



Access to Argyll and Bute (A83)

Strategic Environmental Assessment Scoping Report

A83AAB-JAC-EGN-XX_XX-RP-LE-0001 | C02

December 2020

Transport Scotland

Access to Argyll and Bute (A83)

Project No: A83AAB
Document Title: Strategic Environmental Assessment Scoping Report
Document No.: A83AAB-JAC-EGN-XX_XX-RP-LE-0001
Revision: C02
Document Status: A1 – Accepted - Brief
Date: December 2020
Client Name: Transport Scotland
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File Name: A83AAB-JAC-EGN-XX_XX-RP-LE-0001

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
C02	December 2020	Scoping report publication	GM	SI	PS	DR

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ACCESS TO ARGYLL AND BUTE (A83) SEA SCOPING – KEY FACTS

Key Facts	
<i>Scheme</i>	<i>Access to Argyll and Bute (A83)</i>
<i>Responsible Authority</i>	<i>Transport Scotland</i>
<i>Purpose of PES and SEA</i>	<i>To identify a preferred corridor for access to Argyll and Bute from the wider transport network. This will review the problems and opportunities relating to the existing A82, A83, A85 and A828 Trunk Roads and consider various corridor options, including the existing A83 Trunk Road corridor.</i>
<i>Scheme objectives</i>	<ul style="list-style-type: none"> ▪ <i>TPO1 Resilience – reduce the impact of disruption for travel to, from and between key towns within Argyll & Bute, and for communities accessed via the strategic road network.</i> ▪ <i>TPO2 Safety – positively contribute towards the Scottish Government's Vision Zero road safety target by reducing accidents on the road network and their severity.</i> ▪ <i>TPO3 Economy – reduce geographic and economic inequalities within Argyll & Bute through improved connectivity and resilience.</i> ▪ <i>TPO4 Sustainable travel – encourage sustainable travel to, from and within Argyll & Bute through facilitating bus, active travel and sustainable travel choices.</i> ▪ <i>TPO5 Environment - protect the benefits local communities and visitors obtain from the natural environment by enhancing natural capital assets and ecosystem service provision through delivery of sustainable transport infrastructure.</i>
<i>Area to be Considered</i>	<i>The study area includes 11 corridor options and is shown on Image 1. in Chapter 1</i>
<i>Period Covered by the PES and SEA</i>	<i>2021 - 2030</i>
<i>Frequency of Update</i>	<i>Live project with ongoing updates</i>
<i>Contact Details</i>	<i>Comments can be provided by email to: Sinead.thom@transport.gov.scot and Steve.Isaac@jacobs.com; or by post to: [Transport Scotland, Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF]</i>
<i>Project Website</i>	<i>https://www.transport.gov.scot/publication/project-corridor-options-access-to-argyll-and-bute-a83/</i>

1. Introduction

1.1 Background

- 1.1.1 Following recent landslide events in August 2020 at the Rest and Be Thankful on the A83 trunk road, one of which was the largest recorded in the area, Jacobs / AECOM was commissioned by Transport Scotland to undertake a Strategic Environmental Appraisal (SEA) and provide preliminary engineering support services (PES) as the equivalent of a Design Manual for Roads and Bridges (DMRB) Stage 1 Assessment to identify a preferred corridor for access to Argyll and Bute. This will review the problems and opportunities relating to the existing A82, A83, A85 and A828 Trunk Roads and consider various corridor options, including the existing A83 Trunk Road corridor.
- 1.1.2 The A83 Trunk Road (hereafter referred to as 'the A83') is one of only two east-west strategic trunk road network connections between Argyll and Bute and the central belt. Accidents or incidents (e.g. roadworks, landslips, flooding) occurring on any part of the A83 in Argyll and Bute can effectively cut off parts of the region for a period, with the potential to significantly impact residents, business and visitors due to the significant length of alternative routes and the travel times involved. Sections of the A83 are also noted as having higher accident rates than the national average.
- 1.1.3 As part of Transport Scotland's second Strategic Transport Projects Review (STPR2) (Transport Scotland n.d.) (described in Section 2.2 of this report), an Initial Appraisal: Case for Change report was produced for the Argyll and Bute region, which set out the importance of the A83 as a 'vital artery' running through the region - a key transport corridor in need of investment. Due to the complexities of the route and the urgent need for a solution to the recurring landslides issues, it was decided that Access to Argyll and Bute (A83) should be taken forward in parallel with the STPR2 programme and to a level of detail that would support the early stages of project delivery.
- 1.1.4 As such, there is a need to consider the route corridor options available to improve resilience and safety for strategic traffic currently using the A83. This includes examining, in conjunction with the existing A83 corridor, alternative corridors, both to the north and south of the existing route, that could provide a suitable alternative route to the A83. The proposed route corridor options are shown on Image 1.1 and the corridor study areas are shown on Image 1.2.¹
- 1.1.5 The Access to Argyll and Bute (A83) SEA Scoping Report is being undertaken to inform the PES and SEA of potential alternative corridors to the existing A83. The PES appraisal will set out the evidence base for problems and opportunities linked to the A83, drawing on relevant data analysis, policy review and stakeholder engagement. The PES appraisal will also report the engineering, traffic and economic assessments of the route corridor options. The SEA will identify any likely significant effects of the PES, and provide avoidance and mitigation measures for these, where necessary. The SEA will also inform the development of the more detailed design and Environmental Impact Assessment (EIA) requirements at the project level. The SEA process is described in Section 1.3.

¹ The lines shown on Image 1.2 are indicative only; the route could be anywhere within the corridor and would not necessarily follow existing roads.

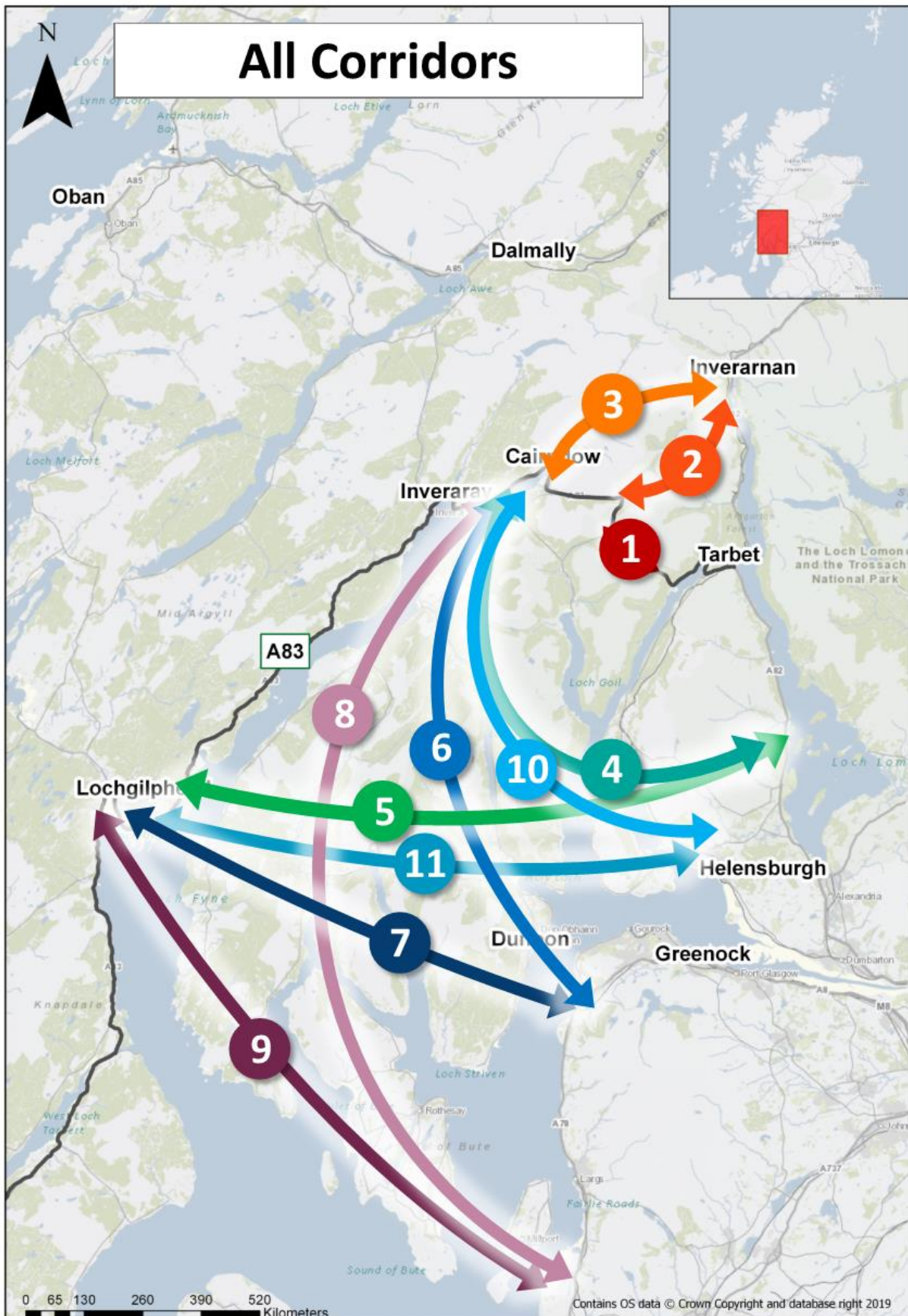


Image 1.1: Route Corridor Options

1.2 Report Structure

- Chapter 1 (this chapter) summarises the general background to Access to Argyll and Bute (A83) PES and SEA and various impact assessments required for the Access to Argyll and Bute (A83) scheme.
- Chapter 2 provides a more detailed background and context for the Access to Argyll and Bute (A83) scheme.
- Chapter 3 shows the key relationships between the Access to Argyll and Bute (A83) scheme and other Plans, Policies and Strategies (PPS), including the environmental requirements associated with them.
- Chapter 4 provides a summary of the existing environment (the 'environmental baseline').
- Chapter 5 describes the approach to stakeholder engagement throughout the development of the A83 and the SEA.
- Chapter 6 sets out the proposed approach for undertaking the SEA.
- Chapter 7 summarises the next steps required for consultation on each of the Access to Argyll and Bute (A83) impact assessments.
- Appendix A contains the screening exercise used to determine the requirement for SEA.
- Appendix B contains the constraints plans, depicting nationally or internationally significant environmental, landscape and cultural heritage designations.
- Appendix C contains a comprehensive review of the relevant PPS that are summarised in Chapter 3 of the report.
- Appendix D contains the environmental baseline data for the 2km study area, which is summarised in Chapter 4 of the report.

1.3 SEA Requirements

- 1.3.1 SEA is a means of systematically assessing the likely impact of a public plan, programme or strategy on the environment. The Environmental Assessment (Scotland) Act 2005 transposes the requirements of the European Community SEA Directive (2001/42/EC). Under the Environmental Assessment (Scotland) Act 2005, those bodies preparing qualifying Scottish plans are required to undertake a SEA of plans that are likely to have significant environmental effects, if implemented.
- 1.3.2 The SEA aims to offer greater protection to the environment by ensuring public bodies (in this case, Transport Scotland) and those organisations preparing plans of a 'public character' consider and address the likely significant environmental effects. The SEA also offers a foundation for future DMRB stages of a project assisting an environmentally led design.
- 1.3.3 A SEA shall be prepared for the Access to Argyll and Bute (A83) PES, to explore the potential for positive or negative significant environmental effects. A Screening Report has been prepared and is provided in Appendix A. Following screening, the key remaining stages of SEA for the Access to Argyll and Bute (A83) scheme are:
- SEA Scoping (this stage) – described in the following paragraphs.
 - Draft Environmental Report (see Chapter 6) – The assessment stage will establish the likely significant (positive and negative) environmental effects of implementing the Access to Argyll and Bute (A83) scheme. Any potential reasonable alternatives will also be considered at this stage, along with viable mitigation measures to avoid, reduce or offset adverse effects. The assessment and a summary of key findings will be included in the draft Environmental Report, which will be made available for consultation alongside the PES.
 - Final Environmental Report (that responds to SEA consultation comments and any post-consultation updates to the PES reporting).
 - Post Adoption Statement - This statement will be produced after the Access to Argyll and Bute (A83) scheme has been adopted. It will outline how the assessment and consultation responses have been

taken into account within the finalised Access to Argyll and Bute (A83) scheme. It will also include the final environmental monitoring programme for the Access to Argyll and Bute (A83) scheme implementation.

- Monitoring – any significant environmental effects predicted in the SEA will need to be monitored, according to the monitoring programme set out in the Post Adoption Statement, and remedial action taken in response to the monitoring, where required.

1.3.4 Post Adoption Statements are intended to improve the transparency of the decision-making process within schemes such as the Access to Argyll and Bute (A83).

1.3.5 The SEA Directive topics, to be considered at all SEA stages, are:

- biodiversity, fauna and flora;
- population and human health;
- water;
- soil;
- air;
- climatic factors;
- material assets;
- cultural heritage; and
- landscape.

1.3.6 Inter-relationships between the environmental topics listed in paragraph 1.3.5 will also be considered. For example, direct effects on soil or the quality of the water environment, as a result of increasing the background levels of pollution within a specific area, could have a secondary significant effect on biodiversity. The potential inter-relationships identified as part of the scoping exercise are outlined in Section 4.1.6 and Section 6.5.

1.3.7 The SEA is developed to incorporate the feedback from statutory Consultation Authorities. The Scottish statutory Consultation Authorities are:

- Scottish Environment Protection Agency (SEPA);
- NatureScot; and
- Historic Environment Scotland (HES).

1.3.8 The role of the Consultation Authorities within SEA is to bring their individual environmental expertise to the assessment process. This can help to ensure that the future consultation process undertaken by a Responsible Authority (in this case Transport Scotland) is more robust. This in turn means that the public can gain a better understanding of the likely effect of a plan on the environment and meaningfully contribute to the plan's preparation process by offering an informed view (Scottish Government 2013a).

1.3.9 The Consultation Authorities also sit on an Environmental Steering Group (ESG) that has been formed for this project – the ESG is described in Section 5.2. Feedback from the wider ESG members in addition to the statutory authorities will also be incorporated in the development of the SEA.

1.3.10 In adherence to the requirements of the Environmental Assessment (Scotland) Act 2005, screening was undertaken to determine whether the Access to Argyll and Bute (A83) scheme would be likely to have significant environmental effects which would require SEA. A Screening Report was submitted to Transport Scotland in October 2020 (refer to Appendix A).

1.3.11 SEA was proposed for the Access to Argyll and Bute (A83) scheme as the most appropriate and robust framework for identifying potential environmental effects and opportunities at a high-level. The SEA process also ensures that stakeholders are given an early opportunity to comment on and influence the

proposals. Following review of the Screening Report, Transport Scotland confirmed the intention to progress with voluntary SEA for the Access to Argyll and Bute (A83) scheme.

- 1.3.12 Following confirmation through screening that an SEA will be undertaken, the next stage in the process is scoping. The purpose of this scoping stage is to describe the environmental context, by establishing the relevant baseline information, reviewing other relevant PPS and identifying environmental problems and opportunities. The PPS Review is provided in Appendix C and the baseline data are provided in Appendix D.
- 1.3.13 The Scoping Report is intended to provide sufficient information about the Access to Argyll and Bute (A83) scheme and its potential environmental effects to allow the Consultation Authorities to provide an informed view regarding the environmental topics to be included in the SEA. The Scoping Report provides details of baseline data, relevant plans, programmes and policies and proposed methodology that will be used in the SEA. Comments from the Consultation Authorities on this Scoping Report will be responded to in the draft Environmental Report (the next stage of SEA).
- 1.3.14 The scoping stage has also been informed by environmental workshops and engagement, as described in Chapter 5. The approach to the remaining SEA stages after scoping is described in Chapter 6.

1.4 Supporting Assessments

- 1.4.1 Where not already covered by assessments for other plans, policies and programmes, the Access to Argyll and Bute (A83) scheme is accompanied by supporting assessments. These comprise this SEA, as described in Section 1.3 and a Strategic Habitats Regulations Appraisal (HRA). These impact assessments will interact and run in parallel with one another to ensure consistency and to provide additional insight into key environmental concerns relating to the Access to Argyll and Bute (A83) scheme.

Habitats Regulations Appraisal (HRA)

- 1.4.2 The EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter referred to as the Habitats Directive) was adopted in 1992 (as amended). The primary aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species of European interest listed in the Annexes to the Directive at a favourable conservation status. It also introduces robust protection for those habitats and species of European importance.
- 1.4.3 Article 6(3) of the EC Habitats Directive requires that any plan which is not directly connected with or necessary to the management of a European site (otherwise known as 'Natura 2000' sites), but may be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, shall be subject to an 'appropriate assessment' of its implications for the European site in view of the site's conservation objectives. The application of the precautionary principle is implicit in the Habitats Directive, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty (European Commission 2001). Where scientific information is insufficient, inconclusive, or uncertain, the precautionary principle is applied. This procedure is applied in Scotland through The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and is known as the 'Habitats Regulations Appraisal' (HRA) of plans. These regulations will remain in place post 31st December 2020 with only minor changes being introduced by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019.

- 1.4.4 Natura 2000 sites include Special Areas of Conservation (SACs) designated under the Habitats Directive (92/43/EEC) and Special Protection Areas (SPAs) designated under the Birds Directive (2009/147/EEC). In addition, Candidate and Possible SACs, Potential SPAs and Ramsar wetlands (designated under the Convention on Wetlands of International Importance) should be included in appraisals as they are afforded the same level of protection as European sites under domestic policy. Natura 2000 sites are designated due to the presence of specific habitats and species of internationally important biodiversity value, otherwise known as 'qualifying interest features.'
- 1.4.5 Each stage in the development of the Access to Argyll and Bute (A83) scheme will be reviewed to determine if there might be any potential indirect or direct significant effects on Natura 2000 sites. As the Access to Argyll and Bute (A83) route corridors develop, including any further spatial detail or indicative maps of transport interventions, they will continue to be reviewed from an HRA perspective, as part of an HRA screening assessment. The HRA screening will identify any likely significant effects on Natura 2000 sites and, if such effects are identified, describe the next stages required (Appropriate Assessment) to determine if there will be any adverse effects on site integrity. This approach is similar to the approach used for the wider STPR2 HRA and this approach will be discussed and agreed with NatureScot, the statutory nature conservation body (SNCB) for HRAs in Scotland. Discussions with NatureScot and refinement of the HRA approach will continue throughout the progression of the Access to Argyll and Bute (A83) scheme. Any HRA reports would be produced independently of the SEA.

Equality Impact Assessment (EqIA)

- 1.4.6 Scottish Government guidance is that an Equality Impact Assessment (EqIA) should be undertaken to assess the impact of new or revised policies, practices or services against the requirements of the public sector equality duty. As an EqIA is being undertaken at a policy level for STPR2, an EqIA is not considered necessary for the Access to Argyll and Bute (A83) scheme. The STPR2 EqIA also incorporates an Island Communities Impact Assessment (ICIA), required by the Islands (Scotland) Act 2018. The ICIA will assess the potential impacts of STPR2 on island communities across Scotland, including Argyll and Bute. The STPR2 SEA Environmental Report and EqIA Main Report, incorporating the ICIA, is expected to be published in Summer 2021.

2. Access to Argyll and Bute (A83) Overview

2.1 Background

- 2.1.1 Transport Scotland is currently undertaking the STPR2 to inform the Scottish Government's transport investment programme in Scotland over the next 20 years (2022 – 2042). STPR2 takes a national overview of the transport network with a focus on regions and will help deliver the vision, priorities and outcomes that are set out in the new National Transport Strategy (NTS2). Both STPR2 and NTS2 and the relationship of these strategies with Access to Argyll and Bute (A83) are discussed in more detail in Chapter 3.
- 2.1.2 The Access to Argyll and Bute (A83) PES Corridor Appraisal is being undertaken in parallel to the wider STPR2, to inform a decision regarding the selection of a preferred corridor, in response to the major landslide incidents that occurred in late summer 2020. There is a need to consider the options available to improve resilience for strategic traffic currently using the A83 and offer other benefits in line with the objectives established for the region in STPR2. This includes examining the existing corridor and alternative corridors north and south of the existing route, that could provide a suitable alternative route to the A83 as shown on Image 1.1.

2.2 Access to Argyll and Bute (A83) Scheme Objectives

- 2.2.1 The draft scheme objectives for Access to Argyll and Bute (A83) are as follows:
- TPO1 Resilience – reduce the impact of disruption for travel to, from and between key towns within Argyll & Bute, and for communities accessed via the strategic road network.
 - TPO2 Safety – positively contribute towards the Scottish Government's Vision Zero road safety target by reducing accidents on the road network and their severity.
 - TPO3 Economy – reduce geographic and economic inequalities within Argyll & Bute through improved connectivity and resilience.
 - TPO4 Sustainable travel – encourage sustainable travel to, from and within Argyll & Bute through facilitating bus, active travel and sustainable travel choices.
 - TPO5 Environment - protect the benefits local communities and visitors obtain from the natural environment by enhancing natural capital assets and ecosystem service provision through delivery of sustainable transport infrastructure.
- 2.2.2 The scheme objectives have been developed taking cognisance of national and regional objectives and these will be used to measure the performance of each route corridor in the ongoing assessments against the themes of resilience, safety, economy, sustainable travel and the environment. The scheme objectives will be used, along with other assessment criteria, to help inform the selection of a preferred route corridor. The scheme objectives will also provide a benchmark for measuring the success of the scheme and will be monitored throughout the lifecycle of the project. It should be noted that in the early stages of a project, the scheme objectives can evolve as more information becomes available.

2.3 Content/Scope of PES and SEA

- 2.3.1 As indicated in Section 1.1, Transport Scotland has commissioned a PES study to inform the identification of a preferred corridor for access to Argyll and Bute, which in conjunction with the SEA will form the equivalent of a DMRB Stage 1 Assessment. Typically, this stage of reporting is the first element of a three-stage assessment process. A DMRB Stage 1 Assessment is a preliminary assessment and usually involves a broad, strategic approach to developing and assessing indicative improvement strategies to allow the identification and consideration of the environmental, engineering, economic and traffic advantages, disadvantages and constraints associated with the developed improvement strategies.

- 2.3.2 Following the strategic assessments to be undertaken within the PES and SEA (equivalent of a DMRB Stage 1 assessment) for the Access to Argyll and Bute (A83) scheme and the selection of a preferred route corridor, route options within the preferred corridor will be developed for further assessment at DMRB Stage 2. Once a preferred route option is chosen, at DMRB Stage 3 the scheme design will be developed and refined and a project-specific statutory Environmental Impact Assessment (EIA) and project-level HRA will be undertaken to assess the potential for significant environmental effects in greater detail.
- 2.3.3 The corridor appraisal informing the PES and SEA will be carried out in two stages:
1. **Preliminary Assessment** – An initial assessment considering 11 corridors, with the objective of identifying if corridors can justifiably be removed from further consideration at this initial stage on the basis that they do not sufficiently meet the scheme objectives and are demonstrably less preferable than other corridors. This will allow more detailed consideration of those corridors remaining to allow a recommendation on the preferred corridor.
 2. **Detailed Assessment** – Assessment in line with the DMRB of the corridors taken forward from the preliminary assessment. The standard TD37 Scheme Assessment Reporting has been withdrawn in the latest updates to the DMRB, however as indicated by Transport Scotland (<https://www.transport.gov.scot/transport-network/roads/design-of-trunk-roads/#45114>), the previous standard is still applicable for use in Scotland. The detailed assessment will be in line with DMRB Stage 1 for the engineering aspects and the SEA will consider environmental aspects.
- 2.3.4 The SEA process has been integrated with the PES work to support assessment and selection of the route corridors; a simple diagram of the process is shown in Diagram 1.

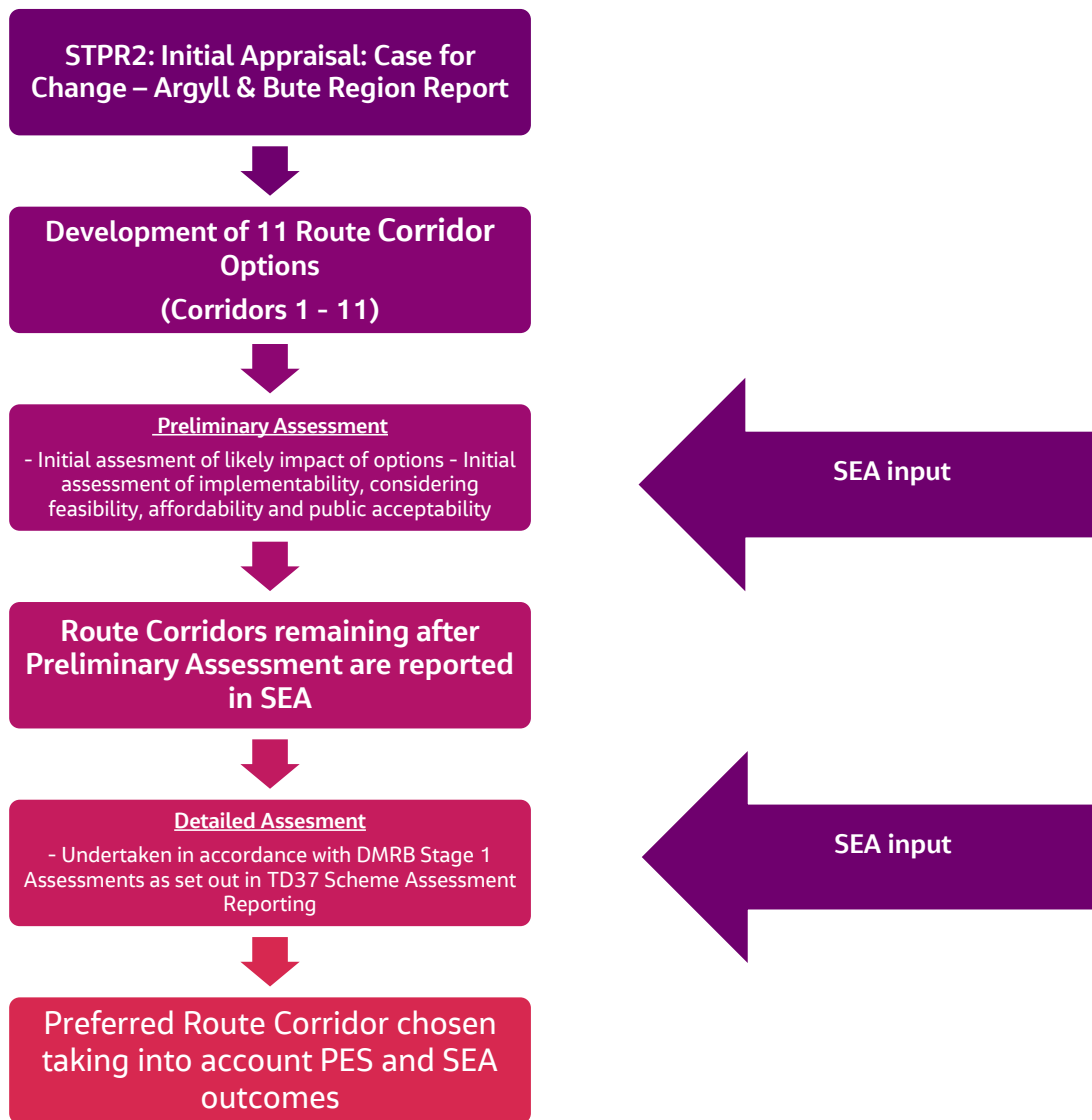


Diagram 1: Route Corridor Options Assessment Process

2.4 Route Corridor Summaries

2.4.1 A summary of the 11 indicative route corridor options that were developed for the Preliminary Assessment phase of the PES are outlined in Table 2.1 and illustrated on Figure 1 of Appendix B.

Table 2.1: Description of Route Corridor Options

Corridor	Description
1 – Glen Croe (Existing A83)	<p>This corridor was identified in the A83 Trunk Road Route Study Report, published in 2013.</p> <p>The Glen Croe (A83 online) sub corridor is adjacent to the existing road corridor starting from the bridge over Coire Croe Burn between the Cobbler and Beinn Luibhean. It is offset from the existing A83 Trunk Road and re-joins the alignment of the existing A83 Trunk Road before the bend prior to the junction with the B828 and the access to the Rest and Be Thankful car park. It is approximately 1.5km long and would generally follow a similar profile to the existing road.</p> <p>The Glen Croe (southern side) sub corridor is an off-line corridor within Glen Croe in the area of forestry on the south-west side of the valley. The corridor is approximately 4.3km in length and ties-in to the existing A83 Trunk Road approximately 3.2km north-west of Ardgartan, in the vicinity of the A83/Forestry Commission Track & the Old Military Road junction, and the north side of the Rest and Be Thankful car park at the B828. The corridor generally follows the Forestry Track and road structures and ground engineering measures would potentially be required to fit the new road into the topography of this side of Glen Croe.</p>
2 – Glen Kinglas	<p>This corridor was identified in the A83 Trunk Road Route Study Report, 2013.</p> <p>The Glen Kinglas corridor is off-line within Glen Kinglas and follows the wide valley floor, from the A83 Trunk Road west of the Rest and Be Thankful, heading north-east towards Loch Sloy, and then continuing to the A82 Trunk Road north of Ardlui. The overall length of the corridor is approximately 12km. The corridor passes through similar terrain to that of the Rest and Be Thankful. Road structures and ground engineering measures would likely be required to fit the new road in the topography of the valley.</p>
3 – Glen Fyne	<p>This corridor was identified in the A83 Trunk Road Route Study Report, 2013.</p> <p>The Glen Fyne corridor is off-line within Glen Fyne and follows the wide valley floor, from the A83 Trunk Road at the head of Loch Fyne, heading north-east, to the A82 Trunk Road north of Inverarnan. The overall length of the corridor is approximately 15km. The corridor passes through similar terrain to</p>

Corridor	Description
	that of the Rest and Be Thankful. Road structures and ground engineering measures would likely be required to fit the new road in the topography of the valley.
4 – A82 – Cowal – Cairndow	<p>This corridor was identified in the A83 Trunk Road Route Study Report, 2013.</p> <p>This corridor would be a combination of new offline carriageway and online upgrading works which generally follows the existing road network with a new fixed link crossing at Loch Long.</p> <p>From east to west, the corridor initially follows the existing A817 and A814 from the A82 Trunk Road north of Arden, to Whistlefield, near Garelochhead, with a new length of road and an approximate 1.4km fixed link crossing at Loch Long to Barnacabber. The corridor then generally follows the existing C09 and A815 to tie back into the A83 Trunk Road at Cairndow. The approximate length of the corridor where no road currently exists is approximately 5.5km with the full corridor approximately 57.9km in length. Construction is required in the vicinity of the Ministry of Defence (MOD) bases of Faslane and Coulport with a section of the proposed corridor utilising the MOD owned carriageway.</p>
5 – A82 – Cowal – Lochgilphead	<p>This corridor was initially identified by the Cowal Fixed Link working group and has subsequently been considered as a potential corridor by the STPR2 team.</p> <p>This corridor would be a combination of new offline carriageway and online upgrading works which generally follows the existing road network with new fixed link crossings at Loch Long and Loch Fyne.</p> <p>From east to west, the corridor initially follows the existing A817 and A814 from the A82 Trunk Road north of Arden, to Whistlefield, near Garelochhead, with a new length of road and an approximate 1.4km fixed link crossing at Loch Long to Barnacabber. The corridor then generally follows the existing C09 and A815 to Dalinlongart and then the existing B836, A886, C11 and B8000 to Otter Ferry, on the eastern shore of Loch Fyne. An approximate 2.7km fixed link crossing of Loch Fyne ties into the A83 Trunk Road at Port Ann. The length of the corridor where no road currently exists is approximately 5.5km with the full corridor approximately 76km in length. Construction is required in the vicinity of the MOD bases of Faslane and Coulport with a section of the proposed corridor utilising the MOD owned carriageway.</p>
6 – Inverclyde – Cowal – Cairndow	<p>This corridor was initially identified by the Cowal Fixed Link working group and has subsequently been considered as a potential corridor by the STPR2 team.</p> <p>This corridor would be generally online linking the A78 Trunk Road at Inverclyde to Cowal, with the provision of a fixed link crossing of the Firth of Clyde.</p> <p>From south to north, the corridor includes a connection from the A78 Trunk Road to Cowal via an approximate 3.9km fixed link crossing of the Firth of Clyde and upgrades along the A815 corridor, to its connection with the A83 Trunk Road at Cairndow. The approximate overall length of the full corridor is</p>

Corridor	Description
	50.7km. The fixed link crossing over the Firth of Clyde will present considerable challenges. This area is used by large marine vessels as well MOD submarines which are based at Faslane and Coulport. The structure will require to span a deep section of the Firth of Clyde as well as have adequate clearance for large marine vessels.
7 - Inverclyde – Cowal - Lochgilphead	<p>This corridor was initially identified by the Cowal Fixed Link working group and has subsequently been considered as a potential corridor by the STPR2 team.</p> <p>This corridor would be generally online linking the A78 Trunk Road at Inverclyde to Cowal, with the provision of fixed link crossings of the Firth of Clyde and Loch Fyne.</p> <p>From south to north, the corridor includes a connection from the A78 Trunk Road to Cowal via an approximate 3.9km fixed link crossing of the Firth of Clyde and upgrades along the A815 corridor between Dunoon and Dalinlongart. The corridor then generally follows the existing B836, A886, C11 and B8000 to Otter Ferry, on the eastern shore of Loch Fyne where an approximate 2.7km fixed link crossing of Loch Fyne ties into the A83 Trunk Road at Port Ann. The approximate overall length of the full corridor is 43.6km in length. The fixed link crossing over the Firth of Clyde will present considerable challenges. This area is used by large marine vessels as well MOD submarines which are based at Faslane and Coulport. The structure will require to span a deep section of the Firth of Clyde as well as have adequate clearance for large marine vessels.</p>
8a – North Ayrshire – Cairndow via Colintraive	<p>This corridor was identified by the STPR2 team.</p> <p>This corridor would be a combination of new offline carriageway and online upgrading works which generally follows the existing road network, with new fixed link crossings to the Isle of Bute and Cowal. The corridor includes a connection from the A78 Trunk Road in North Ayrshire to Cowal via a 2.65km and 2.53km fixed link crossing between the mainland (within the vicinity of Portencross) and the Isle of Bute via Little Cumbrae Island and a 0.5km fixed link crossing between the Isle of Bute and Cowal (within the vicinity of the Colintraive to Rhubodach ferry crossing).</p> <p>From east to west, a new section of carriageway will be required between the A78 Trunk Road and the fixed link crossing to the Isle of Bute. Once on the Isle of Bute, the corridor then generally follows the existing B881, A844 and A886. Once on Cowal the corridor generally follows the A886 again and thereafter the A815 to tie back into the A83 Trunk Road at Cairndow. The approximate length of the corridor where no road currently exists is 6.7km with the full corridor approximately 89.8km in length. The fixed link crossings to the Isle of Bute will provide significant technical challenges. This area is used by large marine vessels as well MOD submarines which are based at Faslane and Coulport.</p>
8b – North Ayrshire –	This corridor was identified by the STPR2 team.

Corridor	Description
Cairndow via Dunoon	<p>This corridor would be a combination of new offline carriageway and online upgrading works which generally follows the existing road network with new fixed link crossings to the Isle of Bute and Cowal. The corridor involves a connection from the A78 Trunk Road in North Ayrshire to Cowal via a 2.65km and 2.53km fixed link crossing between the mainland (within the vicinity of Portencross) and the Isle of Bute via Little Cumbrae Island and a 2.23km fixed link crossing between the Isle of Bute and Cowal (within the vicinity of the Craigmore and Toward).</p> <p>From east to west, a new section of carriageway will be required between the A78 Trunk Road and again between the fixed link crossing from the Isle of Bute to the B881. Once in Cowal, the corridor then generally follows the existing B881, A844 and A815 past Dunoon, meeting corridor option 8a again at the junction with the A886 near Strachur, to then tie back into the A83 Trunk Road at Cairndow. The approximate length of the corridor where no road currently exists is 6.7km with the full corridor approximately 76km in length. The fixed link crossings to the Isle of Bute will provide significant technical challenges. This area is used by large marine vessels as well MOD submarines which are based at Faslane and Coulport.</p>
9 – North Ayrshire – Cowal – Lochgilphead	<p>This corridor was identified by the STPR2 team.</p> <p>This corridor would be a combination of new offline carriageway and online upgrading works which generally follows the existing road network with new fixed link crossings to the Isle of Bute and Cowal. The corridor includes a connection from the A78 Trunk Road in North Ayrshire to Cowal via a 2.65km and 2.53km fixed link crossings between the mainland (within the vicinity of Portencross) and the Isle of Bute via Little Cumbrae Island and a 0.5km fixed link crossing between the Isle of Bute and Cowal (within the vicinity of the Colintrave to Rhubodach ferry crossing).</p> <p>From east to west, a new section of carriageway will be required between the A78 Trunk Road and the fixed link crossing to the Isle of Bute. Once on the Isle of Bute the corridor then generally follows the existing B881, A844 and A886. Having crossed to Cowal the corridor generally follows the A886 again up to Ballochandrain. Thereafter to corridor generally follows the C11 and B8000 to Otter Ferry, on the eastern shore of Loch Fyne where an approximate 2.7km fixed link crossing ties into the A83 Trunk Road at Port Ann. The approximate length of the corridor where no road currently exists is 6.7km with the full corridor approximately 62.7km in length. The fixed link crossings to the Isle of Bute will provide significant technical challenges. This area is used by large marine vessels as well MOD submarines which are based at Faslane and Coulport.</p>
10 – Helensburgh – Cowal – Cairndow	<p>This corridor was identified by the Cowal Fixed Link working group and has subsequently been considered as a potential corridor by the STPR2 team.</p> <p>This corridor would be generally online linking the A814 at Helensburgh to Cowal, with the provision of fixed link crossings at Gare Loch and Loch Long.</p> <p>From east to west, the corridor involves a connection from the A814 to Cowal via approximately 0.68km and 2.98km fixed link crossings to the Rosneath Peninsula and the corridor generally follows the B833 whilst on the Rosneath Peninsula. Having crossed Loch Long on the western side of the peninsula, the corridor generally follows the existing A880, C09 and A815 to tie back into the A83 Trunk Road at Cairndow. The approximate overall length of the</p>

Corridor	Description
	full corridor is 50.3km in length. The fixed link crossing over Gare Loch and Loch Long will present considerable challenges as both lochs are used by large marine vessels as well MOD submarines which are based at Faslane and Coulport.
11 - Helensburgh – Cowal - Lochgilphead	<p>This corridor was identified by the Cowal Fixed Link working group and has subsequently been considered as a potential corridor by the STPR2 team.</p> <p>This corridor is generally online linking the A814 at Helensburgh to Kintyre via Cowal, with the provision of fixed link crossings at Gare Loch, Loch Long and Loch Fyne.</p> <p>From east to west, the corridor involves a connection from the A814 to Cowal via approximately 0.68km and 2.98km fixed link crossings to the Rosneath Peninsula and the corridor generally follows the B833 whilst on the Rosneath Peninsula. Having crossed Loch Long the corridor generally follows the existing A880 to Ardbeg and the A815 to Dalinlongart, before then following the B836, A886, C11 and B8000 to Otter Ferry on the eastern shore of Loch Fyne. A 2.7km fixed link crossing of Loch Fyne ties into the A83 Trunk Road at Port Ann. The approximate overall length of the full corridor is 48.6km in length. The fixed link crossing over Gare Loch and Loch Long will present considerable challenges as both lochs are used by large marine vessels as well MOD submarines which are based at Faslane and Coulport.</p>

3. Legislative and Policy Context

3.1 Policy Context

3.1.1 The Access to Argyll and Bute (A83) Scheme is supported by PPS from national and regional strategic levels in Scotland. At the national level, those most relevant and closely linked are the National Planning Framework 3 (NPF3), National Transport Strategy 2 (NTS2) and the forthcoming Strategic Transport Projects Review 2 (STPR2), which are summarised below. A comprehensive review of PPS from national and regional local strategic levels is provided in Appendix C (Plans, Policies and Strategies Review).

3.2 National Planning Framework 3 (NPF3)

3.2.1 NPF3 identifies 14 major transport, energy and environmental infrastructure projects that are of national significance to Scotland and are considered by Scottish Ministers to be essential to the delivery of the spatial strategy set out in NPF3. Although NPF3 does not specifically mention the A83 corridor improvements, improving connectivity in the Argyll and Bute region would support in achieving NPF3's aspirations of a Scotland which is a '*connected place*' (p.1). In relation to the NPF3 outcomes of '*a low carbon place*' and '*a natural, resilient place*' 2014, (p.1), construction of a trunk road scheme may result in potential impacts upon the natural environment. However, through appropriate design and construction management, environmental impacts would be likely to be largely temporary, can be appropriately mitigated and would not be expected to have a material impact on the ability of the UK or Scotland to meet respective carbon reduction targets.

3.2.2 The National Planning Framework 4 (NPF4) is being prepared and will replace NPF3 and Scottish Planning Policy (SPP), which will aim to provide closer alignment with wider programmes and strategies for the next 20 to 30 years.

3.3 National Transport Strategy 2 (NTS2)

3.3.1 In February 2020, a new National Transport Strategy (NTS2) was published, outlining an updated vision over a twenty year period for a transport system which is '*sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors*' 2020 (p.4).

3.3.2 The vision is underpinned by four priorities:

- Reducing inequalities through the provision of fair, easy and affordable access to transport services.
- Taking climate action by ensuring Scotland's transport system helps deliver the Scottish Government's net-zero carbon emission target by 2045, adapts to the effects of climate change and promotes the use of sustainable travel options.
- Delivering inclusive economic growth by ensuring Scotland's transport network and services will be effectively integrated with spatial and land use planning and economic development, adapt to the changing requirements of citizens, businesses and visitors, provide reliable journey times, and use new and innovative products, services and technologies.
- Improving health and wellbeing by prioritising the prevention and reduction of incidents, promoting active travel and creating cleaner and greener places and networks within the transport system.

- 3.3.3 Overall, the various corridor options under consideration would support the aims and visions of NTS2. The existing A83 Trunk Road Corridor would fall under the 2nd tier '*Maintaining and safely operating existing assets*' of the strategies '*Sustainable Investment Hierarchy*' (p.44). The other route corridors would fall into the 4th tier of the hierarchy and considered as '*Targeted Infrastructure Improvements*' (p.44), since they would improve the safety of the transport system; a key aim of NTS2.
- 3.3.4 Overall, establishing a safe and secure route corridor for the A83 Trunk Road would support the NTS2's aim of ensuring '*a resilient and reliable transport strategy*' (p.41) by connecting the rural area of Argyll and Bute with the urban areas within the central belt.
- 3.3.5 Argyll and Bute Council has conducted a review of NTS2 and provided recommendations to support economic growth and social inclusion within the region. As part of this, the Council has identified a need for a permanent solution to address landslip risk on the A83 Trunk Road at the Rest and Be Thankful.

3.4 Strategic Transport Projects Review 2

- 3.4.1 The STPR2 will inform transport investment in Scotland over the next 20 years, helping to deliver the objectives and visions for transport set out in NTS2 and aligning with other national plans such as the NPF and the Climate Change Plan.
- 3.4.2 At present, the Covid-19 pandemic restrictions and response have impacted programme progress on STPR2 and as such it is anticipated that there will be a phased approach to the review. This will consist of Phase 1, focusing on recommendations which lock in the positive benefits and travel behaviours of individuals and provide a step change in investment, supporting the priorities and outcomes of the NTS2. Phase 1 will be reported at the end of 2020. Phase 2, which will complete the review, is expected in 2021. While STPR2 is yet to be finalised, Case for Change Reports have been published in draft, which set out the initial appraisals for the 11 STPR2 regions. The Argyll and Bute Case for Change sets out the transport issues and challenges faced by the region, providing further context, including sustainability and travel statistics. Specifically, the report notes that the A83 is a '*vital artery running through Argyll*', and the A83 Rest & Be Thankful often suffers from the effects of weather-related events, such as flooding and landslips resulting in longer journey times for users (Jacobs / AECOM 2020, p.47). Therefore, the decision to review alternative route corridors for Access to Argyll (A83), aligns with the objectives of the Argyll and Bute Case for Change Report.

3.5 Relationship with other PPS

- 3.5.1 SEA consideration of the Access to Argyll and Bute (A83) scheme, within the context of the most relevant PPS, supports the identification of wider environmental protection objectives and issues that the Scheme should take cognisance of, and might support with its delivery.
- 3.5.2 A wide range of national and regional level policies from various PPS need to be considered in the development of the PES and the SEA. The key relevant aspects of these policies are included in Appendix C (Plans, Policies and Strategies Review). A summary of the key environmental requirements and objectives identified through the review is presented in Table 3.1.
- 3.5.3 A review of the associated environmental protection objectives highlights existing and potential problems, as well as opportunities for enhancement and benefits, and has served as an important base upon which to build the SEA objectives and assessment framework.

Table 3.1: Key Environmental Requirements and Objectives from PPS Review

Topic	Key Environmental Requirements
Air Quality and Climatic Factors	<ul style="list-style-type: none"> ▪ Promote sustainable and active travel; ▪ Reduce greenhouse gas emissions to align with net zero targets and national/international climate commitments; and ▪ Enhance wellbeing, health, environment, placemaking and sustainable economic growth through improved air quality.
Population and Human Health	<ul style="list-style-type: none"> ▪ Promote sustainable and active travel; ▪ Improve the quality and connection of transport options to reduce inequality and promote inclusivity; ▪ Improve safety through fewer accidents and casualties; and ▪ Protect citizens from the harmful effects of air pollution.
Biodiversity	<ul style="list-style-type: none"> ▪ Protect and enhance the natural environment, wildlife, its habitats and other natural features, including internationally and nationally designated sites.
Soil	<ul style="list-style-type: none"> ▪ Safeguard and maximise the multiple benefits and functions of carbon rich soils and peat.
Water	<ul style="list-style-type: none"> ▪ Minimise flooding as a result of development; ▪ Protect and enhance the water environment through minimising and mitigating impacts upon physical, chemical and biological quality; and ▪ Safeguard access to ports and harbours and encourage their sustainable growth to maximise their potential to facilitate cargo movement, passenger movement and to support other sectors.
Cultural Heritage / Historic Environment	<ul style="list-style-type: none"> ▪ Minimise detrimental impact upon and support the preservation of the historic environment.
Landscape & Visual Amenity	<ul style="list-style-type: none"> ▪ Protect and enhance the landscape (including the Green Belt and Countryside) due to its multitude of benefits; ▪ Ensure that visual amenity and important views are safeguarded; and ▪ Encourage green infrastructure.
Material Assets	<ul style="list-style-type: none"> ▪ Promote sustainable design and innovation to reduce material consumption; ▪ Minimise waste generation through recycling and reusing materials; and ▪ Maintain and enhance transport infrastructure.

4. Baseline Profile

- 4.1.1 Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the following be identified when undertaking a SEA:
- relevant aspects of the current state of the environment and its likely evolution without the implementation of the plan or programme;
 - environmental characteristics of areas likely to be affected;
 - relevant existing environmental problems; and
 - relevant environmental protection objectives at the international, European or national level (as described in Table 3.1).
- 4.1.2 The full national-level environmental baseline, that describes these aspects, is provided as Appendix C, which also contains discrete sections that summarise the likely evolution of the environmental baseline if the Access to Argyll and Bute (A83) Scheme was not implemented (i.e. the 'do nothing' or 'without plan' scenario).
- 4.1.3 The study area considered is a 2km buffer offset from the route corridors, as illustrated on Image 1.1 and Figure 1 of Appendix B. The study area was considered appropriate for an initial high-level review of potential effects on SEA topic, and shall be extended or reduced as required following the Preliminary Assessment as part of the PES and SEA process. Four council areas and one national park authority were identified within the 2km study area:
- Argyll and Bute Council;
 - Inverclyde Council;
 - North Ayrshire Council;
 - Stirling Council; and
 - Loch Lomond and The Trossachs National Park Authority.
- 4.1.4 Online mapping and publicly available resources have been used to identify environmental constraints and inform the baseline of the study area. Sources used include:
- Ordnance Survey (OS) Maps;
 - Scotland's Environment website;
 - SEPA Water Classification Hub;
 - SEPA Flood Maps;
 - NatureScot SiteLink;
 - National Soil Map of Scotland;
 - Historic Environment Scotland website;
 - Scottish Forestry Open Data; and
 - Local authority GIS data.
- 4.1.5 Internationally and nationally designated sites and key environmental constraints identified from the baseline data collection are shown for each route corridor in Figures 2A – 2K, in Appendix B.
- 4.1.6 All of the SEA topics listed in the SEA Directive have been 'scoped in' to the Access to Argyll and Bute (A83) SEA, as described in Chapter 6. A summary of the key national-level baseline findings for each SEA topic and the inter-relationships between the topics is provided on the following pages.

Climatic Factors

- 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.
- Transport is estimated to account for 25% of Scotland's total energy use, contributing to climate change.
- Scotland's annual rainfall has increased approximately 13% above the average for the early 1900s, and sustained periods of heavy rain have been the main factor in the landslides of recent years that have resulted in the closure of the A83 Rest and Be Thankful.
- 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.

Air Quality

- Poor air quality can have detrimental impacts on human health and quality of life.
- The transport sector is the most significant source of air pollution in the UK.
- Air Quality Management Areas (AQMAs) are designated by local authorities in areas where Air Quality Strategy Objectives in relation to harmful objectives are not (or are unlikely to be) met.
- There are currently no AQMAs within the Argyll and Bute, Stirling, Inverclyde and North Ayrshire Council areas.

Population and Human Health

- Almost half of Argyll and Bute's population live in areas classified by the Scottish Government as 'rural'.
- Air quality and noise from transport could result in significant impacts on human health on the population, particularly the more urban areas affected by the Access to Argyll and Bute (A83) scheme.
- There are a number of areas of high deprivation within the four councils' administrative areas, and these areas would be more vulnerable to changes in the environment.
- Access to services is an important consideration for rural communities and improved connectivity can reduce health inequalities.

Material Assets

- The trunk road network plays an essential role in enabling mobility in the Argyll and Bute region.
- Other key transport assets in the region include The West Highland Railway, National Cycle Network Route 78, and the Dunoon to Portavadie cycle route, and several ferry services.
- There are 11 public recycling centres and 11 commercial waste disposal facilities in the Argyll and Bute region. The primary mineral resources extracted include hard rock, peat, sand and gravels.
- The changing climate is expected to affect material assets in future years due to the predicted increase in annual rainfall for Scotland and more frequent, higher intensity rainfall events.

Water Environment

- Scotland's Water Environment is essential for all life and activity, ranging from drinking water to maintaining habitats and supporting a significant part of the economy.
- Waterbodies within all four council areas experience pressures from different sources such as industry, pollution, man-made barriers and hydroelectricity generation, as well as unknown sources.
- SEPA Flood Maps indicate that the existing trunk road network within the Argyll and Bute, Stirling, North Ayrshire and Inverclyde are currently at risk of flooding from rivers, surface water and coastal waters.
- Key concerns for the water environment in the future include urbanisation and intensive agriculture/ aquaculture resulting in pollution to watercourses, climate change effects resulting in increased rainfall and flooding and water scarcity, and ecological impacts.

Biodiversity, Flora and Fauna

- Biodiversity provides the ecosystem services that are the basis of life, including the regulation of air and water, soil formation, nutrient cycling, flood regulation and pollination.
- There are a number of EU and UK protected ecological sites within the study area, including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Marine Protected Areas (MPAs), Sites of Special Scientific Interest (SSSI) and woodland identified on the Ancient Woodland Inventory (AWI).
- These protected sites support important habitats, such as moorland, bogs and native woodland, and important protected species, including golden eagle, hen harrier, redshank, otter, arctic charr and powan.
- The drive towards Biodiversity Net Gain (BNG), meeting United Nations (UN) sustainability targets in relation to biodiversity and consideration of Natural Capital in policy will be key to the future protection and enhancement of Scottish biodiversity and the wider natural environment.

Soils

- Soil is a key part of our environment and soil degradation can have major implications for air and water quality as well as our climate, biodiversity and economy.
- Soils in Scotland are rich in organic matter and account for over 50% of the UK's soil carbon.
- Across much of Argyll and Bute, soils are predominantly peaty gleys and peaty podzols, with alluvial soils present in the lower valleys connecting to the sea lochs.
- Scotland's soils are under pressure from the effects of climate change and changes in land-use and land management.

Cultural Heritage

- Scotland has a unique and varied selection of irreplaceable cultural heritage resources that contribute to quality of life, the character of the country, cultural identity, education and economy.
- Argyll and Bute, North Ayrshire, Stirling and Inverclyde each have a rich cultural heritage, with large numbers of Listed Buildings, Conservation Areas, Scheduled Monuments and Gardens and Designed Landscapes in the study area.
- There is potential for undiscovered archaeological sites to be located within the study area, given the area contains known archaeological sites and artefacts from the Neolithic, Iron Age, Celtic, early Christian, Viking, medieval and post-medieval periods.
- Inappropriate development, visitors, land-use changes and climate change are key pressures on the historic environment, and can cause direct damage to designated, undesignated and undiscovered assets and/or their setting.

Landscape and Visual Amenity

- Landscapes are a significant part of the country's cultural and natural heritage, contributing to the economy and the wellbeing of the population.
- Part of Loch Lomond and The Trossachs National Park is situated within the study area, as is the Kyles of Bute National Scenic Area, which several route corridors would pass through.
- There are two Wild Land Areas (WLAs) in the study area: Ben Lui WLA and Ben More - Ben Ledi WLA, as well as a number of distinct landscape and seascape character types and areas.
- The main pressures that influence the character of the landscape are land use intensification, incremental development, climate change and climate change adaptation and biosecurity threats.

Key strategic inter-relationships between SEA topics

- **Climate** change and associated extreme weather such as flooding of the **water environment** disrupts the lives of individuals and communities, limiting access to vital services and impacting on the **population's physical and mental health**.
- **Climate** change affects the unique Scottish **landscape** and threatens **cultural heritage** resources through coastal erosion, flooding, and wetter, warmer conditions.
- **Climate** change affects the delicate balance of Scotland's biodiversity and the associated ecosystem services. Changes to rainfall trends and flood patterns (the **water environment**) also affect biodiversity, for example through waterlogging of terrestrial habitats. Increasing temperatures transform Scotland's **biodiversity**; as temperatures increase, distinctive Scottish species may struggle or be lost while invasive non-native species may thrive.
- **Material assets** on the transport network are impacted by **climate** change due to increases in disruptive events such as flooding, landslides, drought, and heatwaves, compromising the **safety** of the infrastructure and people and resulting in journey delays for the **population**. Construction materials also have embodied carbon and their lifecycle contributes to **climate** change.
- **Soil** preserves **cultural heritage** resources and supports the agriculture and forestry industries, which provide resources for the **population**.
- **Soil** quality is key for maintaining **biodiversity**, as the trees and vegetation and the wildlife that feed on them and pollinate depend on it. Soil biodiversity is also important.
- **Soils** may be altered by changes to rainfall patterns, erosion and increased temperatures due to **climate** change, while the release of CO₂ sequestered in peat soils from development contributes to climate change. Peatland conservation is therefore essential for climate change mitigation.
- **Biodiversity** in green space and **landscapes** provides opportunities for people to enjoy and experience nature, enhancing quality of life and improving **health and wellbeing**.
- **Landscape** incorporates **cultural heritage** resources, which help to shape the historic landscape. Cultural heritage and landscape both contribute to a sense of place.
- **Landscape** elements (e.g. trees and woodland) are increasingly recognised and accounted for as Scottish natural capital and as such comprise **material assets** according to SEPA (2018a) guidance.
- **Air** pollution can contribute to **climate** change and also affect **human health** and **biodiversity**, through the deposition of dust and other pollutants on habitats. Habitats can also help to manage air pollution.
- **Water** quality is important for **population and human health** as drinking water and has **biodiversity** value, such as providing habitat for aquatic species. Flooding affects **population and human health, soils, biodiversity, landscape, cultural heritage and material assets**.
- Forestry resources in the study area have significant value for **biodiversity, landscape, soil** (e.g. slope stability) and **climate** change mitigation.
- The Access to Argyll and Bute (A83) scheme will affect multiple SEA topics (see Section 6.5) – cumulative and synergistic effects across the topics will be described in the Environmental Report.

5. Stakeholder Engagement

5.1 Overview

5.1.1 Engaging with Consultation Authorities from the beginning of the SEA process is important as each organisation brings their individual environmental expertise to the assessment process, and ensures that the consultation process undertaken by a Responsible Authority is more robust. This in turn means that the public can gain a better understanding of the likely effect of a plan on the environment and meaningfully contribute to the plan's preparation process by offering an informed view (Scottish Government 2013).

5.1.2 Consultation with the wider public is also undertaken at different stages in the SEA and is crucial for ensuring transparency in the SEA decision-making process.

5.2 Environmental Steering Group

5.2.1 An Environmental Steering Group (ESG) has been established for the Access to Argyll and Bute (A83) Scheme. The ESG members and terms of reference broadly follow the approach taken for other Transport Scotland projects, such as the A9 and A96 dualling programmes and their respective SEAs. The first ESG (virtual) meeting took place on 27th October 2020.

5.2.2 The ESG members comprise the following organisations:

- Transport Scotland;
- Jacobs / AECOM;
- The SEA Statutory Consultation Authorities (NatureScot, HES, SEPA);
- Argyll & Bute Council, Inverclyde Council, North Ayrshire Council, Stirling Council;
- Loch Lomond and The Trossachs National Park Authority;
- Marine Scotland; and
- Scottish Forestry.

5.2.3 Local councils were invited to the ESG based on whether the route corridor 2km study area for the Access to Argyll and Bute (A83) scheme would intersect the council areas. As route corridor options are refined during the PES Preliminary Assessment process, ESG attendance may change if fewer council areas would be affected.

5.2.4 The ESG aims to:

- provide an opportunity for participating organisations to influence corridor option Preliminary Assessment and review emerging design proposals;
- facilitate efficient and effective two-way communication between the A83 project team and the organisations participating in the group; and
- provide an opportunity for the organisations participating in the group to discuss any issues relevant to the PES and SEA.

5.3 Wider Engagement and Public Consultation

- 5.3.1 In relation to the Access to Argyll and Bute (A83) scheme, Transport Scotland published details of the 11 project corridor options on its website on 23rd September 2020 with a request for public feedback on local information and constraints in relation to the corridors by 30th October 2020. The feedback received will inform the progression of DMRB Stage 1 data collection for the PES and SEA, assessment of corridors and Preliminary Assessment work and it is stated on the Transport Scotland website that further updates will be provided as the assessment progresses.
- 5.3.2 Consultation specific to the SEA is required at several stages in line with the Scottish Government’s SEA Guidance (2013). As a minimum, the SEA Consultation Authorities listed in Section 1.4 are consulted on the need for SEA and the scope of the SEA. The findings of the assessment are outlined in the Environmental Report and a public consultation on the plan and the report must be carried out before any plan can be adopted. The principal consultation requirements are outlined in Table 5.1.

Table 5.1: SEA Consultation Requirements ²

Steps in the SEA	Consultation requirements in Scotland
Decision on scope and level of detail of the assessment	Consult Consultation Authorities (5 week statutory minimum).
Environmental report and draft plan or programme	Consult Consultation Authorities (6 - 8 weeks) Consult the public
During preparation of plan or programme	Take account of Environmental Report and opinions expressed (produce second draft of Environmental Report that incorporates these changes)
Adopted plan or programme: statement and measures concerning monitoring	Consult Consultation Authorities Consult the public

- 5.3.3 The SEA Scoping Report, Environmental Report and Post Adoption Statement will each be placed on Transport Scotland’s website for public consultation. They will also be placed on Scotland’s SEA Gateway website:
<https://www.gov.scot/policies/environmental-assessment/strategic-environmental-assessment-sea/>

² Adapted from European Commission guidance, paragraph 7.2, and ODPM (2005): A Practical Guide to the SEA Directive (Fig. 3, p.17).

6. Approach to the Assessment

6.1 Assessment Overview

- 6.1.1 The assessment process will ensure that the SEA influences each stage of the PES and the selection of a preferred corridor. It will facilitate the identification and assessment of reasonable alternatives to meet the scheme objectives, at an early stage. It will identify any significant environmental effects early enough to effectively avoid or mitigate them.
- 6.1.2 The assessment of the route corridor options by the SEA team will take place once any comments from the SEA Scoping Report consultation or from the ESG have been received and any proposed changes to the methodology have been made where necessary.
- 6.1.3 The SEA process will primarily follow Scottish Government (2013) SEA Guidance and guidance for specific environmental topics, where relevant (refer to Section 6.4). The SEA will broadly align with the SEA being produced for STPR2 and the HRA for the Access to Argyll and Bute (A83) scheme. The objectives of the NTS2 and STPR2 will be closely considered, as discussed in Chapter 3: Legislative and Policy Context.

6.2 Constraints and Opportunities Mapping

- 6.2.1 Project Mapper, a Geographic Information Systems (GIS) tool developed by Jacobs, is an interactive mapping which shows significant environmental constraints, such as designated and undesignated sites. The data which feed into the map are gathered from publicly available sources (as outlined in Chapter 4) and through consultation with the Consultation Authorities and other members of the ESG. Project Mapper will be used to determine where environmental constraints are present in relation to the route corridors and where there may be opportunities for enhancement.

6.3 SEA Objectives

- 6.3.1 The SEA will utilise a set of SEA objectives that cover each of the environmental topics scoped into the assessment, as outlined in Table 6.1. The SEA objectives were developed on a national basis for the STPR2 SEA. These objectives have been further developed for the Access to Argyll and Bute (A83) SEA following a comprehensive review of both the baseline issues and policy requirement. They also respond to recent feedback received from the Consultation Authorities (NatureScot, SEPA and HES) and other ESG members.

Table 6.1: Draft SEA Objectives

SEA Topic	SEA Objective
Climatic Factors	<ul style="list-style-type: none"> ▪ 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 ▪ Adapt the transport network to the predicted effects of climate change
Air Quality	<ul style="list-style-type: none"> ▪ Reduce all forms of transport-related air pollution and improve air quality
Population and Human Health	<ul style="list-style-type: none"> ▪ Improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment ▪ Reduce noise and vibration associated with the transport network ▪ Promote, invest in, build and maintain infrastructure to support the development of high-quality places ▪ Improve safety on the transport network

SEA Topic	SEA Objective
Material Assets	<ul style="list-style-type: none"> Promote and improve the sustainable use of the transport network Reduce use of natural resources
Water Environment	<ul style="list-style-type: none"> Protect, maintain and improve the quality of water bodies, wetlands and the marine environment from any direct or indirect impacts from the project, and protect against the risk of flooding
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> Protect, maintain and enhance biodiversity and ecosystem services³, avoiding damage to or loss of designated and undesignated wildlife or geological sites
Soils	<ul style="list-style-type: none"> Safeguard and improve soil quality in Scotland, particularly high value agricultural land and carbon-rich soil
Cultural Heritage	<ul style="list-style-type: none"> Protect cultural heritage resources and their settings.
Landscape and Visual Amenity	<ul style="list-style-type: none"> Protect the landscape and deliver environmental benefits through sustainable and high quality design and place-making

6.3.2 SEA Guidance and specific environmental topic guidance identified in Table 6.3 will be used in conjunction with the SEA objectives to assess the route corridor options and preferred route corridor. The assessment will be summarised for each SEA topic with a colour-coded scoring of each corridor option, as shown in Table 6.2. This will be accompanied by a narrative that provides the rationale to the scoring. The scoring criteria may be refined as the SEA and PES process progresses, for example if new data emerge that are important in impact evaluation. Due to the strategic nature of the SEA, the significant land area covered by the study area and the absence of route alignment and design details at DMRB Stage 1, the assessment and narrative will necessarily be high-level.

Table 6.2: Scoring Criteria for Route Corridor Options

Score	Description	Colour coding and symbol
Minor positive effect	The proposed route corridor has potential for positive environmental effects, for example by providing opportunities for enhancement	+
Minor negative or uncertain environmental effect	The route corridor has potential for a minor negative or uncertain environmental effect.	-
Significant negative effect	The route corridor has potential for significant negative environmental effects..	--

³ Ecosystem Services are the direct and indirect contributions ecosystems (known as natural capital) provide for human wellbeing and quality of life. This can be in a practical sense, providing food and water and regulating the climate, as well as cultural aspects such as reducing stress and anxiety. In fact, the vast number of services provided by ecosystems can be categorised into more manageable groups, of provisional, regulating, cultural, and the slightly more ambiguous, supporting services. These services provided by ecosystems lead to benefits received by humans in the form of security, goods and materials, health and wellbeing (NatureScot, 2020c)

6.3.3 Following the assessment, any potentially negative impacts identified will be discussed with the project team to consider a reasonable alternative in the context of the scheme objectives, and effective mitigation or enhancement recommendations. Recommendations will respond not only to direct impacts but also indirect, secondary and cumulative impacts.

6.3.4 Cumulative impacts will be considered at both intra-plan (the impact of a combination of interventions) and the inter-plan (the impact of the plan alongside other plans and policies). The inter-plan assessment will be undertaken towards the end of the assessment, when the preferred corridor option is available to consider alongside relevant national level policy/strategy, including the National Planning Framework and Climate Change Plan.

6.4 Topic Specific Methodology

6.4.1 During the scoping process it has been recognised that some SEA topics may exert more influence over the route corridor selection than others, due to the unique environmental character and constraints within the study area. As a result, certain topics are considered to present a higher likelihood or intensity of negative impacts across some route corridors. While having the greatest potential for negative impacts, careful consideration of these topics at the early stages also offer increased opportunities for enhancement. These prominent SEA topics have been identified as:

- biodiversity, flora and fauna (impacts on ecology, including designated sites);
- water environment (impacts on flood risk, water quality and hydromorphology);
- cultural heritage (impacts on designated/undesignated cultural heritage resources and/or their setting); and
- landscape and visual amenity (impacts on designated and non-designated landscapes and views).

6.4.2 Further detailed baseline information will be gathered for these topics and presented in the SEA to identify key potential impacts as early in the strategic process as possible. Details of the assessment approach and methods to be adopted for these topics in the SEA are outlined in Table 6.3.

Table 6.3: Assessment approach / methodology for prominent SEA topics

SEA Topic	Applicable guidance	Assessment approach / methodology proposed for SEA
Biodiversity, flora and fauna	<p>Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM 2018)</p> <p>DMRB LD118 (Highways England <i>et al.</i> 2020a)</p> <p>DMRB LA104 (Highways England <i>et al.</i> 2020b)</p> <p>DMRB LA 108 (Highways England <i>et al.</i> 2020c)</p> <p>Communication from the Commission on the Precautionary Principle (European Commission 2000)</p> <p>Assessment of plans and projects significantly affecting Natura 2000 sites:</p>	<p>A high-level desk-based assessment will be conducted to identify potential effects on habitats and protected species as a result of the proposed route corridor options</p> <p>A separate strategic HRA will be conducted to identify any likely significant effects on Natura 2000 sites and Ramsar wetlands as a result of the proposed route corridor options</p> <p>Both assessments will identify biodiversity constraints to be considered in the route corridor option analysis</p>

SEA Topic	Applicable guidance	Assessment approach / methodology proposed for SEA
	<p>Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission 2001)</p> <p>Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the Concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission (European Commission 2007)</p> <p>Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (European Commission 2019)</p>	
Water Environment	<p>Guidance on consideration of water in Strategic Environmental Assessment (LUPS-SEA-GU3) (SEPA 2019a)</p> <p>Strategic Flood Risk Assessment: SEPA technical guidance to support development planning (SEPA 2015a)</p> <p>DMRB LA113 (Highways England et al. 2020d)</p>	<p>Desk-based assessment to:</p> <ul style="list-style-type: none"> ▪ Identify and map fluvial, surface water and coastal flood risk areas. ▪ Identify and provide a high-level assessment of the potential flood risk constraints likely to affect / be affected by the proposed options ▪ Identify WFD classified water bodies which may be affected by the proposed options, providing an indication and pressures which may affect current status ▪ Approximate the number of minor watercourses which may be affected by the proposed route options ▪ Details on the status of any designated waters, such as bathing waters, drinking water protected areas, groundwater, nutrient sensitive areas, and water dependent areas <p>This will identify any such constraints to be considered in the route corridor option analysis and provide an understanding of the key issues and potential impacts associated with the options</p> <p>The outputs from the flood risk elements will detail design and assessment criteria to assist in future stages of the process (DMRB Stage 2 and 3)</p>

SEA Topic	Applicable guidance	Assessment approach / methodology proposed for SEA
Cultural Heritage	<p>HES (2019). Historic Environment Policy for Scotland.</p> <p>HES Managing Change in the Historic Environment guidance notes</p> <p>DMRB LA 106 Cultural Heritage Assessment</p>	<p>The SEA will consider the content of the Historic Environment Policy report (HES, 2019) and its six principal policies in the cultural heritage baseline and assessment of corridor options</p> <p>The HES 'Managing Change...' series of guidance notes will be used to assess impacts on specific heritage asset types where applicable. This is more likely to happen where there is a preferred corridor, due to the strategic nature of the study area for all 11 corridors</p> <p>The approach proposed for cultural heritage in the SEA comprises the following key tasks:</p> <ul style="list-style-type: none"> ▪ Constraints led analysis of a 2km buffer area, using an interactive mapping tool in conjunction with a list of heritage designations already provided by HES. The digital analysis will provide a number count of cultural heritage resources. ▪ Use of a SEA objective for cultural heritage (refer to Section 6.3), supported by underlying 'guide' questions to assess the route corridor options ▪ Commentary on the potential for significant effects on cultural heritage (both direct and indirect) from development of a route corridor ▪ Consideration of any avoidance and mitigation measures required for cultural heritage resources
Landscape and Visual Amenity	<p>Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3) (Landscape Institute and IEM, 2013)</p> <p>Fitting Landscapes: Securing more Sustainable Landscapes (Transport Scotland, 2014)</p> <p>DMRB LA107 Landscape and Visual Effects (Highways England <i>et al.</i>, 2020e)</p>	<p>Desk-based assessment focussing on nationally and regionally important landscapes, seascapes and views, taking account of receptors' susceptibility to change of the type proposed, value and magnitude of impact. The national Landscape Character Assessment of Scotland and the Seascape/Landscape Assessment of The Firth of Clyde (including sensitivity assessment) will be used to help establish the potential for significant landscape and visual effects</p> <p>Assessment of the landscape and visual effects of change in marine and coastal environments will consider the relationship between land and sea in coastal areas</p>

6.5 Inter-relationships between SEA topics

6.5.1 As set out in the Scottish Government's SEA Guidance (2013), the inter-relationship of environmental effects between the topics shall be considered within the SEA. The Guidance states that *'When considering interrelationships and secondary effects, the assessment would only have to consider the effects that can reasonably be attributed to the plan. Interactions arising from external factors, beyond the control of the plan, do not need to be included.'* Table 6.4 sets out the inter-relationship of environmental effects that could reasonably arise as a result of the scheme and will be explored further in the SEA.

Table 6.4: Inter-relationship between SEA topics

	Climate	Air quality	Population and human health	Material assets	Water environment	Biodiversity, flora and fauna	Soils	Cultural heritage	Landscape and visual amenity
Climate									
Air quality	✓								
Population and human health	✓	✓							
Material Assets	✓		✓						

	Climate	Air quality	Population and human health	Material assets	Water environment	Biodiversity, flora and fauna	Soils	Cultural heritage	Landscape and visual amenity
Water environment	✓		✓	✓					
Biodiversity, flora and fauna	✓	✓	✓	✓	✓				
Soils	✓		✓	✓	✓	✓			
Cultural heritage	✓		✓		✓		✓		
Landscape and visual amenity	✓		✓	✓	✓	✓	✓	✓	

6.6 SEA Environmental Report

- 6.6.1 Following the SEA assessments, relevant findings and recommendations will be recorded in summary form, for inclusion in the SEA Environmental Report, with assessment matrices provided in appendices to aid transparency.
- 6.6.2 In line with the requirements set out in the Environmental Assessment Act 2005, the Environmental Report will contain:
1. An outline of the contents and main objectives of the Access to Argyll and Bute (A83) scheme, and its relationship (if any) with other plans and programmes.
 2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the Access to Argyll and Bute (A83) scheme.
 3. The environmental characteristics of areas likely to be significantly affected.
 4. Any existing environmental problems which are relevant to the Access to Argyll and Bute (A83) scheme, including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds and Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (as last amended by Council Directive 97/62/EC).
 5. The environmental protection objectives, established at international, Community or Member State level, which are relevant to the Access to Argyll and Bute (A83) scheme, and the way those objectives and any environmental considerations have been taken into account during its preparation.
 6. The likely significant effects on the environment, including:
 - (a) on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape; and the inter-relationship between these issues;
 - (b) short, medium and long-term effects;
 - (c) permanent and temporary effects;
 - (d) positive and negative effects; and
 - (e) secondary, cumulative and synergistic effects.
 7. The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the Access to Argyll and Bute (A83) scheme (mitigation measures).
 8. An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of expertise) encountered in compiling the required information.
 9. A description of monitoring measures envisaged, focusing on any significant environmental effects identified. A draft monitoring framework, including indicators, will be provided in the Environmental Report, but will be finalised in the Post Adoption Statement, as described in Section 3.6.
 10. A non-technical summary of the key findings of the SEA.

6.7 Approach to Mitigation and Monitoring

- 6.7.1 The environmental assessment will aim to prevent, reduce or offset any significant adverse effects as far as possible, before mitigation measures are proposed. Undertaking the SEA process alongside the PES development process will help ensure that modifications can be made at the strategic level, i.e. via alternatives and identifying issues which can be addressed through other relevant PPS policies/strategies. Where location-specific mitigation requirements are identified, these will be described with appropriate recommendations for implementation at a project level.
- 6.7.2 In addition to mitigation measures, recommendations for PES and corridor enhancement opportunities will be provided wherever possible.
- 6.7.3 The mitigation measures and enhancement opportunities will consider:
- the environmental baseline data provided in Appendix D;
 - the environmental requirements emerging from the PPS review, provided in Table 3.1;
 - the SEA Objectives provided in Table 6.1: Draft SEA Objectives;
 - feedback received from Transport Scotland's online public consultation described in Section 5.3;
 - key issues and opportunities identified during the continuing development of the Access to Argyll and Bute (A83) PES, SEA and HRA; and
 - ongoing feedback from the SEA Consultation Authorities.
- 6.7.4 A draft, high-level monitoring framework will be developed as part of the Environmental Report and will be finalised within the Post Adoption Statement. The monitoring framework will also be discussed and agreed with the SEA Consultation Authorities.

7. Next Steps

7.1 Consultation and Milestones

- 7.1.1 Comments on the scoping report and the proposed approach to SEA can be provided by email to: Sinead.Thom@transport.gov.uk and Steve.Isaac@jacobs.com; or by post to: Transport Scotland, Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF.
- 7.1.2 Transport Scotland seeks comments on the following:
1. Does the review of key relevant PPS (Appendix C) provided in this report adequately address all relevant strategic environmental issues related to the Access to Argyll and Bute (A83) scheme?
 2. Do the environmental constraints plans in Appendix B and the baseline evidence base (Appendix D) identify all relevant environmental issues which should be considered for the Access to Argyll and Bute (A83) scheme or do additional issues need to be considered?
 3. Does the methodological approach (Chapter 6), including the proposed Assessment Framework of SEA objectives (Section 6.3) provide an appropriate basis to undertake the SEA of the Access to Argyll and Bute (A83) scheme as it develops?
- 7.1.3 The specific dates are yet to be confirmed for the remaining SEA stages after scoping. However, the indicative timeframes for the key SEA milestones are as follows:
- Appraisal of interventions/SEA assessment and drafting of Environmental Report – Spring 2021;
 - Consultation on Environmental Report – Spring / Summer 2021; and
 - Adoption – Autumn 2021.
- 7.1.4 Timescales for consultation will be discussed with the ESG members outlined in paragraph 5.2.2 to allow sufficient notice for feedback to be provided.

Appendix A. Screening Report

[Refer to Appendix A document]

Appendix B. Environmental Constraints and Opportunities Figures

[Refer to Appendix B drawings]

Appendix C. Plans, Policies and Strategies Review

[Refer to Appendix C document]

Appendix D. Baseline

D.1 Climatic Factors

D.1.1 Baseline

There is consensus in the scientific community that anthropogenic climate-change poses an ongoing threat to the planet. The uninhibited consumption of fossil fuels since the industrial revolution has steadily increased the atmospheric concentration of greenhouse gases to unprecedented levels. This increasing concentration has amplified the 'greenhouse effect' where the carbon dioxide (CO₂) traps heat from the sun, resulting in higher average global temperatures. A minor increase in global temperature threatens to imbalance delicate tipping points, causing uncontrollable and irreversible changes to ecosystems, such as melting permafrost that would release significant amounts of methane and the melting of polar ice caps, causing sea-level rise.

Transport is estimated to account for 25% of all Scotland's total energy use, with the majority of this arising from road transport and fossil fuels (Scottish Government 2017a). According to the NTS2, published in 2020, the largest source of transport emissions is cars at 40%, followed by aviation and shipping which are both 15%. In addition, 25% of emissions were generated by a combination of LGVs & HGVs. The proportion of single occupancy car trips also shows an underlying increasing trend, with 66% in 2018 compared with a figure of 65% in 2013 and 60% in 2008 (Transport Scotland 2020).

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.

According to the Argyll and Bute Council Woodland and Forestry Strategy (Argyll and Bute Council, 2011, page 5) woodlands in Argyll and Bute currently store around 11 million tonnes of carbon and sequester an additional 0.6 million tonnes per annum. This compares with annual emissions of more than 1.1 million tonnes per annum for the whole of Argyll and Bute, based on average Scottish figures, illustrating the importance of woodland and forestry in the region and the interrelationship with climate.

The baseline for climatic factors is not considered to differ between the 11 route options. However, the existing route corridor and northern route corridors are considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in these areas.

D.1.2 Evolution of the Baseline and Trends

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 (for which an update is expected in December 2020) have since been implemented to facilitate and encourage the required reduction in emissions by 2045. Key proposals include vehicle technological improvement (increased uptake of electric and low carbon vehicles), alternative fuels, and demand management and behaviour change with a shift towards sustainable travel modes (walking, cycling and public transport); all of which will reduce emissions from the transport sector over the coming decades.

However, the effects of climate change are expected to continue to exacerbate even as Scotland transitions to a low-carbon economy. 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 summer heat waves, extreme temperatures and drought, as well as an increase in the frequency and intensity of extreme precipitation events, are also expected.

Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents. As noted above, the existing corridor and northern route corridors are considered to be more vulnerable to such impacts due to the steep topography in the area, and the frequency and scale of climate-related incidents are expected to worsen.

A key component of Scotland's climate change strategy is to encourage a shift to more sustainable forms of transport, away from private vehicles. The Covid-19 pandemic has caused a dramatic fall in travel generally. This has included a decline in the use of public transport due to the inability to socially distance. It may take several years for public transport demand to return to pre-pandemic levels, which may hamper efforts to reduce private vehicle use. The long-term trends for public transport and vehicular travel remain uncertain, and it is currently unclear whether there would be an increase or reduction in greenhouse gases as a result.

D.2 Air Quality

D.2.1 Baseline

Poor air quality can have detrimental impacts on human health and quality of life. Air pollution stems from the release of substances into the atmosphere from a variety of sources, including organic and man-made sources. Regulations on pollutant sources and advancements in combustion technology have led to Scotland currently experiencing the best air quality since pre-industrial revolution times. Despite this, air quality is still a concern for many in the country, particularly those living in urban and industrial areas. Poor air quality can result in human health conditions such as asthma, respiratory problems and cardiovascular disease (Royal College of Physicians 2016), discussed further below in A.3: Population and Human Health. The UK government estimates that air pollution reduces the life expectancy of every person in the UK by 7-8 months, with related costs of up to £20 billion to the economy annually (Air Quality in Scotland 2019).

Transport is a significant contributor to nitrogen oxide (NO_x) and particulate matter (PM₁₀ and PM_{2.5}) emissions and the transport sector is the most significant source of air pollution in the UK. Transport generates just over one-sixth of Scotland's total particulate matter and over one-third of the total emissions of nitrogen oxides. The majority of these emissions are caused by road transport. Emissions of NO_x from road transport are reducing but not at the expected rate.

A set of Air Quality Standards and Objectives have been developed in Scotland for several pollutants of concern for human health (Scottish Air Quality 2020a). Air Quality Management Areas (AQMAs) are designated by local authorities in areas where Air Quality Strategy Objectives in relation to harmful objectives are not (or are unlikely to be) met. Henceforth, local authorities are required to develop and implement a plan to improve air quality in the AQMA (Scottish Air Quality 2020b).

In June 2020 Argyll and Bute Council published their 2020 Air Quality Annual Progress Report (APR), which set out that air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland. Modelling results for sources of nitrogen dioxide and fine particulates in the APR illustrate that background concentrations are very low, with the traffic considered as the main potential source of pollution in the absence of industry hotspots in the region.

The Argyll and Bute APR did not identify any areas where air quality objectives may be under threat and where specific actions required to improve air quality. The Argyll and Bute APR states that: *'Argyll and Bute Council currently does not have any AQMAs and this current and past annual assessments suggest that it will be very unlikely to be necessary to declare any AQMAs in the future based on current air quality objectives.'* (Argyll and Bute Council 2020a).

The Stirling Council APR was produced in June 2019 and states that no exceedances of air quality objective have been recorded through monitoring, and it is unlikely that the objectives will be exceeded in the near future (Stirling Council 2019). There are no AQMAs currently present in the Stirling, Inverclyde and North Ayrshire Council areas. While these council areas are generally more urban than Argyll and Bute, there are no reported exceedances of air quality objectives which indicates these areas have a good standard of air quality.

D.2.2 Evolution of the Baseline and Trends

Air quality in Scotland has improved considerably over the last few decades. However, environmental trends suggest that, without mitigation, concentrations of air pollution may increase in the future, particularly in urban or industrial areas. Climate changes, such as higher humidity, could also potentially exacerbate the risks of worsening air quality to human health.

While poor air quality may be a national concern in the coming years, based on the above information from the Argyll and Bute Council ARP and Stirling Council ARP, air quality is not a key concern for the council areas in the foreseeable future. However, Stirling, Inverclyde and North Ayrshire may be more sensitive to changes in air quality due to being more urbanised than Argyll and Bute.

The decarbonisation of transport and reducing vehicle emissions as discussed in A.1: Climatic Factors should support wider Scottish Government objectives, particularly those seeking to improve health, through improving air quality and encouraging a modal shift away from private vehicle usage towards public transport and active travel.

D.3 Population and Human Health

D.3.1 Baseline

Population

As shown in Table D3.1, while Scotland's overall population increased between 2018 and 2019, Argyll and Bute, Inverclyde, North Ayrshire and Stirling Council areas all experienced a population decline during this same period. At -0.5%, Argyll and Bute experienced the greatest population decline amongst the 32 Scottish local authorities, while Inverclyde and North Ayrshire experienced the second greatest population declines at -0.4%.

As with Scotland as a whole, Argyll and Bute, Inverclyde, North Ayrshire and Stirling Council areas have ageing populations. Between 2009 and 2019, the percentage of those aged 65 and over increased by 18%, 13%, 22% and 21% in Argyll and Bute, Inverclyde, North Ayrshire and Stirling respectively, compared to 20% nationally (National Records of Scotland 2019a).

Table D3.1: Population Statistics for Scotland and Argyll and Bute, Inverclyde, North Ayrshire and Stirling Council areas (National Records of Scotland 2019a-e, 2020)

Location	Population	Average Population Density (persons per hectare)	Population Change 2018 to 2019	% Population Aged 0 to 15 Years	% Population Aged 16 to 64 Years	% Population Aged 65 and over
Scotland	5,463,300	0.65	+25,200 (+0.5%)	17	64	19
Argyll and Bute	85,870	0.1	-390 (-0.5%)	15	59	26
Inverclyde	77,800	4.9	-350 (-0.4%)	16	63	21
North Ayrshire	134,740	1.5	-540 (-0.4%)	17	61	23
Stirling	94,210	4.3	-120 (-0.1%)	16	64	19

The largest settlement in Argyll and Bute is Helensburgh, which has a population of 15,610 (National Records of Scotland 2016). 48.4% of Argyll and Bute's population live in areas classified by the Scottish Government as 'rural', with 43% living in areas classified as 'remote rural' and 4.2% living in areas classified as 'accessible rural' (Scottish Government 2016). The largest settlement in Inverclyde is Greenock which has a population of 44,248 (National Records of Scotland 2011). Inverclyde is entirely located on the Scottish mainland, with 158 km² stretching along the south bank of the estuary of the River Clyde. The largest settlement in North Ayrshire is Irvine which has a population of 34,390 (National Records of Scotland 2011). North Ayrshire covers an area of around 886 km², with 441 km² on the mainland and 445 km² comprising of offshore islands (North Ayrshire Council 2017). The largest settlement in Stirling is the city of Stirling which has a population of 36,140 (National Records of Scotland 2011). Stirling is one of Scotland's largest council areas, covering an area of approximately 5,664 km² of the Scottish mainland, including part of the southern highlands (National Records of Scotland 2019a).

Human Health

Exposure to air pollution can exacerbate health inequalities between different demographics. Air quality is explored as a standalone topic in A.2: Air Quality. However, there are significant impacts from air quality on human health. For example, short-term increases in PM levels are associated with acute health effects:

- increased use of medication (e.g. asthma inhalers);
- days off work and days with restricted activity;
- hospital admission for lung and heart diseases; and
- risk of death from asthma, COPD, heart disease (Ramsay 2019).

The long-term risks of exposure to PM_{2.5} comprise:

- increased deaths from all causes, heart attack, chronic lung disease, stroke and lung cancer; and
- estimated reduction in average life expectancy of 3-4 months in Scotland (COMEAP 2010).

Reducing traffic related air pollution can improve peoples' sense of well-being as well as physical health and the quality of the environment (European Commission 2019). Transport is a significant contributor to poor air quality in urban areas and although emissions from transport have declined over the years, the rate of the decline has started to level off (Scottish Environment, undated). Due to several common sources, most notably road traffic in urban areas, there is also a close relationship between air quality and environmental noise (Scottish Government 2015a).

Environmental noise is defined as 'unwanted or harmful outdoor noise created by human activities, including noise emitted by means of transport, road traffic, rail traffic, and from sites of industrial activity' (Transport Scotland 2018). Noise from transportation is the biggest source of environmental noise in Scotland, and population exposure to environmental noise have been linked to adverse health effects. Annoyance and sleep disturbance are the key direct impacts on the population. Evidence also suggests that high levels of noise nuisance and vibration cause by traffic and activities associated with construction works can result in indirect effects such as increased aggression, and impaired communication (WHO 1995).

Deprivation

People living in deprived areas in Scotland are more likely to die early from disease and have more years of ill health (Public Health Scotland 2019). The Scottish Burden of Disease Study (2016) Deprivation Report noted that more deprived areas have double the rate of illness or early death than less deprived areas, and that people living in Scotland's wealthiest areas are more likely to live in ill health than die prematurely due to ill health, and that the number of years of life affected by ill health are much fewer (Public Health Scotland 2019). Those living in deprived areas are also more vulnerable to the effects of environmental change due to the prevalence of pre-existing health problems and inequities amongst these communities.

The Scottish Index of Multiple Deprivation (SIMD) 2020 is a tool used to identify areas where poverty and inequality exist within Scotland to allow targeted investment in these areas. Scotland's data zones are ranked from most to least deprived using 38 different indicators of deprivation across seven 'domains' comprising of income; employment; health; education, skills and training; geographic access to services; housing and crime.

Of Argyll and Bute's 125 data zones, 13 were identified as being amongst the 20% most overall deprived data zones in Scotland (Argyll and Bute Council 2020b). Under the geographic access to services domain, which considers access deprivation in terms of drive times and public transport times to a selection of basic services such as schools, GP surgeries, retail centres and petrol stations, 52 of Argyll and Bute's data zones were identified as being within the 20% most access deprived data zones in Scotland (Argyll and Bute Council 2020b). Of North Ayrshire's 186 data zones, 52 were identified as being amongst the 15% most overall deprived data zones in Scotland (North Ayrshire Council 2017). Of Inverclyde's 114 data zones, 51 were identified as being amongst the 20% most overall deprived data zones in Scotland (Inverclyde Council 2020). SIMD 2020 also identified the most deprived data zone in Scotland as Greenock Town Centre in Inverclyde (Inverclyde Council 2020). Of Stirling's 121 data zones, 15 were identified as being within the 20% most overall deprived data zones in Scotland (Scottish Government 2020).

There is a link between areas of lower socio-economic status and higher levels of obesity, which has harmful effects on health such as diabetes, heart disease and some cancers. Scotland's obesity rates continue to be amongst the highest in the developed world and are a significant public health issue (Scottish Government 2017b). In particular, women and children in the most deprived areas are affected by more extreme obesity (Public Health Scotland 2018). In 2017, 65% of individuals in Scotland were overweight or obese (Scottish Government 2017c). In North Ayrshire, this figure was higher than the national average at 72% (Scottish Government 2017c).

Access to active travel

Access to active travel is an important factor in combating obesity as well as having beneficial impacts on mental health and wellbeing. Existing walking and cycling routes in the vicinity of the study area for the route corridors are shown on Figure 3. In 2013 to 2016, the proportion of Scottish adults meeting physical activity guidelines was 64% (Scottish Government 2017b). The second lowest proportion of Scottish adults meeting these guidelines was observed in North Ayrshire (59%) (Scottish Government 2017b). There are a range of factors that can impact on levels of exercise, and these include the built environment and transport systems that encourage active living and regular physical activity.

Access to services

The 11 route corridor options pass through predominantly rural areas, as well as some villages and towns. Access to integrated transport infrastructure is a key concern within rural communities. Increasing connectivity between modes of transport can also provide a number of benefits, such as reducing congestion and supporting more sustainable modes of transport. Barriers to accessing healthcare is an influencing factor for causing health inequalities. Affordability and adequate provision of public transport, as well as integrated public transport, act as barriers to those on lower incomes or in certain areas accessing healthcare facilities. In the rural regions, there is greater reliance on private vehicles due to a lack of regular public services and road travel being the only method of transport.

Recreation and Tourism

In March 2015, the Scottish Government published 'Scotland's National Marine Plan' (Scottish Government 2015b) which set out a number of objectives and marine planning policies and plans in order to provide important context for planning and decision making (Scottish Government 2015b). The plan also identified the most popular recreational activities for key areas across Scotland. In Argyll and Bute, these were identified as recreational sea angling, sailing, kayaking, wildlife watching, diving, windsurfing, personal watercraft, coastal walks and cruising. In Inverclyde, the plan noted that popular recreational activities include sailing, kayaking, wildlife watching, surfing, personal watercraft, coastal walks and cruising. Popular recreational activities in North Ayrshire were identified as sailing, kayaking, wildlife watching, surfing, windsurfing, personal watercraft and coastal walks and, in Stirling, diving and personal watercraft were identified as being popular recreational activities within the region. These recreational activities attract visitors from all over the world to Argyll and Bute, Inverclyde, North Ayrshire and Stirling each year, and are therefore of significant economic importance to local areas. Scotland's National Marine Plan also noted that some activities, such as recreational sea angling, have experienced declines in participation in recent years, possibly due to jetties and piers which have fallen into disrepair. Other factors which may influence participation in recreational activities include the provision of shared support facilities/passenger ferries/boat tours, access to car parking/harbour facilities/quaysides and the identification of safe sites and seasons for specific activities.

Woodland and forests also provide opportunities for recreation and tourism. In Argyll and Bute, several woodlands located close to settlements are regularly used for recreational purposes, including Bishop's Glen, Duchess Wood, Dunollie woodlands and Kilmory Woodland Park (Argyll and Bute Council 2011). Nationally-renowned gardens and arboreta also attract significant numbers of visitors to the area each year, and the enjoyment of Argyll and Bute's woodlands is a quintessential part of the tourism experience (Argyll and Bute Council 2011). Access to woodlands and outdoor green space provide opportunities for people to experience and enjoy nature regularly, which is important for human health and quality of life.

Safety

Currently, accidents or incidents (e.g. roadworks, landslips, flooding) occurring on any part of the A83 in Argyll and Bute can effectively cut off parts of the region for a period, significantly impacting residents, business and visitors due to the significant length of alternative routes and the travel times involved.

Recent landslides on the A83 Rest and Be Thankful pose a public health and safety risk to vehicle travellers along the route. It is expected that the Access to Argyll and Bute (A83) scheme would improve safety on the road network. One of the aims of the proposed improvements is to reduce the risk of vehicle travellers encountering landslides on the A83 by providing an alternative, safer route.

D.3.2 Evolution of the Baseline and Trends

Between 2018 and 2028, the populations of Argyll and Bute, North Ayrshire and Inverclyde are projected to decrease while the populations of Stirling and Scotland as a whole are projected to increase. By 2028, Scotland's population is expected to increase from 5.4 million to 5.5 million (+1.8%). By mid-2028, Argyll and Bute's population is projected to decrease by 5.9%; Inverclyde's population is projected to decrease by 6.1% and North Ayrshire's population is projected to decrease by 3.1%, while Stirling's population is projected to increase by 4.8% (National Records of Scotland 2019a, 2019c, 2019d, 2019e).

Barriers to health equality will persist unless action to remove them is taken – for example, relating to accessing health care services or affordable public transport. Improvements to local and strategic roads, such as those proposed for the Access to Argyll and Bute (A83) scheme, will be key for ensuring the future reliability of the transport network.

Climate change and associated extreme weather such as flooding of the water environment disrupts the lives of individuals and communities, limiting access to vital services and impacting on the population's physical and mental health; these events are expected to become more commonplace in the future. Coastal erosion caused by climate change could render existing settlements uninhabitable in the future, resulting in population displacement and potentially a lack of adequate housing. Such impacts could potentially lead to social tensions and affect human health. Existing social and health inequalities could be exacerbated as a result of climate change unless action to prevent this is taken.

At the time of writing, the impact of the ongoing Covid-19 pandemic on the health baseline and trends for Argyll and Bute, Inverclyde, North Ayrshire and Stirling Councils is uncertain, but will be taken into account in future assessments if more information becomes available.

D.4 Material Assets

D.4.1 Baseline

Material assets is a wide-ranging topic, considering the natural and built environment, including housing and critical infrastructure. Material assets in the environmental sense includes finite mineral, aggregate and fossil fuel resources. In relation to Material Assets, the wider STPR2 SEA aims to promote and improve the sustainable use of the transport network via the following means:

- support improvements to transport technology, interchanges and timetabling;
- plan for future capacity of public transport, taking demographic and societal changes into account;
- promote sustainable use and management of existing infrastructure; and
- ensure transport infrastructure contributes to the circular economy.

The mode of travel people choose influences the number of vehicles on the road and therefore the performance and reliability of the asset (i.e. road). Car usage remains the principal mode of transport in Scotland, with 63% of adults recording a journey by car at least once a week and 70% of the adult population holding a driving licence. The route corridors being considered are primarily located in rural areas with the trunk road network playing an essential role in enabling mobility in the Argyll and Bute region. The West Highland Railway is located within the region, providing a rail link from the central belt to Helensburgh, Oban and Mallaig with stations at settlements along the route.

National Cycle Network Route 78 is the key active travel route in the region to the west of the study area, linking

Lochgilphead in the south to Oban via Loch Awe. The Dunoon to Portavadie is a 29-mile cycle route across the Cowal Peninsula in the region, linking the Firth of Clyde and Portavadie ferry terminal. The study area also includes some of Scotland's Great Trails. The John Muir Way, Loch Lomond and Cowal Way, Ayrshire Coastal Path, Forth and Clyde/ Union Canal Towpath, the Three Lochs Way and the West Island Way are all either within or close to the study area (Scotland's Great Trails, 2020).

Within the Argyll and Bute region, there are 11 public recycling centres and 11 commercial waste disposal facilities. The primary mineral resources extracted include hard rock, peat, sand and gravels. The Argyll and Bute Forestry Strategy highlights the important contribution that forests make to the area's natural and cultural heritage (Argyll and Bute Council 2011). Forests and woodland cover over 30% of the land area in the region, providing social and environmental benefits. Forestry plays an important role in the economy of the region, providing jobs in rural areas and supporting businesses. The native and non-native woodland also supports a wide range of flora and fauna.

The Argyll and Bute region has 800 operational renewable energy developments with a combined electricity output of 1.5GW. Micro hydro schemes account for the majority of this, contributing 1.15GW of the renewable electricity generated. Additionally, there are 15 operational commercial windfarms with a combined output of 346MW and there are seven small scale community windfarms with a combined capacity of 2.4MW.

Route corridors 4, 5, 6, 7, 8, 9, 10 and 11 include fixed crossings over waterbodies which will require consideration for shipping clearance and navigation. There are several ferry services in the region including connections from Greenock to Dunoon and Wemyss Bay to Rothesay in the Firth of Clyde. Otter Ferry on the Cowal Peninsula links to Tarbet across Loch Fyne. HMNB Clyde is located on Gare Loch north of Helensburgh which will require consideration of maritime navigation for the routes that include crossings of the Firth of Clyde. The STPR2 environmental objectives include safeguarding and improving the provision and connectivity of ferry services to islands and remote island communities. Scotland's National Marine Plan (Scottish Government 2015b) introduces a framework for maritime spatial planning and aims to promote sustainable development of marine areas and the sustainable use of marine resources. The plan sets out legislative requirements for regional plans including; assessing the current condition of the marine areas in the region, summarising the pressure and impacts on human activity, setting economic, social, marine and climate change objectives and stating policies for sustainable development of the region (Scottish Government 2015).

Flooding poses the greatest long-term climate related risk to the performance of the physical road infrastructure which is considered within the Material Assets topic, but the growing risks posed from heat, water scarcity and slope instability caused by severe weather could also prove significant (Committee on Climate Change, 2017). Road and rail transport are generally more vulnerable to a changing climate than air and water transport and flooding is anticipated to be the greatest threat. The existing corridor has experienced significant disruption in recent years from landslides following prolonged rainfall which has led to many forced and precautionary closures, particularly during August 2020. The frequency of closures is reducing the reliability of mobility in the region, having detrimental impacts to the rural economy and creates a high safety risk for users, requiring continuous monitoring of conditions and weather forecasting.

Several of the routes considered require the construction of significant fixed crossings. There is also the need to construct new carriageways and upgrade existing roads to the required standard. This infrastructure would have considerable requirements for materials, aggregates and energy for manufacture and construction. This is linked with the 'climatic factors' topic due to the energy and carbon intensive nature of infrastructure construction.

D.4.2 Evolution of the Baseline and Trends

The changing climate is expected to have an effect on material assets in future years. An increase in annual rainfall for Scotland and more frequent, higher intensity rainfall events poses a risk to the transport network from slope instability and resulting landslides.

A key component of Scotland's climate change strategy is to encourage a shift to more sustainable forms of transport, away from private vehicles. The Covid-19 pandemic has caused a dramatic fall in the use of public transport due to the inability to physically distance. It may take several years for public transport demand to return to pre-pandemic levels, which may hamper efforts to reduce private vehicle use, putting greater pressure on the road network from congestion.

D.5 Water Environment

D.5.1 Baseline

Scotland's Water Environment is essential for all life and activity, ranging from drinking water to maintaining habitats and supporting a significant part of the economy. Scotland has approximately 19,000km of coastline, incorporating 470km² of fishing zones that underpin coastal fishing communities. Water is also used for industrial processes such as whisky production, hydroelectricity generation and recreational activities. Scotland's rivers and lochs contain 90% of the entire UK's freshwater and cover 2% of the land area.

Legislation and policies relating to the Water Environment are implemented through European Union legislation, transposed into Scottish Law. The Water Framework Directive (WFD) (Directive 2000/60/EC) was transposed into Scottish law under the Water Environment Water Services (WEWS) Act 2003. Under the WFD, new activities within or near to the water environment must not cause deterioration or prevent the achievement of Good Status or Good Ecological Potential (for artificial or heavily modified water bodies). The WEWS Act is delivered through the production of River Basin Management Plans (RBMP), which detail the current condition of water bodies in the Plan area and set objectives for improvement to Good overall status or Good Ecological Potential. Surface water bodies include rivers, lochs, transitional and coastal waters.

Within the Argyll and Bute Council area, there are 283 surface water bodies classified under the WFD (SEPA, 2015b). For the latest available classification year (2018), 189 of these water bodies achieved at least Good overall status or Good ecological potential, with the remaining 94 failing to achieve Good overall status or Good ecological potential (SEPA 2018b). In the latest RBMP for the Scotland river basin district (Natural Scotland 2015), the key pressures affecting overall status for surface water bodies in the Argyll and Bute Council area were Hydroelectricity generation (~30%), Man-made barriers to fish migration (~11%) and Use by other industries (~11%) (SEPA 2015b).

Within the Stirling Council area, there are 110 surface water bodies classified under the WFD (SEPA, 2015b). For the latest available classification year (2018), 54 of these water bodies achieved at least Good overall status or Good ecological potential, with the remaining 56 failing to achieve Good overall status or Good ecological potential (SEPA 2018b). In the latest RBMP for the Scotland river basin district (Natural Scotland 2015), the key pressures affecting overall status for surface water bodies in the Stirling Council area were Man-made barriers to fish migration (~20%), Hydroelectricity generation (~17%), Modifications to physical condition (~16%) and Rural diffuse pollution (~16%).

For the latest available classification year (2018), five of these water bodies achieved at least Good overall status or Good ecological potential, with the remaining seven failing to achieve Good overall status or Good overall potential (SEPA 2018b). In the latest RBMP for the Scotland river basin district (Natural Scotland 2015), the key pressures affecting overall status for surface water bodies in the Inverclyde Council area were Man-made barriers to fish migration (~25%) and Use by other industries (~25%).

In all council areas within the study area, a large proportion of pressures (~13-25%) affecting overall status for water bodies was also attributed to unknown sources (SEPA 2015b), which is often where the pressure cannot be attributed to a single sector or source (SEPA 2017).

Approximately 35 water bodies classified under the WFD have the potential to be affected by the route options, including 19 rivers, two lochs, two transitional water bodies and 12 coastal water bodies. In addition, up to 270 minor watercourses have the potential to be affected by the route options; however, for some options this figure is significantly lower.

SEPA Flood Maps show areas which are likely to flood from rivers, surface water and coastal waters in Scotland (SEPA 2019b). A review of the Flood Maps indicates that the existing trunk road network within the Argyll and Bute, Stirling, North Ayrshire and Inverclyde are currently at risk of flooding from rivers, surface water and coastal waters. Existing flood risk to the trunk road network relevant to the route corridors can be characterised as follows:

- the existing A83 corridor is at river flood risk from Croe Water;
- the existing A814 is at coastal flood risk from Gare Loch;
- the existing A815 is at river and coastal flood risk from Milton Burn and Balgaidh Burn (at Dunoon), Little Eachaig River/Cruach Neuran Burn, River Cur, River Finart, Kinglas Water, Holy Loch, Loch Striven, Loch Eck and Loch Fyne;
- the existing A817 is at river flood risk from Fruin Water;
- the existing A844 is at river and coastal flood risk from a lade from Loch Fad (at Rothesay) and from Loch Striven;

- the existing A886 is at river and coastal at the River Ruel, Tamhnich Burn, Loch Tarsan, Loch Fyne, and on the Isle of Bute;
- the existing A880 and B833 are at coastal flood risk from Loch Long South; and
- the existing B836 is at river and coastal flood risk from Little Eachaig River/Cruach Neuran Burn and Loch Striven.

For those route corridors to the north through Glen Kinglas and Glen Fyne where there is no existing trunk road network, there is existing fluvial flooding risks from the Kinglas Water, the River Fyne and Allt an Lairige watercourses.

Route corridors which require significant new crossing structures over transitional and coastal waters, such as those improving connections between North Ayrshire, Inverclyde, Helensburgh, Cowal and Kintyre will not only need to consider the direct coastal flood risk to the crossing itself and coastal, fluvial and surface water flood risk to immediate road infrastructure, but the existing flood risk to the wider trunk road network on which they may rely.

Within the Argyll and Bute, Inverclyde and North Ayrshire Council areas, there are eight designated bathing waters at Luss Bay, Lunderston Bay, Ettrick Bay, Largs (Pencil Beach), Millport Bay, Seamill, Saltcoats/Ardrossan and Irvine. In the latest classification year (2019), the only designated bathing water to achieve a classification below 'Sufficient' was Irvine (SEPA 2019c). There are no designated bathing waters within the Stirling Council area.

There are also four designated Shellfish Water Protected Areas within the Argyll and Bute Council area at Loch Striven, Kyles of Bute, Loch Fyne and Loch Long, a number of active aquaculture sites and CAR licenced fish farms within the Argyll and Bute Council area and Stirling Council area (Scotland's Aquaculture 2016).

Those route corridors which interact with coastal waters will need to consider the potential effects on the water quality of bathing waters, aquaculture and fisheries.

D.5.2 Evolution of the Baseline and Trends

Ongoing key pressures on the surface water environment include urbanisation and intensive agriculture/ aquaculture. Rural and urban diffuse pollution also remains a concern for water quality, particularly in relation to agriculture, forestry, and urban development.

Climate change will exacerbate flood events, with rising sea levels increasing the risk of coastal flooding. More frequent, high-intensity rainfall will increase the risk of flash flooding from surface water or sewers for inland communities.

The predicted effects of climate change such as increased temperatures and changes to rainfall patterns could affect flows in rivers and impact on water resource availability (Scotland's Environment 2014). Increased frequency and intensity of rainfall may result in greater risk of river flooding due to higher river flow volumes and flashier flow regimes. A changing climate is also expected to have ecological impacts, such as warmer sea temperatures and an increasing risk of non-native species spreading and becoming established in aquatic environments (SEPA 2015).

The impact of climate change is likely to vary regionally; as such, SEPA has recently published updated guidance recommending regional climate change allowances (SEPA 2019d). The route corridors are located between the Argyll and Clyde River Basin Regions, and the corresponding regional flow allowances for rivers and sea level rise allowances are provided in Table D5.1. The Forth River Basin Region is topographically disconnected from the route corridors and is therefore not considered relevant.

Table D5.1: Regional flow and sea-level rise allowances relevant to the route options (SEPA 2019d)

Region	Regional flow allowance (Total change to the year 2100)	Sea level rise allowance (Cumulative rise (in metres) from 2017-2100)
Argyll	56%	0.86
Clyde	44%	0.85

Allowances for peak rainfall intensity is also provided, these are 35% for the east of Scotland and 55% for the west of Scotland. The above allowances must be considered in the development of route corridors.

D.6 Biodiversity, Flora and Fauna

D.6.1 Baseline

Biodiversity is a common measure of the variety of living organisms and ecosystems and is often used to assess ecosystem health. Biodiversity provides the ecosystem services that are the basis of life, including the regulation of air and water, soil formation, nutrient cycling, flood regulation and pollination. This distribution of biodiversity has key interrelations the abiotic environment such as soil and the water environment.

Legislation and policies relating to biodiversity, flora and fauna are implemented from international to local level to protect the natural environment. At EU level, the Natura 2000 network of sites aims to protect key assets under the Habitats and Birds Directives. As identified in Section 1.2.2, Natura 2000 sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which will be assessed as part of the HRA for the Access to Argyll and Bute (A83) scheme. Further ecological sites protected by UK legislation and policy include Ramsar wetlands, Marine Protected Areas (MPAs), Sites of Special Scientific Interest (SSSI) and woodland identified on the Ancient Woodland Inventory (AWI).

Biodiversity is a key concern of current Scottish Government policy. NatureScot produced 'Delivering Scotland's Ambition to Secure Positive Effects for Biodiversity' (NatureScot 2020d), to support delivery of the new statutory requirement for the National Planning Framework (NPF) outcome to secure positive effects for biodiversity. 'Scotland's biodiversity: it's in your hands' and '2020 Challenge for Scotland's Biodiversity' are national strategies targeted at the conservation and enhancement of biodiversity in Scotland (Scottish Government 2004 and 2013b). Scotland's National Marine Plan (Scottish Government 2015b) also sets out objectives and marine planning policies in relation to sea fisheries, aquaculture and wild salmon and diadromous fish.

Each planning authority (with the exception of Stirling Council) and Loch Lomond and The Trossachs National Park have identified specific actions in their Local Biodiversity Action Plans (LBAPs) in line with the local development plan (LDP) policies, discussed in Appendix B: PPS Review. The most recent iterations of the LBAPs are listed below:

- Argyll and Bute Local Biodiversity Action Plan 2010 – 2015 (Argyll and Bute Council (2010));
- The North Ayrshire Local Biodiversity Action Plan (North Ayrshire Council 2019b);
- Local Biodiversity Action Plan for East Renfrewshire, Renfrewshire and Inverclyde (Inverclyde, Renfrewshire and East Renfrewshire Councils 2004); and
- Wild Park National Park Biodiversity Action Programme 2018-2023 (Loch Lomond and The Trossachs National Park 2018).

In April 2011, Argyll and Bute Council published the Argyll and Bute Council Woodland and Forestry Strategy which sets out strategic priorities in relation to Argyll and Bute's woodland habitats and biodiversity (Argyll and Bute Council 2011).

The terrestrial environment in the study area includes a complex mosaic of forestry, mountains and moorland, farmland and peatlands, interspersed with lochs and rivers. Designated ecological sites, one National Park, one regional park and one Local Nature Reserve (LNR) have potential to be affected by the Access to Argyll and Bute (A83) scheme. The route corridors pass through or run directly adjacent to the following sites, shown on Figures 2A – 2K:

- Glen Etive and Glen Fyne SPA
- Upper Loch Fyne and Loch Goil MPA
- Beinn an Lochain SSSI
- Portencross Woods SSSI
- Craighoyle Woodland SSSI

- Lock Eck SSSI
- Ruel Estuary SSSI
- Archyline Wood SSSI
- Loch Lomond and The Trossachs National Park

Additionally, there are several internationally designated sites in the wider area which could feasibly be affected by the route options. These include but are not limited to:

- Renfrewshire Heights SPA
- Arran Moors SPA
- Inner Clyde SPA
- Inner Clyde Ramsar site
- Loch Lomond Woods SAC

As evidenced by the prevalence of designated sites, the area in the vicinity of the route options is important for nature conservation. The protected sites support species including golden eagle *Aquila chrysaetos*, hen harrier *Circus cyaneus*, redshank *Tringa totanus*, otter *Lutra lutra*, and arctic charr *Salvelinus alpinus*. The sites also support important habitats, including notable examples of upland oak and mixed ash woodland, areas rich in bryophytes and lichen (with nationally scarce or important species), and flame shell beds and burrowed muds in the aquatic environment.

Terrestrial species of conservation interest within the study area include Eurasian badger *Meles meles*, pine marten *Martes martes*, red squirrel *Sciurus vulgaris* and bat species (including common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*).

Freshwater species of conservation interest in the study area include freshwater pearl mussel *Margaritifera margaritifera*, powan *Coregonus lavaretus* and Atlantic salmon *Salmo salar*. The marine environment also supports protected resident or seasonal marine mammals. These include common dolphin *Delphinus delphis*, bottlenose dolphin *Tursiops truncatus*, harbour porpoise *Phocoena phocoena*, grey seal *Halichoerus grypus* and common seal *Phoca vitulina*.

Parcels of woodland listed on the Ancient Woodland Inventory (AWI) are in the vicinity of the route options. In Scotland, Ancient Woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750 (SNH 2011b). Ancient Woodlands are usually significantly more biodiverse than more recent woods and are identified in Scottish Planning Policy as an 'important and irreplaceable national resource that should be protected and enhanced' (Scottish Planning Policy). Some areas of Ancient Woodland fall within the route corridor study areas, and tree felling would be required, but the exact volumes are unknown at this stage.

Key pressures to biodiversity, flora and fauna include the loss, fragmentation and degradation of habitats as a result of development. An Ecological Impact Assessment (EclA) will identify, quantify, and evaluate potential effects of development related actions on habitats, species and ecosystems (CIEEM 2018) and enable appropriate mitigation or compensation to be determined for any significant effects. Where licences are required for specific activities to avoid potential breaches of conservation legislation, these should be sought from the appropriate statutory bodies, including NatureScot and SEPA. In addition to designated areas, green spaces within urban and rural areas such as green corridors, parks, and gardens can have important functions and play a valuable role in enhancing biodiversity. Improving green infrastructure and cycling and walking networks can promote active travel, helping to reduce transport emissions and build networks of priority habitats with positive impacts on biodiversity.

D.6.2 Evolution of the Baseline and Trends

Biodiversity loss has been well documented over the last 50 years, and today there are a range of pressures with the potential to impact on Scotland's wildlife and biodiversity. Key ongoing issues include climate change, land use pressures (e.g. loss or damage of natural habitats from development or agricultural intensification and land use change), and the pollution of air, water, and land. Climate change and future development are the biggest drivers for the possible changes in the future baseline. Whilst a future baseline is difficult to predict for every ecological feature, trends and targets can provide a useful indication of future biodiversity.

Within Scotland's designated sites (SSSI, SAC, SPA and Ramsar sites), 78.8% of natural features were in favourable condition at 31st March 2020 (NatureScot 2020a). This is an increase of 1.6% since 2011, when 77.2% of natural features were in favourable condition (SNH 2011c). Over the same period, the percentage of qualifying habitats features in favourable condition has increased by 4.9% (from 73.8% in 2011 to 78.7% in 2020), but the percentage of qualifying species features in favourable condition has declined by 2.3% (from 75.4% in 2011 to 73.1% in 2020) (SNH 2011c; NatureScot 2020a). Whilst these figures hide fluctuation between years (such as 80.4% of natural features in favourable condition in 2016, the highest since monitoring began in 2005), they indicate that the percentage of natural features in favourable condition within Scotland's designated sites will not be significantly different by 2029.

The most recent report on population trends of common breeding birds in the UK, by the British Trust for Ornithology (BTO) (Massimino *et al.* 2019), highlighted that long-term trends (measured over the longest period of available data, which is usually 50 years) vary between species groups:

- Birds of prey populations have generally increased as a result of a ban on the use of certain pesticides, increased legal protection leading to a reduction in persecution and positive conservation efforts. Persecution of hen harrier on grouse moors and changes in land use have been attributed to population declines in some areas.
- Populations of most waterbird species have increased, likely due to increased water quality and warmer winter temperatures. Conversely, the breeding populations of most wader species (including redshank) in the UK show long term declines, mostly as a result of habitat loss, intensification of land use and predation of their ground nests.
- The populations of species which are typically found within woodland habitats have generally increased, by being able to make use of green areas within suburban environments and due to warmer winters. Numbers of species which have specialist habitat requirements have declined and this is attributed to fundamental changes in woodland habitat quality in recent decades.

The drive towards Biodiversity Net Gain (BNG), meeting United Nations (UN) sustainability targets in relation to biodiversity and consideration of Natural Capital in policy will be key to the future protection and enhancement of Scottish biodiversity and the wider natural environment.

D.7 Soils

D.7.1 Baseline

Soil is a key part of our environment and soil degradation can have major implications for air and water quality as well as our climate, biodiversity and economy. Sustainable management and protection of soils is key to ensuring that soils can deliver essential functions vital for the sustainability of Scotland's environment and economy (SEPA 2019e), including:

- storing carbon and maintaining the balance of gases in the air;
- biomass production (including agriculture and forestry);
- filtering and buffering pollutants;
- regulating the flow of and providing storage for water;
- providing a physical environment for human activity (including built development);
- providing habitats and supporting biodiversity;
- a source of raw materials; and
- preserving cultural and archaeological heritage.

Soil is a non-renewable resource that supports a range of natural processes as well as providing environmental, societal and economic benefits of the human population. Soil has inherent links to several SEA topics, including climatic factors, biodiversity, water and air quality.

Scotland's soils are highly variable in their presence due to the diverse geology and climate in Scotland. Soils in Scotland are rich in organic matter and account for over 50% of the UK's soil carbon (Dobbie *et al.* 2011). Organic soils store vast quantities of carbon dioxide (CO₂), and it is estimated that Scotland's soils store 3 billion (bn) tonnes of CO₂ (Scotland's Soils 2019a). A significant amount of Scotland's soil is comprised of peatland, which is a key part of the landscape and cultural heritage. Peatlands cover more than 20% of the country's land area, storing 1.6bn tonnes of CO₂ through carbon sequestration. It is estimated that over 80% of Scotland's peatlands are degraded, which emit more CO₂ than they sequester.

Across much of Argyll and Bute, soils are predominantly peaty gleys and peaty podzols, with alluvial soils present in the lower valleys connecting to the sea lochs (Scotland's Soils 2019b). There is a prevalence of non-peat dominated (mineral) soils that occur in the valleys of the route corridors, with Class 2 peatlands present at higher altitudes. Class 1 and 2 peatlands are designated as being nationally important carbon-rich soils, deep peat and priority peatland habitat. These areas would be considered to have a high conservation value and restoration potential. Much of the areas close to the coast within the route corridor study area are dominated by the presence of brown soils and absent of peat forming or peat dominated soils. The various soil classifications within the study area for the route corridors are shown on Figure 4.

The Local Development Plans (LDP) for Argyll and Bute, Stirling, Inverclyde, North Ayrshire and LLTNPA have included policies to protect soil and peat resources from development and the consequent risk of CO₂ release from disturbance:

- Policy 79 – Protection of Soil and Peat Resources (Argyll and Bute Council 2019);
- Policy 4.2 – Protection of Carbon-Rich Soils and Policy 14 – Soil Conservation and Agricultural Land (Stirling Council 2018);
- Policy 15 – Soils (Inverclyde Council 2019a);
- Policy 34 – Protecting Peatland and Carbon Rich Soils (North Ayrshire Council 2019a); and
- Policy 10 -Protecting Peatlands (LLTNPA 2016).

The Argyll and Bute Council Woodland and Forestry Strategy (Argyll and Bute Council, 2011) also outlines strategic priorities in relation to climate change, including CC5 - Encourage robust protection of peat soils to maintain their value as carbon stores.

National mapping detailing land capability for agriculture indicates limited to no prime agricultural soils are present across the route corridors in Argyll and Bute. Land capability for agriculture (LCA)⁴ indices a range of agricultural soils in the mid-to-low value categories (from approximately Class 4.1 to Class 7) in Argyll and Bute, Inverclyde and Stirling within the study area. Class 3.2, of a higher agricultural value, is present in the study area within North Ayrshire.

Additionally, Strone Point North Loch Fyne SSSI (NN 116087) and Garabal Hill SSSI (NN 295172) are present within the route corridor study area. These sites are designated for earth science: Strone Point, North Loch Fyne SSSI is designated for its structural and metamorphic geology, and Garabal Hill SSSI is designated for its igneous petrology.

D.7.2 Evolution of the Baseline and Trends

Scotland's soils are under pressure from the effects of climate change and changes in land-use and land management. The impacts of climate change include temperature change, run-off erosion from high-intensity rainfall which leads to soil degradation and soil losses through other sources of flooding. Land use and land management can improve the protection of soils or can potentially lead to sealing, compaction, loss or organic matter, contamination or erosion and landslides. These changes can cause secondary impacts on various other SEA topic receptors, including landscape, human health, flood risk and flora and fauna.

⁴ The LCA classification is used to rank land on the basis of its potential productivity and cropping flexibility. This is determined by the extent to which the physical characteristics of the land (soil, climate and relief) impose long term restrictions on its use. The LCA is a seven class system. Four of the classes are further subdivided into divisions. Class 1 represents land that has the highest potential flexibility of use whereas Class 7 land is of very limited agricultural value. (The James Hutton Institute 2010)

Future development of certain areas of the Argyll and Bute region, if not managed appropriately, has the potential to release CO₂ currently sequestered in peat soils into the atmosphere and contribute to climate change.

D.8 Cultural Heritage

D.8.1 Baseline

Scotland has a unique and varied selection of irreplaceable historical sites that contribute to quality of life, the character of the country, cultural identity, education and economy. Scotland's historic assets attracted 18 million visitors in 2016. These assets provide an educational role and a significant contribution to the tourist economy (HES, 2018).

The cultural heritage baseline considered for this SEA comprises terrestrial and marine archaeological remains, historic buildings and historic landscape within the study area. To protect valuable cultural heritage resources, there is a process of designation, which aims to identify the significance of these resources and protect it for future generations to enjoy. Designated cultural heritage resources within the study area include large numbers of Listed Buildings, Conservation Areas, Scheduled Monuments and Gardens and Designed Landscapes. All of these cultural heritage resources are illustrated on Figures 2A – 2K in Appendix B. There are no World Heritage Sites, Historic Marine Protected Areas or Inventory Battlefields within the study area.

In total, the 11 corridor study areas contain:

- 1414 Listed Buildings;
- 77 Scheduled Monuments;
- 16 Conservation Areas; and
- 16 Gardens and Designed Landscapes.

Undesignated sites account for 95% of the historic environment are important cultural heritage resources in their own right, but also provide contextual information to help better understand designated sites, and Argyll and Bute has over 19,000 undesignated cultural heritage assets alone (Argyll and Bute Council, 2015).

The study area contains known archaeological remains from the Neolithic, Iron Age, Celtic, early Christian, Viking, Medieval and Post-Medieval periods. There is also potential for undiscovered archaeological remains to be located within the study area.

The designated and undesignated historic landscape and seascape of the study area is also important. The historic landscape has developed as a result of land management, agriculture and settlement patterns.

Inappropriate development is a key pressure on cultural heritage resources, and can lead to direct physical impacts on designated, undesignated and unknown resources. It can also cause impacts on the setting of these resources. Pressure also comes from visitors, land-use changes and climate change.

D.8.2 Evolution of the Baseline and Trends

Development will continue to be a key pressure on cultural heritage resources, requiring mitigation. The development of new transport infrastructure can also affect these resources or their setting. Increasing levels of congestion will also continue to affect historic urban areas and the countryside within the study area. Measures to reduce the need to travel, manage demand and encourage modal shift have the potential to enhance the integrity of the cultural environment in the urban and rural areas through an associated reduction in traffic levels and visitor numbers.

It is projected that Scotland will become warmer and wetter as a result of climate change, resulting in the increased weathering of stone, rotting timbers and corrosion of metals (HES, 2014). Rising sea levels and increased storm events may increase coastal erosion, endangering our historic landscapes, structures, buildings and archaeology in the coastal zone. This threat will grow in the future given the future predictions of the likely effects of climate change for the remainder of this century.

D.9 Landscape and Visual Amenity

D.9.1 Baseline

Rich in diversity, Scotland's landscapes are internationally renowned. Landscapes are a significant part of the country's cultural and national heritage, contributing to the economy and the wellbeing of the population. They play a key role in attracting tourism and providing opportunity for outdoor recreation. Key landscape designations in the study area for the route corridors are shown on Figures 2A – 2K in Appendix B.

Part of Loch Lomond and The Trossachs National Park is situated within the 2km route corridor study area. The National Park contains special landscapes, which include *'lochs, coastlines, forests and striking contrasts where the lowlands and highlands meet, with significant areas in the north still retaining a wilder feel. These have been created and shaped by both natural and human forces over millennia, and are continuously evolving as the climate and the use of the land changes. The area also has a rich historic environment which is valued by residents and visitors alike'* (Loch Lomond and The Trossachs National Park, 2018).

The Loch Lomond and The Trossachs National Park includes a NSA, which several of the route corridors would pass through. The Loch Lomond NSA Special Qualities include the following:

- a world-renowned landscape famed for its rural beauty;
- wild and rugged highlands contrasting with pastoral lowlands;
- water in its many forms;
- the rich variety of woodlands;
- settlements nestled within a vast natural backdrop;
- famous through-routes;
- tranquillity; and
- the easily accessible landscape splendour.

The Kyles of Bute NSA covers an area of 4400ha and several of the route corridors would pass through it. The Special Qualities of the NSA are summarised as follows:

- the drama of the Kyles;
- verdant woodland on the enclosing hills;
- rocky outcrops punctuating the wooded slopes;
- small fields between the water and the woods;
- the juxtaposition of human settlement and a wider undeveloped landscape of sea and hills;
- a peaceful landscape of constant movement;
- the ever-changing vistas; and
- the gradual transition from land to sea in Loch Ruel.

Wild Land Areas

Wild Land Areas (WLA) that show minimal signs of human interference are identified as nationally important in Scottish Planning Policy but are not a statutory designation.

There are two WLAs in the study area: Ben Lui WLA and Ben More - Ben Ledi WLA. As stated in *Assessing impacts on Wild Land Areas - technical guidance, 'an assessment [of effects on WLAs] will only be required where it has been deemed necessary by the competent authority'* (NatureScot 2020b).

Landscape and Seascape Character

A number of distinct landscape and seascape character types and areas (including coastal character areas along Loch Long and Loch Fyne) are present within the study area. 'Seascapes' are defined as landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other. Any assessment of the landscape and visual effects of change in marine and coastal environments will consider the relationship between land and sea in coastal areas and take account of possible requirements to consider the open sea.

The national Landscape Character Assessment of Scotland as well as the Seascape/Landscape Assessment of The Firth of Clyde (Firth of Clyde Forum 2013) including sensitivity assessment would be used to establish the baseline against which to assess the potential for significant landscape and visual effects.

Areas of Panoramic Quality

The Argyll and Bute Local Development Plan also identifies Areas of Panoramic Quality (APQ) that are considered important for the quality of the landscape. Within these areas the impact on the landscape is a major consideration when new development is proposed. The APQs within the study area comprise:

- Bute & South Cowal;
- North Argyll;
- East Loch Fyne (Coast);
- West Loch Fyne (Coast); and
- Loch Long (Coast).

Key Visual Receptor Locations

Recognised viewpoints, such as the Rest and Be Thankful car park, as well as popular highland summits, National Cycle Network Routes, Scotland's Great Trails, such as Cowal Way or West Island Way and Inventory Gardens and Designed Landscapes in the study area with outstanding scenic value would be sensitive to any change to views.

D.9.2 Evolution of the Baseline and Trends

The two main direct pressures caused by humans that will continue to influence the character of the landscape are land use (and the intensification of land use and management) and incremental and ongoing development.

The expansion of many towns and cities and their associated infrastructure, such as roads and railways, is seen as a pressure and the distinctive landscape setting of many towns and cities is being lost as a result of settlement expansion and the need for associated infrastructure, such as roads and railways.

The Argyll & Bute Local Development Plan lists a number of Areas for Action, including strategic and local regeneration and environmental enhancement, mostly focussed on town centres some of which are located in the study area (e.g. Dunoon and Lochgilphead). Argyll and Bute Council Woodland and Forestry Strategy sets out the role that Argyll and Bute can play in helping to achieve the Scottish Government's target of 25% woodland cover in Scotland by 2050.

Climate change and climate change adaptation measures will continue to affect the Scottish landscape. The combined effects of these are generally likely to be more pronounced in coastal and lowland areas with the exception of renewable energy developments which affect upland landscapes.

Ongoing and potential biosecurity threats (pest and diseases affecting trees) are also contributing to the changing landscape character and pattern and may lead to loss of plant species from the landscape.

References

- Adaptation Scotland (2020). Climate trends and projections. Available at: <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections> [Accessed November 2020].
- Air Quality in Scotland (2019). About air quality. Available at: <http://www.scottishairquality.scot/air-quality/>. [Accessed October 2020].
- Argyll and Bute Council (2010). The Argyll and Bute Local Biodiversity Action Plan 2010 – 2015. Available at: <https://www.argyll-bute.gov.uk/sites/default/files/Unknown/AandB%20BAP%20Draft.pdf>. [Accessed October 2020].
- Argyll and Bute Council (2011). Argyll and Bute Council Woodland and Forestry Strategy April 2011. Available at: <https://www.argyll-bute.gov.uk/sites/default/files/planning-and-environment/Woodland%20and%20Forestry%20Strategy%20April%202011.pdf>. [Accessed December 2020].
- Argyll and Bute Council (2015). Historic Environment Strategy 2015–2020. Available at: https://www.argyll-bute.gov.uk/sites/default/files/hist_env_strat_combined.pdf. [Accessed October 2020].
- Argyll and Bute Council (2016). Local Development Plan Supplementary Guidance. Available at: <https://www.argyll-bute.gov.uk/consultations/local-development-plan-supplementary-guidance>. [Accessed October 2020].
- Argyll and Bute Council (2018). Rural Growth Deal: Argyll, the natural choice. Available at: <https://www.argyll-bute.gov.uk/moderngov/documents/s130865/Briefing%20Note%20-%20Appendix%20%20Special%20Council%204.10.18.pdf>. [Accessed October 2020].
- Argyll and Bute Council (2019). Local Development Plan 2 Available at: <https://www.argyll-bute.gov.uk/sites/default/files/Unknown/finalpldp2writtenstatementdepositv2.pdf>. [Accessed October 2020].
- Argyll and Bute Council (2020a). 2020 Air Quality Annual Progress Report (APR) for Argyll and Bute Council. Available at: https://www.argyll-bute.gov.uk/sites/default/files/apr_2020_argyll_and_bute_final.pdf. [Accessed October 2020].
- Argyll and Bute Council (2020b). Scottish Index of Multiple Deprivation 2020: Argyll and Bute. Available at: <https://www.argyll-bute.gov.uk/info/scottish-index-multiple-deprivation-2009-argyll-and-bute>. [Accessed October 2020].
- British Geological Society (2020). Rest and Be Thankful Pass, A83, Argyll and Bute, 2009: Landslide case study. <https://www.bgs.ac.uk/case-studies/rest-and-be-thankful-a83-2009-landslide-case-study/>. [Accessed October 2020].
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
- Committee on Climate Change (2017). UK Climate Change Risk Assessment 2017 Evidence Report: Summary for Scotland.
- Dobbie, K.E., Bruneau, P.M.C. and Towers, W. (eds) (2011). The State of Scotland's Soil. Natural Scotland. Available at: <https://www.sepa.org.uk/media/138741/state-of-soil-report-final.pdf>. [Accessed October 2020].
- European Commission (2000). Communication from the Commission on the Precautionary Principle. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52000DC0001>. [Accessed October 2020].
- European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Available at: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf [Accessed October 2020].

European Commission (2007). Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the Concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission. January 2007. Available at: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf. [Accessed October 2020].

European Commission (2019). Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg. Available at: https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN_art_6_guide_jun_2019.pdf [Accessed October 2020].

HES (2014). Scotland's Historic Environment Audit 2014. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=9b715951-a1dd-4d3f-b83e-ab9e00916828> [Accessed November 2020].

HES (2016). Scotland's Historic Environment Audit 2016. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=bac8296b-fcd4-4fdf-8617-ab9e009235db> [Accessed November 2020].

HES (2018). Scotland's Historic Environment in Numbers 2018. Available at: https://www.environment.gov.scot/media/2556/she_a_infographic_2018.pdf. [Accessed October 2020].

HES (2019). Historic Environment Policy for Scotland. Available at: <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/historic-environment-policy-for-scotland-heps/> [Accessed November 2020].

HES (2020). Scotland's Historic Environment Audit 2018. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=11a63865-9bd4-4d26-9fd4-ab9e0093460e> [Accessed November 2020].

Highlands and Islands Enterprise (2016). Argyll and Bute Transport Connectivity and Economy Research Report June 2016. Available at: <https://www.hie.co.uk/media/6412/argyllplusandplusbuteplustransportplusconnectivityplusandpluseconomyplusresearchplus-report.pdf>. [Accessed October 2020].

Firth of Clyde Forum (2013). Seascape/Landscape Assessment of the Firth of Clyde. Available at: <https://www.clydemarineplan.scot/marine-planning/marine-planning-projects/#seascape>. [Accessed October 2020].

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020a). Design Manual for Roads and Bridges, Volume 10 Environmental Design and Management, Section 4 Nature Conservation, Part 1 LD 118 Biodiversity Design.

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020b). Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 2 General Principles of Environmental Assessment, Part 4 LA 104 Environmental assessment and monitoring.

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020c). Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 4 LA 108 Biodiversity.

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020d). Design Manual for Roads and Bridges, LA 113 Road Drainage and the Water Environment, Revision 1

Highways England, Transport Scotland, Welsh Government, and Department for Infrastructure Northern Ireland (2020e). Design Manual for Roads and Bridges, LA 107 Landscape and visual effects, Revision 2.

Inverclyde, Renfrewshire and East Renfrewshire Councils (2004). Local Biodiversity Action Plan for East Renfrewshire, Renfrewshire and Inverclyde. Available at: https://www.inverclyde.gov.uk/planning-and-the-environment/planning-policy/natural-heritage/biodiversity-and-natural-heritage-designations#:~:text=Launched%20on%201%20April%202004,a%20orange%20of%20conservation%20organisation_s [Accessed October 2020].

Inverclyde Council (2019a). Inverclyde Local Development Plan. Available at: <https://www.inverclyde.gov.uk/planning-and-the-environment/planning-policy/development-planning/ldp> [Accessed October 2020].

Inverclyde Council (2019b). Inverclyde Heritage Strategy. Available at: <https://www.inverclyde.gov.uk/assets/attach/10392/Inverclyde-Heritage-Strategy-2019-29.pdf>. [Accessed October 2020].

Inverclyde Council (2020). Scottish Index of Multiple Deprivation (SIMD 2020). Available at: <https://www.inverclyde.gov.uk/meetings/documents/13038/Additional%20Agenda%20Item%20SIMD%202020.pdf>. [Accessed October 2020].

Jacobs (2013). A83 Trunk Road Route Study. Available at: <https://www.transport.gov.scot/projects/a83-improvements/project-details/#42601>. [Accessed October 2020].

Jacobs / AECOM (2020). (*on behalf of Transport Scotland*) Argyll and Bute: The Case for Change

Landscape Institute and the Institute for Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd edition (GLVIA3). Routledge.

Loch Lomond and The Trossachs National Park (2016). Loch Lomond and The Trossachs National Park Local Development Plan. Available at: <https://www.lochlomond-trossachs.org/planning/planning-guidance/local-development-plan/>. [Accessed November 2020].

Loch Lomond and The Trossachs National Park (2018). National Park Partnership Plan 2018 – 2023. Available at: <http://www.lochlomond-trossachs.org/wp-content/uploads/2018/02/NPPP2018-23-web.pdf>. [Accessed November 2020].

Loch Lomond and Trossachs National Park (2020). Outcome 2: Landscape Qualities. Available at: <https://www.lochlomond-trossachs.org/park-authority/what-we-do/national-park-partnership-plan-2018-2023/long-term-vision/conservation-land-management/outcome-2-landscape-qualities/> [Accessed October 2020].

Massimino, D., Woodward, I.D., Hammond, M.J., Harris, S.J., Leech, D.I., Noble, D.G., Walker, R.H., Barimore, C., Dadam, D., Eglington, S.M., Marchant, J.H., Sullivan, M.J.P., Baillie, S.R. & Robinson, R.A. (2019). *BirdTrends 2019: trends in numbers, breeding success and survival for UK breeding birds*. Research Report 722. BTO, Thetford. Available at: www.bto.org/birdtrends. [Accessed October 2020].

National Records of Scotland (2011). Scotland's Census: Area Profiles. Available at: <https://www.scotlandscensus.gov.uk/ods-web/area.html>. [Accessed October 2020].

National Records of Scotland (2016). Mid-2016 Population Estimates for Settlements and Localities in Scotland. Available at: <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/settlements-and-localities/mid-2016-population-estimates-for-settlements-and-localities-in-scotland>. [Accessed October 2020].

National Records of Scotland (2019a). Mid-Year Population Estimates Scotland, Mid-2019 [Online] Available at: <https://www.nrscotland.gov.uk/files//statistics/population-estimates/mid-19/mid-year-pop-est-19-report.pdf>. [Accessed October 2020].

National Records of Scotland (2019b). Argyll and Bute Council Area Profile. Available at: <https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/argyll-and-bute-council-profile.html#:~:text=Between%202018%20and%202028%2C%20the,for%20Scotland%20as%20a%20whole.&text=>

[Argyll%20and%20Bute%20is%20projected%20to%20have%20the%2027th%20highest,areas%20in%20Scotland%20in%202028](#). [Accessed October 2020].

National Records of Scotland (2019c). North Ayrshire Council Area Profile. Available at: <https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/north-ayrshire-council-profile.html#:~:text=Between%202018%20and%202028%2C%20the,for%20Scotland%20as%20a%20whole.&text=North%20Ayrshire%20is%20projected%20to%20have%20the%2015th%20highest%20population,areas%20in%20Scotland%20in%202028>. [Accessed October 2020].

National Records of Scotland (2019d). Inverclyde Council Area Profile. Available at: <https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/inverclyde-council-profile.html#:~:text=Between%202018%20and%202028%2C%20the,for%20Scotland%20as%20a%20whole.&text=Inverclyde%20is%20projected%20to%20have,areas%20in%20Scotland%20in%202028>. [Accessed October 2020].

National Records of Scotland (2019e). Stirling Council Area Profile. Available at: https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/stirling-council-profile.html#table_pop_est. [Accessed November 2020].

Natural Scotland (2015). The river basin management plan for the Scotland river basin district: 2015-2027. Available at: <https://www.sepa.org.uk/media/163445/the-river-basin-management-plan-for-the-scotland-river-basin-district-2015-2027.pdf>. [Accessed October 2020].

NatureScot (2020a). The Proportion of Scotland's Protected Sites in Favourable Condition 2020: An Official Statistics Publication for Scotland. Available at: <https://www.nature.scot/sites/default/files/2020-05/Official%20Statistics%20-%20Protected%20sites%20-%20proportion%20in%20favourable%20condition%202020.pdf>. [Accessed October 2020].

NatureScot (2020b). Assessing impacts on Wild Land Areas - Technical Guidance. Available at: <https://www.nature.scot/sites/default/files/2020-09/Guidance%20-%20Assessing%20impacts%20on%20Wild%20Land%20Areas%20-%20technical%20guidance.pdf>. [Accessed October 2020].

NatureScot (2020c). Ecosystem services: nature's benefits. Available at: <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/ecosystem-approach/ecosystem-services-natures-benefits> [Accessed December 2020].

NatureScot (2020d). Delivering Scotland's Ambition to Secure Positive Effects for Biodiversity. Available at: <https://www.transformingplanning.scot/media/2131/securing-positive-effects-for-biodiversity.pdf> [Accessed December 2020]

North Ayrshire Council (n.d.). Conservation – historic environment. Available at: <https://www.north-ayrshire.gov.uk/planning-and-building-standards/conservation-historic-environment/conservation-historic-environment.aspx>. [Accessed October 2020].

North Ayrshire Council (2017). Key facts and figures. Available at: <https://www.north-ayrshire.gov.uk/council/council-information/key-facts-and-figures.aspx>. [Accessed October 2020].

North Ayrshire Council (2019a). Adopted Local Development Plan. Your Plan Your Future. Available at: <https://www.north-ayrshire.gov.uk/Documents/CorporateServices/LegalProtective/LocalDevelopmentPlan/ldp2.pdf>. [Accessed October 2020].

North Ayrshire Council (2019b). North Ayrshire Local Biodiversity Action Plan 2019 – 2031. Available at: <https://www.north-ayrshire.gov.uk/Documents/CorporateServices/Finance/approved-lbap.pdf>. [Accessed October 2020].

Our Place in Time Climate Change Working Group (2019). A Guide to Climate Change Impacts on Scotland's Historic Environment. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=843d0c97-d3f4-4510-acd3-aadf0118bf82> [Accessed October 2020].

Public Health Scotland (2018). Diet and healthy weight. Available at: <http://www.healthscotland.scot/health-topics/diet-and-healthy-weight/obesity>. [Accessed October 2020].

Public Health Scotland (2019). Impact of deprivation on health. Available at: <http://www.healthscotland.scot/health-inequalities/impact-of-ill-health/impact-of-deprivation-on-health#:~:text=People%20who%20live%20in%20poorer,more%20years%20of%20ill%20health.&text=there%20are%20differences%20in%20rates,groups%20by%20age%20and%20sex>. [Accessed November 2020].

Ramsay, C.N. (2019) Air Pollution and Health Impacts: A Scottish Context. Cleaner Air for Scotland Review, 10th January 2019. Available at: http://www.scottishairquality.scot/assets/documents/Colin_Ramsay.pdf. [Accessed September 2019].

Royal College of Physicians (2016). Every breath we take: the lifelong impact of air pollution. Available at: <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>. [Accessed December 2019].

Scotland's Aquaculture (2016). Scotland's aquaculture. Available at: <http://aquaculture.scotland.gov.uk/map/map.aspx>. [Accessed October 2020].

Scotland's Environment (n.d.) Air quality and health. Available at: <https://www.environment.gov.scot/our-environment/air/>. [Accessed October 2020].

Scotland's Environment (2014). State of the Environment Report 2014. Available at: <https://www.environment.gov.scot/media/1170/state-of-environment-report-2014.pdf>. [Accessed October 2020].

Scotland's Great Trails, 2020. Available at: <https://www.scotlandsgreattrails.com/> [Accessed November 2020].

Scotland's Soils (2019). Wider impacts of the state of Scotland's Soils Available at: <https://soils.environment.gov.scot/soils-in-scotland/state-of-scotlands-soils/>. [Accessed October 2020].

Scotland's Soils (2019). National Soil Map of Scotland. Available at: https://map.environment.gov.scot/Soil_maps/?layer=1#. [Accessed October 2020].

Scottish Air Quality (2020a). Air Quality Standards and Objectives. Available at: <http://www.scottishairquality.scot/air-quality/standards>. [Accessed January 2020]

Scottish Air Quality (2020b). Local Air Quality Management. Available at: <http://www.scottishairquality.scot/laqm/>. [Accessed January 2020].

Scottish Government (2004). Scotland's biodiversity: it's in your hands. Available at: <https://www.gov.scot/publications/scotlands-biodiversity---its-in-your-hands/>. [Accessed December 2020].

Scottish Government (2013a). Strategic Environmental Assessment Guidance. Available at: <https://www.gov.scot/publications/strategic-environmental-assessment-guidance/>. [Accessed October 2020].

Scottish Government (2013b). 2020 Challenge for Scotland's Biodiversity. Available at: <https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/>. [Accessed December 2020].

Scottish Government (2014a). National Planning Framework 3 (NPF3). Available at: <https://www.gov.scot/publications/national-planning-framework-3/> (Accessed: 06/11/2020)

Scottish Government 2014b). Scottish Planning Policy. The Scottish Government, Edinburgh.

Scottish Government (2015a). Cleaner Air Scotland – The Road to a Healthier Future. Available at: <http://www.gov.scot/Publications/2015/11/5671>. [Accessed December 2017].

Scottish Government (2015b). Scotland's National Marine Plan. Available at: <https://www.gov.scot/publications/scotlands-national-marine-plan/>. [Accessed December 2020].

Scottish Government (2017a). Scottish Energy Strategy: The future of energy in Scotland. Available at: <https://beta.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/>. [Accessed February 2019].

Scottish Government (2017b). A healthier future – action and ambitions on diet, activity, and healthy weight: consultation. Available at: <https://www.gov.scot/publications/healthier-future-action-ambitions-diet-activity-healthy-weight-consultation-document/>. [Accessed October 2020].

Scottish Government (2017c). Scottish Health Survey 2016: local area results 2013-2016 combined. Available at: <https://www.gov.scot/publications/scottish-health-survey-results-local-areas-2013-2014-2015-2016/pages/4/>. [Accessed October 2020].

Scottish Government (2019). The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.
Scottish Government (2020). National Transport Strategy 2 (NTS2). Available at: <https://www.transport.gov.scot/publication/national-transport-strategy-2/> (Accessed 06/11/2020).

Scottish Government (2020). Scottish Index of Multiple Deprivation 2020. Available at: <https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/#lookupfiles>. [Accessed November 2020].

SEPA (2015a). Strategic Flood Risk Assessment: SEPA technical guidance to support development planning (LUPS-GU23), Version 2. Available at: <https://www.sepa.org.uk/media/143351/lups-gu23-strategic-flood-risk-assessment-sepa-technical-guidance-to-support-development-planning.pdf>. [Accessed October 2020].

SEPA (2015b). Water Environment Hub. Available at: <https://www.sepa.org.uk/data-visualisation/water-environment-hub/>. [Accessed October 2020].

SEPA (2017). River Basin Management Planning: Argyll Advisory Group Update. Available at: <https://www.sepa.org.uk/media/219828/argyll-and-locahaber-update-feb-2017.pdf>. [Accessed October 2020].

SEPA (2018a) Guidance on consideration of material assets in Strategic Environmental Assessment. Scottish Environmental Protection Agency. SEPA Guidance Note 4, LUPS-SEA-GU4, 30 May 2018. Available at: <https://www.sepa.org.uk/media/219432/lups-sea-gu4-consideration-of-material-assets-in-sea.pdf> [Accessed October 2020].

SEPA (2018b). Water Classification Hub. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/>. [Accessed October 2020].

SEPA (2019a). Strategic Environmental Assessment Guidance Note 3 (LUPS-SEA-GU3) Guidance on consideration of water in Strategic Environmental Assessment, Version 5. Available at: <https://www.sepa.org.uk/media/162987/lups-sea-gu3-consideration-of-water-in-sea.pdf>. [Accessed October 2020].

SEPA (2019b). Flood maps. Available at: <https://www.sepa.org.uk/environment/water/flooding/flood-maps/>. [Accessed October 2020].

SEPA (2019c). Season 2019: Classifications. Available at:
<https://www2.sepa.org.uk/BathingWaters/Classifications.aspx>. [Accessed October 2020].

SEPA (2019d). Climate change allowances for flood risk assessment in land use planning. Available at:
https://www.sepa.org.uk/media/426913/lups_cc1.pdf. [Accessed October 2020].

SEPA (2019e). Strategic Environmental Assessment Guidance Note 2 (LUPS-SEA-GU2) Guidance on consideration of soil in Strategic Environmental Assessment, Version 3, available at: <https://www.sepa.org.uk/media/162986/lups-sea-gu2-consideration-of-soil-in-sea.pdf>. [Accessed November 2020].

SNH (2010). The Special Qualities of the National Scenic Areas. SNH Commissioned Report No.374. Available at:
<https://www.nature.scot/naturescot-commissioned-report-374-special-qualities-national-scenic-areas>. [Accessed October 2020].

SNH (2011a). Trend Note: Climate change and rivers. Available at:
<https://www.nature.scot/sites/default/files/B1043758%20-%20Natural%20Heritage%20Trends%20-%20Climate%20change%20and%20rivers%20-%20PDF.pdf>. [Accessed October 2020].

SNH (2011b). A guide to understanding the Scottish Ancient Woodland Inventory (AWI). Available at:
<https://www.nature.scot/sites/default/files/2018-11/A%20guide%20to%20understanding%20the%20Scottish%20Ancient%20Woodland%20Inventory%20%28AWI%29.pdf>. [Accessed October 2020].

SNH (2011c). The Proportion of Scotland's Protected Sites in Favourable Condition 2011: An Official Statistics Publication for Scotland. Available at: <https://www.nature.scot/sites/default/files/2017-09/Official%20Statistics%20-%20Protected%20sites%20-%20proportion%20in%20favourable%20condition%202011.pdf>. [Accessed October 2020].

Stirling Council (2018). Stirling Council Local Development Plan. Available at: <https://www.stirling.gov.uk/planning-building-the-environment/planning/development-planning/local-development-plan-2018/>. [Accessed October 2020].

Stirling Council (2019). 2019 Air Quality Annual Progress Report (APR) for Stirling Council. Available at:
http://www.scottishairquality.scot/assets/documents//Stirling_Annual_Progress_Report_2019.pdf. [Accessed October 2020].

The James Hutton Institute (2010). Land Capability for Agriculture in Scotland. Available at:
<https://www.hutton.ac.uk/learning/exploringscotland/land-capability-agriculture-scotland>. [Accessed October 2020].

Transport Scotland (n.d.). Strategic Transport Projects Review 2. Available at: <https://www.transport.gov.scot/our-approach/strategy/strategic-transport-projects-review-2/>. [Accessed October 2020].

Transport Scotland (2014). Fitting Landscapes: Securing more sustainable landscapes. Available at:
<https://www.transport.gov.scot/media/33663/j279083.pdf>. [Accessed October 2020].

Transport Scotland (2018). Transportation Noise Action Plan 2019-2023. Available at:
<https://www.transport.gov.scot/media/43657/transportation-noise-action-plan-2019-2023-december-2018.pdf>. [Accessed October 2020].

Transport Scotland (2020) National Transport Strategy 2. Available at:
<https://www.transport.gov.scot/publication/national-transport-strategy-2/>. [Accessed October 2020].

World Health Organisation (1995). Guidelines for community noise. Available at:
<https://www.who.int/docstore/peh/noise/Comnoise-1.pdf>. [Accessed December 2019].