

A83 Rest and Be Thankful

LTS EIAR VOLUME 4, APPENDIX 4.2 - FIRST ITERATION
ENVIRONMENTAL MANAGEMENT PLAN

Transport Scotland

A83AAB-AWJ-EAC-LTS_GEN-RP-LE-000434

A4-2. First Iteration Environmental Management Plan

A4-2.1. Introduction and Background to Project

Purpose of the First Iteration Environmental Management Plan

A4-2.1.1. A first iteration of the Environmental Management Plan (FIEMP) has been produced in accordance with [Design Manual for Roads and Bridges \(DMRB\) LA 120 'Environmental management plans'](#) (hereafter referred to as DMRB LA 120), as an appendix to the Environmental Impact Assessment (EIA) Report for the A83 Rest and Be Thankful Long-Term Solution (hereafter referred to as the Proposed Scheme). According to DMRB LA 120, the FIEMP “*shall set out the conclusions and the actions needed to manage environmental effects identified within the environmental assessment during construction and operation of a development*”.

A4-2.1.2. DMRB LA 120 stipulates that an FIEMP shall be produced at the design stage of the Proposed Scheme and thereafter it should be refined and updated for the consented project in advance of construction, and at the end of construction to support future management and operation. To reflect the current stage, the EMP is referred to as the First Iteration Environmental Management Plan (FIEMP).

The Project

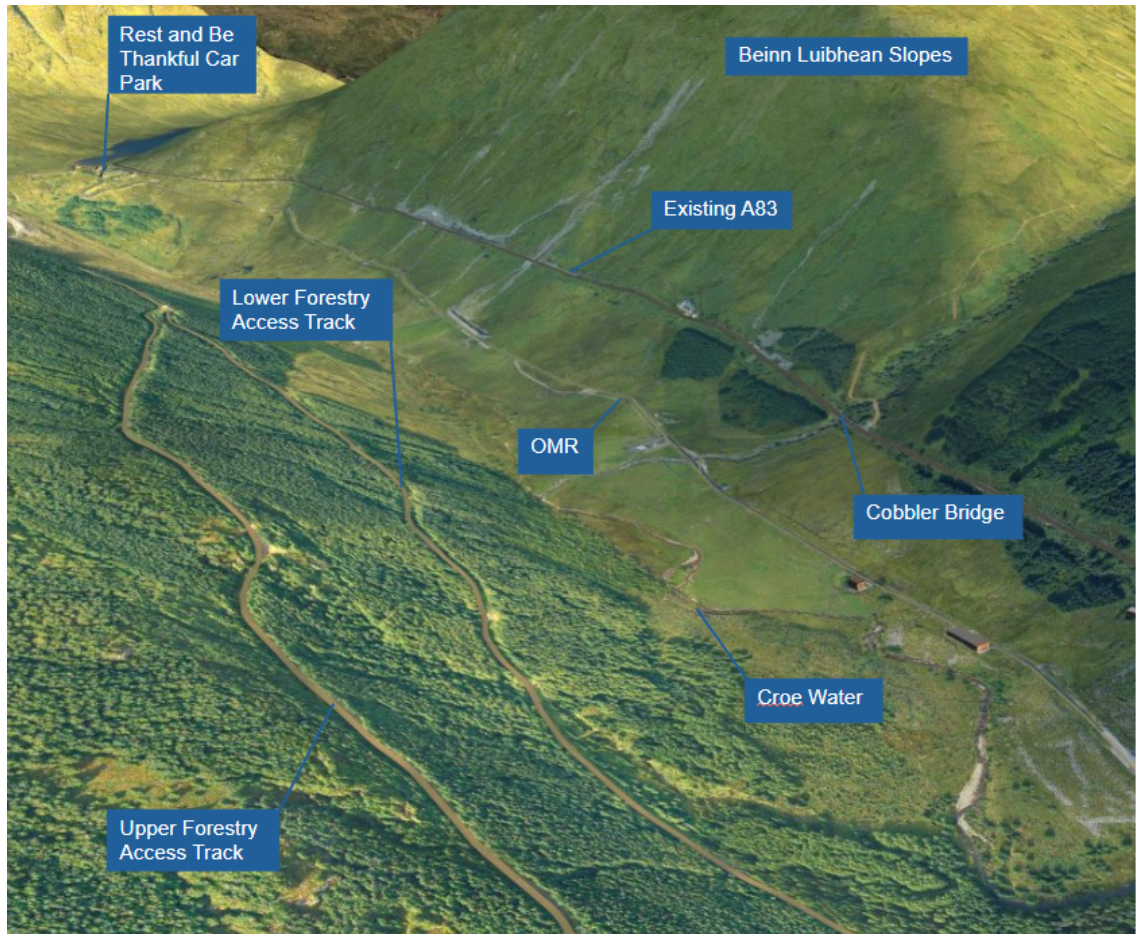
A4-2.1.3. The Proposed Scheme is located in Glen Croe, at the highest point of the A83 trunk road (A83), approximately 265m Above Ordnance Datum (AOD).

A4-2.1.4. The A83 is one of two east-west strategic trunk roads that connects Argyll and Bute to the central belt of Scotland, making it a vital link in the region's transportation infrastructure. The adjacent hillsides have a history of instability resulting in landslides and debris flow hazards, which has increased in recent years due to the frequency of heavy, intense periods of rainfall, leading to road closures and resultant diversion. The Proposed Scheme has been proposed by Transport Scotland as a long-term, resilient, and sustainable solution to the problem of landslides in Glen Croe. The Proposed Scheme location as it passes through Glen Croe is shown in Plate 1, below.

Plate 1 – Proposed Scheme Location (red inset box)



Plate 2 – Key features within Glen Croe



A4-2.1.5. The Proposed Scheme extends for a length of 2.25km, predominately online of the existing A83 trunk road and can be split into five sections:

- a southern tie-in to the existing A83 immediately north of the existing Cobble Bridge
- a debris flow shelter (DFS) and catch pit over a length of 1.35km
- a debris flow wall (DFW) and catch pit extending approximately 145m north from the DFS
- a northern tie-in to the existing A83 and
- a B828 Glenmore local road junction and Rest and Be Thankful Viewpoint car park and bus stop / turning area.

A4-2.1.6. In addition to the permanent solution to address the landslide and debris flow risk to the A83, improvements to the Old Military Road (OMR) are proposed to deliver a safe, proportionate and resilient diversion route to use while the A83 is closed during delivery of the long-term solution.

A4-2.1.7. It is currently estimated that construction would comprise of approximately one year for the OMR improvements and geohazard interventions and three-to-four-years for the construction of the Long-Term Solution following appointment of a Contractor, based on a continuous working approach. The Appointed Contractor will be required to update and monitor the construction programme throughout the duration of the Proposed Scheme and include reference to timings for discharging the environmental mitigation measures. A copy of the construction programme should be included in Annex H: Construction Programme of the Appointed Contractor's Second Iteration Environmental Management Plan (EMP).

Environmental Context and Constraints

A4-2.1.8. The Proposed Scheme is located within Glen Croe, which sits within the Argyll Forest Park and the Loch Lomond and The Trossachs National Park (LLTNP) (Northern Area). At the northern extent of the glen there is a viewpoint and car park known as the 'Rest and Be Thankful' viewpoint which offers a view south across the entire glen and is the site of a Category C listed structure – 'Rest and be Thankful' Stone.

A4-2.1.9. One designated site is located partially within the Proposed Scheme boundary, [Beinn an Lochain Site of Special Scientific Interest \(SSSI\)](#). Within the wider area, the [Glen Etive and Glen Fyne Special Protection Area \(SPA\)](#) is located 1.8km to the north of the Proposed Scheme and [Loch Lomond Woods Special Area of Conservation](#) (SAC) is located approximately 3.1km to the east.

A4-2.1.10. There are no residential, commercial or industrial properties located immediately adjacent to the proposed scheme. Two private residences are located approximately 270m from the Proposed Scheme. The land immediately surrounding the Proposed Scheme comprises of fields of improved and semi-improved pasture, agricultural outbuildings, small areas of forestry plantation and rough grazing.

A4-2.1.11. The location of the Proposed Scheme in relation to the local area and key environmental constraints is shown on Figure 1.2 of the EIA Report as provided in Annex A: Environmental Features.

Project Objectives

A4-2.1.12. The key objectives of the Proposed Scheme as reported in the EIA Report are as follows:

- Resilience - Reduce the impact of disruption for travel to, from and between key towns within Argyll and Bute, and for communities accessed via the strategic road network.

- Safety - Positively contribute towards the Scottish Government's Vision Zero road safety target by reducing accidents on the road network and their severity.
- Economy - Reduce geographic and economic inequalities within Argyll & Bute through improved connectivity and resilience.
- Sustainable travel - Encourage sustainable travel to, from and within Argyll & Bute through facilitating bus, active travel and sustainable travel choices.

A4-2.1.13. The objectives align with the design strategy and objectives in [DMRB GG 103](#) (Introduction and general requirements for sustainable development and design) and [DMRB LD 117](#) (Landscape design).

A4-2.2. Project Team Roles and Responsibilities

Roles and Organisations Involved in the Delivery of the FIEMP

- A4-2.2.1. Transport Scotland will be responsible for overseeing management of the Proposed Scheme. Some of the site supervision roles involved in the delivery of the mitigation detailed within the FIEMP will be the responsibility of the Appointed Contractor such as the Ecological Clerk of Works (EcCoW).
- A4-2.2.2. The Appointed Contractor will be responsible for the construction phase of the Proposed Scheme, this will include for the appointment and management of any subcontractors. The Appointed Contractor will be contracted in writing by Transport Scotland to plan, manage, monitor and coordinate health and safety during this phase. The Appointed Contractor will also be responsible for overseeing environmental management on site and will have responsibility for updating the FIEMP once the design and construction stage plans have been finalised. Furthermore they will provide an updated EMP to Transport Scotland for monitoring during future management and operation of the Proposed Scheme.
- A4-2.2.3. The Appointed Contractor will be required to delegate responsibilities (prior and during construction) to experienced onsite personnel within the key areas of the site. The delegation of responsibilities will be clearly identified within relevant Proposed Scheme documents and site files.
- A4-2.2.4. A summary of key personnel and a summary of their anticipated responsibilities are provided in Table A4-2.1. The responsibilities of onsite personnel will be clearly identified within relevant project documents and site files. The Appointed Contractor will be required to keep a record of competent expert statements including contact details and lines of escalation for personnel involved in the implementation, reporting and monitoring of the environmental mitigation. Key roles for which records will be kept include those described below in Table A4-2.1.

Table A4-2.1. – Key Organisations and their Responsibilities

Organisation	Responsibility
Transport Scotland Project Manager	- Overseeing and monitoring the implementation of the Proposed Scheme including the responsibilities of those roles identified through this table.
Appointed Contractor’s Environmental Clerk of Works (ECoW)/Environmental Specialists	The responsibilities of the ECoW include but are not limited to: <ul style="list-style-type: none"> - maintaining environmental records - providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works - reviewing environmental management content of method statements

Organisation	Responsibility
	<ul style="list-style-type: none"> - reporting environmental performance to the Site Manager - liaison with statutory bodies with an environmental interest throughout the construction works - producing and undertake environmental toolbox talks and - ensure the appropriate precautions are taken at specific locations during construction through the identification of appropriate skills.
Appointed Contractor's Ecological Clerk of Works (EcCoW) (and Ecological Operatives)	<p>The responsibilities of the EcCoW will include but are not limited to:</p> <ul style="list-style-type: none"> - manage ecological operatives undertaking pre-construction surveys and any advance mitigation measures - advise on protected and notable biodiversity receptors during construction and provide practical and on-site support - produce Species Protection Plans and other protection Plans set out in the LEMMP - manage ecological operatives engaged in ecological mitigation activities during construction, such as undertaking ecological watching briefs and translocation of protected species and - manage protected species licencing as necessary.
Ecologist (acting on behalf of Transport Scotland)	<ul style="list-style-type: none"> - Auditing the Contractor's EcCoW to confirm compliance with specific mitigation (the ECO measures as detailed in Table A4-2.3) and - Engage with and, where required, provide technical guidance to the Contractor's EcCoW.
Appointed Contractor's Community Liaison Officer	<ul style="list-style-type: none"> - Providing consultation and engagement with and between all relevant parties in relation to the Project including site personnel, Transport Scotland, relevant local authorities; other statutory bodies and regulatory authorities, community groups; and residents affected by the construction works. - Notifying owners and occupiers of nearby properties of the nature and anticipated duration of planned construction works that may affect them. - Establishing a dedicated freephone telephone helpline, email address and postal address for enquiries and complaints. These details will as a minimum be displayed on signs around the site as well as being published on the project website. All enquiries and complaints will be logged by the Community Liaison Officer in a register and appropriate action will be taken and recorded in response to any complaints received.

- A4-2.2.5. Further information on the key project roles and environmental responsibilities is detailed in the Record of Environmental Actions and Commitments (REAC) (Table A4-2.3). These roles and responsibilities will be reviewed and agreed in subsequent stages. Upon appointment the Appointed Contractor will confirm individual names and contact details for each role and the FIEMP will be updated where applicable prior to the commencement of construction.

A4-2.3. Environmental Actions and Commitments

Record of Environmental Actions and Commitments

A4-2.3.1. The REAC (Table A4-2.2) identifies the environmental commitments made during the design stage to address the potential environmental effects of the Proposed Scheme as detailed within the EIA Report. Table A4-2.2 provides the EIA Report chapter numbers which relate to the mitigation item codes used in the REAC.

Table A4-2.2 – Mitigation Item Reference

Chapter Number	Chapter Title	Mitigation Item Reference
Chapter 1-6	Various	GEN
7	Air Quality	AQ
8	Cultural Heritage	CH
9	Landscape	LV
10	Visual Effects	LV
11	Biodiversity	ECO
12	Geology, Soils and Groundwater	GSG
13	Material Assets and Waste	MW
14	Noise and Vibration	NV
15	Population and Human Health	PH
16	Effects on Climate	EC
17	Climate Vulnerability	CV
18	Major Accidents and Disasters	MAD
19	Road Drainage and the Water Environment	RDWE

A4-2.3.2. Volume 2, Chapter 21: Schedule of Environmental Commitments of the EIA Report collates the environmental mitigation from those chapters listed in Table A4-2.2 above.

A4-2.3.3. The REAC will be updated throughout the design and construction of the Proposed Scheme and will be finalised at the end of construction period upon completion of the Proposed Scheme. Following completion of the construction works the Third Iteration EMP (TIEMP) will be provided to Transport Scotland for the future maintenance and operation.

A4-2.3.4. The REAC states at which stage of the project the environmental mitigation commitment is aligned to. The management and monitoring of change will be the responsibility of the Appointed Contractor and will be recorded in Annex E: Copy of Evaluation of Change Register, as appropriate.

A4-2.3.5. The REAC requires the Appointed Contractor to produce and develop multiple Environmental Management Plans and Method Statements which will be

updated throughout the construction period as appropriate. Annex B: Relevant Management Plans and Annex C: Environmental Method Statements have been provided as placeholders for the Appointed Contractor to populate and they list the management plans and method statements that are required as mitigation through the REAC as detailed in the Schedule of Environmental Commitments.

- A4-2.3.6. The Appointed Contractor is required to monitor the achievement of the committed mitigation and will be required to develop achievement criteria as well as utilising the Completion Record column of the REAC. Any risks associated with non-compliance of the commitments will be managed by the Appointed Contractor and recorded in their Project Risk Register (refer to Annex G: Risk Register which has have been provided as a placeholder for the Appointed Contractor to populate).

Table A4-2.3. – Record of Environmental Actions and Commitments

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
GEN1	Scheme Wide	Construction	To set a framework for the implementation of construction activities in accordance with the mitigation and environmental commitments contained in the EIA Report.	<p>The appointed Contractor will, through contractual requirements, be required to produce a CEMP in accordance with DMRB LA 120 'Environmental management plans to provide a framework for the implementation of construction activities and how they intend to operate the construction site. Construction mitigation measures are detailed through the EIA Report and have been included with the table below. The CEMP must be in place prior to the start of construction work and will be developed throughout the construction period as required to avoid, reduce or mitigate construction impacts on the environment and the surrounding community.</p> <p>The CEMP will include but not be limited to, plans including those identified in Volume 2, Chapter 21 Schedule of Environmental Commitments. A First Iteration Environmental Management Plan has been developed and is included in Volume 4, Appendix 4.2.</p>	Appointed Contractor	Consultation with Loch Lomond and The Trossachs National Park, Argyll and Bute Council and other statutory bodies and regulatory authorities.	Employer's Requirements in the Contract.	
AQ1	Scheme Wide	Construction	To mitigate dust and remove mud and debris.	Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Environmental Clerk of Works (ECoW)	
AQ2	Scheme Wide	Construction	To mitigate mud and debris deposited on the public road.	Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the public road.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works (ECoW)	
AQ3	Scheme Wide	Construction	To mitigate materials being blown from vehicles.	Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
AQ4	Scheme Wide	Construction	To mitigate dust entrainment and dispersion.	Enforcing speed limits for vehicles on unmade surfaces and site haul roads to minimise dust entrainment and dispersion.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
AQ5	Scheme Wide	Construction	To mitigate footprint of temporary site roads.	Ensuring any temporary site roads are no wider than necessary to minimise their surface area.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
AQ6	Scheme Wide	Pre-Construction / Construction	To mitigate dust levels during construction.	Damping down of surfaces prior to their being worked.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
AQ7	Scheme Wide	Construction	To appropriately contain materials from site boundaries to reduce dust levels.	Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.).	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
AQ8	Scheme Wide	Construction	To mitigate dust levels on site.	Securing an adequate water supply (ideally rainwater) on site for the effective suppression of dust.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
CH1	Scheme Wide	Construction	To mitigate impacts on potential archaeological remains through preservation by record.	<p>Archaeological monitoring and recording is proposed in the location of the SuDS detention basin. There is potential for archaeological settlement remains within the footprint of the SuDS as it is within a fertile floodplain and close to a water source which would be suitable for settlement. The monitoring and recording would be required as the area is stripped for groundworks and would identify the presence, nature, extent and condition of any surviving archaeological remains. The loss of the archaeological resource would be mitigated through recording which will ensure that a permanent record of previously unrecorded archaeological remains exists.</p> <p>The methodology for the strip, map and record would be set out within a Written Scheme of Investigation (WSI) to be approved by WoSAS. The works must be undertaken by an</p>	Appointed Contractor	West of Scotland Archaeological Service (WoSAS)	Work to be undertaken on site by appropriately qualified archaeological organisation who is a registered organisation of the Chartered Institute for Archaeologists, monitoring of the works will be undertaken by the ECoW.	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				appropriately qualified archaeological organisation, registered with ClfA. On completion of the archaeological works, a programme of reporting, analysis, publication (if merited), archiving, and dissemination of the results will be undertaken. This will include a report to WoSAS and the National Record for the Historic Environment. The archive will be placed with HES. This would remove the significant effects.				
CH2	BNG / Natural Capital Areas	Construction	To mitigate impacts to both assets by ensuring that they are not accidentally moved or damaged.	Demarcation and avoidance of the Rest and Be Thankful stone (A2) is recommended during construction within the car park area during construction. A buffer of 5m would ensure that the stone is protected from construction vehicles and machinery. Demarcation and avoidance of a memorial stone (A63) and spigot mortar emplacement (A64) is recommended during ground preparation and planting within the BNG / Natural Capital Areas to mitigate impacts. Access should also be maintained for the memorial stone which would enable loved ones to return to the memorial. A suitable buffer of 5m should be maintained during planting to ensure that any root systems do not damage the assets. This would remove the significant effects.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
CH3	Scheme Wide	Construction	To maintain the character of the stone walls along the main roads.	Stone from sections of walls (A26, A27, A29, A30, A37 and A41) will be retained and used for future reinstatement. This should be done by an experienced drystone wall contractor with experience of working in this area. The walls should be of the same construction and appearance as the sections of retained walls such as A7 and A12. Prior to removal, the sections of wall should be photographed as a means of recording. This would remove the significant effects.	Appointed Contractor	Drystone Wall Contractor	On-going monitoring of Construction works by ECoW	
CH4	OMR	Pre-Construction	To document condition and character of the bridge (A6)	Photographic and documentary recording of a bridge (A6), bridge piers (A43 and A44), and	Appointed Contractor	Not Applicable	Not Applicable	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
	Cultural Heritage		and bridge piers (A43 and A44). Reuse of stone for rebuilding the widened section of A6 will allow it to appear as it did before the works,	brick structures (A10 and A23) prior to start of construction. The works must be undertaken by an appropriately qualified archaeological organisation. The existing stone for widening bridge A6 should be reused to mirror the original design of the sections which were removed for widening purposes so that the bridge retains the character of the current bridge. Photographic and documentary recording and the reuse of stone would remove the significant effects.				
LV1	Scheme Wide	Pre-Construction, Construction and Post-Construction	To mitigate duration of overall construction impacts.	Construction activity will be kept to the minimum practicable time to reduce the duration of impacts. Areas will be cleared for construction as close as possible to the works commencing and topsoiling, reseeded and planting will be undertaken as soon as possible after the works are complete, allowing for the appropriate planting/seeding season.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
LV2	Scheme Wide	Construction	To mitigate visibility of compound and storage areas.	Work compound and storage areas will, as far as practicable, be located where existing features can provide screening.	Appointed Contractor	Consent for works compound and storage areas to be obtained by the Appointed Contractor	Not Applicable	
LV3	Scheme Wide	Construction	To mitigate litter and debris in construction areas.	Construction areas will be kept tidy and free of litter and debris.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works Appointed Contractor	
LV4	Scheme Wide	Construction	To minimise nighttime working and mitigate glare levels from lighting.	Work will be avoided during hours of darkness as far as is practicable and where necessary, directed lighting will be used to minimise glare.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works Appointed Contractor	
LV5	Scheme Wide	Construction	To mitigate impacts on soil quality.	To protect soil quality: <ul style="list-style-type: none"> • uncontaminated topsoil for re-use shall be stored in un-compacted mounds up to 2m in height separate from subsoil material; • stripped topsoil shall be used in areas of the same vegetation type; and 	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				subsoil in proposed planting areas shall be replaced after construction and ripped to a depth agreed with the ECoW, landscape architect or soil scientist as appropriate prior to topsoiling and planting.				
LV6	Scheme Wide	Construction	To mitigate vegetation loss.	Minimise loss of all existing vegetation as far as practicable. Retention of existing trees and vegetation and incorporation with new planting proposals. Trees shall only be removed where it can be demonstrated that this is required for construction or safety purposes.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
LV7	Scheme Wide	Construction	To retain existing trees and shrubs not needing removed during construction.	Fence off existing trees and shrubs not affected by construction with a suitable type of fencing which shall extend to the root zone of the tree canopy and remain in situ until works are completed. Adhere to BS 5837:2012 trees in relation to design, demolition or construction.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
LV8	Scheme Wide	Construction	To minimise rock cutting and to retain the character of the area.	<p>Earthworks/Rock cut proposals will:</p> <ul style="list-style-type: none"> • use retaining walls where appropriate to avoid extensive cuttings into slopes or large embankments which increase land disturbance • where rock cuttings are required, create formations which are varied and reflect the structure of the rock • rock cuttings shall incorporate embayments, vary the height of ledges, and utilise bunds in the crest of benches to contain rockfall, either alone or in combination, to achieve an irregular and naturalistic appearance • use of mesh shall be avoided and sensitive grading of earthworks to integrate with surrounding landform and/or reduce requirement for/extent of felling. 	Appointed Contractor	Not Applicable	Not Applicable	
LV9	Debris Flow Shelter	Pre-Construction and Construction	To minimise tree felling.	Earthworks will be steepened at the maintenance access to the DFS area to reduce tree felling.	Appointed Contractor	Not Applicable	Not Applicable	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
LV10	Scheme Wide	Pre-Construction and Construction	To mitigate potential lighting impacts during construction.	Lighting will be minimised and designed to be as contained as possible within the confines of its purpose for safety.	Appointed Contractor and Designer	Not Applicable	Not Applicable	
LV11	Rest and Be Thankful Car Park	Pre-Construction and Construction	To mitigate impacts on landscape setting and on the listed building.	Rest and Be Thankful car park – materiality, road surfacing, road markings, respect the landscape setting of the Rest and Be Thankful Stone (Category C Listed Building)	Appointed Contractor and Designer	Not Applicable	Not Applicable	
LV12	Scheme Wide	Construction	To mitigate tree loss by replacement.	Mitigation planting to replace trees lost during the construction of the Proposed Scheme. Planting shall aid integration with the landscape character maintaining open views up and down the glen and be based on native species established in the area. Planting density shall be light to align with landscape character or to afford open or glimpsed views of landscape features. Species-rich mixes used for the majority of grass verges with the aim of integrating these into the wider landscape character. The exception to this will be the use of low nutrients and suitable low growing, local grass species in areas associated with visibility splays which are capable of withstanding regular cutting. Please refer to Volume 3, Figure 9.3 Landscape and Ecological Mitigation.	Appointed Contractor and Designer	Not Applicable	On-going monitoring of Construction works by ECoW	
LV13	Scheme Wide	Pre-Construction and Construction	To mitigate impacts on mammals from a landscape and visual perspective.	The detail of any required mammal fencing shall be designed to minimise landscape and visual impact.	Appointed Contractor and Designer	Not Applicable	On-going monitoring of Construction works by ECoW	
LV14	Scheme Wide	Pre-Construction and Construction	To mitigate potential lighting impacts during construction	The detail of the lighting shall utilise luminaires selected to avoid upward light.	Appointed Contractor	Not Applicable	Not Applicable	
ECO1	Scheme Wide	Pre-Construction	To refine mitigation for impacts on sensitive habitats and protected species.	It is recognised that some additional mitigation may be required as a result of update surveys, particularly if key species colonise working areas or alter their use of areas. This will be defined and applied by the Appointed	Appointed Contractor	May require input from NatureScot, consultation, derogation licences and/or amendments to	On-going monitoring of construction works by EcCoW	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				Contractor based on pre-commencement surveys.		derogation licences (as needed).		
ECO2	Beinn an Lochain SSSI	Design Pre-Construction Construction	To contribute to resilience of SSSI	While the significance of effect of residual impact on the Beinn an Lochain SSSI is predicted to be slight, opportunities to provide additional mitigation through habitat enhancement will be explored during detailed design. The approach to any such measures would be proportionate and would be finalised in consultation with NatureScot and works would be undertaken through agreement with the relevant landowner.	Appointed Contractor and Transport Scotland	Consultation with NatureScot may be required.	On-going monitoring of Construction works by EcCoW	
ECO3	BNG / Natural Capital Areas	Design Pre-Construction Construction	To compensate for losses of terrestrial and aquatic habitat and deliver additional benefits.	Habitat in four areas within the Proposed Scheme Boundary will be enhanced as mitigation for terrestrial and aquatic habitat losses. These enhanced habitats will make a positive contribution to biodiversity net gain to address and go beyond the additional mitigation required to offset impacts on terrestrial and aquatic habitats. Biodiversity net gain calculations have been produced to ensure the Proposed Scheme delivers a net gain in line with NPF4 (Volume 4, Appendix 11.2: Biodiversity Legislation, Policy and Guidance). Full details of the proposals for the four enhancement sites are provided within Volume, Chapter 4: The Proposed Scheme and the four sites are described in the Enhancement Site Survey Report (Volume 4, Appendix 11.16). The overarching management and monitoring methods of all enhancement features will be set out in the LEMMP (Volume 4, Appendix 11.15: Outline Landscape and Ecological Management and Monitoring Plan). While work in the four enhancement areas are driven by habitat-based metric calculations, they will also benefit species IEFs including plants, species contributing to the aquatic ecology IEFs, birds, mammals and reptiles and priority invertebrates.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by EcCoW. Any further monitoring to be set out in long term management plans.	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
ECO-4	Scheme wide	Design, Pre-Construction and Construction	To mitigate the risk of pollution from construction activities and impacts on protected species	<p>During detailed design and construction, efforts will continue to aim to reduce habitat losses further.</p> <p>Construction compounds and on-site workings will be sited away from the SSSI and other sensitive habitats (including watercourses) to minimise the risk of pollution. All construction activities will follow good practice procedures to avoid or reduce polluting effects. These include implementation of pollution prevention measures, dust control, and buffer zones around sensitive features.</p> <p>In addition to update surveys to inform protected species licensing requirements, pre-construction ecological surveys will be conducted to update the baseline condition assessment prior to construction starting. Where possible, core hours of working will be adjusted throughout the seasons to minimise work outside hours of daylight. Surface vegetation and soil will be stored appropriately (topsoil, subsoil, and peat storage areas) until required for reinstatement. Toolbox talks will be delivered to all construction staff by the EcCoW.</p>	Appointed Contractor	Not Applicable	Pre- construction ecological surveys, any licence requirements Tool box talks and on-going monitoring of Construction works by EcCoW	
ECO-5	Scheme wide	Design, Pre-Construction and Construction	To mitigate the impacts on species	<p>A Construction Environmental Management Plan (CEMP) will be produced (refer to Volume 2, Chapter 4: The Proposed Scheme and Volume 2, Chapter 21: Schedule of Environmental Commitments).</p> <p>Species Protection Plans (SPP) will be produced as part of the CEMP covering the following species / species groups as a minimum: otter, birds, pine marten, red squirrel, bats, badger, reptiles and any other species as deemed necessary from the pre-construction surveys conducted (see further details below). Designated Sites and Sensitive Habitats Precautionary Working Method Statement and an Aquatic SPP (see further details below) will also be produced.</p>	Appointed Contractor - experienced and (where required) licenced ecologist	Apply for any EPS licences if required	Pre- construction ecological surveys, apply for EPS licences (if required) and on-going monitoring of Construction works by EcCoW	

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				<p>A suitably experienced and (where required) licensed ecologist commissioned by the Appointed Contractor will:</p> <ul style="list-style-type: none"> • Complete pre- works ecology surveys to confirm the current understanding of the constraints and update the current baseline information where required. While existing data have been shared in this document, this does not take the place of the update survey that the Appointed Contractor's ecologist must undertake. • Apply for any EPS or other protected species licences if requirements for these are identified. <p>The EcCoW will directly oversee all works within a 50m radius of designated sites for nature conservation and IEF habitats. A Designated Site and Sensitive Habitats Precautionary Working Method Statement (PWMS) will be appended to the CEMP. It will be produced in consultation with NatureScot. This PWMS will detail precautionary measures for all works within these features themselves or within a 50m radius of these designated sites for nature conservation: SSSI; Annex I habitats and other Habitat IEFs. This PWMS will also include measures relating to works at a greater distance if there are risks of indirect effects, cross referencing the main CEMP for general measures such as dust control where appropriate.</p>				
ECO-6	Scheme wide	Pre-construction and Construction	To mitigate the impact on aquatic ecology during the in-stream works	The Aquatic Ecology SPP will detail methods to be adhered to during all construction works, especially in-stream works. The Aquatic Ecology SPP will include timing restrictions on certain in-channel construction works to avoid sensitive lifecycle stages of the fish present, covering watercourses identified depending on their suitability for fish. This approach will be confirmed through SEPA engagement as part of the CAR authorisation process. If it is found that dewatering will be required for any	Appointed Contractor -	SEPA Engagement and CAR Authorisation	On-going monitoring of Construction works within watercourses by EcCoW	

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				watercourse extent that currently supports fish the SPP will also include translocation methods. The EcCoW will directly supervise all working within watercourses and within a 10m buffer. The Aquatic Ecology SPP will address sensitivity (to noise and vibration) of those fish species present.				
ECO-7	Scheme wide	Pre-construction and Construction	To mitigate the impacts during vegetation clearance and on birds	<p>The Bird SPP will include standard methods including timing of vegetation clearance, pre-clearance surveys and watching briefs (if required). Works in Receptor 1 will include erection of bird nesting boxes as mitigation for the reduction in nesting opportunities as vegetation created and enhanced matures. Long-eared owl have been recorded and an assumption has been made that they breed in the local area, and therefore nest baskets suitable for them will be installed as part of wider provision, contributing to mitigation on a precautionary basis.</p> <p>Provisions for golden eagle will be included in the Bird SPP and this will include the detailed the mitigation outlined in Volume 4, Appendix 11.1: Report to inform Habitats Regulations Appraisal.</p> <p>Provisions for golden eagle that will be included within the SPP / CEMP will include, but are not limited to:</p> <ul style="list-style-type: none"> Golden eagle roost surveys to be undertaken within appropriate buffer of the Proposed Scheme. The purpose of the surveys will be to establish presence / location of any roosting birds. To be undertaken by a NatureScot Schedule 1 licensed surveyor. Should roosting birds be located within the buffer, procedures will be set out to avoid impacts (e.g. stand-off periods and flexibility in working hours / locations for potentially disturbing works elements so as to prevent disturbance to individual birds). 	Appointed Contractor -	Not Applicable	Presence of suitably qualified and experienced ecologist during relevant works and on-going monitoring of Construction works by EcCoW	

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				<ul style="list-style-type: none"> • Presence of suitably qualified and experienced and licensed ornithologist / EcCoW during relevant works. • Should helicopter use be required, flexibility in timing of, and routes used by, helicopter depending on number of journeys and time of year (i.e. seeking to avoid the sensitive eagle breeding period), and landing / take off positions with cognisance to timing and the effect these journeys may have on bird behaviour. Should helicopter use be required, a helicopter-use method statement will be agreed with NatureScot in advance of any flights commencing. • Flexibility in travel routes to and from the works areas, depending on anticipated vehicle numbers / type and with cognisance to timing and weather and the effect these may have on bird behaviour. • Consultation with ARSG, NatureScot and other relevant bodies, as appropriate. The Appointed Contractor will seek information on the movements of any satellite tagged golden eagles present with the vicinity of the Proposed Scheme prior to the start of works. • Defined working areas and exclusion areas where necessary, the latter to be agreed with the ornithologist / EcCoW. • Defined flight paths for helicopter and exclusion zones (if necessary, in future). <p>Good practice measures to mitigate general local environmental impacts such as pollution prevention measures and measures to reduce noise will also be applied through the CEMP. No additional mitigation is proposed, unless pre-works surveys or surveys during construction indicate unexpected issues, such as a Schedule 1 species being found in proximity to the works. If this occurs, then expert ecological advice will inform further measures.</p>				

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ECO-8	Scheme wide	Pre-Construction and Construction	To mitigate the impacts on otter	<p>The Otter SPP will include the detailed the mitigation outlined in Volume 4, Appendix 11.1: Report to inform Habitats Regulation Appraisal. This includes:</p> <ul style="list-style-type: none"> • Detail of pre-works otter survey and appropriately experienced and licensed EcCoW to be present on-site during works (as necessary). • Restriction of working hours within the vicinity of watercourses so as to prevent disturbing works activities being undertaken when otter are most likely to be active (within two hours after sunrise and two hours before sunset). NatureScot standing advice is that this can be reduced to one hour between November and February (inclusive) because of the limited daylight. • Procedure for obtaining EPS licences as necessary. • Trenches, holes and pits will be kept covered at night or provide a means of escape for animals. • Defined working areas and exclusion areas and protection of retained habitat. • Use of lighting in accordance with BS5489 Code of Practice for the Design of Road Lighting. Any temporary lighting will be directed towards works areas to minimise light spill. • Provision of Habitat Protection Plan (HPP) detailing general good practice measures that will protect the wider local environment, including otter prey species and habitats during works. • Monitoring of flood risk potential to inform site activities. • Controls on topsoil strips and management of exposed ground. • Storage of plant and materials outside the functional floodplain. 	Appointed Contractor -	Apply for any EPS licences if required	Pre- construction ecological surveys, apply for EPS licences (if required) and on-going monitoring of Construction works by EcCoW	

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				<ul style="list-style-type: none"> • Protocols for management of incidental spillages. • Protocols for working with sealing materials such as concrete adjacent to watercourses. • Defined working areas and exclusion areas and protection of retained habitat. • The risk of pollution will be controlled by strict adherence to best practice procedures (including Guidance for Pollution Prevention (GPP), (NetRegs, 2011), and Construction Industry Research and Information Association (CIRIA, 2001) guidance). <p>Design measures described above, including habitat restoration and mammal fencing, will also contribute to mitigation for otter. Mammal fencing appropriate for otter will be utilised if confirmed to be required during detailed design to prevent otter being pushed onto the A83 carriageway.</p> <p>Under the CEMP, general good practice measures to mitigate general environmental impacts such as duration and timing of noisy activities will be minimised. Methods that reduce noise disturbance such as choice of equipment or 'soft-start' techniques will be used, where work increases gradually at the start of a work period.</p>				
ECO-9	Scheme wide	Pre-Construction and Construction	To mitigate the impacts on protected species	<p>SPPs will be produced for: bats, badger, pine marten, red squirrel, and reptiles.</p> <p>Each SPP will set out necessary measures including pre-construction surveys, precautionary methods of working, cross references to any EPS or other protected species licences, and any necessary compensation and monitoring. Compensation may include licensed measures (such as bat boxes as compensation for loss of known bat roosts) or general measures (such as bat boxes to compensate for loss of wider roosting opportunities and reptile hibernacula to increase carrying capacity). All methods will</p>	Appointed Contractor -	Apply for any EPS licences if required	Pre- construction ecological surveys, apply for EPS licences (if required) and on-going monitoring of Construction works by EcCoW	

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				<p>follow relevant NatureScot guidance. Design measures described above, including habitat restoration and mammal fencing, will also contribute to mitigation for these species.</p> <p>For each species / group with legal protection, the measures will include:</p> <ul style="list-style-type: none"> • Timing and methods of work to protect individual animals from harm; • Compensation for loss of protected features, such as bat roosts; • Habitat restoration in temporary works areas; and • For species where habitat losses could affect local assemblage carrying capacity, relevant habitat enhancement. This is only anticipated to be potentially required for reptiles as part of the embedded mitigation. <p>While no measures are set out specifically for mountain hare, brown hare or common amphibians, these species would be protected by general mitigation measures and allowed to move to safety if encountered during ecological checks prior to vegetation clearance.</p>				
ECO-10	Scheme wide	Design, Pre-Construction and Construction	To mitigate the impacts on habitats and protected species	<p>A Landscape Ecological Management and Monitoring Plan (LEMMP) will be prepared prior to construction by the Appointed Contractor detailing areas of habitat creation, management, and monitoring required as part of the Proposed Scheme (this will be an updated and expanded version based on the high-level contents set out in the Outline LEMMP (Volume 4, Appendix 11.15)). This will take into account the results of the pre-construction surveys.</p> <p>The LEMMP will include details of habitat creation, enhancement and re-instatement. The LEMMP will provide details on landscape planting, species composition (including the use of native planting) for the Proposed Scheme, including habitat enhancement plans and an appropriate INNS management plan for</p>	Appointed Contractor	May require input from NatureScot, consultation.	On-going monitoring of Construction works by EcCoW	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				<p>the enhancement sites. It will also include monitoring and maintenance of all embedded and additional mitigation measures for protected and notable species, such as bird and bat boxes, as well as any artificial compensatory badger setts and otter holts, should they be required (subject to pre-construction surveys).</p> <p>The information in the Outline LEMMP and this chapter will inform production of the LEMMP and CEMP, and appended documents including the SPPs and the Designated Sites and Sensitive Habitats PMWS. The Outline LEMMP should be read with Volume 3, Figure 9.3 Landscape and Ecological Mitigation Plan.</p> <p>Monitoring will be undertaken in accordance with any NatureScot EPS or other protected species licences required for the Proposed Scheme. Adaptive management will be applied if required, based on the results of monitoring.</p>				
GSG1	Scheme wide	Design, Pre-Construction and Construction	To mitigate against impact to carbon rich soils, geology, GWDTE, groundwater and surface water quality	<ul style="list-style-type: none"> Creation and implementation of a Soil and Materials Management Plan (SMMP) which will detail the appropriate way to segregate and store materials on site such as the storage of stockpiles away from watercourses in designated locations, segregation of material and storage of any contaminated arisings in a lined skip/on an impermeable membrane, keeping storage periods as short as possible; when stripping, stockpiling or placing soil, do so in the driest condition possible and use tracked equipment where possible to reduce compaction, and soil re-use criteria and placement techniques. The risks posed by any soil contamination can be reduced by ensuring that made ground materials are maintained under hardstanding or, if appropriate, placed under a clean layer of subsoil and topsoil. This will be managed during construction under the Standards for Highways Works Series 600 2024 and the 	Appointed Contractor and Designer	Consultation with SEPA and Local Authority	On-going monitoring of Construction works by the Appointed Contractor and appropriate specialists.	

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				<p>Sustainable reuse of soils BS ISO 18504 published in 2017 or BS ISO 15176: 2019.</p> <ul style="list-style-type: none"> • Creation and implementation of a Surface Water Management Plan (SWMP) detailing control and treatment measures for excavation and surface water runoff. • Implementation of a Dewatering Management Plan (DMP) would be required for any dewatering activities being carried out. This document would outline how to remove excess water from the construction site and minimise environmental impacts, enabling groundwater recharge whilst taking account of local slope stability. Any dewatering activities will be compliant with industry standards and best practice and the PMP. Working areas are to be kept to a minimum for construction of the project to reduce habitat loss. <p>Review and verification of private water supply information to ensure source types, locations and related assets are confirmed pre-construction.</p>				
GSG2	Scheme wide	Design / Construction	To mitigate against impact to GWDTE, groundwater and surface water quality	<p>Further ground investigations and groundwater monitoring to refine the estimation of groundwater drawdown and radii of influence. This data will also be required to assess the groundwater volumes seeping into the cuttings, including the LTS catch pit, which will inform the cutting drainage design.</p> <p>Due to potential slope instability, it is envisaged that any groundwater collected shall be transferred to the surface water drainage system. If further GI data suggests groundwater seepage into the cuttings is likely to be substantial then groundwater cut-off walls may be required.</p> <p>The road drainage and cut-off drainage elements will discharge to watercourses.</p>	Designer	Not Applicable	Monitoring will take place post GI for groundwater during design phase	

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GSG3	Scheme wide	Design / Construction	To mitigate against impact to GWDTE and groundwater quality.	<p>Linked with GSG2, data with relevance to M10 habitats shall be reviewed against previous findings to verify the assessment outcome.</p> <p>On the basis that uncertainty remains, groundwater level and water quality monitoring shall be undertaken in accordance with SEPA LUPS- GU31 guidance, including locations both upslope and downslope of the Proposed Scheme covering the period preceding construction until post-construction, across a number of seasons. Ecological monitoring would be undertaken in parallel for any change to community in comparison to baseline. This data shall be used to update and refine the M10 habitat assessment.</p> <p>Should outcomes emerge that indicate these habitats are subject to a residual effect greater than current assessment, proportionate design measures shall be considered in latter design stages. These could include sub-surface cross-drains, to enable shallow groundwater pathways to continue supply to downslope habitats.</p> <p>This approach will ensure any effect upon GWDTE, based on emerging information, does not exceed slight adverse significance.</p> <p>SEPA shall be consulted at all above stages.</p>	Designer	Consultation with SEPA	Monitoring will take place post GI for groundwater during design phase	
MW1	Scheme wide	Pre-Construction	To promote local sourcing	Where aggregates for earthworks, drainage and pavement need to be imported, the current commitment is to procure these from sources local to the Proposed Scheme, such as authorised quarries.	Appointed Contractor	Not Applicable	Not Applicable	
MW2	Scheme Wide	Pre-Construction	To reach recycled content target of 10% (minimum).	Aim to achieve the regional aggregate recycled content target of 25% as a minimum, in line with the DMRB LA 110, Appendix E/1. For example, this can be achieved through considering the use of recycled aggregate supplied from local quarries, where feasible.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	

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MW3	Scheme Wide	Pre-Construction	To consider how 100% reuse, recovery or recycling could be achieved.	The Appointed Contractor will consider how 100% reuse, recovery or recycling could be achieved and provide justification where this is not considered viable in terms of cost, safety and / or material quality or performance and must achieve not less than 70% inert and non-hazardous material recovery, in accordance with paragraph 3.17 of DMRB LA 110. The recovery of any construction and demolition waste which is geotechnically or chemically unsuitable for reuse within the Proposed Scheme will require disposal or treatment prior to any reuse off-site, in accordance with the current waste regulatory framework. This will be managed in accordance with the CEMP, as part of an MMP.	Appointed Contractor	Not Applicable	Not Applicable	
MW4	Scheme wide	Pre-construction and Construction	To maximise reuse of materials minimising quality degradation	Arisings would be suitably stockpiled to maximise reuse by minimising quality degradation, damage and other loss. Providing a management framework for this approach, the CEMP would be developed by the Appointed Contractor with commitments to, and information on, stockpile location, underlying soil type and condition, methods for prevention of erosion and leachate generation and use of appropriate signage. It is anticipated that the finalised CEMP would be submitted for approval by the relevant Planning Authority prior to the commencement of the Proposed Scheme.	Appointed Contractor	Not Applicable	Not Applicable	
MW5	Scheme wide	Construction	To maximise resource efficiency and minimise waste from the Proposed Scheme.	The Appointed Contractors' Site Waste Manager will also document within a Site Waste Management Plan (SWMP) any opportunities implemented to reduce waste, and update this throughout the construction phase of the Proposed Scheme, using actual waste data including quantities, types and the chosen waste management option.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
MW6	Scheme Wide	Pre-Construction	To maximise resource efficiency and minimise	In order to maximise resource efficiency and minimise waste on the Proposed Scheme, good practice principles must be considered as early as possible by the Appointed Contractor	Appointed Contractor	Transport Scotland	Not Applicable	

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			waste from the Proposed Scheme.	<p>in development of their detailed design. In delivering the Proposed Scheme, the Appointed Contractor will identify opportunities and define objectives for designing out waste, e.g. by conducting Resource Efficiency Workshops. As part of this process, the following opportunities will be reviewed and refined during design, and their feasibility established. Wherever a measure cannot practicably be adopted, justification will be agreed with Transport Scotland:</p> <ul style="list-style-type: none"> • Specifying the need for the value chain to remove or take back packaging. • Implementation of Lean construction methods – improving efficiency and effectiveness by avoiding unnecessary costs and eliminating waste. For example, given the drainage design generally incorporates the use of plastic pipes, consider the use of recycled plastics for drainage pipes. In addition, offcuts from these products can be returned to the suppliers, to be reincorporated in the manufacturing process or duly recycled. • Specification of reused, recycled and recyclable materials. For example, consider the use of secondary materials such as Pulverised Fuel Ash (PFA) and Ground Granulated Blast-furnace Slag (GGBS) in concrete mix designs to maximise their use and benefits in the permanent works design, for both in-situ and pre-cast concrete elements (subject to strength and stiffness requirements). • Specification of responsibly sourced materials e.g. in accordance with the BRE Environmental & Sustainability Standard: Framework Standard for Responsible Sourcing BES6001. • Specification of alternative construction methods – off site fabrication / modularisation. For example, consider the 				

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				<p>use of warm-mix asphalt for road surfacing requirements and procuring steel elements required for structural reinforcement from suppliers who re-fabricate or manufacture these products from recovered ferrous scrap, where feasible.</p> <ul style="list-style-type: none"> • Alignment or compliance with BREEAM Infrastructure (Building Research Establishment Environmental Assessment Method), formerly Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL), to assess scheme performance in accordance with a recognised industry standard. • Assessment of end-of-life options for materials and assets, to minimise disposal. • Assessing the opportunity to use mechanisms such as, but not limited to: <ul style="list-style-type: none"> ○ Regulatory guidance produced by SEPA with the Civil Engineering Contractors Association (Scotland) (CECA) and the Environment Industries Commission (EIC) on Promoting the sustainable reuse of greenfield soils in construction • International soil reuse guidelines i.e. those similar to CL:AIRE 'Definition of Waste: Development Industry' Code of Practice for excavated materials (which are only applicable in England and Wales) • SEPA waste exemptions and • BRE SMART Waste. 				
NV1	Noise and Vibration	Construction	To mitigate noise and vibration impacts during construction.	During the construction phase Best Practicable Means (as defined in Section 72 of the Control of Pollution Act 1974) will be adopted, this includes the adoption of the advice contained within BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014, and will be secured through the CEMP prepared by the Contractor.	Appointed Contractor	To change construction impacts on site throughout the duration of the construction and restoration period	On-going monitoring of Construction works by ECoW	

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PHH1	Scheme wide	Construction	To reduce impacts to receptors including walkers, cyclists and horse-riders as well as members of the local community.	Construction Environmental Management Plan (CEMP), Traffic Management Plan (TMP) and Community Engagement Plan will be enacted during the construction phase. This will provide a framework for the implementation of construction activities including plans related to geology and land contamination, surface water and groundwater, air quality (e.g. dust), and noise and vibration. In respect of the Community Engagement Plan, this will ensure that local communities are kept informed of the nature and duration of the works.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH2	Scheme wide	Construction	To ensure the soil resource is appropriate restored.	Any Land temporarily used for construction will be restored to a condition equivalent to its original state. This will be achieved by means of a Soil Resource Plan (SRP) following best practice set out in guidance such as DEFRA's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites , SEPA Promoting the sustainable reuse of greenfield soils in construction sites or equivalent guidance.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH3	OMR	Construction	To reduce impacts to receptors including walkers, cyclists and horse-riders.	During construction on the Old Military Road, walking, cycling and horse riders will be convoyed through the route.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH4	Scheme wide	Construction	To ensure the soil resource is appropriate restored.	Where unrestricted agricultural uses are to be resumed on land disturbed during the construction of the Proposed Scheme, the Appointed Contractor will be responsible for ensuring no long-term reduction in the quality of the disturbed land, through the adoption of good practice techniques in handling, storing and reinstating soils and field drains.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH-EMB-1	Scheme wide	Construction	To minimise the impacts on connectivity	Use of the alternative bus stop at / adjacent to the Rest and Be Thankful Car Park / Viewpoint during construction period noting that this alternative bus stop is already in use during periods where the A83 is closed.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by	

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							Appointed Contractor	
PHH-EMB-2	Scheme wide	Construction	To reduce the impacts on the existing paths and networks during construction	With respect to paths (informal or formal), these will be realigned as close to their original alignment as practical to avoid extending WCH routes, where possible.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH-EMB-3	Scheme wide	Construction	To reduce the impacts on the existing paths and networks during construction	Where the Proposed Scheme would affect existing paths, replacement network provision would be made to ensure routes remain open by providing suitable crossing points or diversions.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
PHH-EMB-4	Scheme wide	Construction	To reduce the impacts on the existing paths and networks during construction	Where new paths are required, they would be designed to be as fully accessible as possible. Of note, a new Active Travel Link is included in the Proposed Scheme and will link the Rest and Be Thankful Car Park / Viewpoint to forest trails and core path to the west of the OMR.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by Appointed Contractor	
EC1	Scheme Wide	Pre-Construction	To mitigate GHG emissions and inform decision making.	The Appointed Contractor should commit to adhering to the principles of PAS 2080:2023 – Carbon Management in Buildings and Infrastructure . PAS 2080:2023 is a global standard for managing infrastructure carbon and looks at reducing carbon across the whole value chain through more design, construction and use. It also ensures that carbon is consistently and more transparently quantified at key points during the process, to inform decision making. The Appointed Contractor should report actual GHG emissions during construction of the Proposed Scheme.	Appointed Contractor and Designer	Not Applicable	Not Applicable	
EC2	Scheme Wide	Pre-Construction	To effectively manage GHG emissions.	The Appointed Contractor will produce a Carbon Management Plan (CMP) as part of their contract. The CMP will set out how Greenhouse Gas emissions will be managed and reduced over the lifetime of the Proposed Scheme. The Appointed Contractor should also set targets for GHG emissions reductions	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	

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				for each stage of the Proposed Scheme which will be included within the CMP.				
EC3	Scheme Wide	Construction	To mitigate GHG emissions	Materials should be sourced from as close as possible to the site to reduce the requirement for longer transportation distances. The same is applicable to construction waste in that it should be re-used, recycled or disposed of as close to the site as possible.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
EC4	Scheme Wide	Construction	To mitigate GHG emissions	Use of electrical equipment (connected to the mains) should be promoted during construction of the Proposed Scheme to reduce the volume of diesel that is required during construction.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
EC5	Scheme Wide	Construction	To mitigate GHG emissions	The use of onsite renewable energy sources should be considered to reduce the need for diesel generators and mains source electricity during construction.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
EC6	Scheme Wide	Operation	To mitigate GHG emissions	Operational energy could be sourced from green energy tariff that verifies that the energy used on site is produced from low carbon / renewable energy sources.	Owner or Appointed Operator	Not Applicable	On-going monitoring of operational assets by Owner or Appointed Operator	
EC7	Scheme Wide	Construction	To mitigate GHG emissions	Efforts should be made to minimise disturbance and excavation of peat as much as possible. Further information and mitigation is provided in the Outline Peat Management Plan (Volume 4, Appendix 12.6).	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
CV1	Scheme Wide	Pre-Construction	To mitigate against bad weather and to promote safety for construction workers.	Health and Safety protocols will be included in the CEMP, for example weather forecasts, severe weather plans and stability observations and protocols to protect the safety of the construction workers.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW	
CV2	Scheme Wide	Pre-Construction	To mitigate against bad weather and to promote	Health and safety measures would be implemented as part of maintenance plans,	Appointed Contractor	Not Applicable	On-going monitoring of Construction	

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			safety for construction workers.	that would monitor forecasts and stability in the area of work.			works by the Appointed Contractor	
MAD 1	Scheme wide	Construction	To mitigate the risk of accidents and disasters	Construction Environmental Management Plan (CEMP) which will be embedded within the Construction Contract for the Proposed Scheme and as such is considered within the initial impact assessment.	Appointed Contractor	Not Applicable	Employer's Requirements in the Contract.	
MAD- 2	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of accidents and disasters	<p>Transport Scotland has committed to constructing and managing the Proposed Scheme in accordance with the following non-exclusive list of standards and systems:</p> <ul style="list-style-type: none"> operational and maintenance phase Environmental, Health & Safety Management Systems which will be implemented prior to the road re-opening manage all construction risks in accordance with the CDM Construction Phase Plan which will be prepared prior to the commencement of construction activities supplier management environmental, health & safety standards (for example, Construction Skills Certification Scheme) will be considered prior to procuring contractors undertaking work during both the construction and maintenance phases Risk Management Systems will be developed and implemented prior to the construction and the operational and maintenance phases and Construction and Environmental Management Systems (including the Construction Environmental Management Plan (CEMP)) will be developed and implemented prior to the construction phase. 	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
MAD-3	Scheme wide	Construction, Operation, maintenance	To manage the response should a major event occur.	Bespoke emergency preparedness and response plan developed by Transport Scotland and/or their contractors which will identify the actions to be taken should a major	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of effectiveness by the Appointed	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				event occur. The specific mitigation measures and emergency preparedness and response plan will be in place for the construction and operation of the Proposed Scheme to ensure that any potential major events are managed to be ALARP.			Contractor and Transport Scotland.	
MAD-4	Scheme wide	Construction	To mitigate the risk of accidents and disasters	Ground investigations to be undertaken to determine the ground conditions and understand the areas of site that are at greatest risk from instability.	Appointed Contractor	Not Applicable	Employer's Requirements in the Contract.	
MAD-5	Scheme wide	Construction	To mitigate the risk of landslides	The construction contractor will plan the works and apply appropriate controls to mitigate potential instability (e.g. top-down excavations, installation of slope stabilisation systems).	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by the Appointed Contractor	
MAD-6	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of landslides	Use of slope monitoring systems to help identify ground movements in advance of significant events.	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of effectiveness by the Appointed Contractor and Transport Scotland.	
MAD-7	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of accidents and disasters	Existing debris flow and rockfall fences and catchpits upslope of the A83, which will help retain landslide events.	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of effectiveness by the Appointed Contractor and Transport Scotland.	
MAD-8	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of landslides	Existing geotechnical measures (e.g. soil nails, rock blankets, retaining walls) installed to stabilise areas immediately downslope of the A83. Should a landslide occur, there is an existing debris flow barrier to mitigate the risk of land-slipped material affecting the OMR.	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of effectiveness by the Appointed Contractor and Transport Scotland.	
MAD-9	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of landslides	Site specific landslide management plan to manage the risk to road users. Mitigation measures within this plan include site-specific	Appointed Contractor and	Not Applicable	On-going monitoring of effectiveness by	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				weather forecasts; real-time rainfall monitoring; slope inspections; and landslide patrols.	Transport Scotland		the Appointed Contractor and Transport Scotland.	
MAD-10	Scheme wide	Construction, Operation, maintenance	To mitigate the risk of landslides	Remote monitoring instrumentation to be trialled (and if successful adopted) to providing pre-cursor information on landslide events.	Appointed Contractor and Transport Scotland	Not Applicable	On-going monitoring of effectiveness by the Appointed Contractor and Transport Scotland.	
MAD-11	Scheme wide	Construction	To mitigate the risk of flooding	The CEMP will include a Flood Response Plan which will set out the mitigation measures to be implemented, (e.g. checking for flood alerts, monitoring river levels, installation of temporary drainage systems, withdrawal from works close to or within the water features should flooding be predicted, where practicable plant and materials will be stored in areas outside the functional floodplain, in addition, where practicable haul routes will be located out of the functional floodplain).	Appointed Contractor	Not Applicable	Employer's Requirements in the Contract.	
RDWE2	Between the A83 and OMR	Design / Construction	To minimise the degree of interventions on applicable channels, whilst remaining resilient	In relation to downslope protection of the A83 culverts, where required, minimise the extent of concrete cascades and/or bed and bank reinforcement downstream of the A83 and DFS, allowing the channel to naturally adjust to geomorphologically effective flows. Where possible, smooth the transition between hard engineered features (concrete cascade and/or bed and bank reinforcement) and the natural channel with boulders (e.g. creation of step-pool features), to gradually naturalise to the unprotected channel.	Appointed Contractor	Not Applicable	Not Applicable	
RDWE3	Between the A83 and OMR	Operation	Improve slope and bank stability to reduce erosion and channel mobility	Allowing the watercourses and slopes to naturally protect themselves by fencing of the watercourses to prevent livestock access and promote vegetation growth, and in turn, stability. Utilise coir matting and seeding or planting of native shrubs to accelerate hillside stability.	Appointed Contractor	Not Applicable	On-going monitoring of Construction works by ECoW On-going maintenance by	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
							the Operating Company	
RDWE4	Road Drainage and the Water Environment	Construction	To remove linkage between PWS and A83 or OMR contaminated runoff	In relation to PWS, where an existing private water supply (PWS) is likely to be disrupted in terms of potential impact to water quality or yield during the operational phase, the Appointed Contractor shall suggest alternative PWS solutions in consultation with the owners/users, to be installed ahead of operation (this may be installed as a pre-construction arrangement, to minimise PWS disruption across both phases).	Appointed Contractor	Owners/users of existing PWS	Not Applicable	
RDWE5	Scheme Wide	Construction	To optimise sediment control	<p>For sediment control, the following supplementary measures to embedded mitigation are proposed. Procedures and measures will form part of a Construction Environmental Management Plan (CEMP):</p> <ul style="list-style-type: none"> • suspend construction works during periods of elevated debris flow risk in all areas that have to potential to be impacted by such flow events; • agree regulatory expectations of thresholds for total suspended solids (TSS) as a maximum sediment level allowable for discharge to surface waters, furthermore, consideration of threshold levels for in-channel sediment levels taking account of baseline conditions (i.e. sediment uplift) • temporary interception, upstream of the construction zone, with over-pumping and diversion to adjacent watercourse(s) will reduce the incoming flows from hillslopes and channels. Channel flows would be reinstated following completion of local works including downstream scour and bank protection; • construction of temporary settlement basins, where topography and earthwork programming allow, to provide retention of runoff from disturbed areas prior to entering watercourse channels, these shall not be 	Appointed Contractor	SEPA	On-going monitoring of Construction works by ECoW Potential application of drone surveys to map sediment change and investigate incidents	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				<p>positioned within areas susceptible to flood risk, avoiding 0.5% Annual Exceedance Period with climate change (0.5% AEP + CC) zones;</p> <ul style="list-style-type: none"> where settlement basins are not feasible, mechanical settlement devices shall be considered to enable treatment for local discharge. These portable devices would be deployed at appropriate locations to reduce construction sedimentation risk as the construction programme progresses; and construction of other source control methods, such as sediment fences and straw bale filters (downslope of disturbed areas and stockpiles) as required. 				
RDWE6	Scheme Wide	Construction	To optimise sediment control	To aid sediment control, pre-approval from SEPA shall be sought for application of coagulants and flocculants as a contingency measure to promptly aid settlement of suspended solids. In accordance with pre-requisite sediment conditions and methodologies; including chemical type, dosage level and location.	Appointed Contractor	SEPA	On-going monitoring of Construction works by ECoW Potential application of drone surveys to map sediment change and investigate incidents	
RDWE7	Scheme Wide	Construction	To optimise sediment control (contingency)	Given the challenging local conditions, sediment control directly within tributary channels may be appropriate as a further contingency measure, should excess sediment entrainment linked to construction activities occur or be predicted. Ongoing GI and detailed design inputs will inform this requirement, to supplement other sediment control measures. This shall involve the installation of temporary settlement ponds or other engineering interventions to tributaries of Croe Water. These would be positioned on slopes with shallower gradient. Offline features are preferable (adjacent to channel) but online (in-channel) features may also be required to	Appointed Contractor	SEPA	On-going monitoring of Construction works by ECoW Potential application of drone surveys to map sediment change and investigate incidents	

Mitigation Item/Source	Location of Measure	Timing of Measure	Mitigation Purpose/Objective including legislative requirements if applicable	Environmental Actions/Commitments	Responsible Party for Overseeing Implementation	Specific Consultation or Approval Required	Monitoring / Compliance	Completion Record
				<p>reduce sediment load in minor channels prior to their confluence with the Croe Water.</p> <p>Pre-approval from SEPA for such interventions would enable site preparation ahead of requirement (preferred approach) or initiation of a prompt response, with associated design details provided, taking account of local channel characteristics and constraints (including groundwater level and with avoidance of flood risk 0.5% AEP + CC zones) to determine location, footprint, maintenance plan and reinstatement method.</p>				

A4-2.4. Consents and Permissions

- A4-2.4.1. During the construction of the Proposed Scheme the Appointed Contractor will be required to comply with the conditions of all permits, consents and licences obtained. Table A4-2.4 lists those consents and licences anticipated to be required.
- A4-2.4.2. This will be reviewed and updated by the Appointed Contractor, as required.

Table A4-2.4 - Anticipated Consents/Licences Required

Consent / Licence Required	Relevant Legislation	Description	Relevant Mitigation Item	Timing	Responsible for Obtaining Party
Protected Species Licence: Potential licences required in respect of works necessary to construct Proposed Scheme	Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland)	Licences in respect of works necessary to construct the Proposed Scheme that are likely to breach applicable conservation legislation will be obtained where required. The Contractor will comply with the requirements or conditions of any granted licence.	ECO10	Preconstruction and Construction	Appointed Contractor
Construction Runoff Permits (CRP): Road Drainage and the Water Environment (formerly referred to as a construction site licences (CSL))	The Water Environment (Controlled Activities) (Scotland) Regulations 2011	Any discharge of water run-off from a construction site to the water environment must be authorised by SEPA.	RDWE-EMB-03	Preconstruction and Construction	Appointed Contractor
CAR Licence: Road Drainage and the Water Environment	The Water Environment (Controlled Activities) (Scotland) Regulations 2011	CAR consent for engineering activities in the water environment, particularly in relation to sediment management	RDWE-EMB-03	Preconstruction and Construction	Appointed Contractor

Consent / Licence Required	Relevant Legislation	Description	Relevant Mitigation Item	Timing	Responsible for Obtaining Party
	(as amended) (CAR)	and fuel/hydrocarbon control. Regulated by SEPA			

A4-2.5. Environmental Asset Data and As-Built Drawings

Collection and Submission of Environmental Data

- A4-2.5.1. The gathering of environmental data has been a developing process since the outset of the Proposed Scheme and the design, collection and submission of environmental data is achieved through the publication of the EIA Report where information on data gathering is reported in Chapters 7 to 19 and the associated appendices. Where additional data is required during the preconstruction and construction phases, the Appointed Contractor will be responsible for the collection and submission to Transport Scotland and any relevant stakeholders / statutory bodies.
- A4-2.5.2. Table A4-2.5 summarises the ecological surveys undertaken during the EIA. Further information on these surveys can be found in Volume 2, Chapter 11: Biodiversity and associated appendix and figures of the EIA Report. Further details on the requirements for ecological surveys during the pre-construction, construction and post-construction phases are provided in Volume 4, Appendix 11.15: Outline Landscape and Ecological Management and Monitoring Plan of the EIA Report.
- A4-2.5.3. This will be reviewed and updated by the Appointed Contractor, as required.

Table A4-2.5. - Summary of Species Surveys Obtained to Date

Survey Type	Date	Location
Terrestrial Habitats Survey (Ukhab and National Vegetation Classification)	May to September 2023, November 2023, May 2024 ¹	250m buffer around the Proposed Scheme ¹
Bryophytes Survey	June 2024	250m buffer around Coire Croe Burn
Aquatic Habitats and Species Surveys (Watercourse Walkover Survey, Watercourse River Condition Assessment: Modular Physical (MoRPh) Survey, Watercourse Electric Fishing Survey, Watercourse and Loch Aquatic Macroinvertebrate Survey, and Loch Macrophyte Survey)	June, July and November 2023, March and June 2024 ¹	Watercourses and waterbodies within 150m of the Proposed Scheme ¹
Breeding Birds Assemblage Survey	April to July 2023	500m buffer around the Proposed Scheme
Black Grouse (Habitat Suitability Survey, Lekking Survey)	April to July 2023	1.5km buffer around the Proposed Scheme

Survey Type	Date	Location
Barn Owl	April to July 2023	Up to 1km buffer around the Proposed Scheme
Otter (Habitat Suitability, Presence/Likely Absence)	February to July 2023	Watercourses and waterbodies within 250m of the Proposed Scheme
Otter Resting Site Monitoring	February to September 2023, June to August 2024	Features with suitability for use by otters within 50m of the Proposed Scheme
Pine Marten (Scoping and Presence/Likely absence)	March to April 2023, July to September 2023 and May to June 2024	250m buffer around the Proposed Scheme
Red Squirrel (Scoping and Presence/Likely absence)	March and April 2023 and July to August 2023	100m buffer around the Proposed Scheme
Bats	February to September 2023, December 2023 and between March and August 2024	100m buffer around the Proposed Scheme
Badger	June and November 2023	200m buffer around the Proposed Scheme
Terrestrial Invertebrates	August 2023, July 2024	250m buffer around the Proposed Scheme
Reptile Habitat Suitability Survey	September and November 2023	50m study area around the Proposed Scheme

¹ UKhab and MoRPh surveys undertaken in 2024, were completed for the Enhancement Sites, no areas outside of the boundary were surveyed.

Collection and Submission of Engineering Data

A4-2.5.4. The method of procurement and contract is to be decided however the project is progressing on the basis of a Design and Build (D&B) type contract. Should the project progress under this form of contract, the Appointed Contractor will undertake both the detailed design and construction of the Proposed Scheme. Responsibility for operating and maintaining the trunk road following completion of the Proposed Scheme including any maintenance period would remain with the Scottish Government. Responsibility for operating and maintaining side roads would remain with Argyll and Bute Council on completion of the Proposed Scheme.

- A4-2.5.5. Engineering data, including design drawings, used in the EIA Report and DMRB Stage 3 Report will be made available to the tenderers and the successful Appointed Contractor.
- A4-2.5.6. The Appointed Contractor will be responsible for developing the detailed design of the Proposed Scheme and will be required to submit design drawings including as built drawings on completion to Transport Scotland.

A4-2.6. Details of Maintenance and First Iteration EMP Monitoring Activities

Environmental Monitoring Requirements Monitoring of Committed Mitigation

- A4-2.6.1. The Appointed Contractor will be responsible for implementing and monitoring, the mitigation measures outlined in Table A4-2.2. Routine inspections to check that mitigation measures are in place will be undertaken by the ECoW (delegated to the EcCoW for biodiversity measures, as needed). The ECoW will compile and produce periodic inspection reports (the frequency of which is to be agreed with Transport Scotland).
- A4-2.6.2. Monitoring of compliance will also be conducted by the ECoW and/or the EcCoW. The Employers Requirements of the Design and Build Contract will detail the specific measures to monitor compliance.
- A4-2.6.3. The Appointed Contractor will be required to keep a record of monitoring activities and any potential areas of non-compliance through development and population of Annex F: Final Environmental Investigation and Monitoring Reports.
- A4-2.6.4. In instances where the requirements of the FIEMP are not upheld, a Non-Conformance and Corrective Action Notice will be produced. The Appointed Contractor will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming, with associated 'lessons learned'.
- A4-2.6.5. The ecologist appointed by Transport Scotland, will also monitor/audit the management of valued biodiversity receptors (including mitigation and European Protected Species (EPS) and protected species licencing).

Environmental Management Plans

- A4-2.6.6. Annex B: Relevant Management Plans provides a list of some of the environmental management plans that are likely to be required as part of the Proposed Scheme works, these plans will detail environmental data collation and monitoring activities. The Appointed Contractor will monitor compliance using these management plans and will be required to update Annex B as appropriate.
- A4-2.6.7. An Outline Landscape and Ecological Management and Monitoring Plan has been produced as part of the EIA Report within Volume 4, Appendix 11.15 alongside an Outline Peat Management Plan within Volume 4, Appendix 12.6. The Contractor is required to follow the guidance therein and update the management plans where appropriate.

A4-2.7. Induction, Training and Briefing Procedures for Staff

Introduction

- A4-2.7.1. A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Appointed Contractor. Training will be provided by the Appointed Contractor to ensure that all persons working on site have a practical understanding of environmental issues and management requirements prior to commencing activities. The Appointed Contractor will ensure that environmental emergency plans are drawn up and will conduct regular checks to ensure that the plan is effective by means of emergency drills.
- A4-2.7.2. The Appointed Contractor must keep the list of environmental training “live” and identify any requirements for additional training throughout the design and construction of the Proposed Scheme. A record of all training delivered must be maintained for audit and monitoring purposes.
- A4-2.7.3. All training requirements will be reviewed and updated by the Appointed Contractor, as required.

Table A4-2.6 - Indicative Training Programme

Topic	Personnel	Delivery	Description
Site Safety Induction and Environmental Awareness	All	Site Induction	All personnel involved in the Proposed Scheme will receive environmental awareness training. The environmental training and awareness procedure will ensure that staff are familiar with the principles of the Second Iteration EMP (SIEMP), the environmental aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures
Toolbox talks	All	Site Induction	Specific toolbox talks will be provided to contractors prior to work commencing. The talks will be delivered by a suitably experienced ECoW / EcCoW who will explain any legal requirements that are in place as well as highlighting

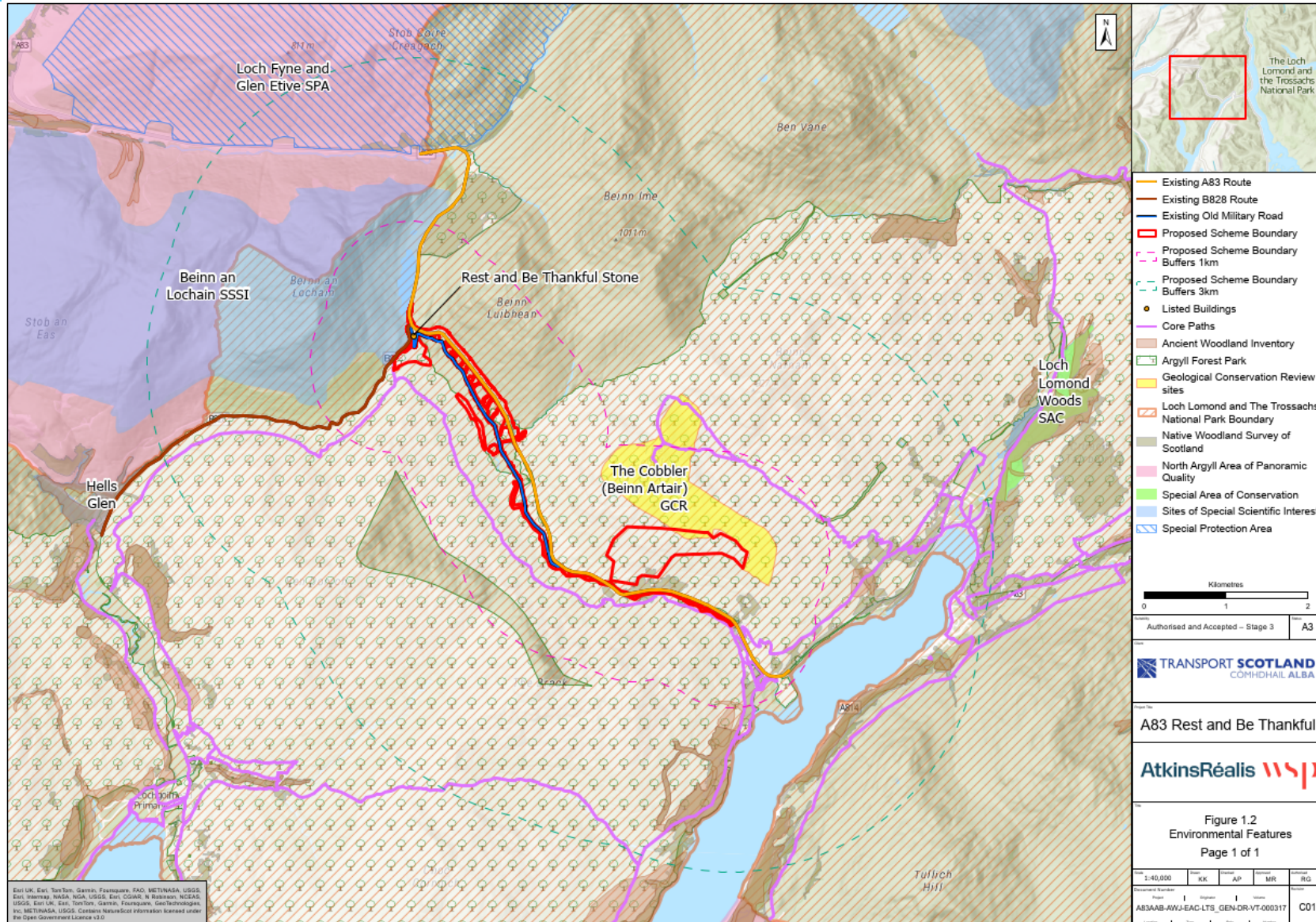
Topic	Personnel	Delivery	Description
			measures such as sensitive zones within the construction area and appropriate working methods that must be implemented.

Environmental Competencies

- A4-2.7.4. A project specific plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Appointed Contractor who will be required to monitor and record that all staff have attended the relevant environmental induction or training as listed above
- A4-2.7.5. The Contractor is required to develop criteria for evaluating the effectiveness of any training.

Annexes

Annex.4.2.A. Environmental Features



Annex.4.2.B. Relevant Management Plans

A.4.2.B.1. The Appointed Contractor will be required to produce environmental management plans including, but not limited to:

- Air Quality and Dust Management Plan (identifying suitable mitigation measures to be employed in accordance with the Institute of Air Quality Management Construction Dust Guidance)
- Archaeological Management Plan
- Bio-Security Plan, including the management of invasive, non-native species
- Bird Species Protection Plan
- Carbon Management Plan
- Community Engagement Plan
- Construction Lighting Management Plan
- Designated Sites Protection Plan
- Dewatering Management Plan
- Ecological Management Plan, including specific Species Protection Plans, Designated Sites and Habitat Management Plans
- Flood Response Plan
- Groundwater and Surface Water Management Plans, including Water Quality Monitoring Plan, adherence to Pollution Prevention Guidelines, Flood Response and Pollution Incident Control and Response Plans
- Invasive non-native Species (INNS) Management Plan
- Habitat Protection Plan
- Landscape Ecological Management and Monitoring Plan
- Noise and Vibration Management Plan (identifying how to appropriately control and minimise construction noise and vibration impacts as far as is reasonably possible)
- Peat Management Plan
- Pollution Prevention Measures and Incident Control Plan
- Pre-construction surveys, including ecology and drainage
- Private Water Supply Protection Plan
- Site Waste Management Plan
- Soil and Materials Management Plan

- Species Protection Plan (covering the following species / species groups as a minimum: aquatic species, otter, pine marten, red squirrel, bats, badger, reptiles and any other species as deemed necessary from the pre-construction surveys conducted)
- Surface Water Management Plan and

A.4.2.B.2. Traffic Management Plan, including non-motorised users. This Annex should be updated with these management plans where available and appropriate.

A.4.2.B.3. This will be reviewed and updated by the Appointed Contractor, as required.

Annex.4.2.C. Environmental Method Statements

- A.4.2.C.1. Prior to construction, the Contractor will develop environmental method statements, as required. These will include, but not be limited to, the following:
- a Designated Site and Sensitive Habitats Precautionary Working Method Statement (PWMS).
- A.4.2.C.2. This will be reviewed and updated by the Appointed Contractor, as required.

Annex.4.2.D. Emergency Procedures and Record of Any Environmental Incidents

- A.4.2.D.1. A Site Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and Emergency Services, this plan will include emergency procedures and specific Oil/Hydrocarbon spill response measures.
- A.4.2.D.2. The plan will detail the following controls:
- site drainage controls
 - fuel handling procedures
 - incident notification procedures
 - encountering unexpected ground conditions procedures
 - dealing with contaminated materials procedures
 - pollution control equipment requirements
 - procedures for the control of dust and mud and
 - measures to protect watercourses and wildlife from chemical spills or sediment laden run off.
- A.4.2.D.3. Responsible staff will be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Appointed Contractor who will report on results. Any corrective actions shall be taken forward for review and approval.
- A.4.2.D.4. Should an emergency incident occur, the ECoW will be notified immediately. The emergency response will be co-ordinated by the Appointed Contractor's Project Manager. Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation and shall be put into place, having regard for the sensitivities of the environment. A record of the emergency incident will be kept and communicated with relevant internal and external stakeholders to show the nature of the corrective action undertaken and enable 'lessons to be learned' on this and other projects.
- A.4.2.D.5. This will be reviewed and updated by the Appointed Contractor, as required.

Annex.4.2.E. Copy of Evaluation of Change Register

A.4.2.E.1. Section inserted for the Appointed Contractor to populate.

Annex.4.2.F. Final Environmental Investigation and Monitoring Reports

A.4.2.F.1. Section inserted for the Appointed Contractor to populate.

Annex.4.2.G. Risk Register

A.4.2.G.1. Section inserted for the Appointed Contractor to populate.

Annex.4.2.H. Construction Programme

A.4.2.H.1. Section inserted for the Appointed Contractor to populate.