Loch Kemp Storage
A STATERA COMPANY

Loch Kemp – Outline Construction Environmental Management Plan

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Document History			
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Contents

Glossary

CEMP	Construction Environmental Management Plan
EIA	Environmental Impact Assessment
MWC	Main Works Contractor
ECU	Energy Consents Unit
LKES	Loch Kemp Energy Storage
RAMS	Risk Assessment Method Statement
CAR	Water Environment (Controlled Activities) Regulations
EASR	Environmental Authorisation (Scotland) Regulations
SEPA	Scottish Environment Protection Agency
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
ECoW	Ecological Clerk of Works
LCoW	Landscape Clerk of Works
ACoW	Archaeological Clerk of Works
AQCoW	Aquatic Clerk of Works
HGV	Heavy Good Vehicle
ICE	Internal Combustion Engines
EERP	Emergency Environmental Response Plan
PPP	Pollution Protection Plan
SMP	Sediment Management Plan
WDMP	Waste Disposal Management Plan
WMP	Water Management Plan
SMP	Soil Management Plan
BPMP	Borrow Pit Management Plan
PMP	Peat Management Plan
PSH	Pumped Storage Hydropower
SRP	Site Restoration Plan
CHMP	Cultural Heritage Management Plan
EMP	Ecological Management Plan
CNVMP	Construction Noise and Vibration Management Plan
AQMP	Air Quality Management Plan
DMP	Dust Management Plan

1 Introduction

1.1 This Outline Construction Environmental Management Plan (CEMP) has been developed as part of the Section 36 application (ECU00003398) for the Loch Kemp Storage Ltd. (LKS) Pumped Storage Hydropower (PSH) project, referred to hereinafter as the 'Proposed Development'.

1.2 The LKS scheme proposes a long-duration electricity storage facility with a generation capacity of up to 600 MW and a storage volume of approximately 9 GWh. It will operate by transferring water between Loch Kemp (upper reservoir) and Loch Ness (lower reservoir).

1.3 This document is referred to as the Outline CEMP, which means that it provides an overview of what will be in the Final CEMP, which will be developed by the Main Works Contractor (MWC), who will be appointed by LKS. The Final CEMP will be developed to avoid, minimise or mitigate any construction impacts on the environment. As well as the CEMP, the MWC will also produce Risk Assessments and Method Statements (RAMS) for all site activities.

1.4 The delivery of all of the mitigation identified in the EIA Report would be controlled and delivered through the Final CEMP, associated management plans, and the RAMS produced by the MWC. The final version (or construction version) of the CEMP would be drafted and owned by the MWC. It is anticipated that the final version of the CEMP would be submitted to the planning authority as a pre-commencement condition.

1.5 Construction will comply with all applicable environmental legislation, including the Environmental Authorisations (Scotland) Regulations 2018 (EASR) administered by SEPA, the Environmental Protection Act, the Nature Conservation (Scotland) Act, the Wildlife and Countryside Act, the Waste Management Licensing Regulations and relevant planning conditions associated with the scheme. Copies of all permits, licences and conditions will be maintained on site, and compliance will be monitored throughout construction.

1.6 Whilst the CEMP would be finalised and submitted as a final version as part of a pre-commencement condition, it is acknowledged that the CEMP would be a 'live' document and as such would be refined during the construction period.

1.7 In this Outline CEMP, the likely structure of the final document has been set out, along with highlighting key high-risk activities, which are covered in more detail. In the final construction stage, CEMP, all relevant published guidance by SEPA, Nature Scot and other competent authorities would be followed in the drafting and implementation of the CEMP.

2 Project Environmental Constraints

2.1 A range of mitigation measures, designed to avoid or minimise potential environmental impacts from construction, are detailed within **Volume 4, Appendix 3.2: Schedule of Mitigation** of the EIA report.

2.2 Following receipt of the Section 36 consent, the CEMP will be updated to include relevant pre-commencement conditions associated with the project, and will also detail all relevant mitigation measures referred to in the EIA Report, any EIA Report Addendum, and additional documentation provided to and approved by the Planning Authority.

3 Correspondence, Records and Reporting

3.1 The MWC will provide records of all relevant correspondence, documents, and reports associated with all aspects of environmental management on site. As a minimum it is anticipated that the following records will be maintained as part of the works:

- Minutes and attendance record of all relevant introductions, briefings, site meetings. Attendance required by Employer, MWC, ECoW and all other relevant personnel responsible for environmental management during the project.
- Weekly rolling live Environmental Risk Register, including look-ahead activities with required mitigation (including weather forecasts). This is required to be on the agenda at every scheduled weekly construction meeting. This will cover all environmental sensitivities, including, but not limited to, terrestrial and aquatic ecology. This will also include a supporting Environmental Risk Map.
- Environmental risk log and associated Environmental Risk Map
- An Emergency Environmental Response Plan will be provided by the MWC, which will detail the lines of communication that should be used in the event of an emergency.
- A Communication Plan (to be followed in the event of a spillage) will be provided by the MWC, in liaison with relevant stakeholders and will be provided to the Employer, according to the Contract provisions, prior to commencement of the site works.
- Water Quality Monitoring Records, documenting the MWC's visual checks of waterbodies as outlined in the Pollution Prevention Plan (PPP).
- Employer and MWC Audit Reports
- Records of Toolbox Talks and Training
- Air quality records
- Noise monitoring records
- Waste Management Records
- Excavation Register
- Geotechnical / Peat Risk Register
- Licenses and Consents - copies of all permissions, consents, licenses, and permits, including related correspondence.
- Records of Authority visits (e.g. SEPA, Nature Scot, The Highland Council), including observations, communications, and reports.
- Environmental Change Register defining all details around the departure during the construction.

- General Correspondence - all other relevant internal and external communication records relating to environmental management issues and implementation of the CEMP.

4 Programme of Works

4.1 The LKS project consists of multiple different scheme components that are scheduled into the construction programme, which is broadly intended to last around 65 months. The key activities associated with the project, along with a high-level description, are covered below. These highlight the key environmental considerations that are associated with each activity. Further details associated with these activities will be provided in the Final CEMP.

Early Works

4.2 Prior to the commencement of the main works contract, early works will be carried out on the site. These works will include, but are not limited to, the following activities, such as site establishment, localised felling, new access junction works from the B862, opening up borrow pits, temporary bridge crossings, upgrade of existing access tracks, culvert installation, construction of new access tracks, and construction of compound areas.

4.3 During this period, mitigation will focus on controlling initial ground disturbance through careful stripping and storage of topsoil, installation of perimeter swales and cut-off drains, and implementation of dust suppression on haul routes. The ECoW will approve all vegetation clearance, which will be timed to avoid the bird breeding season wherever practicable.

Main Works

Mobilisation

4.4 Following on from the Early Works, which will broadly comprise setting up the main site compound area and other necessary construction compounds, the facilities associated with the main site compound will be installed. This will comprise temporary accommodation, welfare facilities, offices, parking, drainage systems, utility installations, fuel storage set-up, and any associated mitigation measures, such as acoustic barriers.

4.5 Mobilisation will also include the in-water activities in Loch Ness at the Powerhouse area, which would include, but not be limited to, implementation of environmental mitigation in Loch Ness such as silt curtains, site clearance, the installation of temporary roll-on/roll-off ramps, compound establishment, plant and equipment deployment, and installation of any associated environmental controls within the Powerhouse working corridor.

Access Tracks

4.6 The network of access tracks will then be constructed throughout the site, with a key focus on constructing the relevant parts of the Arterial Access Track, Powerhouse Access Track and other permanent access tracks. These works will require significant earthworks and transportation of material from borrow pits to work fronts. Details around the proposed borrow pit locations can be found in **AI Appendix 3.5 - Draft Borrow Pit Screening Assessment**.

4.7 The Powerhouse Access Track will require detailed planning and coordination due to the sensitive nature of the Ness Woods SAC / Easter Ness Forest SSSI, as outlined in **Volume 1 - Chapter 10 - Terrestrial Ecology**, and will also follow a site Peat Management Plan, Sediment Management Plan, and Biosecurity Plan. It is anticipated that there will be two work fronts, one from the powerhouse platform uphill and one from the Arterial Access Track downhill. The details of these activities and the associated control measures will be covered within the Sediment Management Plan, Water Management Plan, Pollution Prevention Plan, and Soil Management Plan.

Powerhouse

4.8 The powerhouse for the Proposed Development is a surface Powerhouse located on the banks of Loch Ness, also within the Ness Woods SAC / Easter Ness Forest SSSI. The Powerhouse will sit within the powerhouse platform and will consist of a vertical shaft(s) that will house mechanical & electrical equipment, draft tunnels, and main inlet valves. To construct the works, a large temporary cofferdam will be built in Loch Ness.

4.9 The design of the cofferdam and temporary queue side will be subject to detailed design from the MWC. It is anticipated that the cofferdam will be constructed initially from land and then by vessel in the loch. It is anticipated that silt curtains, bubble curtains and other environmental mitigation will be utilised during the installation of the cofferdam. Further details will be provided in the Final Construction Method Statement.

4.10 Once the cofferdam is completed, the civil works for the vertical shaft(s) can commence. These works will involve top-down drill and blast construction, with the surplus material being hauled away from the powerhouse platform. The construction of the waterways and access tunnels can also be started once the shaft has been fully excavated.

4.11 The details of these activities and the associated control measures will be covered within the Sediment Management Plan, Water Management Plan, Pollution Prevention Plan, and Soil Management Plan.

Waterways

4.12 The Proposed Development connects the upper reservoir and the lower reservoir with twin waterways that will each bifurcate into two turbines. These tunnels will be constructed using drill and blast techniques, starting from the powerhouse and working uphill towards the upper intake.

4.13 During the excavation, it is anticipated that water will ingress into the tunnel, which will be collected at the bottom of the powerhouse shaft. This will then be pumped out onto the powerhouse platform, where it will be treated before being discharged into Loch Ness. The volume of runoff from the tunnels could be substantial and needs to be appropriately managed. Further details of these activities and the associated control measures will be covered within the Sediment Management Plan, Water Management Plan, and Pollution Prevention Plan.

4.14 Following the mucking out, a temporary lining would be formed before the primary linings are installed. On the higher-pressure sections, steel lining will be used, and on the lower-pressure sections, a concrete lining will be used. Both tunnels are anticipated to be constructed simultaneously, with work progressing towards the Upper Intake in Loch Kemp.

Dams

4.15 There is a series of dams that are required to be constructed around Loch Kemp. The main dams are Dam 1, which is a Roller-Compacted Concrete dam located at the mouth of Loch Kemp and Dam 3, which is a Concrete Faced Rockfill Dam (CFRD) located at the east of the Proposed Development.

4.16 To construct Dam 1, the Allt an t-Sluichd burn will be temporarily diverted around the working area. It is anticipated that the temporary diversion will be split into two phases to carry out the foundation works of the dam. Due to the depth of the foundations and the underlying geology, it is anticipated that a sheet pile/ cofferdam will be required to retain the groundwater from Loch Kemp.

Upper Intake

4.17 The upper intake at Loch Kemp will comprise a reinforced-concrete intake structure with track racks, isolation gates and a smooth transition into the high-pressure penstock, designed to provide stable, low-loss approach flow to the pump-turbines while controlling debris, sediment and air entrainment. The structure will incorporate a low-velocity forebay, fish-friendly screening, vortex-suppression features and adequate submergence to meet pump NPSH criteria. Construction will be undertaken within a temporary cofferdam, including excavation to competent founding strata, installation of embedded items, placement of the intake and headbox concrete, mechanical installation of racks and gates, and connection to the penstock, followed by riprap and scour protection.

4.18 At Loch Kemp this work is scheduled for the mid-phase of the construction programme, commencing once access, site establishment and reservoir-side earthworks are complete, and concluding prior to final penstock testing and system commissioning. Further details will be provided in the Final CEMP.

4.19 M&E installation of the powerhouse mechanical and electrical equipment and associated commissioning of turbines would be undertaken towards the end of the construction programme. The start of commissioning would mean watering up tunnels for the first time. The methodology that would be undertaken to avoid any contamination of the lower and upper reservoir bodies would need to be set out in the final CEMP.

Grid Connection

4.20 The LKS project will be connected to the grid via an underground tunnel and buried cable. This buried cable will be installed under the main access track that runs from the powerhouse, through the cable shaft to the switching station. Further detail will be provided within the Final CEMP.

Reinstatement

4.21 Reinstatement of the site would be a significant activity that will be sequenced with the completion of the main works. This work will be planned, approved and supervised by the relevant parties and will be carried out with the goal to enhance the natural habitat and encourage regeneration in line with best practice guidelines. This will involve replacement of soils, regrading of temporary works areas, reseeding with appropriate native mixes and removal of the cofferdam. Water quality monitoring will continue until SEPA agrees that the loch environment has stabilised. Further detail will be provided within the Final CEMP.

5 High Impact Activities

In-water Works

5.1 A significant amount of in-water works is required as part of the Proposed Development. These are mainly focused on the works around the powerhouse in Loch Ness and around the intake and Dam 1 in Loch Kemp. These works will be covered under the Environmental Authorisations (Scotland) Regulations 2018, and will be controlled by EASR Permits and regulated and authorised by SEPA.

5.2 Given the scale of the works associated with the Proposed Development, the duration of the in-water activities is intended to last for the majority of the construction programme. As such, activities in and around Loch Ness and Loch Kemp will be undertaken over multiple consecutive years. Given the intended construction programme of the project, it is likely that, before the main in-water works commence, environmental mitigation, such as silt and bubble curtains, will be installed within and around the associated waterbodies to minimise the impact of the in-water activities. To meet the construction programme, the installation of these environmental controls will likely be outside the standard in-water working periods. The implantation phase and design of these environmental controls will be discussed in detail directly with SEPA and NatureScot.

5.3 These in-water works will involve heavy civil engineering activities such as dredging, dewatering, river diversions, cofferdam installation, pilling, infilling, and construction of quayside. These works will impact aquatic ecosystems and will be appropriately planned, sequenced, and implemented following discussion with MWC, SEPA, and NatureScot. Cofferdams and river diversions are temporary structures that will be built to isolate the works from the sensitive receptors and provide dry working conditions, but their construction can disturb sediments, alter hydrology, and affect sensitive species.

5.4 During the installation, piles will be driven into the bed of the loch using a vessel and large piling equipment. These works will generate noise underwater which could impact salmon migration. Noise will also be generated from blasting and hydraulic breaking associated with the construction of nearby surface and underground infrastructure. To mitigate these risks, the timing and methods of the works will be planned to minimise impacts by trying to avoid critical ecological windows—such as fish spawning seasons and fish migrations. Note: NatureScot have asked that acoustic fish deterrents, previously provided as mitigation should not be used in Loch Ness as they could potentially create a barrier to migrating salmon. Details around these sensitive species are shown in **Volume 1 - Chapter 12 - Aquatic Ecology** and **Volume 1 - Chapter 13 – Fish**.

5.5 Prior to dewatering, any aquatic ecology, such as fish, trapped within the cofferdam will be caught and released under the supervision of the AQCoW. Dewatering within cofferdams will be carefully managed and treated to prevent the release of turbid or contaminated water back into the loch. Where appropriate, pumped water can be filtered through settlement tanks or geotextile bags, or equivalent, to remove suspended solids before discharge. In some cases, water may need to be tested and treated to meet SEPA's discharge standards. Rapid dewatering can cause pressure changes and temperature shifts that stress aquatic organisms. To avoid these impacts, methods such as gradual drawdown and controlled flow rates will be followed to help maintain ecological stability.

5.6 Bubble curtains and or silt curtains can be used as mitigation to reduce the impact on aquatic ecology by reducing noise and to contain suspended sediments during cofferdam installation and dewatering. The silt curtains, which are floating barriers, are anchored around the work area to prevent sediment plumes from spreading into the wider loch. Their effectiveness depends on proper deployment, maintenance, and site-specific conditions such as water depth, flow rate, and wind exposure. To reduce the risk of non-toxic pollution from entering the water courses, multiple control systems may need to be deployed, as detailed in the Sediment Management Plan (SMP). To reduce the risk from toxic pollutants all mitigation will be covered in the PPP.

5.7 Monitoring of aquatic ecology is essential throughout the duration of in-water works. Baseline surveys will be conducted prior to construction to identify key species and habitats, and ongoing monitoring should track changes in water quality, turbidity, and biological indicators. The presence of protected species such as freshwater pearl mussels, Arctic charr, or submerged macrophytes may trigger additional mitigation measures or require adaptive management. An Aquatic Clerk of Works (AQCoW) will be required to oversee compliance and respond to any ecological risks associated with the aquatic environment in real time.

5.8 Post-construction, restoration of the affected area is vital to support ecological recovery. This may include replanting aquatic vegetation, stabilise disturbed sediments, and removing temporary infrastructure with minimal impact. Long-term monitoring may be required to assess habitat regeneration and ensure that conservation objectives are met. By following best practice guidance and regulatory requirements, cofferdam installations in lochs can be carried out responsibly, striking a balance between infrastructure needs and environmental protection.

Watercourse Crossings

5.9 Watercourse crossings during construction will be another high-impact activity, particularly on aquatic ecology, that will require on-site management and supervision. Mitigating the impacts of watercourse crossings on site requires careful planning and coordination. The first step is to avoid sensitive watercourses where possible through route selection and design. The EIA has identified all watercourses anticipated to be required as part of the proposed development, as laid out in **Volume 4 - Appendix 14.3 - Schedule of Watercourse Crossings**.

5.10 All watercourse crossings, temporary and or permanent, will be covered under the CAR. These regulations are enforced by SEPA. Due to in-water working, there will only be certain periods in the year when in-water working activities can take place; these will be stipulated in the relevant EASR Permits provided by SEPA. These activities will also be covered under the Water Management Plan and the SMP.

5.11 Where crossings are unavoidable, the use of appropriate structures such as clear-span bridges or bottomless culverts is preferred to maintain natural flow and avoid altering the streambed. These designs help preserve aquatic connectivity and reduce the risk of sedimentation and habitat fragmentation.

5.12 Sediment control is critical during construction. Measures such as silt fencing, settlement ponds, and buffer zones must be installed to prevent runoff from entering the watercourse. Where practicable, works will be timed to avoid periods of high rainfall and spawning seasons for fish species like salmon and trout. All machinery shall be well-maintained and refuelled away from water to prevent pollution.

5.13 Pollution prevention protocols must be in place, including spill kits, bunded fuel storage, and emergency response procedures. Concrete works near watercourses require special handling, with washout areas located far from drainage paths. Operatives should be trained in environmental awareness and site-specific mitigation measures to ensure compliance and rapid response to incidents.

5.14 Post-construction, restoration of the crossing area is essential. This includes replanting native vegetation, stabilising banks, and monitoring water quality and habitat recovery. Long-term maintenance of crossing structures and drainage systems ensures continued protection of water-sensitive environments, particularly in designated sites like SACs.

First Fill

5.15 The first filling of the upper reservoir will be a carefully staged process to ensure that impacts are reduced as far as reasonably practical. Before filling begins, extensive preparatory work will be undertaken, including vegetation clearance, wildlife relocation, and installation of monitoring systems, where appropriate. Due to the size of the catchment, the filling will be required to be carried out via main waterways.

5.16 The reservoir will be gradually filled with water from the waterways. This slow filling helps reduce erosion, sediment displacement, and shock to aquatic and terrestrial ecosystems. Wildlife corridors and escape routes will be maintained to allow animals to move away from rising waters, and temporary exclusion zones are enforced to protect sensitive habitats. All commercial trees and or additional vegetation will be removed to prevent decay-related water contamination.

5.17 Once the reservoir reaches its full supply level, post-fill assessments are conducted to evaluate ecological outcomes and infrastructure performance. The reservoir will also be drained and the full wetted area will be assessed and inspected and any remedial works carried out. Further detail will be provided in the Final CEMP.

Transportation

5.18 High volumes of traffic are anticipated to be generated as a result of the construction of the Proposed Development. Bulk material transportation, commuting, Abnormal Indivisible Loads (AILs), plant and equipment will all generate traffic volumes on and off-site. Transportation within the site boundary will also impact receptors, particularly those sensitive to air and water pollution. Further details about these impacts are listed below, along with associated mitigation.

5.19 A summary of these activities is listed as follows. All access routes and timing specific mitigation will included in the pre-approved Traffic Management Plan (TMP):

- Commuting – A large proportion of the workforce is intended to be housed on site, and a proportion of the workforce will be transported to the site via minibus, van, and cars.
- AIL’s – Large indivisible loads will be transported to site via the Caledonian Canal, and the public road network, using canal vessels, and HGV’s, respectively. Wider loads will be escorted to site via police convoy.
- Plant and Equipment – General plant and equipment will be transported to site via the public road as well as within the site boundary, using HGV’s.

- Materials – Bulk aggregates will be transported to site via the Caledonian Canals and the public road network, which will use canal vessels, and HGV's respectively.

Air Quality Impacts

5.20 High volumes of internal combustion engine (ICE) HGV movements near sensitive receptors, such as lichens located within the Ness Woods SAC / Easter Ness Forest SSSI, can significantly impact air-sensitive receptors through increased emissions of particulate matter (PM10 and PM2.5), nitrogen oxides (NOx), and volatile organic compounds (VOCs). These pollutants can degrade air quality, particularly in areas with sensitive vegetation, lichens, mosses, or habitats that rely on low-nutrient, clean-air conditions. Nitrogen deposition from NOx can alter soil chemistry and encourage invasive species, threatening the ecological integrity of designated sites. Full details of the receptors associated with the Proposed Development are provided in **Volume 1, Chapter 18 - Air Quality**.

5.21 Dust and fine particulates generated by ICE from vehicles such as HGVs especially on unpaved or poorly maintained access roads can settle on plant surfaces, reducing photosynthesis and damaging fragile flora. In SACs and SSSIs, this is especially concerning for epiphytic species, such as certain lichens and bryophytes, which absorb nutrients directly from the air and are highly sensitive to airborne pollutants. Prolonged exposure can lead to habitat degradation, reduced biodiversity, and failure to meet conservation objectives.

5.22 To mitigate these impacts, construction projects must implement strict Air Quality Management Plans, dust netting, barrier walls, sealed roads, dust suppression (e.g. water spraying), speed limits, wheel washing, and routing strategies to avoid ecologically sensitive zones. Monitoring of air quality and nitrogen deposition should be carried out regularly, and adaptive management used to respond to exceedances. In some cases, limiting ICE/ HGV movements or switching to low-emission vehicles may be required to protect the site's conservation status. Further details will be found in the AQMP, which will be part of the Final CEMP. An outline plan for dust is provided in **Volume 4 - Appendix 18.1 – Dust Monitoring Scheme**.

Terrestrial and Aquatic Ecology Impacts

5.23 High volumes of HGV movements near a Ness Woods SAC / Easter Ness Forest SSSI can pose serious risks to water-sensitive receptors, particularly where habitats depend on clean, stable hydrological conditions, such as aquatic bryophytes. Increased traffic can lead to surface runoff laden with hydrocarbons, heavy metals, and fine sediments, which may enter nearby watercourses or wetlands. This runoff can degrade water quality, disrupt aquatic ecosystems, and harm species such as freshwater pearl mussels, salmon, or sensitive invertebrates that rely on low-nutrient, oxygen-rich environments.

5.24 HGV movements also contribute to soil compaction and erosion, especially on unsealed or poorly maintained access roads. Compacted soils reduce infiltration and increase overland flow, which can alter natural drainage patterns and lead to flashier hydrology, more frequent and intense water level fluctuations. These changes can destabilise stream banks, increase sedimentation, and reduce habitat suitability for aquatic and riparian species. In peatland, this can also accelerate peat degradation and carbon loss.

5.25 To mitigate these impacts, construction projects must implement robust Water Management Plans, Dust Management Plan and Pollution Prevention Measures. This includes installing silt traps, oil interceptors, and buffer zones, as well as scheduling HGV movements during dry conditions and limiting access near sensitive water bodies. Regular monitoring of water quality and hydrological function is essential, and adaptive management should be used to respond to any signs of ecological stress or pollution.

Concreting

5.26 Concreting will be carried out throughout the site. These works will involve the following activities:

- Transportation to site – Delivery of raw materials to site, i.e. sand, cement, and aggregate. Materials will be delivered to site via the Caledonian Canal and vis the B862.
- Storage – Storing of concrete materials on site near to the batching locations which will be located within the construction compounds.
- Batching – Site batching of concrete onsite within different construction compounds.
- Transportation within site – Transportation of ready mixed concrete around site.
- Washing out – Concrete washout areas will be located
- Washing out – Concrete washout areas will be located as and when required throughout the site.

5.27 The components of the project that require the most significant amounts of concrete are the Dams, Powerhouse Shaft, Waterways, and Upper Intake. Further detail will be provided in the Final CEMP.

Blasting

5.28 Full details will be provided within a Blasting Method Statement, which is a requirement of planning condition: Prior to any blasting activities within the development, the applicant shall submit, for the approval of the planning authority, a Blasting Method Statement which describes how the best practicable means for minimising the impact of blasting on sensitive receptors.

5.29 Drilling and blasting will be used across the site and will be used for tunnel construction, road construction, and opening up borrow pits. This technique will be used when conventional mechanical excavation methods are deemed less effective. The process begins by notifying local residents of the planned activities. Following this the drilling of blastholes into the tunnel face using hydraulic or pneumatic drills. These holes are strategically arranged in patterns such as wedge, fan, or ring formations to control the direction and efficiency of the blast. Once drilled, the holes are loaded with explosives, typically a combination of detonating cord, boosters, and bulk explosives.

5.30 After loading, the blast is initiated in a controlled sequence. Following the blast, the muck (broken rock) is removed using loaders or conveyors, and the tunnel face is scaled to remove loose debris. Ventilation systems are used to clear dust and gases, ensuring safe re-entry for workers. The cycle then repeats, with each round advancing the tunnel by several meters. Throughout the process, monitoring and safety protocols are critical to manage risks and ensure compliance with environmental and occupational standards.

5.31 Explosives used in tunnelling and construction must be strictly controlled to ensure safety, legal compliance, and environmental protection. Control measures include appointing a qualified Explosives Supervisor responsible for overseeing procurement, transport, use and storage in accordance with the Explosives Regulations 2014 and the Quarries Regulations 1999. A site-specific Explosives Management Plan will outline risk assessments, blast designs, and emergency protocols. Access to explosives is restricted to authorised personnel, and all activities must be logged and reported to relevant authorities, including the Health and Safety Executive (HSE).

5.32 Handling procedures require that explosives be transported in approved containers, using designated vehicles with appropriate signage and fire suppression equipment. Detonators and bulk explosives must be kept separate during transit and use. On-site, explosives are only prepared immediately before use, with exclusion zones established and communication protocols in place. Personnel involved in handling must be trained and certified, and weather conditions are assessed to avoid unsafe blasting scenarios. Vibration monitoring and flyrock control are also implemented to protect nearby structures and ecosystems.

5.33 Storage of explosives is a highly regulated activity governed by strict safety protocols to minimise risk to the public and property. Explosives must be kept in secure, specifically designed, licensed magazines approved by the Health and Safety Executive, in consultation with SEPA and NatureScot. Magazines must be located away from populated areas, public highways, and other vital facilities. Minimum separation distances are determined by the type and quantity of explosives stored and are designed to contain the effects of an accidental detonation within the immediate area. Magazines are constructed of robust materials like steel, concrete, or fire-resistant earth, and are designed to resist unauthorized entry and external hazards like fire. Access is strictly controlled and monitored to prevent theft, vandalism, or unauthorised. Proper ventilation and temperature controls are maintained to ensure the stability of the explosive. The management of these materials is critical to maintaining safety and operational efficiency throughout the project.

6 Structure of Final CEMP

6.1 The MWC will develop the Final CEMP, and as a minimum, is anticipated to cover the following sections, which has been developed from Volume 4, Appendix 3.3: Outline CEMP of LKS EIA. The Final CEMP is expected to be a comprehensive document covering all relevant plans and procedures that will be implemented during the construction phase of the development.

Introduction and Description

6.2 The CEMP outlines the environmental safeguards and management strategies for the construction of the LKS project. It ensures compliance with the relevant guidance and standards from various stakeholders, including, but not limited to, SEPA, NatureScot, THC, and Transport Scotland. The CEMP will also include a number of individual plans that will be laid out in the introduction. These plans will identify risks, mitigation measures, and monitoring protocols to be implemented during the construction phase, protecting watercourses, peatlands, biodiversity, and cultural heritage.

Correspondence, Records and Record Keeping

6.3 The MWC provides a complete record of all relevant communication and reports associated with all aspects of environmental management and implementation of this document. A list of the suggested records to be kept is shown in Section 3.1.

Project Environmental Management Team

6.4 The MWC will appoint an Environmental Management Team (EMT), which will include, but not be limited to, a Project Environmental Manager, various Ecological Clerk of Works (ECoW), Aquatic Clerk of Works (AQCoQ), Archaeological Clerk of Works (ACoW), and specialist advisors where appropriate. The EMT will oversee daily compliance and monitoring, conduct inspections, and liaise with statutory bodies. Roles and responsibilities will be clearly defined to ensure accountability and rapid response to environmental issues.

6.5 The MWC will ensure that all contractor employees, sub-contractors, suppliers, and other visitors to the site are made aware of the content of this document and the final approved full CEMP. Accordingly, environmental specific induction training will be prepared and presented to all categories of personnel working and visiting the site.

6.6 As a minimum, the following information will be provided to all inductees:

- Identification of specific environmental risks associated with the work to be undertaken on site by the inductee (e.g. exclusion zones, fuel handling, spill kit locations, sensitive habitats, drainage control/mitigation, spill control, silt pollution control, waste minimisation and recycling, reporting of environmental observations).
- Environmental Incident and Emergency Response Procedures (including specific Environmental Communication Plan requirements and reporting of incidents).

6.7 Based on survey data collected throughout the planning and pre-commencement Development phases, the Employer develops an Environmental Constraints Area Map illustrating land constraint by environmental sensitivities (e.g. exclusion zones) and provides these maps to the MWC. The Employer provides updated survey data to the MWC when available, e.g. throughout the ecological survey season.

6.8 Informed by the Environmental Constraints Area Map, the MWC will provide an Environmental Risk Map illustrating environmentally sensitive areas and potential sources of pollution (e.g. water buffers, designated refuelling areas, location of spill kits, concrete wash out areas, fuel tanks etc.). The Environmental Risk Map will be used during the induction and prominently displayed in the compound areas. In consultation with the ECoW, the MWC updates the map as required.

6.9 Regular training sessions will be held and carried out by the MWC, in order to provide on-going reinforcement and awareness training, the above topics, along with any other environmental issues which arise onsite.

6.10 Training to include a range of matters including:

- Training on the use of spill kits (on ground and in surface waters), to be provided on a regular basis (to account for staff/subcontractor changes etc). Training to be undertaken by a suitably qualified individual; and

- Training on silt mitigation e.g. installation of silt fencing etc., silt mitigation measures to relevant construction / site staff.

6.11 A record of these talks will be kept by the MWC should the Employer request confirmation in an audit.

Environmental Policies and Procedures

6.12 All construction activities will adhere to a number of Environmental Policies, which will be summarised in detail in the Final CEMP. Within the CEMP, a clear set of roles and responsibilities, as well as communication procedures, will be established for dealing with various environmental matters.

Communication and Training Plan

6.13 The project will have a larger workforce that will have the relevant training and supervision for carrying out different site operations. All relevant talks, and environmental lessons learned will be included in any site briefings and Risk Assessments and Method Statements.

6.14 Effective engagement with local communities, landowners, statutory consultees and other stakeholders is a critical component of the Proposed Development. A dedicated Community Liaison Group will serve as a point of contact for queries, concerns and complaints, ensuring that all communications are responded to promptly and transparently. Regular updates will be provided through newsletters, community meetings and online platforms, detailing upcoming works, potential disruptions and mitigation measures.

6.15 Pre-construction briefings will be held prior to high-impact activities, such as blasting, cofferdam installation or night-time operations. Coordination with SEPA, NatureScot, and local planning authorities, The Highland Council (THC) will occur on a regular basis to ensure compliance with consents, licences and environmental commitments. Feedback from stakeholders will be formally recorded and used to refine mitigation measures and operational procedures throughout construction.

6.16 The MWC provides and maintains project environmental notice board(s) which are positioned to ensure that all operatives have the opportunity to review a notice board on a daily basis. As a minimum this will include one notice board to be placed in each compound.

6.17 The environmental notice boards are maintained by the MWC's Site Environmental Representative and shall be updated at least monthly. As a minimum, the notice boards contain:

- Description of the key environmental risks and intended risk mitigation measures.
- Accompanying Environmental Constraints Map illustrating the location of the key risks and required exclusion zones / buffer zones and location of emergency response equipment, as required by the CEMP; and

- Key contact numbers and responsible personnel identified within the Environmental Incident and Emergency Response Plan (EIERP).

Environmental Auditing and Monitoring Plan

6.18 Regular audits will be conducted by the ECoW and the Project Environmental Manager to assess compliance with the CEMP. Monitoring will include water quality sampling, noise and vibration checks, and ecological surveys. Water-quality monitoring

will focus on turbidity, suspended solids and pH, particularly during cofferdam and intake works. Noise and vibration monitoring will take place during penstock blasting, while ecological monitoring will continue through each phase under the supervision of the ECoW. Results will be documented and used to adapt mitigation strategies as needed.

6.19 Audits may be completed at any time by the Employer, but at least one per quarter. All completed audit forms (and records of corrective action and close outs) must be filed. The MWC undertakes a programme of environmental audits to satisfy conformity with CEMP principals, including audits of their sub-contractors.

Management of Change

6.20 During the construction of the Development, it is considered reasonable to presume that certain eventualities will partially or fully preclude the implementation of specific standards and processes outlined herein. In these events, the MWC provides justification to the Employer outlining the reasons for any departure and details a proposed alternative approach that does not compromise environmental protection. The alternative proposals shall only be adopted following consideration and acceptance of the Employer and the ECoW where relevant.

Emergency Environmental Response Plan

6.21 An Emergency Environmental Response Plan (EEMP) will be in place for pollution incidents, fires, and ecological emergencies. Spill kits will be available on-site, and staff will be trained in containment procedures. SEPA and NatureScot will be appropriately notified in the event of significant environmental harm.

Pollution Prevention Plan

6.22 All site discharges are regulated under the Environmental Authorisations (Scotland) Regulations 2018 (the “EASR” Regulations) and the Water Environment (Miscellaneous) (Scotland) Regulations 2017. A licence will be sought from SEPA prior to the commencement of any operations on-site.

6.23 A Pollution Prevention Plan (PPP) will be used as a proactive strategy to identify, manage, minimise and control risks of environmental pollution associated with construction activities. All works near watercourses will follow SEPA’s Pollution Prevention Guidelines (PPGs) and CAR license conditions.

6.24 The MWC is responsible for ensuring that all materials ordered or brought to site listed as hazardous under the Control of Substances Hazardous to Health (COSHH) Regulations are accompanied with all relevant Safety Data Sheets for each substance. The MWC comply with the COSHH Regulations.

6.25 Further detail is as follows:

- Identifies Pollution Risks: It assesses potential sources of pollution such as fuel spills, sediment runoff, concrete washout, and chemical leaks. This includes mapping sensitive receptors like watercourses, peatlands, and protected habitats.

- Implements Control Measures: The plan outlines site-specific mitigation strategies—such as bunded storage areas, spill kits, silt fencing, and designated refuelling zones—to prevent pollutants from entering the environment. These measures align with SEPA’s Pollution Prevention Guidelines (PPGs) and the Environmental Authorisations (Scotland) Regulations 2018 Regulations.

- Establishes Response Protocols: It defines clear procedures for responding to pollution incidents, including containment, reporting, and remediation. Staff are trained to act quickly, and emergency contacts (e.g., SEPA, local authorities) are listed for rapid coordination.

6.26 Depending on the time available between contract award and construction start, the developer of the site may act as Responsible Person until such time as a MWC is appointed, at which point the license and Responsible Person nomination will be transferred to the MWC. Upon transfer of the license, the MWC will prepare any further site/works-specific plans, and documents to update the PPP dependent on their design of the Works.

6.27 The Client / MWC submits all temporary drainage designs and drawings as required to comply with conditions of the CAR Construction Runoff Permit as amended (2021 update) and PPP.

General Pollution Prevention Measures

6.28 The following points (not exhaustive) indicate general pollution prevention measures in accordance with those highlighted within the guidelines referenced in this document and the EIA Report. Pollution Prevention measures relating to specific tasks will be detailed in the full CEMP.

- Any material or substance which could cause pollution, including fuels/oils, wet cement, raw concrete or silty water will be prevented from entering groundwater, surface water drains or watercourses by the appropriate use of and appropriate placement of (temporary) silt fences, cut-off drains, silt traps and drainage to vegetated areas where appropriate. Any sign of failing water treatment measures or sight of silted or contaminated water entering any watercourse on site will be reported immediately.

- Any silty water generated on site will ideally be settled out as much as possible through drainage mitigation measures (silt traps, etc.) and, where appropriate, released back into the watercourse.

- External fuel delivery lorries will only be allowed as far as the site compound where there will be a covered refuelling area equipped with an impermeable base.

- Fuel transfer / refuelling will be undertaken by specifically trained and competent staff or undertaken under competent supervision.

- Areas of waste oil / fuel / chemical storage and permanent refuelling will be located at least 50m away from watercourses or drainage paths. Where this is not possible, advice will be sought from the ECoW, and a minimum distance will be agreed with the Employer. Such storage areas will be sited on an impervious base to prevent the downward percolation of contaminants to natural soils and groundwater.

- All refuelling will be carried out at least 10m from watercourses. Where this buffer distance cannot be achieved a minimum distance will be agreed with the ECoW. Fuel pipes on plant, outlets at fuel tanks etc will be regularly checked and maintained to ensure that no drips or leaks to ground occur.

6.29 Spill kits will be available within each plant on site and located close to identified pollution sources or sensitive receptors (fuel storage areas, water course crossings, etc).

- Irrespective of the buffer distance and location of refuelling, interceptor drip trays (or similar, e.g. plant nappies, – open metal drip trays are not acceptable) will be available. Interceptor drip trays will be positioned under any stationary mobile plant to prevent oil contamination of the ground surface or water.

- All stockpiled materials will be stored in designated areas and isolated from any surface drains. Aggregate or fine materials storage with dust or run off potential will be enclosed and screened/sheeted.

- Washing-out of concrete wagons on site shall only be permitted when the MWC has provided a designated, suitably prepared wash-out area with signage identifying the area as suitable for concrete wagon wash-out.

- The concrete 'washout' in the designated area shall not be emptied into any watercourse and shall be appropriately treated or disposed of in accordance with the Site Waste Management Plan.

- Tools, equipment, or materials will not be washed in watercourses. Mortar mixing and material storage areas must be away from watercourses.

Sediment Management Plan

6.30 The Sediment Management Plan (SMP) will be an important management plan and will be crucial for the success of the project. The SMP is designed to reduce the impact of the Proposed Development on natural morphological processes, such as erosion, sediment transport, and deposition. **Volume 4 - Appendix 10.1 - Terrestrial Ecology Report** lays out the extent of the sensitive receptors and should be used and referred to when planning the SMP, particularly around the impacts to the SACs and water bodies. The plan will refer to the following guidance:

- WAT-SG-21: Environmental Standards for River Morphology
- WAT-SG-26: Sediment Management
- WAT-SG-30: Review of River Geomorphology Impact Assessment Tools
- WAT-SG-44: Riparian Vegetation Management
- WAT-RM-02: Regulation of Engineering Activities

6.31 The SMP will be closely linked to the WMP and will use the following hierarchy of control to proactively manage sediment on site:

- Avoidance - The most effective control is to avoid the disturbance of natural processes altogether. This includes careful planning to reduce the footprint of construction, preserving vegetation cover, protecting sediment stores, and scheduling works during dry seasons to minimise erosion risk. Avoidance also means routing access tracks and infrastructure away from watercourses and steep slopes. Other ways of avoidance include delineating a clean vs a dirty water system. For example, a watercourse crossing under a road should have all surface water (dirty) from the road diverted away from the watercourse (clean) towards treatment areas.

- Minimisation - Where disturbance is unavoidable, the next step is to minimise the extent and duration of exposed soils. Techniques include phased construction, rapid re-vegetation, and stabilisation using geotextiles or mulch. Minimisation also

involves reducing vehicle movements and using low-impact machinery to limit soil compaction and erosion.

- Containment - Containment measures aim to trap sediment before it reaches sensitive receptors. Trapping and slowing sediment in suspension is vital for reducing the impact on terrestrial and aquatic ecology. This includes installing silt fences, straw bales, sediment traps, and settlement ponds. These barriers intercept runoff and allow particles to settle, protecting nearby watercourses, wetlands, and designated sites like SACs and SSSIs.

- Treatment - The final layer involves treating sediment-laden water before discharge and monitoring effectiveness. This may include primary and secondary forms of treatment, flocculants, or engineered wetlands.

- Monitoring - Monitoring is a critical component of the SMP. Regular inspections by the Environmental Clerk of Works (ECoW) ensure that sediment controls are functioning effectively and are maintained or replaced as needed. Visual assessments, turbidity testing, and photographic records help track performance over time. If sediment is observed entering watercourses, immediate corrective actions must be taken, and SEPA notified if thresholds are breached.
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- Servicing – Following, regular monitoring and inspections, targeted servicing and or modifications to the management systems should be carried out. These should be carried out in a proactive manage.

6.32 Preventative measures should always be looked to be carried out and there should always be sufficient stores and supplies on site to carry out these works. Stabilisation techniques—like hydroseeding, geotextiles, and rapid re-vegetation—are used to reduce erosion on bare ground. Construction sequencing should be planned to minimise the extent and duration of exposed soils, especially during wet seasons.

6.33 Post-construction, the SMP includes reinstatement of disturbed areas with topsoil replacement and native vegetation to restore natural drainage and soil structure. Long-term erosion control may involve contouring, buffer strips, and habitat enhancement. The SMP supports compliance with planning conditions and environmental legislation, helping to protect Scotland's water-sensitive ecosystems from degradation.

Waste and Disposal Management Plan

6.34 To prevent the generation of waste, Waste and Disposal Management Plan (WDMP) will use the Waste Hierarchy through the design, development, and construction of the various elements of the project. The plan will emphasise the five stages of the Waste Hierarchy: reduce, reuse, recycle, recover, and dispose, with clear targets for minimising landfill use and maximising resource efficiency. The WDMP will outline how construction waste will be identified, handled, and disposed of in compliance with the Waste (Scotland) Regulations 2012 and SEPA guidance. It begins by classifying expected waste types—such as inert, hazardous, and biodegradable—using European Waste Catalogue (EWC) codes and sets out responsibilities for contractors and site personnel.

6.35 On-site procedures include segregation of materials into designated skips, secure containment for hazardous substances, and protocols for safe storage and handling. Licensed waste carriers will be used for transport, with full documentation maintained to meet Duty of Care obligations. Recycled materials will be prioritised in construction,

and regular audits will track volumes, destinations, and compliance with environmental commitments.

6.36 Monitoring and reporting are central to the WDMP, with inspections conducted to ensure best practices are followed and corrective actions taken when necessary. Staff will receive training on waste protocols, and contingency measures will be in place for unexpected waste types or pollution incidents. The plan supports sustainable construction and helps safeguard Scotland's natural environment throughout the project lifecycle.

6.37 Waste will be segregated, stored, and disposed of in accordance with the Waste (Scotland) Regulations 2012. A licensed waste carrier will be used, and reuse/recycling will be prioritised. Hazardous waste will be managed under COSHH regulations.

Water Management Plan

6.38 The Water Management Plan (WMP) will outline how water resources will be protected and managed throughout the construction phase, ensuring compliance with SEPA's Environmental Authorisations (Scotland) Regulations 2018 and pollution prevention standards. Survey data and analysis used in **Volume 1 - Chapter 7 - Water Management** and **Volume 4 - Appendix 10.1 - Terrestrial Ecology Report** will be used to identify watercourses, groundwater, drainage systems, and receptors that may be affected by the works, and sets out mitigation measures to prevent contamination, flooding, and hydrological disruption. This plan will consider in-water and out-of-water activities that will impact the water environment, such as cofferdam works in lochs and watercourse crossings. The WMP also considers seasonal variations and climate resilience to safeguard sensitive aquatic environments.

6.39 Construction drainage will be designed to control sediment, manage flow, and prevent runoff into natural water bodies. Techniques such as settlement ponds, silt fencing, and buffer zones will be used to reduce turbidity and protect water quality. Any water abstraction or discharge will be licensed under CAR, and activities near watercourses will follow SEPA's Good Practice Guide for River Crossings and Engineering in the Water Environment guidance. Fuel and chemical storage will be bunded and located away from water-sensitive areas.

6.40 Monitoring and reporting are central to the WMP, with regular inspections conducted by the ECoW to ensure compliance. Water quality sampling may be undertaken at key locations, and adaptive management will be used to respond to adverse weather or unexpected pollution risks. Staff will be trained in water protection protocols, and emergency response procedures will be in place for spills or drainage failures. The plan supports sustainable construction while protecting Scotland's water environment.

6.41 Foundation excavations for the proposed development is below the level of the surrounding ground and hence surface water ingress from up slope or groundwater seepage may occur, leading to standing water within the base of the excavation. A 'permit to pump' procedure will be in place prior to water being pumped from an excavation. The MWC seeks the Site Environmental Representative's and/or ECoWs (Environmental Clerk of Works) approval prior to granting a 'permit to pump'.

Soil Management Plan

6.42 The Soil Management Plan (SMP) will outline how soil resources will be protected, handled, and reused during construction, in accordance with SEPA, NatureScot, and British Standards guidance. Survey data and analysis are presented in **Volume 1 - Chapter 14 - Geology, Soils and Water** and ground investigation information will be

used to identify site-specific assessment of soil types, quality, and sensitivity, identifying areas of topsoil and subsoil to be stripped, stored, and reinstated. The plan aims to preserve soil structure, fertility, and function, supporting future restoration and minimising erosion and compaction risks.

6.43 During construction, soil will be stripped in dry conditions, stored in segregated stockpiles, and protected from contamination and sealed to reduce runoff. Stockpiles will be clearly marked, limited in height, and located away from watercourses and sensitive habitats. Erosion control measures such as geotextiles, vegetation cover, and drainage channels will be implemented on exposed areas and steep slopes to prevent sediment loss and water pollution. GBR 22: Management of soil and spoil near watercourses.

6.44 Monitoring will be carried out by the ECoW to ensure compliance with handling protocols and restoration targets. Soil quality will be assessed before reuse, and any contaminated or unsuitable material will be treated or disposed of in line with SEPA's waste guidance. The SMP supports sustainable land management and helps maintain ecological integrity across the construction site.

Borrow Pit Management Plan

6.45 The Borrow Pit Management Plan (PMP) outlines how borrow pits will be planned, constructed, operated, managed and closed. The plan will also identify the anticipated locations of the borrow pits and how they relate to associated infrastructure.

6.46 Access routes to the borrow pit will be designed to minimize land disturbance and ensure safe vehicle movement. The majority of haul roads will be unsealed in nature, however, some areas may need to be surfaced and maintained to reduce dust, sediment tracking, and erosion. Wheel washes may be installed at entry points, and traffic will be managed to avoid congestion and protect sensitive habitats.

6.47 Effective drainage is essential to prevent waterlogging, erosion, and pollution from borrow pit operations. The plan includes perimeter ditches, settlement ponds, and silt fencing to manage surface water and control sediment runoff. These measures protect nearby watercourses and comply with SEPA's water environment regulations, especially in sensitive upland or peatland areas.

6.48 To open the borrow pits, the topsoil, peat and or vegetation will be stripped and segregated as per the SMP. Once the bedrock is exposed, excavation works can commence. If blasting is required to extract rock, it will be carried out under strict protocols aligned with the Quarries Regulations 1999. This includes vibration monitoring, exclusion zones, and controlled timing to reduce disturbance to wildlife and nearby communities. Safety signage and communication procedures will be in place to ensure public and worker safety.

6.49 Once extraction is complete, the borrow pit will be regraded to blend with the surrounding landscape, in line with the SRP. Stored topsoil and peat will be replaced, and native vegetation will be re-established using appropriate seed mixes. Monitoring will ensure restoration targets are met, supporting ecological recovery and fulfilling planning and environmental obligations.

Peat Management Plan

6.50 The Peat Management Plan (PMP) will outline how peatland resources will be protected, excavated, stored, and reinstated during construction, in line with NatureScot's Guidance on Developments on Peatland and SEPA's regulatory framework. Peaty survey data from **Additional Information - Appendix 14.1 - Peat**

Management Plan (September 2024) and **Volume 4 - Appendix 14.2 – PLHRA**, will be used to identify areas of deep or sensitive peat, carbon-rich soils, and hydrologically active zones. The plan aims to minimise peat disturbance, avoid unnecessary excavation, and reduce greenhouse gas emissions associated with peat degradation.

6.51 Excavated peat will be carefully handled and stored in designated stockpiles, with measures to prevent drying, erosion, and contamination. Reuse of peat for site restoration—such as reinstating borrow pits, access tracks, and turbine bases—will be prioritised to maintain ecological function and carbon storage. Works will avoid deep peat areas where feasible, and floating road techniques or geogrid reinforcement may be used to reduce excavation in sensitive zones.

6.52 Monitoring will be conducted by the ECoW, with regular inspections to ensure compliance with handling protocols and restoration targets. Any changes to peat volumes or excavation methods will be documented and justified through updated risk assessments. The PMP supports climate resilience, biodiversity protection, and responsible land stewardship across the construction site.

Site Restoration Plan

6.53 The Site Restoration Plan (SRP) will outline how land disturbed during construction will be reinstated to a stable, ecologically functional condition, in line with planning conditions and NatureScot's Guidance on Habitat Restoration. Restoration will be as stated in, **Volume 4 - Appendix 19.3 - Forest to Bog Restoration Proposals** and **Volume 1 - Chapter 8 - LVIA** and or pre-commencement planning conditions that will accompany the planning application. These works will be approved by the relevant stakeholders, such as NatureScot and SEPA, ahead of reinstatement commencing. The plan aims to minimise the long-term environmental impact and support biodiversity recovery, especially in sensitive upland and peatland areas.

6.54 Restoration measures include regrading disturbed areas, replacing stored topsoil and peat, and re-establishing native vegetation using locally sourced seed mixes. Temporary infrastructure such as access tracks, laydown areas, and borrow pits will be removed or softened, and drainage systems will be adapted to restore natural hydrology. Works will be timed to optimise growing conditions and reduce erosion risk, with techniques tailored to site-specific conditions such as slope, substrate, and exposure.

6.55 Monitoring will be carried out by the Landscape Clerk of Work (LCoW) and ECoW to assess restoration success and guide adaptive management. Vegetation cover, soil stability, and hydrological function will be tracked over time, and remedial actions will be taken if targets are not met. The SRP ensures that construction leaves a positive legacy, supporting Scotland's landscape integrity and ecological resilience.

Cultural Heritage Management Plan

6.56 The Cultural Heritage Management Plan (CHMP) will outline how known and potential heritage assets will be protected during construction, ensuring compliance with planning conditions and Historic Environment Scotland's Managing Change in the Historic Environment guidance. It begins with the baseline information stated in **Volume 1 - Chapter 15 - Cultural Heritage**, which will be used to identify nearby archaeological sites, listed buildings, and historic landscapes within or near the project area. The plan aims to avoid or minimise physical and visual impacts on these assets through careful design, exclusion zones, and timing of works.

6.57 During construction, protective measures such as fencing, signage, and buffer zones will be implemented around sensitive sites. Where ground disturbance is unavoidable, archaeological watching briefs or supervision will be arranged in consultation with local authority archaeologists. Any unexpected discoveries—such as artefacts or buried structures—will trigger a stop-work protocol and immediate reporting to the relevant heritage body, with procedures in place for assessment and preservation.

6.58 Monitoring will be carried out by a qualified heritage specialist, Archaeological Clerk of Works (ACoW) and LCoW, who will ensure compliance with mitigation measures and provide regular updates to stakeholders. All heritage-related activities will be documented, and post-construction reporting will contribute to the public record. The Cultural Heritage Management Plan supports responsible development while safeguarding Scotland's rich historical legacy.

Ecological Management Plan

6.59 The Ecological Management Plan (EMP) will outline how biodiversity will be protected and enhanced during construction, ensuring compliance with NatureScot's Planning for Development: Environmental Guidance, SEPA's regulatory framework, and relevant SAC conservation objectives. The information collected and assessed during the EIA, as summarised in will be used to identify protected species, priority habitats, and designated sites—including, but not limited to Ness Woods SAC Easter Ness Forest SSSI, which is valued for its ancient woodland and associated fauna. The following documents from the EIA will be referred to:

- **Volume 4 - Appendix 10.1 - Terrestrial Ecology Report**
- **Volume 4 - Appendix 10.2 - Bryophyte Survey Report**
- **Volume 4 - Appendix 10.3 - Terrestrial Lichen Survey Report**
- **Volume 4 - Appendix 10.4 - Freshwater Lichen Survey Report**
- **Volume 4 - Appendix 10.5 - Ness Woods SAC Tree Tagging**
- **Volume 4 – Appendix 10.7: Outline HMP**
- **Volume 4 - Appendix 10.8: Otter Survey Report (GI Works) (CONFIDENTIAL)**
- **Volume 4 - AI Appendix 10.10 - Deer Management Strategy**
- **Volume 4 - Appendix 11.2 - Ornithological Baseline Survey Results**
- **Volume 4 - Appendix 11.4: Sensitive Bird Records (CONFIDENTIAL)**
- **AI Appendix 11.5: White-Tailed Eagle Nest – Briefing Note (CONFIDENTIAL)**
- **Volume 4 - Appendix 12.1 - Loch Kemp Baseline Aquatic Surveys**
- **Shadow Habitats Regulations Appraisal Report**

6.60 The EMP sets out mitigation measures to avoid or minimise impacts, including timing restrictions, buffer zones, and habitat connectivity safeguards. Construction activities in or near Ness Woods SAC / Easter Ness Forest SSSI will be carefully managed to prevent disturbance, fragmentation, or pollution. Where practicable, works will be scheduled outside sensitive breeding and hibernation periods, and physical barriers or exclusion zones will be used to protect key habitats. Lighting, noise, and vibration will be controlled to reduce indirect impacts on woodland species such as bats, otters, and breeding birds. Invasive non-native species will be monitored and controlled in line with the Invasive Non-Native Species Code of Practice. To safeguard the integrity of of the Ness Woods SAC/ Easter Ness Forest SSSI compensatory measures will be implemented as detailed in **120012-R-DR-RHD-Loch Kemp Storage - Case For Derogation Update** (April 2025).

6.61 Monitoring will be led by an ECoW, who will conduct regular inspections, ensure compliance with mitigation measures, and liaise with NatureScot and local planning authorities. Adaptive management will be used to respond to ecological risks, and post-construction restoration will include replanting native woodland species and enhancing habitat structure. The EMP ensures that construction supports Scotland's

biodiversity goals while safeguarding the integrity of Ness Woods SAC / Easter Ness Forest SSSI.

Construction Noise and Vibration Management Plan

6.62 The Construction Noise and Vibration Management Plan (CNVP) will outline how noise and vibration impacts will be managed during the project, ensuring compliance with BS 5228-1 and -2, local planning conditions, and environmental protection standards. The information collected and presented in the **Volume 1 - Chapter 17 - Noise and Vibration** and **Volume 4 - Appendix 17.3 - Outline CNVMP**, will be used to identify sensitive receptors, on and off-site, such as residential areas, schools, and wildlife habitats. The plan sets limits for permissible noise and vibration levels and establishes working hours to minimise disruption.

6.63 Mitigation measures include selecting low-noise equipment, using acoustic barriers, and scheduling high-impact activities during less sensitive times of day. Vibration control may involve alternative construction techniques or the establishment of buffer zones around vulnerable structures. Continuous monitoring will be carried out at key locations, with real-time alerts and adaptive management to prevent exceedances. All activities will be coordinated to avoid cumulative impacts from overlapping operations.

6.64 The ECoW or a designated acoustic specialist will oversee compliance, conduct regular inspections, and liaise with local authorities and affected communities. Complaints will be logged and addressed promptly, and communication protocols will ensure transparency and responsiveness. The plan supports responsible construction while safeguarding public health, amenity, and ecological integrity.

Air Quality Management Plan

6.65 The Air Quality Management Plan (AQMP) will outline how dust, emissions, and airborne pollutants will be controlled during construction to protect public health, ecological receptors, and compliance with planning obligations. The information collected and presented in **Volume 1 - Chapter 18 - Air Quality** and **Volume 4 - Appendix 18.1 - Dust Monitoring Scheme**, will be used to identify sensitive receptors, such as residential areas, schools, and designated habitats such as the Ness Woods SAC / Easter Ness Forest SSSI. The plan sets out thresholds for particulate matter (PM10 and PM2.5), nitrogen dioxide (NO_2), and other pollutants, referencing IAQM and SEPA guidance.

6.66 Mitigation measures include dust suppression techniques such as water spraying, wheel washes, and covering of stockpiles. Vehicle and machinery emissions will be minimised through regular maintenance, use of low-emission equipment, and anti-idling policies. Site layout will be optimised to reduce exposure, and activities likely to generate high dust levels such as earthworks or concrete batching will be scheduled during favourable weather conditions and away from sensitive boundaries.

6.67 Monitoring will be carried out by the Environmental Clerk of Works (ECoW) or a qualified air quality specialist, using visual inspections and, where required, real-time sensors. Complaints and exceedances will be logged and addressed promptly, with adaptive management used to refine controls. The Air Quality Management Plan ensures construction activities are conducted responsibly, safeguarding air quality for workers, communities, and the surrounding environment.

Dust Management Plan

6.68 The MWC shall implement the following mitigation measures to minimise dust emissions during the Works:

- Wheel cleaning and lorry sheeting measures are employed to prevent mud, debris or other loose or deleterious material being deposited on the local road network. Similarly, any hardstanding areas for vehicle parking are kept clean and, if unsealed, are kept damp during prolonged spells of dry weather or as required to suppress dust emissions. Site speed limits will also be enforced.

- Site entrances and the adjacent local road network are kept free of mud and other loose or deleterious material arising from construction traffic through use of a road sweeper where required.

- Dust generation on site haul roads and hardstanding areas is avoided or minimised by regular water spraying in dry weather spells or as required to suppress dust emissions.

- Excavations and excavated materials are kept damp by water spraying or misting and stockpiles are dampened down and if necessary, covered or screened. Waste material is stored in a controlled manner in a designated area.

- Adequate supplies of water are made available for use for dust suppression. Dust collection systems and / or dampening systems are used on all blast-hole drilling machines (if used). Borrow pit working areas are kept damp by water spraying or misting if required to suppress dust emissions.

7 Final CEMP

7.1 Once appointed, the MWC will produce the Final CEMP as part of the pre-commencement planning conditions. This will then be submitted to THC, SEPA and NatureScot, as appropriate, for approval prior to the start of the main works. The production of the Final CEMP will require input from multiple stakeholders and consultees.

7.2 The report is anticipated to be extensive and comprehensive in nature, and as such, will require being distilled and appropriately communicated by the MWC to all relevant site personnel and visitors. During the construction phase, the CEMP will be kept as a live document and will be updated as the project evolves.

7.3 Updates to the CEMP may be required due to the following (but not limited to):

- Working methods may change such that the CEMD would also require updating.

- The MWC may be required to deal with unforeseen events or conditions that could impact environmental management.

- Additional environmental issues or interfaces may be picked up by ecologists during the works period.

- The Proposed development has a long programme and Construction best practices may be altered during the works which would require revision to parts of the CEMP, and

- Comments or advice from the ECoW or stakeholders following site visits may mean a change of working methods is required, to be reflected in a revised CEMP.