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7. HYDROLOGY, HYDROGEOLOGY, GEOLOGY, AND SOILS

7.1 Executive Summary

- 7.1.1 An assessment has been undertaken of the potential impacts the Proposed Development would have on hydrology and hydrogeology (the water environment) and geology including soils and peat.
- 7.1.2 The assessment considers both the construction and operational phases of the Proposed Development.
- 7.1.3 This Chapter summarises the existing site setting which has been informed by a desk top study and data supplied by The Highland Council (THC) and Scottish Environment Protection Agency (SEPA). It has also used information and data presented in assessments for neighbouring developments.
- 7.1.4 The assessment describes the baseline site setting and the results of a programme of site work which has been completed to verify the published information sources. The field work has included an assessment of private water supply sources and a peat probing and characterising assessment. The collected peat depth data has been used to assess peat management and prepare a peat landslide hazard risk assessment.
- 7.1.5 The mitigation included in the site design (embedded mitigation) is detailed, and potential effects of the Proposed Development have then been assessed. It has been shown, subject to this mitigation, and the use of industry standard best practice that no significant effects are likely to result on the water environment, geology and soils including peat as a result of the Proposed Development.

7.2 Introduction

- 7.2.1 This Chapter outlines the baseline conditions of the Proposed Development in respect to soils (including peat), geology and the water environment. It also details the embedded mitigation included in the site design and considers the likely potential effects the Proposed Development might have on soils, geology and the water environment.
- 7.2.2 This Chapter has been prepared by SLR Consulting Ltd (SLR) under the supervision of a Technical Director who has more than 30 years' experience completing similar assessments throughout Scotland.
- 7.2.3 It is noted that no works, including widening or improvement, are proposed to the public highway shown as primary routes shown on **Figure 7.1a – 7.1d**. These are shown only to illustrate how access will be made to the Proposed Development.
- 7.2.4 Secondary access tracks shown on **Figure 7.1a – 7.1d** are existing tracks and secondary access tracks (open ground) are temporary routes that will be used on open ground where there are no existing access tracks and will either be accessed using temporary trackway or low load bearing vehicles. A short section of permanent access track is required to link the southern CSE hardstanding area to the existing access track. No other new permanent access track is required to establish the Proposed Development.

7.3 Scope of Assessment

Study Area

- 7.3.1 The study area and identified features are indicated on **Figures 7.1a – 7.1d**. The study area includes a 500 m buffer to all elements (e.g. the primary and secondary access tracks as well as the proposed power line) of the Proposed Development.

Consultation

- 7.3.2 Data requests were issued to SEPA and THC to obtain information relating to water quality data, groundwater level and flow data, private water supplies, licenced water abstraction and discharges, and landfill sites.
- 7.3.3 **Table 7-1** summarises responses to the screening request that are relevant to the water environment, geology, and soils.

Table 7-1: Consultee Responses

Consultee	Response	Comment
THC	Development or land raising within any flood plain should be avoided and proposals should generally follow SEPA's Standing Advice for Flood Risk. Should any permanent infrastructure be located within close proximity to a watercourse a Flood Risk Assessment should be submitted to demonstrate that the development is not at risk from flooding and will not increase flood risk elsewhere. SEPA's technical flood risk guidance for stakeholders outlines the information require to be submitted as part of a Flood Risk Assessment.	Noted. Flood risk screening is included within this Chapter. No permanent land raising is proposed in the floodplain.
	A Drainage Impact Assessment (DIA) is required. The DIA should include details relating to any existing field drains and the management of surface water drainage, which should be designed in line with general Sustainable Drainage Systems (SuDS) principles. The applicant should demonstrate, within the proposals	Principles, design standards and best practice measures for the management and control drainage that would be adopted by the Principal Contractor are included within this Chapter.

Consultee	Response	Comment
	submitted, any mitigation measures to manage the residual risk of overland flow / pluvial flooding.	
	Natural flood management techniques should also be applied to reduce the rate of runoff where possible. Tracks should not act as preferential pathways for runoff and efforts should be made to retain the existing drainage network. Appropriate drainage is required to restrict runoff to pre-development rates and to minimise erosion to existing watercourses. The DIA should ensure that post development runoff rate is no greater than pre-development runoff rate (i.e. greenfield runoff) for all return periods up to the 1 in 200 year event including an allowance for climate change.	Sustainable drainage approaches and standards that would be adopted by the Principal Contractor are given in this Chapter.
	Runoff from all events up to and including the 1 in 200 year plus climate change event should be managed within the site boundary, with no flooding to critical roads or buildings, and evidence as to how this will be achieved should be included within the DIA. Refer to THC's Flood Risk and Drainage Impact: Supplementary Guidance for further detailed requirements.	As above.

7.3.4 In addition, this Chapter refers to statutory and non-statutory feedback given by consultees earlier in the project and summarised in the Report on Consultation – Alignment Options report¹, and which includes responses from NatureScot and SEPA.

7.4 Methodology

7.4.1 This section outlines the assessment methodology used for the assessment of potential effects on soils, geology and the water environment.

Desk Study

7.4.2 An initial desk study has been undertaken to determine and confirm the baseline characteristics by reviewing available information on soils, geology, hydrology and hydrogeology. The following sources of information have been consulted in order to characterise the baseline conditions of the study area:

- Bhlaraidh Wind Farm Extension – EIA Report, SSE Renewables, 2021;
- Skye Reinforcement Project EIA Report. SSEN Transmission, September 2022.
- Ordnance Survey (OS) 1:50,000 and 1:25,000 scale mapping data;
- Natural England Magic Map²;
- NatureScot Sitelink Online Information Service³;
- James Hutton Institute, National Soil Map of Scotland (1:250,000)⁴;
- Scottish Natural Heritage (now NatureScot) Carbon and Peatland 2016 Map⁵
- British Geological Survey (BGS) Onshore Geoindex⁶;

¹ Report on Consultation – Alignment Options: Bhlaraidh Extension Wind Farm Grid Connection. Project Ref.: LT295, Scottish & Southern Electricity Networks and Transmission, April 2022.

² Natural England, Magic Map Application, available at <http://magic.defra.gov.uk/MagicMap.aspx>, accessed August 2022

³ Nature Scot, Sitelink, available at <https://sitelink.nature.scot/home>, accessed August 2022

⁴ The James Hutton, National Soil map of Scotland, available at <https://soils.environment.gov.scot/> accessed August 2022

⁵ Scottish Natural Heritage (now NatureScot), Carbon and Peatland 2016 map, available at <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/>, accessed August 2022

⁶ British Geological Survey GeoIndex Onshore, available at <http://mapapps2.bgs.ac.uk/geoindex/home.html>, accessed August 2022

- BGS Hydrogeological Maps of Scotland⁷;
- SEPA flood maps⁸;
- SEPA environmental data⁹; and
- Data requests to SEPA and THC (February 2021).

Field Survey

- 7.4.3 A site walkover survey was carried out on 5 April 2022 to 7 April 2022 to verify the information that was collected during the desk study, allow an appreciation of the study area and to gather peat depth and condition data. This information was used to inform the emerging site design.

Legislation and Guidance

- 7.4.4 This assessment has been undertaken with respect to environmental legislation, planning policy and general guidance, including the following which are relevant to soils, geology and the water environment.

Legislation

- European Union (EU) Water Framework Directive (2000/60/European Commission (EC));
- EU Drinking Water Directive (98/83/EC);
- Water Environment and Water Services (WEWS) (Scotland) Act 2003 (WEWS Act);
- The Environment Act 1995;
- Environment Protection Act 1990;
- The Flood Risk Management (Scotland) Act 2009;
- The Water Environment (Controlled Activities) (Scotland) Regulations, 2011 (Controlled Activities Regulations (CAR)) (as amended);
- The Water Supply (Water Quality) (Scotland) Regulations, 2001;
- Private Water Supplies (Scotland) Regulations 2006; and
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017.

Planning Policy

- 7.4.5 In addition to Scottish Planning Policy (SPP) published by The Scottish Government (December 2020), THC Highland-wide Development Plan (HwDP) (5 April 2012) provides planning guidance on the type and location of development that can take place in the region. The HwDP presents policies of which the following are relevant to this assessment:

- Policy 28 - Sustainable Design;
- Policy 55 - Peat and Soils;
- Policy 58 - Protected Species;
- Policy 59 - Other Important Species;
- Policy 60 - Other Important Habitats;
- Policy 62 - Geo-diversity;
- Policy 63 - Water Environment;
- Policy 64 - Flood Risk;

⁷ British Geological Survey, Hydrogeological maps of Scotland, available at <https://www.bgs.ac.uk/datasets/hydrogeological-maps-of-scotland/>, accessed August 2022

⁸ Scottish Environment Protection Agency, flood maps available at <https://www.sepa.org.uk/environment/water/flooding/flood-maps/> and <http://map.sepa.org.uk/reservoirsfloodmap/Map.htm>, accessed August 2022

⁹ Scottish Environment Protection Agency, Environmental Data available at <https://www.sepa.org.uk/environment/environmental-data/>, accessed August 2022

- Policy 69 - Electricity Transmission Infrastructure; and
- Policy 72 – Pollution.

Guidance

7.4.6 The following guidance is also applicable to the assessment.

7.4.7 Planning Advice Notes (PANs) are published by the Scottish Government. Applicable PANs include:

- PAN 61 Planning and Sustainable Urban Drainage Systems (SUDS); and
- PAN 69 Planning and Building Standards Advice on Flooding.

7.4.8 SEPA and NetRegs Pollution Prevention Guidelines (PPG) and replacement Guidance for Pollution Prevention (GPP):

- GPP01 Understanding your environmental responsibilities – good environmental practices;
- GPP02 Above Ground Oil Storage Tanks;
- GPP03 Use and Design of Oil Separators in Surface Water Drainage Systems;
- GPP05 Works and Maintenance in or near Water;
- PPG06 Working at Construction and Demolition Sites;
- PPG07 Safe Storage – The Safe Operation of Refuelling Facilities;
- GPP08 Safe Storage and Disposal of Used Oils;
- GPP13 Vehicle Washing and Cleaning; and
- GPP21 Pollution incident response plans

7.4.9 Construction Industry Research and Information Association (CIRIA) publications:

- C532 Control of Water Pollution from Construction Sites (2001);
- C648 Control of Water Pollution from Linear Construction Projects – Technical Guidance (2006);
- C741 Environmental Good Practice on Site (2015); and
- C753 The SUDS Manual (2015).

7.4.10 SEPA Publications:

- Engineering in the Water Environment: Good Practice Guide – River Crossings (2010);
- Engineering in the Water Environment: Good Practice Guide – Sediment Management (2010);
- Groundwater Protection Policy for Scotland, Version 3 (2009);
- Land Use Planning System SEPA Guidance Note 31, Version 3 (September 2017); and
- Position Statement – Culverting of Watercourses (2015).

7.4.11 Other Guidance:

- Department of Environment, Food and Rural Affairs (DEFRA) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2011); and
- DEFRA Good Practice Guide for Handling Soils (Ministry of Agriculture, Fisheries and Food (MAFF) 2000).

Assessment of Effects

7.4.12 The assessment of receptors identified by the baseline and field studies has been undertaken considering best practice and safeguards incorporated included in the site design.

7.5 Baseline Conditions

7.5.1 This section outlines the baseline soils (including peat), geology and water environment conditions within the study area.

7.5.2 The Proposed Development is situated in a rural area to the northwest of Loch Ness between the proposed substation at Bhlaraidh Windfarm Extension and the existing Fort Augustus substation.

Designations

7.5.3 Review of Nature Scot SiteLink indicates that the following statutory designated sites are located within the study area (**Figure 7.1**):

- River Moriston Special Area of Conservation (SAC). The SAC is limited to the River Moriston corridor and has been designated for Atlantic salmon and freshwater pearl mussel. The Proposed Development is located within the River Moriston surface water catchment and the OHL crosses the river and area designated as part of the SAC. Therefore, this SAC is assessed further below.
- Levishie Wood Site of Special Scientific Interest (SSSI). The SSSI is located within the northeastern extent of the study area and has been designated for upland birch woodland habitats. The SSSI is not located downstream of the Proposed Development and not in the same water catchment as the proposed OHL line or proposed UGC. It is therefore not hydraulically connected to the Proposed Development and is not considered further in this Chapter.
- Fort Augustus Geological Conservation Review (GCR) site. The GCR is designated for important superficial deposits and is located approximately 650 m northeast of the existing Fort Augustus substation. No elements of the Proposed Development cross the GCR and therefore it is not considered further.

Soils and Geology

Soils

7.5.4 An extract of 1:250,000 National Soil Map of Scotland is presented as **Figure 7.2**, review of which indicates that the Proposed Development is underlain by peat, peaty gleys, mineral podzols and peaty podzols.

7.5.5 Peat soils are recorded within a small area within the southern extent of the Proposed Development between the Inverwick Forest and Inchnacardoch Forest, near the upper reaches of the Allt Phocaichain.

7.5.6 Peaty gleys are recorded within the northern extent of the Proposed Development and within a small area of the Inchnacardoch Forest whilst peaty podzols are located within the southern extent of the Proposed Development, within Inverwick Forest and Inchnacardoch Forest. Mineral podzols are noted in the areas adjacent to the River Moriston and River Oich, within the central and southern extent of the study area respectively.

Superficial Geology

7.5.7 Review of the BGS Onshore Geindex (**Figure 7.3**) indicates that much of the Proposed Development is underlain by glacial till (diamicton) and hummocky glacial deposits (diamicton, sand and gravel). Large areas within the northern extent of the study area, where the ground is higher, are recorded to have no superficial deposits.

7.5.8 Glaciofluvial deposits, alluvium and alluvial fan deposits are recorded adjacent to the main rivers within the study area, in particular the areas adjacent to the River Moriston and River Oich located within the central and southern extent of the Proposed Development respectively.

7.5.9 Minor localised areas of peat are recorded in the northern extent of the Proposed Development and in the area within the centre of the Proposed Development between Inverwick Forest and Inchnacardoch Forest.

Peat

- 7.5.10 Review of Peatland Classification mapping (**Figure 7.4**) shows that the majority of the Proposed Development is not located within an area designated as priority peatland (Class 1 and 2 peatlands). Areas of priority peatland are recorded within small areas in the northern extent of the Proposed Development and between the Inverwick Forest and Inchnacardoch Forest, near the upper reaches of the Allt Phocaichain, within the southern extent of the Proposed Development.
- 7.5.11 As part of the baseline assessment, a peat probing and characterisation exercise has been undertaken. Peat / soil depths were recorded at 1,051 locations, with the recorded peat depths shown on **Figure 7.5a – 7.5c** and **Figure 7.6a – 7.6d**. Minor alignment adjustments were made following the peat probing works resulting in a stretch of the OHL south of the River Moriston not covered by survey data, as shown on **Figure 7.5b**. Detailed pre-construction surveys would be carried out to confirm peat depths in this section to obtain missing data and confirm overall peat depth survey findings (see paragraph 7.7.2). A summary of the recorded peat depths are shown in **Table 7-2**.

Table 7-2: Peat Probe Data

Thickness (m)	Number of Probes	Percentage (of total probes undertaken on-site)
0 (no peat)	122	11.6
0.1 to 0.5 (peaty soil)	794	75.5
0.5 to 1.0	101	9.6
1.0 to 1.5	19	1.8
1.5 to 2.0	14	1.3
2.0 to 2.5	1	0.1
2.5 to 3.0	0	0
> 3.0	0	0

- 7.5.12 Review of **Figure 7.5a – 7.5c**, **Figure 7.6a – 7.6d** and **Table 7-2**, indicates that:
- Recorded peat thickness varies from 0 to 2.1 m;
 - 87% of all probes intersected no peat and/or peaty soils (less than or equal to 0.5 m deep); and
 - Areas of deeper peat (>1m) are mainly recorded within the southern extent of the Proposed Development, between the Inverwick Forest and Inchnacardoch Forest, where the Class 1 priority peatland is recorded.

Peat Landslide Hazard Risk Assessment

- 7.5.13 A peat landslide hazard risk assessment (PLHRA) has been prepared for the Proposed Development notwithstanding that the potential risk is deemed to be minimal due to the limited extent of peat along the proposed route.
- 7.5.14 The peat depth data has been combined with slope data and observations of underlying substrate condition to complete an assessment of peat slide risk. The resultant peat slide risk plan is shown as **Figure 7.7a- 7.7d** which shows there are very few areas of medium and high peat slide risk, and the majority of the proposed access tracks are not located on peat and utilise either existing wind farm / estate tracks used for construction of the Bhlaraidh Wind Farm and its Extension, and for the construction of the existing transmission lines to Fort Augustus substation. Much of the proposed alignment is underlain by areas of negligible to low peat slide risk. The medium and high risk sites are a consequence of thin peat on very steep slopes and are very localised. These do not pose a significant risk to either the Proposed Development or the access tracks and can be

readily avoided as the proposed Limit of Deviation can be used to micro-site the proposed works to avoid these areas during the construction phase of the development.

Peat Management Plan

- 7.5.15 The requirement to manage peat along the Proposed Development will be minimal due to the limited extent of peat present. There are no areas of extensive deep peat and therefore a detailed peat management plan is not required. Where peat is excavated locally it can be managed using the CEMP which will include procedures and method statements for the management and safeguarding of soils and peat where encountered (see Section 7.6, Good Practice and Embedded Mitigation by Design, and Section 7.7, Assessment of Potential Effects, which includes principles for the management of peat and soils that will ensure their integrity).

Bedrock Geology

- 7.5.16 An extract of the BGS bedrock and linear features geology mapping is presented as **Figure 7.8**.
- 7.5.17 The majority of the Proposed Development is underlain by psammite, a metamorphic rock, of the Tarvie Psammite Formation. The formation is described as well bedded, flaggy, fawn to brown and white quartzose psammite with minor semipelite bands. Minor igneous intrusions are also recorded beneath the Proposed Development.
- 7.5.18 Inferred faults have been recorded by the BGS, generally trending in a southwest to northeast orientation. There are no inferred faults mapped that would intersect the Proposed Development.

Hydrogeology

Groundwater Levels and Flow

- 7.5.19 SEPA have confirmed that no groundwater monitoring is undertaken within the study area.
- 7.5.20 An extract of the BGS 1,100,000 scale Aquifer Productivity and Groundwater Vulnerability datasets and 1:625,000 scale Hydrogeological Map of Scotland are presented in **Figure 7.9** and **Figure 7.10** respectively.
- 7.5.21 The Aquifer Productivity and Groundwater Vulnerability datasets classifies the underlying aquifer (superficial and bedrock) according to the predominant groundwater flow mechanism (fracture or intergranular) and the estimated groundwater productivity. Groundwater vulnerability is divided into five classes (1 to 5) with 1 being least vulnerable and 5 being most vulnerable.
- 7.5.22 Review of **Figure 7.9** indicates that the superficial deposits within the study area are generally not considered a significant aquifer, with the exception of the glaciofluvial and alluvial deposits adjacent to the River Murrison. These deposits are considered to be a Moderate to High productivity aquifer, whereby groundwater flow predominately occurs by intergranular flow. Given the proximity of the river, the groundwater within these deposits is likely to be in hydraulic conductivity with the river. The bedrock aquifer is considered to be a very low productivity aquifer, where groundwater flow can occur in fractures.
- 7.5.23 The Proposed Development is shown to be underlain by groundwater vulnerability Classes 5 and 4a. The highest vulnerability is noted within the northern extent of the Proposed Development, where no superficial deposits are recorded, and thus little attenuation of potential pollutants prior to entry to groundwater.
- 7.5.24 **Figure 7.10** confirms that the Proposed Development is underlain by Precambrian rock classified as a low productivity aquifer whereby small amounts of groundwater are expected in near surface weathered zones and secondary fractures.

Groundwater Quality

7.5.25 All of Scotland's groundwater bodies have been designated as Drinking Water Protected Areas (DWPA) under the Water Environment (Drinking Water Protected Area) (Scotland) Order 2013 and require protection for their current use or future potential as drinking water resources.

7.5.26 SEPA has identified that the Proposed Development is underlain by the Northern Highlands groundwater body (SEPA ID 150701), which has been classified as having a Good overall groundwater quality in 2020 (last reporting cycle). No pressures have been identified by SEPA for this groundwater waterbody.

7.5.27 SEPA has confirmed that they do not hold any specific groundwater water quality data within the study area.

Hydrology

7.5.28 The local hydrology is shown on **Figure 7.1a – 7.1d**.

7.5.29 The Proposed Development is entirely located within the Loch Ness surface water catchment, specifically the following sub catchments (from north to south):

- Allt Saigh which drains the northern most area of the Proposed Development and flows generally eastward towards Loch Ness to the northeast of the Proposed Development;
- River Moriston which flows through the centre of the Proposed Development site and discharges into Loch Ness approximately 3 km southeast of the eastern most element of the Proposed Development. The majority of the Proposed Development is drained by the River Moriston and its tributaries.
- Allt Bhlaraidh, a tributary of the River Moriston, which drains the north western extent of the Proposed Development and flows generally south eastwards towards the River Moriston.
- Allt Larairidh, a tributary of the River Moriston, which drains a small section of the centre of the Proposed Development and flows generally south eastwards towards the River Moriston.
- Allt Phocaichain, a tributary of the River Moriston, which drains part of the southern extent of the Proposed Development and flows generally north eastward towards the River Moriston.
- River Oich which drains the southern most area of the Proposed Development and flows generally north eastwards before discharging into Loch Ness within the south eastern corner of the study area.

7.5.30 The whole of Loch Ness and its immediate catchment (i.e., not including those listed above) has been designated as a Drinking Water Protected Area (DWPA). While the Proposed Development is not located within the DWPA a number of the surface water catchments crossed by the Proposed Development discharge to Loch Ness and the DWPA. The DWPA is therefore considered further in this assessment.

Rainfall and Surface Water Flow

7.5.31 SEPA has provided precipitation data for the Dundreggan rainfall gauge (station number 530175). Review of the last six years data (July 2016 – June 2022) indicates an average annual rainfall of 1352 mm.

7.5.32 SEPA also provided data for the closest stream gauge on the River Moriston at Levishie, however, it is noted that no surface water flow data is available from 2011. The National Flow Archive¹⁰ indicates a mean flow of 5.66 m³/s from between 1994 and 2011 at this location.

7.5.33 The watercourses locally will exhibit a flash response to rainfall; the low permeability bedrock geology will result in a rapid response (rise) in flows in the watercourses during storm events.

Surface Water Quality

¹⁰ UK Centre for Ecology and Hydrology (UKCEH), National Flow Archive Data, available at <https://nrfa.ceh.ac.uk/>, accessed August 2022

7.5.34 The larger watercourses within the study area are monitored by SEPA and were classified in 2020 (the last reporting cycle). A summary of the SEPA classifications is shown in **Table 7-3**.

Table 7-3: SEPA Waterbody Classifications (2020)

Waterbody ID (SEPA ID)	Overall Status	Overall Ecology	Biological Elements	Hydromorphology
Allt Saigh (20278)	Good ecological potential	Moderate	High	Moderate
Allt Bhlaraidh (20282)	Bad ecological potential	Bad	Poor	Bad
Allt Larairidh (20283)	Good	Good	High	Good
River Moriston – Dundreggan Dam to Bun Loyne (23382)	Good ecological potential	Moderate	Good	Moderate
River Moriston – Loch Ness to Dundreggan Dam (23381)	Moderate ecological potential	Moderate	Good	Moderate
Allt Phocaichain (20284)	Moderate	Moderate	Moderate	Moderate
River Oich (20253)	Good	Good	High	Good
Loch Ness (100156)	Good	Good	Good	High

7.5.35 Allt Saigh, Allt Bhlaraidh, and River Moriston (Loch Ness to Dundreggan Dam and Dundreggan Dam to Bun Loyne) have been designated as a heavily modified water bodies on account of physical alterations that cannot be addressed without a significant impact on water storage for hydroelectricity generation.

7.5.36 SEPA has not identified any pressures on Allt Saigh, Allt Larairidh, River Oich and River Moriston (Loch Ness to Dundreggan Dam and Dundreggan Dam to Bun Loyne).

7.5.37 SEPA identified the following pressures on Allt Bhlaraidh and Allt Phocaichain:

- Unknown pressure on water animals and plants that impacts the ecological condition; and
- Water abstraction for hydroelectricity generation that impacts water flows and levels.

Flood Risk

7.5.38 SEPA has developed national flood maps that present modelled flood extents for river, coastal, surface water and groundwater flooding. The river, coastal, surface water and groundwater maps were developed using a consistent methodology to produce outputs for the whole of Scotland, supplemented with more detailed, local assessments where available and suitable for use. Flood extents are presented in three likelihoods: High, Medium and Low.

- High likelihood: a flood event is likely to occur in the defined area on average more than once in every ten years (1:10), or a 10% chance of happening in any one year;
- Medium likelihood: a flood event is likely to occur in the defined area on average more than once in every two hundred years (1:200), or a 0.5% chance of happening in any one year; and
- Low likelihood: a flood event is likely to occur in the defined area on average more than once in every thousand years (1:1000), or a 0.1% chance of happening in any one year.

7.5.39 A summary of the potential sources of flooding and a review of the potential risks posed by each source is presented in **Table 7-4**.

Table 7-4: Potential Flooding Sources

Potential Source	Potential Flood Risk to Application Site	Justification
Coastal flooding	No	The Proposed Development is not near the coast.
River Flooding	Yes (minor)	SEPA river flood mapping highlights that there is low to high likelihood of flooding along the main rivers near the Proposed Development. The majority of the areas denoted to be at risk of flooding are generally confined to the watercourse channel, and do not encroach onto the Proposed Development, except for where the Proposed Development is proposed to cross watercourses.
Surface Water Flooding	Yes (minor)	SEPA records several small, isolated areas at risk of surface water flood risk across the Proposed Development. It is noted that the flood extents are minor and localised, never forming large linked areas or flow paths. Surface water flooding is not considered to present a development constraint and potential effects can be mitigated by good site design.
Groundwater Flooding	No	SEPA groundwater flood mapping highlights that there is low likelihood of flooding surrounding Loch Ness. The Proposed Development does not cross the area shown to be at risk. No other groundwater flood risk is recorded. Additionally, review of the baseline geology and hydrogeology confirms that the geology at and near to the Proposed Development is unlikely to contain significant quantities of groundwater.
Flooding due to dam failure	Yes (minor)	SEPA has produced reservoir inundation maps for those sites currently regulated under the Reservoirs Act 1975. Review of the SEPA Inundation Mapping highlights that there are four potential breach scenarios from several reservoirs which may cause flooding along the River Bhlairaidh, River Moriston and River Oich. It is noted that the majority of the Proposed Development is not noted to be at risk from these breach scenarios, with the exception of where the Proposed Development passes along the River Moriston valley. The risk of such an event occurring is very low, given the safeguards and monitoring required by the Reservoirs Act. Flooding due to infrastructure failure is therefore not considered a constraint for the Proposed Development.
Flood Defence Breach (Failure)	Yes	The Proposed Development is remote from any flood defences.
Flooding from artificial drainage systems	No	No drainage systems are present near to the Proposed Development route.

Private Water Supplies and Licenced Sites (Abstractions / Discharges / Waste)

- 7.5.40 Consultation with THC and SEPA has been conducted regarding records of registered and licenced water abstractions and discharges. In addition, details of private water supplies (PWS) have been collated from the Bhlaraidh Extension Wind Farm EIA Report, and from the Skye Reinforcement Project EIA Report. Information regarding PWS in the Skye Reinforcement Project EIA Report is presented in a confidential appendix, and therefore source specific data is not presented in this assessment.
- 7.5.41 Recorded PWS and SEPA Controlled Activity Regulation (CAR) registrations / licences are illustrated in **Figure 7.1** and are discussed below. The PWS data has been used to assess the potential for each identified PWS to be hydraulically connected to the Proposed Development and therefore at potential risk from the Proposed Development.

Private Water Supply Risk Assessment

- 7.5.42 THC provided records held of properties with PWS within the study area, a summary of which are included in **Table 7-5**. These and data from the Bhlaraidh Extension Wind Farm EIA Report and from the Skye Reinforcement Project EIA Report have been used to complete the PWS risk assessment.

Table 7-5: Private Water Supply Risk Assessment

PWS ID (Figure 7.1)	Property Name	PWS Source Type	Location of PWS	Discussion	Potential Pathway
PWS01	Allt Loch a Chrathaich	Stream	E 237419 N 817911	Reference PWS02 in the Bhlaraidh Wind Farm Extension EIAR. The PWS source is taken from the Allt Loch a' Chrathaich immediately upstream of its confluence to the Allt Bhlaraidh. An existing track will be used and a proposed temporary track is proposed within 250 m of the PWS and within the same surface water catchment as the PWS source. It is, therefore, potentially at risk.	✓
PWS02	Allt Bhlaraidh	Stream	E 237795 N 816887	Reference PWS03 in the Bhlaraidh Wind Farm Extension EIAR. The PWS source is taken from the Allt Bhlaraidh. An existing track will be used and a proposed temporary track is proposed within 250 m of the PWS and within the same surface water catchment as the PWS source. It is, therefore, potentially at risk.	✓
PWS03	Caochan na Muic	Stream	E 238298 N 816844	Reference PWS04 in the Bhlaraidh Wind Farm Extension EIAR. The PWS source is taken from the Caochan na Muic. An existing track will be used within c. 250 m of the PWS and within the same surface water catchment as the PWS source. It is, therefore, potentially at risk.	✓
PWS04	Levishie Power Station	Hill Loch	E 235320 N 815964 (power station location)	The power station is located approximately 600 m northwest of the proposed OHL. The Proposed Development is located within a different surface water catchment to the power station and therefore not considered to be at risk.	×
PWS05	Dundreggan Bungalows	Stream	E 235254 N 815853 (PWS source - unconfirmed)	The PWS source is located approximately 500 m northwest of the proposed OHL. The Proposed Development is located within a different surface water catchment to the PWS and therefore not considered to be at risk.	×

PWS ID (Figure 7.1)	Property Name	PWS Source Type	Location of PWS	Discussion	Potential Pathway
PWS06	Dundreggan Power Station	Stream	E 235756 N 815611 (power station location)	The power station is located approximately 100 m north of the proposed OHL. The Proposed Development is located uphill of the PWS and within the same surface water catchment (River Moriston). The PWS is therefore potentially at risk from the Proposed Development and is considered further in this assessment. The exact location of the PWS source should be determined prior to construction.	✓
PWS07	Glenmoriston Power Station	Stream	E 235739 N 815617 (power station location)	The power station is located approximately 100 m north of the proposed OHL. The Proposed Development is located uphill of the PWS and within the same surface water catchment (River Moriston). The PWS is therefore potentially at risk from the Proposed Development and is considered further in this assessment. The exact location of the PWS source should be determined prior to construction.	✓
PWS08	Fraoch Eilean	Unknown	E 232263 N 814419 (property location)	The property is located approximately 850 m northwest of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×
PWS09	Sylvan House	Stream	E 232207 N 814402 (property location)	The property is located approximately 850 m northwest of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×
PWS10	Allt Ruadh	Unknown	E 232136 N 814354 (property location)	The property is located approximately 850 m northwest of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×
PWS11	But N Ben	Unknown	E 232339N 814315 (property location)	The property is located approximately 700 m northwest of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×

PWS ID (Figure 7.1)	Property Name	PWS Source Type	Location of PWS	Discussion	Potential Pathway
PWS12	3 Torgoyle Crescent	Hill Loch	E 230569 N 812975 (property location)	The property is located approximately 1 km northwest of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×
PWS13	Inchmore Hatchery	Stream	E 230171 N 812450 (property location)	The property is located approximately 1.5 km west of the proposed OHL and located within a different surface water catchment than the Proposed Development. Therefore, the PWS is not considered to be at risk.	×
PWS14	Pinetop and Forest Lodge	Stream	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	The PWS source is located 200 m west and downgradient of the proposed underground cable and is in hydraulic continuity with the development. The PWS is therefore potentially at risk from the Proposed Development and is considered further in this assessment.	✓
PWS15	Ach na Cloiche	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	Borehole depth is 45 m (according to BGS records). The PWS source is located downgradient of the proposed underground cable and is in hydraulic continuity with the development. Given the depth of the borehole, however, it is considered the Proposed Development is unlikely to affect the PWS supply.	×
PWS16	Ach na Cloiche 7B	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	Borehole depth is 72 m (according to BGS records). The PWS source is located downgradient of the proposed underground cable and is in hydraulic continuity with the development. Given the depth of the borehole, however, it is considered the Proposed Development is unlikely to affect the PWS supply.	×
PWS17	Forest Lodge	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	The source is located approximately 300 m southwest of the Proposed Development. The PWS source is located downgradient of the proposed underground cable. However, the distance from the Proposed Development will afford protection to the source and given the proposed embedded	×

PWS ID (Figure 7.1)	Property Name	PWS Source Type	Location of PWS	Discussion	Potential Pathway
				mitigation the PWS is not considered at risk from the Proposed Development.	
PWS18	Pinetop	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	The source is located approximately 300 m southwest of the Proposed Development. The PWS source is located downgradient of the proposed underground cable however the distance from the proposed works and embedded mitigation will afford protection to the PWS. The PWS is therefore not considered at risk.	x
PWS19	Windhill	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	The source is located approximately 450 m southwest of the Proposed Development. The PWS source is located downgradient of the proposed underground cable, however the distance from the proposed works and proposed embedded mitigation will safeguard this water source. It is not considered at risk.	x
PWS20	Hawksview	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	Borehole depth is 45 m (according to BGS records). The source is located approximately 450 m southwest of the Proposed Development. The PWS source is located downgradient of the proposed underground cable and is in hydraulic continuity with the development. Given the depth of the borehole, however, it is considered the Proposed Development is unlikely to affect the PWS supply.	x
PWS21	Meadowside	Borehole	Data from confidential Skye Reinforcement Project EIA Report (Private Water Supply Risk Assessment Appendix)	The source is located approximately 500 m south of the proposed connection point at Fort Augustus substation. The PWS is downgradient of the proposed underground cable , however the distance from the proposed works and proposed embedded mitigation will safeguard this water source. It is not considered as at risk.	x

7.5.43 A review of **Table 7-5** confirms that there are six PWS potentially at risk from the Proposed Development.

Licensed Sites

7.5.44 SEPA has provided records of CAR authorisations within the study area, a summary of which are provided below:

- Seven water abstractions (two from groundwater, two from river and three from lochs);
- One river impoundment for hydropower generation;
- 64 private sewage discharges (55 to groundwater, eight to river and one to lake);
- Seven other sewage discharges (two to groundwater, three to river and one to lake);
- 22 engineering works (bridge / bridging culverts / pipelines / sediment removal) over rivers; and
- One PPC licence and one CAR registration for dam.

7.5.45 Three abstractions are for hydropower schemes:

- Allt Phocaichain Hydro Scheme (CAR/L/1112111) which abstracts from the Allt Phocaichain approximately 80 m south of the proposed OHL. The abstraction point is located upstream of the Proposed Development and is therefore not considered to be at risk.
- Allt na Fearna Hydropower Scheme (CAR/L/1140297) which abstracts from the Allt na Fearn (a tributary of the River Oich) located approximately 400 m northeast of the proposed underground cable. It is not considered at risk from the Proposed Development.
- Ness Section Hydroelectric Scheme (CAR/L/1011471) (abstraction return) located approximately 100 m north of the proposed OHL. It is not considered at risk from the Proposed Development.

7.5.46 The remaining two surface water abstractions are associated with the existing Bhlaraidh Wind Farm and permit an abstraction from surface water features (rivers / lakes) for environmental services (CAR/R/1149567) and an abstraction for industrial or commercial process water (CAR/R/1149561). The Proposed Development is located approximately 2 km west and upstream of the CAR licences. They are not considered at risk.

7.5.47 The two groundwater abstractions are located at Inchmore Hatchery and permit an abstraction for fish farming (CAR/L/1024870) and a pumping test (CAR/R/1179108). The hatchery is located approximately 1.5 km west of the Proposed Development and located within a different surface water catchment. The abstractions are not considered at risk.

Groundwater Dependent Terrestrial Ecosystems (GWDTEs)

7.5.48 Potential GWDTEs have been identified within Chapter 5 (Ecology) and measures to safeguard these are detailed therein.

Watercourse Crossings

7.5.49 The Proposed Development has sought to use existing access tracks where possible (see secondary access track, **Figure 7.1**). With the exception of one location, no new permanent stone tracks are required. A short section of new permanent access track (approximately 20 m) will require to be constructed to link the southern proposed CSE hardstanding area to an existing access track. It would not cross a watercourse and thus no new or upgraded watercourse crossing is required. Upgrade or track improvement works to existing tracks may be required locally.

7.5.50 Temporary access routes used by low load bearing machinery will cross minor watercourses (see secondary access (open), **Figure 7.1**). Temporary access would also be required to install the underground cable. No structures or permanent infrastructure is associated with the temporary access routes.

7.6 Good Practice and Embedded Mitigation by Design

7.6.1 SSEN Transmission has established best practice construction techniques and procedures that have been agreed with statutory consultees, including SEPA and NatureScot. These are set out within SSEN Transmission's General Environmental Management Plans (GEMPs), included in **Appendix 3.1**.

7.6.2 The Proposed Development would be constructed in accordance with these plans.

7.6.3 A contractual management requirement of the successful Principal Contractor would be the development and implementation of a comprehensive and site-specific Construction Environmental Management Plan (CEMP). This document would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the Environmental Appraisal, SSEN Transmission's GEMPs, statutory consents and authorisations, and industry best practise and guidance.

7.6.4 The CEMP will also outline measures to ensure that the works minimise the risk to soils, peat, geology, groundwater, surface water and licensed water uses. It will include a project specific drainage plan and materials (soils and peat) management plan. The drainage plan would detail the passive measures that would be deployed to treat both the quality and quantity of water shed from the works area in accordance with Sustainable Drainage Systems (SuDS) techniques. The materials management plan will show how soils and peat arisings will be safeguarded, will be managed and used in restoration on site.

7.6.5 It is expected that the following will be included within the CEMP and would ensure the works are undertaken in accordance with good practice guidance, as detailed in Section 7.4:

- During construction there would be heavy plant and machinery required and as a result it is appropriate to adopt best working practices and measures to protect the water environment, including those set out in Pollution Prevention Guidance (GPP01);
- In accordance with GPP02 any above ground on-site fuel and chemical storage would be banded;
- Emergency spill response kits would be maintained during the construction works (GPP21);
- A vehicle management system would be put in place wherever possible to reduce the potential conflicts between vehicles and thereby reduce the risk of collision (GPP21);
- Suitable access routes would be chosen which minimise the potential requirement for either new temporary access tracks or for tracking across open land which could contribute to the generation of suspended solids;
- A speed limit would be used to reduce the likelihood and significance of any collisions;
- Plant nappies would be placed under stationary vehicles which could potentially leak fuel / oils;
- Any temporary construction / storage compounds required would be located remote from any sensitive surface water receptors and will be constructed to manage surface water run-off in accordance with best practice;
- Any water contaminated with silt or chemicals would not be discharged directly or indirectly to a watercourse without prior treatment;
- Water for temporary site welfare facilities would either be brought to site or a local surface water or groundwater abstraction would be identified. Any water abstraction would be made in accordance General Binding Rule or an authorisation would be obtained from SEPA in accordance with the Controlled Activity Regulations (CAR); and
- Foul water would either be collected in a tank and collected for offsite disposal at an appropriately licensed facility or discharge will be to a septic tank or soakaway in accordance with the CAR.

7.6.6 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. The

ECoW would have authority to stop any works that are or have potential to impair soils, geology or the water environment.

- 7.6.7 In general, proposed construction site access would be taken via the existing public road network and would make use of existing forest and estate tracks as far as practicable. For temporary watercourse crossings less than 2 m wide CAR General Binding Rules will be adhered to. Bog mats, or similar, would be positioned across the watercourse to enable access, where necessary, side rails will be installed with silt mitigation at either end and across if required to ensure that silt impacts from vehicles crossing are controlled at all times. Crossings will be cleaned at the end of the day if required. All proposed crossing locations and methodologies would be reviewed and approved by the ECoW, prior to any works being undertaken.
- 7.6.8 A Site Construction Licence would be required and obtained in accordance with the CAR from SEPA prior to any construction works commencing on site. The Licence would specify the controls and measures that would be used at site to safeguard the water environment.
- 7.6.9 To establish the proposed transmission line, no new permanent access is required in the River Moriston SAC. Measures required to safeguard water quality and flow, and thus the qualifying interests of the SAC are given in the sections that follow.

7.7 Assessment of Potential Effects

- 7.7.1 The following have the potential to impair the soils, geology, local hydrology (surface water) and hydrogeology (groundwater):
- Tracking and use of machinery has the potential to damage soils and/or peat by compaction or indirectly by draining water from the peat;
 - Soil compaction from vehicular movement may cause an increase of local flood risk;
 - Excavation of soils, peat and shallow geology has the potential to induce local ground instability;
 - The use of and tracking of machinery has the potential to generate suspended solids in site runoff;
 - The use of machinery has the potential to introduce oils or hydrocarbons; and
 - New temporary access tracks may change surface drainage paths which might increase flood risk and / or impair water supplies.

Peat Resources and Peat Slide Risk

- 7.7.2 An extensive programme of peat depth probing has been undertaken during route selection and development of the proposals, ensuring that the areas of deepest peat are avoided by the proposed development, although extensive deep peat was not recorded. A limit of deviation is also proposed, so that at the time of construction, works can be micro-sited to avoid deep peat. Further site investigation would be undertaken as part of the detailed site design and additional peat depth data collected and used to update the peat depth plan, peat management proposals and ensure works are not undertaken in areas of potential high peat slide hazard risk. It is envisaged that this would be secured by a pre-commencement planning condition and form part of the site-specific CEMP.
- 7.7.3 Earthworks would be localised and minimised as far as practicable, and the following best practice measures will be detailed in the site CEMP in order to safeguard peat:
- Peat excavation to form access tracks to monopole locations would be minimised, utilising existing roads where appropriate, low loading bearing access vehicles would be used, and where required temporary portable tracking would be deployed, to safeguard peat below the access routes;
 - Works would be undertaken in accordance with SSEN Transmission's GEMPs which will ensure peat stripping, excavation and storage is kept to an absolute minimum; and

- Any temporary peat storage will be located so that peat slide risk is not increased and safeguards will be deployed in accordance with SSEN Transmission's GEMP, for example, to ensure existing hydrological conditions are maintained and drying of the peat does not occur.

7.7.4 Specifically, industry standard best practice methods would be used for cable and pole construction. A large section of turf will be removed to a depth of approximately 300 mm and carefully laid to the side for re-use. The turves would be replaced on the backfilled excavations once the pole or cable is installed (see below).

7.7.5 Once the turf is removed the excavator operator would then commence excavating the soils to the required depth. The soil is removed in roughly even layers down the excavation depth with different soil types stored separately.

7.7.6 With the pole or cable installed, backfilling of the excavation would take place with the soils replaced in reverse order whilst being compacted with the excavator bucket in approximately 300 mm layers. At this time it may be necessary to add imported backfill around the pole foundation blocks to ensure stability.

7.7.7 Backfilling would continue until normal ground level is reached. The turfs would then be replaced – using the excavator and deliberately left slightly proud of the surrounding ground level. This is for two reasons; the subsoils would naturally settle following excavation as a consequence of 'bulking up'– despite being compacted as they are replaced and in time would form a 'hollow' around the structure. The second reason is that with the replaced turf being kept slightly higher it would prevent the excavated materials deteriorating below the turf and aid quicker healing of the turf.

7.7.8 Generally within 12 months of reinstatement the excavated area would return to natural ground levels and no evidence of the excavation itself would be visible.

7.7.9 Soils and turves would be handled sensitively to avoid cross contamination between distinct horizons and to ensure re-use potential is maximised. Any excess peat from excavation works, that cannot be used in reinstatement, would be used locally for peat habitat enhancement and restoration under the direction of the site ECoW.

7.7.10 It has been shown that the Proposed Development and limit of deviation is mostly underlain by areas of low and medium peat slide risk. The peat slide risk assessment would be revised prior to construction and incorporate the results of additional site investigation. The risk assessment would also consider the proposed access routes and track design. Micro-siting would be used to locate the proposed infrastructure in areas of least peat slide risk and mitigation measures to prevent a peat slide would be identified, if required. The updated peat slide risk assessment would form part of the CEMP that would be prepared by the Principal Contractor and be agreed with SEPA and THC prior to construction commencing.

7.7.11 It is expected that the following controls would form part of the final peat slide risk assessment:

- Careful micrositing of proposed excavations to avoid drainage channels;
- Development of detailed construction access plans, including siting of roads, pads and other associated infrastructure;
- Maintaining flow within existing watercourses and drainage features; and
- Careful placement of excavation spoil and imported materials to avoid excess surcharging near excavations or on slopes.

7.7.12 If required, a geotechnical risk register would form part of the updated peat slide risk assessment and part of the CEMP.

7.7.13 Given these safeguards the peat resources at site would not be degraded nor is peat slide considered a risk.

Soils and Geology

7.7.14 The following best practice measures would be detailed in the site CEMP in order to safeguard soils:

- Any soils temporary stockpiled would be managed in accordance with best practice so that their value is not degraded;
- Works would be scheduled to avoid, when possible, periods of heavy rain and vehicular movement shall be planned to avoid saturated ground conditions;
- Soils would be protected from temporary heavy vehicular movement through placement of ground protection mats or above ground tracks (underlain by a geotextile);
- Stationary plant left for long periods would be parked on formal track / compounds so as to avoid potential of soil compaction;
- All temporary tracks would be removed upon completion of works; and
- Localised measures including silt fencing would be used to manage runoff shed from areas where soils are disrupted so as not to locally impair water resources and protect sensitive receptors.

7.7.15 With careful management of soils and adoption of the above best practice, their value would not be impaired as a result of the Proposed Development.

7.7.16 The local geology is not considered sensitive, and with the safeguards proposed the geology at site would not be impaired.

Surface Water and Groundwater Quality

7.7.17 As stated above the works would be undertaken in accordance with the SSEN Transmission's GEMPs and relevant technical guidance, PPG / GPPs and other codes of best practice, to limit the potential for contamination of both ground and surface waters. In addition, a site-specific CEMP would be prepared by the Principal Contractor and include a surface and groundwater quality management plan.

7.7.18 The above measures would significantly reduce the likelihood of pollutants, including suspended solids, being discharged to nearby watercourses or groundwater (including River Moriston SAC and Loch Ness DWPA).

7.7.19 It is proposed that water required for the site welfare facilities during the construction phase would be provided by water bowser or tanker. Water from site welfare facilities would be discharged to a sealed tank which would be routinely emptied and disposed of at an appropriately licensed off-site facility.

7.7.20 Should a need for water abstraction / discharge arise during works (e.g. vehicular / wheel washing), this would be dealt with through a registration with SEPA as required under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended).

7.7.21 With these safeguards surface and groundwater quality would not be impaired.

Flood Risk

7.7.22 As part of the detailed site design the Principal Contractor will identify locations for construction compounds, access routes and prepare a detailed method statement all of which will have regard to areas of known and potential flood risk.

7.7.23 No new, upgraded or permanent watercourse crossings are proposed.

7.7.24 During construction the efficacy of existing track side drains would be subject to routine inspection and as required blockages that might impede water flow, and increase flood risk, would be removed.

7.7.25 With these safeguards flood risk to the Proposed Development and downstream of the site can be mitigated.

Surface and Groundwater Flow

7.7.26 The works and protection measures for soils would ensure there were no significant differences to the existing hydrological characteristics at site. There would, therefore, be no effect on surface water flows or flood risk as there would be no permanent change to ground conditions. No alteration of the water contribution to the River Moriston SAC and Loch Ness DWPA would occur.

7.7.27 Surface water flow paths to areas identified as potential GWDTE would be maintained.

Private Water Supplies and Loch Ness DWPA

7.7.28 A number of PWS and licenced abstractions have been noted downstream and in hydraulic connectivity to the Proposed Development. The Proposed Development is also upstream of the Loch Ness DWPA.

7.7.29 Site specific measures will be adopted to ensure that the quality and quantity of water to the water supplies is not impaired. For example, use of existing and temporary tracks upstream of the PWS and licenced abstractions would be kept to a minimum and no fuel storage or welfare facilities would be located upstream of the abstraction. A detailed description of the safeguards would be given in the site CEMP which would be prepared by the Principal Contractor and agreed with SEPA and THC prior to construction commencing.

7.7.30 It is proposed that confirmatory water quality sampling of the PWSs and principal watercourses is undertaken prior to, during and for a period following construction to confirm that Proposed Development has had no effect on the water supplies. Details of the monitoring suite and monitoring frequency, assessment levels and contingency measures that would be adopted in the unlikely event that the water supply is impaired, would also be specified in the CEMP.

7.7.31 With these safeguards, potential impacts on PWS and licenced abstractions, and Loch Ness DWPA can be controlled and mitigated.

7.8 Summary and Conclusion

7.8.1 Existing soils, geological, hydrogeological and hydrological conditions have been identified and used to assess the potential effects the Proposed Development may have on geology, soils and the water environment.

7.8.2 Best practice construction techniques that would safeguard soils, geology and the water environment and would be incorporated in the detailed design of the works and during the construction works have been identified. Subject to the adoption of the best practice peat resources, soils, geology or the water environment can be safeguarded during and following development.