

CHAPTER 10 – WATER AND GEOLOGICAL ENVIRONMENT

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10 Water and Geological Environment

10.1 Introduction

- 10.1.1 This Chapter sets out the assessment of the potential effects on the water and geological environment resulting from the Proposed Development. The assessment considered effects within the Proposed Development and the relevant Study Areas (defined in **Section 10.2** Study Area).
- 10.1.2 For each of these topics (listed below), this Chapter details the baseline description, identifies and assesses the impacts and resultant effects on each receptor and, where relevant, identifies proposed mitigation:
- Hydrology – changes to drainage regime and associated alteration to surface water run-off rates and volumes, erosion / sedimentation and water quality characteristics across the Proposed Development and the wider catchment, including designated sites. This topic also assesses changes to water resources such as Scottish Water public water supply abstractions, Private Water Supplies (PWS), and Drinking Water Protected Areas (DWPA);
 - Hydrogeology – changes to groundwater infiltration and groundwater levels, groundwater quality and wetland characteristics;
 - Geomorphology and Geology – geomorphological characteristics along the Proposed Development and changes to geological structures or effects on designated sites; and
 - Soils and Peat – changes to characteristics related to erosion, compaction and quality.
- 10.1.3 This Chapter (and its associated Figures and Appendices as listed on the preceding page) is not intended to be read as a standalone assessment and reference should be made to the introductory chapters of this EIA Report (**Chapters 1-6**).

10.2 Scope of Assessment and Methodology

Scope of the Assessment

- 10.2.1 An EIA Scoping Report was submitted to the Scottish Government in June 2024, which outlined the scope of this assessment based on the available baseline data at the time.
- 10.2.2 This Chapter focuses on the effects of the construction and operational phases of the Proposed Development upon sensitive hydrology, hydrogeology, geology, and soils features within the Study Area. During the construction and operational phase of the Proposed Development, there is the potential for the following short-term impacts on the hydrology, hydrogeology, geology, and soils environment, in the absence of mitigation measures:
- pollution of surface waters, groundwater and public and private water supplies;
 - impact on water resource availability;
 - short-term increase in flood risk;
 - soil erosion, compaction and excavation;
 - loss of peat and soils; and
 - impacts upon groundwater dependent terrestrial ecosystems (GWDTE).

10.2.3 Based on professional judgement and with the assumption of good design and implementation of good practice construction measures including the Applicant's General Environmental Management Plans (GEMPs), it was considered that the following would not give rise to significant construction effects and therefore can be scoped out:

- pollution of surface watercourses and impact of pollution on fisheries and groundwater; including from suspended sediment in surface water bodies, hydrocarbon and oil pollution;
- impact on watercourses and standing waters, including impacts to groundwater levels from any dewatering required; and
- soil erosion, compaction and excavation losses during access or construction.

10.2.4 SEPA acknowledged within **Paragraph 1.1** of their scoping response of 24 July 2024 that they generally agreed with the environmental topics in relation to their interests, to be scoped out as set out above (and as listed in **Section 10.6** of the submitted EIA Scoping Report).

Legislative Framework, Policy and Guidance

Legislation

10.2.5 This assessment is carried out in accordance with the principles contained within the following legislation:

- The Water Environment and Water Services (Scotland) Act 2003¹;
- The Private Water Supplies (Scotland) Regulations 2006²;
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017³;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)⁴;
- The Flood Risk Management (Scotland) Act 2009⁵;
- Environmental Protection Act (1990)⁶;
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017⁷; and
- The Pollution Prevention and Control (Scotland) Regulations 2012⁸.

Policy

10.2.6 This assessment is carried out in accordance with the principles contained within the following documents:

- National Planning Framework 4 (NPF4) 2023⁹;
- SEPA Policy No. 19, Groundwater protection policy for Scotland¹⁰;

¹ Scottish Government (2003). Water Environment and Water Services (Scotland) Act 2003. asp 3. Available at: <https://www.legislation.gov.uk/asp/2003/3/contents>

² Scottish Government (2006). The Private Water Supplies (Scotland) Regulations 2006. Available at: <http://www.legislation.gov.uk/ssi/2006/209/contents/made>

³ Scottish Government (2017). The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017. Available at: <https://www.legislation.gov.uk/ssi/2017/282/contents/made>

⁴ Scottish Environment Protection Agency (2022). The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) The Water Environment (Controlled Activities) (Scotland) Regulations 2011

⁵ Scottish Government (2009). Flood Risk Management (Scotland) Act 2009. Available at: <https://www.legislation.gov.uk/asp/2009/6/contents>

⁶ UK Government (1990). Environmental Protection. Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents>

⁷ UK Government (2017). The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Online at: <https://www.legislation.gov.uk/ssi/2017/101/contents>

⁸ Scottish Government (2012) The Pollution Prevention and Control (Scotland) Regulations 2012. Available at: <https://www.legislation.gov.uk/ssi/2012/360/contents/made>

⁹ Scottish Government (2023). National Planning Framework. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf>

¹⁰ Scottish Environment Protection Agency (2009). Groundwater Protection Policy for Scotland v3, November 2009, Environmental Policy Number 19. Available at: <https://www.sepa.org.uk/media/34371/groundwater-protection-policy-for-scotland-v3-november-2009.pdf>

- Aberdeenshire Local Development Plan (LDP)¹¹;
- Highland-wide LDP¹²;
- Moray LDP¹³;
- Scottish Environment Protection Agency (SEPA) Position Statement on Planning and Soils (2022)¹⁴;
- SEPA's Position Statement on Land Protection (2022)¹⁵; and
- The Scottish Soil Framework (2009)¹⁶.

Guidance

10.2.7 This assessment is carried out in accordance with the principles contained within the following documents:

Construction Industry Research and Information Association (CIRIA):

- Construction Industry Research and Information Association (CIRIA) Report C532 – Control of water pollution from construction sites: Guidance for consultants and contractors¹⁷;
- CIRIA C648 Control of Water Pollution from Linear Construction Projects¹⁸;
- CIRIA Report C753 – The SuDS Manual¹⁹;
- CIRIA C689 Culvert Design and Operation Guide²⁰;
- CIRIA 750 Groundwater control: design and practice (second edition)²¹; and
- CIRIA C811 Environmental good practice on site guide (fifth edition)²².

Scottish Government Planning Advice Notes (PANs):

- Planning Advice Note (PAN) 33: Development of contaminated land (2017)²³;
- PAN 50: Controlling the Environmental Effects of Surface Mineral Workings²⁴;
- PAN 51: Planning, Environmental Protection and Regulation (revised 2006)²⁵;
- Planning Advice Note 60: Natural Heritage (2000)²⁶;

¹¹ Aberdeenshire Local Development Plan (2023) Available at:

<https://online.aberdeenshire.gov.uk/ldpmedia/LDP2021/AberdeenshireLocalDevelopmentPlan2023IntroductionAndPolicies.pdf>

¹² Highland-wide Local Development Plan (2012). Available at: [file:///C:/Users/UKEXE012/Downloads/Highland_wide_Local_Development_Plan%20\(5\).pdf](file:///C:/Users/UKEXE012/Downloads/Highland_wide_Local_Development_Plan%20(5).pdf)

¹³ Moray Local Development Plan (2025). Available at: <http://www.moray.gov.uk/downloads/file159325.pdf>

¹⁴ Scottish Environment Protection Agency (SEPA). Position Statement on Planning and Soils (2022). Available at: <https://www.sepa.org.uk/environment/land/soil/>

¹⁵ SEPA's Position Statement on Land Protection (2022). Available at: https://www.sepa.org.uk/media/159201/ep-054_position_statement_on_land_protection.pdf

¹⁶ Scottish Government (2009). The Scottish Soil Framework. Available at: <https://www.gov.scot/publications/scottish-soil-framework/>

¹⁷ Masters-Williams, H., Heap, A., Kitts, H., Greenshaw, L., Davis, S., Fisher, P., Hendrie, M. and Owens, D. (2001). CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Principal Contractors

¹⁸ Publication C648 Control of water pollution from linear construction projects: technical guidance (2006). Available at: <https://www.thenbs.com/publicationindex/documents/details?Pub=CIRIA&DocId=279111>

¹⁹ CIRIA (2015). The SuDS Manual (C753) Available at: <https://www.calderdale.gov.uk/docs/planning/ciria-c753-the-suds-manual.pdf>

²⁰ CIRIA C689 Culvert Design and Operation Guide (2010). Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C689F&Category=FREEPUBS

²¹ CIRIA 750 (2016) Groundwater control: design and practice (second edition). Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductcode=C750&Category=BOOK

²² Publication C811 Environmental good practice on site guide (fifth edition) (2023) Available at: <https://www.thenbs.com/publicationindex/documents/details?Pub=CIRIA&DocId=340873>

²³ Scottish Government (2017). Planning Advice Note (PAN) 33: Development of contaminated land (2017) Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/12/pan-33-development-of-contaminated-land/documents/planning-advice-note-33-development-contaminated-land-pdf/planning-advice-note-33-development-contaminated-land-pdf/govscot%3Adocument/Planning%2Badvic%2Bnote%2B33%2B-%2Bdevelopment%2Bof%2Bcontaminated%2Bland.pdf>

²⁴ Scottish Government (1996). Planning Advice Note 50: controlling the environmental effects of surface mineral workings. Available at: <https://www.gov.scot/publications/planning-advice-note-pan-50-controlling-environmental-effects-surface-mineral/>

²⁵ Scottish Government (2006). Planning Advice Note 51: planning, environmental protection and regulation. Available at: <https://www.gov.scot/publications/planning-advice-note-pan-51-revised-2006-planning-environmental-protection/>

²⁶ Scottish Government (2000). Planning Advice Note 60: Natural Heritage. Available at: <https://www.gov.scot/publications/pan-60-natural-heritage/>

- PAN 1 / 2013: Environmental Impact Assessment²⁷;
- Flood risk: planning advice²⁸;
- PAN 61: Sustainable Urban Drainage Systems²⁹;
- PAN 79: Water and Drainage³⁰;
- Guidance for Pollution Prevention (GPP) 13: Vehicle Washing and Cleaning³¹;
- GPP 21: Pollution Incident Response Planning³²;
- GPP 22: Dealing with Spills³³; and
- GPP 26: Safe Storage - Drums and Intermediate Bulk Containers³⁴.

SEPA Position Statements (Published):

- SEPA – WAT-PS-06-02, Culverting of watercourses³⁵;
- SEPA – WAT-SG-25, Good practice guide – river crossings³⁶;
- WAT-PS-07-02: SEPA (2012), Bank Protection³⁷;
- WAT-SG-23: SEPA (2008), Engineering in the Water Environment, Good Practice Guide - Bank Protection Rivers and Lochs³⁸;
- WAT-SG-75: SEPA (2011), Water Run-Off from Construction Sites September 2021³⁹;
- WAT-SG- 78: SEPA (2012), Sediment Management Authorisation⁴⁰;
- SEPA – WAT-SG-31, Special requirements for civil engineering contracts for the prevention of pollution⁴¹;
- SEPA (2024), Guidance on Assessing the Impacts of Development on Groundwater Dependent Terrestrial Ecosystems⁴²;

²⁷ Scottish Government (2016). Planning Advice Note 1/2013 annex A: further reading. Available at: <https://www.gov.scot/publications/pan-1-2013-annex-a/>

²⁸ Scottish Government (2015). Flood risk: planning advice. Available at: <https://www.gov.scot/publications/flood-risk-planning-advice/>

²⁹ Scottish Government (2001). Planning Advice Note PAN 61. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2001/07/pan-61-sustainable-urban-drainage-systems/documents/planning-advice-note-pan-61-sustainable-urban-drainage-systems-pdf/planning-advice-note-pan-61-sustainable-urban-drainage-systems-pdf/govscot%3Adocument/Planning%2BAdvice%2BNote%2BPAN%2B61%2BSustainable%2Burban%2Bdrainage%2Bsystems.pdf>

³⁰ Scottish Government (2006). Planning Advice Note 79: water and drainage (2006). Available at: <https://www.gov.scot/publications/planning-advice-note-pan-79-water-drainage/>

³¹ Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA). Vehicle Washing and Cleaning GPP 13 (2021). Available at: <https://www.netregs.org.uk/media/1882/guidance-for-pollution-prevention-13-2022-update-v2.pdf>

³² Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA). Pollution incident response planning: GPP 21 (2021). Available at: <https://www.netregs.org.uk/media/1436/gpp-21-final.pdf>

³³ Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA). Dealing with spills: GPP 22 (2018). Available at: <https://www.netregs.org.uk/media/1643/gpp-22-dealing-with-spills.pdf>

³⁴ Natural Resources Wales (NRW), Northern Ireland Environment Agency (NIEA) and Scottish Environment Protection Agency (SEPA). Safe Storage of Drums and Intermediate Bulk Containers (IBCs): GPP 26 (2021). Available at: <https://www.netregs.org.uk/media/1885/guidance-for-pollution-prevention-26-2022-updated.pdf>

³⁵ Scottish Environment Protection Agency (2011). WAT-PS-06-02: Culverting of Watercourses – Position Statement and Supporting Guidance. Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf

³⁶ Scottish Environment Protection Agency and Natural Scotland (2010). Engineering in the Water Environment: Good Practice Guide River Crossings (Second Edition). Available at: <https://www.sepa.org.uk/media/151036/wat-sg-25.pdf>

³⁷ Sustainable Riverbank Protection Reducing Riverbank Erosion (2020). Available at: https://www.sepa.org.uk/media/219450/bank_protection_guidance.pdf

³⁸ SEPA (2008), Engineering in the Water Environment, Good Practice Guide - Bank Protection Rivers and Lochs. Available at: https://www.sepa.org.uk/media/150971/wat_sg_23.pdf

³⁹ Supporting Guidance (WAT-SG-75) Sector Specific Guidance: Water Run-Off from Construction Sites (2021). Available at: <https://www.sepa.org.uk/media/340359/wat-sg-75.pdf>

⁴⁰ Supporting Guidance (WAT-SG-78) Sediment Management Authorisation (replacing WAT-PS-06-03) (2012). Available at: <https://www.sepa.org.uk/media/151062/wat-sg-78.pdf>

⁴¹ Scottish Environment Protection Agency (2006). Prevention of Pollution from Civil Engineering Contracts: Special Requirements Available at: https://www.sepa.org.uk/media/152220/wat_sg_31.pdf

⁴² SEPA (2024). Guidance on Assessing the Impacts of Development on Groundwater Dependent Terrestrial Ecosystems. Available at: <https://www.sepa.org.uk/media/i2c9r03k/guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx>

- SEPA (2024), Guidance on Assessing the Impacts of Development on Groundwater Abstractions⁴³; and
- SEPA (2022c), Land Remediation and Waste Management Guidelines⁴⁴
- SEPA (20235) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). A Practical Guide v9.4⁴⁵

Other Guidance:

- Scottish Natural Heritage (now 'NatureScot') – A handbook on Environmental Impact Assessment, version 5 (2018)⁴⁶;
- Scottish Government – River crossings & migratory fish: Design guidance (2012)⁴⁷;
- Scottish Government (2006), Environmental Protection Act 1990 - Part IIA Contaminated Land: statutory guidance edition 2⁴⁸;
- British Standard (BS) 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of practice (BSI, 2017)⁴⁹;
- BS 5930:2015+A1:2020 Code of practice for ground investigations (BSI, 2020)⁵⁰;
- Environment Agency (2020), Land Contamination Risk Management (LCRM)⁵¹;
- SNIFFER. 2009. WFD95 A Functional Typology for Scotland⁵²;
- Scottish Government, Scottish Natural Heritage (SNH), SEPA (2017), Peatland Survey. Guidance on Developments on Peatland⁵³;
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017)⁵⁴; and
- DEFRA (2018), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites⁵⁵.

⁴³ SEPA (2024), Guidance on Assessing the Impacts of Development on Groundwater Abstractions. Available online at: https://www.sepa.org.uk/media/143868/lupsgu31_planning_guidance_on_groundwater_abstractions.pdf

⁴⁴ SEPA (2022c), Land Remediation and Waste Management Guidelines. Available at: <https://www.sepa.org.uk/media/28317/land-remediation-and-waste-management-guidelines.pdf>

⁴⁵ SEPA (2024) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) A Practical Guide v9.4. Available at: <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.sepa.gov.uk%2Fmedia%2Fcd3doeli%2Fcar-a-practical-guide.docx&wdOrigin=BROWSELINK>

⁴⁶ Scottish Natural Heritage and Historic Environment Scotland (2018). Environmental Impact Assessment Handbook. Available at: <https://www.nature.scot/doc/archive/environmental-impact-assessment-handbook-version-5-2018>

⁴⁷ Scottish Government (2012) River Crossings and Migratory Fish: Design Guidance. Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf

⁴⁸ Scottish Government (2006), Environmental Protection Act 1990 - Part IIA Contaminated Land: statutory guidance edition 2. Available at: <https://www.gov.scot/publications/environmental-protection-act-1990-part-ii-a-contaminated-land-statutory-guidance/>

⁴⁹ BS 10175:2011+A2:2017 (BSI, 2017). Investigation of potentially contaminated sites. Code of practice. Available at: <https://knowledge.bsigroup.com/products/investigation-of-potentially-contaminated-sites-code-of-practice-code-of-practice>

⁵⁰ BS 5930:2015+A1:2020 (BSI, 2020). Code of practice for ground investigations. Available at: <https://knowledge.bsigroup.com/products/code-of-practice-for-ground-investigations>

⁵¹ Environment Agency (2020), Land Contamination Risk Management (LCRM). Available at: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

⁵² WFD95: A Functional Wetland Typology for Scotland (2009). Available at: https://notcoul.org/wp-content/uploads/2024/09/SnifferWFD95_FunctionalWetlandTypologyGWDTE_NVC.pdf

⁵³ Scottish Government, Scottish Natural Heritage (SNH), SEPA (2017), Peatland Survey. Guidance on Developments on Peatland. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/12/peatland-survey-guidance/documents/peatland-survey-guidance-2017/peatland-survey-guidance-2017/govscot:document/Guidance+on+developments+on+peatland+-+peatland+survey+-+2017.pdf>

⁵⁴ Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017). Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/04/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/documents/00517176-pdf/00517176-pdf/govscot%3Adocument/00517176.pdf>

⁵⁵ DEFRA (2018), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Available at: <https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites>

Consultation

- 10.2.8 Full details of the consultation process and responses are included in **Chapter 6: Scope and Consultation** and associated appendices. In undertaking this assessment, consideration has been given to the scoping responses as detailed in **Table 10.1: Consultation Responses relevant to Water and the Geological Environment**. Replies to each of the scoping responses relating to the water and geological environment are also detailed within **Appendix 6.3: Scoping Response Matrix**.

Table 10.1: Consultation Responses relevant to Water and the Geological Environment

Organisation	Type of Consultation	Response	How response has been considered
SEPA	SEPA abstractions data for the whole of Scotland - requested in September 2023 and in March 2024. Due to unknown authorisation activity for some of the CAR registered activities provided by SEPA in March 2024, original CAR licenses were requested in order to gain further clarification.	Response received September 2023. SEPA provided all records of activities authorised under the CAR ⁴ . SEPA replied about the requested CAR licences in October 2024. Of the 47 documents requested, 13 CAR documents were provided, all of which were private sewage treatment discharges. SEPA does not hold copies for the remaining 34, however, replied that it is likely most of them, if not all of these, are discharge consents for private sewage treatment.	This is considered further in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report .
SEPA	Consultation on peat survey approach April and May 2024	The proposed approach to peat depth surveys was discussed with SEPA at a meeting on 22 April 2024, followed by a letter dated 2 May 2024 detailing the proposed peat depth survey scope, including use of a model developed by the James Hutton Institute (JHI) to inform the extent of peat depth probing required. SEPA confirmed via email on 4 June 2024 that the model is fit for purpose for identifying the presence of absence of peat, and to confirm that peat probing can be omitted in areas where no data sources suggest the presence of peat. SEPA welcomed the proposal that, where any data source indicates that peat may be present then probing will be undertaken across a 50 m grid, and if peat is observed then probing at the more detailed 10 x 10 m grid will be done. This is an informed risk-based approach that uses multiple existing data sets and, where necessary, coarse resolution probing to target the effort of detailed probing to where peat is present. SEPA also welcomed that the proposal covers probing at track locations, hardstandings and tower locations to ensure adequate avoidance and minimisation of impact to peat.	The proposed peat depth survey scope was confirmed within the EIA Scoping Report (see Appendix 6.1: Scoping Report). Full details of the peat survey methodology, including the JHI peat depth mapping approach, are provided in Appendix 10.1: Peat Depth Survey Report and its supporting annexes.

Organisation	Type of Consultation	Response	How response has been considered
		SEPA also recommended that NatureScot was consulted for their advice and on whether they have any further requirements for peat depth survey in regard to their interests.	
NatureScot	Consultation on peat survey approach July and August 2024	The proposed approach to peat depth surveys, including the use of a model developed by JHI to inform the extent of peat probing required, was presented to NatureScot in a letter dated 22 July 2024, followed by a meeting with NatureScot on 19 August 2024. NatureScot confirmed via email on 9 September 2024 that: • The approach developed by JHI will need to be fully detailed in the EIA to ensure any degradation of the quality of evidence provided will not be detrimental to NatureScot's ability to assess the impact of the proposal on natural features. • NatureScot will expect the EIA process and report to cover the following points: – Methodology for the creation of the peat score value map including detail on scale of assessment and method for smoothing / averaging score in areas with composite score value. Given the scale of the Proposed Development, NatureScot will welcome maps of raw and interpreted peat score value to be provided in a digital format. – Detail on the approach to define and set up selection criteria for survey protocol across the whole site. This should include detail on any method for smoothing / averaging score in composite in proposed survey sites. – Detail on any allowance (prior or during site survey) that will be set in place to counteract possible error in the map extent.	Full details of the peat survey methodology, including the details requested by NatureScot, are provided in Appendix 10.1: Peat Depth Survey Report and its supporting annexes.
The Highland Council (THC)	Pre-application consultation	<u>Impact on Peat</u> It should be clearly demonstrated that the assessment has informed careful project design and ensured, in accordance with relevant guidance and the	The requested peat information is presented in Appendix 10.1: Peat Depth Survey Report , Appendix 10.2: Peat Management Plan and should be read along with Appendix 10.3: Peat

Organisation	Type of Consultation	Response	How response has been considered
	(24/00571/PREMAJ) July 2024	mitigation hierarchy in NPF4, that adverse impacts are first avoided and then minimised through best practice. Noted that the proposed route may pass through some areas of peat. Although these are relatively small areas of peat, they are relatively rare in this part of Scotland. THC would therefore wish to see them avoided and the NPF4 mitigation hierarchy followed. The submission should include a series of layout drawings at a usable scale showing all permanent and temporary infrastructure, with the extent of excavation required. These plans should be overlaid on the following: a) Peat depth survey showing peat probe locations (or by other agreed methods), colour coded using distinct colours for each depth category. This must include adequate peat probing (or other survey method) information to inform the site layout in accordance with the mitigation hierarchy in NPF4, which may be more than that outlined in the Guidance on Developments on Peatland Survey (2017)); b) Peat depth survey showing interpolated peat depths; c) Peatland condition mapping – the https://www.nature.scot/sites/default/files/2023-02/Guidance-Peatland-Action-Peatland-Condition-Assessment-Guide-A1916874.pdf (nature.scot) photographic guide lists the criteria for each condition category and illustrates how to identify each condition category. The detailed series of layout drawings above should clearly demonstrate that development proposals avoid any near natural peatland and that all proposed excavation is on peat less than 1 m deep. The layout drawings should also demonstrate that peat excavation has been avoided on sites where this is possible. On other sites where complete avoidance of peat and carbon rich soils is not possible then it should be clearly demonstrated that the deepest areas of peat have been avoided and the volumes of peat excavated have been reduced as much as possible, first through layout and then by design making use of techniques such as floating tracks. An Outline Peat Management Plan (PMP) should be produced.	Landslide Hazard and Risk Assessment. Peatland Condition analysis is provided in Appendix 8.4 Peatland Condition Assessment. These reports outline how the design for the Proposed Development has sought to avoid areas of peat as part of a scheme of mitigation by design in accordance with NPF4. A summary of the conclusions is presented in Section 10.5: Assessment of Likely Significance of Effects.

Organisation	Type of Consultation	Response	How response has been considered
		<u>Designated and Protected Areas</u> Torvean Landforms Site of Special Scientific Interest (SSSI) Alignment Section 5 - The SSSI site is also a Geological Conservation Review site (GCR) and is nationally important as an area of fluvio-glacial deposits to the southwest of Inverness. The extent to which the SSSI would be negatively impacted upon will crucially depend upon much of the detail we do not yet have at this stage, such as exact tower locations, access tracks etc. It is NatureScot's intention to meet to discuss this section with SSEN, hopefully in July 2024. The decommissioning of the existing 132 kV Beaulay to Knocknagael Overhead Line (OHL) will also affect this SSSI as the OHL currently runs through the site north of the proposed alignments. NatureScot will also discuss these plans further with SSEN.	The Applicant and Principal Contractor undertook meetings and are continuing engagement with NatureScot specifically in relation to the Torvean Landforms SSSI in order to help microsite tower locations to avoid the key SSSI landforms and minimise potential effects from the Proposed OHL Alignment. These discussions have informed the design of the Proposed Development and Section 10.5: Assessment of Likely Significance of Effects sets out embedded mitigation measures, including the option for potential micrositing from sensitive features within the LoD at the detailed design post application stage.
		<u>Contaminated Land</u> There are no concerns in terms of potential contaminated land issues with the construction of OHLs. As noted within the Consultation Document, localised areas of potentially contaminated land are present along the route, and these localised areas should be further investigated should any founded constructions be proposed within those areas. Further consultation is advised once location and layout plans are finalised.	Potential sources of contaminated land are considered within Appendix 10.5.2: Phase 1 Environmental Assessment – Longside Airfield Interface with Proposed Development and summarised in Section 10.4: Baseline Conditions of this Chapter.
		<u>PWS</u> Prior to the commencement of the development, the applicant will be required to carry out an investigation to identify any private water supplies infrastructure which may be adversely affected by the development. A report which includes details of the measures proposed to prevent contamination or physical disruption shall be submitted for the written approval of the Planning Authority. The report should include details of any monitoring prior to, during and following construction. It should also include proposals for contingency measures in the event of an incident.	Appendix 10.6: Private Water Supply Risk Assessment includes a range of embedded and additional mitigation measures (including contingency measures) which are also set out in Section 10.5: Assessment of Likely Significant Effects and Section 10.6: Additional Mitigation of this Chapter.

Organisation	Type of Consultation	Response	How response has been considered
		<u>Flood Risk</u> A Flood Risk Assessment will be required. The scope of the project is very large and will involve numerous water crossings, including of major river floodplains. In such locations, localised land raising or any action which could have an adverse effect on the conveyance of flood water should be avoided where possible. Compensatory storage may be required in some cases. Appropriately sized riparian buffers should be maintained where possible. The FRA should be written by a suitably qualified and experienced engineer, in accordance with the Supplementary Guidance and SEPA's guidance. All sources of flood risk should be considered. The scale of the FRA should be guided by the extent of any flood risk or impact on flood plains determined. As the project is considered to be an 'Essential Infrastructure', in accordance with SEPA's guidance, it should be shown in the FRA that the site will remain operational (with respect to flood risk) in a 200 year+ climate change storm event. It should also be shown that the site will not increase the flood risk to others. Any (temporary or permanent) small watercourse crossings should be oversized and larger scale watercourse crossings should be demonstrated to be adequately designed to accommodate the 1 in 200 flooding, or information provided to justify smaller structures year flow (including an allowance for climate change and freeboard) to avoid increasing the risk of flooding, or information provided to justify smaller structures. Compensatory storage may be required for any landraising associated with any essential infrastructure such as pylon platforms within the flood extent which would need to be supported by a flood risk assessment. SEPA highlight the following: • The future flood extent associated several of the watercourses along the proposed alignment are relatively wide, e.g. River Beauly may be over 500 m and tributaries of the Moniack Burn south of the A862 at NH5451444279 over 1000 m. This matter will need careful consideration in terms of infrastructure location and access if this route is taken forward.	Appendix 10.8: Flood Risk Assessment covers all potential sources of flood risk in accordance with SEPA's guidance along with a range of appropriate embedded mitigation measures and good industry practices for drainage during the different phases of the Proposed Development. Section 10.5: Assessment of Likely Significance of Effects also provides a summary of the embedded mitigation measures including both mitigation by design and construction good practice for drainage, which will be applied through the implementation of standard mitigation measures detailed within the Applicant's GEMPs. The design of the crossings will be agreed by the Principal Contractor as part of the detailed design, following best practice in consultation with SEPA. Appropriate authorisations will be obtained by the Principal Contractor, as required. Typical designs are provided in Figure 3.8: Typical Watercourse Crossing Sections and described in Chapter 3: Project Description. Due to the nature of the works the Applicant is not preparing a separate, standalone DIA as part of the EIA Report. However an assessment has been undertaken including appropriate embedded mitigation for surface water drainage and water management as presented in Section 10.5: Assessment of Likely Significance of Effects of this Chapter and summarised in Appendix 3.3: Outline Construction Environmental Management Plan (CEMP). This is in keeping with other typical approaches on OHL applications.

Organisation	Type of Consultation	Response	How response has been considered
		<u>Drainage</u> A Drainage Impact Assessment (DIA) for the development is required. Natural flood management techniques should be applied to reduce the rate of run-off where possible. Tracks should not act as preferential pathways for run-off and efforts should be made to retain the existing drainage network. The Applicant should demonstrate, within the proposals submitted, any mitigation measures to manage the residual risk of overland flow / pluvial flooding.	
		<u>Groundwater Dependent Terrestrial Ecosystems (GWDTE)</u> GWDTE are protected under the Water Framework Directive. Excavations and other construction works can disrupt groundwater flow and impact on GWDTE and existing groundwater abstractions. The layout and design of the development must avoid impacts on such areas. A National Vegetation Classification (NVC) survey should be submitted which includes the following information: a) A set of drawings demonstrating all GWDTE and existing groundwater abstractions are outwith a 100 m radius of all excavations shallower than 1 m and outwith 250 m of all excavations deeper than 1 m and proposed groundwater abstractions. The survey needs to extend beyond the site boundary where the distances require it. b) If the minimum buffers cannot be achieved, a detailed site specific qualitative and / or quantitative risk assessment will be required. Please refer to lups- gu31- guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions.pdf (sepa.org.uk) for further advice and the minimum information SEPA requires to be submitted.	Screening for potential GWDTE has been provided within Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report and summarised in Section 10.4: Baseline Conditions and Section 10.5: Assessment of Likely Significance of Effects of this Chapter, which includes the provision of suitable mitigation measures. This approach has taken into account both LUPS 31 guidance and the emerging SEPA guidance on GWDTE⁴². This approach was discussed in a meeting with SEPA on 15 January 2025. SEPA confirmed (via email) on 3 March 2025 that the proposed approach is low risk and is acceptable for the Proposed Development.
		<u>Protection of the Water Environment</u> The proposals should demonstrate how impacts on local hydrology have been minimised and the site layout designed to minimise watercourse crossings and	Appendix 10.9: Watercourse Crossing Schedule and Appendix 10.10: SEPA Watercourse Buffer Encroachment provides detailed information on the proposed watercourse crossing proposals and water environment buffers which have been

Organisation	Type of Consultation	Response	How response has been considered
		avoid other direct impacts on water features. Measures should be put in place to protect any downstream sensitive receptors. The submission must include a set of drawings showing: a) All proposed temporary or permanent infrastructure overlain with all lochs, wetlands and watercourses; b) A minimum buffer of 10 m around each loch, wetland or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works. SEPA highlight wetlands are protected by the Water Framework Directive and that a number of wetlands on the Scottish Wetland Inventory lie within the alignment corridors. These include wetlands at NH5110443920, NH5437144419, NH6461840021, NH6673739243, NH6643839066, NH7641741892, NH8896847140 and NH9328645919. This list should be further checked before finalising the alignment and infrastructure located outwith suitable buffer zones around these wetlands. SEPA have identified potential Geomorphic Risk to several watercourses along the proposed alignment and recommend a minimum buffer zone as indicated on each side of these watercourses as a precautionary measure. Further geomorphic studies may be advisable for these crossings to ensure long-term viability of the infrastructure if close to this buffer: • River Nairn (40 m) • Riereach Burn (20 m) • Muckleburn (35 m) • Red Burn (10 m) • River Findhorn (45 m)	allocated as part of the Proposed Development. A commitment to the application of these watercourse buffers and other good practices has also been set out in the embedded mitigation sub section of Section 10.5: Assessment of Likely Significance of Effects, in accordance with SEPA's consultation feedback and the SSEN Transmission GEMPs. Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report provides a list of wetlands which are situated in close proximity to the proposed infrastructure (see Figure 10.7.7: SEPA Wetlands), and these have been considered along with the appropriate measures within Section 10.4: Baseline Conditions and 10.5: Assessment of Likely Significance of Effects in this Chapter.
THC	Scoping Response (24/03064/SCOP)	<u>Geology, Hydrology and Hydrogeology, Soils and Contaminated Land</u> The EIA Report needs to address the nature of the hydrology and hydrogeology of the site, and the potential impacts on watercourses, and water supplies including private supplies, water quality, water quantity and aquatic flora and	Section 10.4: Baseline Conditions of this Chapter, Appendix 10.6: Private Water Supply Risk Assessment and Appendix 10.7: Detailed Hydrological and Hydrogeological Report all

Organisation	Type of Consultation	Response	How response has been considered
	August 2024	fauna. Impacts on watercourses, groundwater, other water features and sensitive receptors, such as water supplies, need to be assessed. Measures to prevent erosion, sedimentation or discolouration will be required, along with monitoring proposals and contingency plans. Assessment will need to recognise periods of high rainfall which will impact any calculations of run-off, high flow in watercourses and hydrogeological matters. If culverting should be proposed, then it should be noted that SEPA has a general presumption against modification, diversion or culverting of watercourses. Schemes should be designed to avoid crossing watercourses, and to bridge watercourses where this cannot be avoided. The EIA Report will be expected to identify all water crossings and include a systematic table of watercourse crossings or channelising, with detailed justification for any such elements and design to minimise impact. The table should be accompanied by photography of each watercourse affected and include the dimensions of the watercourse. It may be useful for the applicant to demonstrate choice of watercourse crossing by means of a decision tree, taking into account factors including catchment size (resultant flows), natural habitat and environmental concerns. Further guidance on the design and implementation of crossings can be found on SEPA's Construction of River Crossings Good Practice Guide. SEPA's consultation response refers to the applicant to consider their standing advice for major developments and notes SEPA's general agreement with the scope of the EIA in relation to their interests. SEPA's further advice in relation to geomorphic risk layer mapping, and flood risk mapping data should be reviewed by the applicant. The Council's Flood Risk Management Team have confirmed that they have no further comments to make at this stage and refer the applicant to consider the pre-application advice given.	provide information on the baseline hydrology and hydrogeological conditions of the site including water supplies and other potential receptors. Section 10.5: Assessment of Likely Significant Effects considers the potential effects of the Proposed Development and sets out a range of embedded mitigation measures. Watercourse crossings with associated photographs are provided in Appendix 10.9: Watercourse Crossing Schedule, along with a document which sets out the respective buffers from the proposed infrastructure in Appendix 10.10: SEPA Watercourse Buffer Encroachment. Appendix 10.8: Flood Risk Assessment is summarised in Section 10.4: Baseline Conditions and Section 10.5: Assessment of Likely Significant Effects of this Chapter.
		<u>Nature Scot</u> NatureScot is advising SSEN on the best design and mitigation measures to try to avoid significant adverse effects on protected features. It is hoped best practice will avoid significant effects. However, Torvean Landforms SSSI will be directly	Embedded mitigation measures including good industry practices have been set out in Section 10.5: Assessment of Likely Significant Effects of this Chapter.

Organisation	Type of Consultation	Response	How response has been considered
		affected. Therefore, NatureScot is working with SSEN to avoid key landform features which would otherwise cause irreversible damage to the geological interest.	The Applicant and Principal Contractor are in ongoing discussion with NatureScot specifically in relation to the Torvean Landforms SSSI in order to help microsite tower locations to avoid the key SSSI landforms within the LoD.
		<u>PWS</u> The need for, and information on, abstractions of water supplies for concrete works or other operations should also be identified. The EIA Report should identify whether a public or private source is to be utilised. If a private source is to be utilised, full details on the source and details of abstraction need to be provided. The applicant will be required to carry out an investigation to identify any private water supplies, including pipework, which may be adversely affected by the development and to submit details of the measures proposed to prevent contamination or physical disruption. Highland Council has some information on known supplies, but it is not definitive. An on-site survey will be required. The EIA will require to include report which details of the measures proposed to prevent contamination or physical disruption of any water supplies. The report should include details of any monitoring prior to, during and following construction. It should also include proposals for contingency measures in the event of an incident.	Chapter 3: Project Description outlines that concrete is likely to be brought to site ready-mixed, although tower locations with remote access may require limited batching on-site. It is assumed that water for temporary welfare facilities will be brought to site, or a local surface water or groundwater abstraction would be identified. Any water abstraction would be made in accordance with SEPA General Binding Rules, or an authorisation would be obtained from SEPA in accordance with the Controlled Activity Regulations (CAR). Section 10.5: Assessment of Likely Significance of Effects of this Chapter sets out these embedded mitigation measures which will be included in the Construction Environmental Management Plan (CEMP) to ensure works are undertaken in line with good practice guidance. Appendix 10.6: Private Water Supply Risk Assessment has provided an investigation which has included council data and site survey information. The conclusions of that investigation including embedded and additional mitigation measures are summarised within Section 10.4: Baseline Conditions, Section 10.5: Assessment of Likely Significance of Effects and Section 10.7: Residual Effects of this Chapter.

Organisation	Type of Consultation	Response	How response has been considered
		<u>Contaminated Land</u> Based on the details provided to date and having checked our records, THC's Contaminated Land Team do not require any further information and do not envisage that any contaminated land conditions to be considered necessary.	Potential sources of contaminated land are considered within Appendix 10.5.2: Phase 1 Environmental Assessment – Longside Airfield Interface with Proposed Development and summarised in Section 10.4: Baseline Conditions of this Chapter.
Moray Council (MC)	Pre-application consultation (24/00266/PEMAJ/AM/TD) July 2024	<u>Water Supply</u> NPF Policy 11(e)(vii) requires impacts on hydrology to be considered. Where this proposal has the potential to impact on private water supplies and drinking water protection areas (Glenlatterach, River Spey, Strathisla and Keith areas), any application should demonstrate there is no adverse impact on the water quality of these sources through regular monitoring and identify measures to be taken should works result in an adverse impact on the quality of any water source. It is noted Scottish Water and SEPA may have their own input on these matters as part of their regulatory / consultee roles.	Private water supplies and Drinking Water Protection Areas (DWPAs) have been considered within Appendix 10.6: Private Water Supply Risk Assessment and Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Information Report . A range of embedded measures and additional measures have been set out in Appendix 10.6: Private Water Supply Risk Assessment and summarised in Section 10.5: Assessment of Likely Significance of Effects and Section 10.6: Additional Mitigation of this Chapter as appropriate. This includes a range of embedded mitigation measures which have been put forward for DWPAs within Section 10.5: Assessment of Likely Significance of Effects of this Chapter. Engagement was held with Scottish Water in relation to their Spey Wellfield Abstraction Scheme and Glenlatterach water public supplies during meetings on 01 August 2024 and 13 November 2024 respectively. This engagement has helped inform the provision of the mitigation which is set out in this Chapter, and this will incorporate the provision of baseline and construction phase water quality monitoring for any DWPAs and potential at risk PWS in accordance with the consultation response.

Organisation	Type of Consultation	Response	How response has been considered
		<u>Flooding and Drainage</u> Moray Flood Risk Management have stated: All development at risk of flooding or in a flood risk area will only be supported in certain circumstances, as set out in NPF Policy 22 and MLDP Policy EP12. Moray Flood Risk Management note the proposed alignments travel through numerous fluvial flood risk areas, including the River Spey (Fochabers) and River Isla (Keith & Newmill). Any proposal should therefore be supported by a Level 2 Flood Risk Assessment (FRA). This should include any temporary access roads or structures. Alignment 19b appears to intersect part of the Council's existing Flood Alleviation Scheme (FAS) to the East of Newmill. No structures should be constructed within 6 metres of any of the FAS boundaries. Any proposed impermeable areas would also require a Drainage Impact Assessment (DIA) to be submitted in support of a full application. The FRA and DIA should include all requirements and specifications set out in "Moray Councils Flood Risk & Drainage Impact assessment for new developments – Supplementary Guidance" - http://www.moray.gov.uk/downloads/file124411.PDF	Appendix 10.8: Flood Risk Assessment has been prepared in accordance with available SEPA flood maps and the council's guidance for flood risk assessments. In this Chapter Section 10.5: Assessment of Likely Significance of Effects also provides a summary of the embedded mitigation measures including both mitigation by design and construction good practice for drainage, which will be applied through the implementation of standard mitigation measures detailed within the Applicant's GEMPs. The Applicant can confirm there are no structures within 6 m of FAS boundaries. Due to the nature of the works the Applicant is not preparing a separate, standalone DIA as part of the EIA Report. However an assessment which includes the incorporation of embedded mitigation for surface water drainage and water management is presented in Section 10.5: Assessment of Likely Significance of Effects of this Chapter and summarised in Appendix 3.3: Outline Construction Environmental Management Plan (OCEMP). This is in keeping with other typical approaches on OHL applications.
		<u>Natural Environment and Protected Species</u> The area subject to this enquiry is covered by the following environmental designations: • River Spey SAC • River Spey SSSI • Mill Wood SSSI • Buinach and Glenlatterach SSSI	In this Chapter Section 10.4: Baseline Conditions and Section 10.5: Assessment of Likely Significance of Effects provides an assessment of effects for water dependent designated sites, taking into account embedded mitigation and good practices. Chapter 8: Ecology also provides an assessment of all designations (both water dependent and non-water dependent).

Organisation	Type of Consultation	Response	How response has been considered
		Coleburn Pasture Under relevant policies (NPF Policy 4, MLDP Policy EP1), there is a requirement to ensure the qualifying interests of these features are not adversely affected by development, and where there is a potential for a negative impact, this should be mitigated. The importance of peat as a carbon sink is recognised through NPF Policy 5 and MLDP Policy EP16. These policies require areas of peat and carbon-rich soils to be avoided where possible. Whilst NPF Policy 5 does support the development of essential infrastructure and development for the generation of energy from renewable sources, impacts should be avoided and minimised where possible. Accordingly, any application should be accompanied by a suitable analysis of the impact of the proposal on peat, in line with NPF Policy 5 (d) and MLDP Policy EP16.	This Chapter is supported by various reports and assessments into the potential impacts of the Proposed Development upon peat and appropriate mitigation measures. This is presented in Appendix 10.1: Peat Depth Survey Report, Appendix 10.2: Peat Management Plan and should be read along with Appendix 10.3: Peat Landslide Risk Assessment and Appendix 10.4: Peatland Carbon Emission Assessment. These reports outline how the design for the application has sought to avoid areas of peat as part of a scheme of mitigation by design in accordance with NPF4. A summary of the conclusions is presented in Section 10.5: Assessment of Likely Significance of Effects.
MC	Scoping Response (24/01085/S36SCO/AM/SS) August 2024	When considering the impact of the proposal on flooding, including drainage, a Flood Risk Assessment and Drainage Impact Assessment should be prepared in line with the Council's Supplementary Guidance on Flood Risk and Drainage Impact Assessment for New Developments. http://www.moray.gov.uk/downloads/file133646.pdf	Appendix 10.8: Flood Risk Assessment has been prepared in accordance with available SEPA and the council's guidance for flood risk assessments. The Applicant is not preparing a separate, standalone DIA as part of the EIA Report. This is in keeping with other typical approaches on OHL applications.
AC	Pre-application consultation (ENQ/2024/0242) July 2024	<u>SEPA</u> Areas of peat need to be avoided and the NPF4 mitigation hierarchy followed.	Appendix 10.1: Peat Survey Report, Appendix 10.2: Peat Management Plan and should be read along with Appendix 10.3: Peat Landslide Risk Assessment. These reports outline how the design for the application has sought to avoid areas of peat as part of a scheme of mitigation by design in accordance with NPF4. A summary of the conclusions is presented in Section 10.5: Assessment of Likely Significance of Effects.
		<u>SEPA – Flood Risk</u>	Appendix 10.8: Flood Risk Assessment has been prepared in accordance with available SEPA flood

Organisation	Type of Consultation	Response	How response has been considered
		SEPA highlights the applicant should use the SEPA Future Flood Maps extents rather than referring to 'High', 'Medium', 'Low' events on their constraints maps to be compliant with NPF4. Any future planning application must demonstrate compliance with NPF4 Policy 22. SEPA is likely to request a planning condition for storage of materials and construction compounds to be located outwith the future flood extent. Compensatory storage may be required for any landraising associated with any essential infrastructure such as pylon platforms within the flood extent. The future flood extent associated several of the watercourses along the proposed alignment are relatively wide, e.g. Burn of Turriff may be 250 m. This needs to be carefully considered in terms of infrastructure location and access, if this route is taken forward. <u>Drainage - Flood Risk and Coast Protection</u> A Drainage Impact Assessment, prepared in accordance with Council Guidelines would be required. This should cover all potential phases of the application; To fully consider flood risk to the site the applicant will need to submit a Flood Risk Assessment (FRA) which must consider flood risk from all sources. This is to be undertaken in accordance with the current version of SEPAs 'Technical Flood Risk Guidance for Stakeholders – SEPA requirements for undertaking a Flood Risk Assessment; We suggest that SEPA be consulted as part of the production of any FRA and DIA associated with the proposal. <u>SEPA</u> SEPA have identified potential Geomorphic Risk for several watercourses along the proposed alignment and recommend a minimum buffer zone of 20 m on each side of these watercourses as a precautionary measure. Further geomorphic studies may be advisable for these crossings to ensure long-term viability of the infrastructure if close to this buffer: • Burn of Ludquharn • Quhomery Burn • Unnamed tributary of the Cock Burn south of Stuartfield	maps and the council's guidance for flood risk assessments. In this Chapter Section 10.5: Assessment of Likely Significance of Effects also provides a summary of the embedded mitigation measures including both mitigation by design and construction good practice for drainage, which will be applied through implementation of standard mitigation measures detailed within the Applicant's GEMPs. The Applicant is not preparing a separate, standalone DIA as part of the EIA Report. This is in keeping with other typical approaches on OHL applications. The respective buffers from proposed infrastructure are presented in Appendix 10.10: SEPA Watercourse Buffer Encroachment Report. A commitment for the application of these watercourse buffers has also been set out in the embedded mitigation sub section of Section 10.5: Assessment of Likely Significance of Effects. As part of the Proposed Development design, with the exception of the requirement for specific watercourse crossings for access purposes, a minimum buffer of 10 m around each loch, wetland or watercourse will be applied.

Organisation	Type of Consultation	Response	How response has been considered
		• Burn of Auchreddie • Idoch Water • Burn of Turriff • Burn of Tollo • Burn of Cairnie • Burn of Cobairdy SEPA request all other watercourses have a minimum buffer of 10 m from top of bank.	
		<u>Environmental Health</u> The onus to determine if there are any private water supplies (PWS) potentially affected by the development and necessary control measures rests with the applicant. Requests for details / information of PWS is subject to a FOI / EIR by the applicant. <u>SEPA</u> A number of PWS lie within the corridor route – SEPA Guidance Note LUPS-31 will need to be followed. If any groundwater source lies within the 250 m buffer zone a full PWS assessment may be required with a 12-month monitoring before development starts on site.	Appendix 10.6: Private Water Supply Risk Assessment contains an investigation which has been informed by data requested from the relevant councils (AC, MC and THC), as well as site survey information. Appropriate embedded and additional measures are set out in Appendix 10.6: Private Water Supply Risk Assessment and summarised in Section 10.5: Assessment of Likely Significance of Effects and Section 10.6: Additional Mitigation, the latter of which includes recommendations for options such as monitoring, and / or further assessment for a minority of PWS as necessary. The approach has followed emerging SEPA guidance on groundwater abstractions⁴³.
		<u>Contaminated Land</u> The proposed route passes through the 1 km search area for Radioactive substances (Radium-226) associated with the historical use of the former airfield at Longside (NK 03000 47500) and a Phase 1 desk study will be required to identify the potential for radioactive contamination within the cable route boundaries and to establish whether any further detailed assessment is required. This desktop study should be accompanied by a walk over survey by an experienced practitioner.	Potential sources of contaminated land are considered within Appendix 10.5.2: Phase 1 Environmental Assessment – Longside Airfield Interface with Proposed Development and summarised in Section 10.4: Baseline Conditions of this Chapter.

Organisation	Type of Consultation	Response	How response has been considered
		There are over 170 potentially contaminated land sites within the site boundary. Of these PCL sites the following are of note in respect of the proposals: Former railway land crosses the site N-S direction (hence across any potential cable route) in three places. There are four landfills and associated 250 m consultation zones, two of which are located such that the unimpacted corridor is reduced to 200 m Should the proposals be the subject of a planning application, or a scoping exercise or environmental impact assessment be carried out, contamination issues will require assessment.	
Aberdeenshire Council (AC)	Scoping Response (ENQ/2024/1010) August 2024	<u>Flood Risk and Coastal Protection Team</u> See Comments from AC in relation to FRA and DIA in their pre-application comments.	The Applicant has provided a relevant response to the equivalent pre-application comments (within the MC and THC sections about FRA and DIA) above.
NatureScot	Scoping Response (CNS/DC/MOR) July 2024	<u>Protected Areas</u> Torvean Landforms Site of Special Scientific Interest (SSSI) will be directly affected. The SSSI is designated for its Quaternary geomorphology (less than 10 million years old) containing an excellent range of fluvioglacial landforms (deposited by meltwater) comprising kame terraces, eskers and kettleholes. If infrastructure can avoid key landform features, then it is hoped that irreversible damage to the geological interest can be avoided. Our work with SSEN is ongoing in this respect. The potential effect on other protected areas is being considered. <u>Peatland and carbon-rich soil</u> Class 1 and 2 peatlands (as mapped through NatureScot's Carbon and Peatland Map 2016) – Between the crossing of the A9 south of Inverness and the A941 in Moray the route crosses areas of Class 1 and 2 peatland where the extent of peatland would exceed the span between towers, meaning that impacts are unavoidable.	Embedded mitigation measures including good industry practices have been set out in Section 10.5: Assessment of Likely Significant Effects of this Chapter. The Applicant and Principal Contractor undertook meetings and are continuing engagement with NatureScot specifically in relation to the Torvean Landforms SSSI in order to help microsite tower locations within the LoD to avoid the key SSSI landforms and minimise potential effects from the Proposed OHL Alignment. This Chapter is supported by various reports and assessments into the potential impacts of the Proposed Development upon peat and appropriate mitigation measures. This is presented in Appendix 10.1: Peat Depth Survey Report, Appendix 10.2 Peat Management Plan and should be read along with Appendix 10.3: Peat Landslide Hazard and Risk Assessment . A summary of the conclusions is

Organisation	Type of Consultation	Response	How response has been considered
		The quality of these habitats is not yet known, and we cannot therefore advise on their likely value and whether or not priority peatlands of national interest would be affected. The Applicant's ongoing work will inform this topic.	presented in Section 10.5: Assessment of Likely Significance of Effects .
Scottish Water	Scoping Response (DSCAS-0113620-N8Z)	<u>Drinking Water Protected Areas</u> The proposed activity falls within several drinking water drinking water catchments where a Scottish Water abstraction is located. Scottish Water abstractions are designated Drinking Water Protected Areas (DWPA) under Article 7 of the Water Framework Directive. • The River Ugie supplies Forehill Water Treatment Works (WTW); • Burn Of Davidstone and Shenwell Spring supply Herricks WTW; • Glenlatterach supplies Glenlatterach WTW; • The Spey Boreholes, Dipple and the Ordiequish Collecting Chambers supply the Spey Scheme (Badentinan) WTW, and groundwater will need to be protected; • The River Deveron (Muireisk Intake) supplies Turriff WTW and Loch Ashie supplies Inverness Loch Ashie WTW. For each DWPA it was noted that there is a risk to water quality from proposals and mitigation measures will be required to ensure risks are minimised as much as possible and particular care is taken in our smaller and more sensitive catchments. Individual comments from Scottish Water for each DWPA are provided in the following rows.	Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report provides information on how the proposed infrastructure relates to DWPA and public water supplies, and screened in potential receptors have been considered further within Section 10.5: Assessment of Likely Significance of Effects which includes the provision of appropriate embedded mitigation measures.
		<u>Glenlatterach Reservoir</u> Approximately 3.33 km of the proposed OHL lies within the Glenlatterach Reservoir catchment, which is part of the Spey Deveron Water Resource Zone (WRZ). The closest tower lies 100 m away from the reservoir and the Allt Creach Burn, while another lies around 150 m away from the Glenlatterach Burn flowing into the reservoir. Given the close proximity to burns and the reservoir itself, travel times for pollution events would be short. While the Proposed Development is unlikely to impact the long-term yield of the system, the	

Organisation	Type of Consultation	Response	How response has been considered
		proximity to the reservoir is of concern and we are currently limited with resilience options at this site. It would be Water Resources' preference to request the alternative route proposed in SSEN Alignment Maps and Considerations report of 15B and 14C. The route shapefile provided currently follows 14D and 15C, while the potential alternative marked in their reports of 15B and 14C would greatly reduce the risk to this source by remaining outside of the catchment (attached relevant screenshots of report map). SSEN acknowledged that this alternative route would be adopted if the proposed Kellas Drum Wind Farm obtains planning consent.	any major concerns in relation to the proposals. Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report contains information on Glenlatterach Reservoir DWPA which is assessed along with a set of appropriate embedded measures within Section 10.5: Assessment of Likely Significant Effects of this Chapter.
		<u>River Deveron</u> Approximately 38.5 km of the proposed OHL lies within the River Deveron catchment, the source for Turriff WTW. The proposed route in the shapefiles crossed the River Isla, River Deveron and multiple smaller tributaries, however none of these crossings are within close proximity to the Muiresk Intake resulting in longer travel times for pollution events. The route also passes downstream, but within <0.5 km of the Birken Burn intake and <1 km from the Herricks Intake, both burns supplying Herricks WTW. This will be a low-risk development for water resources (quantity); however, it is important that drainage is not directed out of the catchment and SW must be notified of any pollution incidents that could impact this catchment.	Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report contains information on River Deveron DWPA which is assessed along with a set of appropriate embedded measures including good industry practices within Section 10.5: Assessment of Likely Significant Effects of this Chapter.
		<u>River Ugie</u> Approximately 19.5 km of OHL lies within the River Ugie catchment, the source for Forehill WTW. This WRZ is in supply demand surplus and is restricted by WTW capacity. This is low risk for water resources (quantity), however, it is important that drainage is not directed out of the catchment and SW must be notified of any pollution incidents that could impact the River Ugie.	Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report contains information on the River Ugie DWPA which is assessed along with a set of appropriate embedded measures including good industry practices within Section 10.5: Assessment of Likely Significant Effects of this Chapter.
		<u>Badentinan (Spey Boreholes)</u> The section that cuts across our ground water zone of influence at Badentinan (Spey Boreholes) is also a concern for us and Scottish Water would encourage	Response noted. The Applicant held several meetings with Scottish Water between 01 August 2024 and 13 November 2024 which have helped informed the final chosen Proposed OHL

Organisation	Type of Consultation	Response	How response has been considered
		the route to be altered. Our tenant farmer has also raised concerns about the current proposed route.	Alignment which has since been altered and moved further away from the Badentinan (Spey Boreholes/ 'Dipple wellfield') or Spey Wellfield Abstraction Scheme as it is hereafter referenced in the Chapter and Appendix 10.7: Detailed Hydrological and Hydrogeological Report . The appendix provides further information on how the proposals relate to the wellfield and embedded mitigation has been set out in Section 10.5: Assessment of Likely Significance of Effects of this Chapter.
		<u>Asset Impact Assessment</u> According to our records, the development proposals impact on existing Scottish Water assets. The applicant must identify any potential conflicts with Scottish Water assets and contact our HAUC Diversions Team via our Customer Portal to apply for a diversion. The applicant should be aware that any conflict with assets identified may be subject to restrictions on proximity of construction. Please note the disclaimer at the end of this response.	The Applicant notes this response and has set out a commitment to it as part of their embedded GEMPs as described in Section 10.5: Assessment of Likely Significance of Effects . Further consultation with Scottish Water will be required prior to construction to identify any Scottish Water assets which require protection. Should any such assets be identified, specific mitigation measures will be developed and will be agreed with Scottish Water.
		<u>Surface Water</u> For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.	Response noted. The Proposed Development will not be connecting into the Scottish Water combined sewer system.
Scottish Environment Protection Agency (SEPA)	Scoping Response (PCS-20002224) July 2024	<u>Water environment</u> We welcome the aim to provide a 50 m buffer from water features. Whilst we welcome reference to the SEPA geomorphic risk layer mapping, we highlight the recommended width of these should be checked with the SEPA database to ensure whether the stated 20 m in the Scoping Report will be sufficient. We	Watercourse crossings with associated photographs are provided in Appendix 10.9: Watercourse Crossing Schedule , along with a document which sets out the respective buffers from the proposed infrastructure in Appendix 10.10: SEPA Watercourse Buffer Encroachment . Good practices have also been set out in the

Organisation	Type of Consultation	Response	How response has been considered
		highlight the future flood extent of some watercourses may be also wider than these buffers and should be assessed accordingly. The proposals should demonstrate how impacts on local hydrology have been minimised and the site layout designed to minimise watercourse crossings and avoid other direct impacts on water features. Measures should be put in place to protect any downstream sensitive receptors. The submission must include a set of drawings showing: a) All proposed temporary or permanent infrastructure overlain with all lochs and watercourses; b) A minimum buffer of 10 m around each loch or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works.	embedded mitigation sub section of Section 10.5: Assessment of Likely Significance of Effects.
		<u>Flood risk</u> Crossings must be designed to accommodate the 0.5% annual exceedance probability flows (with an appropriate allowance for climate change), or information provided to justify smaller structures. If it is considered the development could result in an increased risk of flooding to a nearby receptor, then a flood risk assessment (FRA) must be submitted. Our Technical Flood Risk Guidance for Stakeholders outlines the information we require to be submitted in an FRA.	An embedded measure has been set out for the appropriate sizing of watercourse crossings in the mitigation section of Section 10.5: Assessment of Likely Significance of Effects. Appendix 10.8: Flood Risk Assessment has been prepared in accordance with available SEPA guidance for flood risk assessments.
		<u>Peat</u> Where proposals are on peatland or carbon rich soils (CRS), the following should be submitted to address SEPA's requirements in relation to NPF4 Policy 5 to protect CRS and the ecosystem services they provide (including water and carbon storage). It should be clearly demonstrated that the assessment has informed careful project design and ensured, in accordance with relevant guidance and the	This Chapter is supported by Appendix 10.1: Peat Depth Survey Report, Appendix 10.2: Peat Management Plan and Appendix 10.3: Peat Landslide Hazard and Risk Assessment which cover the various items requested. These reports outline how the design for the application has sought to avoid areas of peat as part of a scheme of mitigation by design in accordance with NPF4. A summary of the appropriate measures and

Organisation	Type of Consultation	Response	How response has been considered
		mitigation hierarchy in NPF4, that adverse impacts are first avoided and then minimised through best practice. The submission should include a series of layout drawings at a usable scale showing all permanent and temporary infrastructure, with extent of excavation required. These plans should be overlaid on the following: a) Peat depth survey showing peat probe locations, colour coded using distinct colours for each depth category. This must include adequate peat probing information to inform the site layout in accordance with the mitigation hierarchy in NPF4, which may be more than that outlined in the Peatland Survey – Guidance on Developments on Peatland (2017); b) Peat depth survey showing interpolated peat depths; c) Peatland condition mapping – the Peatland Condition Assessment photographic guide lists the criteria for each condition category and illustrates how to identify each condition category. The detailed series of layout drawings above should clearly demonstrate that development proposals avoid any near natural peatland and that all proposed excavation is on peat less than 1m deep. The layout drawings should also demonstrate that peat excavation has been avoided on sites where this is possible. On other sites where complete avoidance of peat and carbon rich soils is not possible, then it should be clearly demonstrated that the deepest areas of peat have been avoided and the volumes of peat excavated have been reduced as much as possible, first through layout and then by design making use of techniques such as floating tracks. The Outline Peat Management Plan (PMP) must include: a) A table setting out the volumes of acrotelmic, catotelmic and amorphous peat to be excavated. These should include a contingency factor to consider variables such as bulking and uncertainties in the estimation of peat volumes; b) A table clearly setting out the volumes of acrotelmic, catotelmic and amorphous excavated peat: (1) used in making good site specific areas disturbed by development, including borrow pits (quantities used in making good areas disturbed by development must be the minimum required to achieve the	conclusions is presented in this Chapter within Section 10.5: Assessment of Likely Significance of Effects.

Organisation	Type of Consultation	Response	How response has been considered
		intended environmental benefit and materials must be suitable for the proposed use), (2) used in on and off-site peatland restoration, and (3) disposed of, and the proposed means of disposal (if deemed unavoidable after all other uses of excavated peat have been explored and reviewed); c) Details of proposals for temporary storage and handling of peat - Good Practice during Wind Farm Construction outlines the approach to good practice when addressing issues of peat management on-site and minimising carbon loss; d) Suitable evidence that the use of peat in making good areas disturbed by development, including borrow pits, is genuine and not a waste disposal operation, including evidence on the suitability of the peat and evidence that the quantity used matches and does not exceed the requirement of the proposed use. If peat is to be used in borrow pits on-site, SEPA will require sections and plans including the phasing, profiles, depths and types of material to be used; e) Use of excavated peat in areas not disturbed by the development itself is now not a matter SEPA provides planning advice on. Please refer to Advising on peatland, carbon-rich soils and priority peatland habitats in development management NatureScot 2023, and the Peatland ACTION – Technical Compendium which provides more detailed advice on peatland restoration techniques. Unless the excavated peat is certain to be used for construction purposes in its natural state on the site from where it is excavated, it will be subject to regulatory control. The use of excavated peat off-site, including for peatland restoration, will require the appropriate level of environmental authorisation. Excavated peat will be waste if it is discarded, or the holder intends to or is required to discard it. These proposals should be clearly outlined so that SEPA can identify any regulatory implications of the proposed activities. This will allow the developer and their contractors to tailor their planning and designs to accommodate any regulatory requirements. Further guidance on this may be found in the document Is it waste - Understanding the definition of waste. <u>GWDTE and existing groundwater abstractions</u> GWDTE are protected under the Water Framework Directive. Excavations and other construction works can disrupt groundwater flow and impact GWDTE and	Screening for potential GWDTE has been provided within Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report and Section 10.4: Baseline Conditions and Section 10.5:

Organisation	Type of Consultation	Response	How response has been considered
		existing groundwater abstractions. The layout and design of the development must avoid impacts on such areas. GWDTE and existing groundwater abstractions. A National Vegetation Classification (NVC) survey should be submitted which includes the following information: a) A set of drawings demonstrating all GWDTE and existing groundwater abstractions are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. The survey needs to extend beyond the site boundary where the distances require it. b) If the minimum buffers cannot be achieved, a detailed site specific qualitative and / or quantitative risk assessment will be required. Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice and the minimum information we require to be submitted.	Assessment of Likely Significance of Effects in this Chapter, which includes the provision of suitable mitigation measures. NVC surveys have been carried out for the screened in potential GWDTE and presented within Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report.
Spey Community Council	Scoping Response September 2024	Disagreed with the proposal to scope out elements as set out in Paragraph 10.6.1 of the Scoping Report): " Based on professional judgement and with the assumption of good design and implementation of good practice construction measures including the Applicant's GEMPs, it is considered that the following would not give rise to significant construction effects and therefore can be scoped out: • pollution of surface watercourses and impact of pollution on fisheries and groundwater; including from suspended sediment in surface water bodies, hydrocarbon, and oil pollution; • impact on watercourses and standing waters, including impacts to groundwater levels from any dewatering required; • soil erosion, compaction and excavation losses during access or construction".	As noted in Paragraph 1.1 of SEPA's scoping response (24 July 2024) they have agreed with the proposals which were set out in the EIA Scoping Report.
SEPA	Post-scoping consultation January 2025	Meeting with SEPA to discuss the GWDTE screening approach proposed for the BBNP OHL project.	The Applicant's proposed approach for screening for potential GWDTE has been accepted by SEPA and provided within Appendix 10.7: Detailed

Organisation	Type of Consultation	Response	How response has been considered
			Hydrological and Hydrogeological Baseline Report and summarised in Section 10.4: Baseline Conditions and Section 10.5: Assessment of Likely Significance of Effects of this Chapter, which includes the provision of suitable mitigation measures. This approach has taken into account both LUPS 31 guidance and the emerging SEPA guidance on GWDTE⁴². National Vegetation Classification (NVC) surveys have been carried out for the screened in potential GWDTE and this information has been detailed within Annex B of Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report with overall findings summarised within the report. . This agreement was confirmed within an email from SEPA to the Applicant on 03 March 2025.
NatureScot	Post-scoping consultation March 2025	Peat Restoration Approach The discussion focused on peatland restoration, emphasizing firm commitments to effective reuse of peat and restoration projects that deliver tangible benefits for biodiversity and climate change. While specifics of project locations are still being finalized, key approaches include minimizing impacts on peat and implementing restoration efforts in collaboration with landowners. Highlights: • Mitigation by Design: The alignment avoids peat as much as possible, reducing risks to priority peatland habitats. Even where impacts to priority peatland habitats can be avoided impacts to peat soils are likely. Our Carbon and Peatland Mapping (2016) would suggest that peat will be encountered within the east Highland and west Moray sections of line, although peat soil could occur in discrete locations elsewhere. • Minimisation of peat excavation and reuse reinstatement and temporary infrastructure: Embedded mitigation that helps to inform when tracks	Further information is provided within: Appendix 10.1: Peat Depth Survey Report Appendix 10.2: Peat Management Plan and Appendix 10.3: Peat Landslide Hazard and Risk Assessment which cover the various items requested. These reports outline how the design for the application has sought to avoid areas of peat as part of a scheme of mitigation by design in accordance with NPF4. A summary of the appropriate measures and conclusions is presented in this Chapter within Section 10.5: Assessment of Likely Significance of Effects.

Organisation	Type of Consultation	Response	How response has been considered
		can be temporary and/or floated and using construction techniques that reduce the impact on peat is good practice. Reusing peat for reinstatement of disturbed areas and to restore areas affected by temporary infrastructure as close to where this occurs is welcomed too. Peat Restoration: • NatureScot understand that the linear nature of project footprint and resulting wayleave may limit the opportunities for peat restoration 'on-site' and support the intention to look at wider areas and work with landowners to ensure the peat can be reused to help restore peatland habitats within the wider area. The Peatland ACTION Technical Compendium guides restoration practices, addressing challenges such as tree regeneration and maintenance of wetter ground conditions. • Peat reinstatement within areas of eroded peat: Restoration benefits include runoff control and flooding reduction within catchments. It is also possible to use aerial imagery to relatively quickly identify areas of eroded peat with potential for restoration. Revegetation is important to consider, and herbivore presence can impact rates of regrowth. It is important therefore to understand deer and livestock management at possible restoration sites and take measures to adapt this to ensure success. • Peat reinstatement within areas of cut peat: – along the length of the line there is likely to be substantial areas of peatland that will have been affected primarily now by historic peat cutting for domestic purposes. Aerial imagery can also help identify areas betrayed by their angular and unnatural topography. Contacting the estates along the route could assist in identifying such sites, because many estates historically (possibly still) had provision for local folk (attached to house deeds) to cut peat on the estate. • Ditch blocking: estates along the route may have many gripped moors with potential for restoration through ditch blocking. The focus here should be on areas where there is greatest potential to assist in restoring functioning peatland habitats through the rewetting of them.	

Organisation	Type of Consultation	Response	How response has been considered
	Post-scoping consultation April 2025	Torvean Landforms SSSI for ground investigation works: - In accordance with section 13(6) of the Nature Conservation (Scotland) Act 2004, NatureScot have the following advice in relation to the consented operation: - The work should be carried out as described in your application and supporting information provided to us on 24 February 2025 in your 'Proposed Works within Torvean Landforms SSSI' Report.	The Applicant held a site meeting with NatureScot at Torvean SSSI on 29 April 2025 and agreed to proposals on the basis that there would be an embedded measure within the EIA Chapter committing to micro-siting within the LoD, and to maximise distance from landform features subject to the findings of Ground Investigation and detailed design.
	Post-scoping consultation May to July 2025	The potential requirement for upgrading and widening of existing roads within the Dalroy and Clava Landforms SSSI and GCR was discussed with NatureScot in May to July 2025. In May 2025 NatureScot provided information on the key features of the SSSI, and the crucial areas where widening of existing access roads may impact on these features. NatureScot noted that exposures of fine sediments can be clearly seen in the larger crucial sections along the Finglack and Cassie Burns. The existing bridge across the Cassie Burn is close to some of these exposures so if this bridge requires work, avoiding damage to these exposures would be important. The other two small crucial areas relate to locations of previous scientific research so preserving these locations is important because of the historical context and ability to revisit these locations and conduct further research. Any additional cut and fill in these areas could be problematic. The requirement for passing places may also put these crucial areas at a greater risk. The non-crucial areas within the SSSI are still important as context but in this case, minor upgrades to the track are unlikely to impact on their interest. SSEN Transmission provided further information in June 2025 on the indicative road widening likely to be required in the vicinity of the features of interest, based on an initial swept path analysis. In their email response dated 23 July 2025, NatureScot advised that the key pinch point will be the crossing over the Cassie Burn. Upstream especially, there are exposed sediments that hold the key interests. The bank that holds / supports these deposits runs along to the southwest of the access track. If widening must occur along this section of track, NatureScot need to be certain that this will not affect the structural integrity of this bank, such that it could affect the deposits within and those currently	The Applicant's Principal Contractor has confirmed that any temporary or permanent access works can avoid the crucial areas of sensitivity, including the section of exposed sediments upstream of the crossing over the Cassie Burn. Section 10.5: Assessment of Likely Significance of Effects sets out embedded mitigation measures, including the development of a site-specific method statement for any access upgrade works within the SSSI, to be agreed in consultation with NatureScot (post-consent).

Organisation	Type of Consultation	Response	How response has been considered
		exposed. If it is possible to widen on the other side of the track, this would avoid this risk. NatureScot also need to be certain that any temporary or permanent bridge / crossing works to accommodate construction will not impact the deposits. NatureScot noted that for works within any SSSIs, they will request (most likely through condition) a site-specific method statement covering the key aspects of the work within SSSIs and how impacts will be mitigated through the working methods. They also noted that, with regards to other sections in this SSSI, it would be useful for a record to be made of where any widening occurs and new deposits are exposed, including locational details and photos of exposed deposits.	
SEPA	Post-scoping consultation 08 April 2025	PWS SEPA noted the following in relation to the Applicant proposing for the Detailed Quantitative Risk Assessments (DQRA) (where required) to be undertaken post submission and also conditioned as part of a determination: Whilst SEPA would be content with your proposal, we highlight the Council are the lead authority regarding PWS. Whilst SEPA only comment on PWS with groundwater sources and therefore you are advised to check with the Council for their agreement with regards all other PWS.	Appendix 10.6: Private Water Supply Risk Assessment identifies which PWS will be subject to DQRA within the respective councils (THC, MC and AC) across the Proposed Development. As advised by SEPA, the Applicant consulted the local authorities via email on 24 July 2025 to confirm their agreement with regards to the approach to assessment of PWS, with the responses from AC and MC noted below. At the time of finalising the EIA Report, no response had been received from THC.
AC	Post-scoping consultation 31 July 2025	PWS AC advised that their Environmental Health service has confirmed that the Applicant's approach with regard to PWS assessment was acceptable to them.	Appendix 10.6: Private Water Supply Risk Assessment identifies which PWS will be subject to DQRA within the respective councils (THC, MC and AC) across the Proposed Development.
MC	Post-scoping consultation 04 September 2025	PWS MC confirmed via email on 4 September 2025 that a comprehensive PWS management plan should be submitted with the proposal, including details of the mitigations to protect the private water supplies during construction, operation and decommissioning activity. It should also include details of actions	Appendix 10.5: Private Water Supply Risk Assessment provides details of the embedded mitigation to protect all PWS during construction, as well as additional mitigation measures for those

Organisation	Type of Consultation	Response	How response has been considered
		to be taken in the event that the wholesomeness or adequacy of any PWS becomes affected by the stages of activity.	supplies identified as having potentially significant effects.

Study Area

- 10.2.9 The Proposed Development and the infrastructure are defined in **Chapter 1: Introduction and Background**, and **Chapter 3. Project Description** of this EIA Report.
- 10.2.10 Due to the scale of the Proposed Development the extent of the Study Area encompasses the water and geological environment receptors within the zone of influence of the Proposed Development which, using professional judgment, is set to 1 km from the LoD as displayed on **Figure 10.1: Hydrology and Watercourse Crossings**. This radius is considered conservative for the assessment of potential adverse effects resulting from the Proposed Development. Professional judgement has been applied where appropriate, with the inclusion of surface water abstractions which are slightly over 1 km from the Proposed Development. For chemical and sedimentation impacts, it is considered that at distances of more than 1 km, the Proposed Development is unlikely to have a hydrological impact, as attenuation and dilution of substances are likely to occur.
- 10.2.11 In accordance with SEPA (2024) guidance⁴² the GWDTE Study Area comprises a 250 m buffer of the Proposed Development where excavations are likely to be greater than 1 m depth, reduced to a 100 m buffer from excavations less than 1 m depth.

Determining Baseline

Desktop Study

- 10.2.12 To investigate baseline conditions, and to consider the potential effects of the Proposed Development with respect to the water and geological environment, a review of available desk-based information has been undertaken.
- 10.2.13 The general methodology used to assess the effect of the Proposed Development on the water and geological environment within the Study Area is as follows:
- desktop study to obtain baseline and historical data; and
 - consultation with SEPA, NatureScot Scottish Water, THC, MC, and AC to identify water abstractions and PWS and discuss flood risk and designated conservation sites.

Site Visits

- 10.2.14 The collation of baseline information was supported by:
- PWS surveys undertaken between July 2024 and February 2025; and
 - a peat depth survey undertaken between July 2024 and June 2025.

Methodology for the Assessment of Impacts

Determining the Magnitude of Change and Sensitivity of Receptors

- 10.2.15 The assessment of significance has considered the magnitude of change (from the baseline conditions), the sensitivity of the affected environment / receptors and (in terms of determining residual effects) and the extent to which mitigation and enhancement would reduce or reverse adverse effects.

Sensitivity of Receptor

- 10.2.16 The sensitivity of the receptor has been determined using professional judgement, consideration of existing designations and quantifiable data, where possible. The criteria used to determine the sensitivity of receptors are shown in **Table 10.2**.

Table 10.2: Sensitivity of Receptor Criteria

Sensitivity of Receptor	
High	• Receptor has 'High' or 'Good' Water Framework Directive (WFD) overall status and / or water quality status for surface water or groundwater body. • Receptor is a designated site protected under national or international legislation, such as Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), or Special Protection Area (SPA), where the designation is based specifically on aquatic features. • Receptor contains Geological Conservation Review (GCR) sites designated as SSSIs or Candidate SSSIs. • Receptor contains areas of regionally important economic mineral deposits. • Receptor supports key species and habitats sensitive to changes in suspended sediment concentrations and turbidity, such as salmon or freshwater pearl mussels. • Receptor supports potential GWDTE habitats which are evaluated to have high groundwater dependency. • Receptor contains a range of hydromorphological features with very little modification. • Receptor is a watercourse or floodplain, with a possibility of direct flood risk to populated areas, which are sensitive to increased flood risk by the possible increase in water levels. • Receptor provides clear flood alleviation benefits. • Receptor is used for abstraction or storage for public water supply or large private water supply serving ≥ 10 properties. • Receptor (peat) is present and is generally >1.0 m in depth. • Receptor is classed as a high productivity aquifer⁵⁶ (class 1A or 2A).
Medium	• Receptor has 'Moderate' WFD overall status and / or water quality status for surface water or groundwater body. • Receptor contains GCR sites with Local Geodiversity Site (LGS) status. • Receptor is a protected wetland (identified on the SEPA (2025) Scottish Wetland Inventory⁵⁷) which itself is not part of a SSSI, SAC or SPA. • Receptor contains areas of locally important economic mineral deposits. • Receptor supports potential GWDTE habitats which are evaluated to have moderate groundwater dependency. • Receptor contains limited hydromorphological features and a limited range of fluvial processes, such areas may have been subject to past modification such as straightening, bank protection and culverting or other anthropogenic pressures. • Receptor is a watercourse or floodplain, with a possibility of direct flood risk to high value agricultural areas, which are moderately sensitive to increased flood risk by the possible increase in water levels. • Receptor provides limited flood alleviation benefits. • Receptor is used for abstraction or storage for private water supply serving <10 properties. • Receptor (peat) is present and is >0.5 m in depth, but with isolated deposits >1 m in depth. • Receptor is classed as a moderate productivity aquifer (class 1B or 2B). • Local or regional ecological status / locally important fishery.

⁵⁶ British Geological Survey (2015) Scotland's aquifers and groundwater bodies Available at: <https://www2.bgs.ac.uk/groundwater/waterResources/ScotlandsAquifers.html>,

⁵⁷ SEPA (2025) Scottish Wetland Inventory, Environmental Data, Available at: <https://www.sepa.org.uk/environment/environmental-data/>

Sensitivity of Receptor	
Low	• Receptor has 'Poor' or 'Bad' WFD overall status and / or water quality status for surface water or groundwater body. • Receptor contains GCR sites without SSSI (or Candidate SSSI) designation or LGS status, and non GCR sites with potential geodiversity interest. • Receptor supports no key species and habitats sensitive to changes in suspended sediment concentrations and turbidity. • Receptor supports potential GWDTE habitats which are evaluated to have low groundwater dependency. • Receptor contains no hydromorphological diversity and / or are identified as 'heavily modified water bodies' or 'artificial water bodies'. • Receptor is a watercourse or floodplain which passes through low value agricultural areas, less sensitive to increased flood risk by the possible increase in water levels. • Receptor provides limited flood alleviation benefits. • Receptor is used only for agricultural / industrial water use. • Receptor (peat) is rarely present and is typically <0.5 m. • Receptor is classed as a low or very low productivity aquifer (class 1C or 2C). • Sporadic fish presence.

Magnitude of Change

10.2.17 The likely magnitude or extent of an impact (or change) on a receptor has been established by assessing the degree of the impact relative to the nature and extent of the Proposed Development. The criteria used to determine the magnitude of change are shown in **Table 10.3**. Note that these criteria are not bound by a specific threshold which is applied, as the magnitude of change is assessed using professional judgment on a qualitative basis. Criteria are relative to the receptor in question and the related qualifying interests and are based on previous experience from similar infrastructure projects EIAs.

Table 10.3: The Magnitude of Change Criteria

Magnitude of Change	
Major	• Long-term (≥ 12 months) or permanent change in surface water quality, resulting in a change in WFD status and / or prevention of attainment of target status of 'Good'. • Results in loss of feature(s) and failure of hydromorphological elements (morphology, quantity and dynamics of flow) resulting from the works. Loss or damage to existing habitats. Replacement of natural bed and / or banks with artificial materials. Extensive change to channel planform. • Loss of floodplain due to construction within flood risk area. • Permanent loss of water supply. • Major or total loss of a geological site or mineral deposits or where the value of the receptor would be severely affected. • Major or total loss of soils or peatland deposits or where the value of the receptor would be severely affected. • Long-term (≥ 12 months) or permanent change in groundwater quality, resulting in a permanent change in WFD status and / or prevention of attainment of target status of 'Good'. • Major loss of an aquifer in terms of water level or yield, with total loss of or major changes to dependent abstractions / habitats. • Major change or total loss of a GWDTE / wetland, where the value of the habitat would be severely affected.

Magnitude of Change	
Moderate	• Mid-term (≥ 6 months) change in local surface water quality, potentially resulting in a temporary change of WFD status (or equivalent status at local scale) or preventing attainment of target overall status of 'Good' during this period. • Results in adverse change on integrity of hydrological feature(s) or loss of part of feature / moderate shift away from baseline conditions. Failure of one or more hydromorphological elements (morphology, quantity and dynamics of flow) resulting from the works. Some damage or loss to habitat due to the modifications. Replacement of the natural bed and / or banks with artificial material. • Floodplain reduction due to extensive increases in impermeable area within catchment and / or drainage design which would result in an increase in peak flood level. • Temporary loss of water supply. • Partial loss of a geological site or mineral deposit, with major change to the settings, or where the value of the receptor would be affected. • Partial loss of soils or peatland deposits or where the value of the receptor would be affected. • Mid-term (≥ 6 months) change in local groundwater quality, not affecting overall WFD status. • Changes to an aquifer in terms of water level or yield, with small changes to nearby dependent abstractions / habitats. • Partial change or loss of a GWDTE / wetland, where the value of the habitat would be affected.
Minor	• Short-term (≥ 1 month) change in local surface water quality, resulting in minor temporary changes such that ecology is affected for short-term. Equivalent to a temporary minor, but measurable, change within WFD status class. • Potential failure in one of hydromorphological elements (morphology, quantity and dynamics of flow) resulting from the works. Results in minimal shift away from baseline conditions or partial loss or damage to habitat due to modifications. • Floodplain changes due to limited increases in impermeable area within catchment and / or drainage design which would result in a minor increase in peak flood level. • Temporarily reduced quality and / or quantity of water supply. • Small loss to a geological site or mineral deposit, such that the value of the receptor would not be affected. • Small loss of soils or peatland, or where soils will be disturbed but the value not affected. • Short-term (≥ 1 month) change in local groundwater quality. • Small change to an aquifer in terms of water level or yield, with little discernible change to dependent abstractions / habitats. • Small change to or loss of a GWDTE / wetland, where the value of the habitat would not be affected.
Negligible	• Negligible change to surface water quality, very slight temporary change in water quality with no discernible change to watercourse ecology. • No alteration to hydromorphological elements. Some change on feature(s), but of insufficient level to affect the use / integrity, approximating to a 'no change' situation.

Magnitude of Change

	- Floodplain variations of negligible change. - No anticipated change to water supply. - Minimal or no change to a geological site or mineral deposit. - Minimal or no change to soils or peatland deposits. - Negligible change to groundwater quality, very slight temporary change in local water quality. - Minimal or no change to an aquifer in terms of water level or yield, with no discernible change to dependent abstractions / habitats. - Minimal or no change to or loss of a GWDTE / wetland.
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Probability

10.2.18 The probability of the occurrence of an effect has been evaluated as being high, medium, or low. Professional judgement is used to determine the probability of occurrence. The application of good practice, as detailed in the Applicant's GEMPs and mitigation measures, reduces the probability of an effect occurring.

Significance

10.2.19 The criteria considered when evaluating the significance of an effect have been applied using a matrix (**Table 10.4**). The outcome of this matrix will be used to apply a significance to each potential effect identified within this Chapter.

10.2.20 Through the assessment, potential effects are concluded to be of major, moderate, minor, or negligible significance. Major and moderate effects are considered significant in the context of the EIA Regulations⁷. Effects are considered adverse unless stated otherwise.

Table 10.4: Significance Matrix

Sensitivity	Magnitude	Probability	Significance of Effect
High	Major	High	Major
		Medium	Major
		Low	Moderate
	Moderate	High	Moderate
		Medium	Moderate
		Low	Minor
	Minor	High	Minor
		Medium	Minor
		Low	Minor
	Negligible	High	Minor
		Medium	Negligible
		Low	Negligible
Medium	Major	High	Major
		Medium	Moderate
		Low	Minor
	Moderate	High	Moderate
		Medium	Minor
		Low	Minor

Sensitivity	Magnitude	Probability	Significance of Effect
	Minor	High	Minor
		Medium	Minor
		Low	Negligible
	Negligible	High	Negligible
		Medium	Negligible
		Low	Negligible
Low	Major	High	Moderate
		Medium	Minor
		Low	Negligible
	Moderate	High	Minor
		Medium	Minor
		Low	Minor
	Minor	High	Minor
		Medium	Negligible
		Low	Negligible
	Negligible	High	Negligible
		Medium	Negligible
		Low	Negligible

10.3 Limitations and Assumptions

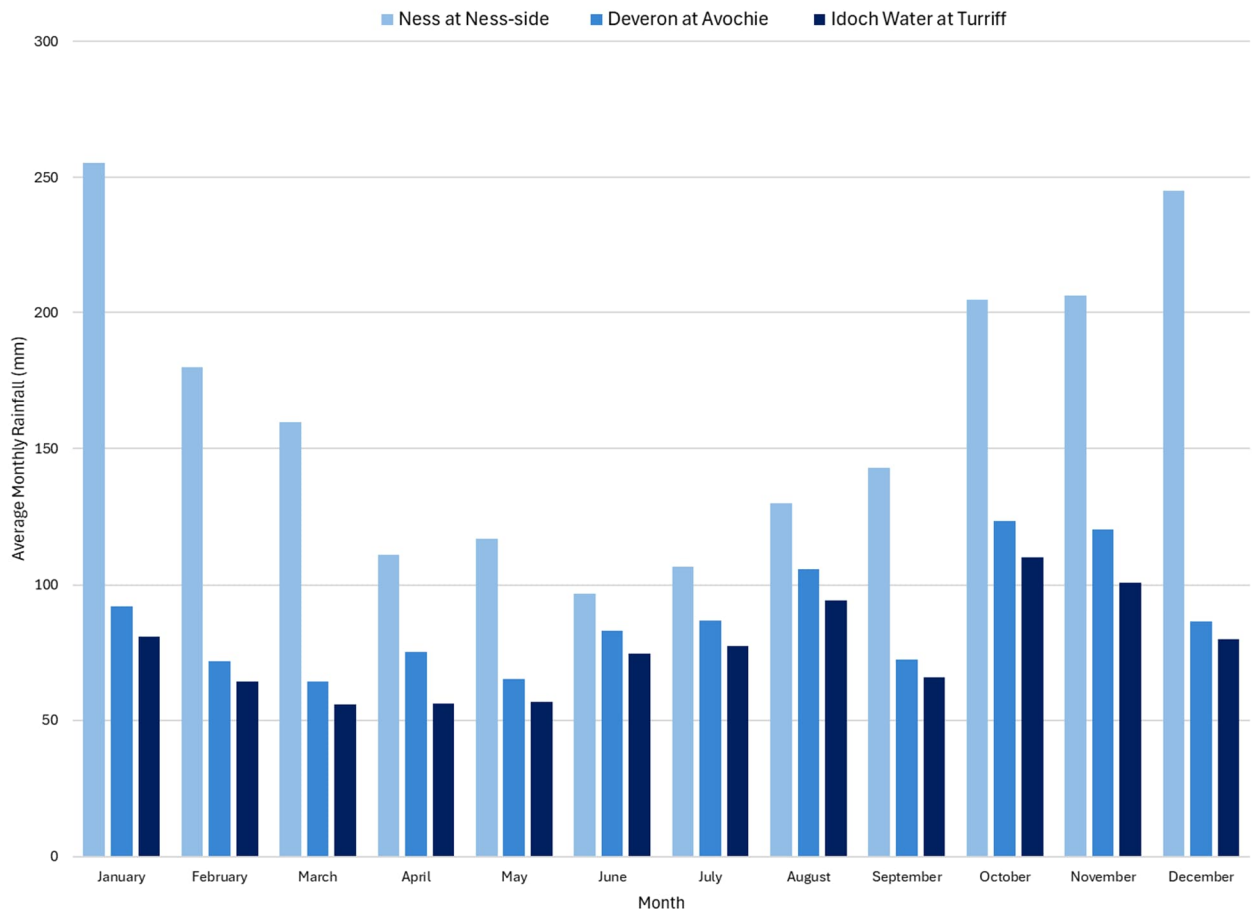
- 10.3.1 Baseline conditions have been established from a variety of sources, including historical data, as referenced within this Chapter, but due to the dynamic nature of certain aspects of the environment, conditions are likely to change during the construction and operation of the Proposed Development.
- 10.3.2 It is assumed that information received by third parties, including the register of PWS provided by THC, MC and AC are complete and up to date.
- 10.3.3 A limitation of the PWS assessment has been the difficulty in obtaining or verifying PWS information from all properties contacted, despite multiple attempts. During the site visits, permission to access properties to review PWS and confirm their location was refused by multiple landowners on occasion and non-return of questionnaires has led to an incomplete data record. To address these limitations, professional experience was used in conjunction with a comprehensive desktop study to apply reasonable assumptions, applying a precautionary approach.

10.4 Baseline Conditions

Rainfall

- 10.4.1 Rainfall datasets were obtained from the National River Flow Archive (NFRA, 2025⁵⁸) using the following rain gauges: Ness at Ness-side (NGR NH 645427), Deveron at Avochie (NJ 532464) and Idoch Water at Turriff (NJ 724493). The Ness at Ness-side gauge, located in a mountainous Highland catchment on the western side of the Proposed Development, recorded the largest average annual rainfall between 2000 and 2011, with a value of 1956 mm / year. In contrast, the Deveron at Avochie and Idoch Water at Turriff gauges, both situated in lowland catchments within the central east and eastern sides of the Proposed Development, reported lower average annual rainfall volumes of 1045 mm and 915 mm, respectively, between 2000 and 2011.
- 10.4.2 The datasets indicate that the periods of highest rainfall in a typical year are expected between October and March. Distribution of the average annual rainfall for each month for individual datasets is illustrated in **Graphic 10.1**.

Graphic 10.1 Average monthly rainfall totals recorded at Ness-side, Avochie, and Turriff NRFA rain gauges, between January 2000 and July 2011



⁵⁸ National River Flow Archive (NRFA) (2025) Rainfall Data [Online] Available at: National River Flow Archive

Surface Water Hydrology

- 10.4.3 Within the Study Area there are numerous hydrological catchments and associated watercourse networks. Based on Scotland's Environment mapping⁵⁹ the Proposed Development crosses 13 Main River and Coastal Catchments. These are also illustrated in **Figure 10.1: Hydrology and Watercourse Crossings**.
- 10.4.4 **Table 10.5** identifies the catchments and watercourses which have been classified under the SEPA WFD that would be crossed by the Proposed Development. This was derived from the Water Classification Hub⁶⁰. Given the extensive scale of the Proposed Development and the numerous river bodies which span it, for the purpose of brevity a summary of their range of current statuses (Good, Moderate, Poor and Bad Status) is presented. In some cases river water bodies have been designated as 'heavily modified water bodies' on account of physical alterations by human activity. Where no better environmental options exist, then these water bodies have 'Good ecological potential' as their environmental objective. Ecological potential is described as the equivalent of achieving a given ecological status (Good, Moderate or Poor) in water bodies once the impact of physical modifications necessary to support land use has been taken into account.
- 10.4.5 The river catchments and watercourses which are listed in are also illustrated in **Figure 10.1: Hydrology and Watercourse Crossings**.

Table 10.5: Surface and Coastal Water Bodies which would be crossed by the Proposed Development

Catchment	Watercourse Name	Watercourse WFD ID	Status of WFD Surface Watercourses (assessed for overall status) 2023 as shown on Water Classification Hub ⁶⁰
River Beaully (ID: 19)	River Beaully - Beaully Firth to Cannich	20209	Good ecological potential
Beaully Coastal (ID: 18)	Moniack Burn - Kirkhill Wastewater Treatment Plant (WWTP) to source	20208	Moderate
River Ness (ID: 21)	River Ness - Inverness Firth to Loch Ness	23394	Moderate
	Caledonian Canal - Tomnahurich Bridge to Loch Ness	20248	Good ecological potential
	Big Burn - Ness confluence to Loch Ashie	20260	Bad ecological potential
	Ault na Skiah	23370	Poor ecological potential
River Nairn (ID: 23)	River Nairn - Moray Firth to River Farnack confluence	20305	Moderate
	Cawdor Burn	20309	Good
Muckle Burn (ID: 24)	Black Burn (Clunas)	20321	Good
	Muckle Burn - Speedie Burn confluence to source	20318	Good
	Red Burn	20320	Poor

⁵⁹ Scotland's Environment Main River and coastal catchments (2019). [online] Available at: <https://map.environment.gov.scot/sewebmap/>

⁶⁰ Water Classification Hub. Available at <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> [accessed February 2025]

Catchment	Watercourse Name	Watercourse WFD ID	Status of WFD Surface Watercourses (assessed for overall status) 2023 as shown on Water Classification Hub ⁶⁰
River Findhorn (ID: 25)	River Findhorn - Tomatin to Dorback Burn	23004	Good
	Dorback Burn / River Divie	23002	Good
River Lossie (ID: 26)	River Lossie - upper catchment	23043	Good
	Leanoach Burn - upper catchment	23041	Good ecological potential
	Gedloch Burn	23042	Moderate
	Linkwood Burn	23034	Poor ecological potential
Moray Coastal (ID: 22)	Lhanbryde Burn / Burn of Blackhills	23378	Moderate ecological potential
Spey Bay Coastal (ID: 27)	Stripe Burn	23045	Moderate ecological potential
River Spey (ID: 28)	Red Burn	23068	Moderate
	River Spey - River Fiddich to tidal limit	23065	Good
	Burn of Fochabers	23067	Poor
River Deveron (ID: 97)	Crooksmill Burn / Haughs Burn	23180	Good ecological potential
	River Isla - Keith to Shiel Burn	23179	Moderate ecological potential
	Burn of Drum	23177	Good ecological potential
	Cairnie Burn	23172	Moderate
	River Deveron - Huntly to Turriff	23165	Moderate
	Keithny Burn / Forgue Burn	23170	Good ecological potential
	Idoch Water	23161	Moderate ecological potential
River Ythan (ID: 33)	Little Water / Black Burn	23237	Moderate ecological potential
River Ugie (ID: 32)	South Ugie Water - New Deer to Stuartfield	23230	Moderate ecological potential
	Crichie Burn	23227	Bad
	Quhomery Burn	23226	Moderate ecological potential
	Burn of Ludquharn	23225	Moderate ecological potential

- 10.4.6 The current condition of watercourses along the Proposed Development is classified as either bad, poor, moderate, or good (as shown in **Table 10.5** are also illustrated in **Figure 10.1: Hydrology and Watercourse Crossings**).
- 10.4.7 Therefore, the sensitivity of river catchments ranges from low to high. However, for the basis of this assessment, as part of a precautionary approach, the rivers will be assessed as high sensitivity receptors (see **Table 10.10**).
- 10.4.8 In general, the classification of water bodies describes by how much their condition or status differs from near natural conditions. Water bodies in a near natural condition are at High status, while those whose quality has been severely damaged are at Bad status.
- 10.4.9 This classification system is underpinned by a range of biological quality elements, supported by measurements of chemistry (specific pollutants like: Arsenic, Iron, Zinc, Copper, Ammonium etc), hydrology (changes to water levels and water flows) morphology (changes to the beds, banks and shores of water bodies) and assessment of invasive non-native species (INNS).
- 10.4.10 There are also a number of small unnamed watercourses or field drains, crossed by the Proposed Development, which originate on gentle slopes flowing towards the larger watercourses. These are also assigned as High sensitivity.
- 10.4.11 Notable standing water bodies within the Study Area are the following:
- Clunas Reservoir lies in the western part of the Proposed Development, 250 m south and upslope from the LoD, at the foot of the northern slopes of Carn Maol. It is situated within Muckle Burn catchment, between Cawdor Burn (River Nairn catchment) and Black Burn (Clunas) (Muckle Burn catchment).
 - Loch Dallas lies central to the Proposed Development, 520 m south and upslope from the LoD. It is situated within the River Findhorn catchment; and an unnamed tributary of the River Findhorn discharges to Loch Dallas.
 - Glenlatterach Reservoir lies central to the Proposed Development, within the LoD. The south part of Glenlatterach Reservoir is situated 110 m northeast and slightly downslope from a proposed tower and the north part of the Glenlatterach Reservoir is situated 115 m southwest and at the same elevation as the proposed tower. Also, it is situated within the River Lossie catchment and the Leanoch Burn discharges into it.

Geology

Bedrock Geology

- 10.4.12 British Geological Survey (BGS) Bedrock Geology 1:625,000 scale mapping⁶¹ indicates the Study Area encompasses a variety of bedrock types as shown in **Figure 10.2: Bedrock Geology**. These include:
- Appin Group – Quartzite;
 - Argyll Group – Psammite, Semipelite and Pelite;
 - Glenfinnan Group – Psammite and Pelite;
 - Grampian Group – Psammite and Semipelite;
 - Lower Old Red Sandstone – Conglomerate, Sandstone, Siltstone and Mudstone;
 - Middle Old Red Sandstone (Undifferentiated) – Conglomerate, Sandstone, Siltstone and Mudstone;
 - Moine supergroup – Gneissose Psammite and Semipelite;
 - Southern Highland Group – Psammite and Pelite; and

⁶¹ BGS GeoIndex Onshore viewer: Bedrock and superficial geology (2020). [online]. Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.200831406.129307875.1654083545-959159431.1654083545

- Unnamed Igneous Intrusions such as Late Silurian to Early Devonian Felsic Rock, Neoproterozoic – Felsic Rock, Ultramafite, and Mafic Igneous Rock.

Superficial Geology

10.4.13 British Geological Survey (BGS) Superficial Geology 1:625,000 scale mapping⁶¹ indicates the Study Area encompasses a variety of superficial deposits as shown in **Figure 10.3: Superficial Geology**. These include:

- Alluvium (clay, silt, and sand);
- Till (Diamicton);
- Peat;
- Glacial Sand and Gravel; and
- Raised Marine Deposits (Undifferentiated).

Soils and Peat

10.4.14 Due to the length of the route for the Proposed Development, the Applicant undertook consultation with SEPA and NatureScot to agree a suitable basis for focusing peat identification on lengths of the route most likely to overlap with peat and which would therefore be subject to peat survey and assessment through the peat landslide hazard and risk assessment (PLHRA) and peat management plan (PMP).

10.4.15 The James Hutton Institute National Soil Map of Scotland (originally mapped at the 1:250,000 scale)⁶² indicates that the Study Area comprises of a mixture of mineral soil and peat types, primarily showing Humus iron podzols and brown earth, mineral alluvium or gleys with a varying degree of peat humification, and basin and blanket peats. For the latter, **Table 10.6** highlights the different soil categories from the NatureScot Carbon and Peatland Map⁶³ by percentage coverage dominance within the Study Area. The map is a predictive tool which provides an indication of the likely presence of peat on each individually mapped area, on a coarse scale. The types of peat shown on the map are carbon rich soils, deep peat and priority peatland habitat. The map shows five different classes of peat soils. Class 1 and 2 are described as being solely, or are predominantly, land with peat soil and peatland priority habitats, which only form a minority of the overall Study Area. The Study Area instead predominantly consists of mineral soil coverage (Class 0).

Table 10.6: Soil Association and Coverage within the Study Area

Class	Area % Coverage	Class description (NatureScot Carbon and Peatland Map ⁶³)
-2	0.5	Non-soils (e.g. loch, built up area, rock and scree).
0	73.4	Mineral soils (Peatland habitats are not typically found on such soils).
1	4.6	Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value.
2	1.1	Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.
3	0.9	Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat.

⁶² James Hutton Institute (2021) Scotland's Soils [online]. Available at: http://map.environment.gov.scot/Soil_maps/?layer=1

⁶³ SNH (2016) Carbon and Peatland Map [online]. Available at: https://map.environment.gov.scot/Soil_maps/?layer=10

Class	Area % Coverage	Class description (NatureScot Carbon and Peatland Map ⁶³)
4	13.2	An area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils.
5	6.3	Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

- 10.4.16 Peat is present within the Study Area, and pockets of peat are most prevalent between River Nairn Creagan and Gedloch Burn, to the west of the Study Area.
- 10.4.17 Peat depth surveys were undertaken between July 2024 and August 2025, which included peat probing and coring. The strategy for these surveys was agreed with SEPA in June 2024 following a meeting on 22 April 2024, during which both peat survey strategy and peat model development were discussed. During a meeting on 19 August 2024 the survey strategy was presented and agreed with NatureScot.
- 10.4.18 The results of the peat depth probing area presented in **Appendix 10.1: Peat Depth Survey Report, Annex C Penetration Probing Data** and the accompanying **Figure 10.1.1: Peat Depth of Penetration**. Peat is almost entirely absent for the section of the Proposed Development from Beauly to Cregan Glas (approximately 7 km east of Inverness) and south of Elgin to Peterhead.
- 10.4.19 Peat depth surveys include 21,203 depths and 40 cores; with 9.09 % of the surveyed area over 1 m depth, and 7.65 % between 0.5 - 1 m depth, with an average peat depth of 0.92 m and a maximum depth of 8.1 m.
- 10.4.20 To validate probing depths, cores were taken at 40 selected locations, showing a distinct acrotelm layer in 35 of the 40 coring locations (at a depth of 0.05 m - 0.20 m, with an average depth of 0.11 m where present). The coring survey did not identify records of amorphous peat. For further details, see **Appendix 10.1: Peat Depth Survey Report**.
- 10.4.21 Using the survey data, a peat contour model was created in the ArcMap GIS. The peat depth model is shown for the spatial scope of the Proposed Development in **Figure 10.1.2: Estimated Peat Depth** within **Appendix 10.1: Peat Depth Survey Report**.
- 10.4.22 For the assessment of soil loss it is assumed that the presented peat characterisation across the survey area is representative of the character and distribution of peat across the Proposed Development footprint.

Historical Land Use and Contaminated Land

- 10.4.23 The potential for legacy ground contamination in shallow soils is considered possible (based on current and historical land uses on and off-site), however, the risk is classified as low.
- 10.4.24 The principal risks are considered to be to the current and future Study Area users. However, given the Proposed Development is an OHL (including access tracks), the probability of contemporary user exposures at a material frequency, should such contamination exist in these areas, is considered low.
- 10.4.25 Based on the available information, the site represents a Low risk with respect to contaminated land liabilities (for further details see **Appendix 10.5.1: Contaminated Land Register** and **Appendix 10.5.2: Phase 1 Environmental Assessment – Longside Airfield Interface with Proposed Development**. On that basis, further assessment in relation to contaminated land has been scoped out in **Section 10.5: Assessment of Likely Significance of Effects** within this Chapter.
- 10.4.26 Should visual or olfactory evidence of contamination be noted during intrusive works, this assessment should be revisited in accordance with the Contaminated Land GEMP (see **Appendix 3.5: General Environmental Management Plans**).

Groundwater

10.4.27 Based on information obtained from the Water Classification Hub^{59,60} the 18 groundwater WFD bodies which are situated within the Study Area are presented in **Table 10.7** along with a description of their current classification status (i.e. whether they are in a good or poor state).

Table 10.7: Groundwater bodies (classified by SEPA under WFD) within the Study Area

Groundwater body	WFD ID	Status of Groundwaters (assessed for overall status) 2023 as shown on Water Classification Hub ⁶⁰
Beaully Coastal	150784	Good
Muir of Ord	150619	Poor
Northern Highlands	150701	Good
Inverness and Ardersier Coastal	150807	Good
Inverness	150670	Good
Strathnairn, side and Cairngorms	150709	Good
Findhorn and Muckle Burn Sand and Gravel	150812	Good
Upper Lossie Sand and Gravel	150765	Good
Lossiemouth Coastal	150813	Poor
Elgin	150637	Poor
Fochabers	150609	Good
Spey Coastal	150804	Good
Keith	150656	Good
Huntly	150671	Good
Ellon	150676	Poor
Turriff	150600	Good
New Blyth	150454	Good
Mintlaw	150655	Good

10.4.28 According to BGS GeoIndex Onshore Hydrogeology 1:625,000 mapping⁶⁴, the Study Area is underlain by:

- Appin group, Argyll group, Glenfinnan group, Grampian group, Moine group, Southern Highland group, unnamed igneous intrusion (late Silurian to early Devonian), unnamed igneous intrusion (Neoproterozoic) and unnamed igneous intrusion (Ordovician to Silurian), low productivity aquifers (class 2C), which typically maintain small amounts of groundwater near the surface weathered zone and secondary fractures.
- Lower Old Red Sandstone, Middle Old Red Sandstone (undifferentiated) and Upper Old Red Sandstone, moderately productive aquifers (class 2B).

⁶⁴ BGS GeoIndex Onshore Viewer for Hydrogeological map of Scotland (2020). [online] Available at: http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap&_ga=2.59199725.1532853921.1644263485-96331536.1635767367

- 10.4.29 On account of the aquifers low and medium productivity and likely limited vertical and lateral extent, groundwater is considered to be of Medium sensitivity. The potential importance of groundwater to surface water baseflow or PWS and GWDTE is recognised in both of these receptors being afforded Medium or High sensitivity depending on their size (see PWS and GWDTE items).

Designated Sites

- 10.4.30 Designated Sites in relation to the water and geological environment which are of regional, national, or international importance in the Study Area are detailed in **Table 10.8**, identified with reference to NatureScot Sitelink⁶⁵. The designated sites are displayed in **Figure 8.1: International Designated Sites** and **Figure 8.2: National Local / Non-statutory Designated Sites** which supports **Chapter 8: Ecology**. Each of these receptors are designated sites protected under national or international legislation, such as SSSI, SAC, SPA or GCR therefore they have been assessed as having a High sensitivity.

Table 10.8 Designated Sites within the Study Area

Designated Site Name	Description	Hydrological connection to the Proposed Development
Torvean Landforms SSSI / Torvean GCR	Torvean Landforms SSSI lies on the southwestern edge of Inverness and straddles the A82 Inverness – Drumnadrochit road as far south as Dochgarroch. It is an important site for Quaternary geomorphology (less than 10 million years old) containing an excellent range of fluvioglacial landforms (deposited by meltwater) comprising kame terraces, eskers and kettleholes.	The Torvean Landforms SSSI / GCR is crossed by four proposed towers, four proposed temporary floated access tracks and one existing access track upgrade. The existing Beauly to Knocknagael 132 kV OHL will be decommissioned and dismantled. The existing OHL passes through the Torvean Landforms SSSI, with a total of five towers located within the SSSI. On this basis, it is screened in .
Moniack Gorge Site of Special Scientific Interest (SSSI)/Special Area of Conservation (SAC)	Qualifying Interests for which the site is designated, are Woodlands: Upland mixed ash woodland and Lichen assemblage. Part of this site has been identified as wet heath on the Scottish Wetland Inventory ⁶⁶ .	The Moniack Gorge SSSI / SAC is located 410 m southwest and upslope of the nearest proposed tower and therefore is considered not to be hydrologically connected. On this basis, it is screened out .
Dalcharn GCR	The sequence of sediments exposed in the stream sections at this site includes interglacial organic deposits which are both underlain and overlain by till. Although the deposits are undated, the sequence is remarkable for the detail of information it has yielded on the Quaternary history of the Inverness area and the potential it holds for providing further elaboration of this record ⁶⁷ .	The Dalcharn GCR is located 280 m northeast and downslope of an existing access track upgrade and 550 m northwest and downslope of the nearest proposed tower. However, given the nature of the geomorphological designation and considering the GCR is sited outside of the LoD, the Dalcharn GCR is highly unlikely to be impacted by the Proposed Development. On this basis, it is screened out .

⁶⁵ NatureScot (2021) Sitelink [online] Available: <https://sitelink.nature.scot/map>

⁶⁶ Scotland's Environment map [online]. Available at: <https://map.environment.gov.scot/sewebmap/?layers=scotWetlandInven> [Accessed October 2024]

⁶⁷ Joint Nature Conservation Committee (JNCC). Volume 6: Quaternary of Scotland, Chapter 7: Inverness area Site: DALCHARN (GCR ID: 3046). Available at: <https://jncc.gov.uk/jncc-assets/GCR/gcr-site-account-3046.pdf>

Designated Site Name	Description	Hydrological connection to the Proposed Development
Dalroy and Clava Landforms SSSI / Clava GCR	This fluvio-glacial landform is located on the southeastern side of the Nairn Valley 9 km to the east of Inverness. It is a series of terraces consisting of deep glacial deposits. This site is notified for Quaternary geology and geomorphology.	The Dalroy and Clava Cairns SSSI / GCR is crossed by two existing access tracks upgrades and 850 m north and downslope of the nearest proposed tower. On this basis, it is screened in .
Teindland Quarry SSSI / Geological Conservation Review (GCR)	The Teindland Quarry, located 10 km southeast of Elgin, is a key site for interpreting and dating Quaternary events and environmental change in Scotland. Notified natural features are Quaternary geology and geomorphology. Teindland Quarry is one of only a few sites in Scotland with deposits dating from the Last Interglacial. It is therefore a site of outstanding importance for establishing the sequence of events and environmental changes that occurred in Scotland during the Late Quaternary.	The Teindland Quarry SSSI / GCR is located 530 m southeast and at the same elevation as the nearest proposed tower. Given that it is geomorphological designation, which is sited outside of the LoD, the Teindland Quarry SSSI / GCR is considered unlikely to be impacted by the Proposed Development. On this basis, it is screened out .
Coleburn Pasture SSSI	Coleburn Pastures is located 7 km south of Elgin on the slopes of Brown Muir. It is designated for lowland acid grassland. It mainly comprises acidic grasslands of sheep's fescue <i>Festuca ovina</i> and common bent <i>Agrostis capillaris</i> or mat-grass <i>Nardus stricta</i> . The site is also part of a larger area of wet grassland, based on the Scottish Wetland Inventory ⁵⁷ .	The Coleburn Pasture SSSI is situated adjacent to a proposed new permanent culvert and is located 110 m southwest and at the same elevation as the nearest proposed tower. There are also three proposed towers situated within the larger area of wet grassland and therefore the Coleburn Pasture SSSI is considered to be hydrologically connected to the Proposed Development. On this basis, it is screened in .
Buinach and Glenlatterach SSSI	Buinach and Glenlatterach SSSI is located 10 km south of Elgin. It includes 3.5 km of the River Lossie and Leanoich Burn and adjacent semi-natural habitats, between 75 m and 150 m above sea level. Notified natural features are woodland and lowland heathland.	The southern part of the Buinach and Glenlatterach SSSI is located 110 m north and downslope of the nearest proposed tower. Also, Leanoich Burn – upper catchment, which flows into Glenlatterach Reservoir and continues through the SSSI site, is crossed by the Proposed Development; therefore, it is considered to be hydrologically connected to the Proposed Development. On this basis, it is screened in .
River Spey SSSI / SAC	The River Spey rises above Loch Spey in the Monadhliath Mountains and flows in a northeasterly direction, by Aviemore and Grantown-on-Spey, to its mouth at Spey Bay in the Moray Firth. It is the second largest river in	The River Spey SSSI / SAC is crossed by the Proposed Development. The River Spey is situated 30 m east and at the same elevation as the nearest proposed tower

Designated Site Name	Description	Hydrological connection to the Proposed Development
	Scotland and exhibits the characteristics of an alpine river with high flow levels often associated with snow melt persisting late into spring. Qualifying Interests for which the site is designated, are: Atlantic salmon (<i>Salmo salar</i>), sea lamprey (<i>Petromyzon marinus</i>), freshwater pearl mussel (<i>Margaritifera margaritifera</i>) and otter (<i>Lutra lutra</i>).	and therefore is considered to be hydrologically connected. On this basis, it is screened in .
Mortlach Moss SSSI / SAC	Mortlach Moss is located 5 km north of Huntly, on the margins of Bin Forest. This site is designated for base-rich fens.	The Mortlach Moss SSSI / SAC is located 600 m south and slightly upslope of the nearest proposed tower and therefore is considered not to be hydrologically connected to the Proposed Development. On this basis, it is screened out .
Whitehill SSSI	Whitehill is located 6 km north of Huntly at an altitude of 180 m and comprises the western slope of White Hill down to the valley floor of the Burn of Hogston. Notified natural features are fens (fen meadow and valley fen) and lowland grassland (lowland acid grassland, lowland calcareous grassland, and lowland neutral grassland). It also comprises wetlands, springs, flushes, and seepages, based on the Scottish Wetland Inventory ⁵⁷ .	The Whitehill SSSI is located 350 m north and downslope of the nearest proposed tower and therefore is considered to be hydrologically connected to the Proposed Development. On this basis, it is screened in .
Den of Pitlurg SSSI	The Den of Pitlurg is located 5 km to the south of Keith. It comprises a narrow meltwater channel extending for 3 km. The floor of the den contains wet fen vegetation which is floristically very rich whilst the adjacent steep slopes, part of an ancient woodland site, support birch and hazel woodland. The site is designated for upland birch woodland and valley fen.	The Den of Pitlurg SSSI is located 900 m southwest and downslope from the nearest proposed tower and therefore is considered to be hydrologically connected to the Proposed Development. On this basis, it is screened in .

Wetlands

- 10.4.31 Based on the Scottish Wetland Inventory⁵⁷ there are numerous wetlands within the Study Area and within the LoD. For the purpose of this EIA report, **Appendix 10.7 Detailed Hydrological and Hydrological Baseline report** lists the wetlands that are in close proximity to proposed infrastructure (i.e. 10 m from proposed towers and tracks), which are considered further within this Chapter (see **Figure 10.7.7 SEPA Wetlands** within **Appendix 10.7**). The non-designated wetlands identified on the Scottish Wetland Inventory (which are not part of a SSSI, SAC or SPA) have been assessed as having a Medium sensitivity.

Water Supplies

Private Water Supplies

- 10.4.32 PWS information was obtained from THC, MC and AC between February and May 2024. Detailed assessment of these PWS is presented in **Appendix 10.6: Private Water Supply Risk Assessment** in accordance with SEPA's guidance (SEPA, 2024⁴³)⁴³ on assessing the impacts of any potential infrastructure.
- 10.4.33 **Appendix 10.6: Private Water Supply Risk Assessment** identifies a total of 273 supplies; comprising of 26 in THC, 60 in MC and 187 in AC (displayed geographically on **Figure 10.6.1: Private Water Supplies**).
- 10.4.34 The list of PWS was screened to determine the potential to be impacted, based on the source-pathway-receptor (S-P-R) framework, discussed within **Appendix 10.6: Private Water Supply Risk Assessment**. The screening has been undertaken using baseline conceptual information presented in this Chapter, including topography, hydrology, and hydrogeology context. The screening also took into account information obtained via direct consultation with PWS users (via questionnaires), as well as site walkover surveys undertaken between July 2024 and February 2025. Where source locations could not be fully confirmed by questionnaires and / or site visits, these have been based on national grid coordinates provided by the relevant council.
- 10.4.35 The screening identified that from the 274 PWS which were initially considered, 110 required further assessment as part of **Appendix 10.6: Private Water Supply Risk Assessment**. The sensitivity of these potential receptors is summarised in **Table 10.10**.

SEPA Registered Activities

- 10.4.36 Based on the register of CAR authorisations provided by SEPA, there are 24 registered abstractions within the Study Area, nine of which have been screened in to the assessment due to a potential hydrological connection with the Proposed Development. These abstractions are considered in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** and illustrated in **Figure 10.7.1: SEPA CAR Abstractions, Scottish Water Abstractions and SEPA Drinking Water Protection Areas**. The sensitivity of these potential receptors is described in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** and summarised in **Table 10.10**.

Public Water Supplies

- 10.4.37 The Study Area intersects a number of Drinking Water Protection Areas (DWPA) which include Glenlatterach Reservoir, Spey Wellfield Abstraction Scheme (also known as the Dipple Wellfield), Herricks and Birken Burn, the River Deveron, Patties Croft and the River Ugie. **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** and **Figure 10.7.1: SEPA CAR Abstractions, Scottish Water Abstractions and Drinking Water Protection Areas** presents relevant information on the DWPA and their associated Scottish Water public water supply abstractions as part of an initial screening assessment.
- 10.4.38 The surface water abstraction sources include Glenlatterach Reservoir, Herricks Burn and Birken Burn, River Deveron and River Ugie DWPA. The operational public water supplies within Glenlatterach Reservoir, Herricks Burn and Birken Burn are all identified as having a potential hydrological connection with the Proposed Development and have been screened in for further assessment as part of this Chapter. The River Deveron and the River Ugie DWPA do not have any operational abstractions within the Study Area, however, they have also been screened in as part of a precautionary approach.
- 10.4.39 The groundwater abstraction sources include the Spey Wellfield Abstraction Scheme and Patties Croft. The public water supply receptor near Spey Wellfield Abstraction Scheme comprises a ~3 km linear wellfield adjacent to the River Spey that includes 36 production boreholes. There are three proposed tower locations situated within the indicative extent of the superficial aquifer, approximately 385 m directly upgradient and to the south (CB14-1B), 440 m (CB12-16A) and 703 m (CB12-15A) cross gradient and to the southwest from the nearest abstraction borehole, respectively. On the basis of the baseline conceptual information, the Scottish Water Spey Wellfield Abstraction Scheme has been screened in for further assessment in this Chapter. The Patties Croft public water

supply located within the River Isla sub-catchment of the River Deveron has been screened out, due to a lack of hydrogeological connectivity with the Proposed Development.

- 10.4.40 Each of the Scottish Water public water supplies which have been screened in for further assessment have been assessed as having a High sensitivity.

Groundwater Dependant Terrestrial Ecosystems (GWDTE)

- 10.4.41 GWDTE are wetlands which critically depend on groundwater flows and / or chemistries and are specifically protected under the WFD.
- 10.4.42 In order to identify these, analysis of the UK Habitat Survey findings (see **Chapter 8: Ecology** and **Figure 8.1.2: UK Habitat Survey Results**) were initially cross referenced in accordance with SEPA Guidance on Assessing the Impacts of Development Proposals on Groundwater Dependent Terrestrial Ecosystems⁴².
- 10.4.43 The SEPA (2024) guidance states that assessment of potential GWDTE is required where these are situated within 100 m of excavations less than 1 m in depth, or within 250 m of excavations greater than 1 m in depth. Based on this, all potential GWDTE within 250 m of the LoD have been considered.
- 10.4.44 The information presented in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** evaluates if there is a likely groundwater dependency as a baseline condition across the Proposed Development to support GWDTE.
- 10.4.45 Groundwater dependency for these potential GWDTE areas has been assessed through consideration of possible water supply mechanisms based on local topography, underlying geology, and the potential for surface water contributions to habitats. This supporting information is displayed on **Figures 10.7.2: Potential GWDTE and Bedrock Geology, 10.7.3: Potential GWDTE and Superficial Geology, 10.7.4: Potential GWDTE and Groundwater Indicators, 10.7.5: Potential GWDTE and Surface Water Indicators** and **10.7.6: Screening of Potential GWDTE** for reference. NVC surveys were also carried out as detailed in Annex B of **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** and the information is summarised in the main report. A number of GWDTE were identified as having groundwater conditions which are likely to be highly and moderately groundwater dependant. These habitats have been assigned a sensitivity value of 'High' and 'Medium' respectively.
- 10.4.46 The GWDTE information from the screening study in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** is summarised in the Sensitive Receptors section within **Table 10.10**.

Flooding

- 10.4.47 The Flood Risk Assessment (**Appendix 10.8: Flood Risk Assessment**) provides detailed information on all sources of flood risk in relation to the Proposed Development.
- 10.4.48 SEPA defines areas with a 'High' likelihood of flooding as being land within which a fluvial, coastal, or pluvial flood event is likely to occur in the defined area on average once in every ten years (1:10); or a 10 % chance of occurrence in any one year.

Fluvial and Surface Water Flood Risk

- 10.4.49 The Study Area contains areas of high risk of river flooding and surface water flooding, based on SEPA indicative flood risk mapping⁶⁸.

⁶⁸ SEPA Interactive Flood Risk Mapping (2024) [online]. Available at: <https://www.sepa.org.uk/environment/water/flooding/flood-maps/>

10.4.50 The Proposed Development areas subject to a high likelihood of flooding from water bodies are identified in **Table 10.9** and displayed on **Figure 10.8.1: Fluvial Flood Risk** and **Figure 10.8.2: Surface Water Flood Risk** within **Appendix 10.8**. It is important to note that SEPA Flood Maps do not account for watercourses with catchment areas below 3 km², therefore, additional areas of concern may occur in smaller catchments or headwater zones.

Table 10.9: Likelihood of flooding from rivers and surface water within the Study Area

Type of Flooding	Likelihood	Water Body Name(s) (and Summary of Proposed Infrastructure within flood extent)
River	High	• River Beaully – one proposed tower including a temporary working area and temporary track within floodplain; • Moniac Burn - five proposed towers including temporary working areas, temporary track and existing track upgrades within floodplain; • River Ness - one proposed tower working area within floodplain; • Tributaries of the River Findhorn - part of five proposed tower working areas and sections of temporary track within floodplain; • Tributary of River Lossie - a proposed tower including a temporary working area and three other tower working areas and sections of temporary track; • River Spey and a tributary - six proposed towers including temporary working areas and sections of temporary track within floodplain; • River Isla - two proposed towers including temporary working areas and a section of permanent track within floodplain); • River Deveron and its tributaries such as Burn of Turriff and Idoch Water - four proposed towers including temporary working areas, an additional temporary working area and sections of temporary and permanent track within floodplain; • Tributary of the River Ythan - a proposed tower and its associated working area within floodplain; and • Tributary of the River Ugie - two proposed towers including temporary working areas and a section of temporary track within floodplain.
Surface	High	There are multiple small pockets of surface water flooding across parts of the Proposed Development (many of which are positioned along the river floodplains already identified above). Other more notable areas include: • Tributaries of Moniac Burn, Conan Water and various ditches - surface water flood risk extent encompasses a proposed tower working area and temporary section of track; • A headwater tributary of Muckle Burn and convergence of ditches near Clunas Moss - surface water flood extent encompasses a proposed tower and its working area; and • Topographic low points across fields in the South Ugie catchment - surface water flood extent encompasses a proposed tower and its working area.

10.4.51 Due to the nature of flood likelihood being 'high' at the noted sections, the associated sensitivity for the Proposed Development (including tower locations) is therefore classified as High⁶⁹ within **Table 10.10**.

Groundwater

10.4.52 Groundwater flooding occurs when the water table rises from underlying rocks or from springs and is often classified as a contributing factor to flooding rather than the primary source.

⁶⁹ It is recognised that the High sensitivity is considered to be a conservative approach and does not represent the majority of the Proposed Development.

- 10.4.53 Given the nature of the Proposed Development, the towers would not be susceptible to be flooded from groundwater. If groundwater were to emanate, it is expected water would follow the overland flow paths or sit in low points in the landscape until it saturates back into the ground.
- 10.4.54 The groundwater flood risk to the Proposed Development is considered to be 'Low Risk'. It is assumed that as part of detailed design and prior to construction ground investigation would be undertaken to determine the suitability of the ground for determining construction methodology, such as piling depth. On this basis, sources of groundwater flood risk have been scoped out from further assessment within this Chapter.

Sewer

- 10.4.55 Sewer flooding occurs as a result of a number of influencing factors. It is most likely to occur during storms when large volumes of rainwater enter the sewers. However, it can also occur when pipes become blocked or damaged.
- 10.4.56 Due to the nature of development in non-urban areas, there is likely to be a limited sewer network. The presence and location of any sewers will be determined during the detailed design stage through public utility searches and ground investigations. In the event of a sewer leak, water would spill out the sewer and follow overland flow paths. The Proposed Development would not be disrupted by this flooding, nor would it alter flow paths in a way that increases flood risk elsewhere.
- 10.4.57 The sewer flood risk to the Proposed Development is considered to be 'Low'. On this basis sources of sewer flood risk have been scoped out from further assessment in this Chapter.

Coastal

- 10.4.58 The Proposed Development is located approximately 9 km inland at an elevation of 30 mAOD. As such, SEPA Flood Maps show that there is no coastal flood risk and therefore coastal flood risk has been scoped out from further consideration.

Artificial sources

- 10.4.59 The Proposed Development is not within risk of flooding from any controlled reservoirs and is not hydrologically connected to any canal network and therefore artificial sources of flood risk have been scoped out from further consideration.

Fisheries

- 10.4.60 The assessment for fisheries is included in **Chapter 8: Ecology** and is not considered further within this Chapter.

Kellas Alternative Alignment

- 10.4.61 The Kellas Alternative Alignment has been captured within the Study Area and the water and geological desktop and survey information, as set out in **Section 10.4: Baseline Conditions** above.

Future Baseline

- 10.4.62 Without the Proposed Development proceeding, it is considered that current land uses would continue and the main change to the future baseline would be as a result of climate change.

- 10.4.63 Climate change studies predict a decrease in summer precipitation and an increase in winter precipitation alongside slightly higher annual average temperatures⁷⁰. This suggests that there may be greater pressures on PWS, and impacts on GWDTE, in summer months in the future. Summer storms are predicted to be of greater intensity; therefore, peak fluvial flows associated with extreme storm events may also increase in volume and velocity.
- 10.4.64 Without the Proposed Development, the morphology and hydrological regime of watercourses within the Operational Corridor of the Proposed Development are likely to continue in their current form, although altered rainfall patterns may alter geomorphological processes such as erosion or deposition features in specific channels. There is likely to be the ongoing management of existing forests (e.g. rotational felling) (see **Chapter 12: Forestry**) within the Study Area, which would be undertaken in accordance with the UK Forestry Standard⁷⁵ to minimise erosion and other adverse impacts on soils, watercourses and water quality.
- 10.4.65 Peat and peatlands are generally in a degraded condition⁷¹ and this would be exacerbated by the effects of climate change, with increasing frequency of high intensity rainfall events triggering greater levels of erosion. However, there are current initiatives such as Peatland ACTION⁷² that are actively seeking to identify and provide funding to restore degraded peatland across Scotland, if enacted locally, these could improve future peat conditions.

Receptor Sensitivity

- 10.4.66 **Table 10.10** summarises the receptor sensitivity, which has been assessed based on the sensitivity criteria (**Table 10.2**), which was provided in **Section 10.2**.

Table 10.10: Sensitivity of Receptors

Receptor	Sensitivity	Justification
Surface Water (River Catchments as listed in Table 10.5)	High	The condition of watercourses along the Proposed Development ranges from bad to moderate to good status. Therefore, the sensitivity of river catchments ranges from low to high. For the basis of this assessment, as part of a precautionary approach, all surface waters (rivers and tributaries) will be assessed as high sensitivity receptors.
Flooding (fluvial) Construction workers, local residents, third parties and nearby developments (Outlined in Appendix: 10.8: Flood Risk Assessment and Table 10.9).	High	Various floodplains and surface water flood risk areas (classed as 'high risk' on SEPA mapping) have been identified adjacent to watercourses crossed by the Proposed Development (see Table 10.9).
Designated sites - River Spey SSSI / SAC - Whitehill SSSI	High	Receptors are designated site protected under national or international legislation, such as SSSI, SAC, or SPA.

⁷⁰ UKCP18 Derived Projections of Future Climate over the UK (2018). Available at: <https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Derived-Projections-of-Future-Climate-over-the-UK.pdf>

⁷¹ IUCN Peatland and climate change. Available at: <https://iucn.org/resources/issues-brief/peatlands-and-climate-change#:~:text=Degradation%20and%20overexploitation%20of%20peatland,burning%2C%20and%20mining%20for%20fuel.>

⁷² Peatland ACTION, NatureScot [online]. Available at: <https://www.nature.scot/climate-change/nature-based-solutions/nature-based-solutions-practice/peatland-action>

Receptor	Sensitivity	Justification
• Den of Pitlurg SSSI • Coleburn Pasture SSSI • Buinach and Glenlatterach SSSI • Dalroy and Clava Landforms SSSI / Clava GCR • Torvean Landforms SSSI / Torvean GCR		
GWDTE Potential GWDTE screened in (in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report)	High Medium	Potential GWDTE which are considered to be highly groundwater dependent (those potential GWDTE which are assigned a relative groundwater dependency score of 4 or 5 in the screening within Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report). Potential GWDTE which are considered to be moderately groundwater dependent (those potential GWDTE which are assigned a relative groundwater dependency score of 3 in the screening within Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report).
Groundwater bodies (as listed in Table 10.7)	Medium	On account of the aquifers low and medium productivity and likely limited vertical and lateral extent, groundwater is considered to be of Medium sensitivity. The potential importance of groundwater to surface water baseflow or PWS is recognised in both of these receptors being afforded medium or high sensitivity depending on their size (see PWS item).
Scottish Water Public Water Supply abstractions Screened in for further investigation (in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report)	High	It has been confirmed that the Proposed Development crosses and has potential hydrological and hydrogeological connectivity with five DWPA, including Glenlatterach, River Spey, Birken and Herricks Burn, River Deveron, and River Ugie, as well as the Spey Wellfield Abstraction Scheme.
SEPA CAR abstractions Screened in for further investigation (in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report)	High	Abstraction serving public / private abstractions for ≥ 10 properties. This relates to Aultmore (CAR/L/1011442) and Glendronach (CAR/L/1011007) distilleries only due to the scale of these receptors and the importance of water use in the distilling process, as noted in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report .
	Medium	Abstraction serving <10 properties. This includes CAR/R/1186191 for precautionary reasons as the authorisation activity is unknown as identified in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report .

Receptor	Sensitivity	Justification
	Low	Abstraction used for agricultural / industrial use. These include CAR/R/1115484, CAR/R/1109864, CAR/L/1004664, CAR/L/1100905, and CAR/R/1114347 as noted in Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report .
PWS Screened in for further investigation (in Appendix 10.6: Private Water Supply Risk Assessment)	High	PWS used for abstraction or storage for large private water supply serving ≥ 10 properties. These include ID 10, 44 – 49B, 67 and 70 as identified within Appendix 10.6: Private Water Supply Risk Assessment .
	Medium	PWS used for abstraction or storage for private water supply serving < 10 properties. This relates to the majority of PWS identified in Appendix 10.6: Private Water Supply Risk Assessment .
	Low	PWS used for agricultural / industrial use. This relates only to PWS ID: 122.
Peat Deposits (in Appendix 10.1: Peat Depth Survey Report)	High	9.09% of the survey area that was probed was on land with peat > 1 m in depth.
	Medium	7.65% of the survey area that was probed was on land with peat > 0.5 m and up to 1 m in depth.
	Low	83.26 % of the survey area that was probed was on land with no (< 0.5 m in depth).
Peat Stability (in Appendix 10.3: Peat Landslide Hazard and Risk Assessment)	Negligible to Low	Likelihood of landslides for the majority of surveyed LoD footprint is considered Low or Negligible.
	Medium	A fraction of surveyed LoD area is considered to pose a increased level of likelihood for landslides, due to steep slopes and isolated pockets of deep peat present.

Issues Scoped Out

- 10.4.67 Key drivers of the scoping out process were the adoption of good practice measures for design and construction phases of the Proposed Development, including embedded mitigation. After taking account of the above factors, the following effects were considered to be unlikely to be significant and thus were scoped out from assessment:
- mobilisation of contaminated soil / bedrock has been scoped out, given that contaminated soil is unlikely to be present along the Proposed Development due to its historical and present rural land use as reported within the Soils baseline information (**Historical Land Use and Contaminated Land**) of this Chapter and **Appendix 10.5.2: Phase 1 Environmental Assessment – Longside Airfield Interface with Proposed Development**;
 - pollution of surface watercourses and impact of pollution on fisheries and groundwater; including from suspended sediment in surface water bodies, hydrocarbon and oil pollution;
 - impact on watercourses and standing waters, including impacts to groundwater levels from any dewatering required;
 - soil erosion, compaction and excavation losses during access or construction;

- groundwater flood risk has been scoped out from further consideration, as the Proposed Development would not be susceptible to be flooded from groundwater;
- sewer flood risk has been scoped out from further consideration, as there is likely to be a limited sewer;
- coastal flood risk has been scoped out for further consideration, as the Proposed Development is located approximately 9 km inland at an elevation of 30 mAOD and therefore there is no coastal flood risk; and
- artificial sources of flood risk have been scoped out for further consideration, as the Proposed Development is not within risk of flooding from any controlled reservoirs and is not hydrologically connected to any canal network.

10.5 Assessment of Likely Significance of Effects

Embedded Mitigation - Overview

- 10.5.1 Detailed constraints advice was provided during the iterative layout design process for the towers and associated infrastructure. At various stages, during the determination of the design, fieldwork was undertaken to provide feedback to inform the design team. This iterative design process has included seeking to use existing access tracks and to avoid locating infrastructure at hydrologically and / or geologically sensitive areas, wherever practicable.
- 10.5.2 In addition to the mitigation embedded in the design and routeing of the Proposed Development, best practice construction measures have also been developed to avoid (or reduce) the potential for pollution incidents to occur and for the severity of any incidents that do occur to be reduced in scale and / or timeframe of effect.
- 10.5.3 A description of all elements of the Proposed Development is given in **Chapter 3: Project Description**. Embedded mitigation and mitigation by design relevant to the water environment is presented below.

Good Practice Measures – GEMPs and CEMP

- 10.5.4 The Proposed Development will be constructed in accordance with good practice guidance, including UK and Scottish guidance on good practice for construction projects as detailed in **Section 10.2** of this Chapter.
- 10.5.5 In addition, the Applicant has established good industry practice construction techniques and procedures. These are set out within the Applicant's GEMPs included in **Appendix 3.5: General Environmental Management Plans**. The Proposed Development will be constructed in accordance with these plans.
- 10.5.6 A contractual management requirement of the Principal Contractor would be the development and implementation of a comprehensive and site-specific CEMP which will follow the principles set out in the Outline CEMP presented in **Appendix 3.3: Outline 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 EIA Report, the Applicant's GEMPs, statutory consents and authorisations, and industry guidance, including pollution prevention guidance.
- 10.5.7 The GEMPs (**Appendix 3.5: General Environmental Management Plans**) applicable to this Chapter are:
- Working In or Near Water GEMP;
 - Working In Sensitive Habitats GEMP;
 - Working with concrete GEMP;
 - Watercourse Crossings GEMP;
 - Private Water Supplies GEMP;
 - Forestry GEMP;
 - Contaminated Land GEMP;
 - Soil Management GEMP; and

- Bad Weather GEMP.

10.5.8 The CEMP will also outline measures to ensure that the works minimise the risk to groundwater, surface water, PWS, DWPA's and licensed water uses in accordance with good practice guidance. Appropriate measures will include but not be limited to the following:

- 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 Guidance for Pollution Prevention³²;
- refuelling would take place at least 50 m from watercourses and where possible it would not occur when there is a greater risk that hydrocarbons from a spill could directly enter the water environment. For example, periods of heavy rainfall or when standing water is present would be avoided;
- areas would be designated for washout of vehicles which are a minimum distance of 50 m from a watercourse;
- washout water would also be stored in the washout area before being treated and disposed of;
- any above ground on-site fuel and chemical storage would be bunded (GPP26³⁴);
- emergency spill response kits would be maintained during the construction works, including at various locations across this large linear project (GPP 21³³);
- a vehicle management system, including speed limits, would be put in place wherever possible to reduce potential collisions between vehicles (GPP 21³³);
- suitable access routes would be chosen which minimise the potential requirement for either new temporary access tracks or for tracking across open land, reducing potential generation of suspended solids in run-off;
- plant nappies would be placed under stationary vehicles which could potentially leak fuel / oils;
- any temporary construction / storage compounds would be located remote from surface water receptors and will be constructed to manage surface water run-off in accordance with best practice;
- vegetation clearance, and time period during which bare ground it is exposed, would be kept to a minimum;
- appropriate cut-off (interception) drainage will be employed to manage and seek to avoid / reduce surface flows entering excavations such as tower foundations, these would be installed in advance of the main works;
- clean and dirty water on-site would be separated and treated appropriately;
- sediment-laden run-off would pass through a number of settlement lagoons and silt / sediment traps to remove silt to an acceptable level, prior to discharge into the surrounding drainage system;
- silt / sediment traps, single size aggregate, geotextiles or straw bales would be used to filter any coarse material and prevent increased sediment load, prior to and within watercourses. Further to this, activities involving the movement or use of fine sediment would avoid periods of heavy rainfall where possible;
- any water contaminated with chemicals would not be discharged directly or indirectly to a watercourse without prior treatment, contaminated water that cannot be adequately treated shall be collected and removed to an approved facility;
- construction compounds shall be secure to prevent unauthorised access / vandalism that could cause pollution, with appropriate storage and bunding of liquid materials liable to cause pollution;
- construction compounds shall not be located on flood plain;
- all stockpiled soil or peat materials would be located outwith a 50 m buffer zone from watercourses;
- if soil or peat material is stockpiled on a slope, cut-off ditches would be installed upslope, with silt fences located at the toe of the slope to reduce sediment transport;
- any stockpiles on slopes shall take account of peat stability risk, to both avoid exacerbating risk and also potential for local instability to cause stockpiled material to affect sensitive receptors (such as watercourses);

- 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 with SEPA General Binding Rules, or an authorisation would be obtained from SEPA in accordance with the CAR;
- foul water would either be collected in a tank and collected for off-site disposal at an appropriately licensed facility or discharged to a septic tank or soakaway in accordance with CAR;
- a plan for dealing with spillage incidents would be designed prior to construction, and this would be adhered to should any incident occur, reducing the effect as far as practicable. This would be included in the final CEMP for the Proposed Development; and
- the requirement for the use of appropriate Personal Protective Equipment (PPE), particularly when handling soils and working in areas of historical land use where there is a potential risk of contamination.

- 10.5.9 A wet weather protocol will be developed. This will detail the procedures to be adopted by all staff during periods of heavy rainfall. Toolbox talks would be given to engineering / construction / supervising personnel. Roles would be assigned, and the inspection and maintenance regimes of sediment and run-off control measures would be adopted during these periods. In extreme cases, the protocol would dictate that work on-site may have to be temporarily suspended until weather / ground conditions allow.
- 10.5.10 The CEMP will also be accompanied by Site Specific Environmental Management Plans (SSEMP) where appropriate to provide detail on how mitigation will be delivered during the construction of specific site areas (e.g. see Torvean Landforms further below).
- 10.5.11 Further consultation with Scottish Water is required prior to construction to identify any Scottish Water assets which require protection. Should any such assets be identified, specific mitigation measures will be developed and will be agreed with Scottish Water. Scottish Water good practice guidance for construction and land management practices in DWPA⁷³ will be adhered to and included in the CEMP.
- 10.5.12 PWS and abstractions will require further investigation by the Principal Contractor prior to construction to verify the infrastructure location, supply type, properties supplied and their uses. Consultation will be required with property owners as part of this process and further unregistered supplies may be established. A Private Water Supply Monitoring Plan (PWSMP) will include a pollution response plan and contingency measures, detailing responsibilities, and lines of communication between the Principal Contractor, PWS users, and stakeholders. Contact details (land and mobile numbers / email addresses) for PWS users will be maintained by the Principal Contractor at all times.
- 10.5.13 In the event of an unforeseen impact on the existing PWS arising from the construction and operational impact of the Proposed Development, contingency measures will be implemented. These will include tiers of provisions to provide alternative water supplies on a temporary and permanent basis, including:
- demarcation, or fencing off of the PWS intake and / or storage tank to avoid accidental damage;
 - demarcation of the supply distribution route on the ground using wooden pegs (or similar) to avoid accidental damage; and
 - making site operatives aware of PWS and the sensitivity of the catchment through toolbox talks and site induction.
- 10.5.14 Pre-application consultation with SEPA will be required to identify potential CAR authorised activities associated within the Proposed Development in accordance with SEPA controlled activity regulations and the CAR Practical Guide⁴.

⁷³ Scottish Water (2024) List of Precautions for Drinking Water and Assets [Online]. Available at: <https://www.scottishwater.co.uk/about-us/energy-and-sustainability/sustainable-land-management/activities-within-our-catchments>

Environmental Advisor

- 10.5.15 To ensure all reasonable precautions are taken to minimise adverse effects on the water environment, a suitably qualified Environmental Advisor with support from other environmental professionals, as required, will be appointed by the Principal Contractor. This will occur prior to the commencement of construction, in order to advise the Applicant and the Principal Contractor on sensitive ecological and hydrological receptors and identify activities of particular concern.
- 10.5.16 The Environmental Advisor will be required to be present on-site during the construction phase and will carry out monitoring of works and briefings to the relevant Principal Contractor and subcontractor staff.
- 10.5.17 The Environmental Advisor will carry out regular visual inspections of watercourses to check for suspended solids in watercourses downstream of work areas and to ensure water flow paths and quality to water-dependent habitat are sustained during all phases of the Proposed Development. They would also have a responsibility to ensure cut-off drainage is installed ahead of excavation works or stockpiling activities.
- 10.5.18 The Environmental Advisor would be empowered to halt construction activities if these were not following environmental protocols or in any circumstance where it is apparent that foreseeable harm to the water environment may occur.
- 10.5.19 The Environmental Advisor would also be involved in any incident response and reporting procedures, to ensure lessons are learned to minimise chance of re-occurrence. This would include communication of background, outcomes, and remedial activities to statutory stakeholders, including SEPA.

Embedded Measures by Activity

Water Abstraction

- 10.5.20 Abstraction of water for construction activities is not anticipated. If, however, a source of water is required for construction, an application for a CAR Licence would be made to SEPA and managed through the regulation of the CAR Licence(s). Should a suitable source not be identified, a water bowser would be used.
- 10.5.21 Good practice that would be followed in addition to the CAR Licence regulations includes:
- water use would be planned so as to minimise abstraction volumes;
 - water would be re-used where possible;
 - abstraction volumes would be recorded; and
 - abstraction rates would be controlled to prevent significant water depletion to any source.

Watercourse Crossings

- 10.5.22 Where permanent new access tracks or watercourse crossings cannot be avoided, construction will be carried out in accordance with appropriate SEPA and CIRIA guidance, following the Applicant's watercourse crossing GEMP and methodologies to consider geomorphological, ecological and hydrological constraints. Suitable crossing methods would be developed and agreed with SEPA and detailed within a CEMP, with the watercourse crossing schedule to be developed and updated during detailed design and project progression.
- 10.5.23 **Appendix 10.9: Watercourse Crossing Schedule** contains a preliminary crossing schedule which indicates there are approximately 281 watercourse crossings (including 267 for accessing proposed works and 14 for accessing existing towers for dismantling) as displayed in **Figure 10.1: Hydrology and Watercourse Crossings**. The crossings would be sized and designed so as to minimise effect upon flood risk (e.g. sized to accommodate the 200 year flow in accordance with SEPA guidance⁷⁴). The design and capacity of the watercourse crossings would

⁷⁴ SEPA (2024) Controlled Activities Regulations (CAR) Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities. Available at: [car-flood-risk-standing-advice-for-engineering-discharge-and-impoundment-activities.pdf](https://www.sepa.org.uk/publications/controlled-activities-regulations-car-flood-risk-standing-advice-for-engineering-discharge-and-impoundment-activities.pdf)

be agreed by the Principal Contractor in consultation with SEPA as part of the detailed design. Other infrastructure will be sited outside of the SEPA watercourse buffers and flood risk areas, as far as practicable.

Watercourse Buffers

- 10.5.24 As part of the Proposed Development design, with the exception of the requirement for specific watercourse crossings for access purposes, a minimum buffer of 10 m around each loch, wetland or watercourse will be applied.
- 10.5.25 Based on SEPA scoping responses (as shown in **Table 10.1**), a Geomorphic Risk has been identified for several watercourses along the Proposed Development, whereby they have requested the following bespoke buffers:
- River Nairn – 40 m;
 - Riereach Burn – 20 m;
 - Muckle Burn – 35 m;
 - Red Burn – 10 m; and
 - River Findhorn – 45 m.
- 10.5.26 As part of their consultation feedback SEPA also requested a standard 20 m buffer for the following watercourses:
- Burn of Ludquharn;
 - Quhomery Burn;
 - Unnamed tributary of the Cock Burn south of Stuartfield;
 - Burn of Auchreddie;
 - Idoch Water;
 - Burn of Turriff;
 - Burn of Tollo;
 - Burn of Cobairdy; and
 - Burn of Cairnie.
- 10.5.27 Each of the recommended buffers have been accommodated as part of the Proposed Development. The only exception to this has been where temporary access is required to cross the Riereach Burn, Red Burn and Quhomery Burn. The proposed works will be installed for temporary access in line with good practice (GEMPs and CEMP). At the detailed design stage these crossings would be designed to minimise potential effects at each location and seek to reduce in-channel works, where practicable to do so, for instance employing arch culverts or bridges.
- 10.5.28 For other watercourses a 10 m buffer has been applied using the SEPA buffer dataset. Where this buffer has not been achieved it is reported in **Appendix 10.10: SEPA Watercourse Buffer Encroachment**. Tower working areas will be microsit during the detailed design stage to avoid these buffers where possible.
- 10.5.29 Further details have been provided in **Appendix 10.9: Watercourse Crossing Schedule** and **Appendix 10.10: SEPA Watercourse Buffer Encroachment**.

Micrositing

- 10.5.30 During the detailed design and construction phases, towers and associated infrastructure could be microsit within the LoD (as detailed in **Chapter 3: Project Description, Section 3.6**) to seek improved locations that avoid constraints, such as watercourses, peat or water supplies. Sections of track would be surveyed and microsit to optimise the design based on latest engineering and environmental data, taking into account local topography and local characteristics.

- 10.5.31 Tower foundations would be located and excavated wherever possible in the driest local locations with well consolidated superficial geology, with wetland areas to be generally avoided. Wherever possible tower locations will not be located within 20 m of waterbodies, and no tower construction will be located within 10 m of waterbodies. Wherever possible, towers would be located outwith floodplains to reduce potential effects on flooding.
- 10.5.32 Public water supplies may also lead to micrositing (Spey Wellfield Abstraction Scheme, Glenlatterach, and Herricks and Birken Burn).
- 10.5.33 Further information on PWS and peat instability micrositing is presented in **Appendix 10.6: Private Water Supply Risk Assessment** and **Appendix 10.3: Peat Landslide Hazard and Risk Assessment**, respectively. Sections of track would be surveyed and micrositied, to optimise the distances from the PWS, considering local topography and landscape characteristics.

Safeguarding of Carbon Rich Soils and Peat

- 10.5.34 As required by NPF4, a detailed review of the distribution and depth of peat at the Site is contained in **Appendix 10.1: Peat Depth Survey Report, Appendix 10.2: Peat Management Plan** and **Appendix 10.3: Peat Landslide Hazard and Risk Assessment**.
- 10.5.35 The Proposed Development design has applied the mitigation hierarchy detailed in Policy 5 of NPF4 and specifically avoided areas of deep peat, wherever practicable, taking account of other constraints.
- 10.5.36 The amount of excavated peat that is unable to be reused within the temporary infrastructure (3,147 m³) is relatively small and there may be opportunities to reduce this volume further through micrositing and also through the reuse of peat along the track verges. There is still, however, a need for identification of other peat restoration opportunities to achieve full peat reuse. If preferential restoration areas are identified that allow immediate translocation of excavated peat for greater benefit then these should also be undertaken in preference of peat reuse in temporary infrastructure which requires long periods of storage.
- 10.5.37 The Applicant has recently presented four alternative reinstatement strategies to NatureScot for agreement, including peat translocation to areas of eroded peat in the vicinity of the areas of excavated peat, within areas of cut peat, in ditches as part of ditch blocking efforts, and as part of forest to bog restoration.
- 10.5.38 The Applicant will seek further identification of the four peat restoration opportunities to achieve full peat reuse post-consent. The Peat Management Plan will be further updated using any additional survey data and detailed infrastructure design post consent. The detailed Peat Management Plan will be approved by the local authorities in consultation with SEPA as part of the CEMP pursuant to the imposition of a planning condition.
- 10.5.39 Good construction practice and methodologies to ensure safe handling of peat during construction are identified in **Appendix 10.2: Peat Management Plan**. These include:
- Principal Contractor will produce a detailed Method Statement for peat excavation and reinstatement, using the Peat Management Plan as baseline;
 - when stripping turf before construction, excavated materials (bedrock, mineral soils and organic soils (including peat) need to be stored in separate horizons to avoid cross contamination, with vegetation side up where encountered;
 - it is advised to limit the period of time excavated peat is in (temporary) storage to reduce drying of turfs and reduce carbon loss. Where possible, transfer of turfs immediately to adjacent receptor area for restoration. Store excavated peat in stockpiles to minimise carbon losses and keep moist;
 - should excavated material remain in storage for longer periods, classify excavated materials based on their reuse potential; and

- Principal Contractor will identify and agree design and location of suitable areas for stockpiling with relevant consultants, considering constraints and mitigation, including drainage, pollution prevention, and stability measures.

10.5.40 A Design and Geotechnical Risk Register would be compiled by the Principal Contractor to include risks relating to peat instability.

10.5.41 Notwithstanding any of the above good construction practice and methodologies, detailed design and construction practices would need to consider the particular ground conditions and the specific work planned at each location throughout the construction period. An experienced and qualified engineering geologist / geotechnical engineer would be appointed as a supervisor, to provide advice during the setting out, micro-siting and construction phases of the Proposed Development.

Torvean Landforms SSSI

10.5.42 Tower positions have been refined following consultation with NatureScot to avoid the key Torvean SSSI features of interest. The Applicant has provided detailed plans of the construction proposals and careful working methods to avoid impacting on the landform features. The findings from ground investigations and further detailed design studies will be used to help inform the final micro-siting of infrastructure such as access tracks, tower working areas and tower foundations within the SSSI. Any proposed micro-siting of infrastructure within the SSSI would be agreed in consultation with NatureScot.

10.5.43 A summary of the other proposed construction mitigation within Torvean Landforms SSSI is presented below and will be incorporated into a SEMP, to be developed in advance of the works and updated as required by the Principal Contractor as part of the CEMP.

Access Tracks

10.5.44 It is proposed that all construction access tracks within the SSSI will be floated rather than cut track, to minimise impact to ground conditions and designated features.

Tower Working Area Set Up

10.5.45 Site-specific tower working areas have been designed for each of the four proposed tower locations within Torvean Landforms SSSI. Each tower working area will comprise the following key components:

- a fenced-off working area, demarcated by temporary fencing to control access to the working area;
- temporary stoned construction areas within the working area, comprising the piling pad, crane pad and telehandler pads. These areas will be floated to minimise ground disturbance within the SSSI;
- creation of temporary laydown areas and welfare / storage / parking areas. These areas will not require to be stoned. Where ground is level, trackway matting may be utilised to spread the load across the ground. If the site is particularly sloped, laydown areas will be micro-sited as much as possible to reduce disturbance; and
- installation of drainage control measures to control run-off from site working areas and protect adjacent landform features (e.g. kettle holes) from sediment contamination. Various techniques will be installed to ensure siltation run-off is controlled within the working area, managed by the SEMP. The SEMP shall be briefed to all working parties including reporting requirements in the event of an incident arising. Materials and techniques deployed will be site-specific and dependant on risk (e.g. existing slope, interception ditches or existing drainage). Silt fencing and Sedi-Mats will be the preferred solution in the SSSI to minimise ground-breaking. Silt fencing will be hand-dug, if necessary, on the low side of tower working areas. As access and working areas are to be floated, hydrological connectivity should not be disrupted. However, if a drainage ditch is intercepted by the access track, placement of a small culvert may be required at existing ground level.

Foundation Installation

- 10.5.46 Foundation dimensions and types will vary dependant on a range of factors including tower types (suspension, angle, and terminal), ground conditions and environmental factors. The specific foundation type and size will be determined during the detailed design phase of the project to ensure the towers are sufficiently supported in line with the Applicant's design standards.
- Piled Foundation: For this location, a piled foundation solution is being proposed to minimise the excavation requirement within the SSSI. This will be confirmed following completion of the Ground Investigation works which will determine ground conditions and inform foundation detailed design;
 - Pad and Column Foundations: The alternative foundation type that can be used is a pad and column foundation. At present it is not anticipated that this type of foundation will be utilised within the SSSI, however, Ground Investigation works may determine piled foundations are not suitable for some or all towers.

Reinstatement

- 10.5.47 Following commissioning of the Proposed Development, all construction sites will be reinstated. Reinstatement will form part of the contract obligations for the Principal Contractor and will include the removal of all temporary access tracks, all work sites around the tower locations and the re-vegetation of all construction compounds etc. Reinstatement principles are detailed in the GEMPs.

Dalroy and Clava Landforms SSSI and GCR

Access Tracks

- 10.5.48 Any temporary or permanent access track upgrades required within the SSSI will be designed in consultation with NatureScot to ensure that the key features of interest are protected during construction. The findings from further detailed design studies, including more detailed topographic surveys and swept path analysis, will be used to help inform the final road widening requirements and any requirements for upgrades to the existing crossing of the Cassie Burn.
- 10.5.49 A site-specific method statement will be developed in agreement with NatureScot prior to commencement of construction within the SSSI, detailing:
- the full extent of road widening and access track upgrades required within the SSSI, overlain on a plan showing the extent of the landform features to be protected;
 - working methods to ensure the structural integrity of the landform features is protected, such as demarcating all areas to be avoided with temporary fencing and appropriate signage, and specific briefings provided to all site operatives working in the area of concern;
 - any requirements for upgrades to the existing bridge crossing of the Cassie Burn, together with measures to ensure that these works will not impact on the burn, banks and deposits in the vicinity of this crossing;
 - proposed access track reinstatement measures following commissioning of the Proposed Development.
 - A system of checks by the Principal Contractor's Environmental Advisor will be outlined in the method statement, so that the above measures can be successfully implemented and monitored during the works.
- 10.5.50 A record will also be kept of where any widening of the road has occurred within the SSSI which has resulted in the exposure of new deposits (e.g. where cutting is required into existing slopes). Locational details and photographs of newly exposed deposits will be provided to NatureScot following completion of the Proposed Development.

Water Quality Monitoring, for Watercourses, Designated Sites and DWPA

- 10.5.51 Water quality monitoring before, during and after the construction phase would be undertaken, to ensure that watercourses, designated sites, and DWPA downstream of the Proposed Development have no notable adverse change to water quality.

- 10.5.52 Monitoring will consist of visual observations, *in situ* testing and sample collection for lab analysis. Various monitoring activities would be carried out at specified frequencies (depending upon the construction programme locally) on these catchments, as agreed with statutory consultees, including local councils, NatureScot, fisheries boards and SEPA, with procedures contained within the CEMP.
- 10.5.53 The water quality monitoring outcomes during construction shall be reviewed in relation to performance of construction methods and associated pollution control measures upstream, based on a comparison of a baseline data set commencing prior to the construction period.
- 10.5.54 Where concerns are identified, interventions and remedial actions to improve water quality shall be enacted in as short a timescale as practicable. Pre-construction advice and the presence of an Environmental Advisor for higher risk activities adjacent to sensitive water receptors should reduce potential for adverse effect.

Spey Wellfield Abstraction Scheme

- 10.5.55 In the instance of the Proposed Development causing potential adverse impacts near the Spey Wellfield Abstraction Scheme, embedded design measures would include one or more of the following methodologies;
- use of less impactful (shell and auger type) or non-intrusive ground investigation (geo-physics) that avoids or reduces the need for rotary type intrusive investigation;
 - use of locally imported stone with similar lithology where possible as part of enabling works, track, and platform establishment;
 - bespoke foundation design that minimises the need for disturbance of the superficial aquifer, e.g. piling, for towers in proximity to the Spey Wellfield drinking water abstractions (Towers CB12-16A and CB14-1B), the design requires the pile cap to be situated above ground level to minimise impacts on the drinking water abstractions. As such, the tower footprint would be in the region of 5 m x 5 m at the base of each leg. The final dimensions will be confirmed upon completion of ground investigation and foundation design. The installation of pile caps would reduce the need for dewatering below the ground surface, which would minimise interactions with the superficial sand and gravel aquifer;
 - use of casing during drilling and piles to minimise the exposure of the vertical column of aquifer to disturbance;
 - avoidance of the use of drill fluids containing polymers or other potentially hazardous substances during ground investigation;
 - pre-agreement with Scottish Water of methods, chemicals and materials applied, prior to investigation;
 - keeping records of materials and chemicals used; and
 - timing of works associated with foundations to monopolise on lower river and groundwater levels in the surrounding catchment

Pollution Prevention and Incident Plans - Spey Wellfield Abstraction Scheme, Glenlatterach and Birken and Herricks Burn DWPA

- 10.5.56 Individual Pollution Prevention and Incident Plans (PPIPs) will be prepared for the Spey Wellfield Abstraction Scheme, Glenlatterach and Herricks and Birken Burn DWPA in order to protect the water quality and water quantity supplying these receptors. The PPIPs will include the following details;
- identify pollution hazards, pathways, and high-risk areas i.e. where attenuation distances are restricted;
 - management arrangements including defining roles and responsibilities as well as coordination and liaison;
 - work procedures and controls on drainage design as well as fuels / oils / chemicals, cement, and concrete within DWPA;
 - Pollution Prevention Plans including a matrix for specific control measures to be agreed with Scottish Water;
 - Pollution Incident Plan including incident response procedures, management, and resolution;

- Monitoring Plan for surveillance inspections and site audits as well as water quality monitoring, trigger levels and intervention; and
- pre-construction surveys of drainage ditches in the vicinity of towers and tracks to ensure that potential flow pathways in catchments are fully identified and managed by the contractor during works.

Principal Contractor Contingency Arrangements

- 10.5.57 The PWSMP will include a pollution response plan and contingency measures, detailing responsibilities, and lines of communication between the Principal Contractor, PWS users, and stakeholders. Contact details (land and mobile numbers / email addresses) for PWS users would be maintained by the Principal Contractor at all times.
- 10.5.58 In the event of an unforeseen effect on an existing PWS arising from the construction of the Proposed Development, incident response and contingency measures will be implemented. These will include provisions to provide alternative water supplies on a temporary and / or permanent basis, including:
- provision of bottled potable water in the event of a short or transient degradation of a water supply (crates of bottled water would be retained locally, ready for quick dispatch to any affected property);
 - provision of mobile potable water bowser or tanker water deliveries to an existing storage vessel, for short-medium term contingency, whilst engineering activities are occurring locally and increasing risk to supply (or if an event has occurred which has adversely affected the PWS);
 - provision of an alternative PWS source (e.g. spring, borehole, alternative surface water abstraction location) or public water supply connection in the event of a permanent degradation of a water supply; and
 - in the event of an alternative water source being implemented, SEPA and the relevant council (THC, MC, or AC) would be advised as soon as practicable.

Groundwater Dependent Terrestrial Ecosystems (GWDTE) and Wetlands

- 10.5.59 Drainage measures will maintain hydrological and hydrogeological connectivity and ensure the water quality of GWDTE and wetlands, with more sensitive locations screened-in as detailed in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline** and displayed on **Figure 10.7.6: Summary of GWDTE Screening** and **Figure 10.7.7: SEPA Wetlands**. The final CEMP will detail protective measures developed by the Principal Contractor, including:
- dewatering of excavations will be carefully monitored and groundwater flow disruption and drawdown will be minimised as much as possible. Open excavation timeframes will be kept to a minimum to minimise ingress of water and dewatering requirements;
 - maintenance of flow paths of water around proposed infrastructure (following contours);
 - temporary cut off drains will be installed to prevent surface water and shallow groundwater ingress into excavations;
 - intercepted water will preferably be encouraged to infiltrate into the ground, to mimic natural flow patterns in accordance with the principles of SuDS;
 - inclusion of cross track drainage in the detailed drainage design to maintain hydraulic continuity of water that supplies shallow groundwater areas;
 - in areas where there are groundwater seepages / flush zones / sub-surface flows are identified along the access tracks at the detailed design stage, the Principal Contractor will utilise appropriate methods to maintain flow conditions, this could include watercourse crossing structures, floating tracks and / or sub-surface drainage layers for temporary and permanent tracks;
 - prior to the onset of construction, micro-siting shall seek to avoid or reduce disturbance of areas where higher groundwater dependency (true) GWDTE are located; and
 - the Principal Contractor's Environmental Advisor will identify areas which require groundwater monitoring post consent following detailed design, and a proposed monitoring plan will be implemented based on SEPA

guidance (2024)⁴², for instance where sections of the proposed track are identified as intersecting 'true GWDTE'. Baseline monitoring is expected to commence at least 12 months ahead of the development works starting on-site, to continue during the construction phase, and for a period of time post-construction. If any potential impacts are identified by the monitoring or through other means, the contingency plan will be implemented. Appropriate remedial measures are expected to be implemented within 6 months of the potential impacts being identified.

Fluvial Flood Risk

- 10.5.60 It is proposed to adopt Sustainable Drainage Systems (SuDS) as part of the Proposed Development. SuDS techniques aim to mimic pre-development run-off conditions and balance or throttle flows to the rate of run-off that might have been experienced prior to development, whilst also providing water quality treatment. Good practice in relation to the management of surface water run-off rates and volumes where new permanent tracks or temporary compounds and laydown areas are proposed would include the following:
- drainage systems would be designed to ensure that any sediment, pollutants, or foreign materials which may cause adverse water quality or blockages are removed before discharge into a watercourse;
 - on-site drainage would be subject to routine checks to ensure that there is no build-up of sediment or foreign materials which may reduce the efficiency of the original drainage design causing localised flooding; and
 - appropriate drainage would attenuate run-off rates and reduce run-off volumes to ensure minimal effect upon flood risk.
- 10.5.61 The CEMP will include an Emergency Flood Plan and reference will be made to SEPA's Floodline service. Although the Proposed Development is not within a specific SEPA Flood Warning area, the alignment does fall within the Nairn, Findhorn and Speyside, Aberdeenshire and Aberdeen City and Caithness and Sutherland flood alert areas. Flood alerts indicate that flooding is possible to a wider geographical area and gives an early indication of potential flooding.
- 10.5.62 In relation to flood risk the Principal Contractor will implement the following mitigation measures during construction:
- The Emergency Flood Plan (as part of the CEMP) will be implemented when working within the low-risk areas and greater. It will include details on how information gathered from MET office Weather Warnings and SEPA's Flood Alert will be provided and disseminated.
 - During periods of heavy rainfall or extended periods of wet weather (in the immediate locality or wider river catchment) river levels will be monitored using, for example, SEPA Water Level Data when available or visual inspection of water features. The Principal Contractor will assess any change from base flow condition and be familiar with the normal dry weather flow conditions for the water feature and be familiar with the likely hydrological response of the water feature to heavy rainfall (in terms of time to peak, likely flood extents) and windows of opportunity to respond should river levels rise.
 - Should flooding be predicted, works close or within the water features will be immediately withdrawn (if practicable) from high-risk areas (defined as: within the channel or within the bankfull channel zone – usually the 50% (2-year) AEP flood extent). Works will retreat to above the 10% AEP (10-year) flood extent) with monitoring and alerts for further mobilisation outside the functional floodplain should river levels continue to rise.
 - Plant and materials will be stored in areas outside the functional floodplain where practicable, with the aim for temporary construction works to be resistant or resilient to flooding impacts, to minimise / prevent movement or damage during potential flooding events. Where this is not possible, agreement will be required with the Environmental Advisor.
 - Temporary drainage systems will be implemented to alleviate localised surface water flood risk and prevent obstruction of existing surface runoff pathways.

- Where practicable, haul routes will be located out of the functional floodplain. When in the floodplain stockpiling of material must be carefully controlled with limits to the extent of stockpiling within an area to prevent compartmentalisation of the floodplain and stockpiles will be away from water feature banks (not within 10m of the water feature banks). This is to limit floodplain encroachment, associated increased flood risk and sediment entering the water feature.

Predicted Construction Impacts

Modification of Surface Water Drainage Patterns

- 10.5.63 Surface flows could potentially be impeded by construction activity in or adjacent to stream channels, poor choice of watercourse crossing locations or inadequately designed crossing structures. Blockages could potentially be caused by inadequate control of earthmoving plant, sedimentation, and poor waste management, all of which could lead to flooding upstream and altered flow patterns. There are a number of flood-sensitive locations which are crossed by the Proposed Development, as discussed in **Section 10.4: Baseline Conditions** and **Appendix 10.8 Flood Risk Assessment**.
- 10.5.64 The interception of diffuse overland flow by the construction of new access tracks and their associated drainage features could disrupt the natural drainage regime of the surrounding area by concentrating flows and / or diverting run-off to an adjacent sub-catchment. The installation of towers and other impermeable surfaces would restrict the infiltration of rainfall into the soil and underlying superficial deposits, resulting in localised increased volumes of surface run-off.
- 10.5.65 Forestry felling may lead to increased surface water flows due to less interception and uptake from trees, as well as potential for introducing preferential pathways for surface flows across clearfelled areas, such as along new timber haul routes or associated drainage. Based on **Chapter 12: Forestry** the Proposed Development would have an impact on areas of woodland removal.
- 10.5.66 **Table 10.11** summarises the results of the potential flow increases as a result of forestry felling as a result of the Proposed Development. These potential flow increases would occur downstream of the forestry felling area.
- 10.5.67 As shown in **Table 10.11**, according to The UK Forestry Standard⁷⁵, studies suggest a 1.5% - 2.0% reduction of potential water yield (freshwater volume flowing into the receiving watercourses) for every 10% of a catchment under a mature conifer forest. Therefore, for every 10% of a catchment area being deforested, an approximate 1.5% - 2.0% increase in water yield is anticipated.
- 10.5.68 The estimations show that for all the catchments crossed by the Proposed Development, the amount of felling equates to far less than 10% of the catchment area being deforested, therefore, the increase in water yield is anticipated to be substantially less than 2% in each of the catchments.

Table 10.11: Potential Flow increases from Forestry Felling in the Operational Corridor

Catchment	Catchment Area (ha)	Felling Area (ha) in the Operational Corridor	Felling Area (% of Catchment Area)	Potential Flow Increases (%)
River Beaully	98751	12.49	0.01	Up to 2.0%
Beaully Coastal	8960	191.43	2.14	Up to 2.0%
River Ness	186134	56.27	0.03	Up to 2.0%
Inverness Coastal	12165	40.37	0.33	Up to 2.0%

⁷⁵ Forestry Commission (2023). The UK Forestry Standard: The government's approach to sustainable forestry management. 5th edition. Available at: https://assets.publishing.service.gov.uk/media/651670336a423b0014f4c5c0/Revised_UK_Forestry_Standard_-_effective_October_2024.pdf

Catchment	Catchment Area (ha)	Felling Area (ha) in the Operational Corridor	Felling Area (% of Catchment Area)	Potential Flow Increases (%)
River Nairn	33433	93.66	0.28	Up to 2.0%
Muckle Burn	11656	106.53	0.91	Up to 2.0%
River Findhorn	78827	93.63	0.12	Up to 2.0%
River Lossie	26997	279.53	1.04	Up to 2.0%
Moray Coastal	4934	2.94	0.06	Up to 2.0%
Spey Bay Coastal	2666	53.71	2.01	Up to 2.0%
River Spey	292876	180.30	0.06	Up to 2.0%
River Deveron	123544	144.40	0.12	Up to 2.0%
River Ythan	53918	26.14	0.05	Up to 2.0%
River Ugie	33366	7.83	0.02	Up to 2.0%

- 10.5.69 Other associated works such as existing track upgrade and proposed track excavations could have an effect on the local flows.
- 10.5.70 As noted within **Chapter 12: Forestry** there are additional areas which could potentially be felled elsewhere in the catchments. Any indirect effects of management felling on flows would be managed in accordance with the Forestry GEMP and UK Forestry Standard (as noted under the future baseline in **Section 10.4**) and the managed felling areas are relatively small, such that there would not be a significant increase in flow at a catchment scale as discussed in **Paragraph 10.5.70** and **Table 10.11**.
- 10.5.71 A change in flows could have a detrimental effect on the populations of fish, freshwater invertebrates, and other species dependent on the water environment. An assessment of potential effects on fish, freshwater invertebrates and other species has been carried out separately within **Chapter 8: Ecology**.
- 10.5.72 The Proposed Development also includes 281 watercourse crossings (including 267 for accessing proposed works and 14 for accessing existing towers for dismantling) as set out in **Appendix 10.9: Watercourse Crossing Schedule** and **Figure 10.1: Hydrology and Watercourse Crossings**. The watercourse crossings comprise of culvert and bridge installations, culvert and bridge upgrades, and temporary work checks.
- 10.5.73 The proposed new structures are anticipated to be culverts or bridges, which would be designed and constructed in line with the principle listed under SEPA's good practice guide³⁶. The bridges would be constructed by creating abutments on either side of the watercourse and either lowering the bridge into place using a crane or a push launch method from one site to the other. For the purpose of this assessment, it has also been assumed that the existing access tracks have structures that have been designed and constructed in line with the principles listed under SEPA's good practice guide³⁶.
- 10.5.74 The adoption of the applicable good practice measures, including Watercourse Crossings and Forestry GEMPs, would reduce the impact of modification to surface water drainage patterns, with artificial drainage installed only where necessary and, wherever practical, installed in advance of vegetation (including forestry) clearance. All structures would be of sufficient capacity to receive storm flows with an allowance for increased flows due to climate change predictions. The application of sustainable drainage techniques shall aim to attenuate flows by increasing peak flow lag time to 'slow the flow' into downstream channels. The implementation of cross-drains at appropriate intervals along the proposed tracks, taking account of track gradient, with frequent discharge points shall reduce scour potential.

- 10.5.75 Taking into account the design and embedded mitigation, the magnitude of the impact upon surface water drainage patterns for surface watercourses and water dependent conservation sites (High sensitivity) is Minor and the probability is considered to be Medium, which results in an overall **Minor Adverse (not significant)** effect.

Water abstractions

Private Water Supplies

- 10.5.76 **Appendix 10.6: Private Water Supply Risk Assessment (PWSRA)** has screened and assessed PWS which are considered to have hydrological connection with the Proposed Development. The nature of the potential construction risk to a PWS abstraction could be a reduction in supply yield (from surface water, groundwater or combined sources) and / or a reduction in the water quality.
- 10.5.77 Although PWS infrastructure, including pipework, may be damaged during construction activities, this accidental damage is typically capable of being repaired rapidly or ideally avoided / relocated based on pre-construction surveys. These matters are not the focus on this EIA Report process, with our assessment focussed upon potential impact upon the source of supply which are subject to longer term effects.
- 10.5.78 Without appropriate mitigation, the risk of pollution and damage to the water environment is highest during the initial construction phase due to various engineering and sub-surface dewatering activities, for instance earthworks required at tower foundations and for the provision of new access tracks.
- 10.5.79 Runoff passing through construction works can mobilise and transport pollutants such as sediment, oils, chemicals, and building materials (e.g. concrete wash) into the surface water and groundwater environment. Construction activities can disrupt the hydrogeological regime by increasing or decreasing the volume of infiltration into the groundwater. Pollutants from construction plant can also leach through the soils and into the groundwater. The excavation of foundations can have an effect on the hydrogeological regime by disrupting or altering flow patterns in groundwater.
- 10.5.80 The impacts of construction on each PWS is assessed in more detail within **Appendix 10.6: Private Water Supply Risk Assessment**. To summarise the results, each PWS location has been individually assessed on the basis of sensitivity, magnitude of change and probability of impact to determine the overall significance of effect.
- 10.5.81 Considering the embedded mitigation and good practice measures described in **Appendix 10.6: Private Water Supply Risk Assessment** and the **Embedded Mitigation** section of this Chapter, with no additional mitigation in place, the effects are assessed as follows:
- The magnitude of impact of pollution and interruption of flow on PWS (High sensitivity) is Moderate and the probability is considered to be High, which results in a **Moderate Adverse (significant)** effect (9 PWS).
 - The 9 PWS comprise of the following receptor IDs: ID 10, ID 44, ID 45, ID 46, ID 47, ID 48, ID 49A, ID 67, ID 70.
 - The magnitude of impact of pollution and interruption of flow on PWS (Medium sensitivity) is Moderate and the probability is considered to be High, which results in a **Moderate Adverse (significant)** effect (13 PWS).
 - The 13 PWS comprise of the following receptor IDs: ID 36, ID 39, ID 40, ID 50, ID 51, ID 54 ID 62, ID 111B, ID 176, ID 212, ID 221, ID 229, ID 251.
 - The magnitude of effect of pollution and interruption of flow on other PWS (High sensitivity) is Minor or Negligible and the probability ranges between Low – High, resulting in **Negligible or Minor Adverse (not significant)** effects.
 - The magnitude of effect of pollution and interruption of flow on other PWS (Medium sensitivity) is Moderate and the probability ranges between Low – Medium, which depending on the combination of results amounts to **Minor Adverse (not significant)** effects.

- The magnitude of effect of pollution and interruption of flow on other PWS (Medium sensitivity) is Minor or Negligible and the probability ranges between Low – High, which depending on the combination of results amounts to **Negligible** or **Minor Adverse (not significant)** effects.

10.5.82 Following the assessment of PWS, those with major / moderate adverse (potentially significant) effects have had additional mitigation measures proposed in **Section 10.6** to help reduce the residual significance of effect to an acceptable level as discussed within **Section 10.7 Residual Effects**.

SEPA Abstractions

10.5.83 **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** identifies a range of SEPA CAR abstractions which have potential hydrological connectivity with the Proposed Development. These abstractions are used for a variety of purposes including industry, agriculture, private and public water supplies (e.g. distilleries).

10.5.84 Taking into account the embedded mitigation measures including the implementation of the GEMPs:

- The magnitude of impact from water quality and yield impacts on the SEPA CARs (Low sensitivity) as follows:
 - CAR/R/1115484, Berry Burn Wind Farm (authorisation activity: Agriculture (irrigation - mobile plant));
 - CAR/R/1109864, Berry Burn Windfarm (authorisation activity: industrial or commercial, process water; Abstraction Environmental Service);
 - CAR/L/1004664, Burnside of Dipple Farm (authorisation activity: agriculture (irrigation - fixed intake));
 - CAR/L/1100905, Auchanachie Hydro (authorisation activity: Impoundment Hydropower; Abstraction Return; Abstraction Hydropower); and
 - CAR/R/111434: Upperton of Gask (authorisation activity: agriculture (irrigation - mobile plant))
 is Minor and the probability is Medium, which results in a **Negligible Adverse (not significant)** effect.
- The magnitude of impact from water quality and yield impacts on the SEPA CAR (Medium sensitivity) (CAR/R/1186191, Land at Blackmyre Farm, authorisation activity: unknown) is Minor and the probability is Medium, which results in a **Minor Adverse (not significant)** effect.
- The magnitude of impact from water quality and yield impacts on the SEPA CAR abstractions (High sensitivity) as follows:
 - CAR/L/1011442, Aultmore distillery (authorisation activity: Water Resources – Whisky, Distilling and Brewing); and
 - CAR/L/1011007, Glendronach Distillery (authorisation activity: Industrial or Commercial: Process Water; Industrial or Commercial: Evaporative Cooling; All other Industrial or Commercial)
 is Minor and the probability is Medium, which results in a **Minor Adverse (not significant)** effect.

Scottish Water Abstractions

Glenlatterach, Herricks and Birken Burn DWPA

10.5.85 As reported in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report**, there are proposed towers and sections of track situated in relatively close proximity and with potential connection to the abstractions of:

- Glenlatterach Reservoir (150 m from proposed a tower and permanent floated track);
- Herricks Burn (75 m from tower realignment and temporary track); and
- Birken Burn (175 m from tower realignment and track upgrade).

10.5.86 Potential impacts on the water yield and water quality of these public water supplies from siltation are likely to be temporary in nature and would be minimised via the successful implementation of embedded measures including the delivery of pre-construction surveys, Scottish Water precautions for activities in DWPA⁷³ and the PPIP.

- The magnitude of impact from water quality impacts on the Glenlatterach public water supply abstraction (High sensitivity) is Minor and the probability is Medium, which results in a **Minor Adverse (not significant)** effect.
- The magnitude of impact of water yield impacts on the Glenlatterach public water supply (High sensitivity) is Negligible and the probability is Medium, which results in a **Negligible Adverse (not significant)** effect.
- The magnitude of impact from water quality impacts on the Herricks Burn public water supply abstraction (High sensitivity) is Minor and the probability is High, which results in a **Minor Adverse (not significant)** effect.
- The magnitude of impact from water yield impacts on the Herricks Burn public water supply abstraction (High sensitivity) is Negligible and the probability is High, which results in a **Negligible Adverse (not significant)** effect.
- The magnitude of impact from water quality impacts on the Birken Burn public water supply abstraction (High sensitivity) is Minor and the probability is Medium, which results in a **Minor Adverse (not significant)** effect.
- The magnitude of impact from water yield impacts on the Birken Burn public water supply abstraction (High sensitivity) is Minor and the probability is Medium, which results in a Minor Adverse (not significant) effect.

River Deveron and River Ugie DWPA

10.5.87 The Proposed Development crosses the upper reaches of River Deveron and River Ugie DWPA, however there are no associated abstractions situated within the Study Area (as detailed in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report**).

10.5.88 Taking into account a range of embedded mitigation measures including the implementation of GEMPs:

- The magnitude of impact from water quality impacts on the River Deveron and River Ugie DWPA (High sensitivity) is Negligible and the probability is Medium, which results in a **Negligible Adverse (not significant)** effect.
- The magnitude of impact from water yield impacts on the River Deveron and River Ugie abstractions (High sensitivity) is Negligible and the probability is Medium, which results in a **Negligible Adverse (not significant)** effect.

Scottish Water Spey Wellfield Abstraction Scheme

10.5.89 As reported in **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report**, there are three proposed tower excavations within the likely extent of the superficial aquifer supplying the Spey Wellfield Abstraction Scheme. Excavations associated with platform creation and pad bases could encounter shallow groundwater if they extend beneath 1 m bgl and will encounter groundwater beyond 3 m bgl (the water table).

10.5.90 The nearest proposed towers are positioned approximately 385 – 700 m and either upgradient or cross gradient on the opposite side of a tributary watercourse. The proposed tower distances have been increased from the original design to reduce the risk of impact. Due to early concerns being identified, a bespoke design solution (**Embedded Mitigation** section) has been put forward by the Principal Contractor; including the use of piled foundations to help reduce the potential for interaction with near surface groundwater and associated ground disturbance causing turbidity increases due to the release of silts and clay. Therefore, potential impacts on the yield and water quality of the Spey Wellfield Abstraction Scheme are likely to be minimised and temporary in nature.

- The magnitude of impact from water quality impacts on the Spey Wellfield Abstraction Scheme (High sensitivity) is Minor and the probability is High, which results in a **Minor Adverse (not significant)** effect.
- The magnitude of impact from water yield impacts on the Spey Wellfield Abstraction Scheme (High sensitivity) is Negligible and the probability is Medium, which results in a **Negligible Adverse (not significant)** effect.

Modification of groundwater levels and flows and GWDTE

- 10.5.91 Potential GWDTE are outlined in **Section 10.4 Baseline Conditions** and **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report**. Using a precautionary approach, they are considered Medium and High sensitivity receptors based on the outcomes of **Appendix 10.7: Detailed Hydrological and Hydrogeological Baseline Report** and **Table 10.10 (Sensitive Receptors)** in this Chapter. From the 671 habitat parcels considered, 98 are assessed as being either of moderate or higher potential groundwater dependency, and 81 of these are considered to have a potential hydrological connection to the Proposed Development.
- 10.5.92 Excavations and associated dewatering from tracks and towers could disrupt shallow groundwater systems resulting in the lowering of groundwater levels in their immediate vicinity. Interruption of groundwater flow would potentially reduce the supply of groundwater to GWDTE, thereby causing an alteration / change in the quantity of the GWDTE. The construction of the proposed infrastructure would involve minor earthworks for the tower foundations, widening and / or upgrade of existing tracks, construction of new proposed access track including very limited spur sections of permanent track and associated drainage improvements. As a result, only small changes to the local subsurface and groundwater flows are expected on the basis of embedded measures (including those set out in **Section 10.5.59**). Should any alterations occur, such as during any required temporary dewatering, it would be expected that the natural local groundwater regime (level and flows) would recur close to these locations in a short timeframe.
- 10.5.93 Contamination of groundwater may also cause physical or chemical contamination and changes in water quality supplying the GWDTE due to sedimentation, and pollution incidents during construction. Many of the GWDTE habitats within the Study Area are located upslope of the proposed access tracks and / or the alignment therefore the Proposed Development is unlikely to influence current conditions.
- 10.5.94 Taking into consideration the mitigation set out in design mitigation and factors discussed above, the effects are assessed as follows:
- The magnitude of impact on groundwater levels and flows upon groundwater and moderately groundwater dependant GWDTE (Medium Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse (not significant)** effect.
 - The magnitude of impact on water quality upon groundwater and moderately groundwater dependant GWDTE (Medium Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse (not significant)** effect.
 - The magnitude of impact on groundwater levels and flows upon groundwater and highly groundwater dependant GWDTE (High Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse (not significant)** effect.
 - The magnitude of impact on water quality upon groundwater and medium groundwater dependant GWDTE (Medium Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse (not significant)** effect.

Flood risk

- 10.5.95 **Appendix 10.8: Flood Risk Assessment** notes that the Proposed Development is located within the Spey floodplain, and that an estimated volume of 300 m³ would be displaced by the above-ground pile caps. Whilst this is a reduction in floodplain capacity, in comparison to the size of the floodplain (estimated to be 7,000,000 m³ in this location), this is not considered to materially reduce the capacity of the floodplain or impact nearby receptors, therefore compensatory storage is not considered to be required for this activity. 14 towers with below-ground pile caps have concrete necks at the base of each tower leg and are located within floodplains. The necks have a maximum dimension of 1.5 x 1.5 x 0.5 m, meaning each of these towers would displace a maximum of 4.5 m³. As the volume displaced by the necks is minimal, this is not expected to impact the floodplain's capacity or increase flood risk to receptors. As part of this assessment the Applicant has requested site specific advice on this matter from SEPA and any potential requirements for compensatory storage will be further considered and discussed between the Applicant and SEPA at the detailed design stage, post consent and prior to construction.
- 10.5.96 In terms of other short-term increases in flood risk, the Proposed Development has the potential to impact on construction workers and floodplains. The proposed infrastructure located within floodplains is within remote and isolated areas and therefore there are no external potential receptors identified in **Appendix 10.8: Flood Risk Assessment**. Surface flows can be impeded by construction activity in or adjacent to stream channels and poor choice of crossing locations or structure types, as well as by inadequate cross track drainage on sloping ground. Blockages can be caused by inadequate control of earthmoving plant, sedimentation and poor waste management, all of which could lead to flooding upstream.
- 10.5.97 Taking into account the design mitigation and construction good practice, specifically the Watercourse Crossings GEMP, and the various embedded mitigation measures set out in **Section 10.5: Assessment of Likely Significance of Effects** including the Emergency Flood Plan, stockpiling and drainage measures, the effects have been assessed as follows:
- The magnitude of the impact of a short-term increase in flood risk on third parties and nearby developments (High sensitivity) is Minor and the probability of effect is considered to be Low, which results in a **Minor Adverse (not significant)** effect.
 - The magnitude of the impact of a short-term increase in flood risk on floodplains and construction workers (High sensitivity) is considered Minor (as there may be works undertaken in areas of flood risk) and the probability of effect is considered to be Low, which results in a **Minor Adverse (not significant)** effect.

Peat Compaction, Disturbance and Loss

- 10.5.98 As reported in **Appendix 10.2: Peat Management Plan** the total volume of excavated peat associated with the infrastructure footprint has been calculated at 24,531 m³ over a total area of approximately 29,727 m², which comprises only approximately 1 % of the total area identified as peat within the surveyed area (as presented in Section 6.6 of **Appendix 10.1: Peat Depth Survey Report**). The excavated peat volume has been minimised through avoidance of peat wherever possible and a combination of piling and floating of infrastructure where peat is present. The potential reuse of excavated peat has been calculated within the temporary infrastructure to total 21,384 m³, resulting in an excess of excavated peat of 3,147 m³.
- 10.5.99 Based on **Appendix 10.4: Peatland Carbon Emission Assessment** the extraction of peat as part of the Proposed Development is expected to result in the removal of 1,803,029 kg of carbon as part of the 24,531 m³ extracted. This would result in total emissions of 6599 tCO₂e if it was not re-used / reinstated. **Appendix 10.4: Peatland Carbon Emission Assessment** provides further detailed information on the methodologies and associated results for peat carbon assessments. After the reinstatement of 21,384 m³ of peat the total carbon emissions are expected to be 846 tCO₂e. The measures proposed for the avoidance, minimisation and restoration of peat as part of the proposed development are detailed in **Appendix 10.2: Peat Management Plan**.

- 10.5.100 The amount of excavated peat that is unable to be reused within the temporary infrastructure is relatively small and there may be opportunities to reduce this volume further through micro-siting and also through the reuse of peat along the track verges. There is still, however, a need for identification of other peat restoration opportunities to achieve full peat reuse. If preferential restoration areas are identified that allow immediate translocation of excavated peat for greater benefit, then these should also be undertaken in preference of peat reuse in temporary infrastructure which requires long periods of storage.
- 10.5.101 Soil compaction as a result of construction works within the Proposed Development may also damage the vegetation and result in a reduction in soil permeability and rainfall infiltration, particularly on peaty soils, thereby increasing the potential for longer-term erosion from surface water run-off. This would be most likely caused by tracking of heavy plant machinery.
- 10.5.102 Stockpiled and unvegetated / exposed areas of soils are also at risk of desiccation and erosion by wind and water, also potentially causing soil loss.
- 10.5.103 Taking into consideration the mitigation set out in the Soil Management GEMP and design mitigation, the effects are assessed as follows:
- The magnitude of impact of soil loss and compaction on soils and peat (Medium sensitivity) is Minor and the probability of effect is considered to be High, which results in an overall **Minor Adverse** (and **not significant**) effect on soils and peat.

Peat Instability

- 10.5.104 **Appendix 10.3: Peat Landslide Hazard Risk Assessment** provides detailed assessment methodologies and results in relation to peat instability. A consequence assessment has been undertaken by determining the potential for landslides sourced at infrastructure and hardstanding locations with a Moderate natural likelihood of peat instability, in vicinity of watercourses. The report highlighted 14 localised areas of stability concern (initial Low and Moderate), with the methodology, data, location maps and interpretation of individual locations provided within the appendix. The methods involved in this initial risk assessment are purposefully cautious, in order to highlight areas of concern, with the expectation that additional data collated as part of the revised risk assessment and pre-construction investigations would reduce concern. The source numbers are numbered from 1 to 19, however the 14 which have been carried into the analysis followed adjustments to layout to relocate infrastructure in the most critical locations in a previous layout iteration. Source zones 2,3,4,7 and 14 are not included in the analysis based on the outline design. Source Zones 8 and 9 have also been subsequently screened out from runout analysis as there is no environmental receptor due to their setting and topography which preclude runout and associated risks at these locations.
- 10.5.105 Runout pathways for the remaining 12 screened in source locations have been assessed, of which 7 could reach watercourses (e.g. Allt Tarsuinn, Allt Glac a' Bhealaich, Souters Stripe, Lone Burn, Cathy Du, unnamed watercourse and Allt Creach) as shown in **Figure 10.3.10: Source and Runout Zones** within **Appendix 10.3: Peat Landslide Hazard and Risk Assessment**. However the runout towards watercourses would be constrained by various factors such as forestry, curvature and debris thinning as presented on **Figure 10.3.11: Calculated Risk** within **Appendix 10.3**. On that basis the calculated risk is overall considered as Low or Negligible for all source zones and therefore manageable through the application of good practice measures.
- 10.5.106 Evaluation of magnitude of effect has taken account of appropriate good practice, data interpretation, and associated detailed design updates in advance of construction activities on towers and access tracks. Taking into consideration the mitigation set out in the geotechnical risk registry as part of the embedded mitigation, and the constraints described above the effect on peat stability is assessed as follows:
- The magnitude of effect of a peat stability failure upon peat (for 14 zones) (Medium sensitivity) is Minor to Moderate and the probability of effect is considered to be Medium, which results in an overall **Minor Adverse** (and **not significant**) effect on peat.

- The magnitude of effect of a peat stability failure on said surface watercourse receptors) (High sensitivity) in these typically headwater locations is considered to be Minor, and the probability is Low, which results in an overall **Minor Adverse** (and **not significant**) effect.

Predicted Operational Impacts

10.5.107 During the operational phase of the Proposed Development, it is expected that the potential impacts would be considerably reduced, without the elevated risks related to earthworks for excavation and reinstatement, including associated plant and storage of fuel and chemicals. As noted in the **Chapter 3: Project Description** there will be a relatively small operational footprint confined to limited sections of permanent tracks (where operational access is required e.g. at angle towers) and the tower leg foundations which are highly localised in nature.

10.5.108 On that basis, the operational phase of the Proposed Development has a more limited number of specific effects identified, in comparison with the Construction Phase, as detailed below.

Modification of groundwater levels and flows

10.5.109 The final design of the Proposed Development will incorporate suitable groundwater control in accordance with CIRIA C750 (2016)²¹ to manage groundwater ingress. The discharge of this groundwater shall be incorporated into the permanent sustainable drainage design.

10.5.110 Considering construction good practice and implementation of measures detailed in the Applicant's GEMPs, the operational effects have been assessed as follows:

- The magnitude of impact on groundwater levels and flows upon groundwater and the moderately groundwater dependant GWDTE (Medium Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse** (not significant) effect.
- The magnitude of impact on groundwater levels and flows upon groundwater and the highly groundwater dependant GWDTE (High Sensitivity) is Minor and the probability is considered to be Medium, which results in a **Minor Adverse** (not significant) effect.

Modification of Surface Water Drainage Patterns

10.5.111 During the operation of the Proposed Development, it is not anticipated that there would be any excavation or need to stockpile large volumes of soils, reducing the potential for effects on surface water.

10.5.112 Should any excavation be required, this is likely to be limited and required for maintenance of tracks etc. Any excavation, handling and placement of material would be subject to the same safeguards that would be used during the construction phase of the project.

10.5.113 Should any non-routine maintenance be required at the sections of track crossing wet areas (defined visually on-site by a contractor or operational personnel) then the good practice measures as detailed for the construction phase would be required on a case-by-case basis. Extensive work at watercourse crossings / adjacent to the water environment may require approval from SEPA under the CAR (depending upon the nature of the activity). On that basis:

- The magnitude of the impact of modified surface water drainage patterns upon surface water drainage patterns for surface watercourses and water dependent conservation sites (High sensitivity) is Negligible and the probability is considered to be Low, which results in an overall **Negligible Adverse** (not significant) effect.

Water Abstractions

Private Water Supplies

10.5.114 Given the embedded measure controls and assessment presented above (and the additional mitigation implemented during construction (see this presented below in **Section 10.6**)), effects on surface water or groundwater quality or flow are not anticipated during the operational phase of the development.

- The magnitude of effect on PWS sources (Low Sensitivity) is assessed as Negligible and the probability is considered to be Low, which results in an overall **Negligible Adverse (not significant)** effect.
- The magnitude of effect on PWS sources (Medium) is assessed as Negligible and the probability is considered to be Low, which results in an overall **Negligible Adverse (not significant)** effect.
- The magnitude of effect on PWS sources (High Sensitivity) is assessed as Negligible and the probability is considered to be Low, which results in an overall **Negligible Adverse (not significant)** effect.

Public Water Supply Abstractions

10.5.115 Given the controls and assessment presented above (and the embedded and additional mitigation implemented during construction), effects on surface water and groundwater quality or flow are not anticipated during the operational phase of the Proposed Development.

10.5.116 Accordingly, the magnitude of effect on public water supply abstractions (High Sensitivity) is assessed as Negligible and the probability is considered to be Low, which results in an overall **Negligible Adverse (not significant)** effect.

Flood Risk

10.5.117 Culverts beneath permanent access tracks could become blocked without routine inspection or maintenance. Any reduction in conveyance could increase local flood risk.

10.5.118 **Appendix 10.8: Flood Risk Assessment** notes that the Proposed Development is located within the Spey floodplain, and that an estimated volume of 300 m³ would be displaced by the above-ground pile caps. Whilst this is a reduction in floodplain capacity, in comparison to the size of the floodplain (700 m wide at this location), this is not considered to materially reduce the capacity of the floodplain or impact nearby receptors, therefore compensatory storage is not considered to be required for this activity. As part of this assessment the Applicant has requested site specific advice on this matter from SEPA and any potential requirements for compensatory storage will be further considered and discussed between the Applicant and SEPA at the detailed design stage.

10.5.119 In accordance with the Applicant's GEMPs, installed infrastructure will be subject to routine inspection and, if required, maintenance. Where identified as necessary, any remedial works would be undertaken using the same set of protocols and authorisations as set out in the embedded mitigation section. On that basis:

- The magnitude of effect of a short-term increase in flood risk on third parties and nearby developments (High sensitivity) is Negligible and the probability of effect is considered to be Low, which results in a **Negligible Adverse (not significant)** effect.
- The magnitude of effect of a short-term increase in flood risk on floodplains and maintenance staff (High sensitivity) is considered Negligible (as there may be highly irregular works undertaken in areas of flood risk) and the probability of effect is considered to be Low, which results in a **Negligible Adverse (not significant)** effect.

Peat Instability

10.5.120 During the operational phase there will be no planned requirement to undertake extensive earthworks which could impair or cause loss of peat or soils. In unlikely event earthworks are required these would be undertaken using the same measures which would be used during the construction phase (as set out in **Appendix 10.2: Peat Management Plan** and **Appendix 10.3: Peat Landslide Hazard and Risk Assessment**).

- The magnitude of effect on peat stability failures upon soils / peat on surface watercourses (for zones 2,3,4 and 14) (High sensitivity) is Negligible and the probability of effect is considered to be Low, which results in an overall **Negligible Adverse (not significant)** effect.

Kellas Alternative Alignment

10.5.121 Kellas Alternative Alignment is situated outside of and downstream of the Glenlatterach Reservoir DWPA. Owing to the embedded mitigation detailed above, the potential magnitude of impact from water quality impacts on the Glenlatterach public water supply abstraction (High sensitivity) is Negligible and the probability is Low, which results in a **Negligible Adverse (not significant)** effect.

10.5.122 The other construction and operational impacts which have been assessed for all other potential receptors are consistent for the Kellas Alternative Alignment.

10.6 Additional Mitigation

Construction Phase

Private Water Supplies

WG1: Further Assessment

- 10.6.1 As noted in **Appendix 10.6: Private Water Supply Risk Assessment** there are a number of PWS which could be potentially impacted by the Proposed Development during the construction phase. For those abstractions a further detailed PWS risk assessment will be completed post-consent, as necessary. The final PWS Risk Assessment will be reviewed in line with the final design consent and will include additional mitigation and the outline for replacements of PWS, where deemed appropriate.
- 10.6.2 Considering the implementation of embedded measures including good practice, potentially significant effects on specific PWS have been identified (prior to the provision of additional mitigation) for the construction phase. Based on **Appendix 10.6: Private Water Supply Risk Assessment**, additional mitigation measures have been recommended for PWS as listed in **Table 10.12**.

Table 10.12 PWS identified for Additional Mitigation Measures

ID	Property Name(s)
10	Balmore, Borlum Farmhouse, Borlum Cottage, Culliard Farmhouse, Culliard Cottage, Culliard Farm Cottage, 1 Forestry Cottage, 2 Forestry Cottage, The Bungalow, Balnafroig Farmhouse, Crow Wood, Crow Wood Cottage, Glenn Dail, Darroch House, Chlumas
36	Johnstripe
39	Glenlatterach
40	Glenlatterach Farm
44	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow
45	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow
46	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow

ID	Property Name(s)
47	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow
48	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow
49A	Coleburn Distillery, 1 – 8 Coleburn Distillery Cottages, Linden Lea, Coleburn Cottage, Coleburn Farm, Coleburn Farm Bungalow
50	Rowan Cottage
51	Logieburn Farm and Logieburn Farmhouse
54	Aultash
62	Kitchen Park
67	Mill of Newmill and Chivas Distillery;
70	Glenkeith
111B	Cormalet
176	Balquhindachy and Wilmoran Balquhindachy;
212	Fadlydyke

WG2: Further Investigation and Demarcation

- 10.6.3 To protect PWS during the construction phase, the Principal Contractor and Applicant will undertake comprehensive investigations prior to commencing any earthwork activities. These investigations will prioritise non-intrusive methods, such as cable avoidance technology (CAT) scanners, ground-penetrating radar (GPR), and other geophysical surveys, to accurately locate and assess PWS infrastructure. Where necessary, systematic trial pit surveys will be conducted by hand to minimise disruption. This proactive approach will help identify any potential risks early, allowing for the implementation of effective mitigation measures to safeguard water quality and supply continuity.
- 10.6.4 Following the completion of further investigation, it may be necessary to implement additional measures to safeguard PWS quality and quantity; these include:
- demarcation or fencing to protect the PWS intake and / or storage tank, to avoid accidental damage;
 - demarcation of the supply distribution route on the ground using wooden pegs (or similar) to avoid accidental damage; and
 - ensuring site operatives are aware of PWS and the sensitivity of the catchment through toolbox talks and site inductions.

WG3: Suitable Engineering Solution

- 10.6.5 Following further investigation, it may be confirmed that there is the potential for the PWS infrastructure to be impacted through planned construction works. Should this be the case, an assigned contractor will prepare specific construction or working methods to ensure the continuity of the PWS. These methods include refining the engineering design and a general arrangement drawing for crossing pipework.

- 10.6.6 Appropriate communication between PWS users, the Principal Contractor and the Applicant will be agreed and established to provide relevant information, such as proposed methods and latest construction programmes.
- 10.6.7 Engineering solutions will be discussed with the relevant council (i.e. THC, MC, or AC) and SEPA post-consent.

WG4: Alternative Water Supply

- 10.6.8 Prior to the commencement of construction, the owners of applicable PWS will be provided with a suitable alternative supply to cover the period of potential disruption, or on a permanent basis, by the Applicant. In the event that an alternative supply is provided to PWS users, then the need for monitoring arrangements (see below) may not be required for those properties.

WG5: PWS Monitoring Plan

- 10.6.9 As previously noted, a PWSMP will be prepared by the Principal Contractor prior to construction. This will detail all mitigation measures to be delivered to secure the quality, quantity and continuity of PWS which have been identified as potentially affected by the Proposed Development. The PWSMP will be provided to the PWS user, prior to construction and will contain contact information for the Construction Site Manager (or similar). PWS users will be informed of methods and programme of planned works that may affect their supply.
- 10.6.10 A water monitoring programme will be undertaken 12 months prior to any construction and during construction. The PWSMP will include water quality sampling methods and shall specify abstraction points. Post-construction monitoring will also be completed to ensure there is no long-term impact on water quality or quantity, which could be associated with the Proposed Development.
- 10.6.11 The PWS water monitoring programme will be aligned with the CEMP. For example, sampling frequency and analysis suite are matched with nearby surface water monitoring locations. The PWSMP will also outline any site-specific additional mitigation outlined in the PWSRA. The monitoring arrangements will be discussed and agreed with THC, MC, AC and SEPA post-consent, prior to construction.

10.7 Residual Effects

- 10.7.1 The residual effects represent the overall likely significant effect of the Proposed Development on the environment taking account of practical and available mitigation measures.
- 10.7.2 The items listed below have benefited from additional mitigation strategies, which has led to the refinement of their residual effects. Any effects which were not identified for additional mitigation are considered to have unchanged residual effects from the initial significance of effect.

Construction Phase

Private Water Supplies

- 10.7.3 The additional measures which are outlined in **Section 10.6: Additional Mitigation** of this Chapter, will be agreed upon with the owner / occupier prior to works commencing.
- 10.7.4 Following the implication of additional mitigation at the specific PWS identified, the magnitude of change for PWS is anticipated to be lowered to Minor, with a Medium to High probability and Medium to High sensitivity, which results in a **Minor Adverse (not significant)** residual impact.
- The PWS comprise of the following receptor IDs: ID 10, ID 36, ID 39, ID 40, ID 44, ID 45, ID 46, ID 47, ID 48, ID 49A, ID 50, ID 51, ID: 54, ID 62, ID 67, ID 70, ID: 111B, ID 176, ID 212, ID 221, ID 229 and ID 251.

Operational Phase

- 10.7.5 On the basis of good practice and embedded mitigation measures, there were no potentially significant effects identified for the operational phase in **Section 10.5: Assessment of Likely Significance of Effects**; therefore a residual assessment of effects is not required as the lack of mitigation results in the residual assessment values being retained at the same level as previously assessed.

Kellas Alternative Alignment

- 10.7.6 The residual effects for the Kellas Alternative Assessment are no greater than those described above for the construction and operation of the Proposed Development.

10.8 Assessment of Cumulative Effects

- 10.8.1 Cumulative effects are additional effects as a result of the Proposed Development in combination with other developments as described in **Section 5.5 of Chapter 5: EIA Process and Methodology** and **Appendix 5.1: Cumulative Developments**, which identify other developments to be considered as having potential for cumulative effects with the Proposed Development. As noted in **Chapter 5: EIA Process and Methodology** the following staged approach has been taken:
- Stage 1: the Proposed Development has been assessed cumulatively with the developments listed in **Table 5.2 of Chapter 5: EIA Process and Methodology** to understand the likely significant effects of the Proposed Development with the SSEN Transmission associated developments.
 - Stage 2: an in combination cumulative assessment has been undertaken with the remaining cumulative developments listed in **Appendix 5.1: Cumulative Developments** to determine the overall potential for in-combination cumulative effects.

In-combination Effects: Stage 1 – Associated SSEN Transmission Developments

- 10.8.2 From the list of associated SSEN Transmission network upgrades (Fanellan substation, Greens 400 kV substation and Netherton Hub), developments have been considered as having potential for cumulative effects with the Proposed Development in the event that these other developments present potentially significant effects to the receiving water and geological environment.
- 10.8.3 However, given that residual effects that have been identified for the Proposed Development are not significant, and on the basis that good practice (SSEN Transmission GEMPs) and effective site-specific 'source' controls are employed for each other individual development (as per commitments set out within their EIARs), the likely cumulative effect during the construction phase of any site would be substantially reduced (for all potential water environment receptors including surface water hydrology, groundwater water supplies, designated sites, GWDTE and flood risk). Furthermore, the differing construction programming and timeframes of activities that would be anticipated to occur across various developments further reduce the probability that water quality and flow issues would be coincident across the same catchments, or that the severity of any incidents would be aggregated by activities elsewhere.
- 10.8.4 Taking account of the above, a **Minor Adverse (not significant)** residual cumulative impact is assessed for the construction phase. Operational phase cumulative impacts would be substantially reduced, in comparison to construction, regarded as **Negligible (not significant)**.

In-combination Effects: Stage 2 – Other SSEN Transmission and 3rd Party Developments

- 10.8.5 The list of other developments in **Appendix 5.1: Cumulative Developments** have been considered as having potential for cumulative effects with the Proposed Development in the event that these other developments present potentially significant effects to the receiving water and geological environment.

- 10.8.6 However, given that residual effects that have been identified for the Proposed Development are not significant and, on the basis that good practice and effective site-specific 'source' controls are employed for each other individual development (as per commitments set out within their associated EIARs), the likely cumulative effect during the construction phase of any site would be substantially reduced (for all potential water environment receptors including surface water hydrology, groundwater water supplies, designated sites, GWDTE and flood risk). Furthermore, the differing construction programming and timeframes of activities that would be anticipated to occur across various developments further reduce the probability that water quality and flow issues would be coincident across the same catchments, or that the severity of any incidents would be aggregated by activities elsewhere.
- 10.8.7 Taking account of the above, a **Minor Adverse (not significant)** residual cumulative impact is assessed for the construction phase. Operational phase cumulative impacts would be substantially reduced, in comparison to construction, regarded as **Negligible (not significant)**.

Kellas Alternative Alignment

- 10.8.8 The cumulative effects which have been assessed for the Proposed Development, are considered to be consistent for the Kellas alternative alignment in relation to the water and geological environment.

10.9 Summary and Conclusions

- 10.9.1 **Table 10.13 Summary of Predicted Impacts and Residual Effects** provides a summary of the impacts and significance of effects on sensitive receptors from the Proposed Development. In summary there are no significant adverse effects on the water and geological environment predicted in relation to the Proposed Development.

Table 10.13: Summary of Predicted Impacts and Residual

Receptor	Likely Significant Effect	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effect
Predicted Construction Impacts				
Surface Watercourses Flood Risk Receptors	Modification of surface water drainage patterns from new access tracks and other impermeable surfaces.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Surface Watercourses Water Dependent Conservation Sites	Forestry felling resulting in an increase in surface water flows.	Minor (not Significant)	N/A	Minor Adverse (not Significant)
Private Water Supplies (Moderate effect) see Appendix 10.6: Private Water Supply Risk Assessment	A reduction in water volume or adverse change in the quality of the water.	Moderate Adverse (Significant)	Yes Measures include the potential for alternative supply,	Minor (not Significant)

Receptor	Likely Significant Effect	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effect
and Paragraph 10.6.2 of this Chapter			monitoring plan, demarcation etc. as discussed in Section 10.6 Additional Mitigation	
Private Water Supplies (Minor effect) see Appendix 10.6: Private Water Supply Risk Assessment	A reduction in water volume or adverse change in the quality of the water.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Private Water Supplies (Negligible effect) see Appendix 10.6: Private Water Supply Risk Assessment	A reduction in water volume or adverse change in the quality of the water.	Negligible Adverse (not Significant)	N/A	Negligible (not Significant)
Public Water Supplies – Glenlatterach, Herricks Burn and Birken Burn DWPA, and Spey Wellfield Abstraction Scheme	Impacts on water quality of public water supply.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Public Water Supplies – River Deveron and River Ugie DWPA	Impacts on water quality of public water supply.	Negligible (not Significant)	N/A	Negligible (not Significant)
GWDTE	Modification of groundwater levels and flows of GWDTE.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Flood Risk Receptors (third parties, and nearby developments)	Short-term increases in flood risk.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Peat	Loss and compaction of Peat.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Peat / Soils	Peat Instability.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)
Surface Watercourses	Indirect effects from Peat Stability.	Minor Adverse (not Significant)	N/A	Minor Adverse (not Significant)

Receptor	Likely Significant Effect	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effect
Predicted Operational Impacts				
Surface Watercourses Water Dependent Conservation Sites Groundwater Flood Risk Receptors	Modification of surface water drainage patterns and groundwater flows from new access tracks and other impermeable surfaces.	Negligible (not Significant)	N/A	Negligible (not Significant)
Private Water Supplies & Public Water Supplies – Glenlatterach, Herricks Burn and Birken Burn DWPA, and Spey Wellfield Abstraction Scheme	Impacts on water quality of private and public water supplies.	Negligible (not Significant)	N/A	Negligible (not Significant)
Peat	Loss and compaction of peat and peat instability.	Negligible (not Significant)	N/A	Negligible (not Significant)