20 Schedule of Environmental Commitments

20.1 Introduction

20.1.1 As described throughout this Environmental Impact Assessment Report (EIAR), the design of the proposed scheme has been progressed taking account of identified environmental constraints and considerations, enabling avoidance or reduction of potential environmental impacts where practicable. This chapter summarises the additional mitigation measures identified in the EIAR, which are considered necessary to avoid; reduce; or offset potential impacts.

20.1.2 The purpose of the following Schedule of Environmental Commitments is to collate mitigation measures, both for ease of reference and for use by the contractor. These mitigation measures are those identified within Chapters 7 to 17 of this EIAR (Table 20.2 to 20.12), as well as four overarching mitigation items (Table 20.1). A description, location, and purpose of each mitigation item is given. The tables also state whether consultation or approval with a consultee is required. The source of any references in the tables are provided in the reference list within the individual chapters.

20.1.3 The timing of mitigation varies and may be a design requirement, or implemented prior to construction, during construction and/or during operation of the proposed scheme. The stated mitigation measures have been identified through the EIA process, and whilst some of these are also necessary to achieve separate legislative compliance (e.g. protected species licences), they are included as they still encompass mitigation commitments of this EIAR.

Table 20.1: Standard Construction Mitigation

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
SM-01	Throughout proposed scheme	Pre-Construction Construction	A Construction Environmental Management Plan (CEMP) will be prepared by the contractor to provide a framework for the implementation of construction activities, setting out how the contractor intends to operate the construction site, including construction-related mitigation measures identified below in Tables 20.2 to 20.12. The relevant section(s) of the CEMP will be in place prior to the start of construction work and the Plan will continue to be developed throughout the construction process to avoid, reduce or mitigate construction impacts on the environment and the surrounding community. The CEMP will include, but not be limited to, subsidiary plans relating to: land (including a specific Soil Management Plan), geology and land contamination; surface water and groundwater (including a Flood Response and Pollution Incident Response Plan); ecology (Ecological Management Plan which will include specific Species Protection Plans and Habitat Management Plans); landscape, cultural heritage, air quality (e.g. dust) and noise and vibration.	To provide a framework for the implementation of construction activities in accordance with the environmental commitments and mitigation measures in the EIAR.	Consultation with the relevant local authorities, other statutory bodies and regulatory authorities (Refer to Tables 20.2 to 20.12).
SM-02	Throughout proposed scheme	Pre-Construction Construction	Prior to construction, a team of suitably qualified Environmental Clerk of Works (EnvCoW) (i.e. professionally qualified in a relevant environmental discipline) will be appointed by the contractor. The EnvCoW(s) will be present on site, as required, during the construction period to monitor the implementation of the mitigation measures identified and ensure that activities are carried out in such a manner to prevent or reduce impacts on the environment.	To monitor the implementation of mitigation measures identified and ensure that activities are carried out in such a manner to prevent or reduce impacts on the environment.	Approval by Transport Scotland.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
SM-03	Throughout proposed scheme	Pre-Construction Construction	Throughout the construction period the contractor will, as required, contribute towards the overall communications strategy for the proposed scheme to ensure that consultees and members of the public are kept informed on the progress of the proposed scheme and to efficiently address any queries or concerns raised. As part of this the contractor will appoint a Community Liaison Officer and liaison team who will: • liaise with relevant local authorities; other statutory bodies and regulatory authorities; community councils and relevant community groups; and businesses and residents in local communities affected by the construction works; • notify occupiers of nearby properties of the nature and anticipated duration of planned construction works that may affect them; • support the production of project communications such as the project website and newsletters; and • establish a dedicated freephone telephone helpline together with a dedicated email address and postal address for enquiries and complaints during the construction phase. The relevant contact numbers, email and postal addresses will as a minimum be displayed on signs around the construction site and will be published on the project website. Enquiries and complaints will be logged in a register and appropriate action will be taken in response to any complaints.	To ensure that consultees and members of the public are kept informed on the progress of the proposed scheme and to efficiently address any queries or concerns raised.	Approval by Transport Scotland.
SM-04	Throughout proposed scheme	Construction	The contractor will ensure that all site workers receive adequate training relevant to their role prior to working on the construction site, including specific environmental project inductions and 'toolbox talks' as required.	To ensure site workers are aware of best practice construction methods, mitigation measures and how they are implemented.	None required

Table 20.2: Air Quality

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
AQ-01	Throughout proposed scheme	Pre-construction Construction	The CEMP (refer to **Mitigation Item SM-01)** will adopt best practice measures to control fugitive dust in compliance with Institute of Air Quality Management (IAQM) guidance on the assessment of dust from demolition and construction. The contractor will enter into pre-works discussions with The Highland Council to agree the method of works and appropriate dust mitigation measures outlined within the Dust Management Plan (DMP). Guidance on appropriate mitigation measures for the proposed scheme (defined as a medium risk site) is provided in Appendix A7.3 (Dust Mitigation Measures) of this EIAR. These will be used as a guide to inform the best practice measures within the DMP and will be reviewed as the contractor confirms further details of the construction activities, location and programme.	To minimise dust emissions as a result of the construction of the proposed scheme.	Approval from The Highland Council

Table 20.3: Noise and Vibration

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
NV-01	Throughout proposed scheme	Pre-Construction Construction	A programme of noise and vibration monitoring will be agreed with the Environmental Health Officer (EHO) of The Highland Council, and noise and vibration limits will be contained within the CEMP (refer to **Mitigation Item SM-01**). The contractor will be required to develop and implement a Noise and Vibration Management Plan to meet these requirements. The Noise and Vibration Management Plan will include the design of any necessary Noise Sensitive Receptor (NSR) specific construction mitigation over and above the standard mitigation included within **Mitigation Item NV-02.**	To predict and monitor the noise and vibration levels during the construction of the proposed scheme.	Approval from The Highland Council's EHO.
NV-02	Throughout proposed scheme	Construction	Best practicable means will be used to limit the level of noise to which operators and others in the vicinity of site operations would be exposed. This includes the following: • the hours of working will be planned and account will be taken of the effects of noise upon persons in areas surrounding site operations and upon persons working on site, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods; • any work outside of normal working hours will be agreed with The Highland Council; • where reasonably practicable, quiet working methods will be employed, including use of the most suitable plant, reasonable hours of working for noisy operations, and economy and speed of operations; • noise mitigation measures such as acoustic screens and earthwork bunds are to be constructed as early as practical;	To reduce, as far as practicable, the level of noise to which operators and others in the vicinity of site operations would be exposed.	Approval from The Highland Council's EHO

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• noise will be controlled at source, for example, by modification of existing plant/equipment, its use and location and ensuring maintenance of all noise-generating equipment; • the spread of noise will be limited, i.e. by distance between source and receiver and/or screening; • on-site noise levels will be monitored regularly, particularly if changes in machinery or project designs are introduced, by a suitably qualified person appointed specifically for the purpose. A method of noise measurement will be agreed with The Highland Council prior to the commencement of site works; • on those parts of a site where high levels of noise are likely to be a hazard to persons working on the site, prominent warning notices will be displayed and, where necessary, ear protectors will be provided; • proper use of plant with respect to minimising noise emissions and regular maintenance in line with plant manuals; • where practicable, vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers and will be maintained in good, efficient working order; • where appropriate, inherently quiet plant will be selected. All major compressors will be 'sound reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers; • machines in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum; • all ancillary plant such as generators, compressors and pumps will be positioned so as to cause minimum noise disturbance. If necessary, acoustic barriers or enclosures will be provided; and • adherence to the codes of practice for construction working and piling given in British Standard 'BS 5228:2009+A1:2014' and the guidance given therein minimising noise emissions from the site. The Highland Council will be consulted regarding any proposed working outwith normal working hours. The Highland Council will be the authority responsible for ensuring the contractor complies with agreed noise limits and taking action if there is an exceedance, or if best practicable means to limit noise are not being used.		

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
NV-03	As required	Pre-construction Construction	Where, following application of proposed mitigation and any Section 61 consents under the Control of Pollution Act 1974, noise levels are expected to exceed the trigger levels defined in Annex E.4 of BS 5228:2009+A1:2014 and any Section 61 consents, a scheme for the installation of noise insulation or the reasonable costs thereof, or a scheme to facilitate temporary rehousing of occupants, as appropriate, will need to be implemented.	To reduce noise impacts at NSR during construction.	Consultation with The Highland Council's EHO.

Table 20.4: Landscape and Visual

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-01	Throughout proposed scheme	Construction	The construction programme will be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas will be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting will be undertaken as soon as practicable after sections of work are complete.	To reduce duration of any landscape and visual impacts.	None required.
LV-02	Throughout proposed scheme	Construction	As far as practicable, construction plant and materials storage areas will be appropriately sited to minimise their landscape and visual impact.	To reduce landscape and visual impact of plant and material storage areas.	None required.
LV-03	Throughout proposed scheme	Construction	In relation to the sensitive location of site compounds, where possible, existing features such as trees should be used to screen from the wider landscape. Where this is not possible, screening can be achieved using bunds or embankments which may become part of the permanent works. Alternatively, temporary screens can be erected, designed and painted to be as inconspicuous in their surroundings as possible.	To avoid or reduce landscape and visual impacts of the temporary buildings, traffic movements and lighting.	None required.
LV-04	Throughout proposed scheme	Construction	Construction sites to be kept tidy (e.g. free of litter and debris).	To reduce visual impact of construction sites	None required.
LV-05	Throughout proposed scheme	Construction	Work during hours of darkness will be avoided as far as practicable, and where necessary, directed lighting will be used to minimise light pollution/glare. Lighting levels will be kept to the minimum necessary for security and safety.	To reduce light pollution/glare during night time working	None required.
LV-06	Throughout proposed scheme	Pre-construction Construction	Vegetation to be retained to be fenced off in advance of works beginning on site to ensure protection.	To protect any areas of retained vegetation during construction.	None required.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-07	Throughout proposed scheme	Construction	To protect soil quality for the purposes of landscape planting, the following measures will be implemented: • uncontaminated topsoil for re-use shall be stored in un-compacted mounds no more than 2m in height and stored separately from subsoil material; • stripped topsoil shall be used in areas of the same proposed vegetation type to utilise the existing natural seed bank; • subsoil in planting areas shall be replaced after construction and ripped to a minimum of 450mm prior to topsoiling and planting; and • proposed planting areas in existing arable and pasture land, not subject to construction activity, shall be ripped to 600mm to alleviate compaction.	To protect soil quality for the purpose of landscape planting.	None required
LV-08	Throughout proposed scheme	Pre-construction Construction	Earthworks design by the contractor will aim to minimise the impact of cuttings and embankment slopes and allow integration of the road with surrounding land, within the available land constraints, through: • rounding off top and bottom of cuttings and embankments; and • modification of the SuDS earthworks in order to improve integration with surrounding landform.	To reduce the visual impact of earthworks	None required
LV-09	Throughout proposed scheme	Pre-construction Construction	The design of SuDS should comply with the requirements of Appendix A9.3 (SuDS Design Principles) and include the following: • where practicable SuDS will be sited within naturally low areas and their design developed further to look as natural as possible; • surrounding earthworks will be designed with smooth flowing contours to integrate naturalistically with the surrounding landform. Abrupt changes in slope, sharp angles and steep side slopes will be avoided; • boundary fencing, where required, will be designed to be as unobtrusive as possible, with the fence type and alignment designed to minimise visual impact; • planting of native scrub species will be undertaken to help screen proposed fencing, outfall and inlet structures, enhance wildlife habitat and provide visual interest; and • open ground in the areas around the SuDS will be seeded with native grasses and wildflowers to provide added wildlife habitat and visual interest.	To mitigate visual intrusion of SuDS features, integrate them into the landscape, and to enhance their visual amenity and wildlife value.	None required
LV-10	Structures throughout proposed scheme	Pre-construction	The detailed design of structures, such as bridges and retaining walls along the length of the proposed scheme and aspects of the landscape design, will be informed by specialist aesthetic advice in order to reduce impacts on both landscape and visual receptors.	To reduce impacts on both landscape and visual receptors	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-11 to LV-21	Throughout proposed scheme	Pre-construction Construction Operation	The general principles relating to existing and new planting comprise the following: • retention of existing trees and vegetation where possible and incorporation with new planting proposals **(Mitigation Item LV-11);** • planting to replace trees lost during the proposed scheme construction **(Mitigation Item LV-12);** • enhancement of biodiversity through use of predominantly native species, providing new wildlife habitats and complementing existing adjacent habitats **(Mitigation Item LV-13);** • planting designed in association with the landform design to provide integration with the local landscape setting **(Mitigation Item LV-14**); • planting mixes will be designed to reflect locally prevalent assemblages of species and will be set out in irregular patterns and spacing to replicate naturally occurring vegetation areas **(Mitigation Item LV-15);** • planting at junctions and bridges to help assimilate proposed earthworks and structures into the surrounding landscape **(Mitigation Item LV-16);** • planting to provide screening to reduce visual impacts of the proposed scheme, earthworks, structures and lighting **(Mitigation Item LV-17);** • use of severed field corners and landlocked areas as appropriate **(Mitigation Item LV-18)**; and • the introduction of more formal planting on approach to Inverness/Inshes to create a 'sense of place' and provide visual interest **(Mitigation Item LV-19**). • creation of views to enhance the experience of travelling along the proposed scheme, taking into account aspects such as natural woodland characteristics typical in the locality, landscape features, or other requirements such as avoiding creation of tree canopies close to the road **(Mitigation Item LV-20)** • planting would be monitored for a minimum of five years after construction with annual replacement of any failed planting with stock of a suitable age so as to achieve full establishment and the required level of mitigation/impact reduction by summer 15 years after opening **(Mitigation Item LV-21).**	To inform the landscape planting mitigation to integrate with the local landscape character and reduce visual impacts.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-22	Mixed woodland as identified on Figure 9.5	Pre-construction Construction	Mixed Woodland will require both broad-leaved and coniferous species for visual screening purposes, will comprise plants which range in size from feathered trees to whips and transplants. The species selection will reflect NVC W11 Quercus petraea – Betula pubescens – Oxalis acetosella woodland with modifications (for improved amenity and bio-diversity) and aim to create multi-layered woodland with a balanced mix of deciduous and coniferous trees, including an understorey. The balance between deciduous and evergreen species will reflect locally common species and be varied to achieve year-round screening and reflect existing woodland local to the various sections of the road. In some instances, the species mix will comprise a 'like for like' replacement, for example to make good affected areas of planting along the western boundary of the Inverness Campus. Tree species mix to be used for mixed woodland (NVC W11) could include: • Scots pine - *Pinus sylvestris;* • Oak - *Quercus robur/Quercus petraea;* • Alder - *Alnus glutinosa;* • Holly - *Ilex aquifolium;* • Silver birch - *Betula pendula;* • Rowan - *Sorbus aucuparia*; • Wild cherry – *Prunus avium*; • Beech – *Fagus sylvatica;* • Hazel – *Corylus avellana*; and • Yew – *Taxus baccata.*	To ensure planting mix is appropriate to provide visual screening and reduce landscape and visual impacts as required.	None required
LV-23	Riparian woodlands as identified on Figure 9.5	Pre-construction Construction	Riparian woodland will be planted adjacent to watercourses and ponds and in other areas along floodplains. It will be a modification of NVC W11 and utilise other species which are suited to wetter ground conditions such as willow, birch and alder which would be indicative of NVC W6 and NVC W7. It will comprise a mix of sizes of plants such as feathered trees, whips and transplants. Native shrub species will also be included to provide understorey and edge planting. A typical tree species mix to be used for riparian woodland planting is: • Goat willow - *Salix caprea;* • White willow - *Salix alba;* • Silver birch - *Betula pendula;* • Alder - *Alnus glutinosa;* • Aspen - *Populus tremula;* • Downy birch - *Betula pubescens;* • Hazel - *Corylus avellana*; and • Scots pine - *Pinus sylvestris*.	To ensure planting mix is appropriate to provide visual screening and reduce landscape and visual impacts as required.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-24	Dry Scrub as identified on Figure 9.5.	Pre-construction Construction	Proposed dry scrub planting will comprise native species of local provenance creating a dense medium height canopy. This mix will be used in areas where a lower height plant cover is more appropriate than the taller woodland mixes. Single species scrub planting will be used in areas such as junctions for local impact creating a more formal design. A typical species mix to be used for dry scrub is: • Hawthorn - Crataegus monogyna; • Blackthorn - Prunus spinosa; • Juniper - Juniperus communis; • Dog Rose - Rosa canina; and • Guelder rose – Viburnum opulus.	To ensure planting mix is appropriate to provide visual screening and reduce landscape and visual impacts as required.	None required
LV-25	Hedgerow as identified on Figure 9.5.	Pre-construction Construction	Hedgerows will be planted to tie revised boundaries into existing field boundaries but also to reintroduce a lost or degraded element back into the landscape to enhance the landscape character, increase biodiversity and provide screening where required. The hedge species mix aims to reflect species currently used within hedgerows in the region. The inclusion of holly adds a native evergreen element. A typical species mix to be used for hedgerows is: • Hawthorn - *Crataegus monogyna*; • Blackthorn - *Prunus spinosa;* • Beech - *Fagus sylvatica*; and • Holly - *Ilex aquifolium*. Typical hedgerow trees would include: • Oak - *Quercus robur;* • Rowan - *Sorbus aucuparia*; and • Wild cherry - *Prunus avium.*	To ensure planting mix is appropriate to provide visual screening and reduce landscape and visual impacts as required.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
LV-26	Individual Heavy Standard Trees and Feathered Trees as identified on Figure 9.5	Pre-construction Construction	Groups of individual trees and tree lines will comprise standard trees in informal or formal groupings and positioned to strengthen the landscape pattern, create distinctive planting and a sense of place at transition points along the proposed scheme i.e. on approach to Inverness/Inshes and provide screening or filtration of views. Feathered tree groups will be planted to reflect the existing landscape character and provide impact at an early stage. Typical native species to be used include: • Beech - *Fagus sylvatica*; • Oak - *Quercus robur;* • Scots Pine - *Pinus sylvestris;* • Silver Birch - *Betula pendula;* • Aspen - *Populus tremula;* • Rowan - *Sorbus aucuparia*; and • Alder - *Alnus glutinosa.*	To ensure planting mix is appropriate to provide visual screening and reduce landscape and visual impacts as required.	None required
LV-27	Grass seeding as identified on Figure 9.5	Construction Operation	For all disturbed soft areas and road verges, different seed mixes shall be used, dependent on location and use: • roadside verge (visibility splay) mix: suited to the roadside location being low maintenance, fast establishing and tolerant of traffic and salt spray; • species-rich grassland mixes: suited for use in all other areas disturbed by construction works, consisting of a mixture of native, non-invasive grasses and wildflower species to reflect locally occurring semi-natural flora. As well as enhancing biodiversity by providing foraging resources for birds and pollinators, and visual interest along the proposed scheme; these types of grasslands will require minimal maintenance; and • wetland grassland mix: suited for use in the SuDS, low lying poorly drained areas and areas around culverts that are likely to experience wet conditions.	To inform grass seeding along the proposed scheme corridor	None required
LV-28	Throughout proposed scheme	Pre-construction Construction	To limit light pollution from the proposed street lights, Light Emitting Diodes (LEDs) or similar which can be dynamically controlled according to traffic flows will be utilised on the proposed scheme. This form of lighting, known as 'Full Cut Off' lighting, directs light of appropriate strength where it is needed and controls the unwanted dispersion of obtrusive artificial light by eliminating the emission of light upwards. This choice of luminaire also enables maximum spacing between lighting columns and ensures that the minimum amount of lighting is used, without compromising safety. Special attention will be given to minimising the landscape and visual impacts of the lighting columns and fixings and to prevent unnecessary glare or light spill. LEDs or similar providing a directional light source with minimal light spillage will be used and consideration will be given to use of low height flat beam lighting fixtures.	To reduce the landscape and visual impacts of lighting	None required

Table 20.5: Ecology and Nature Conservation

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
E-01	Throughout proposed scheme	Pre-Construction	Pre-construction surveys will be undertaken to verify and, where required, update the baseline ecological conditions set out in the EIAR. The scope of the pre-construction surveys will be confirmed with SNH prior to them being undertaken.	To update the baseline ecological conditions set out in the EIAR.	Consultation with SNH
E-02	Throughout proposed scheme	Pre-Construction	Prior to construction, a suitably qualified (or team of suitably qualified) Ecological Clerk of Works (ECoW) will be appointed by the contractor and will be responsible for implementation of the Species Protection Plans and the Habitat Management Plan (forming part of the Ecological Management Plan (refer to **Mitigation Item SM-01**)). The ECoW will: • provide ecological advice over the entire construction programme; • undertake or oversee pre-construction surveys for protected species in the areas affected by the proposed scheme; • ensure mitigation measures are implemented to avoid and reduce impacts on ecological features; and • monitor the implementation of mitigation measures during the construction phase to ensure compliance with protected species legislation and commitments within the EIAR. The ECoW will be a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and will have previous experience in similar ECoW roles. All ECoWs will be approved by Transport Scotland to be appropriately qualified for the role and compliance will be monitored by the employer's ecologist. The ECoW will be appointed in advance of the main construction programme commencing to ensure pre-construction surveys (refer to **Mitigation Item E-01**) are undertaken and any advance mitigation measures required are implemented. An employer's ecologist will check that the contractor's ECoW is suitably qualified to undertake their role and will audit the contractual obligations with regards to the ecological safeguarding and ecological mitigation requirements.	To ensure the implementation of the Ecological Management Plan.	ECoW approved by Transport Scotland.
E-03	At watercourses throughout proposed scheme	Construction Operation	During construction, the extent of areas affected by culverts, watercourse realignment and dewatering will be minimised as far as practicable. Best practice guidance will be adhered to when working within watercourses likely to contain salmonids (SEPA 2010; Scottish Government 2012). In-channel works will avoid the salmonid spawning and egg incubation period, such that all works will be undertaken between May and September inclusive or as agreed with relevant stakeholders. During construction, reasonable precautions will be undertaken to avoid/reduce in-channel works and translocation of channel substrates. During construction, fish are to be removed and relocated from channels to be dewatered for the construction of culverts and channel realignments, in accordance with established guidance. Where watercourse realignments are unavoidable, habitat creation and	To protect fish species during de-watering of watercourse sections and in-stream works, and to ensure fish habitat and connectivity are maintained during the operation of the proposed scheme.	CAR Licence approved by SEPA

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			enhancement have been incorporated into designs through the inclusion of meander bends and riparian zones, where appropriate. Design and construction of new culverts and extended or upgraded culverts, will abide by the relevant guidance provided in the following, to maintain full habitat connectivity by ensuring a suitable flow regime and substrate composition under the footprint of all culverts: • SEPA Good Practice Guidelines for Temporary Construction Methods (SEPA 2009); • SEPA Good Practice Guide for River Crossings (SEPA 2010); • SEPA Position Statement (SEPA 2015b); • DMRB Design of Outfalls and Culvert Details (Highways Agency et al. 2004); and • CIRIA Culvert Design and Operational Guide (C689) (CIRIA 2010). The watercourse substrate in the working area will be removed and stored for reuse to allow the maintenance of natural bed substrates during post-construction operation phase, as per best practice guidance. Where this is not possible imported materials for use as rip rap or stream bed will be appropriate for the location e.g. correct pH. The material will be free of invasive plants and animals and will be placed in such a way so as to maintain or improve the pre-construction fish and invertebrate habitat wherever possible.		
E-04	At watercourses throughout proposed scheme	Construction	During construction within and around watercourses, the following Pollution Prevention Guidance (PPGs) and Guidance for Pollution Prevention (GPPs) will be adhered to (NetRegs 2019) - PPG 1, GPP 2, GPP 5, GPP 21 and GPP 22. The guidance includes the following mitigation measures: • surface and foul water will be appropriately drained and stored. These control measures must be in place before earthworks commence; • chemicals, oils and fuels will be kept safely stored and away from drainage systems and waste will be appropriately managed; • plant and machinery must not be fuelled within 10m of watercourses or drainage systems, or as advised by the ECoW; • sites will be restored fully on completion of works; and • emergency procedures and spillage kits must be available when working near watercourses or drainage systems, and construction staff must be familiar with emergency procedures. Details of how this will be executed will be contained in the CEMP (**Mitigation Item SM-01**).	To prevent pollution to watercourse during construction	None required
E-05	Throughout proposed scheme	Pre-Construction Construction	Plant and personnel will be constrained to a prescribed working corridor through the use of temporary barriers to minimise damage to habitats and potential direct mortality and disturbance to animals located within and adjacent to the proposed scheme working corridor. The working corridor may only be altered in agreement with the ECoW.	To protect habitats and fauna.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
E-06	Throughout proposed scheme	Construction	A construction lighting plan and method statement will be developed by the contractor. The plan, as part of the Ecological Management Plan, will detail specific mitigation requirements taking into account guidance on lighting (e.g. Institution of Lighting Professionals and Bat Conservation Trust (2018); Institution of Lighting Professionals (2011) and The Royal Commission on Environmental Pollution (2009)). The construction lighting design will take into account the need to avoid illuminating sensitive bird and mammal habitats in locations such as: adjacent to watercourses; along woodland edges; and where there is known activity identified through pre-construction ecological surveys (refer to **Mitigation Item E-01**). Where this is not possible the contractor will agree any exceptions with the ECoW after consultation with SNH, where appropriate.	To protect sensitive bird and mammal habitats from illumination.	Consultation with SNH, if ECoW deems appropriate.
E-07	Agricultural land adjacent to: • ch450 of Link 2 to Eastfield Way roundabout; • ch300 to ch500 of Link 3; • Eastfield Way roundabout to ch50 of Link 4; and • Ch50 to ch850 of Link 4.	Construction	Areas of key wintering bird habitat adjacent to the proposed scheme have been identified. It is recommended that these areas are avoided during construction of the proposed scheme and site compounds are located outwith these areas in order that they are still available for foraging and roosting by the bird species concerned.	To mitigate disturbance of wintering birds by construction related activities.	None required
E-08	Throughout proposed scheme	Pre-Construction Construction	Any tree felling will be carried out by experienced contractors to reduce direct mortality of protected species according to agreed felling methods between contractors and the ECoW.	To protect bird and bat species during pre-construction works.	Consultation with SNH, if ECoW deems appropriate.
E-09	Throughout proposed scheme	Pre-Construction Construction	The contractor will obtain and comply with the requirements of any protected species derogation licences in respect of works necessary to construct the proposed scheme that are likely to breach applicable conservation legislation.	To comply with conservation legislation.	Approval from SNH

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
E-10	Throughout proposed scheme	Pre-Construction Construction	Tree felling and vegetation clearance to be reduced as far as practicable and undertaken outside the core bird nesting season (1 March to 31 August) to avoid damage or destruction of occupied nests or harm to breeding birds. If this cannot be achieved, vegetation clearance undertaken within the core bird nesting season will be preceded by a nesting bird inspection by a suitably experienced ecologist no more than 24 hours prior to works commencing. If any nesting birds are identified during the survey, they will be left in situ until the nest is no longer active. Alternative approaches to the work will need be proposed e.g. leaving an exclusion zone around the nest to avoid disturbance. All cleared vegetation will be rendered unsuitable for nesting birds, for example, by covering or chipping depending on the end purpose of the vegetation or will be removed from the works area.	To protect bird species during pre-construction works.	Consultation with SNH, if ECoW deems appropriate.
E-11	For locations see Confidential Appendix A11.3 and Figure 11.9	Pre-Construction Construction	If barn owls are nesting in the known locations or a new nest is identified, a suitable protection zone will be placed around the nest. Construction work within the protection zone will not take place between the 1 March to 31 August.	To mitigate disturbance of Schedule 1 species (barn owl).	None required
E-12	For locations see Confidential Appendix A11.3 and Figure 11.9	Construction	If barn owls are nesting in the known locations or a new nest is identified, construction work near barn owl nests should avoid taking place during the hours of darkness when barn owls are largely active.	To mitigate disturbance of Schedule 1 species (barn owl).	None required
E-13	For locations see Confidential Appendix A11.3 and Figure 11.9	Construction	If barn owls are nesting in the known locations or a new nest is identified, works should be programmed so that the activity is progressively increased over a period of days to give the resident birds the opportunity to acclimatise to the new event.	To mitigate disturbance of Schedule 1 species (barn owl).	None required
E-14	For locations see Confidential Appendix A11.3 and Figure 11.9	Construction	If barn owls are nesting in the known locations or a new nest is identified, if deemed necessary, the nest will be visually screened, for example, by the use of high fine mesh netting which will prevent encroachment and shield birds visually from sudden changes in activity levels.	To mitigate disturbance of Schedule 1 species (barn owl).	None required
E-15	Throughout proposed scheme	Construction	Trenches, holes and pits will be kept covered at night or provide a means of escape for mammals that may become entrapped. Gates to compound areas will be designed to prevent mammals from gaining access and will be closed at night.	To avoid mammals becoming entrapped in and around compound areas during construction.	None required
E-16	Throughout proposed scheme	Construction	Temporary mammal-resistant fencing will be provided around construction compounds.	To avoid mammals becoming entrapped in and around compound areas during construction	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
E-17	At watercourses throughout proposed scheme	Construction	Construction compounds, storage areas, temporary access tracks etc. (except for culvert, bridge and outfall works) will be at least 10m from watercourse banks.	To mitigate direct mortality of otter.	None required
E-18	For locations see Confidential Appendix A11.3 and Figures 11.3. and 11.11)	Construction	Severance and fragmentation of habitat used by otter will be reduced during construction by retention of commuting routes, for example constructing culverts with mammal provision and dry mammal underpasses early in the construction process. Post-construction monitoring to determine the effectiveness of the crossing structures will be undertaken.	To mitigate disturbance and fragmentation of otter and badger cause by construction related activities.	None required
E-19	For locations see Confidential Appendix A11.3 and Figure 11.11	Construction	If otter resting sites are found at pre-construction (**Mitigation Item E-01**), piling/drilling will not be undertaken within 100m of a non-breeding resting site, 200m of a proven breeding resting site or during the hours of darkness.	To mitigate disturbance of otter caused by construction related activities.	Approval from SNH if a protected species derogation licence is needed.
E-20	For locations see Confidential Appendix A11.3 and Figure 11.11	Construction	If otter resting sites are found at pre-construction (**Mitigation Item E-01**), installation of screening (e.g. chestnut paling) to segregate resting sites from construction areas for the duration of works and daily inspections of resting sites, as determined by the ECoW.	To mitigate disturbance of otter cause by construction related activities.	None required
E-21	Throughout proposed scheme	Construction	The contractor will describe within the CEMP (**Mitigation Item SM-01**) the biosecurity strategy to be implemented for the appropriate treatment of invasive non-native species (INNS). The strategy will set out appropriate construction, handling, treatment and disposal procedures to prevent the spread of INNS in line with recognised best practice.	To prevent contamination	None required
n/a (note)	*Throughout proposed scheme*	*Construction*	*Further to the above, the mitigation detailed in Table 20.2 (Air Quality), Table 20.3 (Noise and Vibration), Table 20.4 (Landscape) and 20.8 (Road Drainage and the Water Environment) will be implemented to protect aquatic and terrestrial habitats and species during construction.*	*To protect aquatic and terrestrial habitats and species.*	*None required*
E-22	Throughout proposed scheme	Operation	Measures to prevent pollution of water features during operation, SEPA PPG/GPP 1, 5, 6, 21, 22 and 26 (NetRegs 2019) will be adhered to.	To protect the water environment.	None required
E-23	Throughout proposed scheme	Operation	The loss of wintering bird habitat (agricultural land) will be reduced through the landscape and ecological mitigation planting design (refer to Figure 9.5 which accompanies Chapter 9: Landscape). The landscape and ecological mitigation planting design will minimise additional land-take for planting at the locations identified, with a particular focus on maintaining areas of semi improved grassland.	To mitigate the loss of suitable wintering bird habitat under the footprint of the proposed scheme.	None required
E-24	Throughout proposed scheme	Operation	Habitat enhancement will be provided surrounding SuDS areas (refer to Figure 9.5 which accompanies Chapter 9: Landscape). This will incorporate areas of short vegetation to provide suitable habitat for waders to use as alternative high tide roosts.	To mitigate the loss of suitable wintering bird habitat under the footprint of the proposed scheme.	None required
E-25	• ch150 of Link 2 • ch560 of Link 2	Operation	Fragmentation of habitat will be reduced during operation by retention of commuting routes and avoiding lighting of key bat commuting and foraging habitats. Where lighting is essential,	To mitigate potential direct mortality of bats.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
	• ch40 of Link 3 • ch300 of Link 3 • ch540 of Link 3 • ch70 of Link 4 • ch250 of Link 4 • ch580 of Link 4 • ch850 of Link 4 • ch1080 of Link 4 • Lighting on A9 South Inshes Overbridge		guidance on bats and artificial lighting should be taken into consideration (Institution of Lighting Professionals and Bat Conservation Trust 2018) so movement between areas of habitat can be maintained. Light Emitting Diodes (LED) luminaires providing a directional light source with minimal light spillage shall be used where possible. A warm white spectrum (ideally <2700 Kelvin) should be considered to reduce the blue light component. Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Luminaires should be mounted on the horizontal and with an upward light ratio of 0%.		
E-26	• ch150 of Link 2 • ch560 of Link 2 • ch40 of Link 3 • ch300 of Link 3 • ch540 of Link 3 • ch70 of Link 4 • ch250 of Link 4 • ch580 of Link 4 • ch850 of Link 4 • ch1080 of Link 4	Operation	Bat habitat loss and fragmentation of existing habitat will be mitigated by woodland retention and landscape and ecological planting (refer to Figure 9.5 which accompanies Chapter 9: Landscape). This will include: • planting around SuDS features to create suitable habitat for foraging bats; and • planting and woodland retention designed to encourage use of crossing points so movement between areas of habitat can be maintained. Post-construction monitoring to determine the effectiveness of the hop-overs will be undertaken.	To mitigate bat habitat loss, fragmentation of habitat for commuting and reduced availability of foraging resources under the footprint of the proposed scheme.	None required
E-27	Retained woodland habitat identified for erection of bat boxes and landscape planting is shown on Figure 9.5	Operation	The loss of roost trees and individual trees identified as having high bat potential will be mitigated by the provision of bat boxes designed for trees, for example Schwegler 1FF and 2F boxes and/or by creating integrated bat habitat features within trees. Three bat boxes will be provided as mitigation for each roost tree or high potential tree lost under the footprint of the proposed scheme. Bat boxes will be monitored post tree felling to determine uptake and success reported to SNH and Transport Scotland. The locations of retained woodland and habitat identified for erection of bat boxes and landscape and ecological planting are shown on Figure 9.5 which accompanies Chapter 10 (Landscape).	To mitigate the loss of roosts and potential roost habitat under the footprint of the proposed scheme.	Consultation with SNH and Transport Scotland
E-28	Throughout proposed scheme	Operation	The loss of breeding bird habitat will be replaced through the landscape and ecological mitigation planting design (refer to Figure 9.5 which accompanies Chapter 9: Landscape). The	To mitigate the loss of suitable breeding habitat, which could result in	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			landscape and ecological mitigation planting design has incorporated a variety of breeding bird habitats including planting of woodland, scrub, hedgerow and species rich grassland.	reduced breeding success, under the footprint of the proposed scheme.	
E-29	• ch180 of Link 6 • ch150 of Link 2 • ch560 of Link 2 • ch50 of Link 3 • ch300 of Link 3 • ch540 of Link 3 • ch75 of Link 4 • ch850 of Link 4	Operation	Fragmentation of habitat will be reduced during operation by retention of commuting routes through creation of suitable crossing points including provision of culverts suitable for passage by badgers and otter and one Dry Mammal Underpass (DMU) so movement between areas of habitat can be maintained. Post-construction monitoring to determine the effectiveness of the crossing structures will be undertaken.	To mitigate potential direct mortality of otter and badger.	None required
E-30	The indicative location of mammal fencing is shown on Figure 9.5	Operation	Mammal fencing will be provided to prevent access onto the A9/A96 Inshes to Smithton carriageway and will be positioned to direct animals to safe crossing points along the proposed scheme. Fencing will follow SNH and DMRB guidance (SNH 2019a; SNH 2019b; Highways Agency, Scottish Government, Welsh Assembly Government and The Department of Regional Development Northern Ireland 1999).	To mitigate potential direct mortality of otter and badger.	None required
E-31	Throughout proposed scheme	Operation	The loss of areas identified as otter habitat will be replaced through mixed woodland or woodland riparian planting as shown on Figure 9.5 (accompanies Chapter 9: Landscape).	To mitigate the loss of otter foraging habitat and fragmentation of connecting habitats.	None required
E-32	Throughout proposed scheme	Operation	The landscape and ecological mitigation planting design will be followed to encourage use of crossing points. Possible crossing points and associated mammal fencing are shown on Figure 9.5 (accompanies Chapter 9: Landscape).	To mitigate potential direct mortality of badger.	None required
E-33	Throughout proposed scheme	Operation	The loss of areas identified as suitable badger habitat will be replaced through the landscape and ecological mitigation planting design (refer to Figure 9.5 which accompanies Chapter 9; Landscape).	To mitigate loss of badger foraging habitat under the footprint of the proposed scheme.	None required
E-34	Throughout proposed scheme	Operation	Lighting shall be designed to avoid illuminating badger sensitive habitat.	To mitigate potential disturbance to badger.	None required
E-35	Throughout proposed scheme	Operation	The contractor shall undertake a risk assessment, taking account of Transport Scotland's deer management planning, the Trunk Road Operating Contractor's deer management plan and SNH's 'Code of Practice on Deer Management' (SNH 2012). The contractor shall take appropriate measures such as erection of deer fencing as to avoid increasing the risk of deer collisions on the road and to protect new planting areas from browsing.	To minimise deer collisions with vehicles.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
E-36	Throughout proposed scheme	Operation	The loss of habitats will be replaced through landscape planting and ecological planting as detailed in Figure 9.5 (which accompanies Chapter 9: Landscape).	To mitigate the loss of habitats.	None required

Table 20.7: Geology, Soils, Contaminated Land and Groundwater

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
G-01	Throughout proposed scheme	Pre-Construction	Prior to construction, consultation will be undertaken with The Highland Council and SEPA regarding works in relation to land affected by contamination to support the obligations set out in 'Planning Advice Note 33: Development of Contaminated Land' (Scottish Government 2000), if and where relevant. Any remedial action undertaken in relation to land affected by contamination will be carried out under the appropriate remediation licencing.	To reduce impacts from contaminated land sources.	Consultation with The Highland Council and SEPA.
G-02	Throughout proposed scheme	Pre-Construction	Prior to construction and where potential contamination has been identified, further site investigations sufficient to determine the extent and type of contaminants present will be undertaken as necessary to inform identification of appropriate construction methods and any additional mitigation.	To determine the extent and type of contaminants present and to inform identification of appropriate construction methods and any additional mitigation.	None required
G-03	Throughout proposed scheme	Pre-Construction Construction	Prior to construction, appropriate health and safety and waste management procedures for working with potentially contaminated soils will be established. Waste management procedures will take account of inter alia: Waste Management Licence Regulations 1994 (as amended by Waste management licensing Amendment (Scotland) Regulations 2011), HSE Control of Asbestos Regulations 2012, and the Health and Safety Commission Approved Code of Practice (ACOP) and Guidance Note. These procedures will be implemented as appropriate during construction.	To ensure appropriate health and safety and waste management procedures for working with potentially contaminated soils are followed.	None required
G-04	Throughout proposed scheme	Construction Post-Construction/ Operation	Risks to construction and maintenance staff working with/near contaminated land will be mitigated by the implementation of **Mitigation Item G-03,** in combination with the adoption of appropriate systems of work, including personal protective equipment (PPE) as a last resort. In the event that unrecorded contamination is encountered, works should be stopped and the working procedures reassessed to confirm the working methods remain appropriate.	To reduce impacts from contaminated land sources and confirm the safety of construction and maintenance staff.	None required
G-05	Throughout proposed scheme	Construction	Appropriate training of personnel involved in earthworks activities to enable implementation of a watching brief to identify presence of previously unidentified contamination.	To identify potential presence of previously unidentified contamination.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
G-06	Throughout proposed scheme	Pre-Construction Construction	Where required, landowner consultation and site visits will be undertaken to confirm the location and network of septic tanks. Where septic tanks are located within the land required to construct and operate the proposed scheme they will be relocated and/or rebuilt subject to discussion and agreement with the affected landowner(s).	To mitigate the loss of any septic tanks.	Consultation with affected landowners.
G-07	Throughout proposed scheme	Construction	To prevent cross contamination and pollution from piling works undertaken in areas of land affected by contamination, the contractor will adhere to appropriate guidance including the 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention, National Groundwater and Contaminated Land Centre Report NC/99/77'.	To prevent cross contamination and pollution from piling works undertaken in areas of land affected by contamination.	None required
G-08	Throughout proposed scheme	Pre-Construction	To maximise the reuse of site won materials on-site (and minimise the need for disposal of waste in line with the principles of the 'waste hierarchy') whilst ensuring that no risks are posed to human health nor the water environment a soil reuse assessment will be undertaken prior to construction. The soil reuse assessment will identify any potential risks posed to both human health and the water environment from potentially contaminated soils reused throughout the proposed scheme.	To identify any potential risks posed to human health and the water environment. Maximise re-use of site won materials on-site and minimise the need for disposal of waste through re-use of excavation arisings.	None required
G-09	Throughout proposed scheme	Construction	If excavated soils are deemed unsuitable for reuse, a waste strategy will be developed. This should consider on-site treatment as well as waste disposal. Soils will be assessed in line with the 'Waste Classification: Guidance on the Classification and Assessment of Waste' (Technical Guidance WM3) (Natural Resources Wales, SEPA, Northern Ireland Environment Agency, Environment Agency May 2015) prior to disposal to determine whether they are hazardous or non-hazardous. This will establish the most appropriate and cost-effective waste stream for the waste materials.	To determine whether disposed soils are hazardous or non-hazardous.	None required
G-10	Throughout proposed scheme	Construction	If peat is encountered during construction, excavation, storage and any off-site removal, if required, will be undertaken with cognisance of 'Development on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste' (Scottish Renewables and SEPA 2012) and will comply with relevant waste management practices under The Waste Management Licensing (Scotland) Regulations 2011.	To comply with relevant waste management practices under The Waste Management Licensing (Scotland) Regulations 2011 and reduce impacts on peatlands.	Consultation with SEPA
G-11	Throughout proposed scheme	Pre-Construction Construction	Where concrete materials are proposed to be used, appropriate guidance such as 'Building Research Establishment (BRE) SD1:2005' and 'British Standard (BS) BS8500' should be followed to ensure that ground conditions are appropriate for the use of concrete at each given location.	To ensure that ground conditions are appropriate for the use of concrete at each given location.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
G-12	Throughout proposed scheme	Construction	Unless it can be demonstrated by the contractor via a Quantitative Risk Assessment that no water quality impacts will occur due to leaching from SuDS ponds, basins or wetland features, operational SuDS features will be lined.	To mitigate against potential impacts on water quality due to leaching from SuDS features.	Approval from SEPA.
G-13	Throughout proposed scheme	Construction	Storage of excavated soils and Made Ground will be minimised on site (spatially and in duration) and all storage areas will be appropriately lined, with adequate drainage management in place.	To ensure that no polluted water percolates into the ground or contaminated run-off is generated.	None required
G-14	Throughout proposed scheme	Pre-construction	Groundwater monitoring should continue to be undertaken in order to obtain one year of monitoring on groundwater conditions, especially in cutting areas and where groundwater receptors are present and may be impacted. This additional monitoring dataset should be used in the context and potential requirement of obtaining groundwater abstraction CAR licencing for these activities.	Support CAR licencing and detailed design development.	None
n/a (note)	*n/a/*	*n/a*	*Further to the above, the implementation of **Mitigation Items WC-01, WC-03, WC-06 to WC-09, and WC-12** to **WC-14** (as detailed in Chapter 13: Road Drainage and the Water Environment) will aim to protect groundwater from pollution. Mitigation item AQ-01 will also aim to prevent dust and air pollution when working with contaminated land.*	*To mitigate the water pollution risk to groundwater and avoid the creation of a statutory nuisance associated with dust and air pollution when working with contaminated land.*	*As noted in cross referenced Mitigation Items.*

Table 20.8: Road Drainage and the Water Environment

For details of the Surface Water Features (SWF) locations noted in Table 20.8, refer to Chapter 13 (Road Drainage and the Water Environment) and Figure 13.1

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
Construction					
WC-01	Throughout proposed scheme	Pre-Construction Construction	Construction Method Statements (CMS) will be prepared for each construction activity which will provide clear linkage to the proposed methods and mitigation measures as set out within Chapter 13 (Road Drainage and the Water Environment). The CMS will form part of the CEMP (refer to **Mitigation Item SM-01**).	To mitigate construction impacts on the water environment	Approval by SEPA of CMS as a likely condition of the Controlled Activity Regulations (CAR) licence
WC-02	Throughout proposed scheme	Construction	In relation to flood risk, the contractor will implement the following mitigation measures during construction: • develop a flood response plan for any activities to be located within the functional floodplain (defined here as the 0.5% AEP (200-year) flood extent); • any temporary works within the functional floodplain will be made resistant or resilient to flood impacts; • storing plant and materials outside of the functional floodplain; if reasonably impracticable plant and material will be stored outwith the 10% AEP (10-year) flood extent; • temporary construction SuDS will be provided at the outset of construction and will provide attenuation up to the 10% (10-year) AEP rainfall event during construction; • regular maintenance of construction SuDS and associated outfalls will be undertaken to ensure the basins are not susceptible to flood damage, and that flood risk is not increased locally during construction; and • in advance of extreme flood events (e.g. 0.5% AEP (200-year), in stream working areas will be evacuated and allowed to flood to prevent any increases in flood levels from constriction of flows.	To mitigate flood risk from construction activities.	Mitigation contains items of relevance to pollution prevention, therefore these items will likely require inclusion in the Pollution Prevention Plan to be approved by SEPA as part of the CAR Construction Site Licence authorisation process.
WC-03	Throughout proposed scheme	Construction	In relation to construction site runoff and sedimentation, the contractor will adhere to GPPs/PPGs (SEPA 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13 (Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • avoid unnecessary stockpiling of materials and exposure of bare surfaces, limiting topsoil stripping and phasing stripping to areas where bulk earthworks are immediately programmed; • installation of temporary construction SuDS (or equivalent) including pre-earthworks drainage prior to any earthworks activities to allow settlement and treatment of any pollutants contained in site runoff and to control the rate of flow before water is discharged into a receiving watercourse;	To mitigate construction impacts on the water environment	Approval by SEPA of Pollution Prevention Plan as required as part of the CAR Construction Site Licence authorisation process. If flocculants are considered necessary to aid settlement of fine suspended solids, such as clay particles, the

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• adoption of silt fences, check dams, settlement lagoons, soakaways and other sediment trap structures as appropriate; • use of an appropriate grade of material on temporary haul routes that will be clean and will be durable under heavy trafficking; • maintenance and regrading of haulage route surfaces where issues are encountered with the breakdown of the existing surface and generation of fine sediment; • provision of wheel washes at appropriate locations (in terms of proposed construction activities) and >10m from water features where practicable; • protocols will be developed for ceasing or reducing construction activities during periods of high rainfall to reduce the risks of erosion, sedimentation and pollution; • protection of soil stockpiles using bunds, silt fencing and peripheral cut-off ditches, and location of stockpiles at distances of >10m from water features where practicable; and • restoration of bare surfaces (seeding and planting) throughout the construction period as soon as possible after the work has been completed. The measures will form a construction drainage strategy set out within a site-specific Pollution Prevention Plan. This Plan will form part of the CEMP (refer to **Mitigation Item SM-01**) and will be submitted to SEPA for approval prior to construction as part of the CAR Construction Site Licence authorisation process.		chemicals used must first be approved by SEPA. Where required, temporary discharge consents to be obtained from SEPA through the Water Environment (Controlled Activities (Scotland) Regulations 2011 (as amended)
WC-04	SWF03 SWF04 SWF05 SWF08	Construction	In relation to the construction of watercourse crossings, the contractor will adhere to GPPs/PPGs (SEPA 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • a suitably qualified geomorphologist will be present during key stages of construction; • undertaking in-channel works during low flow periods (i.e. when flows are at or below the mean average) as far as reasonably practicable to reduce the potential for sediment release and scour; • no in-channel working during the salmonid spawning seasons unless permitted within any CAR licence; • minimise the length of channel disturbed and size of working corridor, with the use of silt fences or bunds where appropriate to prevent sediment being washed into the watercourse; • limit the removal of vegetation from the riparian corridor and retain trees on banks and bank top as far as practicable during construction. Retain fallen trees and large wood on banks and in channel margins where practicable; • limit the amount of tracking adjacent to watercourses and avoid creation of new flow paths between exposed areas and new or existing channels; and	To reduce impacts on the water environment during in-channel working.	SEPA CAR Licence applications required. Method statements for any in-channel working will likely require approval by SEPA as a condition of relevant CAR licences.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• where bank stabilisation is required, green bank protection (willow spiling or similar) will be considered in preference to grey bank protection (e.g. rip-rap).		
WC-05	SWF03 SWF04 SWF05 SWF08	Construction	Where improvements are proposed to the morphology of watercourses to offset degradation resulting from the proposed scheme the contractor will adhere to good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment) and implement appropriate measures which will include, but may not be limited to: • if any offline sections are required, once a new section of channel is constructed, the flow should, where practicable, be diverted from the existing section of channel to the new course with a steady release of water and under normal/low flow conditions to avoid entrainment of fine sediment or erosion of the new channel; • diverting flow to a new section of channel should be timed to avoid forecast heavy rainfall events at the location and higher up in the catchment (the optimum time will be the spring and early summer months to allow vegetation establishment to help stabilise the new channel banks); and • any proposed morphological improvement works will be supervised by a suitably qualified geomorphologist.	To mitigate construction impacts on the water environment.	SEPA CAR Licence applications required. Method statements for any in-channel working will likely require approval by SEPA as a condition of relevant CAR licences.
WC-06	Throughout proposed scheme	Construction	In relation to refuelling and storage of fuels the contractor will adhere to GPPs/PPGs (SEPA, 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • only designated trained and competent operatives will be authorised to refuel plant; • refuelling will be undertaken at designated refuelling areas (e.g. on hardstanding, with spill kits available, and >10m from water features) where practicable; • appropriate measures will be adopted to avoid spillages (refer to **Mitigation Item WC-07**); and • compliance with the Pollution Prevention Plan (approved by SEPA as part of the CAR Construction Site Licence authorisation process), refer to **Mitigation Items WC-03**).	To avoid spillages and reduce impacts on the water environment in relation to refuelling.	Approval by SEPA of Pollution Prevention Plan as required as part of the CAR Construction Site Licence authorisation process.
WC-07	Throughout proposed scheme	Construction	In relation to oil/fuel leaks and spillages, the contractor will adhere to GPPs/PPGs (SEPA 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • stationary plant will be fitted with drip trays and emptied regularly; • plant machinery will be regularly inspected for leaks with maintenance as required; • spillage kits will be stored at key locations on-site and detailed within the CEMP (refer to **Mitigation Item SM-01**); and • construction activities will comply with the Pollution Prevention Plan (approved by SEPA as part of the CAR Construction Site Licence authorisation process), refer to **Mitigation Item WC-03**).	To reduce impacts on the water environment in relation to oil/fuel leaks and spillages.	Approval by SEPA of Pollution Prevention Plan as required as part of the CAR Construction Site Licence authorisation process.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
WC-08	Throughout proposed scheme	Construction	In relation to chemical storage, handling and reuse the contractor will adhere to GPPs/PPGs (SEPA, 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • chemical, fuel and oil storage will be undertaken within a site compound, which will be located on stable ground at a low risk of flooding and >10m from any watercourse, where practicable; • chemical, fuel and oil stores will be locked and sited on an impervious base within a secured bund with 110% of the storage capacity; • pesticides, including herbicides, will only be used if there are no alternative practicable measures, and will be used in accordance with CAR requirements (where applicable), the manufacturer's instructions and application rates; and • construction activities will comply with the Pollution Prevention Plan (approved by SEPA as part of the CAR Construction Site Licence authorisation process), refer to **Mitigation Item WC-03**).	To reduce impacts on the water environment in relation to chemical storage, handling and reuse.	Approval by SEPA of Pollution Prevention Plan as required as part of the CAR Construction Site Licence authorisation process
WC-09	Throughout proposed scheme	Construction	In relation to concrete, cement and grout the contractor will adhere to GPPs/PPGs (SEPA 2006 to 2018) and other good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), and implement appropriate measures which will include, but may not be limited to: • concrete mixing and washing areas will be located > 10m from water features (where practicable), have settlement and re-circulation systems for water reuse; and have a contained area for washing out and cleaning of concrete batching plant or ready-mix lorries; • wash-water will not be discharged to the water environment and will be disposed of appropriately to the foul sewer (with permission from Scottish Water) or through containment and disposal to an authorised site; • where concrete pouring is required within a channel, a dry working area will be created; • where concrete pouring is required within 10m of a water feature or over a water feature, appropriate protection will be put in place to prevent spills entering the channel (e.g. Isolation of working area, protective sheeting); and • quick setting products (cement, concrete and grout) will be used for structures that are in or near to watercourses. construction activities will comply with the Pollution Prevention Plan (approved by SEPA as part of the CAR Construction Site Licence authorisation process), refer to **Mitigation Item WC-03**).	To reduce impacts on the water environment in relation to concrete, cement and grout.	Permission required from Scottish Water for any disposal to foul sewer. Approval by SEPA of Pollution Prevention Plan as required as part of the CAR Construction Site Licence authorisation process.
WC-10	Throughout proposed scheme	Construction	Sewage from site facilities will be disposed appropriately either to a foul sewer (with the permission of Scottish Water) or via appropriate treatment and discharge as agreed with SEPA in advance of construction and in accordance with PPG04 Treatment and Disposal of Sewage (SEPA 2009b).	To ensure sewage from site facilities is disposed of appropriately.	Permission required from Scottish Water for disposal to foul sewer or from SEPA for appropriate treatment

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
					and discharge to a watercourse.
WC-11	Throughout proposed scheme	Pre-construction Construction	In relation to service diversions and to avoid damage to existing services from excavations and ground penetration, including temporary severance of public and private water supplies through potential damage to infrastructure, the contractor will: • locate and map all private or public water supply assets and other service infrastructure prior to construction; • take measures to prevent damage to services and to avoid pollution during service diversions, excavations and ground works; and • provide a temporary alternative water supply (e.g. bottled or tankered) if services are to be disrupted or diverted by the works.	To mitigate service diversions and disruptions from excavations and ground penetration.	Consultation with Scottish Water and The Highland Council.
WC-12	Throughout proposed scheme	Pre-construction Construction	For works within areas identified as potentially containing contaminated land and sediment the contractor will reduce the risk of surface water pollution to an acceptably low level through: • further site investigation to determine the level of contamination prior to start of construction; • the installation of temporary treatment facilities to enable removal of pollutants from surface waters; and • adoption of mitigation measures relating to contaminated land as outlined in Chapter 12 (Geology, Soils, Contaminated Land and Groundwater), including **Mitigation Items G-01 to G-05, G-07, G-08 and G-13**.	To reduce risk of surface water pollution from areas identified as potentially contaminated land to an acceptably low level.	Details of any temporary treatment measures to be agreed with SEPA prior to start of construction.
WC-13	Throughout proposed scheme	Pre-construction Construction Post Construction	Water quality monitoring of downstream watercourses will be undertaken one year prior to construction, during construction and one-year post construction. The monitoring regime should include monthly laboratory analysis, visual inspections and real time monitoring. Water quality criteria and standards to be achieved for all site discharges during construction, and sampling locations, will be agreed in consultation with SEPA and will be set out within a site-specific Water Quality Monitoring Plan that will form part of the CEMP (refer to **Mitigation Item SM-01**).	To implement appropriate controls for site runoff and sedimentation and reduce impacts on the water environment.	Water quality monitoring proposals, criteria and standards prior to and during construction will be agreed in consultation with SEPA.
WC-14	Throughout proposed scheme	Construction	In relation to groundwater, the proposed scheme will include standard excavation dewatering practices involving passive and/or active dewatering, as required. It would protect construction personnel, works, plant and machinery associated with the new cuttings.	To protect construction personnel, works, plant and machinery associated with the new cuttings.	Approval by SEPA of CMS as a likely condition of the Controlled Activity Regulations (CAR) licence.
Operation					
WO-01	SWF03 SWF04 SWF08	Design Pre-Construction Construction	Further design of the outfalls (during the Specimen and Detailed design stages) will ensure compliance to good practice (e.g. CIRIA 2015b; Highways Agency et al. 2004; SEPA 2008b) wherever practical, which will include, but may not be limited to:	To mitigate operational impacts of outfalls on the water environment	SEPA CAR Licence Applications may be required.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
	Inner Moray Firth Estuary		• directing each outfall downstream to minimise impacts to flow patterns; • avoiding projecting the outfall into the watercourse channel; • avoid installation of outfalls at locations of known historical channel migration; • avoid positioning in flow convergence zones or where there is evidence of active bank erosion/instability; • directing an outfall away from the banks of a river to minimise any potential risk of erosion (particularly on the opposite bank); • where possible, scour protection should use green bank protection methods, such as willow spiling, as opposed to grey bank protection; • attenuation for road runoff prior to discharge to reduce flow rates to greenfield runoff rates and to encourage siltation reducing fine sediment delivery to the receiving watercourse; • minimising the size/extent of the outfall headwall where possible to reduce the potential impact on the banks; • post project appraisal to identify if there are issues that can be investigated and addressed as early in the operational phase as possible; and • re-planting of vegetation around outfall structures where required, typing in with natural vegetation. The re-planting of trees, if removed is of particular importance.		
WO-02	SWF03 SWF04 SWF05 SWF08	Design Pre-Construction Construction	Further design of the watercourse crossings (during the Specimen and Detailed design stages) will ensure compliance with good practice (SEPA 2010a) wherever practical, which will include, but may not be limited to: • appropriate hydraulic design of all culvert structures to mitigate flood risk impacts, as assessed against the 0.5% AEP (200-year) plus an allowance for climate change design flood event; • design will mitigate any loss of floodplain storage volume, where required, by appropriate provision of compensatory storage; • design will mitigate impacts on the water environment through appropriate design of culvert structures and watercourse modifications (e.g. realignments) with respect to fluvial geomorphology, and both riparian and aquatic ecology; • an experienced fluvial geomorphologist will input to the design of all watercourse crossings and associated engineering activities where appropriate; • the design of culverts and associated watercourse modifications shall incorporate wherever practical: ○ adherence to design standards and good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment); ○ the channel cross section through culverts will be profiled to replicate the existing channel shape (and width) up to the predicted QMED water level where appropriate, thereby allowing	To mitigate operational impacts of watercourse crossings on the water environment.	SEPA CAR Licence applications required. SEPA shall be consulted on the final design solutions for watercourse crossing specifically in relation to flood risk.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			for the appropriate conveyance of water and sediment for a range of flows (including during low flow conditions) and preserving existing morphological processes; ○ maintenance of the existing channel gradient to avoid erosion at the head (upstream) or tail (downstream) end of a culvert; ○ avoidance of reduction of watercourse length through shortening of watercourse planform; ○ minimisation of culvert length; ○ close alignment of the culvert with the existing water feature; ○ energy dissipation (e.g. stilling basins) and sediment retention measures where necessary; ○ depressing the invert of culverts to allow for reinstatement of natural bed with embedment of the culvert invert to a depth of at least 300mm. Culvert C09 (Beechwood Burn (SWF03)) is an exception to this stipulation which is restricted in height and can only be buried to minimum depth of 150mm; and ○ roughening of culvert inverts to help reduce water velocities where required; • re-planting of vegetation around culverts where required, tying in with natural vegetation, where the re-planting of trees, if removed is of particular importance; and • post project appraisal to identify if there are issues that can be investigated and addressed as early in the operational phase as possible. SEPA shall be consulted on the final design solutions for watercourse crossing specifically in relation to flood risk.		
WO-03	SWF03 SWF04 SWF05 SWF08	Design Pre-Construction Construction	Where new watercourse crossings are proposed, particularly on Beechwood Burn (SWF03), Scretan Burn (SWF04), SWF05 and Cairnlaw Burn (SWF08) opportunities exist to provide morphological improvements to these watercourses upstream and downstream of crossing structures; this will offset the morphological impacts of the proposed scheme and any cumulative impacts with the A96 Inverness to Nairn (including Nairn bypass) scheme. The design of the morphological improvements will be developed (during the Specimen and Detailed design phases) in conjunction with the watercourse crossing designs (see **Mitigation Item WO-02**) due to the interdependencies between these two design elements. Any morphological improvements will be undertaken in accordance with good practice (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment) where practical, including, but not limited to: • minimise the length of any offline realignments; • design of the realignment in accordance with channel type and gradient (maintaining the existing gradient where possible); • use of sediment transport analysis, reference reach dimensions and historical mapping to check the proposed channel realignment is appropriate and stable under the proposed conditions;	To mitigate the geomorphological impacts of the proposed watercourse crossings.	SEPA CAR Licence applications required. SEPA shall be consulted on the final design solutions for watercourse crossing specifically in relation to flood risk.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• if required, low flow channels or other design features will be incorporated to improve morphological functioning, thereby reducing the potential for excessive or unwanted erosion and deposition; • if required, low flow channels or other design features will be incorporated to reduce the potential for siltation; • a suitably qualified geomorphologist will inform the design in consultation with SEPA; • realignment designs will be led by a suitably qualified geomorphologist; and • post project appraisal to identify if there are issues that can be investigated and addressed as early in the operational phase as possible. Where channel realignments are not considered to be appropriate, improvements to morphology can be made to encourage the watercourse to recover sinuosity in a two-stage channel through the use of berms and/or flow deflectors. For Cairnlaw Burn (SWF08) SEPA's Water Classification Hub (2018c) currently states 'Hydromorphology' status as 'Moderate' but after consultation with SEPA on this issue (June 2018) Jacobs were advised that it has been reassessed as 'Bad'. Therefore, to mitigate the impact of the proposed scheme, morphological improvements are proposed to an approximate 40m reach upstream and 60m downstream of culvert C06 and 200m reach upstream and 50m downstream of culvert C07 to encourage the existing artificially straightened channel to recover sinuosity in a two-stage channel (as above). A similar approach is also proposed for Beechwood Burn (SWF03) (an approximate 60m reach downstream of culvert C05), Scretan Burn (SWF04) (an approximate 60m reach upstream and 190m reach downstream of culvert C01 and an approximate 45m reach upstream and 35m reach downstream of culvert C04) and SWF05 (an approximate 95m reach upstream and 30m reach downstream of culvert C02 and an approximate 30m upstream and 65m downstream of culvert C03). SEPA shall be consulted on the final design solutions relating to morphological improvements specifically in relation to flood risk.		
WO-04	SWF03 SWF04 SWF08 Inner Moray Firth Estuary	Design Operation (appraisal)	In relation to SuDS, the following mitigation measures will be implemented: • where required, authorisations for the road drainage discharge under CAR would be obtained from SEPA; • SuDS system designed to limit road drainage outflow to the greenfield pre-development runoff rate of a 50% AEP (1 in 2-year return period) flood event; • Specimen and Detailed design to adhere to design standards and good practice guidance (refer to Table 13.1 in Chapter 13: Road Drainage and the Water Environment), including The SuDS Manual (CIRIA 2015b) and SuDS for Roads (SCOTS 2010);	To reduce impacts of operational discharges on the water environment	SEPA CAR Licence Applications may be required.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• for each drainage run, a minimum of two levels of SuDS treatment within a 'treatment train' (see Table 13.16 in Chapter 13: Road Drainage and the Water Environment for further details) to limit the volume of discharge and risk to water quality; • management of vegetation within ponds and drains through grass cutting, pruning of any marginal or aquatic vegetation (as appropriate to the SuDS component) and removal of any nuisance plants, especially trees; • inspect inlets, outlets, banksides, structures and pipework for any blockage and/or structural damage and remediate where appropriate; • regular inspection and removal of accumulated sediment, litter and debris from inlets, outlets, drains and ponds to avoid sub-optimal operation of SuDS; and • adherence to the maintenance plans specific to each SuDS component type as detailed within The SuDS Manual (CIRIA 2015b).		
WO-05	SWF08	Design Operation (appraisal)	Operational SuDS: Treatment Train 1 comprising Swale and Retention Pond (wet) (and filter drains when A96 drainage is considered). The calculated treatment efficiencies are provided in Appendix A13.3 (SuDS and Water Quality) and these calculations were used in the Step 3 routine run-off calculations. The Treatment Train will be adopted for drainage catchment A (Cairnlaw Burn – tie in with A96 proposed scheme drainage).	To reduce impacts of operational discharges on the water environment	Where required, authorisation for the road drainage discharge under CAR would be obtained from SEPA.
WO-06	SWF08 SWF03	Design Operation (appraisal)	Operational SuDS: Treatment Train 2 comprising a swale and wetland. The calculated treatment efficiencies are provided in Appendix A13.3 (SuDS and Water Quality) and these calculations were used in the Step 3 routine run-off calculations. The Treatment Train will be adopted for drainage catchments B, C and F.	To reduce impacts of operational discharges on the water environment.	Where required, authorisation for the road drainage discharge under CAR would be obtained from SEPA.
WO-07	SWF04 SWF03	Design Operation (appraisal)	Operational SuDS: Treatment Train 3 comprising a swale with a filter drain within its base (Enhanced Swale). The calculated treatment efficiencies are provided in Appendix A13.3 (SuDS and Water Quality) and these calculations were used in the Step 3 routine run-off calculations. The Treatment Train will be adopted for drainage catchments D and G.	To reduce impacts of operational discharges on the water environment.	Where required, authorisation for the road drainage discharge under CAR would be obtained from SEPA.
WO-08	SWF04	Design Operation (appraisal)	Operational SuDS: Treatment Train 4 comprising a wetland and filter drain. The calculated treatment efficiencies are provided in Appendix A13.3 (SuDS and Water Quality). and these calculations were used in the Step 3 routine run-off calculations. The Treatment Train will be adopted for drainage catchment E.	To reduce impacts of operational discharges on the water environment.	Where required, authorisation for the road drainage discharge under CAR would be obtained from SEPA.
WO-09	Inner Moray Firth Estuary	Design Operation (appraisal)	Operational SuDS: Treatment Train 5 comprising a filter drain and a swale. The calculated treatment efficiencies are provided in Appendix A13.3 (SuDS and Water Quality) and these calculations were used in the Step 3 routine run-off calculations. The Treatment Train will be adopted for drainage catchment H.	To reduce impacts of operational discharges on the water environment	Where required, authorisation for the road drainage discharge

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
					under CAR would be obtained from SEPA.
WO-10	SWF03	Design Operation	A double box culvert for Crossing C05 will be adopted to convey out-of-bank flood flows underneath the proposed scheme, whilst minimising the increases in flood depths associated with the proposed scheme being located within the 0.5% AEP (200-year) plus CC flood extent. The existing structure located on Beechwood Burn (SWF03) at the south of the Inverness Retail and Business Park breaks the flood embankment located on the left bank of the watercourse. The proposed C05 culvert will need to incorporate a closed abutment which ties into the existing flood embankment located upstream of the structure. This is to prevent overtopping of the left bank which will mitigate the flooding in this area. SEPA shall be consulted on the final design solutions for culvert C05 specifically in relation to flood risk.	To prevent overtopping of the left bank which will mitigate the flooding in this area	Consultation with SEPA on final design solution for C05.
WO-11	SWF04	Design Operation	To the south-west of culvert C01 Scretan Burn (SWF04), two rectangular flood relief culverts of dimensions 2m by 1.5m will be provided to mitigate the increased flood risk caused by the proposed scheme being located within the 0.5% AEP (200-year) plus CC flood extent. Ground re-profiling will be undertaken downstream of the flood relief culverts to the south of the bend in Scretan Burn (SWF04) so the crest of the embankment is lowered to a uniform 35mAOD over an approximate 76m arch. The maximum depth dug will be approximately 0.103m. This area is included within the CPO boundary. This approach will minimise flow being diverted towards the Inverness Campus, and as such will result in the reduction of flood risk to the existing Inverness Campus west of the proposed scheme. The depth of water in the floodplain upstream of culvert C01 will also be reduced by 1.597m. SEPA shall be consulted on the final design solutions for this mitigation specifically in relation to flood risk.	To eliminate flood risk to the existing Inverness Campus to the west of the proposed scheme.	Consultation with SEPA on final design solution for C01.
WO-12	SWF08	Design Operation	Implementation of a 20m stretch of raised bank upstream of culvert C06 Cairnlaw Burn (SWF08) will be undertaken to prevent water spilling into the right floodplain as a result of culvert C06. The right bank will be raised by 0.1m to 0.3m. SEPA shall be consulted on the final design solutions for this mitigation specifically in relation to flood risk.	To prevent overtopping of the right bank which will mitigate the flooding in this area.	Consultation with SEPA on final design solutions for this mitigation.
WO-13	SWF05	Design Operation	Implementation of a 25m stretch of raised bank on the left bank of SWF05 between the existing Highland Main Line Railway (HML) culvert and culvert C02. This will be undertaken to prevent water ponding against the proposed scheme at this location. The top of the left bank will be raised by 0.08 to 0.27m (to an average level of 34.89mAOD). SEPA shall be consulted on the final design solutions for flood risk.	To prevent overtopping of the left bank which will mitigate flooding in this area.	Consultation with SEPA on final design solutions for this mitigation.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
WO-14	SWF04	Design Operation	Implementation of a 18m stretch of raised bank upstream of culvert C08 on the left bank of Scretan Burn (SWF04) and a 17m stretch of raised bank downstream of this culvert on the left bank of Scretan Burn (SWF04). The top of the left bank will be raised to prevent water spilling into the left floodplain in the vicinity of culvert C08. By raising the top of the left bank by 0.23m to 0.52m upstream of culvert C08 and by a maximum of 0.24m downstream of this culvert flood risk to the non-motorised user (NMU) facility access associated with the proposed scheme would be reduced. SEPA shall be consulted on the final design solutions for flood risk.	To prevent overtopping of the left bank which will mitigate flooding in this area.	Consultation with SEPA on final design solutions for this mitigation.
WO-15	SWF04 SWF05	Design Operation	Implementation of a flood storage area on the left floodplain of SWF05 upstream of existing Highland Main Line railway culvert. Ground levels would be adjusted in an area of existing natural depression to 35mAOD. This will provide an additional storage volume of 4,826m^3 during the design flood event. This will reduce pass forward flow through the existing Highland Main Line railway culvert and assist in the prevention of out of bank flow downstream of the culvert. The depth of ponding next to the Highland Main Line railway is also reduced. SEPA shall be consulted on the final design solutions for flood risk.	To reduce pass forward flow and flooding downstream of the Highland Main Line railway culvert.	Consultation with SEPA on final design solutions for this mitigation.
WO-16	SWF08	Design Operation	Implementation of a flood mitigation area adjacent to Cairnlaw Burn (SWF08) upstream of culvert C06. The proposed scheme has been simulated to result in flooding upstream of culvert C06 with a maximum depth of 0.808m. Ground re-profiling in the left floodplain of Cairnlaw Burn is therefore proposed to prevent flood risk to the proposed scheme and significantly reduce floodplain inundation. This will involve adjusting the existing ground level to an average 33.15mAOD. The area will be sloped towards the watercourse to guide out of bank flow back to the channel. SEPA shall be consulted on the final design solutions for flood risk.	To prevent flood risk to the proposed scheme and reduce floodplain inundation.	Consultation with SEPA on final design solutions for this mitigation.
WO-17	Throughout proposed scheme	Design Construction Operation	In relation to groundwater, the following mitigation measures will be implemented: • to protect flood sensitive receptors from groundwater flooding during the operational phase, groundwater seepage will be collected by the proposed road drainage system. • pre-earthworks drainage will be sized appropriately to intercept and accommodate all shallow groundwater flows entering the works area to protect flood sensitive receptors. • all foundations expected to intercept high groundwater levels will be designed to allow existing groundwater flow paths to function. This will prevent an increase in groundwater flood risk to flood sensitive receptors elsewhere.	To protect flood sensitive receptors from groundwater flooding.	Approval by SEPA of CMS as a likely condition of the Controlled Activity Regulations (CAR) licence.

Table 20.9: Cultural Heritage

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CH-01	Throughout proposed scheme	Construction	The contractor will consult with the appointed Curator should any unexpected cultural heritage assets be discovered or revealed during construction to enable appropriate measures to be implemented to mitigate potential impacts.	To enable appropriate measures to be implemented to mitigate potential impacts on assets found during construction.	Consultation with the appointed Curator
CH-02	Throughout proposed scheme	Pre-Construction	Archaeological excavation will be undertaken in advance of construction to make a permanent record of any affected archaeological remains at: • Caulfield Military Road (Asset 16); • Culloden Cropmark (Asset 33); • Stratton Possible Hut Circles 1 (Asset 45); • Stratton Possible Enclosure 1 (Asset 46); • Stratton Possible Hut Circles 2 (Asset 48); • Beechwood Farm Possible Settlement Activity 2 (Asset 53); • Cradlehall Possible Trackway (Asset 56); • Cradlehall Possible Settlement Activity (Asset 57); • Cradlehall Rectilinear Feature (Asset 58); • Inshes Possible Settlement Activity (Asset 59); • Scretan Burn Pit-like Features (Asset 60); • Scretan Burn Linear Feature (Asset 62); • Beechwood Farm Possible Settlement Activity 4 (Asset 64); • Beechwood Farm Possible Settlement Activity 5 (Asset 65); • Inshes Possible Enclosure (Asset 66); • Scretan Burn Curvilinear Features (Asset 74); • Stratton Farm Former Field Division (Asset 75); • Stratton Farm Possible Hut Circle and Linear Feature (Asset 79); • Stratton Farm Possible Enclosure and Settlement Activity (Asset 80); • Ashton Farm Possible Settlement Divisions (Asset 81); • Ashton Farm Possible Pits 2 (Asset 82); • Ashton Farm Possible Settlement Activity 8 (Asset 84); • Ashton Farm Possible Enclosure 2 (Asset 85); • Beechwood Farm Prehistoric Pits and Possible Ring Ditch (Asset 87);	To make a permanent record of archaeological remains.	Consultation and agreement of the Written Scheme of Investigation (WSI) with the appointed Curator

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• Beechwood Farm Boundaries 1 (Asset 89); • Beechwood Farm Boundaries 2 (Asset 90); • Beechwood Farm Former Field Boundary 2 (Asset 101); • Beechwood Farm Possible Ditches 1 (Asset 103); • Beechwood Farm Possible Ditches 2 (Asset 104); and • Cradlehall Cropmark (Asset 107).		
CH-03	Throughout proposed scheme	Pre-Construction	Trial trenching will be undertaken in advance of the archaeological excavation (refer **Mitigation Item CH-02** above) to inform its design. Archaeological trial trenching will also be undertaken in 'blank areas' (where no archaeological remains were identified by geophysical survey) to confirm the presence or absence of unknown archaeological remains and to identify appropriate measures of mitigation of impacts on these remains.	To inform the design of archaeological excavation and to confirm the presence or absence of unknown archaeological remains and identify appropriate measures of mitigation of impacts on these remains.	Consultation and agreement of the WSI with the appointed Curator
CH-04 to CH-06	Throughout proposed scheme	Pre-Construction	Further archaeological mitigation may be required for previously unknown archaeological remains that may be identified during trial trenching, and this may include: • targeted archaeological excavation (**Mitigation Item CH-04**); • strip, map and sample (**Mitigation Item CH-05**); and • archaeological recording during construction (watching brief) (**Mitigation Item CH-06**).	To make a permanent record of any affected previously unknown archaeological remains.	Consultation and agreement of the WSI with the appointed Curator
CH-07	Throughout proposed scheme	Pre-Construction	Topographic surveys will be undertaken in accordance with the guidance provided in Understanding the Archaeology of Landscapes: A Guide to Good Recording Practice (Second Edition) (Historic England 2017). This will be undertaken prior to construction to document the current setting of: • the Scheduled Monument (Asset 14); • Stratton Possible Hut Circles 1 (Asset 45); • Ashton Farm Possible Pits 1 (Asset 49); • Ashton Farm Possible Settlement Activity 1 (Asset 50); • Ashton Farm Pits 1 (Asset 55); • Beechwood Farm Possible Settlement Activity 3 (Asset 63); • Ashton Farm Possible Settlement Activity 6 (Asset 72); • Ashton Farm Possible Settlement Activity 7 (Asset 78); • Ashton Farm Possible Pits 3 (Asset 83); and • Beechwood Farm Possible Enclosure 3 (Asset 91)	To document the current setting of cultural heritage assets.	Consultation and agreement of the WSI with the appointed Curator

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CH-08	Scheduled Monument (Asset 14)	Construction	To mitigate any potential for accidental damage to the Scheduled Monument (Asset 14), Asset 14 will be securely fenced off for the duration of construction. This will comprise a permanent post and rail fence, appropriate signage, and a toolbox talk for contactors. The proposed fenced area will be located on the edge of the Draft CPO boundary. Contractors will not be permitted to use land outwith the Draft CPO Boundary without prior agreement.	To avoid accidental damage to the Scheduled Monument (Asset 14)	None required
CH-09	Scheduled Monument (Asset 14)	Pre-construction	In line with Section 4 (Mitigation of Impacts and Enhancement of Setting) of Managing Change in the Historic Environment: Setting (HES 2016a) opportunities to offset the impacts on the Scheduled Monument (Asset 14) will be explored with interested parties including Historic Environment Scotland (HES) and The Highland Council's Historic Environment Team. This could be achieved through measures such as increased interpretation and/or additional research to increase the ability to understand the Scheduled Monument and surrounding prehistoric landscape, such as an interpretation board at a suitable location along the Eastfield Way Roundabout to Drumrosach Bridge NMU Link and community outreach.	To offset the impacts on the Scheduled Monument (Asset 14).	Consultation with interested parties including HES and The Highland Council's Historic Environment Team
CH-10	Ashton Farm Cottages (Asset 17) and Ashton Farm (Asset 18)	Pre-construction	Photographic surveys will be undertaken prior to construction to document the current setting and condition of Ashton Farm Cottages (Asset 17) and Ashton Farm (Asset 18). Photographic surveys will be undertaken in accordance with the guidance provided in Understanding Historic Buildings: A Guide to Good Recording Practice (Historic England 2016).	To record the current setting and condition of historic buildings at Ashton Farm.	Consultation and agreement of the WSI with the appointed Curator
CH-11	Throughout the proposed scheme (HLT 2)	Pre-construction	Photographic surveys will be undertaken prior to construction to record the current condition of Rectilinear Fields and Farms (HLT 2). The photographic surveys will be undertaken in accordance with the guidance provided in Understanding the Archaeology of Landscapes: A Guide to Good Recording Practice (Second Edition) (Historic England 2017).	To record the current condition of Rectilinear Fields and Farms (HLT 2).	Consultation and agreement of the WSI with the appointed Curator

Table 20.10: People and Communities – Community and Private Assets

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CP-R01	Throughout proposed scheme	Construction	Access to and from residential properties will be maintained throughout the construction period by means of signed diversions where necessary. The contractor will ensure that the estimated duration and location of these diversions are communicated to affected residents before they are put in place.	To maintain access to/from residential properties.	Consultation with affected landowners and occupiers
CP-R02	Throughout proposed scheme	Pre-construction Construction	Consultation with affected residents will be undertaken on the location and timing of the planned construction works to reduce disturbance, as far as practicable, taking into account the overall construction programme.	To reduce disturbance on affected residents.	Consultation with affected landowners and occupiers

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CP-C01	Throughout proposed scheme	Construction	Access to and from commercial and industrial properties shall be maintained throughout the construction period by means of signed diversion, where necessary. The contractor will ensure that the estimated duration and location of these diversions are communicated to affected commercial and industrial businesses before they are put in place.	To maintain access to/from commercial properties.	Consultation with affected landowners and occupiers
CP-C02	Throughout proposed scheme	Pre-Construction Construction	Consultation with affected commercial and industrial parties will be undertaken on the location and timing of the planned construction works to reduce disturbance, as far as practicable, taking into account the overall construction programme.	To reduce disturbance on affected commercial and industrial properties	Consultation with affected landowners and occupiers
CP-C03	Throughout proposed scheme	Operation	Consideration will be given by Transport Scotland to the replacement of existing roadside signage on the proposed scheme for certain businesses whose access has changed and whose business is particularly dependent on vehicular access movements. This includes where the proposed scheme has provided new access to commercial or industrial property.	To minimise impacts on commercial businesses	None required
CP-CM01	Throughout proposed scheme	Construction	Access to community land and facilities will be maintained throughout the construction period by means of signed diversion, where necessary. The contractor will ensure the estimated duration and location of these diversions will be communicated to affected parties before they are put in place.	To main access to community land and facilities	Consultation with affected landowners and occupiers
CP-CM02	Throughout proposed scheme	Operation	Consideration will be given by Transport Scotland to the replacement of existing roadside signage on the proposed scheme for community land and facilities. In addition, consideration will be given to the addition of road signage where new access is provided to community land or facility, as a result of the proposed scheme.	To minimise impacts on community land and facilities	None required
CP-AG01	Throughout proposed scheme	Construction	Measures will be taken to ensure adequate diversion signage is maintained during construction for agricultural and sporting interests.	To ensure appropriate access maintained to agricultural land	None required
CP-AG02	Throughout proposed scheme	Pre-Construction Post-Construction	Loss of agricultural land is to be reduced by implementing re-instatement plans i.e. returning land to agricultural use, where appropriate, post construction. A pre-construction photographic and video survey shall be undertaken to ensure all adjoining land is maintained as near to its original state as is reasonably practicable during construction and operation. These records will be made available to the owner or occupier.	To reduce the loss of value and amount of agricultural land	None required
CP-AG03	Throughout proposed scheme	Construction Operation	Access to agricultural land out with the Draft CPO boundary will be maintained during the construction phase and operation of the proposed scheme.	To ensure appropriate access maintained to agricultural land	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CP-AG04	Throughout proposed scheme	Construction	Potential for damage to the agricultural capability of soils shall be minimised by the adoption of appropriate measures during construction and reinstatement. This includes the careful excavation, storage and replacement of topsoil and subsoil. A Soil Management Plan shall be developed to ensure soil resources are managed in accordance with best practice and soil mitigation measures are fully implemented.	To minimise the loss of agricultural soils	None required
CP-AG05	Throughout proposed scheme	Pre-Construction	Notice of intention to commence construction work will be given to owners and occupiers of adjacent land along the route before works commence. Consultation with landowners and occupiers will be undertaken when developing the programme of works to reduce disturbance where appropriate and without detriment to the overall programme.	To ensure owners and occupiers of agricultural land adjacent to the proposed scheme are informed of the intention to commence construction work prior to works commencing	Notification to and consultation with affected landowners and occupiers
CP-AG06	Throughout proposed scheme	Construction	Temporary fences will be provided in appropriate locations during construction for the health and safety of the public and animals and to avoid trespass. Where appropriate, fencing of the working area would be to a standard adequate to exclude any stock kept on adjoining land.	To maintain health and safety of public and animals and to avoid trespass.	None required
CP-AG07	Throughout proposed scheme	Construction	Where boundary features (e.g. fences, walls and hedges) require temporary or permanent alteration to allow construction, these will be reinstated with appropriate materials to provide a secure field boundary, with opportunities explored in consultation with the landowner/occupier to merge severed field areas to improve field husbandry operations through the creation of more manageable field sizes and shapes.	To provide secure field boundaries and manage severed field areas.	Consultation with affected landowners and occupiers
CP-AG08	Throughout proposed scheme	Construction	Where access points require temporary or permanent alteration as a result of construction, alternative access for stock and machinery will be provided, as appropriate, in consultation with the landowner/ occupier. If required, recessed access shall be provided from local roads.	To reduce potential impacts on agricultural land	Consultation with affected landowners and occupiers
CP-AG09	Throughout proposed scheme	Construction	Reasonable precautions shall be taken during construction to avoid the spreading of soil-borne pests and diseases, animal and crop diseases and invasive species. A 'Biosecurity Management Plan' will be developed by the contractor as part of the CEMP (refer to **Mitigation Item SM-01**).	To avoid the spreading of soil-borne pests and diseases; animal and crop diseases; tree pests and diseases; and invasive species.	None required
CP-AG10	Throughout proposed scheme	Construction	Particular care shall be taken to reduce damage or disturbance to field and drainage systems. Laying of new drains will be undertaken to maintain drainage systems during construction. Repairing and reinstatement of field drains affected by construction will be agreed with the landowner/occupier to ensure that land capability is maintained and flooding is not exacerbated. Where appropriate, the integrity of the drainage system will be secured in advance through the installation of header drains (cut off drains) to facilitate construction. All remaining remedial works will be undertaken post-construction.	To reduce damage or disturbance to agricultural field drainage.	Consultation with affected landowners and occupiers

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
CP-AG11	Throughout proposed scheme	Construction Operation	Water supplies for livestock will be protected and alternative supplies provided where access is compromised by any works, unless agreed with the landowner.	To reduce disruption to agricultural practices.	Consultation with affected landowners and occupiers
CP-AG12	Throughout proposed scheme	Operation	Land within the CPO that is declared surplus following completion of the proposed scheme (including redundant road pavement and/or access tracks) will be offered back to former owners or their successors in accordance with the guidance set out in Planning Circular 5-2011: Disposal of Surplus Government Land – The Crichel Down Rules.	To reduce potential impacts on agricultural land.	Consultation with affected landowners and occupiers (as required)
CP-AG13	Throughout proposed scheme	Construction	Where practically possible, the siting of temporary construction compounds on prime agricultural land will be avoided.	To reduce potential impacts arising from temporary construction compounds on agricultural land.	None required
CP-S01	Throughout proposed scheme	Construction	Where there are sporting rights adjacent to the working area, reasonable endeavours will be taken to minimise interference or enjoyment of them while recognising the primary objective to maintain a safe working environment for both contractors and users of the land and/or water.	To reduce interference or disturbance to sporting interests.	None required
CP-AR01	Throughout proposed scheme	Pre-Construction Construction	Where individual and grouped arboricultural features are to be potentially affected, the Arboricultural Impact Assessment (Appendix A15.3: Arboricultural Impact Assessment) and Tree Constraints Plan (Figure 15.3 accompanying Chapter 15: People and Communities – Community and Private Assets) has been prepared and will be used, subject to **Mitigation Item CP- AR03**, to prioritise the protection and retention of arboricultural features directly affected by the proposed scheme**.**	To prioritise the protection and retention of arboricultural features directly affected by the proposed scheme.	None required
CP-AR02	Throughout proposed scheme	Pre-Construction Construction	Where there are no ecological, landscape or visual issues, tree felling and pruning will be reduced to that necessary to allow the safe construction and operation of the road, taking cognisance of the tree constraints plan.	To allow the safe construction and operation of the road.	None required
CP-AR03	Throughout proposed scheme	Pre-Construction Construction	A suitably qualified and experienced arboriculturist will be present on site as appropriate during the construction phase to ensure **Mitigation Item CP-AR01** is reviewed and updated to reflect any design changes. The arboriculturist will monitor any root interactions and suggest suitable working methods to allow the retention of trees. Working methods will be detailed within a site-specific Arboricultural Method Statement and will include where appropriate construction exclusion zones (where machinery and/or storage is forbidden within an RPA), targeted and reduced root and limb pruning, employment of ground protection and protective fencing.	To manage the retention and safe removal of trees.	None required

Table 20.11: People and Communities – All Travellers

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
AT-01	Throughout proposed scheme	Construction	The construction programme will minimise the length of closures or restrictions of access for NMUs as far as reasonably practicable.	To minimise length of closures or restrictions of access for NMUs.	None required
AT-02	Throughout proposed scheme	Construction	Where practicable, temporary diversion routes and/or assisted crossings will be provided to maintain safe access for NMUs throughout the construction works. Any closure or re-routing of routes used by NMUs would take cognisance of the 'Roads for All: Good Practice Guides for Roads' (Transport Scotland 2013). These will be agreed in advance with Transport Scotland and The Highland Council (where appropriate) and will be clearly indicated with signage as appropriate.	To maintain safe access for NMUs throughout the construction works.	Any closures will be agreed with Transport Scotland (Rights of Way), and The Highland Council (local and core paths).
AT-03	Throughout proposed scheme	Construction	In consultation with the relevant Roads Authority and public transport provider, bus stops affected by the works will be relocated safely with a safe access route provided for NMUs.	To maintain access to public transport facilities.	Consultation with the relevant Roads Authority and public transport provider
AT-04	Throughout proposed scheme	Pre-Construction Construction	The contractor will produce a traffic management plan that will include measures to avoid or reduce disruption to the road traffic, and in accordance with the Traffic Signs Manual (Department of Transport 2009).	To avoid or reduce disruption to the road traffic.	None required
AT-05	Throughout proposed scheme	Construction	Reasonable precautions will be taken by the contractor to avoid or reduce road closures except in exceptional circumstances and for closures which are pre-approved by Transport Scotland and The Highland Council.	To reduce disruption to the road users.	Approval from Transport Scotland and The Highland Council
AT-06	Throughout proposed scheme	Construction	Road diversions will be clearly indicated with road markings and signage as appropriate. Any closures will be notified in advance through road signage and appropriate signage will be provided for the duration of the closure.	To reduce disruption to the road users.	Consultation with Transport Scotland and The Highland Council
AT-07	Throughout proposed scheme	Construction	Appropriate lighting will be provided during any necessary night-time working, taking into account potential ecological and landscape mitigation (**Mitigation Items E-06** and **LV-04** respectively).	To mitigate potential impacts on driver stress such as fear of potential accidents due to inadequate lighting provision.	None required
AT-08	NMU facilities	Construction Operation	Access for NMUs will be maintained and improved in accordance with the following principles: • The requirements of the Equality Act 2010 and 'Roads for All: Good Practice Guides for Roads' (Transport Scotland 2013) shall be incorporated into the proposed scheme wherever practicable; e.g. any bridges, ramps or footpaths will not present potential barriers to disabled people such as the gradient or surfacing.	To maintain access for NMUs and provide appropriate facilities based on use and improve access for NMUs.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• Surfacing of any new paths including alongside roads will be considered on a case by case basis, taking into account factors such as safety, the type of user and should comply with current standards. • Safety of paths will be considered in accordance with the outcome of the Road Restraints Risk Assessment Process and may require provision of barriers. • New cycleways/footpaths will use non-frost susceptible materials to reduce risk of degradation.		
AT-09	NMU facilities	Construction Operation	New signage to direct NMUs travelling along LP2, LP5 and NCN 1/LP11, to the proposed shared-use facilities at Cradlehall Roundabout and to Link 6.	To direct NMUs along the proposed shared-use facilities.	None required
n/a (note)	*n/a*	*n/a*	*Further to the above, the mitigation items detailed in Table 20.3 (Noise and Vibration) and Table 20.4 (Landscape) will reduce the adverse amenity impacts on NMU and vehicle travellers during construction and operation.*	*To reduce the adverse amenity impacts on NMU and vehicle travellers during construction.*	*n/a*

Table 20.12: Materials

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
M-01	Throughout proposed scheme	Pre-Construction Construction	The contractor will apply the principles of the waste hierarchy to the management of waste and materials during the construction phase. This will include, but not limited to, the following: • where possible, any site won materials will be re-used within the proposed scheme; • where materials generated during construction cannot be used for the proposed scheme, opportunities will be sought to re-use the materials on other local projects. It may be possible to recycle all, or most, of the road surface (planings) for incorporation in other schemes or for sale to other local construction projects. • where suitable, green waste will be re-used or recycled, such as through on-site landscaping or ecological improvement works; for example, for habitat creation, or spread as chippings or mulch, with appropriate consideration and control of any watercourse pollution risk and required waste management licences. Off-site disposal through a green waste disposal contractor could also offer recycling through composting (note: there are five sites with operational composting capacity in the Highland and Moray Council areas). • the use of, for example, geotextiles to considerably reduce the quantity of fill material required by improving the strength of structures will be investigated by the contractor.	To maximise the efficient use of resources.	Consultation with SEPA as required.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
M-02	Throughout proposed scheme	Pre-Construction Construction	For all potential waste arisings, the contractor will be required to comply with The Waste Management Licensing (Scotland) Regulations 2011 (WML). Consideration will also be given to SEPA guidance on sustainable waste management, such as the 'Regulatory Guidance: Promoting the Sustainable Re-use of Greenfield Soils in Construction' (March 2010), 'Guidance on the Production of Fully Recovered Asphalt Road Planings' and appropriate SEPA Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs). SEPA is currently carrying out a review of environmental regulatory guidance for Scotland, replacing PPGs with a new guidance series called GPPs; however, both systems continue to provide environmental good practice guidance. If necessary, the contractor will consult SEPA for advice. If wastes could not be legitimately re-used on site, they will be removed to a permitted recycling or disposal facility in line with regulatory requirements. In addition, Zero Waste Scotland Designing out Waste Guide for Civil Engineering (WRAP 2016); and Transport Scotland's CMS Road Infrastructure Projects Tool to support low-carbon decision-making during specimen design, detailed design and construction, will be utilised by the contractor (in accordance with Transport Scotland's Corporate Plan). This will be referenced in the Site Waste Management Plan (SWMP) (refer to **Mitigation Item M-04**).	To ensure waste handling, storage, transport and disposal is compliant with all relevant waste legislation.	Consultation with SEPA as required.
M-03	Throughout proposed scheme	Pre-Construction Construction	The CEMP (refer to **Mitigation Item SM-01**) will be developed by the appointed contractor during the detailed design phase (i.e. before the start of construction works) and implemented in advance of the construction phase. The CEMP will include the following in relation to the management of materials and waste: • Details of the approach to environmental management throughout the construction phase, with the primary aim of mitigating any adverse impacts from construction activity on identified sensitive receptors. • Procurement and waste management protocols/KPIs and targets designed to minimise impacts on the environment and maximise local procurement of materials and waste management options. • Good materials management methods, such as co-location of temporary haul routes on permanent capping and recovery and re-use of temporary works materials from haul routes, plant and piling mattresses, as well as use of 'just-in-time' delivery to minimise double handling. • In order to minimise effects on amenity, materials for import and waste disposal will be transported appropriately along prescribed routes which are likely to include the A9 Perth – Inverness and A96 Aberdeen – Inverness trunk roads. Prescribed routes would be included in the main construction contract documents. The contractor will be required to seek approval from the relevant authority should they wish to use any other routes. • Risk/impact-specific method statements and strategic details of how relevant environmental impacts would be addressed throughout the proposed scheme, embodying the requirements of the relevant SEPA PPGs/GPPs.	To provide a framework for the implementation of construction activities in accordance with the environmental commitments and mitigation measures in the EIAR.	Consultation with the relevant local authorities, other statutory bodies and regulatory authorities.

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
M-04	Throughout proposed scheme	Pre-Construction Construction	A SWMP will be developed, either as part of the CEMP or as a separate document and would be regularly updated. The SWMP will identify, prior to the start of construction works, the types and likely quantities of wastes that may be generated. It will set out, in an auditable manner, how waste will be reduced, re-used, managed and disposed of in accordance with relevant WRAP and Zero Waste Scotland guidance. The SWMP will be a 'live' document and will include waste minimisation targets and associated KPIs. It will be written in accordance with Zero Waste Scotland and WRAP guidance. If required, a Materials Management Plan (MMP) will set out how all construction phase materials will be managed, including specific soils management plans developed under the following voluntary and industry regulated Codes of Practice such as: • Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (DEFRA 2009) provides practice guidance for the excavation, handling, storage and final placement of soils. • Land Remediation and Waste Management Guidelines (SEPA 2009) provides a process whereby contaminated soils can be re-used on the site of origin (i.e. they do not become a waste) if they are proven, through appropriate risk assessments, to be suitable for use. It also provides for soils with naturally elevated contamination levels to be used directly on another site provided that they are suitable for use at that site.	To minimise waste generated on site and quantity sent to landfill.	Consultation with the relevant local authorities as required.
M-05	Throughout proposed scheme	Pre-Construction Construction	If contaminated soils are encountered during the construction works, further investigation, testing and risk assessment will be undertaken to determine whether the soils could stay on-site, will require treatment to make them suitable to remain on-site, or require to be disposed of off-site. Details for dealing with unexpected contaminated soils have been provided in Table 20.7 above (also refer to Chapter 12: Geology, Soils, Contaminated Land and Groundwater).	To appropriately manage contaminated soils.	Consultation with SEPA as required, should contaminated soils be found on-site.
M-06	Throughout proposed scheme	Design Pre-Construction Construction	Carbon quantification is vital for ensuring an understanding of the greatest carbon impacts for the proposed scheme, enabling opportunities for reducing carbon to be highlighted. Reporting and guidance, such as the Infrastructure Carbon Review (HM Treasury 2013) and Building a Sustainable Future (Institution of Civil Engineers (ICE) 2011) indicate that the potential to influence carbon emissions decreases as a project progresses, from the most during the planning stage, to more modest reductions during design and construction. With this in mind,the key early intervention procedure, as identified in the Infrastructure Carbon Review, can be considered to be: • avoid and/or eliminate or 'build nothing': challenge the need; explore alternative approaches to achieve the desired outcome; • reduce or 'build less': maximise the use of existing assets, optimise asset operation and management to reduce the extent of new construction required; • substitute or replace or 'build clever': design in the use of low carbon materials, streamline the delivery process, minimise resource consumption; and	To minimise carbon emissions from construction of the proposed scheme.	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required
			• compensate or 'build efficiently': embrace new construction technologies, eliminate waste. The use of significant quantities of high impact materials, (e.g. steel and aluminium), or processes (e.g. large amounts of excavation), should be avoided where practicable through alternative design specification. If this cannot be done, the amount of material or the length/intensity of the process should be reduced where functional specifications allow. Compensatory measures, such as carbon offsetting, should be considered where it is felt they would be cost effective. Where it would not significantly impact upon engineering, safety and maintenance characteristics, the principle of substitution requires that low carbon alternatives for materials be considered. Imported soil is a significant part of the overall carbon footprint of this proposed scheme. Opportunities to obtain additional soil fill on-site should be maximised and, where it would not significantly alter the safety and driving characteristics of the road, soil fill should be reduced. The regular maintenance of the road pavement, including the surface course, sub-base and base course contributes a significant proportion of the calculated whole-life emissions (48%). Investigation of either a more hard-wearing material for the surface course or a material with a lower emissions factor should be a priority for any mitigation measures.		
n/a (note)	*n/a*	*n/a*	*Further to the above, **Mitigation Items G-08, G-09 and G-10** in Chapter 12 (Geology, Soils, Contaminated Land and Groundwater) and, the mitigation items listed in Table 17.18 of Chapter 17 (Materials), will be implemented to ensure the appropriate management and handling of materials.*	*To ensure the appropriate management and handling of materials.*	*As noted in cross referenced Mitigation Items.*