

Appendix C: Climatic Factors - Detailed Baseline and Assessment

1. Climatic Factors

1.1 Introduction

- 1.1.1 This section presents the Strategic Environmental Assessment (SEA) of the potential effects of the project on climate.
- 1.1.2 Climate change is one of the major global challenges facing the world today and in the coming decades. The Intergovernmental Panel on Climate Change (IPCC 2007) and the Stern Review (Stern 2007) highlighted the future risks and costs of inaction on reducing carbon emissions.
- 1.1.3 The Climatic Factors SEA topic is included within an SEA to help ensure that the programme takes full account of climate change issues and help support achieving government targets. The impacts should include the synergistic and secondary effects that the programme could have on the climate.

1.2 Methodology

- 1.2.1 The assessment for effects on Climatic Factors considers emissions on a global level as they contribute to the cumulative atmospheric concentrations of Greenhouse Gases (GHGs), regardless of the location they are released. The approach for carbon mitigation is focussed on a 2km corridor taken from the centreline of the existing A83 route, and is based on consideration of the baseline data from the following sources:
 - Carbon and Peatland Map;
 - Climate Change trends and projections;
 - Scottish Forestry;
 - SEPA Flood maps;
 - Available information on the five possible route options within the corridor (Pink, Brown, Green, Purple and Yellow Options), as described in Chapter 5 (Project Description); and
 - Assessment scoring criteria and SEA Objectives and Guide Questions set out in Chapter 6 (SEA Approach and Methods).
- 1.2.2 At the time of assessment, information on material quantities for construction was not available, therefore effects on the climate from release of emissions from the construction of the project takes a qualitative approach.
- 1.2.3 Potential effects of the project on Climatic Factors have been assessed using the scoring criteria defined in Table C1.1.

Table C1.1: Assessment Criteria for Potential Effects on Climatic Factors

Score	Description	Colour coding and symbol
Minor positive effect	The route corridor has the potential to result in positive effects on Climatic Factors through carbon offsetting and protection of natural carbon sinks. The corridor would improve the resilience of the road network to the anticipated effects of climate change.	+
Minor negative or uncertain effect	The route corridor contains soils and land use resources that include peatland or forestry. It is possible to avoid these receptors through choice of possible route options within the corridor. If not possible to do this, mitigation is likely to be successful in reducing the potential for significant negative environmental effects.	-
Significant negative effect	The route corridor contains peatland and forestry. Loss or degradation of forestry and non-renewable peat would be impossible or difficult to avoid, resulting in loss of high	--

Score	Description	Colour coding and symbol
	value carbon sequestration land and release of its stored carbon. Materials used to construct the project would contain a high embodied carbon content.	

1.2.4 The assessment is focused on the following Climatic Factors sub-topics:

- Peatlands;
- Forestry;
- Grasslands;
- Embodied Carbon;
- Flooding; and
- Infrastructure Resilience.

1.3 Detailed Baseline

Overview

1.3.1 Scotland has experienced an increase in temperature of approximately 1 degree Celsius in recent decades and annual rainfall has also increased approximately 13% above the average for the early 1900s. Northern Scotland has experienced a 70% increase in rainfall and the country as a whole has experienced 20% more rainfall since 1960 (SNH 2011a). Sustained periods of heavy rain have been the main factor in the landslides of recent years that have led to the closure of the A83 Rest and Be Thankful on several occasions.

1.3.2 Transport is estimated to account for 25% of Scotland’s total energy use, with the majority of this arising from road transport (Scottish Government 2017). According to the National Transport Strategy (NTS2) (Transport Scotland 2020a), the largest source of transport emissions was road transport at 40%, followed by aviation and shipping which are both 15%. In addition, 25% of emissions were generated by a combination of LGVs & HGVs.

1.3.3 Key legislation, policies and plans in relation to Climatic Factors that are also relevant to the project are as follows:

- The Climate Change (Scotland) Act 2009 requires Greenhouse Gas (GHG) emissions to be reduced by at least 80% by 2050, compared to the 1990 baseline. In order to monitor progress against this target, carbon budgets place legally binding caps on UK emissions over 5-year periods.
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the greenhouse gas emissions targets in the Climate Change (Scotland) Act 2009 and set a ‘net zero’ target emissions year of 2045. To achieve net zero by 2045, emissions must reduce significantly and remaining unavoidable emissions must be mitigated through offsetting or negative emission technologies.
- The Climate Change (Duties of Public Bodies: reporting Requirements) (Scotland) Order 2015 sets out regulations requiring all listed public bodies to provide a report on compliance with its climate change duties. Each report must be in the form set out in Schedule 2 of the Act.
- The Infrastructure Investment Plan (IIP) for Scotland 2021-22 to 2025-26 outlines a coherent and strategic approach to delivering the National Infrastructure Mission, highlighting the role of infrastructure to help Scotland recover from the Covid-19 pandemic. The IIP is the Scottish Government response to the Infrastructure Commission vision and commits to increasing annual investment in infrastructure by 1% of 2017 Scottish GDP by 2025-26.
- Infrastructure Carbon Review (HM Treasury 2013). This Infrastructure Carbon Review (ICR) highlights the value of low carbon solutions in infrastructure planning and design. The document also makes clear the direct link between carbon and cost reduction and how a focus on carbon can bring wider benefits.

- In December 2020, the Scottish Government released the Climate Change Plan 2018-2032 update. The update recognises the enormous challenges of the pandemic and the effect it could have on meeting emissions reduction targets. It highlights that, despite the challenges Scotland will face in the coming years as it recovers from the pandemic, it remains absolutely committed to ending Scotland's contribution to climate change. It aims for a 'green recovery' that captures opportunities to transition towards net zero through creation of green jobs, developing sustainability skills, improving wellbeing and addressing inequalities (Scottish Government 2020).

Route Corridor Context

- 1.3.4 The region in which the route corridor is situated is rural, and at a high elevation. Due to the topography of the route corridor, the existing A83 is regularly affected by landslides during periods of extended rainfall which causes slope instability.
- 1.3.5 The region has shown a consistent upward trend in annual rainfall since 1970, with the rainfall anomaly (variability) also showing a gradual increase each year over the past 20 years. This aligns with the long-term climate change projections for Scotland, which indicate winters will be wetter and heavy rainfall events will increase in frequency in all seasons. The region has also experienced a consistent upward trend in mean temperature since 1970. Scotland's ten warmest years have all occurred since 1997, since records began in 1884 (Adaptation Scotland 2021).

Flooding

- 1.3.6 As outlined in Appendix C (Section 6: Water Environment) and shown on Figure C6.2, SEPA Flood Maps (SEPA 2015) suggest areas of the existing A83 and Old Military Road may be at risk from fluvial flooding from the Croe Water at the southern extents of the route corridor and at the Croe Water crossing. SEPA fluvial flood mapping is only available for watercourses with catchments greater than 3km² and therefore there is additional potential for flooding from minor watercourses not identified by this mapping.
- 1.3.7 SEPA Flood Maps (SEPA 2015) suggests areas of the Old Military Road may be at risk from pluvial (surface water) flooding for the 0.5% Annual Exceedance Probability (AEP) (200-year) flood event (Figure C6.2) in localised areas within the southern extents of the route corridor. SEPA flood mapping, however, also indicates the existing A83 is not at risk of pluvial flooding. For greater detail on potential flood risk within the route corridor refer to Appendix C (Section 6: Water Environment).

Carbon Sinks

- 1.3.8 Peatlands account for nearly a quarter of Scotland's land area and the country holds approximately 13% of the global stock of blanket bog. Over 80% of Scotland's peatlands are degraded following failed efforts to improve through afforestation and grazing. Peatlands are recognised as major sources of carbon sequestration and hold a high carbon sink value, with recent estimates suggesting that Scotland's peat holds 1620 million tonnes (Mt) of carbon stock (James Hutton Institute 2019).
- 1.3.9 As outlined in Appendix C (Section 7: Soils), the majority of soil within the route corridor can be characterised as peaty gleyed podzols with peaty gleys and dystrophic semi-confined peat with strichen soil association (James Hutton Institute 2021). The majority of the route corridor transects land identified as Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat), Class 4 (area unlikely to be associated with peatland or high carbon soils) and Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) on the Carbon and Peatland 2016 Map (Scottish Natural Heritage 2016). A small section of the route corridor transects peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) on the higher slopes of Ben Donich to the west and where the A83 joins Glen Kinglas to the north.
- 1.3.10 The Argyll and Bute Council Woodland and Forestry Strategy (Argyll and Bute Council 2011) outlines strategic priorities in relation to climate change, including CC5 - *Encourage robust protection of peat soils to maintain their value as carbon stores*. The Loch Lomond & Trossachs National Park Authority (LLTNPA) Trees and Woodland Strategy recognises the importance of protecting and restoring peatland as a means to reduce the impacts of climate change. Within the National Park, there is a target to restore 2,000 ha of peatland by 2023. The location of peat within the route corridor is shown on Figure C7.2.

- 1.3.11 As outlined in Appendix C (Section 4: Material Assets), there are large areas of forestry within the route corridor, which borders the existing A83. Coniferous plantation woodland covers large areas of the route corridor, particularly to the south of the B828, west of the Old Military Road and to the east of the A83. There are six parcels of Native Woodland Survey of Scotland (NWSS) within the route corridor. There is one area listed on the Woodland and Forestry Strategy (Argyll and Bute Council 2011) that falls within the route corridor and most of the corridor falls within the LLTNPA Trees and Woodland Strategy boundary (LLTNPA 2019).
- 1.3.12 Forestry and Land Scotland data indicate that a Rest and Be Thankful Woodland Creation Project is being undertaken on the steep south western flanks of Bein Luibhean. Forestry and Land Scotland are working in partnership with Transport Scotland and propose planting a mixed native woodland with a range of species selected to maximise slope stability. Natural regeneration of native species will also be encouraged and there is scope for further planting adjacent to the core project area.
- 1.3.13 In addition, the LLTNPA Trees and Woodlands Strategy (2019) identifies large areas around the Highland summits as preferred or potential native woodland creation opportunities, while the Argyll and Bute Council Woodland and Forestry Strategy identifies small areas of potential woodland along the edges of existing woodland in Glen Kinglas. Existing woodland and forestry strategy areas are displayed on Figure C9.2 (Landscape Topography, Land Cover and key Visual Receptors).
- 1.3.14 According to the Argyll and Bute Council Woodland and Forestry Strategy, (Argyll and Bute Council 2011) woodlands in Argyll and Bute currently store around 11 Mt of carbon and sequester an additional 0.6 Mt per annum. This compares with annual emissions of more than 1.1 Mt per annum for the whole of Argyll and Bute, based on average figures for Scotland, illustrating the importance of woodland and forestry in the region and the interrelationship with climate.
- 1.3.15 Grassland also has an important role in carbon sequestration, particularly grassland that has remained undisturbed for greater than five years (Rees *et al.* 2018). As outlined in Appendix C (Section 5: Biodiversity), the corridor contains calcifugous grassland and montane communities and mire habitats on the east side of the A83, between large parcels of woodland.

1.4 Evolution of Baseline and Trends

- 1.4.1 The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the greenhouse gas emissions targets in the Climate Change (Scotland) Act 2009, and set a 'net zero' target emissions year of 2045, by which time emissions are to be 100% lower than the baseline year of 1990. Various policies including the Climate Change Plan which was updated in December 2020 have since been implemented to facilitate and encourage the required reduction in emissions by 2045. The December 2020 update focused on a greener and fair recovery from the Covid-19 pandemic.
- 1.4.2 Climate change projections indicate that the climate trends observed over the last century will continue and intensify over the coming decades. Key long-term climate change trends for Scotland are that weather may become more variable, typical summers will be hotter and drier, winter and autumn will be milder and wetter and sea levels will continue to rise (Adaptation Scotland 2020). Increases in the occurrences of summer heat waves, extreme temperatures and drought, as well as an increase in the frequency and intensity of extreme precipitation events, are also expected.

1.5 Assessment

- 1.5.1 This section presents the potential significant effects on Climatic Factors as a result of the project. The five possible route options (Green, Yellow, Purple, Pink and Brown Route Options) within the route corridor are also considered. The potential effects on Climatic Factors have been assessed using the criteria defined in Table C1.1.

Construction

- 1.5.2 It is recognised that development of any possible route option would cause an unavoidable permanent effect on non-priority peatland. The possible route options within the route corridor have the potential to cause indirect effects on peat, such as a change in drainage or change in vegetation cover. Due to the location of peat within the route corridor and the alignments of the possible route options, it is considered unlikely that any nationally important peat would be affected by the possible route options.
- 1.5.3 Construction on areas of peatland would remove the material from its current setting, resulting in the release of stored carbon and removing high value carbon sequestration peat lands. Overall, degradation and removal of peatland would be considered to have the potential for minor negative or uncertain effects.
- 1.5.4 Construction of the project could also remove one or more grassland habitats that have important carbon sequestration value. There is therefore potential for minor negative or uncertain effects on grassland habitats.
- 1.5.5 The project is assessed as having minor negative or uncertain effects on forestry. This recognises that there would likely be unavoidable loss and permanent loss of Land Capability for Forestry (LCF) Classes F4, F5 and F6. Loss of forestry would result in the release of stored carbon within the established trees and loss of carbon sequestration potential.
- 1.5.6 Construction of the project would have raw material requirements. Manufacture of these materials would have an embodied carbon content, capturing the processes involved in extraction and processing of materials used in construction. The transportation of materials to the site and waste off-site would cause vehicle emissions of greenhouse gases. Construction activities on site would also release emissions from the usage of plant. The scale of effect would be dependent on material requirements, carbon intensity of materials selected and the carbon intensity of construction activities
- 1.5.7 Any release of emissions adds to the cumulative atmospheric concentration of greenhouse gases, affecting climate change. Carbon dioxide (CO₂) remains in the atmosphere for an extended period; therefore, the effect is considered long-term, irreversible and negative.
- 1.5.8 At the stage of assessment there is a lack of detailed design information and construction footprint extents available to quantify differences between the route options. However, it can be expected that the possible route options requiring construction of a tunnel (Pink and Purple) would have highest emissions due to the carbon intensive nature and energy usage for tunnelling.
- 1.5.9 The possible route options requiring construction of viaducts (Yellow and Green) would be expected to have the next highest emissions after the tunnel options due to the material requirements for viaduct construction. The Yellow Route Option would have higher emissions due to the requirement for a longer viaduct with 37m high piers compared to the smaller Green Route Option viaduct of 0.3km.
- 1.5.10 The Brown Route Option would be expected to have the lowest emissions due to the option largely following the alignment of the existing A83, although it does require construction of a 0.3km viaduct.

Operation

- 1.5.11 The project has the potential to be at risk of flooding, dependent on the design and the final alignment in relation to the floodplain. As outlined in the evolution of the baseline, climate change is expected to increase annual rainfall with more frequent severe rainfall events, leading to flash flooding. The presence of additional carriageway infrastructure will create greater areas of impermeable surface, reducing natural flood plain land in the route corridor.

- 1.5.12 The purpose of the project is to improve the resilience of the A83 to adverse weather and the projected effects of climate change. The existing A83 is becoming a less reliable transport route due to more frequent landslides as a result of increased rainfall causing slope instability. The project would be designed with built-in adaptive capacity to climate change, to ensure its operational resilience in future. This is likely to have a positive effect on infrastructure resilience.
- 1.5.13 Once operational, emissions from vehicles using the project would add to the cumulative atmospheric concentration of CO₂. The scale of the emissions would be dependent on traffic flows and type of vehicle using the project. The UK Government has committed to banning the sale of new fossil fuel vehicles from 2030 and phasing out hybrid vehicles by 2035. The Scottish Government has committed to phasing out non-hybrid petrol and diesel cars by 2032. This would be expected to lead to a gradual decline in user emissions as the national vehicle fleet updates and fewer fossil fuel vehicles are in operation.
- 1.5.14 The result of the climatic factors assessment of the project, using the SEA objectives and their respective guide questions, are shown in Table C1.2.

Table C1.2: Climatic Factors assessment using SEA Objectives and Guide Questions

Climatic Factors SEA Objectives	SEA Assessment Guide Questions <i>'Does the Access to Argyll and Bute (A83) corridor...?'</i>	Corridor Assessment
Reduce emissions from Scotland's transport sector by reducing the need to travel and encouraging modal shift and help meet Scotland's wider targets to reduce greenhouse gas emissions.	<ul style="list-style-type: none"> Promote and facilitate modal shift to more sustainable transport options? 	The project will provide upgraded infrastructure within a rural region and a more resilient route, reducing the need for lengthy diversionary routes during weather closures. This could improve public transport operation, making it easier for the public to choose more sustainable transport options. The project is limited in its ability to directly influence the choice that users make with regard to their mode of transport.
	<ul style="list-style-type: none"> Support Scotland's target for net zero greenhouse gas emissions by 2045, and a 75% reduction in emissions by 2030, to comply with the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019? 	To contribute towards the Scottish Government target of net-zero emissions by 2045, the emissions from land-use change and construction would need to be mitigated where practicable, requiring offsetting and negative emission technology to remove the emissions from the atmosphere. At this stage of assessment, information on emissions and offsetting is not available, therefore it is not currently possible to determine if the project would contribute towards the net zero target.
	<ul style="list-style-type: none"> Protect existing and planned forestry as well as peatlands to preserve carbon sequestration lands and aid climate mitigation. 	The project could result in unavoidable loss of existing forestry as well as affect planned forestry within the LLTNP Woodland Strategy. The project could also cause degradation of peatland within the route corridor, resulting in the release of emissions through land-use change. This would also remove high-value carbon sequestration land, reducing the mitigation of carbon emissions. Therefore, it is determined that the project would not be expected to protect existing and planned forestry or peatlands.
Adapt the transport network to the anticipated effects of climate change	<ul style="list-style-type: none"> Help adapt the transport network to direct and indirect risks associated with climate change projections for Scotland? (e.g. temperate, rainfall, landslides, storminess and flood risk projections) 	The purpose of the intervention is to improve the resilience of the project to the effects of adverse weather, notably landslides caused by slope instability following extended periods of rainfall. The project would be designed with the appropriate tolerances in relation to flood risk, rainfall and landslides, so it would have embedded adaptive capacity to future climate change projections. Therefore, it is determined that the project

Climatic Factors SEA Objectives	SEA Assessment Guide Questions <i>'Does the Access to Argyll and Bute (A83) corridor...?'</i>	Corridor Assessment
		would be expected to contribute positively to adapting the transport network to the anticipated effects of climate change.
	<ul style="list-style-type: none"> Prioritise adaptation of transport infrastructure in locations that are more vulnerable to the projected impacts of climate change, including coastal and isolated locations? 	The A83 corridor has been identified as a key route for intervention due to the increased frequency of closures of the A83 at the Rest and Be Thankful. During the second half of 2020 in particular, the operation of the route has been severely disrupted by forced and precautionary closures. This results in long diversion for road users, adversely affecting mobility in the region. Therefore, it is determined that the project would be expected to contribute positively to the prioritisation of transport infrastructure adaptation in locations deemed more vulnerable to climate change.
	<ul style="list-style-type: none"> Maintain or improve access to and within disadvantaged areas or isolated communities at risk from climate change impacts e.g. flooding, slope instability? 	The A83 corridor provides a key link from the central belt to the west coast, including the islands of Arran and Jura. Having a resilient route that provides a reliable connection to remote communities in the western isles is crucial for their economies. Therefore, it is expected that the project would contribute positively to maintaining and improving access to isolated communities.

1.6 Inter-relationships with other SEA topics

- 1.6.1 There can be considerable benefits to considering Climatic Factors alongside other topics within the SEA. It provides the opportunity for win-wins when applying ecosystem-based approaches when developing climate mitigation and adaptation, avoiding actions that have no adaptive capacity or reduce the resilience of other measures (EU Commission 2013).
- 1.6.2 Table C1.3 presents the inter-relationships identified between Climatic Factors and the other SEA topics.

Table C1.3: Inter-related SEA topics

SEA Topic	Relationship with Climatic Factors
Biodiversity	Grassland habitats, forestry and peatland within the corridor have significant carbon sequestration value, but are also important for biodiversity. Any positive or negative effects of the project on these natural assets would therefore affect both SEA topics.
Soils	Soils may be altered by changes to rainfall patterns, erosion and increased temperatures due to climate change, while the release of CO ₂ sequestered in peat soils from development contributes to climate change. Peatland conservation is therefore essential for climate change mitigation. Climate change may result in changes to rainfall patterns which may affect frequency and severity of landslide events.
Material Assets	The materials required to construct the project have embodied carbon emissions that will be released in the manufacture of components of the infrastructure. The natural material assets within the route corridor including forestry and peat soils hold a high carbon sequestration and sink value
Water environment	Climate Change projections indicate that this region will experience wetter winters and more regular high intensity rainfall events which could affect the resilience of the project.

1.7 Conclusions

- 1.7.1 The project has the potential to result in **minor negative or uncertain effects** during construction and operation on the Climatic Factors SEA topic. The project is also expected to result in positive effects through provision of infrastructure that is resilient to the effects of climate change. Therefore, it is considered that the project does not fully meet the SEA Climatic Factors objectives of reducing existing and avoiding new GHG emissions from transport and reducing and avoiding new GHG emissions from land-use change. However, it is considered that the project does meet the SEA Climatic Factors objective of adapting the road network to the effects of climate change.
- 1.7.2 At this stage of assessment, the project is not anticipated to have any significant negative effects on climate. Information on material quantities is not available at this stage, resulting in the inability to assess the level of carbon emissions from the route corridor's construction. It is recognised that some effects on soils, habitats and forestry are unavoidable and the actual significance of effects will be assessed during the DMRB Stage 2 and DMRB Stage 3 processes.
- 1.7.3 A summary of the effects on Climatic Factors at the SEA stage is provided in Table C1.4.

Table C1.4: Summary of Effects on Climatic Factors

Climatic Factors Subtopic	Potential Effect Description	Effect Duration	Scoring Criteria
Peatlands	Unavoidable loss of peatlands, causing degradation and a loss of carbon sink and sequestration land.	Permanent	Minor negative or uncertain environmental effect
Forestry	Unavoidable loss of forestry, causing a loss of carbon sink and sequestration land.	Permanent	Minor negative or uncertain environmental effect
Grassland habitat	Unavoidable loss of grassland habitat, causing degradation and a loss of carbon sink and sequestration land.	Permanent	Minor negative or uncertain environmental effect
Embodied Carbon	The embodied carbon content from manufacture of materials used in construction.	Permanent	Minor negative or uncertain environmental effect
Flooding	Construction of new impermeable road surface reduces the natural flood management in the route corridor.	Permanent	Minor negative or uncertain environmental effect
Infrastructure Resilience	Provision of resilient infrastructure would positively contribute towards adapting the road network to climate change.	Permanent	Minor positive environmental effect

1.8 Design Development, Mitigation and Enhancement Recommendations

1.8.1 Mitigation and enhancement measures relevant to Climatic Factors are presented in Table C1.5. Mitigation measures for materials are presented in Appendix C (Section 4: Material Assets). Mitigation measures for forestry and other habitat types are presented in Appendix C (Section 5: Biodiversity, Flora and Fauna) and mitigation measures for peat soils are presented in Appendix C (Section 7: Soils).

Table C1.5: Potential mitigation, enhancement, and design recommendations in relation to Climatic Factors

Mitigation / Enhancement / Monitoring Measure	Stage of Implementation (e.g. DMRB Stage 2, DMRB Stage 3)	Responsible Party for Implementation	Consultation/ Approvals Required
The design of the project should seek to minimise material usage and the need for earthworks.	DMRB Stage 2 DMRB Stage 3 Detailed design	Designer & Contractor To be monitored by Transport Scotland during subsequent DMRB stages and by contractor during design and construction.	n/a
The choice of materials used to construct the project should consider where it can implement sustainably sourced and low carbon materials. Consideration should also be given to the location of suppliers to minimise transportation distances, subject to any procurement limitations.	Throughout the lifecycle of the project	Designer & Contractor To be monitored by Transport Scotland during subsequent DMRB stages and procurement and by contractor during construction.	n/a
Opportunities for offsetting should be considered where appropriate to contribute towards the national legislative target of achieving net zero emissions.	Throughout the lifecycle of the project	Designer To be monitored by Transport Scotland during subsequent DMRB stages.	n/a
The design of the project should seek to avoid areas of nationally important peat (Class 1 and 2) where possible. Indirect impacts of the design on peat (for example a change in drainage) should be considered and mitigated.	DMRB Stage 2 DMRB Stage 3 Detailed design	Designer & Contractor To be monitored by Transport Scotland during subsequent DMRB stages and by contractor during design and construction.	n/a
The design of the project should seek to avoid areas of existing and future forestry to preserve carbon sequestration woodland.	DMRB Stage 2 DMRB Stage 3 Detailed design	Designer To be monitored by Transport Scotland during subsequent DMRB stages.	n/a

1.9 Legislation

The Climate Change (Scotland) Act 2009

The Climate Change (Duties of Public Bodies: reporting Requirements) (Scotland) Order 2015

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

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