 750</td>
<td>March - June (1) (2) (9) See notes</td>
<td>Return to breeding areas in March to early May. Eggs are laid from mid-March to May. Incubation is 29-32 days per egg (clutch size 3-4 with an interval of 2-3 days between laying but hatching nearly synchronous) and fledging period is 35-42 days with young being dependent for at least two months. Late nesters could therefore fledge in July and still be dependent on their parents for food into September whereas early nesters could have fledged young in May (1,10).</td>
</tr>
<tr>
<td>Red Kite</td>
<td>150 - 300</td>
<td>March - August (1) (2) (9) See notes</td>
<td>Most British birds return to their breeding sites in March and lay during the first three weeks of April (Scottish birds on average towards the end of this period) but there is considerable variation with laying possible between late March and early May. Incubation is 31-32 days and fledging period is around eight weeks. Newly fledged young are dependent on their parents for several weeks and remain close to the nest. Late attempts could see young fledge in early August and not become dependent until early September (9). For non-breeding roosts the 300 m buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.</td>
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### Bird Species Protection Plan

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<th>Species</th>
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<th>Indicative Protection Zone dates</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Red-backed Shrike</td>
<td>150</td>
<td>May - mid July (1)</td>
<td>Post fledging dependence is long in this species with young being dependent on parents for about 40 days (1).</td>
</tr>
<tr>
<td>Red-throated Diver</td>
<td>500 - 750</td>
<td>Apr - Aug (1) (2)</td>
<td>Birds usually return to their breeding lochs in April with peak egg laying from late May to early June (occasionally later). Incubation lasts around 27 days and fledging occurs after 34-48 days meaning most young fledge in August but occasionally into September. Pre-fledging movement of chicks to other nearby lochs occasionally occurs (1,2,4).</td>
</tr>
<tr>
<td>Redwing</td>
<td>50 - 100</td>
<td>Late April - August (1) (2) (4)</td>
<td>This species has a long nesting season due to the fact that it commonly has two broods in a year. Eggs are laid from early May to mid-July (occasionally earlier). Incubation is for 12-13 days and fledging takes around ten days with young dependent for a further two weeks. Young are usually fledged by early August (1, 4).</td>
</tr>
<tr>
<td>Short-eared owl</td>
<td>300 - 500</td>
<td>March - July (1) (2)</td>
<td>Eggs are laid from mid- to late-March to July with incubation taking 24-29 days and fledging 24-27 days with a period of post fledging dependence lasting several weeks. Late broods would therefore not fledge until August and early nesters could have chicks in the nest by mid-April (1,2).</td>
</tr>
<tr>
<td>White-tailed Eagle</td>
<td>500 - 750</td>
<td>All year round (14) See notes</td>
<td>The Ruddock &amp; Whitfield report indicates 500-750 m buffer for the breeding season. Draft forestry guidance advocates 250 m for most activities near roosts outwith the breeding season, it should be noted that roosts of immatures can be all year. For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.</td>
</tr>
</tbody>
</table>

References:

(2) Gilbert et al. (1998)
(3) Currie & Elliott (1997)
(4) Batten et al. (1990)
(5) Shawyer (1998)
(6) Perrins (1979)
(7) Nethersole-Thompson & Nethersole-Thompson (1979)
(8) Watson (1977)
(9) Carter (2001)
(10) Petty (1998)
(11) Dennis et al. (2004)
(12) Poole (1989)
(13) Watson (1997)
(14) Ruddock & Whitfield (2007)
Appendix B  Protected Species Risk Assessment Template

*Project name*: Protected Species Risk Assessment

*Title including record ID and location*

**Scope of Work**

This method statement is applicable for *insert details of works to be undertaken*. The work comprises of:

**Location and Access/Egress**

*Insert details including map / plan*

**Description of species, distance from planned works and ground conditions**

<table>
<thead>
<tr>
<th>Reference Number</th>
<th>BNGR letters</th>
<th>OS Grid reference</th>
<th>Place</th>
<th>Description</th>
<th>Distance from project works</th>
<th>Predicted impact</th>
<th>Project</th>
</tr>
</thead>
</table>

*Insert details*

**Programme of Works**

The following works are planned within the buffer distance:

*Insert details including timing and duration*

**Planned Equipment and Manpower**

The operation will be carried out by the following personnel and using the following equipment:

*Insert details*

**Risk Assessment/ Supervision of Work**

*Insert details of baseline conditions including topography, proximity to works, existing disturbance levels, mitigation measures and operational controls, likely levels of disturbance from works and summary of risk rating (Low / Medium / High)*
Contents

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2 References...............................................................................................................................................3
3 Part 1: General Protection Plan...........................................................................................................3
4 Part 2: Project Licence Protection Plan ..............................................................................................10
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Appendix A  Project Licence Method Statement Template ..............................................................12
1 Introduction

This Protection Plan provides guidance and agreed procedures for the protection of water voles and their shelters during construction works on Scottish Hydro Electric Transmission (SHE Transmission) projects. The Plan contains two parts and details the procedures that must be followed where there is potential for water vole to be present (Part 1), and where a Project Licence for water vole has been issued by Scottish Natural Heritage to cover the project (Part 2):

1.1 Part 1: General Protection Plan

This Part applies to all projects where water vole may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of water vole. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This is provided to Contractors in addition to Part 1 for large projects where a Project Licence has been issued by Scottish Natural Heritage (SNH) to cover the work and identifies those activities and mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 – Miscellaneous Documents below, should be used in conjunction with this document.

<table>
<thead>
<tr>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildlife and Natural Environment (WANE) [Scotland] Act 2011</td>
</tr>
<tr>
<td>Wildlife and Countryside Act 1981 (as amended)</td>
</tr>
<tr>
<td><a href="http://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide">www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide</a></td>
</tr>
</tbody>
</table>

3 Part 1: General Protection Plan

3.1 Background

Water voles (*Arvicola amphibius*) are rat sized members of the rodent family which are found in habitats closely associated with waterways such as rivers and canals as well as upland areas of bog. In Scotland, they
are absent from the most of the islands and are under serious predation pressure from American mink (*Neovison vison*), which together with habitat loss have resulted in massive losses. They usually have black fur in Scotland as opposed to the brown form found in England and Wales and have a short hairy tail, small eyes, a stout body with a chubby face. As suggested by the name they swim frequently and are often first noticed as they noisily ‘plop’ into water. Water voles predominately eat sedges and rushes although they have been known to predate on fish and invertebrates. Tormentil (*Potentilla erecta*) is a favoured plant in upland areas.

Water voles do not hibernate, but are less active during the period October to Mid-March. Females actively defend exclusive territories particularly during the May – August breeding season, during which they have up to 5 litters. Males have not been shown to defend territories and have larger home ranges. In upland areas colonies are small and discrete with high levels of colony extinction and colonisation within a widely dispersed metapopulation.

Water vole colonies are generally found in habitats with the following characteristics:

- Watercourses with banks covered in tall grass or sedge vegetation and scrub tends to be avoided.
- Wet areas in uplands (up to 1000 m asl) often some distance away from ‘typical’ riparian habitats.

Signs of Water Vole:

1. Latrines – home ranges are marked by latrines near nests, burrows and where they enter or leave water. Faeces are characteristically ‘tic-tac’ shaped about 12mm long and 4mm wide.

2. Prints and tracks – water vole footprints are star shaped with four toes on the forefeet and five on the hindfeet. 4 – 9 cm broad paths though vegetation near water can also be an indication of water vole activity.

3. Feeding remains / feeding stations – although these can be confused with other species, neat piles of grasses, sedges or reeds about 10 cm long cut cleanly at a 45 angle can be evidence of water voles.

3. Water vole burrows – normally entrances have a diameter of between 4 and 8 cm and can be either above or below the water level along banks of watercourses. They are generally found within 2 – 5 m of the waters edge. but may be in places relatively far away from running water particularly in upland areas.

### 3.2 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Protection Plan where water vole may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.
3.3 Legislation

Water vole is listed in Schedule 5 of the Wildlife and Countryside Act 1981, as amended, mostly recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011. This legislation makes it an offence to recklessly¹:

- Damage or destroy or obstruct access to, any structure or place which any water vole uses for shelter or protection.
- Disturb a water vole while it is occupying a structure or place which it uses for shelter or protection.

This legislation means that water vole habitat is fully protected in Scotland. The WANE Act permits derogation of disturbance and/or destruction of water vole places of shelter by SNH for development purposes. SNH can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to water voles and their burrows, subject to the following:

a) that undertaking the conduct authorised by the Licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and
b) that there is no other satisfactory solution.

In granting a licence SNH has to take into account the consequences for water vole at a local population level, to assist this assessment SNH will need to see maps of the area of operations and also surrounding areas of suitable water vole habitat.

3.4 Surveying for Water Vole

1. Initial survey for water vole must be undertaken in all works areas containing suitable water vole habitat, a maximum of 12 months² prior to the works commencing (this includes site investigations) to allow for pre-planning. In areas where water vole are identified, additional pre-works survey must be carried out a maximum of 2 months prior to works commencing to ensure the availability of up-to-date information. Survey must be carried out during the active season - between 1 April and 31 October (lowlands) and 1 May and 30 September (uplands) and ideally during the months of June, July or August.

2. Surveys must extend for a minimum of 10 m beyond working areas, including access tracks.

3. Surveys must be carried out by suitably qualified and experienced ecologists and will identify whether any water voles or places of shelter are likely to be affected by the works.

¹ Reckless acts would include not having or disregarding a mitigation plan aimed at protecting water vole resulting in damage, destruction or disturbance of any water vole place of shelter, or carrying out an activity which would result in an offence where the presence of water vole was foreknown.
² Note: Information from any previous surveys (e.g. surveys carried out to provide data for EIA or other Assessments) can be a useful guide to water vole activity in an area, particularly if burrows were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing.
4. Appropriate monitoring (e.g. the use of suitable camera traps) should be undertaken where required to determine if any place of shelter is being occupied.

3.5 Review of Water Vole Survey

Once a water vole survey has been carried out, the ecologist / ECoW should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / Ecological Clerk of Works (ECoW).

Relevant site documentation and project information sources should be updated with new and amended information on water vole constraints as it is produced, with changes communicated to appropriate staff immediately.

3.6 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb water voles in their burrows or to destroy an occupied burrow. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any burrow that may be affected by works (See Figure 1):

**Avoidance**

This is the preferred option for occupied burrows identified within 10 metres of works. A protection zone of 10 metres should be marked and signed on the ground around each burrow or group or burrows with appropriate material to restrict work access.

All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited outwith the protection zone. If water vole disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

**Disturbance**

For works within 10 metres of occupied burrows which cannot be avoided, a Licence for disturbance from SNH will be required (either Individual or Project).

Individual Licence applications to SNH should be accompanied by a Species Protection Plan which outlines how disturbance will be minimised and burrows protected, for example through screening of works and modifying protection zones.

If a Project Licence is in place, the methodology detailed in Part 2 of this document must be followed.

**Displacement of water vole and destruction of burrows**

In some instances, displacement of water vole for example by close strimming around burrows, followed by destruction of burrows may be necessary to allow works to go ahead. This work will always require a licence for disturbance and burrow destruction from SNH (either individual or project). These actions must only be undertaken as a last resort and when there is no alternative. This methodology is only likely to be effective if
proposed displacement distances are less than 50 metres, and only acceptable where an experienced ecologist has confirmed that there is suitable alternative habitat for water vole burrows within 50 meters of the original burrow location. Displacement work and destruction of burrows will not be licensed during the inactive or breeding periods. Suitable times for displacement work to be carried out is as follows: late February to early April (lowlands) and late March and April (uplands). Individual Licence applications to SNH must be accompanied by a Species Protection Plan which outlines timings of works, how impacts to watervole will be minimised, individuals protected, and loss of burrows compensated for.

If a Project Licence is in place, a Method Statement must be submitted to SNH in accordance with Part 2 of this document for written approval prior to any works commencing.

Any water vole place of shelter subject to works under a Licence must be monitored during and after those works.

**Live trapping and translocation of water vole, and destruction of burrows.**

This is a last resort action and a justification will be required as to why there is no alternative to translocation. This work will need significant pre-planning, and the identification of a receptor site for displaced animals. If this situation is likely to arise SNH licensing team should be contacted at the earliest opportunity to discuss timings, methodologies and licensing. This work will require an individual licence from SNH.

### 3.7 Mitigation Measures

#### 3.7.1 General Mitigation

1. The ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to water vole is delivered.

2. All works in proximity to waterbodies / watercourses must follow measures outlined in the project environmental information and Contractors Environmental Management Plan (EMP) to ensure their protection against pollution, silting and erosion.

3. An emergency procedure will be implemented by site workers if signs of water vole (e.g. latrines or animals) are encountered. All work within 10 m will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.

4. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. In such a scenario, works will be halted whilst mitigation is determined on a case specific basis under consultation with SNH.
3.7.2 Monitoring and Reporting

1. The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to water vole is delivered.

2. Reports will be submitted to SNH as required by the relevant Licence.

3.8 Licensing Requirements

Licensing applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.

3.9 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and/or long running Project, which may result in a large number of minor unavoidable water vole offences. For example, multiple instances of disturbance to a number of water vole shelters over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-construction survey within 12 months of the planned project start date, and additional pre-construction survey within 2 months of works commencing, in areas where water voles have been found to be present. Any Project Licence application will need to be accompanied by a Mitigation / Compensation Plan and procedures for water vole included in Parts 1 and 2 of this SPP.

3.10 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable water vole offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement / Mitigation Plan and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing. Further guidance and details of how to apply for a water vole licence can be found on the SNH website [https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/water-voles-and-licensing](https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/water-voles-and-licensing).
Watervole Decision Tree

Undertake agreed pre-construction survey

Are there any burrows within 10m of works?

Yes

Can work be micro-sited beyond 10m of the burrows?

Yes

Establish 10m protection zones and proceed with revised works.

No

Establish 10m protection zone around any burrows in the vicinity of the works and proceed with works as proposed.

No

Can protection zones be reduced to protect burrows and limit offence to disturbance only?

Yes

Apply to SNH for an individual disturbance licence for works attaching a SPP, or if a Project wide Licence is in place carry out works in accordance with Part 2 of this document.

No

Is there suitable habitat within 50m of burrows into which water voles could be displaced to?

Yes

Apply to SNH for individual licence for disturbance through displacement and destruction of burrows attaching this SPP, or if a Project Licence is in place carry out works according to Part 2 of this document. Note: works will only be licensed outwith the inactive and breeding seasons.

No

Consult with SNH with regards to trapping and translocation. An Individual Licence will be required.
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

In advance of, and during construction at any location where there is the potential for a water vole to be present, it is essential that this plan is followed:

4.1 Works Allowed under the Project Licence

The following works may be carried out under this SPP without further approval from SNH, using the prescribed methodologies:

Disturbance to water voles in their places of shelter

a. In situations where it is not possible to maintain a 10 m protection zone around a water vole burrow / place of shelter to avoid disturbance (e.g. upgrade of an existing track or watercourse crossing; or construction of temporary track or watercourse crossing), but it is possible to establish a smaller protection zone (no less than 5m in radius) which will prevent damage or destruction of the burrows. The ECoW must mark out the reduced protection zone on the ground using appropriate marking materials and signage and ensure that it remains in place for the duration of the adjacent works.

b. The ECoW must undertake a Toolbox Talk with all contractors before the start of works to raise awareness of the presence of water vole, locations of, and restrictions posed by protection zones and any required mitigation.

c. During the construction works the ECoW must ensure that no plant and/or work personnel enter the protection zone.

d. All construction works within a 10 m radius of water vole places of shelter must usually be completed within 1 day. Working methods must be adopted to reduce any unnecessary disturbance including the following:

· No parking of any plant or other vehicles.
· No site compounds or welfare facilities.
· No use of static plant and/or generators.
· Artificial lighting, if required, is to be directed away from water vole habitat and riparian habitats in general.
· No potential activities that may result in pollution, *e.g.* re-fuelling, will be allowed within the protection zone. Silt control measures will be agreed prior to works with the ECoW to ensure no adverse impact on water vole habitat.

e. Use of any constructed tracks will not be subject to any subsequent restrictions on use.

### 4.2 Activities requiring an SNH Approved Method Statement

The following works require a Method Statement to be approved in writing by SNH licensing team before works can commence:

1. Displacement of water vole and destruction of burrows. Please note these activities will only be licensed to take place at the following times: late February to early April (lowlands) or late March and April (uplands) to avoid inactive and breeding periods.

2. Translocation, live trapping and destruction of burrows. Please note these activities will only be licensed to take place during March and April to avoid inactive and breeding periods.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions.

Proposed mitigation works should be agreed with SNH.

### 5 Revision History

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<th>Revision</th>
<th>Authorisation</th>
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<td>01</td>
<td>Transfer to new template and Nomenclature</td>
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<td>1.00</td>
<td>Richard Baldwin</td>
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<tr>
<td>02</td>
<td>Weblinks updated, typos corrected and decision tree corrected</td>
<td>TG-NET-ENV-506 (Rev 1.00)</td>
<td>1.01</td>
<td>Richard Baldwin</td>
</tr>
</tbody>
</table>
Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

<table>
<thead>
<tr>
<th>Reference</th>
<th>Easting</th>
<th>Northing</th>
<th>Date recorded</th>
<th>Description</th>
<th>Date works exclusion zone demarcated &amp; distance</th>
</tr>
</thead>
</table>

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

**Site:** <insert description>

**Reference number:** <insert species record reference>

**Client:** SHE Transmission

**Task:** <insert description of works>

**Prepared by:** <insert individual or Company name>

**Licensed Agent:** <insert name>

---

**Method statement for** <insert works description>

**Before works commence:**

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

**During works:**

<insert details of methodology>

---

<Insert Contractor’s name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative:................................. Date   .... /   /

Print name in full: .................................................................
Wildcat Species Protection Plan
Wildcat Species Protection Plan

**Contents**

1. Introduction ........................................................................................................ 3
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3. General Protection Plan ...................................................................................... 3
4. Revision History .................................................................................................. 8
1 Introduction

Wildcat is a European Protected Species and is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of wildcats and their shelters during construction works on Scottish Hydro Electric (SHE) Transmission projects.

2 References

The documents detailed in Table 2.1 below, should be used in conjunction with this document

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</tbody>
</table>

3 General Protection Plan

3.1 Introduction

This Species Protection Plan applies to all projects where wildcat may be present. It outlines the responsibilities of SHE Transmission and the Contractor regarding protection of wildcat. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

3.2 Background

Wildcats are a member of the felidae family with a population restricted to marginal areas predominantly in northern Scotland, in essence north of the Highland Boundary Fault. In the 19th century wildcats were heavily hunted and persecuted, this combined with habitat loss reduced their numbers dramatically. It is now estimated that approximately 400 wildcats remain in Scotland, although estimates do vary.

Domestic tabby cat strongly resemble wildcat, however they are smaller and less robust. Wildcats can easily hybridise with feral and domestic cats making it difficult to confidently identify wildcats. One diagnostic feature of a wildcat is the thick, bushy tail with black rings and a black blunt tip. Wildcats also have distinct
stripes on their flanks that are less broken or spotty than on tabby cats and hybrid cats (see Kitchener et al. 2005 for details). They also do not have white paws.

Wildcats are solitary animals that occupy their own exclusive home range, however the exclusive home range of a male wildcat may overlap with the territories of one or a number of female wildcats. These home ranges can be very large, up to 18 km², but can also be much smaller depending on the density of their prey - primarily rabbits and other small mammals. Male home ranges are usually larger than female home ranges.

Wildcats are an exclusively carnivorous species. They usually inhabit woodland areas but due to the lack of suitable habitat in the UK can also be found using more open habitats such as moorland or rough grazing. Wildcats have a number of dens throughout their home range that they have access to. These dens are usually among rocks and boulders and rocky cairns on hillsides and can also be in abandoned fox earths, badger setts and rabbit burrows as well as among tree roots. Females use different dens to give birth and rear kittens than they do to shelter in.

Wildcats breed predominantly between January and March and give birth to their young between April and May, however they can breed at any time during the year. The female is the sole provider for the kittens bringing live prey to the den from when they are 3 weeks old and she will stop producing milk at 6-7 weeks. The young usually leave their mothers and become independent at around 5-6 months old. Signs of wildcat include (although these can indistinguishable from feral and hybrid cats):

- Feeding signs – prey remains may be left inside or outside of dens
- Wildcat tracks and scats – wildcats may mark their home range on prominent features such as trees and boulders on tracks by spraying urine or leaving scats.
- Claw marks – wildcats scratch the bark of trees to mark their home range
- Places of shelter – dens are usually marked my urine sprays or scats.

Due to their nocturnal activity it can be difficult to confirm the presence of wildcats at suspected dens, and to be sure that the individual is a pure wildcat, therefore camera traps may be required to positively identify a wildcat and confirm its presence in the area.

### 3.3 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Species Protection Plan where wildcat may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor compliance with this Species Protection Plan. The responsibility for applying for any licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

---

3.4 Legislation

https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/wildcats

In summary, it is illegal to:

- Deliberately or recklessly\(^1\) kill, injure or take (capture) a wildcat;
- Deliberately or recklessly disturb or harass a wildcat; and
- Damage, destroy or obstruct access to a breeding site or resting place of a wildcat (i.e. a wildcat shelter).

Licences may be granted for certain purposes that would otherwise be illegal / cause an offence; such licences for development work must be applied for from SNH, licences may be granted for imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment. Further information on licensing and wildcats can be found on the SNH website https://www.nature.scot/professional-advice

3.5 Surveying for Wildcat

1. Surveys for wildcat must be undertaken in all works areas containing suitable wildcat habitat, a maximum of 12 months\(^2\) prior to works commencing, (this includes site investigations).

2. Surveys must extend for a minimum of 200 m beyond working areas, including access tracks.

3. Surveys must be carried out by suitably qualified and experienced ecologists and must identify whether any wildcat and/or their places of shelter are likely to be affected by the works.

4. If wildcats are known to be in the area or evidence of wildcat is found during the initial survey this should alert surveyors and staff to the need for general mitigation measures. Where mammal dens or places of

---

\(^1\) Reckless acts would include not having or disregarding a mitigation plan aimed at protecting wildcat resulting in killing, injury, and/or disturbance of any wildcat or wildcat place of shelter, or carrying out an activity which would result in an offence where the presence of wildcat was foreknown.

\(^2\) Note: Information from any previous surveys (e.g. surveys carried out to provide data for Environmental Impact Assessment (EIA) or other Assessments) can be a useful guide to wildcat activity in an area, particularly if dens were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing. Surveys a maximum of 3 weeks prior to works are recommended.
shelter are found during protected mammal surveys, unless the area can be avoided more detailed survey will likely be required to identify which species are using the den. This will usually involve the use of trail cameras at possible dens for a minimum of 1 month and/or DNA testing of scat or hairs found at the possible den site. If evidence of use by wildcat is established the structure must be assumed to be a den. Paired camera traps are normally required to adequately capture images of the pelage, which are crucial for correct identification of wildcats. The ecologist or EcoW should consult SNH Licensing Team regarding appropriate camera trapping methodology and a licence for disturbance will be required for any camera trapping. If possible wildcat scats or tracks are found away from possible den sites, use of trail camera could be useful to establish which species left them, but the priority should be on identification of potential wildcat dens.

5. It is important to note that some intrusive surveys may require a Licence from SNH.

3.6 Review of Wildcat Survey

Once a wildcat survey has been carried out, the ecologist / ECoW must review the survey results, apply the mitigation hierarchy outlined below and decide if a licence is required from SNH for the works. If required, a licence must be obtained from SNH prior to any works commencing. Construction teams should be advised of existing/new constraints, together with mitigation/compensation, and licensing requirements by the ecologist/EcoW. Relevant site documentation and project information sources should be updated with new and amended information on wildcat constraints as it is produced, with changes communicated to appropriate staff immediately.

3.7 Mitigation Hierarchy

There should be a general presumption against works being carried out which will disturb wildcat in their den, or which will require the destruction of any wildcat den. A hierarchical approach to minimise the impact on wildcat should be established as follows:

Avoidance
This is the preferred option. Appropriately sized protection zones must be marked and signed on the ground by the ecologist/EcoW, with appropriate material, around all wildcat dens identified during the pre-works surveys. A 200 m radius protection zone must be established around all wildcat dens at any time of year. All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until all works are completed. Site staff must be briefed of their purpose through a Toolbox Talk by the ecologist/EcoW. If wildcat disturbance can be avoided in this way, there is no need to obtain a licence from SNH for the works.

Disturbance
If works within protection zones cannot be avoided, a Licence for disturbance from SNH will always be required.
Individual licence applications for disturbance must be accompanied by a Mitigation Plan which outlines how the disturbance will be minimised, and dens protected from damage, for example through screening of works and modifying protection zones.
Wildcat are currently in unfavourable conservation status in Scotland therefore it is unlikely that a licence will be issued by SNH for wildcat den destruction.

3.8 Mitigation Measures

3.8.1 General Mitigation – in all wildcat areas (i.e. where no specific signs found during surveys but known to be locally present)

1. Any temporarily exposed pipe system should be capped when staff are off site to prevent wildcats from gaining access and becoming trapped.

2. All exposed trenches and holes should be provided with mammal exit ramps e.g. wooden planks or earth ramps when Contractors are off site.

3. An emergency procedure will be implemented by site workers if wildcat dens are encountered. All work within 200 m will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.

4. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (with consultation with SNH Licensing Team if required).

3.8.2 Mitigation where a wildcat den is subject to disturbance (under license)

Site specific conditions will be required but may include, protection zones, timing, limits on hours of operation, lighting, noise.

Monitoring and Reporting

1. The Ecologist / Ecological Clerk of Works (EcoW) will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to wildcats is delivered.

2. Reports will be submitted to SNH as required by the relevant Licence.

3.9 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.
4 Revision History

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<td>1.02</td>
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Wildcat Mitigation Decision Tree

Undertake agreed pre-construction surveys for wildcat

Is there a den within 200m of the works?

- No → Proceed with works as proposed.
- Yes
  - Can work be micro-sited to avoid disturbance ie move works so that it is 200m or more from the den?
    - Yes → Establish relevant 200m radius protection zones and proceed with revised works.
    - No
      - Individual Licence – Where possible programme works to avoid the main breeding season (Feb – Aug). Carry out risk assessment and consult SNH on minimum protection zone required. Carry out works under a disturbance licence.
Pine marten Species Protection Plan
Contents

1 Introduction .................................................................................................................................... 3
2 References ...................................................................................................................................... 3
3 Part 1: General Protection Plan ...................................................................................................... 4
4 Part 2: Project Licence Protection Plan ........................................................................................ 10
Appendix A Project Licence Method Statement Template .............................................................. 12
1 Introduction

Pine marten (*Martes martes*) is listed in Schedule 5 of the Wildlife and Countryside Act 1981, as amended, most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011 and is afforded a high level of protection in Scotland. This Species Protection Plan provides guidance and agreed procedures, for the protection of pine marten and their shelters, during construction works on Scottish Hydro Electric (SHE) Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for pine marten to be present (Part 1), and where a Project Licence for pine marten has been issued by Scottish Natural Heritage (SNH) Licensing Team to cover the project (Part 2).

1.1 Part 1: General Protection Plan

This Part applies to all projects where pine marten may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of pinemarten. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This Part is provided to Contractors in addition to Part 1, for large projects where a Project Licence has been issued by SNH to cover the work, and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require an additional Method Statement to be submitted to SNH Licensing Team for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence, to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 below, should be used in conjunction with this document.

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3 Part 1: General Protection Plan

3.1 Background

Pine martens are a member of the mustelid family with a population distributed throughout northern Scotland extending down to the northern boundary of the central belt and including a number of the islands including Mull and Skye. There is also a population in Dumfries and Galloway. Following the dramatic reduction in numbers of pine martens in the 19th century they are currently undergoing resurgence due in part to the legal protection they are afforded under the Wildlife and Countryside Act 1981.

Pine martens are solitary territorial animals. Although the edges of territories may overlap slightly, separate individuals are rarely found in close proximity to each other. They generally inhabit woodland or scrubby areas as they require a large amount of cover, and spend much of their time in the canopy. Pine martens are omnivorous, consuming a diet consisting of a wide variety of animals (predominantly small mammals) as well as berries and nuts allowing them to be active all year round. Both male and female pine martens have large territories of up to 8 km² for females and 20 km² for males. Due to the size of their territories pine martens have a number of dens (resting places) throughout their territory. They also make breeding nests, which can either be within rocks, in hollowed out trees or in bird nests / squirrel dreys. Increasing pine martens use human habitation such as attics, sheds and other farm buildings for both places of shelter and breeding dens.

Pine martens have two stages to their breeding behaviour with mating taking place in July – August but with the implantation of the fertilised egg delayed until February - March. The young are then born 1 month later and remain with the mother for approximately 12 weeks. Pine martens are mainly active at night and dawn/dusk times, although can also be seen during the day.

Signs of Pine marten:

- Pine marten prints and tracks – five toed slightly cat like footprints only of significant use in areas with snow cover. Tracks on the edge of territories are often marked with scat which can vary considerably in size and shape depending on contents.

- Pine marten shelters or dens can be either on the ground in rocky crevices or in elevated tree cavities, abandoned bird nests or owl boxes.

- Pine marten scat – is 4 – 12 cm long and 0.8 – 1.8 cm in diameter with often a narrow and twisted appearance. The scats may have a musky smell likened to Parma Violets, although this can vary and DNA analysis can be required to confirm identification.

Due to their nocturnal activity it can be difficult to confirm the presence of pine martens at suspected dens, therefore camera traps may be required to positively identify a pine marten and confirm its presence in the area.

3.2 Responsibilities

It is the Contractor’s responsibility to comply with all the requirements of this Species Protection Plan where Pine marten may be present, and it is both the Contractor’s and SHE Transmission’s responsibility to monitor...
compliance with this Species Protection Plan. The responsibility for applying for any licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.3 Legislation

Pine marten is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011. This makes it an offence to kill, injure or take a pine marten or to intentionally or recklessly damage, destroy or obstruct access to any place used for shelter or for breeding. Disturbance to this species in any place used for shelter or breeding also constitutes an offence.

SNH can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to pine martens and their places of shelter, subject to the following:

a) That undertaking the conduct authorised by the licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and

b) That there is no other satisfactory solution.

In granting a licence SNH has to take into account the consequences for pine martens at a local population level, to assist this assessment SNH will need to see maps of the area of operations and also surrounding areas of suitable pine marten habitat.

3.4 Surveying for pine marten

1. Surveys for pine marten must be undertaken in all works areas containing suitable pine marten habitat, a maximum of 12 months prior to works commencing, (this includes site investigations), to ensure availability of up to date information on place of shelter locations.

2. Surveys must extend for a minimum of 100 m beyond working areas, including access tracks.

3. All dens must be marked to permit easy identification.

4. Surveys must be carried out by suitably qualified and experienced ecologists and must identify whether any pine martens and/or their places of shelter are likely to be affected by the works.

---

1 Reckless acts would include disregard of mitigation aimed at protecting pine martens, resulting in killing, injuring and/or disturbance of any pine marten or pine marten resting place.
2 Note: Information from any previous surveys (e.g. surveys carried out to provide data for Environmental Impact Assessment (EIA or other Assessments) can be a useful guide to pine marten activity in an area, particularly if dens were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing. Pre-felling surveys a maximum of 3 weeks prior to works are recommended.
If works during the breeding season (March to August inclusive) cannot be avoided, and breeding dens may be disturbed by works, it may also be important to establish if these dens are being used for breeding. The non-invasive method as follows must be used in the first instance: Visual observation and camera surveillance from the ground, for a period of a minimum of 14 consecutive days prior to works commencing, used to establish if the breeding den is in regular use. If regular use is established the den must be assumed to be being used for breeding purposes.

3.5 Review of pine marten Survey

Once a pine marten survey has been carried out, the ecologist / Ecological Clerk of Works (EcoW) must review the survey results, apply the mitigation hierarchy outlined below and decide if a licence is required from SNH (either Individual or Project) for the works.

If required, licences (individual or project), must be obtained by SNH prior to any works commencing.

Construction teams should be advised of existing / new constraints, together with mitigation / compensation, and licensing requirements by the ecologist / EcoW.

Relevant site documentation and project information sources should be updated with new and amended information on pine marten constraints as it is produced, with changes communicated to appropriate staff immediately.

3.6 Mitigation Hierarchy

There should be a general presumption against works being carried out which will disturb pine martens in their den, or which will require the destruction of any pine marten den. A hierarchical approach to minimise the works impact on pine marten should be established as follows:

Avoidance

This is the preferred option. Appropriately sized protection zones must be marked and signed on the ground by the ecologist / EcoW, with appropriate material, around all pine marten dens identified during the pre-works surveys. The breeding season (March to June inclusive) is the most sensitive time for disturbance, during this time a 100m radius protection zone must be established around all pine marten dens. Out with the breeding season, a protection zone of 30 metres radius must be established. For high noise / vibration activities (pile driving or blasting) a 100m radius protection zone around pine marten dens must be established at any time of year.

All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until all works are completed. Site staff must be briefed of their purpose through a Toolbox Talk by the ecologist / EcoW. If pine marten disturbance can be avoided in this way, there is no need to obtain a licence from SNH for the works.

Disturbance

If works within protection zones boundaries cannot be avoided, a Licence for disturbance from SNH will be required. For small scale projects the licence may be specific to the site, for larger scale works a Project Licence may be appropriate.
Individual licence applications for disturbance must be accompanied by a Mitigation Plan which outlines how the disturbance will be minimised, and dens protected from damage, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a den being used in the breeding season will be disturbed, a Method Statement must be submitted to SNH for written approval in accordance with Part 2 of this document, prior to any works commencing. The Method Statement must state how works will be carried out in a way which ensures no abandonment of young.

**Destruction**

Destruction of dens must only be undertaken as a last resort and requires a Licence from SNH. Individual Licence applications to SNH must be accompanied by a Mitigation / Compensation Plan which outlines how disturbance will be minimised and individual pine martens protected from injury, and may include provision for the creation of an artificial den if appropriate. If destruction of a den during the breeding season is required, the plan should include details of non-invasive monitoring which will take place to ensure breeding is not taking place prior to any den destruction.

Any den subject to works under Licence must be monitored during and after those works.

### 3.7 Mitigation Measures

#### 3.7.1 General Mitigation

1. An emergency procedure will be implemented by site workers if pine marten dens are encountered. All work within 30 m (non-breeding season) or 100 m (breeding season) will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.

2. Any temporarily exposed pipe system to be capped when contractors are off site to prevent pine marten from gaining access. Similarly, all exposed trenches and holes must be provided with mammal exit ramps when contractors are off site (i.e. at night time).

3. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH Licensing Team if required).

#### 3.7.2 Monitoring and Reporting

5. The Ecologist / ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to Pine martens is delivered.

6. Reports will be submitted to SNH as required by the relevant Licence.

### 3.8 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.
3.9 Project Licence

An SNH Project Licence is likely to be the most appropriate form of licence for any large scale and / or long running project, in pine marten areas. For example, where multiple instances of disturbance to a number of pine marten resting places is anticipated over several months / years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project’s lifespan. Project Licences do not negate the need for thorough pre-construction survey within 12 months and three weeks of the planned project start date.

Any Project Licence application will need to be accompanied by a Mitigation / Compensation Plan, and procedures for pine marten included in Parts 1 and 2 of this SPP.

3.10 Individual Licence

For small scale projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable pine marten offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Mitigation Plan and should be sent sufficiently in advance of the project start date to ensure the licence is in place prior to work commencing. Further guidance and details of how to apply for a pine marten Licence can be found on the SNH website [https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/pine-martens-and-licensing](https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/pine-martens-and-licensing).
Pine marten Mitigation Decision Tree

Undertake agreed pre-construction survey

Is there an occupied den within 30m (Sept to Feb) or 100m (Mar to Jun) of works? Or is there an occupied den within 100m of any works with high noise/vibration?

- Yes
  - Can work be micro-sited to avoid disturbance or destruction of a den under Licence?
    - Yes
      - Establish relevant protection zones and proceed with works as proposed.
    - No
      - Can the works be rescheduled outwith the breeding season to reduce potential impacts?
        - Yes
          - Establish relevant protection zones and proceed with revised works.
        - No
          - Apply for licence to destroy / disturb den under Project Licence / Individual Licence

- No
  - Establish relevant protection zones and proceed with works as proposed.

Re-schedule works and apply for licence to destroy / disturb den under Project Licence / Individual Licence
4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with Part 1 of this document, the Project Licence (insert Licence number) and its conditions.

Mitigation activities permitted under Project Licence are included in this Part of the SPP (section A). More disruptive activities, listed in Section B below, will require a specific Method Statement to be submitted to SNH Licensing Team for approval, prior to works commencing (see Appendix A). It is the Contractor’s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

In advance of, and during construction at any location where there is the potential for pine marten to be present, it is essential that this plan is followed:

A. Works allowed under the project licence without further approval from SNH Licensing Team

The following works may be carried out under this SPP without further approval from SNH, using the prescribed methodologies:

1. Disturbance to a den or place of shelter out with the breeding season. This includes ground and aerial dens, whether occupied, or unoccupied and located within known pine marten territory.

Methodology:

Pine marten dens must not be damaged or destroyed, but protected from potential damage by setting up a modified protection zone (size determined by the site ecologist / EcoW). Protection zones must be clearly marked on the ground and signed, and must exclude all works personnel, machinery, vehicle and storage. The protection zone must be maintained until all works are finished. Works will be undertaken in as short a period as possible to minimise the level of disturbance. A project licence return must be sent to SNH licensing team detailing all disturbance works under the Project Licence.

a. Before works commence, the ECoW will:

- Attend the site in order to check whether pine marten is present or not. If pine marten is present, then works may need to be delayed until the ECoW is satisfied suitable access / egress away from the place of shelter is safeguarded. If no pine marten is present, works can proceed.

- Brief the site personnel, including contractors and subcontractors, regarding the presence of the pine marten dens and the protected status of pine marten, their dens and the conditions
of this Species Protection Plan, which allows for felling and construction within 30 m of the den.

- Describe the actual den and state that no machinery must drive over it or if it is in a tree the den tree must not be cut down.

b. The den should be clearly marked with a blue tipped stick adjacent to the hole. For an aerial den the tree will be marked with a thick band of blue tape around the trunk.

c. For felling operations, the whole area within the 30 m protection zone, excepting the den tree itself, may be felled using a harvester.

d. Works within 30 m of the den will be undertaken within 1 day wherever possible. Where works take longer, the ECoW will carry out a pre-works check each morning for pine marten presence.

B. Activities requiring an SNH Approved Method Statement Prior to Works Commencing

The following activities require a formal Method Statement to be submitted and approved in writing by SNH licensing team prior to any works commencing:

a. Temporary or permanent exclusion or destruction of a den.

b. Any works within 100m of a breeding den during the breeding season.

c. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the Contractor / Named Agent for all submissions.

5 Revision History

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Appendix A  Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER (insert licence details)

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for <insert details of works> to be completed under <insert licence details>. These works are required in order to facilitate the delivery of the <insert Project details> (the Project).

Condition <insert No.> of the above Licence states that a <insert species> Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect <insert species>. Therefore, no works which would <insert licensed activity> <insert species> shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- <insert licence details>, SNH
- Species Protection Plan (SPP): <insert SPP No. and title> Rev. X <insert date>

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>
Table 1: Summary of Data

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Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>
Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: <insert description>

Reference number: <insert species record reference>

Client: SHE Transmission

Task: <insert description of works>

Prepared by: <insert individual or Company name>

Licensed Agent: <insert name>

Method statement for <insert works description>

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor’s name>
I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of Contractor’s Representative:............................................ Date   ..../      /

Print name in full: …...............................................................................

All method statements must be submitted to, and agreed in writing by, SNH licensing team:
licensing@snh.gov.uk
Telephone 01463725364
Figure 2.1a: Environmental Constraints - LT000134

Reinforcement Works
Blackhillock to Rothienorman
Aberdeenshire
Special Landscape Areas (SLA)

Cultural Heritage Constraints
A-Listed Buildings
Scheduled Monuments (SM)

Ecological and Geological Constraints
Site of Special Scientific Interest (SSSI)
Ancient Woodland Inventory
Semi-Natural Ancient Woodland Inventory

Landscape and Visual Constraints
Gardens and Designed Landscapes (GDL)
Core Path

Keith Substation
Blackhillock Substation

Deveron Valley SLA
Moray and Nairn Coast SPA
Tips of Corsemaul and Tom Mor SPA
Williamston House GDL
Newton House (Aberdeenshire) GDL
Mortlach Moss SAC & SSSI
Den of Pitlurg SSSI
Mill Wood SSSI
Shiel Wood Pastures SSSI
Moss of Echtmore SSSI

Existing Overhead Line to be Removed
Proposed Overhead Line
Substation
Substation Extension
5km Buffer

Scale - 1:150,000

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Project No: LT000134
Project: North East 400 kV Overhead Line Reinforcement Works
Title: Figure 2.1a: Environmental Constraints - Blackhillock to Rothienorman

Drawn by: RT/LCB
Date: 12/09/2018
Drawing: 116020-D-5R2.1a-1.0.0
Figure 2.1b: Environmental Constraints - North East 400 kV Overhead Line

Reinforcement Works
Rothienorman to Peterhead
Aberdeenshire

Special Landscape Areas (SLA)

Cultural Heritage Constraints
A-Listed Buildings
Scheduled Monuments (SM)
Battlefields Inventory (BI)

Ecological and Geological Constraints
Special Protection Area (SPA)
Special Area of Conservation (SAC)
Site of Special Scientific Interest (SSSI)
Ancient Woodland Inventory
Semi-Natural Ancient Woodland Inventory
Geological Conservation Review (GCR)

Landscape and Visual Constraints
Core Path
Gardens and Designed Landscapes (GDL)

Project No: LT00134
Project: North East 400 kV Overhead Line Reinforcement Works
Title: Figure 2.1b: Environmental Constraints - Rothienorman to Peterhead

Drawn by: RT/LCB Date: 12/09/2018

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Figure 2.1c: Environmental Constraints - Reinforcement Works Rothienorman to Kintore Aberdeenshire

- Special Landscape Areas (SLA)
  - Bennachie SLA
  - Deveron Valley SLA
  - Loch of Skene SPA

- Cultural Heritage Constraints
  - A-Listed Buildings
  - Scheduled Monuments (SM)
  - Battlefields Inventory (BI)
    - Battle of Fyvie BI
    - Battle of Barra BI
    - Battle of Harlaw BI

- Ecological and Geological Constraints
  - Site of Special Scientific Interest (SSSI)
  - Special Protection Area (SPA)
  - Semi-Natural Ancient Woodland Inventory
  - Geological Conservation Review (GCR)
    - Towie Wood GCR
  - Special Area of Conservation (SPAC)

- Landscape and Visual Constraints
  - Gardens and Designed Landscapes (GDL)
  - Core Path
    - Castle Fraser GDL
    - Fyvie Castle GDL
    - Williamston House GDL
    - Newton House (Aberdeenshire) GDL

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