

Appendix D: Route Corridor Options Baseline and Assessment

1.1 Introduction

As explained in Chapter 5 (Project Description), a Preliminary Assessment and red, amber, green (RAG) 'implementability' rating of route corridors 1 – 11 was undertaken for each SEA topic. The baseline data and results of the environmental assessment are provided in Tables D1 to D15. This includes the assessment of four additional route corridors that arose from public consultation (Tables D12 to D15). This environmental assessment informed the RAG rating for each SEA topic, provided in Table D16.

Table D1: Corridor 1 – Glen Croe (Existing Corridor)

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SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	The route corridor passes through Beinn an Lochain Site of Special Scientific Interest (SSSI). Glen Etive and Glen Fyne Special Protection Area (SPA) is directly north of the corridor. There is no woodland listed on the Ancient Woodland Inventory (AWI) within the corridor.	<p>209.4ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Glen Etive and Glen Fyne SPA is directly adjacent to the route corridor There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This would be a significant negative environmental effect.</p> <p>No parcels of woodland listed on the AWI fall within the route corridor.</p> <p>There is potential for impacts on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>

Table D1: Corridor 1 – Glen Croe (Existing Corridor)		
SEA Topic	Baseline	Assessment
Population and Human Health	<p>The route corridor is rural in nature and there are no population centres within the corridor. There are <10 residential receptors within the route corridor.</p> <p>A Loch Lomond and the Trossachs National Park (LLTNP) Authority core path traverses the west of Croe Water, through the centre of the route corridor and continues west at the Rest and Be Thankful. There are Corbetts and Munros popular with hill-walkers within the corridor, including The Cobbler.</p> <p>Currently, accidents or incidents (e.g. roadworks, landslips, flooding) occurring on any part of the A83 Trunk Road 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.</p>	<p>There is potential for localised minor noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents.</p> <p>During the operation phase, there is potential for receptors close to the route corridor to experience minor noise and vibration effects from increased vehicle traffic. While there are relatively few residential receptors within the route corridor.</p> <p>There is potential for other minor effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor would generally improve connectivity between the central belt and Argyll and Bute and it is expected it would provide greater accessibility to active travel routes, including the LLTNP core path network in and around the area, and hill-walking routes such as The Cobbler.</p> <p>There is potential for land-take from properties to facilitate the operation of the route corridor.</p>
Water Environment	<p>The route corridor follows the Croe Water, a river water body classified under the Water Framework Directive. The corridor also another river waterbody classified under the Water Framework Directive, Kinglas Water and a coastal waterbody Loch Long, which is located downstream of the corridor and is classified under WFD. The route corridor also contains between approximately 130-4050-250 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicate that the route corridor may be at fluvial flood risk from Croe Water during a medium likelihood event (0.5% Annual Exceedance Probability (AEP (200-year) event).</p> <p>There are no designated sites protected for water environment interests within the route corridor.</p> <p>There are no Shellfish Water Protected Areas, Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through one surface water Drinking Water Protected Area.</p> <p>No bathing waters are in the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of approximately two Water Framework Directive classified river water body, one Water Framework Directive classified coastal waterbody and approximately 30-40 minor watercourses. One surface water Drinking Water Protected Area may also be affected.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicate that the route corridor may be at fluvial flood risk from Croe Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>Construction and operation within the route corridor could result in a minor negative effect on the water environment.</p>

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SEA Topic	Baseline	Assessment
Soils	<p>Soil type within the route corridor is primarily peaty podzols adjacent to the existing A83 Trunk Road with montane soils on the higher slopes. The route corridor transects peat identified as Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) and Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) on the Carbon and Peatland 2016 Map. Given the combination of soils, climactic conditions and topography, the Land Capability for Agriculture (LCA) Class within the route corridor is Class 6.1.</p> <p>There is a Geological Conservation Review (GCR) site (unnotified) on The Cobbler which falls partly within the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is F4 (land with moderate flexibility for the growth and management of tree crops) and there are existing stands of commercial forestry on the south western slopes of the valley and adjacent to the existing A83 Trunk Road on the lower eastern slopes. The northern extents of the corridor is identified in the Argyll & Bute Council Woodland Forestry Strategy as including areas of existing woodland, potential woodland (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists) and sensitive areas (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal).</p>	<p>The route corridor generally follows the existing A83 Trunk Road and the surrounding area of Glen Croe, and a minor negative or uncertain effect is assessed. This recognises there would likely be an unavoidable effect on non-priority peatland habitat, potential for unavoidable loss of existing commercial forestry of LCF Class F4 adjacent to the existing A83 Trunk Road, and also LCF Class F5 and F6.</p>
Air Quality	<p>The route corridor is rural in nature with no population centres in close proximity. There are fewer than 10 residential receptors within the corridor.</p> <p>There are no Air Quality Management Areas (AQMAS) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (APR)</p>	<p>There is potential for localised air quality impacts on receptors within the corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p> <p>However, there are very few residential receptors within the route corridor and the existing air quality in the region is good, and with mitigation measures in place it is expected that any negative effects which do arise are likely to be minor.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna.</p>

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SEA Topic	Baseline	Assessment
	<p>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 would be required to improve air quality.</p>	
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ between the 11 route corridor options. However, due to the northern location of the route corridor it considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area.</p> <p>The route corridor is within a location which may be at risk of fluvial flooding from the watercourse adjacent to the carriageway, as stated in the 'Water Environment' section. This section of the A83 Trunk Road is affected by precautionary and forced closures due to the topography of the land and slope instability during periods of prolonged rainfall.</p> <p>There are significant quantities of forested land in the route corridor. As described in the 'Soils' section, there are several areas of peatland, and some forested area in the northern both with high carbon sink value.</p>	<p>The route corridor generally follows the existing A83 Trunk Road and the Old Military Road through Glen Croe and Restil. The existing corridor faces regular precautionary and enforced closures during periods of extended rainfall, causing slope instability and landslides.</p> <p>As indicated in the 'Water Environment' section, there are areas of the route corridor at risk of flooding. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding of watercourses.</p> <p>As indicated in the 'Soils' section, there are sections of peatland that would be affected by the route corridor, leading to its degradation and release of carbon. Any felling required would also reduce the carbon sink value of forests within the route corridor.</p> <p>As stated in the 'Materials' section, engineering solutions would be required to accommodate aspects of the various options being considered for the route corridor construction. Manufacture of materials and construction activities would have a minor effect on climate from the release of carbon emissions. Considerable volumes of imported fill material for earthworks is required for some options, resulting in negative environmental effects on climate.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As indicated in the Climatic Factors section, there are significant areas of forestry within the route corridor and as listed in the Soils section, there are peat soils present.</p> <p>The route corridor is located in a rural environment with few built material assets. The existing A83 is the main piece of infrastructure within the route corridor. The region contains several pieces of energy infrastructure, but none fall within the route corridor. There is a car park at the Rest and Be Thankful Viewpoint where the B828 meets the A83.</p> <p>The closest waste disposal facilities to the route corridor are approximately 25km</p>	<p>With regard to natural material assets, as set out in the Soils section, construction would be unavoidable on peat soils. This is assessed as resulting in a significant negative environmental effect on natural material assets.</p> <p>Due to the steep topography of the route corridor, significant engineering solutions would be necessary to mitigate potential disruption due to landslides. These solutions would require large-scale works and use of materials, resulting in minor negative environmental effects</p>

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	to the south in Helensburgh.	
Cultural Heritage	There is one Category C Listed Building within the 2km route corridor and one Category B Listed Building 30m beyond the north-east boundary of the route corridor. The A83 Trunk Road follows the line of the Old Military Road, an undesignated cultural heritage resource.	There is potential for minor negative or uncertain effects on the cultural heritage resources identified within the route corridor from the range of possible route options being considered. Construction access to foundations and piers is required from the Old Military Road. There is potential for negative effects on undesignated cultural heritage resources, including unknown archaeological resources if offline options are constructed, including significant earthworks and drill and blast tunnelling.
Landscape and Visual Amenity	<p>The route corridor is situated within the LLTNP boundary. There are no National Scenic Areas (NSAs) or Wild Land Areas within the corridor.</p> <p>This route corridor is located within the Highland Summits Landscape Character Type (LCT) and Upland Glens – Loch Lomond & the Trossachs LCT and would traverse the forested glen slopes.</p> <p>There are existing roads (A83 Trunk Road and Old Military Road) present within Glen Croe and there is an existing car park at Rest and Be Thankful viewpoint at the northern end of this route option. This section of the existing A83 Trunk Road is part of the Argyll Coastal Route.</p> <p>Land cover within the route corridor comprises mainly blocks of coniferous forestry with small areas of open grassland, moorland, rocky outcrops and numerous watercourses.</p> <p>Almost the entire western section of the route corridor is located within the Argyll Forest Park.</p>	The corridor has the potential to cause significant negative effects on the Special Landscape Qualities of the LLTNP, the local landscape character and elements as well as views from the nearby viewpoints and visual receptors within the route corridor due to the construction and operation of the carriageway and supporting infrastructure including extensive earthworks, viaducts, tunnels or debris flow shelters.

Table D2: Corridor 2 – Glen Kinglas

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SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>812.8ha of Glen Etive and Glen Fyne Special Protection Area (SPA) falls within the route corridor.</p> <p>2.9ha of Geal and Dubh Lochs Site of Special Scientific Interest (SSSI) and 40.7ha of Ben Vorlich SSSI fall within the route corridor.</p> <p>There are 11 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor.</p>	<p>812.8ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>2.9ha of Geal and Dubh Lochs SSSI and 40.7ha of Ben Vorlich SSSI fall within the route corridor. There could be temporary and permanent habitat loss within both SSSIs, including the loss of designated features of Geal and Dubh Lochs SSSI (tall herb ledge and upland assemblage) and Ben Vorlich SSSI (alpine flush, subalpine wet heath and tall herb ledge), which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>11 parcels of woodland listed on the AWI are within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which would be a significant negative environmental effect and could require compensation.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of AWI.</p>

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SEA Topic	Baseline	Assessment
		It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.
Population and Human Health	<p>The route corridor is within a rural environment and without an existing public road as it follows the Kinglas Water watercourse. For approximately 5km of the northern section of the route corridor, it follows an existing access track towards the link to the A82 Trunk Road in the town of Inverarnan.</p> <p>The route corridor is rural in nature and the only settlement is Inverarnan, at the north-eastern extents of the route corridor. From aerial imagery, one other building is identifiable in along the route corridor adjacent to Kinglas Water.</p> <p>There are no known active travel routes within the route corridor, however there are Munros – Beinn Ime, Ben Vane, and Ben Vorlich – which are popular with hill-walkers.</p> <p>There are core paths in the wider surrounding area C204a-c (Glen Fyne, Cairndow) and C202 (Clachan, Cairndow (Tree house path)), which are north-west of the route corridor.</p> <p>Currently, accidents or incidents (e.g. roadworks, landslips, flooding) occurring on any part of the A83 and A82 Trunk Roads 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.</p>	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents. During the operation phase, there is potential for receptors close to the route to experience noise and vibration impacts from vehicle traffic. While there are relatively few residential receptors within the route corridor, it is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor passes through a rural environment which does not currently have a carriageway/access. It is expected that the route corridor would also provide greater accessibility to hill-walking routes and core paths in the wider surrounding area, including C204a-c (Glen Fyne, Cairndow) and C202 (Clachan, Cairndow (Tree house path)).</p> <p>The route corridor would provide a new link between the A83 Trunk Road and Inverarnan and potentially reduce the severity and/or incidence of severance issues however there is not expected to be a significant change in connectivity for residents, businesses and visitors in the route corridor and Argyll and Bute as a whole.</p> <p>There may be land-take from properties required to facilitate the operation of the route corridor.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Two river water bodies, Carn Allt and Kinglas Water ▪ One loch water body, Loch Sloy 	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of two Water Framework Directive (WFD) classified river water bodies, one WFD loch and approximately 30-40 minor watercourses. Two surface water Drinking Water Protected Areas may also be affected.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps</p>

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	<p>The route corridor also crosses approximately 30-40 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial flood risk from Kinglas Water, three minor watercourses and Loch Sloy during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>There are no designated sites protected for water environment interests within the route corridor.</p> <p>There are no Shellfish Water Protected Areas, Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through two surface water Drinking Water Protected Areas.</p> <p>There are no bathing waters in the route corridor.</p>	<p>(SEPA 2020) indicates that the route corridor may be at fluvial flood risk from Kinglas Water, three minor watercourses and Loch Sloy as identified on SEPA Flood Maps during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment, subject to appropriate mitigation.</p>
Soils	<p>Soil type within the route corridor is predominantly peaty podzols with alluvial soils and mineral podzols in the valley floor at Ardlui. The route corridor predominantly transects peat identified as Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) and Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) around Loch Sloy and at Glen Kinglas where the route corridor joins the A83 Trunk Road. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the corridor is predominantly Class 6 (Class 6.2 and 6.3) with Class 5.3 on the more productive soils around Ardlui.</p> <p>There is a Geological Conservation Review (GCR) site (Garabal Hill to Lochan Strath Dubh-uisge) north-west of Ardlui and the route corridor intersects the southern edge of the site. The Land Capability for Forestry (LCF) class is predominantly Class F5 with sections of Class F6 and Class F7 and there are existing stands of commercial forestry in the section between Ardlui and Loch Sloy. The route corridor is not identified in the Argyll & Bute Council Woodland Forestry Strategy.</p>	<p>The route corridor would potentially require road structures and ground engineering measures and a significant negative effect is assessed. This recognises the route corridor is unlikely to avoid potential effects on the Garabal Hill to Lochan Strath Dubh-uisge GCR and Class 1 peatland habitat (nationally important and of high conservation value). Loss of existing commercial forestry and land identified as Potential within the Argyll & Bute Woodland Strategy is also likely to be unavoidable within the route corridor.</p>
Air Quality	<p>The route corridor is rural in nature and the only settlement is Inverarnan, at the north-eastern extents of the route corridor. From aerial imagery, one other building is identifiable in the route corridor adjacent to Kinglas Water.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for local residents.</p>

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SEA Topic	Baseline	Assessment
	<p>There are no Air Quality Management Areas (AQMAS) in the route corridor, or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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.</p>	<p>The route corridor does not follow an existing route and would therefore introduce traffic-related emissions to the area (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>However, there are very few residential receptors within the route corridor and the existing air quality in the region is good, and with mitigation measures in place it is expected that any negative effects which do arise are likely to be minor.</p> <p>Potential air quality effects on ecological receptors are assessed under Biodiversity, Flora and Fauna.</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors. However, due to the northern location of this route corridor, it is considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area.</p> <p>As identified in the 'Water Environment' section, the route corridor may be at risk of fluvial flooding from Kinglas Water, three minor watercourses and Loch Sloy.</p> <p>As identified in the 'Soils' section, the soil type in the area is predominantly peaty podzols with a high carbon sink value. There are significant quantities of forested land in the route corridor, including parcels of ancient woodland. Forested areas also have a carbon sink value.</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. The route corridor requires construction of approximately 12km of new carriageway, including an approximate 7.5km long tunnel west of the existing A82 trunk road. Construction of these elements would have a high embodied carbon content from material usage and earthwork treatment, particularly for the tunnel construction. There is approximately 4.8km of forestry area in the route corridor footprint: felling of these trees would release stored carbon.</p> <p>As indicated in the 'Water Environment,' sections of the route corridor are situated within or in close proximity to zones that may be at risk of fluvial flooding. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding of watercourses.</p> <p>As indicated in the 'Soils' section, the route corridor is primarily peat soils with a high carbon sink value. Construction of the route would degrade this peatland, releasing stored carbon and removing ground with a high carbon sequestration potential.</p> <p>Any felling required would also reduce the carbon sink value of forests within the route corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the corridor selection process.</p>

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SEA Topic	Baseline	Assessment
		<p>Material requirements for construction of the route corridor would release carbon during manufacture and construction as set out below in the 'Material Assets' section.</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are relatively low, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As indicated in the Climatic Factors section, there are significant areas of forestry; including AWI within the route corridor and there are peat soils present, as described in the Soils section above.</p> <p>The route corridor is located in a rural environment with few built material assets. The existing A83 Trunk Road at the southern extent and the A82 Trunk Road at the northern extent are within the route corridor. The Loch Sloy/Awe SSE Hydro-electric scheme is located between Loch Sloy and Inveruglas within the corridor. The power station facility and the dam are category A and B Listed Buildings respectively. The West Highland Line railway also passes through the route corridor and is located in land to the west of the A82 Trunk Road. There is a car park at the <i>Rest and Be Thankful Viewpoint</i> where the B828 meets the A83 Trunk Road. The closest waste disposal facility to the route corridor are approximately 30km to the south, in Helensburgh.</p>	<p>The route corridor is entirely off-line within Glen Kinglas valley, providing a link between the existing A83 Trunk Road at Butterbridge and follows the valley floor, heading north-east towards Loch Sloy. Effects on the hydro-electric station at Loch Sloy would likely be avoided within the route corridor. Construction would require usage and manufacture of built material assets, notably for the following activities:</p> <ul style="list-style-type: none"> ▪ Approximately 12km of new single carriageway. ▪ A tunnel in the region of 7.5km in length. ▪ Numerous structural crossings of watercourses. <p>As indicated in the Climatic Factors section, the route corridor could result in significant negative environmental effects on natural material assets, including peat soils and forestry.</p>
Cultural Heritage	<p>There are two Listed Buildings on the northern boundary of the route corridor, at Inverarnan. One is Category B and the other is Category C. There are no other designated cultural heritage resources within the route corridor. The Butter Bridge Category B Listed Building is within 200m of the southern extent of the route corridor. The A83 Trunk Road follows the line of the Old Military Road, an undesignated cultural heritage resource.</p>	<p>Due to the low numbers of known cultural heritage resources in the route corridor, it is anticipated that a road alignment could be developed to avoid major effects on these.</p>
Landscape and Visual Amenity	<p>The route corridor is situated entirely within the LLTNP boundary. The northern extent of the route corridor from its start point for approximately 2km is situated within the Loch Lomond National Scenic Area (NSA). A small part of the route corridor on the north-western slopes of Garabal Hill (524m AOD), approximately 1km long and 250m wide, is located within the Ben Lui Wild Land Area (WLA).</p>	<p>There is potential for effects on the special qualities of the LLTNP and the Loch Lomond NSA, the local landscape character and views from Highland summits within the route corridor due to the construction and operation of a road and supporting infrastructure.</p> <p>The introduction of the new carriageway, traffic, tunnel portals and potential ventilation shafts from the mountain tops to the tunnel with associated haul routes and loss of existing vegetation would</p>

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	<p>This route corridor is located within the Highland Summits Landscape Character Type (LCT) and Upland Glens - Loch Lomond & the Trossachs LCT.</p> <p>The route corridor appears to be aligned with existing access tracks, however the complex topography, the general absence of settlement or infrastructure and the resultant sense of place in the route corridor means that the receiving landscape is characterised by a degree of wildness and tranquillity.</p> <p>Land cover within the route corridor for this option comprises pockets of coniferous forestry, grassland/moorland, Loch Sloy reservoir and numerous watercourses. The hydroelectric infrastructure at the eastern end of Loch Sloy is outside of the route corridor.</p> <p>The southern tip of the route corridor is located along the Argyll Coastal Route and within the Argyll Forest Park.</p> <p>The route corridor is positioned and would likely be visible from the nearby popular hill walking summits (Ben Vorlich, Ben Vane and Beinn Ime).</p>	<p>have adverse effect on the landscape character and visual amenity of the area and the sense of remoteness, naturalness and wildness in the Ben Lui Wild Land Area on the slopes of Garabal Hill.</p>

Table D3: Corridor 3 - Glen Fyne

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>2254.3ha of Glen Etive and Glen Fyne Special Protection Area (SPA) falls within the route corridor, and the route corridor runs through approximately 15km of the SPA.</p> <p>There are 23 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor.</p>	<p>2254.3ha of Glen Etive and Glen Fyne SPA falls within the route corridor, and the route corridor runs through approximately 15km of the SPA. This could result in the temporary and permanent loss of considerable SPA habitat, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This could result in a significant negative environmental effect.</p> <p>There are 23 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, resulting in a significant negative environmental effect.</p> <p>There is potential for negative effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The route corridor is rural in nature and there are fewer than 10 residential and commercial properties in the route corridor visible from aerial imagery, including Fyne Ales Brewery, Glen Fyne Cottage, Glen Gyne Bothy and Alt na Lairig power</p>	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep</p>

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
	<p>station in the southern half of the route corridor. The settlement of Inverarnan is situated at the eastern extent of the route corridor. East of the Allt na Lairig power station, there are no further properties visible in the route corridor until Inverarnan.</p> <p>Core paths C204a, b and c (Glen Fyne, Cairndow) run through the route corridor from Glen Fyne east of the River Fyne, run alongside the route corridor from the track adjacent to the A83 Trunk Road and towards the reservoir route. They then loop around a reservoir in the centre of the route corridor, and back towards Glen Fyne. Core path C202 (Clachan, Cairndow (Tree house path)) is located just outside the southern extents of the route corridor.</p> <p>Currently, accidents or incidents (e.g. roadworks, landslips, flooding) occurring on any part of the A83 and A82 Trunk Roads 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.</p>	<p>disturbance for local residents. During the operation phase, there is potential for receptors close to the route to experience noise and vibration effects from increased vehicle traffic. While there are relatively few residential receptors within the route corridor, it is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs). It is uncertain at this stage whether such impacts would be major.</p> <p>The route corridor would provide a new link between the A83 Trunk Road and Inverarnan and potentially reduce the severity and/or incidence of severance issues however there is not expected to be a significant change in connectivity for residents, businesses and visitors in the route corridor and Argyll and Bute as a whole.</p> <p>It is expected that the route corridor would also provide greater accessibility to hill-walking routes and core paths in the wider surrounding area, including C204a-c (Glen Fyne, Cairndow) and C202 (Clachan, Cairndow (Tree house path)).</p> <p>There may be land-take from properties required to facilitate the operation of the route corridor but the significance of effects on individual landowners is uncertain at this stage.</p> <p>There is also potential that some properties including may require demolition to avoid effects on the River Fyne.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Two river water bodies, Allt na Lairige and River Fyne; and ▪ One coastal water body, Loch Fyne – Upper Basin. 	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of two Water Framework Directive (WFD) classified river water bodies, one WFD coastal water body and approximately 50-60 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial flood risk from River Fyne, Allt an Lairige, Allt Arnan, Eas an Turic and Eas Riachain during a medium likelihood event (0.5% AEP (200-</p>

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
	<p>The route corridor also crosses approximately 50-60 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial flood risk from River Fyne, Allt an Lairige, Allt Arnan, Eas an Turic and Eas Riachain during a medium likelihood event (0.5% AEP (200-year) event). There is potential for existing coastal flooding during a medium likelihood event (0.5% AEP (200-year) event) from Loch Fyne.</p> <p>The Upper Loch Fyne and Loch Goil Marine Protected Area (MPA) and Loch Fyne Shellfish Water Protected Area is within the vicinity of the corridor.</p> <p>There are no Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the immediate vicinity of the route corridor.</p> <p>The route corridor is not within the vicinity of surface water Drinking Water Protected Areas.</p> <p>No bathing waters are in the vicinity of the route corridor.</p>	<p>year) event). Potential for coastal flooding during a medium likelihood event (0.5% AEP (200-year) event) from Loch Fyne.</p> <p>Construction within the route corridor may have an effect on the Upper Loch Fyne and Loch Goil MPA.</p> <p>The potential effects of construction and operation within the route corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>
Soils	<p>Soil type within the route corridor is predominantly peaty podzols with mineral podzols and brown soils in the valley floor at Inverarnan and at the head of Loch Fyne. The route corridor predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) in the Carbon and Peatland 2016 Map as well as mineral soils. However, the route corridor also transects peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) around Garabal Hill and Lairig Arnan and also at Glen Fyne. Given the combination of soils, climatic conditions and topography, the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 6 (Class 6.2 and 6.3) with Class 5.3 on the more productive soils around Inverarnan. LCA Class 4.2 land is found at the head of Loch Fyne.</p>	<p>The route corridor would potentially require road structures and ground engineering measures and a significant negative environmental effect is assessed. This recognises that the route corridor is unlikely to avoid potential negative effects on Garabal Hill to Lochan Strath Dubh-uisge GCR and Class 1 peatland habitat (nationally important and of high conservation value). Loss of existing commercial forestry and land identified as 'Potential' within the Argyll & Bute Woodland Strategy is also likely to be unavoidable within the route corridor.</p>

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
	<p>There is a Geological Conservation Review (GCR) site (Garabal Hill to Lochan Strath Dubh-uisge) north-west of Inverarnan and the route corridor would transect the northern edge of the site.</p> <p>The Land Capability for Forestry (LCF) class is predominantly Class F5 with areas of Class F4 and Class F2 at the head of Loch Fyne. There are existing stands of commercial forestry in the section west of Inverarnan and at the head of Loch Fyne. The route corridor is largely identified in the Argyll & Bute Council Woodland Forestry Strategy as Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) with only small pockets identified as Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists) at the head of Loch Fyne.</p>	
Air Quality	<p>The route corridor is rural in nature and there are fewer than 10 residential and commercial properties in the route corridor visible from aerial imagery. The settlement of Inverarnan is situated at the eastern extent of the route corridor. There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>The route corridor does not follow an existing route and would therefore introduce traffic-related emissions to the area (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>However, there are very few residential receptors within the route corridor and the existing air quality in the region is good, and with mitigation measures in place it is expected that any negative effects which do arise are likely to be minor.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna.</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors. However, due to the northern location of this route corridor, it is</p>	<p>The route corridor requires construction of approximately 14.5km of new carriageway, including an approximately 9.3km long tunnel west of the existing A82 trunk road. The manufacture of materials and construction would result in the release of carbon emissions having a significant negative effect</p>

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
	<p>considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area.</p> <p>As indicated in the 'Water Environment' section, there are areas which may be at risk of fluvial flooding from watercourses within the route corridor.</p> <p>As described in the 'Soils' section, the soil type is predominantly peaty podzols. There are also significant quantities of forested land in the route corridor, including parcels of ancient woodland. Both of these have a high carbon sink value.</p>	<p>on climate as stated in the Material Assets section.</p> <p>Sections of the route corridor are situated within or in close proximity to zones deemed to be at high that may be at risk of fluvial flooding as indicated in the 'Water Environment' section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding of watercourses. The topography of the route corridor follows a valley floor with steep terrain, posing a landslide risk from slope instability.</p> <p>The soil type in the route corridor is primarily peat soils with a high carbon sink value. Construction in the route corridor would degrade this peatland, releasing stored carbon and removing ground with a high carbon sequestration potential.</p> <p>Any felling required would also reduce the carbon sink value of forests within the route corridor.</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are relatively low, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. There are areas of forestry within the route corridor and as listed in the Soils section, there are peat soils present.</p> <p>By way of built material assets in the route corridor, there is a mix of residential and commercial infrastructure adjacent to the existing access track that the route corridor follows visible from aerial imagery but these total fewer than ten. This includes Fyne Ales Brewery and Glen Fyne Cottage. There are several energy generating assets within the route corridor associated with the Alt na Lairig hydro power station. The West Highland Line railway also passes through the route corridor and is located in land to the west of the A82 Trunk Road.</p> <p>The existing A83 and A82 Trunk Roads are the only other built infrastructure assets in the vicinity of the route corridor. The closest commercial waste disposal facility is located to the south at Helensburgh.</p>	<p>With regard to natural material assets, as set out in the Biodiversity, Flora and Fauna section, it is likely that felling of woodland, including AWI, would be required for the corridor. As set out in the Soils section, construction would be unavoidable on peat soils. This is assessed as resulting in a significant negative environmental effect on natural material assets.</p> <p>The following elements would require significant material input and have a significant negative environmental effect on Climate from built material assets as discussed in the Climate section:</p> <ul style="list-style-type: none"> ▪ Approximately 14.5km of new single carriageway. ▪ A tunnel of considerable length – in the region of 9.3km in length. ▪ Numerous structural crossings of watercourses.

Table D3: Corridor 3 - Glen Fyne		
SEA Topic	Baseline	Assessment
Cultural Heritage	<p>Achadunan Motte Scheduled Monument (ID: SM289) is located within the route corridor along with three Listed Buildings (two are Category B and the other is Category C). Achadunan Motte Scheduled Monument (ID: SM289) is located within the route corridor along with four Listed Buildings (two are Category B and two are Category C). The A83 Trunk Road follows the line of the Old Military Road, an undesignated cultural heritage resource.</p>	<p>Due to the low numbers of known cultural heritage resources in the route corridor, it is anticipated that a road alignment could be developed to avoid significant negative effects on these.</p>
Landscape and Visual Amenity	<p>Approximately 4km of the eastern part of the route corridor is located within the LLTNP and the easternmost 0.5km within the Loch Lomond National Scenic Area (NSA). The majority of the route corridor is located within North Argyll Area of Panoramic Quality (APQ). Approximately 5km of this route corridor is also located within the Ben Lui Wild Land Area (WLA).</p> <p>This route corridor is located within the Upland Glens - Loch Lomond & the Trossachs Landscape Character Type (LCT), Upland Glens – Argyll LCT, Rugged Mountains LCT, Highland Summits LCT, Steep Ridges and Mountains LCT and Loch Fyne - Inveraray to St Catherines Seascape Character Area.</p> <p>Starting at the head of Loch Fyne the route corridor appears to follow the existing core path in the valley floor up to the dammed reservoir. It then crosses the Highland summits characterised by a degree of wildness and tranquillity before re-joining existing tracks near Inverarnan. Land cover within the route corridor comprises mainly open grassland and moorland with pockets of coniferous forestry, reservoir and numerous watercourses.</p> <p>The western tip of the route corridor is located along the Argyll Coastal Route. The route corridor would likely be visible from the nearby popular hill walking summits (Beinn Bhuidhe).</p>	<p>There is potential for significant negative effects on the LLTNP, the special qualities of the Loch Lomond NSA, Ben Lui WLA, the North Argyll APQ, the local landscape character and views from Highland summits within the route corridor due to the introduction of a new road, tunnel portals and potential ventilation shafts on mountain tops into a relatively tranquil landscape, including the construction and operation of the carriageway and supporting infrastructure.</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>17.5ha of Glen Etive and Glen Fyne SPA falls within the route corridor.</p> <p>168.8ha of Beinn an Lochain SSSI falls within the route corridor. All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor.</p> <p>252.9ha of Loch Eck SSSI falls within the route corridor.</p> <p>All of Craighoyle Woodland SSSI (77.6ha) falls within the route corridor.</p> <p>Upper Loch Fyne and Loch Goil Marine Protected Area (MPA) is approximately 0.1km north of the route corridor at closest point.</p> <p>7.4ha of Ross Park SSSI falls within the route corridor.</p> <p>149 parcels of woodland listed on the AWI fall within the route corridor, particularly adjacent to the A815, adjacent to the C09 road towards Finart Bay from the A815 and north of Finart Bay towards the Loch Long crossing.</p>	<p>17.5ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This would be a significant negative environmental effect.</p> <p>168.8ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>252.9ha of Loch Eck SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features bryophyte assemblage, flood-plain fen and oligotrophic loch, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Craighoyle Woodland SSSI (77.6ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features bryophyte assemblage and lichen assemblage which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Upper Loch Fyne and Loch Goil MPA is approximately 0.1km north of the route corridor at closest point. Pollution during construction and operation of crossing could adversely impact the MPA, which could be a significant negative environmental effect.</p> <p>4.7ha of Ross Park SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features lichen assemblage and Scottish dock, which</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
		<p>would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There are 149 parcels of AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for negative effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads. The route corridor passes adjacent to or through settlements containing receptors at St Catherines, Ardnagowan and Creggans on Loch Fyne. The route corridor heads south-east at Strachur where it meets the A886 into a rural area, passing Invernoaden on the A815. Once across Loch Long, the route corridor passes through the larger settlement of Garelochhead on the A817 before finishing at Shantron. There are a number of settlements within the route corridor including Faslane, Garelochhead,	There is potential for localised noise and vibration effects on receptors close to the within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents. During the operation phase, there is potential for receptors close to the route to experience noise and vibration effects from increased vehicle traffic. It is uncertain at this stage whether noise and vibration impacts would be significant during construction and operation. Construction of watercourse crossings and

Table D4: Corridor 4 – A82 – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<p>Ardentinny, Strachur and St Catherine's. HMNB Clyde and Garelochhead Training Camp is located just outside the corridor at Faslane.</p> <p>There are several core paths within the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C220b (Strachur village back road) ▪ C221a and b (Cowal Way - Strachur to Balliebeg) ▪ C466 (B833 to Dun Diamh part circular Garelochhead) ▪ C280a, b, c and d (Garelochhead to Loch Long Way) ▪ C279f (Helensburgh Pier to Garelochhead via Shandon) ▪ C275b and c (Three Lochs Way, Helensburgh). <p>Cowal Way and Three Lochs Way (long distance walking paths) are also located within the route corridor. Cowal Way intersects the route corridor at Strachur and travels in a south-easterly direction alongside the A815 until it meets Loch Eck. Three Lochs Way follows a similar route to the route corridor, travelling in a south-easterly direction from Garelochhead to the north of Helensburgh.</p>	<p>tunnelling options in particular could result in a longer construction period and could involve activities such as piling, with high levels of noise and vibration.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossing from Cowal to Garelochhead would provide significant journey time savings for vehicle travellers around Loch Long and the corridor would improve connectivity between the central belt and Argyll and Bute.</p> <p>It is expected that the route corridor would provide greater accessibility to the Cowal Way, Three Lochs Way and the core path network in and around the corridor. There is also potential for paths to be severed as a result of the corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor and the tunnelling options would require additional land take and potentially demolition.</p> <p>There is also potential for localised effects from air on human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Six river water bodies, River Cur (u/s Glenbranter), River Cur (Glenbranter to Loch Eck), River Finart, Fruin Water, Finlas Water and Kinglas Water; ▪ One loch water body, Loch Eck; and ▪ Two coastal water bodies, Loch Fyne – Upper Basin and Loch Long (South). 	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of six Water Framework Directive (WFD) classified river water bodies, two WFD coastal and one loch WFD water body and approximately 90-100 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial and surface water flood risk on the A815 from Loch Eck, River Finart and River Cur and from fluvial flood risk from Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event (0.5% AEP (200-year event)).</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. The route corridor may also be at fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>The route corridor also crosses approximately 90-100 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial and surface water flood risk on the A815 from Loch Eck, River Finart and River Cur and from existing fluvial flood risk from Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor may also be at existing fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich Burn and at Garelochhead from the McAulay Burn during a medium likelihood event (0.5% AEP (200-year) event). The corridor may be at existing coastal flood risk Loch Fyne and Loch Long during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the route corridor.</p> <p>The Loch Fyne Shellfish Water Protected Area is within the route corridor. There are Active Aquaculture Sites and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through four surface water Drinking Water Protected Areas.</p> <p>No bathing waters are in the vicinity of the route corridor</p>	<p>Burn and at Garelochhead from the McAulay Burn during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor may be at risk of coastal flooding along Loch Fyne and Loch Long during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from the new crossing on Loch Long, which could impact flooding on associated road infrastructure. There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels, due to building in the floodplain.</p> <ul style="list-style-type: none"> ▪ May affect the Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area. ▪ Loch Fyne Shellfish Water Protected Area is within the route corridor and may be affected by the corridor. ▪ Active Aquaculture Sites and Classified Shellfish Harvesting Areas within the vicinity of the route corridor may be affected. ▪ Four surface water Drinking Water Protected Areas may be affected. <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>
Soils	<p>The route corridor contains a mixture of peaty podzols and gleys, mineral gleys, alluvial soils and brown earths.</p> <p>The ground conditions in the route corridor contain significant peat reserves with a high carbon sink value. Land capability for agriculture (LCA) is generally mid to low value, and ranges from 3.2 – 6.3.1 Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 2 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor.</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map.</p> <p>However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) around Garelochhead, Ardentinny, Loch Eck and Strachur. Given the combination of soils, climatic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4.2 on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p>	
Air Quality	<p>The route corridor passes through or adjacent to a number of settlements including Shantron, Blairglas, Inverlauren, Garelochhead, Portincapple, Ardentinny, Sligrachan, and Strachur. There are a number of settlements within the route corridor including Faslane, Garelochhead, Ardentinny, Strachur and St Catherine's.</p> <p>There are no Air Quality Management Areas (AQMAs) in the corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities, which includes construction of a large structure across Loch Long, and emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects. However, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow

SEA Topic	Baseline	Assessment
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As described in the 'Water Environment' there are several sections of the route corridor that may be at existing fluvial and surface water flood risk on the A815 from Loch Eck, River Finart and River Cur and from existing fluvial flood risk from Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event. The route corridor may also be at existing fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich Burn and at Garelochhead from the McAulay Burn during a medium likelihood event. The corridor may be at existing coastal flood risk Loch Fyne and Loch Long during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>There are areas of forested land in the route corridor and areas identified in Argyll and Bute's Woodland and Forestry Strategy. Forested areas have a carbon sink value. As described in the Soils section, there are several areas of peatland in the corridor with high carbon sink value.</p>	<p>The route corridor generally follows the existing A817 and A814 carriageway. As outlined in the Material Assets section, major structures would be required, which could have significant negative environmental effects on climate due to the release of embodied carbon emissions associated with the construction materials and installation process</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are considered to be relatively moderate to high for this route corridor. The corridor would reduce the driving distance for some journeys due to the introduction of the watercourse crossing at Loch Long, which over time would likely result in carbon savings.</p> <p>Effects on the route corridor as a result of predicted changes to the climate and weather should also be considered. Sections of the route corridor are situated within or in close proximity to zones which may be at risk of coastal or fluvial flooding as indicated in the 'Water Environment' section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As described in the 'Soils' section, the route corridor is assessed as having a minor negative or uncertain environmental effect as there are several areas of peatland in the corridor with high carbon sink value. Construction on these areas would degrade the land and release the sequestered carbon.</p> <p>As outlined in the Biodiversity, Flora and Fauna section, felling of forestry would be required in the route corridor which would reduce carbon sink value of forests and could result in significant negative effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As indicated in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are peat soils present.</p> <p>There are also several built material assets in the route corridor. These include assets for electricity generation at Glen Kinglas at the northern extent of the corridor. There are also several hydro schemes in the route corridor, including sites at Ardno, Ardchylene, Strachyr, Cnon Madaidh, Allt nan Crocan and Drynain. The route corridor generally follows existing road infrastructure</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>Loss of these natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>As outlined above in the 'Climatic Factors' section, there is likely to be a significant amount of material usage and waste generated to construct the route corridor, largely as a result of the watercourse crossing</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>including a mixture of 'A' 'B' and 'C' roads. The West Highland Line railway is also within the corridor in proximity to Garelochhead with an existing road crossing. There are waste disposal facilities located in close proximity to the route corridor at Dunoon and Dalinlongart.</p> <p>HMNB Clyde and Garelochhead Training Camp are in close proximity to the corridor at Faslane, likely resulting in a high military presence and heightened security level, particularly around the submarine base.</p>	<p>structures, carriageway construction and upgrades, resulting in a significant negative environmental effect from built material assets.</p> <ul style="list-style-type: none"> ▪ 5.5km of upgrading and widening of the existing roads along the route corridor length of new carriageway is required to be constructed. ▪ Construction of an approximate 1.6km long (1,200m main span) structure over Loch Long. ▪ Construction of tunnels depending on local alignment. One potential local alignment would require two tunnels over 3km long. A potential alternative local alignment would require one tunnel over 6km long, instead of the two tunnels over 3km long. ▪ Construction of an approximate 400m long structure near the A83 Trunk Road tie in. ▪ Considerable engineering works would be required to upgrade the existing single-track C09 road to trunk road standards as well as localised realignment works.
Cultural Heritage	<p>There are six Scheduled Monuments and 65 Listed Buildings, including concentrations near the villages of Strachur and Garelochhead within the route corridor, along with two Gardens and Designed Landscapes (GDLs). Rossdhu GDL abuts (and is partially within) the entire eastern boundary of the route corridor.</p>	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects on these.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 58km long. Starting at the north-eastern tip of Loch Fyne the route corridor mostly follows existing roads until Whistlefield (near Garelochhead) where a new road and crossing at Loch Long from Barnacabber to Rosneath Peninsula would be introduced. The route corridor then follows existing roads until it joins the A82 Trunk Road on the western shores of Loch Lomond.</p> <p>Approximately 11 km of the eastern part of the route corridor is located within the LLTNP of which approximately 5km is located the Loch Lomond National Scenic Area (NSA). In addition, another 15km or so of the route corridor is located within the LLTNP in Cowal between Loch Long and Loch Fyne. This section of the route corridor runs through Argyll Forest Park.</p>	<p>There is potential for significant negative environmental effects on the, the special qualities of the LLTNP and the Loch Lomond NSA, the North Argyll and East Loch Fyne (Coast) APQs, one GDL and the local landscape and seascape character due to the construction and operation of the carriageway and supporting infrastructure. There is also potential for significant negative visual effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads and people on long distance walking routes and Highland summits within the route corridor. Construction of the new structure at Loch Long would affect the landscape character and visual amenity of the area.</p>

Table D4: Corridor 4 – A82 – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>The route corridor runs along existing roads within the North Argyll and East Loch Fyne (Coast) Areas of Panoramic Quality (APQs) on the eastern side of Loch Fyne and passes through Ardkinglas And Strone Garden and Designed Landscape (GDL). There are several Open Space Protection Areas within the route corridor around Garelochhead and Strachur. This route corridor would cross and likely be visible from two of Scotland’s Great Trails, the Loch Lomond and Cowal Way (Strachur to Lochgoilhead section) and the Three Lochs Way (Garelochhead to Arrochar / Tarbet section). Parts of the corridor would also be visible from large sections of Loch Long and Loch Fyne coastline as well as nearby hill walking summits and residential receptor locations.</p> <p>This route corridor is located within the Rugged Mountains Landscape Character Type (LCT), Steep Ridges and Hills LCT, Rocky Coastland – Argyll LCT, Straths and Glens LCT, Straths and Glens with Lochs LCT, Lowland Loch Basin - Loch Lomond & the Trossachs LCT, Open Ridgeland - Glasgow & Clyde Valley LCT, Steep Ridges and Mountains LCT and Open Ridges LCT. There is a large number of Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Inveraray to St Catherines SCA, Gareloch - Head of Gareloch SCA, Loch Long - Shepherd's Point to Coileissan SCA,</p> <p>Loch Long - North of Blairmore to Shepherd's Point SCA, Loch Long Finnart Oil Terminal to Coulport SCA and Loch Fyne - St Catherines to Newton Bay SCA.</p> <p>Land cover within the corridor for this route option comprises small and scattered settlements, sea and freshwater lochs and coastland, open grassland and moorland, native woodland, coniferous forestry and numerous watercourse.</p>	

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>Corridor crosses Upper Loch Fyne and Loch Goil MPA for approx. 2.8km and is also approx. 0.2km south at another section.</p> <p>131.7ha of Ruel Estuary SSSI falls within the route corridor.</p> <p>360.2ha of Loch Eck SSSI falls within the route corridor.</p> <p>All of Craighoyle Woodland SSSI (77.6ha) falls within the route corridor.</p> <p>4.7ha of Ross Park SSSI falls within the route corridor.</p> <p>160 parcels of woodland listed on the AWI fall within the route corridor. These are mostly ancient or semi-natural origin with some long-established of plantation origin, particularly adjacent to the A815, adjacent to the access track towards Finart Bay from the A815 and north of Finart Bay towards the Loch Long crossing.</p>	<p>The route corridor crosses Upper Loch Fyne and Loch Goil MPA for approximately 2.8km and is also approximately 0.2km south at another section. Pollution during construction and operation of crossing could affect the MPA, which could be a significant negative environmental effect.</p> <p>131.7ha of Ruel Estuary SSSI falls within the route corridor. This could result in the loss of SSSI habitat, including the loss of designated features fen meadow, flood-plain fen, saltmarsh and upland oak woodland, which could be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>360.2ha of Loch Eck SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features bryophyte assemblage, flood-plain fen and oligotrophic loch, which could be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Craighoyle Woodland SSSI (77.6ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features bryophyte assemblage and lichen assemblage, which could be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>4.7ha of Ross Park SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features lichen assemblage and Scottish dock, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There are 160 parcels of AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for impacts on terrestrial and aquatic species from construction activities, as follows:</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads. There are a number of settlements within the route corridor including Achnaba, Otter Ferry, Auchenbreck, Balliemore, Ardtaraig, Clachaig, Dalinlongart, Ardbeg, Uig, Ardentinny, Garelochhead, Shantron and Blairglas.</p> <p>There are several core paths in the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C406 (Otter Ferry Circular, Loch Fyne); ▪ C215 (Glendaruel to Otter Ferry); ▪ C217a (Otter Ferry to Blairs Ferry, Kames); ▪ C214h, i, k, l (Cowal Way Glenbranter to Portvadie); 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings and tunnelling in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration effects from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossings would provide significant journey savings around Loch Fyne and Loch Long and the route corridor would improve connectivity between the central belt and Argyll and</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C212b (Port Lamont to Ardtariag, Loch Strivan); ▪ C223a, b and c (Dunans loop to Inverreck and LLTNP boundary); ▪ C513 (Broxwood bird hide, Sandback); ▪ C466 and C467 (B833 to Dun Diamh part circular Garelochhead); ▪ C280a, b, c and d (Garelochhead to Long Loch Way); ▪ C279f (Helensburgh Pier to Garelochhead via Shanton); and ▪ C275b and c (Three Lochs Way, Helensburgh). <p>Two long distance walking paths (Cowal Way and Three Lochs Way) are also within the route corridor. Cowal Way intersects the corridor to the south of Glendaruel, and Three Lochs Way follows a similar route to the corridor from Garelochhead to the north of Helensburgh.</p> <p>National Cycle Network (NCN) Route 75 passes through the route corridor, following the A886 east of Loch Riddon, and travelling north past Glendaruel. The Dunoon to Portvadie Sustrans route (an on-road route which is not on the National Cycle Network) intercepts the corridor at Dalinlongart and travels in a westerly direction along the route of the existing B836 and A886 (and corridor) until it reaches Glendaruel.</p>	<p>Bute. The route corridor would provide greater accessibility to active travel routes such as the NCN Route 75, Cowal Way and Three Lochs Way, and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor, but the extent and significance of such impacts are uncertain at this stage.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor and the tunnelling options would require additional land take and potentially demolitions.</p> <p>There is also potential for localised effects from air on human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive,, comprising:</p> <ul style="list-style-type: none"> ▪ 10 river water bodies, Kilfinan Burn/Allt Lean Achaidh, River Ruel, Tamhnic Burn, Balliemore Burn/Allt Glen Laorigh, Glentarsan Burn, Little Eachaig 	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of approximately ten Water Framework Directive (WFD) classified river water bodies, five WFD coastal and one loch WFD water body and approximately 150-160 minor watercourses.</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>River/Cruach Neuran Burn, River Eachaig, River Finart, Fruin Water and Finlas Water;</p> <ul style="list-style-type: none"> ▪ One loch water body, Loch Eck; and ▪ Five coastal water bodies, Loch Long (south), Holy Loch, Loch Striven, Loch Riddon and Loch Fyne - Middle Basin. <p>The route corridor also crosses approximately 150-160 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial and surface water flood risk on the A815 from Loch Eck and River Finart, and from existing fluvial flood risk from the River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Balliemore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may also be at existing fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich Burn and at Garelochhead from the McAulay Burn during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing coastal flood risk from Loch Long, Holy Loch, Loch Striven, Loch Riddon and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Loch Eck SSSI, the Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>The Loch Fyne, Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the route corridor.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p>	<p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial and surface water flood risk on the A815 from Loch Eck and River Finart, and from fluvial flood risk from the River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Balliemore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor may also be at fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich Burn and at Garelochhead from the McAulay Burn during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor may be at coastal flood risk from Loch Long, Holy Loch, Loch Striven, Loch Riddon and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>Potential for coastal flooding from new crossings on Loch Long and Loch Fyne, which could impact flooding on associated road infrastructure.</p> <p>May impact the Loch Eck SSSI and Ruel Estuary SSSI. Upper Loch Fyne and Loch Goil Marine Protected Area may also be affected by crossing structures.</p> <p>Loch Fyne Shellfish Water Protected Area is directly crossed and may be impacted. Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the route corridor and may also be affected.</p> <p>Five surface water Drinking Water Protected Areas may also be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>The route corridor passes through five surface water Drinking Water Protected Areas.</p> <p>No bathing waters are in the vicinity of the route corridor.</p>	
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Peaty Gleys are predominant in the western section of the corridor. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) around Garelohead, Ardentinny and east of Otter Ferry.</p> <p>A small pocket of Class 1 peatland (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present adjacent to the B836 in Glen Lean. Given the combination of soils, climatic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F2 Loch Lomond in the east and at Otter Ferry in the west to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 2 and Class 1 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor.</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) at Garelochhead, Clachaig and Otter Ferry. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).	
Air Quality	<p>There are a number of settlements within the route corridor including Achnaba, Otter Ferry, Auchenbreck, Balliemore, Ardtaraig, Clachaig, Dalinlongart, Ardbeg, Uig, Ardentinny, Garelochhead, Shantron and Blairglas.</p> <p>There are no Air Quality Management Areas (AQMAS) in the route corridor or in the Argyll and Bute council area. Current and past annual assessments suggest that it will be very unlikely to be necessary to declare any AQMAS in Argyll and Bute in the future based on current air quality objectives (Argyll & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities including construction of large structures over Loch Long and at Loch Fyne, and greenhouse gas emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to experience increased pollutant emissions during operation from increased vehicle traffic.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience negative air quality effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality effects on ecological receptors are assessed under Biodiversity, Flora and Fauna.</p>
Climatic Factors	The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.	Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are relatively high, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles this would reduce in the future. Additionally,

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>As described in the 'Water Environment' section, the route corridor may be at existing fluvial and surface water flood risk on the A815 from Loch Eck and River Finart, and from existing fluvial flood risk from the River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Balliemore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and Kilail Burn during a medium likelihood event. The route corridor may also be at existing fluvial flood risk on and around the A817 from Fruin Water, Finlas Water, Allt a' Bhaile a' Mhuilinn, Auchengaich Burn and at Garelochhead from the McAulay Burn during a medium likelihood event. The route corridor may be at existing coastal flood risk from Loch Long, Holy Loch, Loch Striven, Loch Riddon and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event). The region in which the route corridor is located is expected to experience higher levels of annual rainfall in the future as a result of climate change, therefore increasing the frequency and intensity of flooding events.</p> <p>As described in the 'Soils' section, there are several areas of peatland in the route corridor with high carbon sink value.</p> <p>There are also significant quantities of forested land in the route corridor, including Argyll and Bute Forestry Strategy areas, carrying a carbon sequestration and sink value.</p>	<p>the route corridor would reduce the driving distance for some journeys due to the introduction of the watercourse crossings across Loch Long and Loch Fyne, which over time would likely result in carbon savings.</p> <p>Effects on the route corridor as a result of predicted changes to the climate and weather should also be considered. Sections of the corridor are situated within or in close proximity to zones which may be at risk of coastal or fluvial flooding as indicated in the 'Water Environment' section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As indicated in the 'Soils' section, the route corridor is likely to have impacts on peatland habitat, degrading the land and releasing its stored carbon. Any felling required would also reduce the carbon sink value of forested areas within the corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>As outlined in the Material section, there is requirement for significant engineering structures in the route corridor which would carry a high embodied carbon content. Manufacture of materials and construction activities would be expected to have a significant negative environmental effect on Climate.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As indicated in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are peat soils present.</p> <p>In terms of built material assets, the route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. The West Highland Line railway is also within the corridor in proximity to Garelochhead with an existing road crossing. There are waste disposal facilities located in close proximity to the route corridor at Dunoon and Dalinlongart.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland and peat soils that could be affected by the corridor. Loss of these natural material assets would result in major and minor negative environmental effects for soils and woodland respectively.</p> <p>As outlined in the 'Climatic Factors' section, construction of significant structural crossings and tunnels is required for this route corridor. These structures in addition to the existing carriageway upgrade would require significant raw material inputs and energy usage to construct, resulting in a significant negative environmental effect from a built material assets perspective from the following:</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>There are several renewable energy developments in the route corridor including hydroelectric schemes at Otter Ferry, Balagowan, Dalinlongart, Cnon Madaidh, Allt nan Crocan, Glen Striven and Kyles View.</p> <p>HMNB Clyde and Garelochhead Training Camp are in close proximity to the route corridor at Faslane, likely resulting in a high military presence and heightened security level, particularly around the submarine base.</p>	<ul style="list-style-type: none"> ▪ Construction of new offline carriageway and online upgrading works (total route corridor length of 76km) which follows the existing road network. ▪ Construction of an approximate 1.6km long (1,200m main span) structure over Loch Long. ▪ Construction of up to six tunnels depending on local alignment, three tunnels would be over 3kmm long, one tunnel would be over 6km long. ▪ Construction of an approximate 8.2km long (500 main span) structure over Loch Striven. ▪ Construction of an approximate 3kmm long (1,100 main span) structure at Loch Fyne. ▪ Approximately 88 new culverts required depending on the local alignment selected in Barnacabber. ▪ Approximately 4,350m² of tree/vegetation clearance to accommodate the new carriageway, releasing stored carbon and reducing sequestration potential.
Cultural Heritage	<p>There are seven Scheduled Monuments, 61 Listed Buildings and three Gardens and Designed Landscapes (GDLs) within the route corridor. The extent of the route corridor occupied by Benmore GDL and Ballimore GDL is relatively large. Rossdhu GDL abuts (and is partially within) the entire eastern boundary of the route corridor. There are concentrations of Listed Buildings at Benmore and Garelochhead. The Conservation Area at Clachaig is also located within the route corridor.</p>	<p>Due to the relatively high number of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant impacts on these. The most cultural heritage constraints are; where Benmore GDL and Ballimore GDLs cover large sections of the route corridor, where Rossdhu GDL abuts (and is partially within) the entire eastern boundary of the route corridor, the concentrations of Listed Buildings at Benmore and Garelochhead, and the Conservation Area at Clachaig. All of these areas could be considered as pinch points.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 76km long. Starting with the new crossing between the western and eastern shore of Loch Fyne at Otter Ferry, this route corridor mostly follows existing roads and winds its way between the northern tip of Loch Riddon, Loch Striven and Holy Loch, then along Loch Eck and the western shore of Loch Long, until Whistlefield (near Garelochhead) where a new road and crossing at Loch Long from Barnacabber to Rosneath Peninsula would be</p>	<p>There is potential for significant negative environmental effects on the LLTNP, the special qualities of the Loch Lomond and Kyles of Bute NSAs, the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute & South Cowal APQs, two GDLs and the local landscape and seascape character due to the construction and operation of the carriageway and supporting infrastructure and the large footprint of the scheme. There is also potential for significant negative visual effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads and people on long distance walking and cycle</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>introduced. The route corridor then follows existing roads until it joins the A82 Trunk Road on the western shores of Loch Lomond.</p> <p>Approximately 11 km of the eastern part of the route corridor is located within the LLTNP of which approximately 5km is located the Loch Lomond National Scenic Area (NSA). In addition, another 22km or so of the route corridor is located within the LLTNP in Cowal between Loch Long and Loch Eck. This section of the route corridor runs through Argyll Forest Park and Benmore (Younger Botanic Garden) Garden and Designed Landscape (GDL) while the section of the corridor on the eastern shore of Loch Fyne runs through Ballimore GDL. Approximately 20km of the western part of the route corridor is located within the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute & South Cowal Areas of Panoramic Quality (APOs). The route corridor runs through the Kyles of Bute NSA at the top of Loch Riddon for approximately 3km on the A836. There are several Open Space Protection Areas within the route corridor around Port Ann and Garelochhead. This route corridor also runs through Clachaig Conservation Area. This corridor would cross and likely be visible from two of Scotland's Great Trails, the Loch Lomond and Cowal Way (Glenbranter to Portavadie section) and the Three Lochs Way (Garelochhead to Arrochar / Tarbet section). Parts of the corridor would also be visible from large sections of Loch Long and Loch Fyne coastline as well as nearby hill walking summits and residential receptor locations.</p> <p>The Landscape Character Types (LCTs) from the Loch Fyne crossing to the Loch Long crossing are Rocky Coastland – Argyll LCT, Plateau Moor and Forest – Argyll LCT, Steep Ridges and Mountains LCT, Craggy Upland – Argyll LCT, Straths and Glens LCT, Steep Ridges and Hills LCT and Settled Coastal Fringe LCT. East of the Loch Long crossing the LCTs are Steep Ridges and Mountains LCT, Open Ridges LCT, Steep Ridges and Hills LCT, Straths and Glens LCT, Open Ridgeland - Glasgow & Clyde Valley LCT and Lowland Loch Basin - Loch Lomond & the Trossachs LCT.</p> <p>There is a large number of Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Lachlan Bay to South Ballimore SCA, Loch Fyne - Loch</p>	<p>routes and Highland summits within the route corridor. The route corridor passes through the Kyles of Bute and Loch Lomond NSAs, which would likely be impacted during construction and potentially operation. Construction of the new structures at Loch Fyne and Loch Long would affect the landscape character and visual amenity of the areas.</p>

Table 5: Corridor 5 - A82 – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>Gilp to Brainport Bay SCA, Loch Striven - Head of Loch Striven SCA, Loch Striven - Head of Loch Striven to The Craig SCA, Loch Striven - Ardbeg Point to Head of Loch Striven SCA, Inner Firth of Clyde - Holy Loch SCA, Gareloch - Head of Gareloch SCA, Loch Long - Shepherd's Point to Coilessan SCA, Loch Long - North of Blairmore to Shepherd's Point SCA and Loch Long Finnart Oil Terminal to Coulport SCA.</p> <p>Land cover within the route corridor comprises small and scattered settlements, sea and freshwater lochs and coasts, open grassland and moorland, large blocks of woodland and numerous watercourses.</p>	

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>17.5ha of Glen Etive and Glen Fyne SPA falls within the route corridor.</p> <p>168.6ha of Beinn an Lochain SSSI falls within the route corridor.</p> <p>All of Ardchylene Wood SSSI (176.8ha) falls within the route corridor.</p> <p>All of Loch Eck SSSI (541.5ha) falls within the route corridor.</p> <p>There are 124 parcels of AWI within the route corridor.</p>	<p>17.5ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This would be a significant negative environmental effect.</p> <p>168.8ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Ardchylene Wood SSSI (176.8ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Most of Loch Eck SSSI (541.5ha) falls within the route corridor. This could result in the considerable temporary and permanent loss of SSSI habitat, including the loss of designated features bryophyte assemblage, flood-plain fen and oligotrophic loch, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>124 parcels of woodland listed on the AWI fall within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for negative environmental effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> Disturbance from noise and vibration and light pollution.

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for unavoidable habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads. There are a number of settlements within the route corridor, including Dunoon, Sandbank, Rashfield, Benmore, Inveroaden, Glen Sluain, Strachur, Creggans, Ardnagowan, and St Catherine's.</p> <p>The following core paths are within the route corridor:</p> <ul style="list-style-type: none"> ▪ C220a and b (Strachur village back road) ▪ C221a (Cowal Way - Strachur to Lochgilphead) ▪ C221b (Cowal Way - Strachur to Balliebeg) ▪ C223a (Dunans loop to Inverreck and LLTNP boundary) ▪ C225 (Dunoon to Sandbank (High Road)) ▪ C211c (Ardnadam heritage trail loop) 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of the watercourse crossing in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration effects from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossing to Dunoon would provide significant journey savings around the Firth of Clyde and the route corridor would improve connectivity between the central belt and Argyll and Bute for some traffic. The route corridor would provide greater accessibility to active travel routes including</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C2488 (Dunloskin Wood, Dunoon) ▪ C207a, c and d (Sandbank to Toward) ▪ C226 (Bird Garden to Ardnadam) ▪ C227a, b, c and d (Alexander Street (rear) path network, Dunoon) ▪ Cowal Way, a long distance walking path, intersects the route corridor at Strachur. <p>The Dunoon to Portvadie Sustrans route (an on-road route which is not on the National Cycle Network) intercepts the route corridor at Dunoon and continues along the route of the existing A815 (and route corridor) until it reaches Dalinlongart where it continues in a westerly direction outwith the route corridor.</p>	<p>to the Cowal Way and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor.</p> <p>There is also potential for localised effects from air quality on human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Five river water bodies, Kinglas Water, River Cur (u/s Glenbranter), River Cur (Glenbranter to Loch Eck), Little Eachaig River/Cruach Neuran Burn, River Eachaig. ▪ One loch water body, Loch Eck. ▪ Three coastal water bodies, Firth of Clyde Inner – Dunoon and Wemyss Bay, Loch Fyne – Upper Basin and Holy Loch. <p>The route corridor also crosses approximately 150-160 minor watercourses.</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of five Water Framework Directive (WFD) classified river water bodies, three WFD coastal and one loch WFD water body and approximately 150-160 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial and surface water flood risk on the A815 from Loch Eck and River Cur and from fluvial flood risk from River Eachaig, Little Eachaig, Inverchapel Burn, Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No, Kinglas Water, Milton Burn in Dunoon and two minor watercourses at Loch Eck during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor may also be at coastal flood risk at Dunoon, Holy Loch and along Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event).</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial and surface water flood risk on the A815 from Loch Eck and River Cur and from existing fluvial flood risk from River Eachaig, Little Eachaig, Inverchapel Burn, Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No, Kinglas Water, Milton Burn in Dunoon and two minor watercourses at Loch Eck during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may also be at existing coastal flood risk at Dunoon, Holy Loch and along Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>Loch Fyne Shellfish Water Protected Area is within the route corridor.</p> <p>There are Active Aquaculture Sites, and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through one surface water Drinking Water Protected Area.</p> <p>Lunderston Bay bathing water is outwith the route corridor but within the vicinity of the route corridor.</p>	<p>Potential for coastal flooding from the new crossing on Firth of Clyde Inner - Dunoon and Wemyss Bay, which could impact flooding on associated road infrastructure.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels, due to building in the floodplain.</p> <p>May affect the Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area.</p> <p>Loch Fyne Shellfish Water Protected Area is within the route corridor and may be affected.</p> <p>There are Active Aquaculture Sites, and Classified Shellfish Harvesting Areas within the vicinity of the route corridor and may be affected.</p> <p>One surface water Drinking Water Protected Area may also be affected.</p> <p>Lunderston Bay bathing water is out with the route corridor but within the vicinity of the route corridor and may be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Mineral soils are predominant in the route corridor. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) in the Carbon and Peatland 2016 Map. There is no Class 1 or Class 2 peat in the route corridor. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2)</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on peatland habitats. Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor.</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F1 and Class F2 at the Holy Loch in the south at Strachur in the north to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) at Holy Loch and Strachur. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).</p>	
Air Quality	<p>The route corridor passes through a predominantly rural environment and there are a number of settlements within the route corridor, including Dunoon, Sandbank, Rashfield, Benmore, Invernoaden, Glen Sluain, Strachur, Creggans, Ardnagowan, and St Catherine's.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities including construction of a large structure over the Firth of Clyde, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality effects on ecological receptors are assessed under Biodiversity, Flora and Fauna.</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<p>particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As indicated in the 'Water Environment' section, the route corridor may be at existing fluvial and surface water flood risk on the A815 from Loch Eck and River Cur and from existing fluvial flood risk from River Eachaig, Little Eachaig, Inverchapel Burn, Allt Ruadh, Allt na h-Airigh, Eas Dubh, Allt Coire No, Kinglas Water, Milton Burn in Dunoon and two minor watercourses at Loch Eck during a medium likelihood event. The route corridor may also be at existing coastal flood risk at Dunoon, Holy Loch and along Loch Fyne during a medium likelihood event.</p> <p>As described in the 'Soils' section, there are several areas of peatland in the route corridor with a high carbon sink value. There are also areas of forested land in the route corridor, including Argyll and Bute Forestry Strategy areas. Forested areas also have a carbon sink value.</p>	<p>As outlined in the Material Assets section, activities related to the construction of the route corridor would have significant negative environmental effects on climate due to the release of carbon emissions associated with the manufacture of raw materials and construction activities.</p> <p>Once operational, forecast traffic levels are relatively low, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles, this would reduce in the future. Additionally, the route corridor would reduce the driving distance for some journeys due to the introduction of the Firth of Clyde Inner - Dunoon and Wemyss Bay crossing, which over time would likely result in lower vehicle emissions.</p> <p>Effects on the route corridor as a result of predicted changes to the climate and weather should also be considered. Sections of the route corridor are situated within or in close proximity to zones which may be at high risk of coastal or fluvial flooding as indicated in the 'Water Environment' section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>Construction would be required on areas identified as peatland, which, if constructed on, would lead to the release of sequestered carbon and a loss of land with a high carbon sink value. Any felling required would also reduce the carbon sink value of forested areas within the route corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. There are areas of forestry within the route corridor and there are peat soils present.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including peat soils and forestry that could be affected by the route corridor. As outlined in the Soils section, minor negative or</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<p>In term of built material assets, the route corridor generally follows existing road infrastructure including a 'A' 'B' and 'C' roads. The route corridor also includes part of the Ministry of Defence owned and operated road between Garelochhead and Coulport. There are waste disposal facilities located in close proximity to the route corridor at Dunoon and Dalinlongart. The route corridor requires a structural crossing of the Firth of Clyde downstream of HMNB Clyde and Clydeport Container Terminal. There is also a pedestrian ferry service operating between Dunoon and Gourock. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval and commercial shipping on the Firth of Clyde.</p> <p>There are minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes.</p>	<p>uncertain environmental effects are expected on peatlands. As outlined in the Biodiversity, Flora and Fauna section, there could be significant negative environmental effects on forestry.</p> <p>In term of built material assets, as outlined above in the Climatic Factors section, there is likely to be a significant negative environmental effect from the construction of the route corridor on climate from embodied carbon from manufacture of materials and construction activities, including:</p> <ul style="list-style-type: none"> ▪ 47km of carriageway upgrade is proposed, requiring significant raw material inputs ▪ Construction of fixed structural crossing of approximately 3.9km long (2 x 900m main spans) crossing over Firth of Clyde Inner - Dunoon and Wemyss Bay would require significant material input ▪ Construction of various smaller structures, including nine 9 Y beam deck bridges and a 400m long multi-span viaduct. Together these represent a significant cumulative material input. <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services, leisure and fishing vessels. There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on navigation during operation.</p>
Cultural Heritage	<p>There are seven Scheduled Monuments, 77 Listed Buildings, two Gardens and Designed Landscapes (GDLs) and Dunoon Conservation Area within the route corridor. The extent of the route corridor occupied by Benmore GDL is relatively large. There are concentrations of Listed Buildings at Strachur, Benmore and Dunoon. Ardgowan GDL is located close to the southern extent of the route corridor.</p>	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects on these. The most cultural heritage constraints are where Benmore GDL covers a relatively large section of the route corridor and the concentrations of Listed Buildings at Strachur, Benmore and Dunoon.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 51km long and runs along existing roads except for the large-scale crossing at the Firth of Clyde between Dunoon and west of Gourock. Approximately 20 km of the southern part of the route corridor until Holy Loch is located within the LLTNP. This section of the route corridor runs through Argyll Forest Park and Benmore (Younger Botanic Garden) Garden and</p>	<p>There is potential for significant negative effects on the LLTNP, the North Argyll and East Loch Fyne (Coast) APQs, two GDLs and the local landscape and seascape character due to the construction and operation of the carriageway and supporting infrastructure. There is also potential for negative visual effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads</p>

Table 6: Corridor 6 - Inverclyde – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>Designed Landscape (GDL). The northern section of the route corridor runs within the North Argyll and East Loch Fyne (Coast) Areas of Panoramic Quality (APQs) on the eastern side of Loch Fyne and passes through Ardinglas and Strone Garden and Designed Landscape (GDL). There are no National Scenic Areas within the route corridor. There are several Open Space Protection Areas within the route corridor around Strachur and Dunoon and a Conservation Area on the coast in Dunoon.</p> <p>The Landscape Character Types (LCTs) within the route corridor comprise Rugged Mountains LCT, Steep Ridges and Mountains LCT, Steep Ridges and Hills LCT, Straths and Glens LCT, Straths and Glens with Lochs LCT, Rocky Coastland – Argyll LCT, Rugged Moorland Hills LCT and Raised Beach - Glasgow & Clyde Valley LCT. There are several Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Inveraray to St Catherines SCA, Loch Fyne - St Catherines to Newton Bay SCA, Upper Firth of Clyde - Toward to Dunoon SCA, Dunoon SCA and Inner Firth of Clyde - Gourock to Cloch Point and Holy Loch SCAs.</p> <p>Land cover within the route corridor for this route option comprises small and scattered settlements, sea and freshwater lochs and coasts, open grassland and moorland, native woodland, coniferous forestry and numerous watercourses as well as the main town on the Cowal peninsula, Dunoon.</p> <p>This route corridor would cross and likely be visible from the Loch Lomond and Cowal Way (Strachur to Lochgoilhead section) and the Argyll Paddle Trail. Parts of the route corridor would also be visible from large sections of Loch Fyne and Firth of Clyde coastline as well as numerous residential and recreational receptor locations.</p>	<p>and other outdoor receptors. The introduction of the new large-scale structure across the Firth of Clyde would affect the landscape character and visual amenity of the area.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>Route corridor crosses Upper Loch Fyne and Loch Goil MPA for approx. 2.8km.</p> <p>131.7ha of Ruel Estuary SSSI falls within the route corridor.</p> <p>62 parcels of woodland listed on the AWI fall within the route corridor, adjacent to Otter Hill Road, the A886, B836 and A815.</p>	<p>The route corridor crosses Upper Loch Fyne and Loch Goil MPA for approximately 2.8km. Pollution during construction and operation of crossing could impact the MPA, which could cause a significant negative environmental effect.</p> <p>131.7ha of Ruel Estuary SSSI falls within the route corridor. This could result in the temporary and permanent loss of SSSI habitat, including the loss of designated features fen meadow, flood-plain fen, saltmarsh and upland oak woodland, which could be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>62 parcels of woodland listed on the AWI fall within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for negative environmental effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for unavoidable habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.
Population and Human Health	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads as well as rural land. The route corridor passes through a predominantly rural environment and there are a number of settlements within the route corridor including Dunoon, Sandbank, Clachaig, Ballimore, Otter Ferry and Achnaba.</p> <p>The following core paths are within the route corridor:</p> <ul style="list-style-type: none"> ▪ C207a, b, c and d (Sandbank to Toward); ▪ C226 (Bird Garden to Ardnadam); ▪ C227a, b, c and d (Alexander Street (rear) path network, Dunoon); ▪ C223a, b and c (Dunans loop to Inverreck and LLTNP boundary); ▪ C212b (Port Lamont to Ardtariag, Loch Strivan); ▪ C214h, i, k, l and m (Cowal Way Glenbranter to Portvadie); ▪ C215 (Glendaruel to Otter Ferry); ▪ C217a (Otter Ferry to Blairs Ferry, Kames); and ▪ C406 (Otter Ferry Circular, Loch Fyne). <p>Cowal Way, a long distance walking path, passes through the route corridor to the west of Loch Riddon and the River Ruel, travelling north past Glendaruel.</p>	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration effects from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossings would provide significant journey savings around Loch Fyne and the Firth of Clyde and the route corridor would improve connectivity between the central belt and Argyll and Bute. The route corridor would provide greater accessibility to active travel routes such as Cowal Way, NCN Route 753 and the core path network in and around the route corridor. There is also potential for paths to be severed by the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor and the tunnelling options would require additional land take and potentially demolitions.</p> <p>There is also potential for localised effects from air quality on human health; these are discussed further under Air Quality.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>National Cycle Network (NCN) Route 753 also passes through the route corridor, following the A770 from Faulds Park, Gourrock towards Inverkip. The Dunoon to Portvadie Sustrans route (an on-road route which is not on the National Cycle Network) intercepts the route corridor at Dunoon and travels in a north-westerly direction along the routes of the existing A815, B836 and A886 (and route corridor) until it reaches Glendaruel.</p>	
<p>Water Environment</p>	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Seven river water bodies, Kilfinan Burn/Allt Lean Achaidh, River Ruel, Tamhnich Burn, Balliemore Burn/Allt Gleann Laorigh, Glentarsan Burn, Little Eachaig River/Cruach Neuran Burn and the River Eachaig; and ▪ Five coastal water bodies, Firth of Clyde Inner – Dunoon and Wemyss Bay, Loch Fyne – Middle Basin, Loch Striven, Holy Loch and Loch Riddon. <p>The route corridor also crosses approximately 110-120 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial flood risk from Milton Burn in Dunoon, River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Balliemore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing coastal flood risk from Firth of Clyde at Dunoon, Holy Loch at Tom nan Ragh, Loch Striven, Loch Riddon, and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>Loch Fyne Shellfish Water Protected Area and Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of seven Water Framework Directive (WFD) classified river water bodies, five WFD coastal water body and approximately 110-120 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial flood risk from Milton Burn in Dunoon, River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Balliemore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at coastal flood risk from Firth of Clyde at Dunoon, Holy Loch at Tom nan Ragh, Loch Striven, Loch Riddon, and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on Firth of Clyde and Loch Fyne, which could impact flooding on associated road infrastructure.</p> <p>May impact the Ruel Estuary SSSI. Upper Loch Fyne and Loch Goil Marine Protected Area may also be affected by crossing structures.</p> <p>Loch Fyne Shellfish Water Protected Area is directly crossed and may be impacted. Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the route corridor and may be impacted by the route corridor.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor which may be affected.</p> <p>Two surface water Drinking Water Protected Areas may also be affected.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through two surface water Drinking Water Protected Areas.</p> <p>Lunderston Bay bathing water is out with the route corridor but within the vicinity of the route corridor.</p>	<p>Lunderston Bay bathing water is out with the route corridor but within the vicinity of the route corridor and may be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Peaty Gleys are predominant in the western section of the route corridor. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) east of Otter Ferry. A small pocket of Class 1 peatland (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present adjacent to the B836 in Glen Lean. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F2 the Holy Loch in the east and at Otter Ferry in the west to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential impacts on Class 2 and Class 1 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) at Glen Lean and Otter Ferry. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).	
Air Quality	<p>The route corridor passes through a predominantly rural environment and there are a number of settlements within the route corridor including Dunoon, Sandbank, Clachaig, Ballimore, Otter Ferry and Achnaba.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality effects on receptors close to the route corridor during the construction phase: for example, dust generated from site activities including construction of large structures over the Firth of Clyde and at Loch Fyne, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality effects on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As outlined in the 'Water Environment' section, the route corridor may be at existing fluvial flood risk from Milton Burn in Dunoon, River Eachaig, Little Eachaig, Glenkin Burn, Glentarsan Burn, Ballimore Burn, Tamhnich Burn, River Ruel, Bealachandrain Burn and</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and construction activities as outlined in the Material Assets section.</p> <p>Once operational, forecast traffic levels are considered to be relatively moderate to high, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>Kilail Burn during a medium likelihood event. The route corridor may be at existing coastal flood risk from Firth of Clyde at Dunoon, Holy Loch at Tom nan Ragh, Loch Striven, Loch Riddon, and Loch Fyne during a medium likelihood event.</p> <p>As described in the 'Soils' section, there are several areas of peat soils in the route corridor with high carbon sequestration and sink value.</p> <p>As described in the Biodiversity, Flora and Fauna section, there are areas of forested land in the route corridor, including Argyll and Bute Forestry Strategy areas. Forested areas also have a carbon sequestration and sink value.</p>	<p>With the predicted shift towards electric vehicles this would reduce in the future. Additionally, the route corridor would reduce the driving distance for some journeys due to the introduction of the Loch Long and Firth of Clyde crossing, which over time would likely result in carbon savings.</p> <p>Effects on the route corridor as a result of predicted changes to the climate and weather should also be considered. As indicated in the 'Water Environment' section, the route corridor is situated within or in close proximity to zones deemed to be at risk of coastal or fluvial flooding at several locations. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As indicated in the Soils section, the route corridor is located on areas identified as peatland, which, if constructed on, would lead to the release of sequestered carbon and a loss of high value carbon sink land. Any felling required would also reduce the carbon sink value of forested areas within the route corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There are also a variety of built material assets in the corridor. The route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There is a pedestrian ferry service linking Dunoon and Gourock across the Firth of Clyde. The route corridor requires a structural crossing of the Firth of Clyde downstream of HMNB Clyde and Clydeport Container Terminal. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval, commercial shipping, fishing and leisure traffic on the Firth of Clyde.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>Loss of natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>As outlined in the Climatic Factors section, there is likely to be significant negative environmental effects from the construction of built material assets in the route from manufacture of materials and construction activities including:</p> <ul style="list-style-type: none"> ▪ 12 new bridges. ▪ 1 new 3.9km long (2 x 900m main spans) long cable stayed or suspension bridge.

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>There are several minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes. Dalinlongart waste disposal site is within the corridor to the north of Dunoon.</p>	<ul style="list-style-type: none"> ▪ 1 new 820m long (500m main span) cable stayed bridge (Loch Striven). ▪ Construction of up to three tunnels, one tunnel would be over 3km long. ▪ 1 new multispan bridge (River Ruel). ▪ 1 bridge or tunnel (Loch Fyne). <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services, leisure and fishing vessels. There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on navigation during operation.</p>
Cultural Heritage	<p>There are eight Scheduled Monuments, 47 Listed Buildings, a Garden and Designed Landscape (GDL) and two Conservation Areas within the route corridor. There is a high concentration of Listed Buildings at Dunoon. The extent of the route corridor occupied by the Ballimore GDL on the eastern shore of Loch Fyne is relatively large.</p>	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects on these.</p> <p>The most cultural heritage constraints are where there is a high concentration of Listed Buildings at Dunoon and the extent of the route corridor occupied by the Ballimore GDL.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 44km long. Starting with the new crossing between Port Ann on the western and Otter Ferry on the eastern shore of Loch Fyne, this route corridor runs through Ballimore Garden and Designed Landscape (GDL) and then passes through the Kyles of Bute National Scenic Area (NSA) for approximately 3km, past the northern tip of Loch Riddon and Loch Striven, and then runs along the southern edge of Holy Loch until it reaches Dunoon where the large-scale crossing at the Firth of Clyde is proposed. This route corridor runs along existing roads except for the two crossings. Small sections of the route corridor around Holy Loch are located within the LLTNP (at a distance of approximately 800m from the route corridor centreline. Approximately half of this route corridor is located within the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute &</p>	<p>There is potential for significant negative effects on the special qualities of the Kyles of Bute NSAs, the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute & South Cowal APQs, one GDLs, and the local landscape and seascape character due to the construction and operation of the carriageway. There is also potential for negative visual effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads and other outdoor receptors. The construction of the significant new structural crossings at Loch Fyne and the Firth of Clyde would affect the landscape character and visual amenity of these areas.</p>

Table 7: Corridor 7 - Inverclyde – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>South Cowal Areas of Panoramic Quality (APQs). There are several Open Space Protection Areas and two Conservation Areas (in Dunoon and Clachaig).</p> <p>The Landscape Character Types (LCTs) from the Loch Fyne crossing to the Firth of Clyde crossing are Rocky Coastland – Argyll LCT, Plateau Moor and Forest – Argyll LCT, Steep Ridges and Mountains LCT, Craggy Upland – Argyll LCT, Straths and Glens LCT, Rugged Moorland Hills LCT and Raised Beach - Glasgow & Clyde Valley LCT. There is a large number of Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Lachlan Bay to South Ballimore SCA, Loch Fyne - Loch Gilp to Brainport Bay SCA, Loch Striven - Head of Loch Striven SCA, Loch Striven - Head of Loch Striven to The Craig SCA, Loch Striven - Ardbeg Point to Head of Loch Striven SCA, Upper Firth of Clyde - Toward to Dunoon and Dunoon SCAs and Inner Firth of Clyde - Holy Loch and Gourock to Cloch Point SCAs.</p> <p>Land cover within the route corridor comprises small and scattered settlements, sea and freshwater lochs and coasts, open grassland and moorland, native woodland, coniferous forestry and numerous watercourses as well as the main town on the Cowal peninsula, Dunoon. This route corridor would cross and likely be visible from the Loch Lomond and Cowal Way (Strachur to Lochgoilhead section) and the Argyll Paddle Trail. Parts of the route corridor would also be visible from of Loch Fyne and Firth of Clyde coastline as well as numerous residential and recreational receptor locations.</p>	

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>18.2ha of Glen Etive and Glen Fyne SPA falls within the route corridor.</p> <p>169.2ha of Beinn an Lochain SSSI falls within the route corridor.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor.</p> <p>All of Ruel Estuary SSSI (313.2ha) falls within the route corridor.</p> <p>48.4ha of North End of Bute SSSI falls within the route corridor.</p> <p>14.4ha of Central Lochs, Bute SSSI falls within the route corridor.</p> <p>18.5ha of Portencross Woods SSSI (18.5ha) falls within the route corridor. The route corridor runs adjacent to or through several areas of AWI (mostly ancient or semi-natural origin with some long-established of plantation origin).</p> <p>242 parcels of woodland listed on the AWI fall within the route corridor for option 8a.</p>	<p>18.2ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This would be a significant negative environmental effect.</p> <p>169.2ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Glendaruel Wood and Craggs SSSI (81.1ha) falls within the route corridor. This could result in the considerable temporary and permanent loss of SSSI habitat, including the loss of the designated feature upland oak woodland which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Almost all of Ruel Estuary SSSI (313.2ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features fen meadow, flood-plain fen, saltmarsh and upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>48.4ha of North End of Bute SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of the designated feature upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
		<p>could also occur to upland assemblage as a result of nitrogen deposition. There could be disturbance to breeding bird assemblage, a designated feature, during construction, which could result in a significant negative environmental effect.</p> <p>14.4ha of Central Lochs, Bute SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI and disturbance to greylag goose, a designated feature, could occur during construction. This could result in significant negative environmental effects.</p> <p>All of Portencross Woods SSSI (18.5ha) falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of the designated feature upland mixed ash woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur to upland assemblage as a result of nitrogen deposition.</p> <p>242 parcels of woodland listed on the AWI fall within the route corridor for option 8a. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for unavoidable habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
		It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.
Population and Human Health	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads. The route corridor passes through a predominantly rural area, and there are a number of settlements within the route corridor including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Port Bannatyne, Ettrickdale, Ardmaleish, Colintrave, Springfield, Auchencrook, Glendaruel, Strachur and St Catherine's.</p> <p>Several core paths are located within the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C220a and b (Strachur village back road); ▪ C214g, h, i, k, l, m, and n (Cowal Way Glenbranter to Portvadie); ▪ C215 (Glendaruel to Otter Ferry); ▪ C213 (Colintrave to Strone Point); ▪ C230b and c (Rhubodach Ferry to circular route (WIW), Bute); ▪ C487 (West Island Way new off road route, Bute); ▪ C233a and b (Port Bannatyne to Ettrick Bay, Bute); ▪ C237a, b, c, d, f, h, i, k, l and m (Port Bannatyne to Kilchattan Bay, Bute); ▪ C232a, b and c (Port Bannatyne to Ascog, Bute); ▪ C248a, b and c (Port Bannatyne to West Island Way link, Bute); 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings in particular could result in a longer construction period and involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration effects from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossings would provide significant journey savings between the mainland and the Isle of Bute (via Little Cumbrae Island), and between the Isle of Bute and Cowal. The route corridor would improve overall connectivity between the central belt and Argyll and Bute.</p> <p>The route corridor would provide greater accessibility to active travel routes including to the Cowal Way and West Island Way, and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor.</p> <p>There is also potential for localised effects from air quality on human health; these are discussed further under Air Quality.</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintraive		
SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C249 (Port Bannatyne to Gortans, Bute); ▪ C250a, b, c and d (Skeoch Wood, Rothesay); ▪ C251a, b and c (Argyll Street to Ballochgoy, Bute); ▪ C242a and b (Townhead to Barone Hill and Barone Road, Bute); ▪ C241 (Townhead to Lochend, Bute); ▪ C252a, b and c (Serpentine Road, Rothesay); ▪ C253a, b, c and d (Bishops Terrace/Bogany Wood/Eastlands Road, Bute); ▪ C254a and b (Battery Place to Bogany Wood, Bute); ▪ C255a and b (Leopold Road to Bogany Wood, Bute); ▪ C317 (Cnocnicoll Wood, Kerrycroy, Bute); ▪ C410a and b (Kerrylammont to Kilchattan Bay, Bute); ▪ C411 (Kerrylammont to Kingarth, Bute); ▪ C244a, b, c and d (Kilchattan Bay to Blackpark Plantation, Bute); ▪ C243 (Kilchattan Bay to Hawks Nib, Bute). <p>Cowal Way and West Island Way (long distance walking paths) are also located within the route corridor. Cowal Way intersects the route corridor at Strachur, and again to the east of Loch Fyne where it follows the A886 route south towards Glendaruel. West Island Way passes through the majority of the route corridor along the east coast of the</p>	

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
	<p>Isle of Bute. The Dunoon to Portvadie Sustrans route (an on-road route which is not on the National Cycle Network) also passes through the route corridor at Glendaruel.</p>	
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Five river water bodies, Kinglas Water, Tamhnich Burn, Strathlachlan River, River Ruel, Garvie Burn/Eas Davain; and ▪ Seven WFD coastal water bodies, Firth of Clyde Inner – Cumbraes, Kyles of Bute, Rothesay, Loch Fyne – Upper Basin, Largs Channel (Fairlie Roads), Seamill and Ardrossan and Loch Riddon. <p>The route corridor also crosses approximately 260-270 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk around the A886 on the Isle of Bute, from the Firth of Clyde, at Loch Riddon and around the A886 and A815 at Loch Fyne, and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the Auchenbreck Burn, River Ruel, Tamhnich Burn, Garvie Burn, Strathlachlan River during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>The Loch Fyne and Kyles of Bute Shellfish Water Protected Areas are within the route corridor.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of five Water Framework Directive (WFD) classified river water bodies, seven WFD coastal water body and approximately 260-270 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk around the A886 on the Isle of Bute, at Loch Riddon and around the A886 and A815 at Loch Fyne, and at fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the Auchenbreck Burn, River Ruel, Tamhnich Burn, Garvie Burn, Strathlachlan River during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on the Largs Channel, Firth of Clyde and Kyles of Bute, which could impact flooding on associated road infrastructure.</p> <p>May affect the Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area.</p> <p>Loch Fyne Shellfish Water Protected Areas is within the route corridor and the Kyles of Bute Shellfish Water Protected Area is directly crossed and therefore may be affected by the route corridor.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor which may be affected.</p> <p>The route corridor passes through two surface water Drinking Water Protected Areas, which may be affected.</p> <p>Millport and Seamill bathing waters are within 5km of the route corridor and may be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintraive		
SEA Topic	Baseline	Assessment
	<p>The route corridor passes through two surface water Drinking Water Protected Areas.</p> <p>Millport and Seamill bathing waters are within 5km of the route corridor.</p>	
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Peaty Gleys are predominant in the western section of the route corridor. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) east of Otter Ferry. A small pocket of Class 1 peatland (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present adjacent to the B836 in Glen Lean. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F2 the Holy Loch in the east and at Otter Ferry in the west to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) at Glen Lean and Otter Ferry. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 2 and Class 1 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor, but mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
	removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).	
Air Quality	<p>The route corridor passes through a predominantly rural area, and there are a number of settlements within the route corridor including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Port Bannatyne, Ettrickdale, Ardmaleish, Colintrave, Springfield, Auchenbreck, Glendaruel, Strachur and St Catherine's.</p> <p>There are no Air Quality Management Areas (AQMAS) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities, including construction of large structures over the Firth of Clyde and Kyles of Bute, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation. However, as noted in the traffic flows section this route corridor it is unlikely to attract a significant proportion of existing trips from the A83.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential effects on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As indicated in the 'Water Environment' section, several areas of the route corridor may be at existing coastal flood risk around the A886 on the Isle of Bute, from the Firth of Clyde, at Loch Riddon and around the A886 and A815 at Loch Fyne, and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the Auchenbreck Burn, River Ruel, Tamhnic Burn, Garvie Burn, Strathlachlan River during a medium likelihood event .</p>	<p>Construction of the route corridor could have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. This includes the widening of existing A class roads and the upgrading of existing B or C class roads, requiring significant raw material inputs. The Material Assets sets out the key structures for the route corridor.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could result in minor negative or uncertain environmental effects.</p> <p>Effects on the route corridor as a result of predicted changes to the climate and weather should also be considered. Sections of the route corridor are situated within or in close proximity to zones</p>

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintraive		
SEA Topic	Baseline	Assessment
	<p>As described in the Soils section, there are several areas of peat which hold high carbon sequestration and sink value and a mixture of agricultural land types in the corridor.</p> <p>As outlined in the Biodiversity, Flora and Fauna section, there are large areas of forestry in the route corridor with high carbon sequestration and sink value.</p>	<p>deemed to be at risk of coastal or fluvial flooding as indicated in the 'Water Environment' section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As outlined in the Biodiversity, Flora and Fauna section, felling of woodland could have a significant negative environmental effect. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>Once operational, forecast traffic levels are relatively low, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles, this would reduce in the future. Additionally, the route corridor would reduce the driving distance for some journeys due to the introduction of the Kyles of Bute and Firth of Clyde crossings, which over time would likely result in carbon savings.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There is also a variety of built material assets in the corridor. The route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There is a ferry service linking Dunoon and Gourock on the Firth of Clyde at Sandback and another linking Rothesay and Wemyss Bay on the Firth of Cloud within the route corridor.</p> <p>The route corridor requires a structural crossing of the Firth of Clyde downstream of HMNB Clyde and Clydeport Container Terminal. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval, commercial, fishing and leisure traffic on the Firth of Clyde.</p> <p>There are several minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes. Larkhall waste disposal site is within the corridor at Rothesay bay.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>Loss of natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>In terms of built material assets, once operational, forecast traffic levels are relatively low, for all route corridors, assuming the continued operation of the A83 through the Rest and Be Thankful. The route corridor could impact on the operation of the ferry service to Bute which may no longer be required once the crossings are constructed, though the sustainability implications of this modal shift would require further study.</p> <p>As outlined above in the Climatic Factors section, there is likely to be significant embodied carbon in the materials required for the construction of the route corridor, including the following which would have high material requirements:</p> <ul style="list-style-type: none"> ▪ 1 new 3km long suspension bridge between the coast at Portencross to the southern shore of Little Cumbrae Island.

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ 1 new 2.53km long (2.15km main span) suspension bridge between Little Cumbrae Island and the southern coast of Bute. ▪ 1 new 700m long multi span concrete box girder bridge at Colintrave. ▪ 1 new 400m length multi span steel composite viaduct. ▪ Approximately 14 new single span Y beam deck bridges on reinforced concrete abutments. <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services, leisure and fishing vessels. There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on navigation during operation.</p>
Cultural Heritage	There are numerous cultural heritage resources located within route corridor 8 (8a and 8b combined), including two GDLs, two Conservation Areas 22 Scheduled Monuments and 457 Listed Buildings. There are high concentrations of Listed Buildings at Strachur, Port Bannatyne, Rothesay and between Rothesay and Craigmore. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) GDL occupies a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and given their proximity these cultural heritage resources may represent a significant pinch point in this route corridor.	Due to the relatively high numbers of cultural heritage resources within the route corridor and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects on these. The areas with the most cultural heritage constraints are the high concentrations of Listed Buildings at Strachur, Port Bannatyne, Rothesay and between Rothesay and Craigmore. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) GDL occupies a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and, given their proximity, these cultural heritage resources may represent a significant pinch point in this route corridor.
Landscape and Visual Amenity	<p>This route corridor is approximately 90km long and comprises a mix of existing roads and new carriageways and crossings. Approximately 15km of the route corridor is located on the A886 within the Kyles of Bute National Scenic Area (NSA) on the Isle of Bute and the mainland. The majority of the route corridor is located within the North Argyll, East Loch Fyne (Coast) and Bute & South Cowal Areas of Panoramic Quality (APQs). The route corridor passes through the Ardkinglas And Strone Garden and Designed Landscape (GDL) and Mount Stuart (Kirriemuir) GDL and the Isle of Bute. The route corridor passes through several settlements, Open Space Protection Areas and Rothesay Conservation Area and the Loch Lomond and Cowal Way, West Island Way and Ayrshire Coastal Path (Scotland's Great Trails).</p> <p>The Landscape Character Types (LCTs) within the route corridor include Rugged Mountains LCT, Rocky Coastland – Argyll LCT, Craggy Upland – Argyll LCT, Steep</p>	There is potential for effects on the special qualities of the Kyles of Bute NSAs, the North Argyll, East Loch Fyne (Coast) and Bute & South Cowal APQs, two GDLs, and the local landscape and seascape character due to the construction and operation of the carriageway and the large footprint of the scheme. There is also potential for visual effects for residential receptors and users of long-distance recreational routes. The construction of the three new crossings at Kyles of Butes and Firth of Clyde would affect the landscape character and visual amenity of these areas.

Table 8a: Corridor 8a – North Ayrshire – Cairndow via Colintrave		
SEA Topic	Baseline	Assessment
	<p>Ridges and Mountains LCT, Plateau Moor and Forest – Argyll LCT, Open Ridges LCT, Raised Beach Coast and Cliffs LCT, Coastal Fringe with Agriculture LCT, Stepped Rocky Coastlands LCT, Coastal Plain – Argyll LCT and Rolling Farmland with Estates – Argyll LCT. There is also a large number of Seascape Character Areas (SCAs) within the route corridor including Upper Firth of Clyde - Largs to Goldenberry, Goldenberry to Farland Head, Little Cumbrae Island, Garroch Head to White Port, White Port to Kerrytonlia Point and Kerrytonlia Point to Bogany Point SCAs, Rothesay Sound - Bogany Point to Ardbeg Point and Ardbeg Point to Ardmaleish Point SCAs, The Kyles of Bute & Loch Riddon - Ardmaleish Point to Rhubodach, Rhubodach to Rubha Glas, Bargehouse Point to Strone Point, Colintrave to Bargehouse Point, Salthouse Point to Colintrave and Head of Loch Riddon SCAs and Loch Fyne - Inveraray to St Catherines and St Catherines to Newton Bay SCAs.</p> <p>The route corridor option involves a new crossing between Cowal and Isle of Bute and two crossings on either side of Little Cumbrae Island which would be visible from the Firth of Clyde coastline and numerous residential and recreational receptor locations.</p>	

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>18.2ha of Glen Etive and Glen Fyne SPA falls within the route corridor</p> <p>169.2ha of Beinn an Lochain SSSI falls within the route corridor.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor.</p> <p>14.4ha of Central Lochs, Bute SSSI falls within the route corridor.</p> <p>18.5ha of Portencross Woods SSSI falls within the route corridor.</p> <p>221 parcels of woodland listed on the AWI fall within the route corridor for option 8b.</p>	<p>18.2ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This would be a significant negative environmental effect.</p> <p>169.2ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>14.4ha of Central Lochs, Bute SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI and disturbance to greylag goose, a designated feature, could occur during construction. This could result in significant negative environmental effects.</p> <p>All of Portencross Woods SSSI (18.5ha) falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of the designated feature upland mixed ash woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur to upland assemblage as a result of nitrogen deposition.</p> <p>221 parcels of woodland listed on the AWI fall within the route corridor for option 8b. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for unavoidable habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p>
Population and Human Health	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads as well as rural land. The route corridor passes through predominantly rural areas, and there are a number of settlements in the route corridor including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Roward, Innellan, Cluniter, Bullwood, Dunoon, Sandbank, Dalinlongart, Ardbeg, Rashfield, Uig, Benmore, Strachur, and St Catherine's.</p> <p>Several core paths are located within the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C220a and b (Strachur village back road); ▪ C221a (Cowal Way - Strachur to Lochgoilhead); ▪ C221b (Cowal Way - Strachur - Balliebeg); ▪ C223a (Dunans loop to Inverreck and LLTNP boundary); ▪ C211a, b, c and d (Ardnadam heritage trail loop); ▪ C225 (Dunoon to Sandbank (High Road)); ▪ C226 (Bird Garden to Ardnadam); 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase, including those within the settlements the route passes through or adjacent to, and individual residential properties along the route. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration effects from increased vehicle traffic..</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>During operation, the watercourse crossings would provide significant journey savings between the mainland and the Isle of Bute (via Little Cumbrae Island), and between the Isle of Bute and Cowal. The route corridor generally would improve connectivity between the central belt and Argyll and Bute.</p> <p>It is expected that the route corridor would provide greater accessibility to the Cowal Way, West Island Way and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C207a, b, c, d, f, g, h, i (Sandbank to Toward); ▪ C227 (Alexander Street (rear) path network, Dunoon); ▪ C228a, b, c and d (Corlarach loop trail to Bishops Glen); ▪ C306a, b and c (Morags Fairy Glen, Dunoon); ▪ C210a, b and c (Dunoon to Bishops Glen); ▪ C209b (Corlarach loop trail, Innellan); ▪ C402 (Safe route to School, Toward); ▪ C232c (Port Bannatyne to Ascog, Bute); ▪ C252a, b and c (Serpentine Road, Rothesay); ▪ C253a, b, c and d (Bishops Terrace/Bogany Wood/Eastlands Road, Bute); ▪ C254a and b (Battery Place to Bogany Wood, Bute); ▪ C255a and b (Leopold Road to Bogany Wood, Bute); ▪ C317 (Cnocnicoll Wood, Kerrycroy, Bute); ▪ C410a and b (Kerrylammont to Kilchattan Bay, Bute); ▪ C411 (Kerrylammont to Kingarth, Bute); ▪ C244a, b, c and d (Kilchattan Bay to Blackpark Plantation, Bute); 	<p>There is also potential for localised effects from air quality on human health; these are discussed further under Air Quality.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> C243 (Kilchattan Bay to Hawks Nib, Bute). <p>Cowal Way and West Island Way (long distance walking paths) are also within the route corridor. Cowal Way intersects the route corridor at Strachur, travelling alongside the A815 in a south-easterly direction to Loch Eck. West Island Way passes through the route corridor at Rothesay, and again to the west of Mount Stuart where it follows a similar route to the route corridor along the eastern coast of the Isle of Bute towards Glencallum Bay.</p>	
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> Five river water bodies Kinglas Water, River Cur (u/s Glenbranter), River Cur (Glenbranter to Loch Eck), Little Eachaig River/Cruach Neuran Burn, River Eachaig; One loch water body, Loch Eck; and Eight coastal water bodies, Firth of Clyde Inner – Cumbræes, Firth of Clyde Inner – Dunoon and Wemyss Bay, Kyles of Bute, Rothesay, Loch Fyne – Upper Basin, Largs Channel (Fairlie Roads), Seamill and Ardrossan and Holy Loch <p>The route corridor also crosses approximately 200-210 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk around the A886 on the Isle of Bute, from the Firth of Clyde, on the A815 at the Holy Loch, and Loch Fyne and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Burnmakiman Burn, Balgaidh Burn and Milton Burn at Dunoon, River Eachaig, Little Eachaig, Inverchapel Burn, Loch Eck, Allt Ruadh, Allt na h-Airigh, River Cur, Eas Dubh and Allt Coire No, during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Lock Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of five Water Framework Directive (WFD) classified river water bodies, eight WFD coastal, one WFD loch water body and approximately 200-210 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk around the A886 on the Isle of Bute, from the Firth of Clyde, on the A815 at the Holy Loch, and Loch Fyne and at fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Burnmakiman Burn, Balgaidh Burn and Milton Burn at Dunoon, River Eachaig, Little Eachaig, Inverchapel Burn, Loch Eck, Allt Ruadh, Allt na h-Airigh, River Cur, Eas Dubh and Allt Coire No, during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on the Largs Channel, Firth of Clyde and Rothesay, which could impact flooding on associated road infrastructure.</p> <p>May affect the Lock Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area.</p> <p>Loch Fyne Shellfish Water Protected Area is within the route corridor and may be affected by the route corridor.</p> <p>There are Active Aquaculture Sites and Classified Shellfish Harvesting Areas within the vicinity of the route corridor, which may be affected.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<p>Loch Fyne Shellfish Water Protected Area is within the route corridor. There are Active Aquaculture Sites and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through two surface water Drinking Water Protected Areas.</p> <p>Lunderston Bay, Millport and Seamill bathing waters are within 5km of the route corridor.</p>	<p>The route corridor passes through two surface water Drinking Water Protected Areas, which may be affected.</p> <p>Lunderston Bay, Millport and Seamill bathing waters are within 5km of the route corridor and may be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Mineral soils predominate the route corridor. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) at Strachur. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes. There is a small area of prime agricultural land (LCA Class 3.1) at the eastern end of the route corridor at West Kilbride.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F3 at the southern end of the route corridor, Class F2 at Strath Eachaig and Strachur and to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 2 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor, but mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<p>greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) on the Isle of Bute, Dunoon and Strachur. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).</p>	
Air Quality	<p>The route corridor passes through predominantly rural areas, and there are a number of settlements within the route corridor including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Roward, Innellan, Cluniter, Bullwood, Dunoon, Sandbank, Dalinlongart, Ardbeg, Rashfield, Uig, Benmore, Strachur, and St Catherine's.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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.</p>	<p>There is potential for localised air quality effects on receptors close to the route during the construction phase: for example, dust generated from site activities, including construction of large structures across the Firth and Clyde and Kyles of Bute, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation. However, as noted in the traffic flows section this route corridor it is unlikely to attract a significant proportion of existing trips from the A83.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential effects on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. This includes the widening of existing A class roads and the upgrading of existing B or C class roads, requiring significant raw material inputs and could result in significant negative environmental effects on Climate. The Material Assets section sets out the key structural requirements for the route corridor.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<p>As indicated in the 'Water Environment' section, the route corridor may be at existing coastal flood risk around the A886 on the Isle of Bute, from the Firth of Clyde, on the A815 at the Holy Loch, and Loch Fyne and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Burnmakiman Burn, Balgaidh Burn and Milton Burn at Dunoon, River Eachaig, Little Eachaig, Inverchapel Burn, Loch Eck, Allt Ruadh, Allt na h-Airigh, River Cur, Eas Dubh and Allt Coire No, during a medium likelihood event.</p> <p>As described in the 'Soils' section, there are several areas of peatland and forestry in the route corridor with high carbon sink and sequestration value.</p> <p>As outlined in the Biodiversity, Flora and Fauna section, there are large areas of forestry in the route corridor with high carbon sequestration and sink value.</p>	<p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Effects on the route as a result of predicted changes to the climate and weather should also be considered. Sections of the route are situated within or in close proximity to zones deemed to be at risk of coastal or fluvial flooding as indicated in the 'Water Environment' Section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>Once operational, forecast traffic levels are relatively low, for the route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles this would reduce in the future. Additionally, the route would reduce the driving distance for some journeys due to the introduction of the crossings over the Firth of Clyde and between Ardmaleish and Cowal, which over time would likely result in carbon savings.</p>
Material Assets	<p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There is also a variety of built material assets in the route corridor. The corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There are ferry services, including Rhubodach to Colintraive, Dunoon to Gourock on the Firth of Clyde at Sandback and another linking Rothesay and Wemyss Bay on the Firth of Cloud within the route corridor.</p> <p>The route corridor requires a structural crossing of the Firth of Clyde downstream of HMNB Clyde and Clydeport Container Terminal. Consideration for clearance and</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>Loss of natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>Construction of the route corridor would have significant negative effects on built material assets as a result of raw material requirements for the following elements:</p> <ul style="list-style-type: none"> ▪ 1 new 3km long suspension bridge between the coast at Portencross to the southern shore of Little Cumbrae Island.

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
	<p>maritime navigation must be given to facilitate continued passage for naval, commercial, fishing and leisure traffic on the Firth of Clyde.</p> <p>There are several minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes. Dalinlongart waste disposal site is within the corridor to the north of Dunoon. Larkhall waste disposal site is within the corridor at Rothesay bay.</p>	<ul style="list-style-type: none"> ▪ 1 new 2.53km long (2.15km main span) suspension bridge between Little Cumbrae Island and the southern coast of Bute ▪ 1 new suspension bridge 2.25km long between Ardmaleish and Cowal. ▪ 1 new 400m long multi span steel composite viaduct. ▪ Approximately 23 new single span Y beam deck bridges on reinforced concrete abutments. <p>It is anticipated that the route would promote the use of private road vehicles as opposed to public transport alternatives. The route would impact on the operation of the ferry service to Bute which may no longer be required once the crossings are constructed, though the sustainability implications of this modal shift would require further study.</p> <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services, leisure and fishing vessels. There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on navigation during operation.</p>
Cultural Heritage	<p>There are numerous cultural heritage resources located within the route corridor, including four Gardens and Designed Landscapes, three Conservation Areas, 22 Scheduled Monuments and 457 Listed Buildings (route corridors 8a and 8b combined). There are high concentrations of Listed Buildings at Strachur, Benmore, Hunters Quay, Dunoon, Rothesay and between Rothesay and Craigmore. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) GDL occupies a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and given their proximity these cultural heritage resources may represent a significant pinch point in this route corridor.</p>	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects on these.</p> <p>The areas with the most cultural heritage constraints are the high concentrations of Listed Buildings at Strachur, Benmore, Hunters Quay, Dunoon, Rothesay and between Rothesay and Craigmore. Benmore GDL also occupies a large area of the western side of the route corridor at Benmore. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) GDL occupies a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and, given their proximity, these cultural heritage resources may represent a significant pinch point in this route corridor.</p>

Table 8b: Corridor 8b - North Ayrshire – Cairndow via Dunoon		
SEA Topic	Baseline	Assessment
Landscape and Visual Amenity	<p>The route corridor is approximately 76 km long and runs along existing roads between Cairndow and Toward but involves a new crossing at Firth of Clyde between Toward and Rothesay and two crossings on either side of Little Cumbrae island which would be visible from the Firth of Clyde coastline and numerous residential and recreational receptor locations.</p> <p>Approximately 20 km of this route corridor from south of Strachur until Holy Loch is located within the LLTNP. This section of the route corridor runs through Argyll Forest Park and Benmore (Younger Botanic Garden) Garden and Designed Landscape (GDL). Castle Toward GDL is also within the route corridor. There are no National Scenic Areas within the route corridor and no Areas of Panoramic Quality between Strachur and Toward. The northern and the southern ends of this route corridor common with route corridor 8a where they pass through the North Argyll and East Loch Fyne (Coast) and Bute & South Cowal Areas of Panoramic Quality (APQs). There are several Open Space Protection Areas, Conservation Areas and settlements including Dunoon within the route corridor.</p> <p>The Landscape Character Types (LCTs) within the route corridor include Rugged Mountains LCT, Steep Ridges and Hills LCT, Steep Ridges and Mountains LCT, Straths and Glens LCT, Straths and Glens with Lochs LCTs, Steep Ridges and Hills LCT, Raised Beach Coast and Cliffs LCT, Coastal Fringe with Agriculture LCT, Stepped Rocky Coastlands LCT, Coastal Plain – Argyll LCT and Rolling Farmland with Estates – Argyll LCT. There are also a large number of Seascape Character Areas (SCAs) within the route corridor including Upper Firth of Clyde - Largs to Goldenberry, Goldenberry to Farland Head, Little Cumbrae Island, Garroch Head to White Port, White Port to Kerrytonlia Point and Kerrytonlia Point to Bogany Point SCAs, Rothesay Sound - Bogany Point to Ardbeg Point, South of Brackley Point to Toward and Toward Quay to Toward Point SCAs, Inner Firth of Clyde - Holy Loch SCA, Rothesay Sound – SCA and Loch Fyne - Inveraray to St Catherines and St Catherines to Newton Bay SCAs.</p>	<p>There is potential for effects on the LLTNP, the North Argyll, East Loch Fyne (Coast) and Bute & South Cowal APQs, two GDLs, and the local landscape and seascape character due to the construction and operation of the carriageway and the large footprint of the scheme. There is also potential for visual effects for residential receptors and users of long-distance recreational routes. The construction of the three new crossings at Firth of Clyde would affect the landscape character and visual amenity of these areas.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>Route corridor crosses Upper Loch Fyne and Loch Goil MPA for approximately 2.8km.</p> <p>Most of Ruel Estuary SSSI (313.2ha) falls within the route corridor.</p> <p>48.4ha of North End of Bute SSSI falls within the route corridor.</p> <p>18.5ha of Portencross Woods SSSI falls within the route corridor.</p> <p>134 parcels of woodland listed on the AWI fall within the route corridor.</p>	<p>The route corridor crosses Upper Loch Fyne and Loch Goil MPA for approximately 2.8km. Pollution during construction and operation of crossing could impact the MPA, which could result in moderate negative environmental effects.</p> <p>Most of Ruel Estuary SSSI (313.2ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features fen meadow, flood-plain fen, saltmarsh and upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>48.4ha of North End of Bute SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of the designated feature upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur to upland assemblage as a result of nitrogen deposition. There could be disturbance to breeding bird assemblage, a designated feature, during construction, which could result in a significant negative environmental effect.</p> <p>All of Portencross Woods SSSI falls (18.5ha) within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of the designated feature upland mixed ash woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur to upland assemblage as a result of nitrogen deposition.</p> <p>134 parcels of woodland listed on the AWI fall within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation and would be a significant negative environmental effect.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution.

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for unavoidable habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The noise environment in the vicinity of the route is characterised by the road traffic on existing A and B roads. The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Port Bannatyne, Ettrickdale, Ardmaleish, Colintrave, Springfield, Auchenbreck, Glendaruel, Otter Ferry and Achnaba.</p> <p>Several core paths are located within the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C406 (Otter Ferry Circular, Loch Fyne); ▪ C215 (Glendaruel to Otter Ferry); ▪ C214g, h, i and k (Cowal Way Glenbranter to Portvadie); ▪ C213 (Colintrave to Strone Point); ▪ C230a, b and c (Rhubodach Ferry to circular route (WIW), Bute); 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration impacts from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs). It is uncertain at this stage whether such impacts would be significant.</p> <p>During operation, the watercourse crossings would provide significant journey savings between the mainland and the Isle of Bute (via Little Cumbrae Island), and between the Isle of Bute and Cowal. The route corridor generally would improve connectivity from the central belt to Argyll and Bute.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C487 (West Island Way new off road route, Bute); ▪ C233a and b (Port Bannatyne to Ettrick Bay, Bute); ▪ C237a, b, c, d, f, h i, j, k, l and m (Port Bannatyne to Kilchattan Bay, Bute); ▪ C248a, b and c (Port Bannatyne to West Island Way link, Bute); ▪ C232a, b and c (Port Bannatyne to Ascog, Bute); ▪ C249 (Port Bannatyne to Gortans, Bute); ▪ C250a and b (Skeoch Wood, Rothesay); ▪ C251a, b and c (Argyll Street to Ballochgoy, Bute); ▪ C241 (Townhead to Lochend, Bute); ▪ C242a and b (Townhead to Barone Hill and Barone Road, Bute); ▪ C252a, b, c and d (Serpentine Road, Rothesay); ▪ C253a, b, c and d (Bishops Terrace/Bogany Wood/Eastlands Road, Bute); ▪ C254a and b (Battery Place to Botany Wood, Bute); ▪ C255 a and b (Leopold Road to Bogany Wood, Bute); ▪ C317 (Cnocnicoll Wood, Kerrycroy, Bute); ▪ C411 (Kerrylammont to Kingarth, Bute); 	<p>It is expected that the route corridor would provide greater accessibility to the Cowal Way, West Island Way and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor and the tunnelling options would require additional land take and potentially demolitions.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C410a and b (Kerrylamont to Kilchattan Bay, Bute); ▪ C244a, b, c and d (Kilchattan Bay to Blackpark Plantation, Bute); ▪ C243 (Kilchattan Bay to Hawks Nib, Bute). <p>Cowal Way and West Island Way (long distance walking paths) are also located within the route corridor. Cowal Way intersects the route corridor at Glendaruel, travelling south to the west of Loch Riddon. West Island Way passes through the majority of the route corridor along the east coast of the Isle of Bute.</p>	
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Three river water bodies, Kilfinan Burn/Allt Lean Achaidh, River Ruel and Tamhnich Burn; and ▪ Seven coastal water bodies Firth of Clyde Inner – Cumraes, Kyles of Bute, Rothesay, Loch Fyne – Middle Basin, Largs Channel (Fairlie Roads), Seamill and Ardrossan and Loch Riddon. <p>The route corridor also crosses approximately 100-110 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor area may be at existing coastal flood risk around the A886 on the Isle of Bute, the Firth of Clyde, at Loch Riddon and at Loch Fyne, and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the River Ruel, Tamhnich Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event).</p>	<p>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of three Water Framework Directive (WFD) classified river water bodies, seven WFD coastal water bodies and approximately 100-110 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk around the A886 on the Isle of Bute, at Loch Riddon and at Loch Fyne, and at fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the River Ruel, Tamhnich Burn and Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on the Largs Channel, Firth of Clyde, Kyles of Bute and Loch Fyne, which could impact flooding on associated road infrastructure.</p> <p>May affect Protected Sites at Ruel Estuary SSSI. Upper Loch Fyne and Loch Goil Marine Protected Area may also be affected from the direct crossing.</p> <p>The Kyles of Bute and Loch Fyne Shellfish Water Protected Areas are directly crossed and may be affected by the route corridor.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>The Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>The Kyles of Bute and Loch Fyne Shellfish Water Protected Areas are within the route corridor. There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through three water Drinking Water Protected Areas.</p> <p>Millport and Seamill bathing waters are within 5km of the route corridor.</p>	<p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor, which may be impacted.</p> <p>The route corridor of the route corridor passes through three surface water Drinking Water Protected Areas, which may be affected.</p> <p>Millport and Seamill bathing waters are within 5km of the route corridor and may be affected.</p> <p>Construction and operation within the route corridor could result in significant negative environmental effects on the water environment, subject to appropriate mitigation.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral podzols, brown soils and alluvial soils all present. Mineral soils predominate the southern section of the route corridor and peaty gleys the northern section. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) on the northern side of the Isle of Bute and at east of Otter Ferry. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes. There is a small area of prime agricultural land (LCA Class 3.1) at the eastern end of the route corridor at West Kilbride.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 2 peatland habitat (nationally important and of potentially high conservation value and restoration potential). Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be within the route corridor, but mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F3 at the southern end of the route corridor, Class F2 at Glendaruel and Otter Ferry and to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) on the Isle of Bute and at Otter Ferry. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).</p>	
Air Quality	<p>The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor, including Portencross, Kilchattan Bay, Kingarth, Kerrycroy, Ascog, Rothesay, Port Bannatyne, Ettrickdale, Ardmaleish, Colintrave, Springfield, Auchenbreck, Glendaruel, Otter Ferry and Achnaba.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 are required to improve air quality.</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities including construction of large structures across the Firth of Clyde, Kyles of Bute and at Loch Fyne, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to experience increased pollutant emissions during operation from increased vehicle traffic.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality effects on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As indicated in the 'Water Environment' section, the route corridor area may be at existing coastal flood risk around the A886 on the Isle of Bute, the Firth of Clyde, at Loch Riddon and at Loch Fyne, and at existing fluvial flood risk from Ascog Burn, around Rothesay from Mill Lade, Milton Burn at Colintrave, Allt Glachavoil, and on the A886 at the River Ruel, Tamhnich Burn and Kilail Burn during a medium likelihood event.</p> <p>As described in the 'Soils' section, there are several areas of peatland and woodland in the route corridor with high carbon sequestration and sink value.</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. There is a significant cumulative quantity of embodied carbon associated with the structural elements set out in the Material Assets section.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are moderate for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles this would reduce in the future. Additionally, the route would reduce the driving distance for some journeys due to the introduction of the four major watercourse crossings, which over time would likely result in carbon savings.</p> <p>Effects on the route as a result of predicted changes to the climate and weather should also be considered. Sections of the route are situated within or in close proximity to zones deemed to be at high risk of coastal or fluvial flooding as indicated in the 'Water Environment' Section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of land with a high carbon sink value. Any felling required would also reduce the carbon sink value of forested areas within the route corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Material Assets	<p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There is also a variety of built material assets in the corridor. The route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There are ferry services within the route corridor, including Rhubodach to Colintrave and another linking Rothesay and Wemyss Bay on the Firth of Clyde.</p> <p>The route corridor requires a structural crossing of the Firth of Clyde downstream of HMNB Clyde and Clydeport Container Terminal. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval, commercial, fishing and leisure traffic on the Firth of Clyde.</p> <p>There are minor renewable energy developments along the route corridor study are, mostly comprised of micro hydro schemes. Larkhall waste disposal site is within the corridor at Rothesay bay .</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>Loss of natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>In terms of built material assets, construction of the route corridor would have significant negative effects as a result of raw material requirements for the following elements:</p> <ul style="list-style-type: none"> ▪ 1 new 3km long suspension bridge between the coast at Portencross to the southern shore of Little Cumbrae Island. ▪ 1 new 2.53km long (2.15km main span) suspension bridge between Little Cumbrae Island and the southern coast of Bute. ▪ 1 new 700m long multi span concrete box girder bridge at Colintrave. ▪ A tunnel approximately 4.4km under high ground west of Ballochandrain. ▪ A bridge or tunnel approximately 3km long (1.1km main span) across / under Loch Fyne. ▪ Approximately 15 new underbridges Y beam type on reinforced concrete abutments. ▪ Approximately 13 new piped culverts. <p>The route would impact on the operation of the ferry service to Bute which may no longer be required once the crossings are constructed, though the sustainability implications of this modal shift would require further study.</p> <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services, leisure and fishing vessels.</p>

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on navigation during operation.
Cultural Heritage	There are two GDLs, two Conservation Areas, 13 Scheduled Monuments (including includes Rothesay Castle Scheduled Monument) and 372 Listed Buildings within the route corridor. There are concentrations of Listed Buildings at Kilchattan Bay, Kingarth, Rothesay and Port Bannatyne. At Rothesay and Port Bannatyne. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) and Ballimore GDLs occupy a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and, given their proximity, these cultural heritage resources may represent a significant pinch point in this route corridor.	<p>Due to the relatively high numbers of cultural heritage resources (compared to route corridors 1 to 3) within the route corridor and the locations of these, it is considered unlikely that a route corridor could be developed that would avoid significant negative effects on these.</p> <p>The most cultural heritage constraints within the route corridor are the high concentrations of Listed Buildings at Kilchattan Bay, Kingarth, Rothesay and Port Bannatyne. At Rothesay and Port Bannatyne. Rothesay Conservation Area stretches from Ascog to Port Bannatyne while Mount Stuart (Kirriemuir) and Ballimore GDLs occupy a large extent of the route corridor. Due to its linear nature, Thom's Water Cuts Scheduled Monument located to the west of Mount Stuart (Kirriemuir) GDL may also present a significant constraint and, given their proximity, these cultural heritage resources may represent a significant pinch point in this route corridor.</p>
Landscape and Visual Amenity	<p>This route corridor is approximately 63km long and comprises a mix of existing roads and new carriageways and crossings. Approximately 15km of the route corridor is located along the A886 within the Kyles of Bute National Scenic Area (NSA) on the Isle of Bute and the mainland. The majority of the route corridor is located within the East Loch Fyne (Coast) and Bute & South Cowal Areas of Panoramic Quality (APQs). The route corridor passes through the Ballimore Garden and Designed Landscape (GDL) and Mount Stuart (Kirriemuir) GDL and the Isle of Bute. The route corridor passes through several settlements, Open Space Protection Areas and Rothesay Conservation Area and intersects the Loch Lomond and Cowal Way, West Island Way and Ayrshire Coastal Path (Scotland's Great Trails).</p> <p>The Landscape Character Types (LCTs) within the route corridor include Rocky Coastland – Argyll LCT, Craggy Upland – Argyll LCT, Steep Ridges and Mountains LCT, Plateau Moor and Forest – Argyll LCT, Open Ridges LCT, Raised Beach Coast and Cliffs LCT, Coastal Fringe with Agriculture LCT, Stepped Rocky Coastlands LCT, Coastal Plain – Argyll LCT and Rolling Farmland with Estates – Argyll LCT. There is also a large</p>	There is potential for effects on the special qualities of the Kyles of Bute NSAs, the East Loch Fyne (Coast) and Bute & South Cowal APQs, two GDLs, and the local landscape and seascape character due to the construction and operation of the carriageway and the large footprint of the scheme. There is also potential for visual effects for residential receptors and users of long-distance recreational routes. The construction of the four new crossings at Loch Fyne, Kyles of Butes and Firth of Clyde would affect the landscape character and visual amenity of these areas.

Table 9: Corridor 9 - North Ayrshire – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>number of Seascape Character Areas (SCAs) within the route corridor including Upper Firth of Clyde - Largs to Goldenberry, Goldenberry to Farland Head, Little Cumbrae Island, Garroch Head to White Port, White Port to Kerrytonlia Point and Kerrytonlia Point to Bogany Point SCAs, Rothesay Sound - Bogany Point to Ardbeg Point and Ardbeg Point to Ardmaleish Point SCAs, The Kyles of Bute & Loch Riddon - Ardmaleish Point to Rhubodach, Rhubodach to Rubha Glas, Bargehouse Point to Strone Point, Colintrave to Bargehouse Point, Salthouse Point to Colintrave and Head of Loch Riddon SCAs and Loch Fyne - Lachlan Bay to South Ballimore SCA, Loch Fyne - Loch Gilp to Brainport Bay SCAs.</p> <p>The route corridor option involves a new crossing across Loch Fyne at Otter Ferry as well as between Cowal and Isle of Bute and two crossings on either side of Little Cumbrae Island which would be visible from the Firth of Clyde coastline and numerous residential and recreational receptor locations.</p>	

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>6.7ha of Glen Etive and Glen Fyne SPA falls within the route corridor.</p> <p>222.8ha of Beinn an Lochain SSSI falls within the route corridor.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor.</p> <p>253.0ha of Loch Eck SSSI falls within the route corridor.</p> <p>Most of Craighoyle Woodland SSSI (66.6ha) falls within the route corridor.</p> <p>141 parcels of woodland listed on the AWI fall within the route corridor.</p>	<p>6.7ha of Glen Etive and Glen Fyne SPA falls within the route corridor There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to the designated feature breeding golden eagle could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>222.8ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Ardchyline Wood SSSI (176.8ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>253.0ha of Loch Eck SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features bryophyte assemblage, flood-plain fen and oligotrophic loch, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Most of Craighoyle Woodland SSSI (66.6ha) falls within the route corridor. This could result in considerable temporary and permanent loss of SSSI habitat, including the loss of designated features bryophyte assemblage and lichen assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>141 parcels of woodland listed on the AWI fall within the route corridor. This could result in the loss of nationally important habitat, which could require compensation and would be a significant</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
		<p>negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The noise environment in the vicinity of the route is characterised by the road traffic on existing A and B roads. The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor including Helensburgh, Rhu, Rosneath, Kilcreggan, Cove, Strone, Blairmore, Ardentinny, Strachur, and St Catherine's.</p> <p>Several core paths are located within the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C220a and b (Strachur village back road) ▪ C221a (Cowal Way - Strachur to Lochgoilhead); ▪ C221b (Cowal Way - Strachur to Balliebeg); 	<p>There is potential for localised noise and vibration impacts effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration impacts from increased vehicle traffic. It is uncertain at this stage whether noise and vibration impacts would be significant during construction and operation.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for other minor negative effects impacts on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C289a, b and c (Kilcreggan to Auchengower Caravan Park); ▪ C525 (North Ailey Road, Cove); ▪ C319c and d (Barbour Road, Kilcreggan); ▪ C290a, b and c (School Road to Church Road via Fairfield Gardens); ▪ C291 (School Road to Church Road); ▪ C282a, b, d, f and g (Kilcreggan to Peaton Hill (Peninsula Path)); ▪ C286a, b, c and d (Rosneath to Kilcreggan); ▪ C499 (Portkil Point, Kilcreggan); ▪ C288 (Portkill Bay to B833 Kilcreggan/Rosneath); ▪ C285 (Rosneath to Clachan Glen); ▪ C311 (Rosneath to Clynder); ▪ C414 (Silver Hills to Ferry Land, Rosneath); ▪ C415 (Clachan Burn, Rosneath); ▪ C413 (Tom a' Mhoid, Rosneath); ▪ C283 (Clynder High Road); and ▪ C279c and d (Helensburgh Pier to Garelochhead via Shandon). 	<p>and affect journey lengths for both vehicle travellers and non-motorised users (NMUs). It is uncertain at this stage whether such impacts would be significant.</p> <p>During operation, the watercourse crossing would provide significant journey savings around Loch Long and Gare Loch. The route corridor generally would improve connectivity from the central belt to Argyll and Bute.</p> <p>It is expected that the route corridor would provide greater accessibility to the Cowal Way and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor, but the extent and significance of such impacts are uncertain at this stage.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor. but the significance of impacts on individual landowners is uncertain at this stage. and the tunnelling options would require additional land take and potentially demolitions.</p> <p>There is also potential for air quality impacts effects which could affect human health; these are discussed further under Air Quality.</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow

SEA Topic	Baseline	Assessment
	<p>Cowal Way, a long distance walking path, intersects the route corridor at Strachur and travels in a south-easterly direction alongside the A815 until it meets Loch Eck.</p>	
<p>Water Environment</p>	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Four river water bodies, Kinglas Water, River Cur (u/s Glenbranter), River Cur (Glenbranter to Loch Eck) and River Finart; ▪ One WFD loch, Loch Eck; ▪ Two transitional WFD water bodies Clyde Estuary – Outer and Gare Loch; and ▪ Three coastal water bodies, Firth of Clyde Inner – Dunoon and Wemyss Bay, Loch Fyne – Middle Basin and Loch Long (South). <p>The route corridor also crosses approximately 150-160 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk around the A814 at Gare Loch, B833 and A880 at Loch Long, A886 at Loch Fyne and at existing fluvial flood risk from Kilcreggan Burn, River Finart, around A815 at Loch Eck, Allt na h-Airigh and Allt Ruadh, the River Cur, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>The Loch Fyne Shellfish Water Protected Area is within the route corridor. There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may impact affect the hydromorphology and surface water quality of four Water Framework Directive (WFD) classified river water bodies, three WFD coastal, one WFD loch and two transitional WFD water bodies and approximately 150-160 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk around A814 at Gare Loch, B833 and A880 at Loch Long A886 at Loch Fyne and at fluvial flood risk from Kilcreggan Burn, River Finart, around A815 at Loch Eck, Allt na h-Airigh and Allt Ruadh, the River Cur, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on Loch Long and Gare Loch, which could impact flooding on associated road infrastructure.</p> <p>May impact affect the Loch Eck SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area.</p> <p>Loch Fyne Shellfish Water Protected Area is within the route corridor and may be impacted affected by the route.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor, which may be affected.</p> <p>The route corridor passes through one surface water Drinking Water Protected Area, which may be affected.</p> <p>The potential impacts of construction and operation within the route corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>The route corridor passes through one surface water Drinking Water Protected Area.</p> <p>No bathing waters are in the vicinity of the route corridor.</p>	
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral gleys, mineral podzols, brown soils and alluvial soils all present. Mineral soils predominate with peaty gleys and peaty podzols at Loch Eck and north of Strachur. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) at Blairmore and Strachur. There is one small area of Class 1 peatland (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) on the Rosneath Peninsula. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are two Geological Conservation Review (GCR) sites in the route corridor, these being Rhu Point and Cove Bay to Kilcreggan. These sites are shoreline/sea-bed sites.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F2 on the Rosneath Peninsula, at Ardentinny and at Strachur to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) on the Rosneath Peninsula and at Strachur. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of</p>	<p>The 50.3km route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises choice of route alignment within the route corridor is likely to avoid potential impacts effects on Class 1 and Class 2 peatland habitat (nationally important and of potentially high conservation value and restoration potential) and the GCR sites. Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable through choice of route alignment within the route corridor, but mitigation is likely to be achievable to reduce the potential for significant significant negative environmental effects.</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).	
Air Quality	<p>The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor including Helensburgh, Rhu, Rosneath, Kilcreggan, Cove, Strone, Blairmore, Ardentinn, Strachur, and St Catherine's.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality impacts effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities, including construction of large structures across Gare Loch a and Loch Long, and pollutant emissions from vehicular movements, which could result in annoyance for local residents., and in the long-term, health problems including respiratory illness.</p> <p>There is potential for receptors within the route corridor to experience increased pollutant emissions during operation from increased vehicle traffic, which could result in effects on human health.</p> <p>The route corridor passes through or adjacent to a number of settlements containing receptors that could experience negative air quality effects during construction and operation.</p> <p>There are a number of settlements within the route corridor and it is uncertain whether air quality impacts on sensitive receptors would be significant for construction and operation following implementation of mitigation measures.</p> <p>The route corridor involves the construction of two major structures close to sensitive receptors in the settlements of Helensburgh, Rhu, Rosneath, Kilcreggan, Cove, Blairmore, Strone. There is potential for increased, longer-term impacts effects on air quality due to construction activities associated with the structures.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow

SEA Topic	Baseline	Assessment
		<p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As indicated in the 'Water Environment' section, the corridor may be at existing coastal flood risk around the A814 at Gare Loch, B833 and A880 at Loch Long, A886 at Loch Fyne and at existing fluvial flood risk from Kilcreggan Burn, River Finart, around A815 at Loch Eck, Allt na h-Airigh and Allt Ruadh, the River Cur, Eas Dubh, Allt Coire No and Kinglas Water during a medium likelihood event. There are several areas on the existing trunk road network within the route corridor identified as being at risk of coastal or fluvial flooding.</p> <p>As described outlined in the 'Soils' section, there are several areas of peatland and woodland in the route corridor with a high carbon sequestration and sink value. As outlined in the Biodiversity, Flora and Fauna section, there are several areas of forestry in the corridor which also has a high carbon sequestration and sink value.</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. This includes the widening of 27.7km of existing A class carriageway and 19.5km of other roads to be upgraded.</p> <p>There is a significant cumulative quantity of embodied carbon associated with constructing the elements set out in the Material Assets section. following structures:</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are relatively low, for this route corridor, assuming the continued operation of the A83 through the Rest and Be Thankful.</p> <p>Effects on the route as a result of predicted changes to the climate and weather should also be considered. Sections of the route are situated within or in close proximity to zones deemed to be at high risk of coastal or fluvial flooding, as indicated in the 'Water Environment' Section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
		<p>Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland. If used for construction, this would lead to a release of sequestered carbon and a loss of high value carbon sink land. Any felling required would also reduce the carbon sink value of forested areas within the route corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p>
Material Assets	<p>The route corridor passes through or adjacent to several concentrations of properties comprised of a mixture of residential and commercial dwellings within settlements, as indicated within the 'Population and Human Health Section'.</p> <p>Properties adjacent to the proposal would be in close proximity to any upgrade works or new carriageway construction works.</p> <p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There is also a variety of built material assets in the corridor. The route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There is one ferry service within the route corridor, at Gare Loch linking Kilcreggan to Gourrock.</p> <p>The route corridor requires a structural crossing of Gare Loch, downstream of HMNB Clyde. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval shipping at Gareloch.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>Loss of natural material assets would result in minor negative or uncertain environmental effects for soils and significant negative effects on woodland.</p> <p>In terms of built material assets, construction of the route corridor would have significant negative effects as a result of raw material requirements for the following elements:</p> <ul style="list-style-type: none"> ▪ 1 new 1.5km long (900m main span) cable stayed or suspension bridge over Gare Loch. ▪ 1 new 2.6km long main span suspension bridge over Loch Long.

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	<p>There are minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes. The closest waste disposal facility is located at Dalinlongart to the north of Dunoon and Blackhill at Helensburgh.</p>	<ul style="list-style-type: none"> ▪ A tunnel approximately 3.1km long. Under Larach Hill between Glen Finart and the A815 at Whistlefield. ▪ Depending on local alignment across Gare Loch and Loch Long, potential for a tunnel approximately 1.87km long on the west side of Loch Long. ▪ Depending on local alignment across Gare Loch and Loch Long, potential for a tunnel approximately 1.68km long on the west side of Loch Long. ▪ 1 new 400m long multi span steel composite single carriageway viaduct on piled RC reinforced concrete abutments and piled intermediate piers near the tie in to the existing A83 Trunk Road. ▪ Approximately 9 new single span composite concrete Y beam deck single carriageway bridges on piled or spread footing abutments. ▪ Approximately 50 new piped or box culverts. <p>The Firth of Clyde is a busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services. There is potential for effects on shipping during construction of the structural crossing. Appropriate clearance for shipping would be required to avoid effects on on navigation for naval, commercial, fishing and leisure traffic.</p>
Cultural Heritage	<p>There are three Conservation Areas (Rosneath, Cove and Kilcreggan and Rhu), six Scheduled Monuments, 171 Listed Buildings and one Garden and Designed Landscape (Ardkinglas and Strone), within the route corridor. There are concentrations of Listed Buildings at Rosneath, Cove, Kilcreggan, Blairmore, Ardentinnny and Strachur. The Cove and Kilcreggan Conservation Area almost completely bisects the route corridor. The route corridor also includes concentrations of Listed Buildings and large Conservation Areas at Rhu and Helensburgh.</p>	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route within this route corridor could be developed that would avoid significant negative effects significant impacts on these.</p> <p>The most cultural heritage constraints are where there are concentrations of Listed Buildings at Rosneath, Cove, Kilcreggan, Blairmore, Ardentinnny and Strachur and where the Cove and Kilcreggan</p>

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
		Conservation Area almost completely bisects the route corridor. The route corridor also includes concentrations of Listed Buildings and large Conservation Areas at Rhu and Helensburgh and these also represent a pinch point.
Landscape and Visual Amenity	<p>The route corridor is approximately 50km long and generally runs along existing roads but involves two new crossings at Gare Loch and Loch Long linking Cowal to Helensburgh. Approximately 23 km of the route corridor is located within the LLTNP Loch Lomond and The Trossachs National Park and Argyll Forest Park. There are no National Scenic Areas within the route corridor. The northern section of the route corridor runs within the North Argyll and East Loch Fyne (Coast) Areas of Panoramic Quality (APOs) for approximately 15km on the eastern side of Loch Fyne and passes through Ardkinglas And Strone Garden and Designed Landscape (GDL). There are also several Open Space Protection Areas within the route corridor around Strachur, Kilcreggan and Rhu and Conservation Areas in Cove and Kilcreggan, Rosneath and Rhu.</p> <p>The Landscape Character Types (LCTs) within the route corridor comprise Rugged Mountains LCT, Steep Ridges and Mountains LCT, Rocky Coastland – Argyll LCT, Steep Ridges and Hills LCT, Straths and Glens LCT, Straths and Glens with Lochs LCT, Settled Coastal Fringe LCT, Open Ridges LCT and Rolling Farmland with Estates – Argyll LCT. There are several Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Inveraray to St Catherines SCA, Loch Fyne - St Catherines to Newton Bay SCA, Loch Long - Strone Point to North of Blairmore, North of Blairmore to Shepherd's Point and Coulport to Barons Point SCAs, Inner Firth of Clyde - Holy Loch and Kilcreggan to Rosneath Point SCAs and Gareloch - Rosneath Bay to Clynder, Rosneath Point to Rosneath Bay and Rhu SCAs.</p> <p>Land cover within the route corridor for this route option comprises small and scattered settlements, sea and freshwater lochs and coasts, open grassland and moorland, native woodland, coniferous forestry and numerous watercourses.</p> <p>This route corridor would cross and likely be visible from the Loch Lomond and Cowal Way (Strachur to Lochgoilhead section) and the Argyll Paddle Trail. Parts of the route corridor</p>	There is potential for effects on the LLTNP, the North Argyll and East Loch Fyne (Coast) APOs, one GDL and the local landscape and seascape character due to the construction and operation of the carriageway and supporting infrastructure. There is also potential for visual impacts effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads and other outdoor receptors. The introduction of two new crossings at Gare Loch and Loch Long would affect the landscape character and visual amenity of the area.

Table 10: Corridor 10 – Helensburgh – Cowal - Cairndow		
SEA Topic	Baseline	Assessment
	would also be visible from large sections of Loch Fyne, Loch Long, Gare Loch and Firth of Clyde coastline as well as numerous residential and recreational receptor locations.	

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>This route corridor crosses Upper Loch Fyne and Loch Goil MPA for approx. 2.8km and is also approximately 200m south at another section.</p> <p>Most of Ruel Estuary SSSI (131.7ha) falls within the route corridor.</p> <p>91 parcels of woodland listed on the AWI fall within the route corridor.</p>	<p>Route corridor crosses Upper Loch Fyne and Loch Goil MPA for approximately 2.8km and is also approximately 200m south at another section. Pollution during construction and operation of crossing could adversely impact the MPA, which could be a significant negative environmental effect.</p> <p>Most of Ruel Estuary SSSI (131.7ha) falls within the route corridor. This could result in the loss of SSSI habitat, including the loss of designated features fen meadow, flood-plain fen, saltmarsh and upland oak woodland, which could be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>91 parcels of woodland listed on the AWI fall within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which could require compensation, and would be a significant negative environmental effect.</p> <p>There is potential for effects on marine and terrestrial species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
<p>Population and Human Health</p>	<p>The noise environment in the vicinity of the route corridor is characterised by the road traffic on existing A and B roads. The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor including Helensburgh, Rhu, Rosneath, Kilcreggan, Cove, Strone, Blairmore, Clachaig, Otter Ferry and Achnaba.</p> <p>Several core paths are also located within/adjacent to the route corridor, comprising:</p> <ul style="list-style-type: none"> ▪ C406 (Otter Ferry Circular, Loch Fyne); ▪ C215 (Glendaruel to Otter Ferry); ▪ C214h, i and k (Cowal Way Glenbranter to Portvadie); ▪ C212b (Port Lamont to Ardtaraig, Loch Strivan); ▪ C223a, b and c (Dunans loop to Inverreck and the LLTNP boundary); ▪ C289a, b and c (Kilcreggan to Auchengower Caravan Park); ▪ C525 (North Ailey Road, Cove); ▪ C319c (Barbour Road, Kilcreggan); ▪ C290a, b and c (School Road to Church Road via Fairfield Gardens); ▪ C291 (School Road to Church Road); ▪ C319d (Barbour Road, Kilcreggan); ▪ C282a, b d, f and g (Kilcreggan to Peaton Hill (Peninsula Path)); 	<p>There is potential for localised noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for receptors. Construction of watercourse crossings in particular could result in a longer construction period and could involve activities such as piling with high levels of noise and vibration.</p> <p>During the operation phase, there is potential for receptors close to the route to experience new or increased noise and vibration impacts from increased vehicle traffic.</p> <p>As there are a number of settlements within the route corridor, in addition to noise and vibration there is potential for minor negative effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs)..</p> <p>During operation, the watercourse crossings would provide significant journey savings around Gare Loch, Loch Long and Loch Fyne. The route corridor generally would improve connectivity between the central belt and Argyll and Bute.</p> <p>It is expected that the route corridor would provide greater accessibility to the Cowal Way and the core path network in and around the route corridor. There is also potential for paths to be severed as a result of the route corridor.</p> <p>Land-take from properties would be required to facilitate the operation of the route corridor and the tunnelling options would require additional land take and potentially demolitions.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality.</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ C499 (Portkil Point, Kilcreggan); ▪ C286a, c, d (Rosneath to Kilcreggan); ▪ C288 (Portkill Bay to B833 Kilcreggan/Rosneath); ▪ C285 (Rosneath to Clachan Glen); ▪ C311 (Rosneath to Clynder); ▪ C413 (Tom a 'Mhoid, Rosneath); ▪ C415 (Clachan Burn, Rosneath); and ▪ C414 (Silver Hills to Ferry Land, Rosneath). <p>Cowal Way, a long-distance walking path, intersects the route corridor at Glendaruel, where it travels south to the west of the River Ruel and Loch Riddon.</p> <p>The Dunoon to Portvadie Sustrans route (an on-road route which is not on the National Cycle Network) intercepts the route corridor at Glendaruel where it then travels along the A886 and B836 (and route corridor) in an easterly direction towards Dalinlongart.</p>	
Water Environment	<p>The route corridor crosses or is in the vicinity of multiple water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Seven river water bodies, Kilfinan Burn/Allt Lean Achaidh, River Ruel, Tamhnich Burn, Balliemore Burn/Allt Gleann Laorigh, Glentarsan Burn, Little Eachaig River/Cruach Neuran Burn and River Eachaig; ▪ Two transitional water bodies, Clyde Estuary – Outer and Gare Loch; and 	<p>Construction within the route corridor and operational structures and discharges may affect seven Water Framework Directive (WFD) classified river water bodies, six WFD coastal and two transitional WFD water bodies and approximately 130-140 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk around A814 at Gare Loch, B836 at Loch Striven, A886 at Loch Riddon, A815 at Holy Loch, A880 and B833 at Loch Long South and the crossing at Loch Fyne Middle Basin during a medium likelihood event (0.5% AEP (200-year) event). The route may be at fluvial flood rise from Kilcreggan Burn, River Eachaig,</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<ul style="list-style-type: none"> ▪ Six coastal bodies, Firth of Clyde Inner – Dunoon and Wemyss Bay, Loch Fyne – Middle Basin, Loch Striven, Loch Long (South), Holy Loch and Loch Riddon. <p>The route corridor also crosses approximately 130-140 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk around A814 at Gare Loch, B836 at Loch Striven, A886 at Loch Riddon, A815 at Holy Loch, A880 and B833 at Loch Long South and Loch Fyne Middle Basin during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing fluvial flood risk from Kilcreggan Burn, River Eachaig, around the B836 from Little Eachaig River/Cruach Neuran Burn, Glenkin Burn, Glentarsan Burn, Balliemore Burn, around A886 at River Ruel, and Tamhnich Burn, and from the Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area are within the vicinity of the route corridor.</p> <p>The Loch Fyne, Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the vicinity of the route corridor. There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes in the vicinity of two surface water Drinking Water Protected Areas.</p> <p>No bathing waters are in the vicinity of the route corridor.</p>	<p>around the B836 from Little Eachaig River/Cruach Neuran Burn, Glenkin Burn, Glentarsan Burn, Balliemore Burn, around A886 at River Ruel, and Tamhnich Burn, and from the Kilail Burn during a medium likelihood event (0.5% AEP (200-year) event). Potential for coastal flooding from new crossings on Loch Long, Gare Loch and Loch Fyne which could impact flooding on the immediate road infrastructure.</p> <p>May affect the Ruel Estuary SSSI and the Upper Loch Fyne and Loch Goil Marine Protected Area.</p> <p>Loch Fyne Shellfish Water Protected Area is directly crossed and may be affected. Loch Striven and Kyles of Bute Shellfish Water Protected Areas are within the route corridor and may be impacted by the route corridor.</p> <p>There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor, which may be affected.</p> <p>The route corridor passes in the vicinity of two surface water Drinking Water Protected Areas, which may be affected.</p> <p>Construction and operation within the route corridor could result in a significant negative effect on the water environment.</p>
Soils	<p>The route primarily passes through peaty gleys and peaty podzols, in addition to mineral gleys, humus-iron podzols, alluvial soils and brown earths. Land capability for agriculture is generally mid to low value, and ranges from 4.1 – 6.3.</p> <p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, mineral gleys, mineral podzols, brown soils and alluvial soils all present. Peaty gleys and peaty podzols predominate with mineral soils in sections on the Rosneath Peninsula and at the heads of Loch Striven and Loch Riddon. The route corridor where peat is present predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor is likely to avoid potential effects on Class 1 and Class 2 peatland habitat (nationally important and of potentially high conservation value and restoration potential) and the GCR sites. Loss of existing commercial forestry and land identified as Preferred and Potential within the Argyll & Bute Woodland Strategy is likely to be unavoidable within the route corridor, but mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead

SEA Topic	Baseline	Assessment
	<p>peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) at Otter Ferry and there are two small areas of Class 1 peatland (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) on the Rosneath Peninsula and at Glen Lean. Given the combination of soils, climactic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 5 (Class 5.1, 5.2 and 5.3) with Class 4 (Class 4.1 and 4.2) on the more productive mineral soils and Class 6 (Class 6.1, 6.2 and 6.3) on the steeper and higher slopes.</p> <p>There are two Geological Conservation Review (GCR) sites in the route corridor, these being Rhu Point and Cove Bay to Kilcreggan. These sites are shoreline/sea-bed sites.</p> <p>The Land Capability for Forestry (LCF) class is mixed ranging from Class F2 on the Rosneath Peninsula, at Strath Eachaig, Glendaruel and at Otter Ferry to Class F6 on the higher steeper slopes in between. There are existing stands of commercial forestry throughout the route corridor. The route corridor includes land identified in the Argyll & Bute Council Woodland Forestry Strategy as Preferred (land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives, Sensitivities are limited) on the Rosneath Peninsula, Glen Lean and Otter Ferry. Other areas identified include existing woodland, Sensitive (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal) and Potential (considerable potential to accommodate future expansion of a range of woodland types, but where at least one 'sensitivity' exists).</p>	
Air Quality	<p>The route corridor passes through predominantly rural areas and there are a number of settlements within the route corridor, including Helensburgh, Rhu, Rosneath, Kilcreggan, Cove, Strone, Blairmore, Clachaig, Otter Ferry and Achnaba.</p> <p>There are no Air Quality Management Areas (AQMAS) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll</p>	<p>There is potential for localised air quality effects on receptors within the route corridor during the construction phase: for example, dust generated from site activities, including construction of large structures over Gare Loch, Loch Long, and at Loch Fyne, and pollutant emissions from vehicular movements, which could result in annoyance for local residents.</p> <p>There is potential for receptors within the route corridor to experience increased pollutant emissions during operation from increased vehicle traffic.</p> <p>There is potential for receptors within the route corridor to be affected by pollutant emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) from vehicle traffic during operation.</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience air quality negative effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the 11 route corridors.</p> <p>As indicated in the 'Water Environment' section, the route corridor may be at existing coastal flood risk around A814 at Gare Loch, B836 at Loch Striven, A886 at Loch Riddon, A815 at Holy Loch, A880 and B833 at Loch Long South and Loch Fyne Middle Basin during a medium likelihood event. The route corridor may be at existing fluvial flood risk from Kilcreggan Burn, River Eachaig, around the B836 from Little Eachaig River/Cruach Neuran Burn, Glenkin Burn, Glentarsan Burn, Balliemore Burn, around A886 at River Ruel, and Tamhnich Burn, and from the Kilail Burn during a medium likelihood event.</p> <p>As outlined in the 'Soils' section, there are several areas of peatland and woodland in the route corridor with a high carbon sequestration and sink value. As outlined in the Biodiversity, Flora and Fauna section, there are several areas of forestry in the corridor which also has a high carbon sequestration and sink value.</p>	<p>Construction of the route corridor would have significant negative effects on climate due to the release of carbon emissions associated with the construction materials and installation process. This includes the widening of 66.5km of existing A class road and upgrading of 9.5km of other roads, requiring significant raw material inputs. There is also a significant quantity of embodied carbon associated with constructing the elements as listed in the Material Assets section.</p> <p>Once operational, forecast traffic levels (and associated vehicle-derived greenhouse gas emissions) are relatively low, for all route corridors, assuming the continued operation of the A83 through the Rest and Be Thankful. With the predicted shift towards electric vehicles this would reduce in the future. Additionally, the route would reduce the driving distance for some journeys due to the introduction of the watercourse crossings over Gare Loch, Loch Long and Loch Fyne, which over time would likely result in carbon savings.</p> <p>Effects on the route as a result of predicted changes to the climate and weather should also be considered. Sections of the route are situated within or in close proximity to zones deemed to be at High risk of coastal or fluvial flooding as indicated in the 'Water Environment' Section. The anticipated increase in severity and frequency of rainfall events caused by climate change could pose greater risk from flash-flooding.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and</p>

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.
Material Assets	<p>The route corridor contains a variety of natural material assets. As outlined in the Climatic Factors section, there are areas of forestry within the route corridor and as listed in the Soils section, there are sections of peat soils and a mixture of LCF classes.</p> <p>There is also a variety of built material assets in the corridor. The route corridor generally follows existing road infrastructure including a mixture of 'A' 'B' and 'C' roads. There is one ferry service within the route corridor at Gare Loch, linking Kilcreggan to Gourrock.</p> <p>The route corridor requires a structural crossing of Gare Loch, downstream of HMNB Clyde. Consideration for clearance and maritime navigation must be given to facilitate continued passage for naval shipping at Gareloch.</p> <p>There are minor renewable energy developments along the route corridor, mostly comprised of micro hydro schemes. There are waste disposal facilities at located at Dalinlongart to the north of Dunoon and Blackhill at Helensburgh.</p>	<p>As outlined in the Climatic Factors section, there are several natural material assets including woodland, peat soils and farmland that could be affected by the route corridor.</p> <p>As indicated in the 'Soils' section, the route corridor is located on areas identified as peatland which would lead release of sequestered carbon and a loss of high value carbon sink land which could lead to minor negative or uncertain environmental effects.</p> <p>Felling would be required which would also reduce the carbon sink value of forested areas within the route corridor and could result in significant negative environmental effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the route corridor selection process.</p> <p>In terms of built material assets, construction of the route corridor would have significant negative effects a result of raw material requirements for the following elements:</p> <ul style="list-style-type: none"> ▪ 1 new 1.5km long (900m main span) long cable stayed or suspension bridge over Gare Loch. ▪ 1 new 2.98km long (1.98km main span) suspension bridge over Loch Long. ▪ A cable stayed bridge approximately 820m long (500m main span) across Loch Striven. ▪ A tunnel approximately 1.45km under high ground west of Loch Striven. ▪ A tunnel approximately 4.4km under high ground west of Ballochandrain. ▪ A bridge approximately 3km long (1,100 main span) or tunnel across / under Loch Fyne. ▪ Approximately 4 new multi span steel composite single carriageway bridges on piled reinforced concrete abutments and piled intermediate piers.

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Approximately 9 new single span composite concrete Y beam deck single carriageway bridges on piled or spread footing abutments. ▪ Approximately 95 new piped or box culverts. <p>The Firth of Clyde and Loch Fyne are busy shipping route for naval vessels accessing HMNB Clyde and cargo vessels accessing Clydeport Container Terminal at Greenock as well as ferry services. There is potential for impacts on shipping during construction of the watercourse crossing structures. Appropriate clearance for navigation would be required to avoid impacts on shipping that use the Firth of Clyde and Loch Fyne to maintain navigation for naval, commercial, fishing and leisure traffic.</p>
Cultural Heritage	There are seven Scheduled Monuments, 157 Listed Buildings, four Conservation Areas and one Garden and Designed Landscape (Ballimore GDL) within the route corridor. There are concentrations of Listed Buildings at Rosneath, Cove, Kilcreggan, Blairmore, Ardentinny and Strachur. The Cove and Kilcreggan Conservation Area almost completely bisects the route corridor. The Clachaig Conservation Area is centrally located within the route corridor. The Ballimore GDL occupies a large part of the route corridor on the eastern shore of Loch Fyne.	<p>Due to the relatively high numbers of cultural heritage resources within the route corridor (compared to route corridors 1 to 3) and the locations of these, it is considered unlikely that a route could be developed that would avoid significant negative effects on these.</p> <p>The most cultural heritage constraints are likely to be where there are concentrations of Listed Buildings at Rosneath, Cove, Kilcreggan, Blairmore, Ardentinny and Strachur, the Cove and Kilcreggan and Clachaig Conservation Areas and the Ballimore GDL. This GDL occupies a large part of the route corridor on the eastern shore of Loch Fyne. There are also large Conservation Areas and concentrations of Listed Buildings at Rhu and Helensburgh.</p>
Landscape and Visual Amenity	The route corridor is approximately 49km long and generally runs along existing roads, but involves three new crossings at Loch Fyne, Loch Long and Gare Loch linking Kintyre with Cowal and Helensburgh. Starting with the new crossing between Port Ann on the western and Otter Ferry on the eastern shore of Loch Fyne, this route corridor runs through Ballimore Garden and Designed Landscape (GDL) and then passes through the Kyles of Bute National Scenic Area (NSA) for approximately 3km, past the northern tip of Loch Riddon and Loch Striven, and then runs past the northern edge of Holy Loch, crossing Loch Long to Kilcreggan on Rosneath Peninsula and then crossing Loch Gare between Rosneath and Rhu to the northwest of Helensburgh	There is potential for effects on the LLTNP, the special qualities of the Kyles of Bute NSA, the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute & South Cowal APQs, Ballimore GDL and the local landscape and seascape character due to the construction and operation of the carriageway and supporting infrastructure. There is also potential for visual effects for residential receptors in proximity to the route corridor, as well as vehicle travellers using the existing roads and other outdoor receptors. The introduction of three new crossings at Loch Fyne, Loch Long and Gare Loch would affect the landscape character and visual amenity of the area.

Table 11: Corridor 11 - Helensburgh – Cowal - Lochgilphead		
SEA Topic	Baseline	Assessment
	<p>Approximately 6km of the route corridor is located within the LLTNP and Argyll Forest Park. Approximately 15km of this route corridor is located within the West Loch Fyne (Coast), East Loch Fyne (Coast) and Bute & South Cowal Areas of Panoramic Quality (APQs). There are several Open Space Protection Areas around Kilcreggan and Rhu and Conservation Areas in Cove and Kilcreggan, Rosneath and Rhu.</p> <p>The Landscape Character Types (LCTs) within the route corridor comprise Rocky Coastland – Argyll LCT, Plateau Moor and Forest – Argyll LCT, Steep Ridges and Mountains LCT, Rocky Coastland – Argyll LCT, Steep Ridges and Hills LCT, Straths and Glens LCT, Settled Coastal Fringe LCT, Open Ridges LCT and Rolling Farmland with Estates – Argyll LCT. There are several Seascape Character Areas (SCAs) within the route corridor, namely Loch Fyne - Lachlan Bay to South Ballimore SCA, Loch Fyne - Loch Gilp to Brainport Bay SCA, Loch Striven - Ardbeg Point to Head of Loch Striven, Head of Loch Striven and Head of Loch Striven to The Craig SCAs, Loch Long - Strone Point to North of Blairmore, North of Blairmore to Shepherd's Point and Coulpport to Barons Point SCAs, Inner Firth of Clyde - Holy Loch and Kilcreggan to Rosneath Point SCAs and Gareloch - Rosneath Bay to Clynder, Rosneath Point to Rosneath Bay and Rhu SCAs.</p> <p>Land cover within the route corridor for this route option comprises small and scattered settlements, sea and freshwater lochs and coasts, open grassland and moorland, native woodland, coniferous forestry and numerous watercourses.</p> <p>This route corridor would cross and likely be visible from the Loch Lomond and Cowal Way (Glenbranter to Portavadie section) and the Argyll Paddle Trail. Parts of the route corridor would also be visible from large sections of Loch Fyne, Loch Long, Gare Loch and Firth of Clyde coastline as well as numerous residential and recreational receptor locations.</p>	

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>The route corridor passes through Glen Etive and Glen Fyne Special Protection Area (SPA) and Ben Vorlich Site of Special Scientific Interest (SSSI). Beinn a Lochain SSSI is located approximately 0.07km west of the route corridor at the closes point.</p> <p>There are 13 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor.</p>	<p>32.15ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to the designated feature breeding golden eagle could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>15.14ha of Ben Vorlich SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features alpine flush, subalpine wet heath and tall herb ledge, which would be a significant negative environmental effect. Alterations to alpine flush, subalpine wet heath designated features could occur as a result of water flow changes, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Beinn an Lochain SSSI is located approximately 0.07km west of the route corridor at the closes point. Moderate negative environmental effects could occur to tall herb ledge and upland assemblage, designated features of the SSSI, as a result of nitrogen deposition.</p> <p>There are 13 parcels of woodland listed on the AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat which would be a significant negative environmental effect and could require compensation. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting.

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge

SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The route corridor is rural in nature, with residential receptors located within the settlement of Inveruglas, and a further two residential receptors located elsewhere in the route corridor.</p> <p>Two long distance walking paths (Three Lochs Way and Loch Lomond and Cowal Way) follow the same route through the eastern extents of the route corridor, travelling north-west through Ardgartan Forest to Coiregrogain, before travelling east towards Inveruglas.</p> <p>Glen Loin Loop, a forest walking route, also passes through the route corridor, following the perimeter of A' Chrois in a north-westerly direction towards Gleann Leacann Sheileach where it crosses the stream before travelling east along the foot of Ben Vane. The route then joins the long-distance walking paths of Three Lochs Way and Loch Lomond and Cowal Way at Coiregrogain, where it travels south through Ardgartan Forest and exits the route corridor.</p> <p>There are also several Munros, Corbetts and mountains popular with hill-walkers within the route corridor, including Ben Vane, Beinn Chorrnach, Beinn Ime, A' Chrois, Creag Tharsuinn and Beinn Luibhean.</p>	<p>There is potential for localised noise and vibration effects on receptors close to the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents. During the operation phase, there is potential for receptors close to the route to experience noise and vibration impacts from vehicle traffic. It is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor would provide a new link between the A83 and A82 Trunk Roads and potentially reduce the severity and/or incidence of severance issues. The route corridor is expected to improve accessibility and connectivity with the central belt for those living, working, and travelling in the Argyll and Bute region, through increasing the reliability of the trunk road network. It is also expected that the route corridor would provide greater accessibility to walking routes in the surrounding area, including Glen Loin Loop, Three Lochs Way and Loch Lomond and Cowal Way, and hill-walking routes such as Ben Vane, Beinn Chorrnach, Beinn Ime, A' Chrois, Creag Tharsuinn and Beinn Luibhean. There is also potential for paths to be severed as a result of the corridor, but the extent and significance of such impacts are uncertain at this stage.</p> <p>There may be land-take from properties required to facilitate the operation of the route corridor.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality.</p>

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge

SEA Topic	Baseline	Assessment
Water Environment	<p>The route corridor crosses or is in the vicinity of four river water bodies classified under the Water Framework Directive, comprising Loin Water, Allt Coiregrogain, Inveruglas Water and Kinglas Water.</p> <p>The corridor also contains approximately 30-40 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing fluvial flood risk from Inveruglas Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>There are no designated sites protected for water environment interests within the route corridor. There are no Shellfish Water Protected Areas, Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor. The route corridor passes through one surface water Drinking Water Protected Area. No bathing waters are in the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may impact the hydromorphology and surface water quality of four Water Framework Directive classified river water bodies and approximately 30-40 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at fluvial flood risk from Inveruglas Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor passes in the vicinity of one surface water Drinking Water Protected Area, which may be impacted.</p> <p>The potential impacts of construction and operation within the route corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, montane soils, brown soils and mineral podzols all present. Peaty podzols are predominant within the route corridor with montane soils located on the higher slopes and brown soils, mineral podzols and peaty gleys prominent in the eastern section of the corridor around Inveruglas.</p> <p>The route corridor, where peat is present, predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects small pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) on the western slopes of Ben Vane and in the valley between Beinn Chorrnach and Beinn Ime. Peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present in the valley between Beinn Ime and Beinn Luibhean and adjacent to either side of Kinglas Water to the west of the route corridor. Given</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor has the potential to avoid effects on Class 1 (nationally important and of high conservation value) and Class 2 peat (nationally important and of potentially high conservation value and restoration potential) but would unavoidably affect non-priority peatland and carbon-rich soils. Loss of existing commercial forestry and land identified as 'preferred' in the LLTNP Authority Trees and Woodland Strategy, is likely to be unavoidable within the route corridor.</p> <p>Mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>the combination of soils, climatic conditions and topography, the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 6 (Class 6.1, 6.2 and 6.3) which is non-prime land capable of use as rough grazing only.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>Given the combination of soils, topography and climate the Land Capability for Forestry (LCF) class is predominantly Class F6 (Land with very limited flexibility for the growth and management of tree crops) and Class F7 (Land unsuitable for producing tree crops) with some areas of Class F5 (Land with limited flexibility for the growth and management of tree crops) located towards the eastern and western boundaries of the route corridor. There are existing strands of commercial forestry located to the east of the route corridor.</p> <p>The route corridor includes land identified in the LLTNP Authority Trees and Woodland Strategy as 'preferred' (where native woodland creation would have the greatest impact in improving woodland connectivity, providing a more suitable climate for tree growth) predominantly to the east of the corridor on the lower slopes of Ben Vain and to the north of Inveruglas water. Other areas are identified as 'potential' (where native woodland creation would contribute to the wider strategy's objectives) throughout the route corridor.</p>	
Air Quality	<p>The route corridor is rural in nature; receptors sensitive to changes in air quality are present within the settlement of Inveruglas located partially within the eastern extent of the corridor, and at the two other buildings identified within the route corridor.</p> <p>There are no Air Quality Management Areas (AQMAs) in the route corridor or in the Argyll and Bute council area and 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 & Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual</p>	<p>There is potential for localised air quality impacts on receptors within the route corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for residents of Inveruglas.</p> <p>The route corridor does not follow an existing route and would therefore introduce traffic-related emissions to the area (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>The existing air quality in the region is good, and with mitigation measures in place it is expected that any negative effects which do arise are likely to be minor.</p>

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the route corridor options. However, due to the northern location of the route corridor it considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area. The topography of the route corridor rises steeply from the centreline, climbing from approximately 30m to 170m. This steep slope continues to reach the highest point at 750m above the valley floor between Beinn Chorranch and Beinn Ime.</p> <p>The route corridor is within a location that may be at existing fluvial flood risk from Inveruglas Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event, as stated in the 'Water Environment' section.</p> <p>There are areas of forested land in the route corridor, particularly in the eastern section of the corridor. As described in the 'Soils' section, peaty podzols are the predominant soil type within the route corridor. These areas of forestry and peat soils have a high carbon sequestration and sink value.</p>	<p>The route corridor is offline and has steep topography on either side of the centreline. During periods of extended rainfall, the route corridor could be at risk of landslides from slope instability. Climate change is expected to increase the frequency and intensity of extreme weather events, which could impact the route.</p> <p>As indicated in the 'Water Environment' section, there are areas of the route corridor which may be at risk of fluvial flooding from Inveruglas Water, Allt Coregrogain and Kinglas Water. As the route corridor option is primarily a tunnel, negative effects from landslides and flooding at ground level would be avoided.</p> <p>As indicated in the 'Soils' section, there are areas peatland that could be affected by the corridor, leading to its degradation and release of carbon, although this is assessed as being a minor negative or uncertain environmental effect. There is also forestry on the route corridor. Any felling required would reduce the carbon sink value of forests within the corridor. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the corridor selection process. As the option includes a tunnel for almost the entirety of the route, loss of forestry and surface peat would be avoided, however deeper areas of peat may be encountered during tunnelling operations.</p> <p>As stated in the 'Material Assets' section, engineering solutions would be required to construct the 8.1km tunnel, including significant material and earthwork requirements. Embodied carbon within materials and emissions released from construction activities would add to the cumulative atmospheric concentration of carbon, increasing climate change, likely resulting in minor environmental effects.</p>

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge

SEA Topic	Baseline	Assessment
Material Assets	<p>The corridor is located in a rural environment where the trunk road network plays an essential role in enabling mobility in the Argyll and Bute region. The route corridor is offline, west from the A82 Trunk Road, and follows the Inveruglas Water.</p> <p>There are natural material assets visible in the route corridor, including mixed/coniferous plantation woodland to the south of Inveruglas Water at the eastern extent of the corridor. There is evidence of agriculture from aerial imagery within the route corridor, approximately 1.8km from the A83 Trunk Road.</p> <p>There are several built material assets in the corridor associated with utilities, including a high voltage electricity transmission line to the west of Loch Sloy and a second line that runs along the corridor from Loch Sloy to a substation at Inverarnan. At the eastern extent of the corridor, the Sloy power station is located adjacent to the A82 Trunk Road at Inveruglas. The West Highland Line railway also passes through the route corridor and is located in land to the west of the A82 Trunk Road.</p> <p>The closest commercial waste disposal facility to the route corridor is located in Helensburgh to the south.</p>	<p>The route corridor is offline west from the A82 Trunk Road and follows the Inveruglas Water. Due to the topography of the corridor, significant engineering solutions would be required to achieve compliance, requiring large-scale works and material requirements. The route corridor is 8.2km corridor length would require significant raw material inputs and earthwork activities to construct including:</p> <ul style="list-style-type: none"> ▪ Total route corridor length: 8.2km ▪ Tunnel length: 8.1km <p>As the option includes a tunnel for almost the entirety of the route, negative environmental effects on ground-based material assets would be avoided.</p> <p>The total length of the route corridor is 8.2km, of which approximately 8.1km is a tunnel. Construction of this tunnel would have significant requirements for materials and earthwork treatment.</p>
Cultural Heritage	<p>There is only one designated cultural heritage resource within this route corridor, a Category A Listed Building north of Inveruglas. However, there are a cluster of other Listed Buildings (Categories A and C) immediately east of the route corridor, and Inveruglas Castle Scheduled Monument is in Loch Lomond, east of Inveruglas.</p> <p>There are no other designated cultural heritage resources within route corridor, but there is potential for undesignated or undiscovered cultural heritage resources (e.g. archaeological remains) to be located here.</p>	<p>As there is only one designated cultural heritage resource within the route corridor (a Listed Building north of Inveruglas), no significant impacts on cultural heritage are predicted. However, any construction works or temporary access routes would need to avoid impacts on the Butter Bridge Listed Building immediately west of the route corridor. There is also potential for construction works and tunnelling to damage unknown archaeological resources.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 8km long and is situated between the hamlet of Inveruglas on the western shores of Loch Lomond and Butterbridge in Glen Kinglas and lies entirely within the LLTNP. Approximately 1km of the eastern end of the route corridor is located within the Loch Lomond National Scenic Area (NSA). There are no Wild Land Areas within the route corridor, however, the western and northern parts of the route corridor are characterised by steep landform and a considerable degree of</p>	<p>This route corridor has the potential to result in significant adverse effects on the special qualities of the LLTNP and the Loch Lomond NSA, such as the high relative wildness, as well as the local landscape character and landscape elements including the rugged topography, watercourses, native and coniferous plantation woodland and Ancient Woodland sites due to the construction and operation of</p>

Table 12: Corridor 12 - A82 – Inveruglas - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>wildness, remoteness and tranquillity. This route corridor is located mainly within the Highland Summits Landscape Character Type (LCT) with small sections also located within Straths and Glens with Lochs and Upland Glens - Loch Lomond & the Trossachs LCTs.</p> <p>There are several existing tracks in the eastern and central part of the route corridor, providing access to the commercial forestry plantation and the Loch Sloy dam. There are no existing roads or tracks or other large-scale man-made elements in the western part of the route corridor (which passes between the Arrochar massif summits of Ben Vane, Beinn Narain and Beinn Ime) until the existing A83 Trunk Road and Glen Kinglas access track at the route corridor's western end.</p> <p>Land cover within the route corridor consists mainly of open grassland, moorland, rocky outcrops and numerous watercourses with small pockets of native broadleaved woodland in the east, including Ancient Woodland sites, a large block of young native pinewood to the west and a large area of commercial coniferous forestry along the Allt Coiregrogain in the east. This forestry plantation as well as the western edge of the route corridor are located within the Argyll Forest Park. In addition, the LLTNP Trees and Woodlands Strategy (2019) identifies large areas around the Highland summits as preferred or potential native woodland creation opportunities.</p> <p>Two of Scotland's Great Trails, Three Loch Way and Cowal Way, and a core path mainly along the same route are also located at the eastern end of the route corridor. Several hill walking trails are also located within this route corridor. Butterbridge, an old stone single arched bridge over Kinglas Water and a popular viewpoint, is located just outside the route corridor at the western end of the route corridor and the A83 Trunk Road in this location is part of the scenic Argyll Coastal Route. In the eastern section of the route corridor, LLTNP identifies another viewpoint on the path to Ben Vorlich via Loch Sloy, near a sub-station.</p>	<p>the carriageway and supporting infrastructure such as the tunnel vertical ventilation and escape shafts and tunnel portals.</p> <p>There is also potential for significant adverse effects on sensitive visual receptors on the nearby walking routes including the Three Lochs Way and Cowal Way (Scotland's Great Trails), LLTNP core path, the Arrochar Alps hill walking routes and the summit viewpoints on Ben Vane (the smallest but popular Munro in Scotland), Beinn Narain and Beinn Ime. There is also potential for adverse effects on the landscape setting and views of and from the old bridge at Butterbridge, on the LLTNP viewpoint on the path to Ben Vorlich via Loch Sloy and on views experienced by travellers on the Argyll Coastal Route.</p> <p>As the majority of the route corridor would need to be in a tunnel, the significance of the landscape and visual effects during operation would partially depend on the type of construction technique used, however it is considered unlikely that major significant adverse effects could be avoided.</p>

Table 13: Corridor 13 – Glen Loin

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>The route corridor passes through Glen Etive and Glen Fyne Special Protection Area (SPA), Loch Lomond Woods Special Area of Conservation (SAC), and Glen Loin Site of Special Scientific Interest (SSSI). Beinn an Lochain SSSI and Ben Vorlich SSSI are located approximately 0.11km west and 0.19km north of the route corridor at the closest point.</p> <p>There are 14 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the corridor.</p>	<p>32.50ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to the designated feature breeding golden eagle could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>58.32ha of Loch Lomond Woods SAC falls within the route corridor. There could be temporary and permanent habitat loss within the SAC, including the loss of the designated feature western acidic oak woodland and habitat suitable for the designated feature otter, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>65.36ha of Glen Loin SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features upland mixed ash woodland and upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Beinn an Lochain SSSI is located approximately 0.11km west of the route corridor at the closest point. Moderate negative environmental effects could occur to tall herb ledge and upland assemblage, designated features of the SSSI, as a result of nitrogen deposition.</p> <p>Ben Vorlich SSSI falls is located approximately 0.19km north of the corridor at the closest point. Alterations to the designated features alpine flush and subalpine wet heath could occur as a result of water flow changes, which would be a significant negative environmental effect. Moderate negative environmental effects could occur to alpine flush, subalpine wet heath and tall herb ledge, designated features, as a result of nitrogen deposition.</p> <p>There are 14 parcels of woodland listed on the AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which would be a significant negative environmental effect and could require compensation. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p>

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution. ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The corridor is predominantly rural in nature, with the settlements of Succoth and Arrochar partially located within the southern extent of the corridor. As such, there are numerous residential receptors located within the corridor. In addition, there are further receptors sensitive to changes in air quality throughout the corridor, most of which are present within the settlements of Succoth and Arrochar.</p> <p>Two long distance walking paths (Three Lochs Way and Loch Lomond and Cowal Way) intersect the corridor at its southern extent where they join the same route to the east of Succoth. From here, both long distance walking paths travel north through Ardgartan Forest to Coiregrogain, where they then turn east and travel towards Inveruglas and exit the corridor.</p> <p>Glen Loin Loop, a forest walking route, also intersects the corridor at its southern extent, to the south of Succoth. The route then travels north through Succoth and loops south to the west of Succoth before travelling north. The route then follows the perimeter of A'Chrois in a westerly direction to Gleann Leacann Sheileach where it crosses the stream and travels east along the foot of Ben Vane. Glen Loin Loop then joins the route of Three Lochs Way and Loch Lomond and Cowal Way at</p>	<p>There is potential for localised minor noise and vibration effects on receptors within the corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents. During the operation phase, there is potential for receptors within the corridor to experience minor noise and vibration effects from increased vehicle traffic. It is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other minor effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor would provide a new link between the A83 Trunk Road at Succoth / Arrochar and the A83 Trunk Road at Butterbridge and potentially reduce the severity and/or incidence of severance issues. The corridor is expected to improve accessibility and connectivity with the central belt for those living, working, and travelling in the Argyll and Bute region, through increasing the reliability of the trunk road network. It is also expected that the corridor would provide greater accessibility to walking routes in the surrounding area, including Glen Loin Loop, Three Lochs Way and Loch Lomond and Cowal Way, and hill-walking routes such as Ben Vane, Beinn Chorrnach, Beinn Ime, A' Chrois and Cruach Tairbeirt. There is also potential for paths to be severed as a result of the corridor, but the extent and significance of such impacts</p>

Table 13: Corridor 13 – Glen Loin

SEA Topic	Baseline	Assessment
	<p>Coiregrogain where it travels south through Ardgartan Forest before coming to an end to the east of Succoth within the southern extent of the corridor.</p> <p>There are also several Munros, Corbetts, mountains and hills popular with hill-walkers within the corridor, including Ben Vane, Beinn Chorrnach, Beinn Ime, A' Chrois and Cruach Tairbeirt.</p>	<p>are uncertain at this stage.</p> <p>There may be land-take from properties required to facilitate the operation of the route corridor.</p> <p>There is also potential for air quality effects during operation which could affect human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of five water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Four river water bodies, Loin Water, Allt Coiregrogain, Inveruglas Water and Kinglas Water; and ▪ One coastal water body, Loch Long (North) <p>The corridor also contains approximately 20-30 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicate that the route corridor may be at existing coastal flood risk from Loch Long during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing fluvial flood risk from Loin Water, Allt Coiregrogain, and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor passes in the vicinity of Loch Lomond Woods Special Area of Conservation (qualifying features include Otter (<i>Lutra lutra</i>)). The Loch Long Shellfish Water Protected Area is within the vicinity of the route corridor. There are no Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor. The route corridor passes through one surface water Drinking Water Protected Area. No bathing waters are in the vicinity of the route corridor.</p>	<p>Construction within the corridor and operational structures and discharges may impact the hydromorphology and surface water quality of four Water Framework Directive classified river water bodies, one coastal water body and approximately 20-30 minor watercourses.</p> <p>One surface water Drinking Water Protected Area may also be impacted.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the corridor may be at coastal flood risk from Loch Long and at fluvial flood risk from Loin Water, Allt Coiregrogain, and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>Loch Long Shellfish Water Protected Area is within the route corridor and may be impacted by the route.</p> <p>The route corridor passes in the vicinity of one surface water Drinking Water Protected Area, which may be impacted.</p> <p>The potential impacts of construction and operation within the corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>

Table 13: Corridor 13 – Glen Loin

SEA Topic	Baseline	Assessment
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, montane soils, brown soils and mineral podzols all present. Peaty podzols are predominant within the route corridor with montane soils located on the higher slopes and brown soils, mineral podzols and peaty gleys prominent in the eastern section of the corridor between Succoth and Inveruglas.</p> <p>The route corridor, where peat is present, predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects small pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) on the western slopes of Ben Vane and in the valley between Beinn Chorrnach and Beinn Ime. Peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present adjacent to either side of Kinglas Water to the west of the route corridor. Given the combination of soils, climatic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 6 (Class 6.1, 6.2 and 6.3) which is non-prime land capable of use as rough grazing only. However, land surrounding Succoth at the eastern extents of the corridor is LCA Class 4.2 which is non-prime land capable of producing a narrow range of crops.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>Given the combination of soils, topography, , and climate the Land Capability for Forestry (LCF) class is predominantly Class F6 (Land with very limited flexibility for the growth and management of tree crops) and Class F7 (Land unsuitable for producing tree crops) with some areas of Class F5 (Land with limited flexibility for the growth and management of tree crops) located towards the eastern and western boundaries of the route corridor. However, a pocket of Class F2 (Land with very good flexibility for the growth and management of tree crops) is located to the east of Succoth at the southern extents of the route corridor. There are existing</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the corridor has the potential to avoid effects on Class 1 (nationally important and of high conservation value) and Class 2 peat (nationally important and of potentially high conservation value and restoration potential) but would unavoidably affect non-priority peatland and carbon-rich soils. Loss of existing commercial forestry, Land Capability for Forestry (LCF) Class F2, and land identified as 'preferred' in the LLTNP Authority Trees and Woodland Strategy, is likely to be unavoidable within the route corridor.</p> <p>Mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
	<p>strands of commercial forestry within the route corridor, predominantly on either side of the Glen Loin valley.</p> <p>The route corridor includes land identified in the LLTNP Authority Trees and Woodland Strategy as 'Preferred' (where native woodland creation would have the greatest impact in improving woodland connectivity, providing a more suitable climate for tree growth) predominantly to the east of the corridor on the lower slopes of Ben Vain, to the north of Inveruglas water and within Glen Loin. Other areas are identified as 'potential' (where native woodland creation would contribute to the wider strategy's objectives) throughout the route corridor and 'sensitive' (where there is limited capacity for woodland creation due to higher value nature conservation or landscape objectives) in the land within Succoth.</p>	
Air Quality	<p>The corridor is rural in nature; receptors sensitive to changes in air quality are present with the settlements of Succoth and Arrochar located partially within the southern extent, at Tarbet within 200m of the corridor outline, and at the two properties adjacent to Inveruglas Water.</p> <p>There are no AQMAs within the corridor or in the Argyll and Bute Council area. Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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</p>	<p>There is potential for localised air quality impacts on receptors within the corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for residents at Inveruglas Water and in the settlements of Succoth, Arrochar and Tarbet.</p> <p>The corridor does not follow an existing route and therefore would introduce traffic related emissions (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the corridor which could potentially experience negative air quality effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
	objectives may be under threat and where specific actions would be required to improve air quality.	
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the corridor options. However, due to the northern location of the route corridor it considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area. The topography of the route corridor rises gently along the valley floor from the A83 Trunk Road at Arrochar then rises at a steeper angle at Glen Loin from the centreline, climbing to a maximum height of 750m between Beinn Chorrnach. This steep slope continues to reach the highest point at 750m above the valley floor between Beinn Chorrnach and Beinn Ime.</p> <p>The route corridor is within a location that may be at existing coastal flood risk from Loch Long. Additionally it may be at existing fluvial flood risk from Loin Water, Allt Coiregrogain and Kinglas Water, as stated in the 'Water Environment' section.</p> <p>There are areas of forestry particularly in the eastern section of the corridor, including Ardgartan Forest which is either side of Loin Water. As described in the 'Soils' section, there are areas of peat soils in the corridor. Forestry area and peat lands have high carbon sequestration and sink value.</p>	<p>The corridor is offline and has steep topography on either side of the centreline from Glen Loin. During periods of extended rainfall, the route corridor could be at risk of landslides from slope instability. Climate change is expected to increase the frequency and intensity of extreme weather events which could impact the route.</p> <p>As indicated in the 'Water Environment' section, there are areas of the route corridor that may be at risk of coastal flooding from Loch Long and fluvial flooding from Inveruglas Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event.</p> <p>As indicated in the 'Soils' section, there are areas peatland that could be affected by the corridor, leading to its degradation and release of carbon, although this is assessed as being a minor negative or uncertain environmental effect. There are forestry areas in the route corridor and any felling would release sequestered carbon and reduce the carbon sink value of forests within the corridor. This is assessed as having a significant negative environmental effect, Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the corridor selection process.</p> <p>As stated in the 'Material Assets' section, engineering solutions would be required to accommodate aspects of the various options being considered for the corridor construction. The construction of the tunnel and viaducts would have a significant amount of embodied carbon in material usage and emissions from construction activities. Release of carbon emission to construct the scheme and for vehicles using during operation would have a cumulative impact on increasing atmospheric carbon concentrations, contributing to climate change.</p>
Material Assets	<p>The route corridor is located in a rural environment where the trunk road network plays an essential role in enabling mobility in the Argyll and Bute region.</p> <p>There are natural material assets visible within the route corridor including a mixed/coniferous plantation commercial woodland to the south of Inveruglas Water at the eastern extent of the corridor. There is evidence of agriculture from</p>	<p>Due to the topography of the corridor, significant engineering solutions would be required to achieve compliance, requiring large-scale works and material requirements. The corridor is 11.1km corridor length would require significant raw material inputs and earthwork activities to construct including:</p> <ul style="list-style-type: none"> ▪ Total corridor length: 11.1km

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
	<p>aerial imagery within the route corridor at Feorlinn within Glen Loin and Coiregrogain adjacent to Inveruglas Water.</p> <p>There are built material assets in the route corridor associated with utilities, including a high voltage electricity transmission line to the west of Loch Sloy and a second line that runs along the corridor from Loch Sloy to a substation at Inverarnan. At the eastern extent of the corridor, the Sloy power station is located adjacent to the A82 Trunk Road at Inveruglas. The West Highland Line railway also passes through the route corridor and is located in land to the west of the A82 Trunk Road.</p> <p>The closest commercial waste disposal facility to the route corridor is located in Helensburgh to the south.</p>	<ul style="list-style-type: none"> ▪ 9 new 20m single span composite concrete deck watercourse underbridges on reinforced concrete abutments. ▪ 1 new 1.26km long viaduct. ▪ 1 new 320m long viaduct. ▪ Tunnel length: 4km <p>There are forestry areas within the route corridor that would likely require felling, for the corridor option. As stated in the 'Biodiversity Fauna and Flora' section, this would likely result in a significant negative environmental effect.</p> <p>As stated in the Soils section, the route corridor is assessed as having a minor negative or uncertain environmental effect on peat soils.</p> <p>There are commercial properties and a settlement within the route corridor at Succoth. Construction and operation may impact on these receptors. There are several infrastructure assets associated with utilities in the route corridor including transmission lines. Construction would need to take consideration of these lines when working in close proximity.</p>
Cultural Heritage	<p>There are only two designated cultural heritage resources within this corridor. These are Category C Listed Buildings at Succoth. A loop of the Old Military Road, an undesignated cultural heritage resource, cuts into the southern end of the corridor at Succoth.</p> <p>There are no other designated cultural heritage resources within the corridor, but there is potential for undesignated or undiscovered cultural heritage resources (e.g. archaeological remains) to be located here.</p>	<p>As there are only two designated cultural heritage resources and the Old Military Road undesignated resource within the route corridor, no significant impacts on cultural heritage are predicted. However, any construction works or temporary access routes would need to avoid impacts on the Butter Bridge Listed Building immediately west of the route corridor and designated cultural heritage resources to the east of the route corridor. There is also potential for construction works and tunnelling to damage unknown archaeological resources.</p>

Table 13: Corridor 13 – Glen Loin

SEA Topic	Baseline	Assessment
Landscape and Visual Amenity	<p>The route corridor is approximately 11km long and is situated between the village of Succoth at the head of Loch Long and Butterbridge in Glen Kinglas, lying entirely within the LLTNP. Approximately 1km of the eastern end of the route corridor is located within the Loch Lomond National Scenic Area (NSA). There are no Wild Land Areas within the route corridor, however the route corridor is characterised by rugged mountainous terrain with a considerable degree of wildness, remoteness and tranquillity in western and northern parts. This route corridor is located mainly within the Highland Summits Landscape Character Type (LCT) with small sections also located within Straths and Glens with Lochs and Upland Glens - Loch Lomond & the Trossachs LCTs and Head of Loch Long Seascape Character Area (SCA).</p> <p>There are several existing tracks in the southern, eastern and central part of the route corridor. There are no existing roads or tracks or other large-scale man-made elements in the western part of the route corridor (which passes between the Arrochar massif summits of Ben Vane, Beinn Narnain and Beinn Ime) until the existing A83 Trunk Road and Glen Kinglas access track at the route corridor's western end.</p> <p>Land cover within the corridor consists mainly of open grassland, moorland, rocky outcrops and numerous watercourses with pockets of native broadleaved woodland in the east and south, including Ancient Woodland sites, a large block of young native pinewood at the western end of the route corridor and large areas of commercial coniferous forestry along the Allt Coiregrogain in the east and Glen Loin in the south. Approximately half of the route corridor is also located within the Argyll Forest Park. In addition, the LLTNP Trees and Woodlands Strategy (2019) identifies large areas around the Highland summits as preferred or potential native woodland creation opportunities.</p> <p>Two of Scotland's Great Trails, Three Loch Way and Cowal Way, and LLTNP core paths are located at the eastern and southern ends of the route corridor. Several hill walking trails are also located within this route corridor. Butterbridge, an old stone single arched bridge over Kinglas Water and a popular viewpoint, is located just outside the route corridor at the western end of the route corridor and the A83</p>	<p>This route corridor has the potential to result in significant adverse effects on the special qualities of the LLTNP and the Loch Lomond NSA, such as the high relative wildness, as well as the local landscape and seascape character and landscape elements including the rugged topography, watercourses, native and coniferous plantation woodland and Ancient Woodland sites due to the construction and operation of the carriageway and supporting infrastructure such as the tunnel vertical ventilation and escape shafts and tunnel portals.</p> <p>There is also potential for significant adverse effects on sensitive visual receptors, such as the residents of Succoth and Arrochar, walkers on the nearby routes including the Three Lochs Way and Cowal Way (Scotland's Great Trails), LLTNP core paths, the Arrochar Alps hill walking routes and the summit viewpoints on Ben Vane (the smallest but popular Munro in Scotland), Beinn Narnain and Beinn Ime. There is also potential for adverse effects on the landscape setting and views of and from the old bridge at Butterbridge, on the LLTNP viewpoint on the path to Ben Vorlich via Loch Sloy and on views experienced by travellers on the Argyll Coastal Route.</p> <p>As the majority of the route corridor would need to be in a tunnel, the significance of the landscape and visual effects during operation would partially depend on the type of construction technique used, however it is considered unlikely that major significant adverse effects could be avoided.</p>

Table 13: Corridor 13 – Glen Loin		
SEA Topic	Baseline	Assessment
	Trunk Road in this location is part of the scenic Argyll Coastal Route. In the eastern section of the route corridor, LLTNP identifies another viewpoint on the path to Ben Vorlich via Loch Sloy, near a sub-station.	

Table 14: Corridor 14 – Coileissan Glen

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SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>The route corridor intersects Glen Etive and Glen Fyne Special Protection Area (SPA), Beinn an Lochain Site of Special Scientific Interest (SSSI), Hells Glen SSSI, and Upper Loch Fyne and Loch Goil Marine Protected Area (MPA).</p> <p>There are 47 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor.</p>	<p>15.01ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA. Disturbance to breeding golden eagle could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>198.40ha of Beinn an Lochain SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features, tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>All of Hells Glen SSSI (37.40ha) falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features, bryophyte assemblage, lichen assemblage and upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>Upper Loch Fyne and Loch Goil MPA falls within the route corridor in two locations, with 89.08ha within Loch Fyne and 5.60ha within Loch Goil. There could be temporary and permanent habitat loss within the MPA, including the loss of designated features burrowed mud and flame shell beds, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of runoff and release of sediment from construction works including chemical and hydrocarbon loads from accidental spillage.</p> <p>There are 47 parcels of woodland listed on the AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which would be a significant negative environmental effect and could require compensation. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution.

Table 14: Corridor 14 – Coilessan Glen		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of irreplaceable AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The route corridor is predominantly rural in nature, with the settlements of Ardgartan, Coilessan and Lochgoilhead located within the route corridor containing numerous residential receptors. There are also several residential properties located within the northern extent of the corridor at Ardno and Cairndow.</p> <p>Loch Lomond and Cowal Way (a long distance walking path) intersects the route corridor to the west of Lochgoilhead, where it proceeds to travel east through the centre of the corridor towards Loch Long. The path then travels north along the western shore of Loch Long past Ardgartan where it exits the route corridor.</p> <p>Tom a Chluig Walk (Blue) and Glen Donich Walk (Red), forest walking routes, pass through the route corridor at Lochgoilhead, with both travelling north-east around Donich Water before looping back to Lochgoilhead.</p> <p>Ardgartan Peninsula Circuit and Coilessan Glen & Shore Circuit (both forest cycling routes) also pass through the corridor. Ardgartan Peninsula Circuit intersects the route corridor to the south-west of Lochgoilhead, travelling north through the corridor to the east of the B839 road until it exits the route corridor. The cycling circuit then re-enters the eastern extent of the route corridor at Ardgartan where it travels south along the western shore of Loch Long until it exits the route corridor</p>	<p>There is potential for localised minor noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/ or sleep disturbance for local residents within the settlements of Ardgartan, Ardno, Cairndow, Coilessan and Lochgoilhead. During the operation phase, there is potential for receptors within the route corridor to experience minor noise and vibration effects from increased vehicle traffic. It is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other minor effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor would provide a new link between the A83 Trunk Road at Ardgartan and the A83 Trunk Road at Cairndow and potentially reduce the severity and/or incidence of severance issues. The route corridor is expected to improve accessibility and connectivity with the central belt for those living, working, and travelling in the Argyll and Bute region, through increasing the reliability of the trunk road network. It is also expected that the route corridor would provide greater accessibility to walking routes in the surrounding area, including Loch Lomond and Cowal Way, Ardgartan Peninsula Circuit and Coilessan Glen & Shore Circuit, and hill-walking routes such as Cruach nam Mult, Stob an Eas, Stob Liath, Ben</p>

Table 14: Corridor 14 – Coileissan Glen

SEA Topic	Baseline	Assessment
	<p>once more. Coileissan Glen & Shore Circuit intersects the eastern extent of the corridor at Ardgartan, travelling south along the western shore of Loch Long. The circuit then loops around outside the corridor before re-entering the eastern extent of the route corridor and travelling north until it reaches Coileissan Glen where it then travels east until it joins the first section of the circuit which travels south alongside Loch Long.</p> <p>There are also several Corbetts, mountains and hills popular with hill-walkers within the route corridor, including Cruach nam Mult, Stob an Eas, Stob Liath, Ben Donich, Cnoc Coinnich, The Brack and Cruach Fhianach.</p>	<p>Donich, Cnoc Coinnich, The Brack and Cruach Fhianach. There is also potential for paths to be severed as a result of the route corridor, but the extent and significance of such impacts are uncertain at this stage.</p> <p>There may be land-take from properties required to facilitate the operation of the route corridor.</p> <p>There is also potential for air quality effects during operation which could affect human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of seven water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Four river water bodies: Croe Water, Donich Water/ Allt Coire Odhair, River Goil/ Allt Clinne Mhoir and Kinglas Water; and ▪ Three coastal water bodies: Loch Long (North), Loch Goil, Loch Fyne (Upper Basin) <p>The route corridor also contains approximately 50-60 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk from Loch Long, Loch Goil and Loch Fyne during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing fluvial flood risk from River Croe, Coileissan Burn, Donich Water/Allt Coire Odhair, River Goil/ Allt Clinne Mhoir, Allt Glinne Bhig and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>There are no designated sites protected for water environment interests within the route corridor. The Loch Long and Loch Fyne Shellfish Water Protected Areas are within the vicinity of the route route corridor. There are Active Aquaculture Sites, CAR</p>	<p>Construction within the route corridor and operational structures and discharges may impact the hydromorphology and surface water quality of four Water Framework Directive classified river water bodies, three coastal water bodies and approximately 50-60 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk from Loch Long, Loch Goil and Loch Fyne and at fluvial flood risk from River Croe, Coileissan Burn, Donich Water/ Allt Coire Odhair, River Goil/ Allt Clinne Mhoir, Allt Glinne Bhig, and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>Loch Fyne Shellfish Water Protected Area is within the route corridor and may be impacted by the route. There are Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor, which may be impacted.</p> <p>The route corridor passes in the vicinity of two surface water Drinking Water Protected Areas, which may be impacted.</p> <p>The potential impacts of construction and operation within the route corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>

Table 14: Corridor 14 – Coileissan Glen		
SEA Topic	Baseline	Assessment
	<p>licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor.</p> <p>The route corridor passes through two surface water Drinking Water Protected Areas. No bathing waters are in the vicinity of the route corridor.</p>	
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, montane soils, brown soils and mineral podzols all present. Peaty podzols are predominant within the route corridor with montane soils located on the higher slopes and brown soils, mineral podzols and peaty gleys present in smaller groups throughout the route corridor.</p> <p>The route corridor, where peat is present, predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, the route corridor also transects small pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) located near the route corridor boundary at Ben Donich, Tom nan Gamhna and Cruach nan Capull. Peat identified as Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) is present in one location in the valley between The Brack and Cnoc Coinnich.</p> <p>Given the combination of soils, climatic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 6 (Class 6.1, 6.2 and 6.3) which is non-prime land capable of use as rough grazing only. However, there are areas of Class 5 (Class 5.1 and 5.2) at Ardgartan, either side of the B839 between Lochgoilhead and the B828, and either side of the A815, which is non-prime land capable for use as improved grassland.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p>	<p>The route corridor is assessed as having a minor negative or uncertain effect. This recognises the route corridor has the potential to avoid effects on Class 1 (nationally important and of high conservation value) peat but would unavoidably affect non-priority peatland and carbon-rich soils. Loss of existing commercial forestry, Land Capability for Forestry (LCF) Class F2 and F4, and land identified as 'preferred' within the LLTNP Authority Trees and Woodland Strategy is likely to be unavoidable within the route corridor.</p> <p>Mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 14: Corridor 14 – Coilessan Glen		
SEA Topic	Baseline	Assessment
	<p>Given the combination of soils, topography and climate the Land Capability for Forestry (LCF) class is predominantly Class F5 (Land with limited flexibility for the growth and management of tree crops), Class F6 (Land with very limited flexibility for the growth and management of tree crops) and Class F7 (Land unsuitable for producing tree crops). However, there are small pockets of Class F2 (Land with very good flexibility for the growth and management of tree crops) located around Ardgartan, Lochgoilhead and near the banks of Loch Fyne, and a larger area of F4 (Land with moderate flexibility for the growth and management of tree crops) adjacent to the A815. There are large areas of commercial forestry located throughout the route corridor.</p> <p>The north-western section of the route corridor around Binnein an Fhidleir includes land identified in the Argyll & Bute Council Woodland and Forestry Strategy as 'existing planted woodland' and 'sensitive' (areas where the nature or combination of sensitivities restricts the scope to accommodate further woodland expansion or removal). The remainder of the route corridor is located within the LLTNP Authority Trees and Woodland Strategy area. Land within the route corridor is identified in the strategy as 'Preferred' (where native woodland creation would have the greatest impact in improving woodland connectivity, providing a more suitable climate for tree growth) predominantly on the western slopes of Cnoc Coinnich above Lochgoilhead and the south-western slopes of Ben Donich. Other areas are identified as 'Potential' (where native woodland creation would contribute to the wider strategy's objectives) throughout the route corridor and 'Sensitive' (where there is limited capacity for woodland creation due to higher value nature conservation or landscape objectives) in the land around Lochgoilhead.</p>	
Air Quality	<p>The route corridor is rural in nature; receptors sensitive to changes in air quality are present within the settlements of Ardgartan and Coilessan, and at Lochgoilhead to the west before the corridor heads northward. There are also several properties within the northern extent of the route corridor, including at Ardno, as well as the settlement of Cairndow.</p>	<p>There is potential for localised air quality impacts on receptors within the route corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for residents within settlements including Ardgartan, Coilessan, Lochgoilhead, Ardno and Cairndow.</p>

Table 14: Corridor 14 – Coileissan Glen

SEA Topic	Baseline	Assessment
	<p>There are no AQMAs within the route corridor or in the Argyll and Bute Council area. Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>Part of the route corridor does not follow an existing route and would therefore introduce traffic-related emissions to the area (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the route corridor which could potentially experience negative air quality effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the route corridor options. However, due to the northern location of the route corridor it considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area.</p> <p>The route corridor is to the west of Loch Long from the A83 Trunk Road and heads west at Coileissan Glen to Lochgoilhead, before joining the existing B839. The route corridor rises from 10m to 100m over 2.2km on the west bank of Loch Long before rising steeply through Coileissan Glen to a peak of 500m before descending again steeply.</p> <p>As stated in the 'Water Environment' section, the route corridor is within a location that may be at risk of coastal flooding from Loch Long, Loch Goil and Loch Fyne and at fluvial flood risk from River Croe, Coileissan Burn, Donich Water/Allt Coire Odhair, River Goil/ Allt Clinne Mhoir, Allt Glinne Bhig and Kinglas Water during a medium likelihood event.</p>	<p>The route corridor is a combination of online upgrades and new offline carriageway. It starts at the A83 Trunk Road at Ardgartan where a new section of road will take the route south along the west of Loch Long to Lochgoilhead. The route then joins the B839 and generally follows the existing road network. During periods of extended rainfall, the route corridor could be at risk of landslides from slope instability. Climate change is expected to increase the frequency and intensity of extreme weather events which could impact the route.</p> <p>As indicated in the 'Water Environment' section, areas of corridor may be at existing coastal flood risk from Loch Long, Loch Goil and Loch Fyne during a medium likelihood event. The route corridor may be at existing fluvial flood risk from River Croe, Coileissan Burn, Donich Water/Allt Coire Odhair, River Goil/ Allt Clinne Mhoir, Allt Glinne Bhig and Kinglas Water during a medium likelihood event.</p> <p>As indicated in the Soils section, there are areas of peat soils that would be affected by the corridor, leading to its degradation and release of carbon and this is assessed as having a significant negative effect. There are areas of forestry within the route corridor and any felling would release sequestered carbon and reduce the carbon sink value of forests within the corridor. As indicated in the Biodiversity section, this loss is expected to have a significant negative environmental effect. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be</p>

Table 14: Corridor 14 – Coileissan Glen		
SEA Topic	Baseline	Assessment
	<p>There are significant areas of forestry in the route corridor, including Coileissan Glen and Ardgoil Forest. As described in the 'Soils' section, there are large areas of peat soils in the route corridor. Forestry area and peat lands have high carbon sink value.</p>	<p>considered in the route corridor selection process.</p> <p>As stated in the 'Material Assets' section, engineering solutions would be required to accommodate aspects of the various options being considered for the route corridor construction. The construction of two tunnels and bridges would have a significant amount of embodied carbon in material usage and emissions from construction activities. Release of carbon emissions to construct the scheme and for vehicles using during operation would have a cumulative impact on increasing atmospheric carbon concentrations, contributing to climate change.</p>
Material Assets	<p>Natural material assets within the route corridor include coniferous plantation woodland, which covers most of the offline section of the corridor and the lower slopes of the sections following the existing road networks. As indicated in the Soils section, there is presence of peat soils in the route corridor. Forestry areas and peat soils have high carbon sequestration and sink value.</p> <p>Due to the rural nature of the route corridor location, there are few built material assets. The route corridor intersects Local Authority 'A' 'B' and 'C' roads.</p> <p>The closest commercial waste disposal facility to the route corridor is located in Helensburgh to the south.</p>	<p>Due to the topography of the route corridor, significant engineering solutions would be required to achieve compliance, requiring large-scale works and material requirements. The route corridor is 19km in length with a combination of offline and online upgrade works. Construction would require significant raw material inputs and earthwork activities to construct the route corridor and this is assessed as having a major environmental effect from use of materials:</p> <ul style="list-style-type: none"> ▪ 1 new 565m multispan viaduct ▪ 5 new 20m single span composite concrete watercourse underbridges. ▪ 1 new 30m single span composite concrete deck watercourse underbridge on reinforced concrete abutments. ▪ 2 new 15m single span composite concrete deck accommodation road underbridges on reinforced concrete abutments. ▪ Tunnel 1 length: 5.6km ▪ Tunnel 2 length: 2km <p>With regard to natural material assets, there are forestry areas within the route corridor. Any required felling for the corridor option would result in loss of biodiversity and carbon sequestration potential. As stated in the 'Biodiversity Fauna and Flora' section, this loss is expected to have a significant negative</p>

Table 14: Corridor 14 – Coilessan Glen		
SEA Topic	Baseline	Assessment
		<p>environmental effect on woodland.</p> <p>As indicated in the Soils section, there are sections of peat soils that would be affected by the corridor, leading to its degradation and release of carbon and this is assessed as having a significant negative environmental effect.</p>
Cultural Heritage	<p>There are 16 designated cultural heritage resources within this route corridor. Twelve of these are Listed Buildings. These include clusters of Listed Buildings on the B828 at Pole Farm and at Lochgoilhead. There are three Scheduled Monuments within the route corridor: two are near the junction between the A83 Trunk Road with the B839 and the other is at Gleann Beag / Hell's Glen. The Ardkinglas and Strone GDL occupies a large extent of the route corridor at its northern end.</p> <p>There are no other designated cultural heritage resources within the route corridor, but there is potential for undesignated or undiscovered cultural heritage resources (e.g. archaeological remains) to be located here.</p>	<p>Due to the clusters of cultural heritage resources within the route corridor and the large area of GDL at the northern end of the route corridor, significant negative impacts on cultural heritage are predicted. Any alignment within the corridor would need to avoid impacts on the GDL and the clusters of Listed Buildings and Scheduled Monuments. There is also potential for construction works and tunnelling to damage unknown archaeological resources.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 19km long. Starting at Cairndow coastal hamlet on the north-eastern shores of Loch Fyne the route corridor follows the existing A815 parallel to the loch for a short distance before turning south-east along the B839 and Hell's Glen then south along the river Goil until the village of Lochgoilhead. It then runs along Coilessan Glen and Loch Long to the hamlet of Ardgartan where it joins the A83 Trunk Road.</p> <p>Approximately 13 km of the south-eastern part of the route corridor is located within the LLTNP. The majority of this section of the route corridor is also located within Argyll Forest Park. The remaining north-western part of the route corridor is located within the North Argyll Area of Panoramic Quality (APQ). The route corridor also passes through Ardkinglas and Strone Garden and Designed Landscape (GDL). There are no National Scenic Areas or Wild Land Areas within this route corridor, although there are</p>	<p>There is potential for significant adverse effects on the special qualities of the LLTNP, the North Argyll APQ, one GDL and the local landscape and seascape character and landscape elements including native and ancient woodland and forestry plantations due to the construction and operation of the carriageway, introduction of traffic and supporting infrastructure associated with the proposed East and West Tunnels, such as the tunnel vertical ventilation shafts, escape shafts and tunnel portals.</p> <p>There is also potential for significant adverse visual effects on local residential receptors including those in Cairndow, Lochgoilhead and Ardgartan, vehicle travellers using the existing roads and people on core paths, hill walking trails and the Loch Lomond and Cowal Way Scotland's Great Trail, as well as views from the Highland summits around the route corridor.</p>

Table 14: Corridor 14 – Coilessan Glen		
SEA Topic	Baseline	Assessment
	<p>small areas characterised by a degree of wildness on the slopes of The Brack (787m above ordnance datum).</p> <p>This route corridor is located within the Rugged Mountains Landscape Character Type (LCT), Steep Ridges and Mountains LCT, Steep Ridges and Hills LCT, Upland Glens - Loch Lomond & the Trossachs LCT, Straths and Glens LCT, Settled Coastal Fringe LCT and Highland Summits LCT. There are also three Seascape Character Areas (SCAs) within the route corridor: Loch Fyne - Inveraray to St Catherines SCA, Loch Goil - Head of Loch Goil SCA and Loch Long - Shepherd's Point to Coilessan SCA.</p> <p>Land cover within the corridor for this route option comprises sea and freshwater lochs and coastland, open grassland and moorland, native woodland, coniferous forestry and numerous watercourses. There are multiple large areas of coniferous forest plantation, small pockets of native woodland and several areas of Ancient Woodland in the eastern, central and western sections of the route corridor. In addition, the LLTNP Trees and Woodlands Strategy (2019) identifies several areas in the central and eastern parts of the route corridor as preferred or potential native woodland creation opportunities, while the Argyll & Bute Council Woodland and Forestry Strategy (2011) identifies additional potential (but not preferred) areas for woodland/forestry creation on the eastern shores of Loch Fyne. With the exception of the small town of Lochgoilhead, settlement is sparsely scattered.</p> <p>One of Scotland's Great Trails, the Loch Lomond and Cowal Way, numerous core paths and several hill walking trails are located within this route corridor. Parts of the corridor would also be visible from sections of Loch Long, Loch Goil and Loch Fyne coastline as well as nearby hill walking summits and residential receptor locations.</p>	

Table 15: Corridor 15 – Arrochar - Butterbridge

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
Biodiversity, Flora and Fauna	<p>The route corridor intersects Glen Etive and Glen Fyne Special Protection Area (SPA), Loch Lomond Woods Special Area of Conservation (SAC), Glen Loin Site of Special Scientific Interest (SSSI), and Beinn an Lochain SSSI.</p> <p>There are 2 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the corridor.</p>	<p>21.35ha of Glen Etive and Glen Fyne SPA falls within the route corridor. There could be temporary and permanent habitat loss within the SPA, which would be a significant negative environmental effect. Disturbance to breeding golden eagle could occur during construction and operation, which would be a significant negative environmental effect.</p> <p>27.17ha of Loch Lomond Woods SAC falls within the route corridor. There could be temporary and permanent habitat loss within the SAC, including the loss of the designated feature western acidic oak woodland and habitat suitable for the designated feature otter, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>34.22ha of Glen Loin SSSI falls within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features upland mixed ash woodland and upland oak woodland, which would be a significant negative environmental effect. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>5.77ha of Beinn an Lochain SSSI within the route corridor. There could be temporary and permanent habitat loss within the SSSI, including the loss of designated features tall herb ledge and upland assemblage, which would be a significant negative environmental effect. Moderate negative environmental effects could also as a result of nitrogen deposition.</p> <p>There are 2 parcels of woodland listed on the AWI within the route corridor. This could result in the loss of nationally important and irreplaceable habitat, which would be a significant negative environmental effect and could require compensation. Moderate negative environmental effects could also occur as a result of nitrogen deposition.</p> <p>There is potential for negative effects on terrestrial and aquatic species from construction activities, as follows:</p> <ul style="list-style-type: none"> ▪ Disturbance from noise and vibration and light pollution.

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
		<ul style="list-style-type: none"> ▪ Injury or mortality from vegetation removal, vehicle movements, or becoming trapped in uncovered holes and pipes during construction. ▪ Fragmentation and loss of habitat suitable for shelter, foraging and commuting. ▪ Changes in water flow conditions from runoff, or alterations to watercourses and groundwater. <p>During operation, there is potential for habitat loss and fragmentation for protected species as a result of tree and vegetation clearance and loss of AWI.</p> <p>It is anticipated that the implementation of appropriate mitigation will reduce negative effects on Biodiversity during construction and operation.</p>
Population and Human Health	<p>The route corridor is rural in nature, with the settlements of Succoth and Arrochar located in the south-eastern extent of the corridor. As such, there are numerous residential receptors located within the route corridor which are present both within these settlements and elsewhere within the route corridor.</p> <p>Two long distance walking paths (Three Lochs Way and Loch Lomond and Cowal Way) intersect the route corridor at its south-eastern extent to the south and south-east of Succoth respectively. Both paths then travel north until they meet to the east of Succoth and thereafter follow the same route north through Ardgartan Forest until they exit the north-east extent of the route corridor.</p> <p>Several forest walking routes are located in the south-eastern and eastern extents of the route corridor. Succoth Burn Walk (Blue), Stronafyne Loop and Arrochar to Station routes are located in and/or around the settlement of Succoth. Glen Loin Loop transects the route corridor to the south-west of Succoth and travels north through Ardgartan Forest until it exits the route corridor. The walking route briefly re-enters the corridor at Gleann Leacann Sheileach where it crosses the stream then loops around and exits the route corridor once more.</p>	<p>There is potential for localised minor noise and vibration effects on receptors within the route corridor during the construction phase. For example, noise nuisance and vibration caused by traffic and activities associated with construction works could result in temporary general and/or sleep disturbance for local residents. During the operation phase, there is potential for receptors within the route corridor to experience minor noise and vibration effects from increased vehicle traffic. It is uncertain at this stage whether noise and vibration impacts on those receptors would be major during construction and operation.</p> <p>There is potential for other minor effects on population receptors resulting from construction traffic. Increased traffic volumes and construction activities could result in diversions and affect journey lengths for both vehicle travellers and non-motorised users (NMUs).</p> <p>The route corridor would provide a new link between the A83 Trunk Road at Succoth / Arrochar and the A83 Trunk Road at Butterbridge. and potentially reduce the severity and/or incidence of severance issues. . The route corridor is expected to improve accessibility and connectivity with the central belt for those living, working, and travelling in the Argyll and Bute region, through increasing the reliability of the trunk road network. It is also expected that the route corridor would provide greater accessibility to walking routes in the surrounding area, including Three Lochs Way, Loch Lomond and Cowal Way, Glen Loin Loop, Succoth Burn Walk (Blue), Stronafyne Loop, Arrochar to Station walk, and hill-walking routes such as Beinn Narnain, Beinn Ime, Beinn Luibhean, Stob Coire Creagach, Cruach nam Miseag, A' Chrois, Beinn Chorrannach, Creag Bhrosgan and Creag Tharsuinn. There is also potential for paths to be severed as a result of the route corridor, but the extent and significance of such impacts are uncertain at this stage.</p>

Table 15: Corridor 15 – Arrochar - Butterbridge

SEA Topic	Baseline	Assessment
	<p>There are also several Munros, Corbetts, mountains and hills popular with hill-walkers within the route corridor, including Beinn Narnain, Beinn Ime, Beinn Luibhean, Stob Coire Creagach, Cruach nam Miseag, A'Chrois, Beinn Chorrnach, Creag Bhrosgan and Creag Tharsuinn.</p>	<p>There may be land-take from properties required to facilitate the operation of the route corridor.</p> <p>There is also potential for air quality effects which could affect human health; these are discussed further under Air Quality.</p>
Water Environment	<p>The route corridor crosses or is in the vicinity of four water bodies classified under the Water Framework Directive, comprising:</p> <ul style="list-style-type: none"> ▪ Three river water bodies, Loin Water, Allt Coiregrogain and Kinglas Water; and ▪ One coastal water body, Loch Long (North). <p>The route corridor also contains approximately 30-40 minor watercourses.</p> <p>SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at existing coastal flood risk from Loch Long (North) during a medium likelihood event (0.5% AEP (200-year) event). The route corridor may be at existing fluvial flood risk from Loin Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor passes in the vicinity of Loch Lomond Woods Special Area of Conservation (qualifying features include Otter (<i>Lutra lutra</i>)). The Loch Long Shellfish Water Protected Areas are within the vicinity of the route corridor. There are no Active Aquaculture Sites, CAR licenced fish farms and Classified Shellfish Harvesting Areas within the vicinity of the route corridor. The route corridor passes through two surface water Drinking Water Protected Areas. No bathing waters are in the vicinity of the route corridor.</p>	<p>Construction within the route corridor and operational structures and discharges may impact the hydromorphology and surface water quality of three Water Framework Directive classified river water bodies, one coastal water bodies and approximately 30-40 minor watercourses.</p> <p>There is a potential for any new carriageway to be at risk of flooding or for the design to result in a change to flood extents or levels elsewhere, due to potential loss of floodplain. SEPA Flood Maps (SEPA, 2020) indicates that the route corridor may be at coastal flood risk from Loch Long and at fluvial flood risk from Loin Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event (0.5% AEP (200-year) event).</p> <p>The route corridor passes in the vicinity of Loch Lomond Woods Special Area of Conservation (partially designated for otter, <i>Lutra lutra</i>), which may be impacted.</p> <p>The Loch Long Shellfish Water Protected Areas are within the route corridor and may be impacted by the route.</p> <p>The route corridor passes in the vicinity of two surface water Drinking Water Protected Areas, which may be impacted.</p> <p>The potential impacts of construction and operation within the corridor could result in significant negative effects on the water environment, subject to appropriate mitigation.</p>
Soils	<p>Soil type within the route corridor is mixed with peaty podzols, peaty gleys, montane soils, brown soils and mineral podzols all present. Montane soils and peaty podzols are predominant within the route corridor with montane soils located on the higher slopes</p>	<p>The route corridor is assessed as having a minor negative or uncertain environmental effect. This recognises the route corridor has the potential to avoid effects on Class 1 (nationally important and of high conservation value) and Class 2 peat (nationally important and of potentially high conservation value and restoration potential) but would unavoidably affect non-priority peatland and carbon-rich soils. Loss of existing commercial forestry, Land Capability for Forestry (LCF) Class F2 and F4, and land</p>

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>and brown soils, mineral podzols and peaty gleys present in the south-eastern section of the corridor around Succoth.</p> <p>The route corridor, where peat is present, predominantly transects peat identified as Class 5 (no peatland habitat recorded, soils are carbon rich and deep peat) and Class 3 (not priority peatland habitat with carbon rich soils and some areas of deep peat) in the Carbon and Peatland 2016 Map. However, smaller pockets of peat identified as Class 2 (nationally important carbon-rich soils, deep peat and priority peatland habitat, areas of potentially high conservation value and restoration potential) and Class 1 (nationally important carbon rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value) are located throughout the route corridor.</p> <p>Given the combination of soils, climatic conditions and topography the Land Capability for Agriculture (LCA) Class within the route corridor is predominantly Class 6 (Class 6.1, 6.2 and 6.3) which is non-prime land capable of use as rough grazing only. However, a small area of land surrounding Succoth at the south-eastern extents of the corridor is LCA Class 4.2 which is also non-prime agricultural land but capable of producing a narrow range of crops.</p> <p>There are no Geological Conservation Review (GCR) sites in the route corridor.</p> <p>Given the combination of soils, topography and climate the Land Capability for Forestry (LCF) class includes Class F5 (Land with limited flexibility for the growth and management of tree crops), Class F6 (Land with very limited flexibility for the growth and management of tree crops) and Class F7 (Land unsuitable for producing tree crops) with Class F7 predominating. However, a small pocket of Class F2 (Land with very good flexibility for the growth and management of tree crops) is located to the east of Succoth at the south-eastern extents of the route corridor and an area of Class F4 (Land with moderate flexibility for the growth and management of tree crops) is located at the north-western extents of the route corridor. There are existing strands of commercial forestry in the route corridor but these are predominantly located on either</p>	<p>identified as 'preferred' within the LLTNP Authority Trees and Woodland Strategy is likely to be unavoidable within the route corridor.</p> <p>Mitigation is likely to be achievable to reduce the potential for significant negative environmental effects.</p>

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>side of the Glen Loin valley in the south-eastern extents of the corridor and near Butterbridge at the north-western extent of the route corridor.</p> <p>The route corridor is located within the LLTNP Authority Trees and Woodland Strategy area. Land within the route corridor is identified in the strategy as 'Preferred' (where native woodland creation would have the greatest impact in improving woodland connectivity, providing a more suitable climate for tree growth) predominantly on the eastern slopes of Beinn Narnain and the western slopes of Beinn Ime. Other areas are identified as 'Potential' (where native woodland creation would contribute to the wider strategy's objectives) throughout the route corridor and 'Sensitive' (where there is limited capacity for woodland creation due to higher value nature conservation or landscape objectives) in the land within Succoth.</p>	
Air Quality	<p>The route corridor is rural in nature; receptors sensitive to changes in air quality are present at the settlement of Succoth and Arrochar located in the south-eastern extent of the route corridor, and Tarbet within 200m. There is also a property at Butterbridge at Glen Kinglas.</p> <p>There are no AQMAs within the route corridor or in the Argyll and Bute Council area. Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020).</p> <p>Air quality in Argyll and Bute is considered to be generally very good and complies with all the air quality objectives for Scotland (Argyll and Bute Air Quality Annual Progress Report, 2020). Modelling results for sources of nitrogen dioxide and fine particulates in the Argyll and Bute Air Quality Annual Progress Report (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 would be required to improve air quality.</p>	<p>There is potential for localised air quality impacts on receptors within the corridor during the construction phase: for example, dust generated from site activities and emissions from vehicular movements, which could result in annoyance for residents within settlements including Succoth, Arrochar, and Tarbet. The more intensive activities required to facilitate construction of the tunnel could result in these effects being greater.</p> <p>The route corridor does not follow an existing route and would therefore introduce traffic-related emissions to the area (e.g. carbon monoxide, sulphur dioxide, particulate matter) during operation.</p> <p>Although the existing air quality in the region is good, there are a number of settlements within the corridor which could potentially experience negative air quality effects; however, it is expected that these would be reduced through mitigation measures.</p> <p>Potential air quality impacts on ecological receptors are assessed under Biodiversity, Flora and Fauna .</p>
Climatic Factors	<p>The baseline for Climatic Factors is not considered to differ greatly between the route corridor options. However, due to the northern location of the route corridor, it is</p>	<p>The corridor is offline and has steep topography on either side of the centreline from Glen Loin. During periods of extended rainfall, the route corridor could be at risk of landslides from slope instability.</p>

Table 15: Corridor 15 – Arrochar - Butterbridge

SEA Topic	Baseline	Assessment
	<p>considered to be more vulnerable to the impacts of climate change, such as landslides or flooding, due to the steep topography in the area. The topography of the route corridor rises gently along the valley floor from the A83 at Arrochar then rises steeply across the mountain range at Beinn Ime.</p> <p>The route corridor is within a location that may be at existing coastal flood risk from Loch Long (North) during a medium likelihood event. The route corridor may be at existing fluvial flood risk from Loin Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event.</p> <p>There are areas of forestry in the route corridor particularly in the eastern section of the corridor, including Ardgartan Forest which is either side of Loin Water. As described in the 'Soils' section, there are areas of peat soils in the route corridor. Forestry area and peat lands have high carbon sequestration and sink value.</p>	<p>Climate change is expected to increase the frequency and intensity of extreme weather events which could impact the route.</p> <p>As indicated in the 'Water Environment' section, the route corridor may be at coastal flood risk from Loch Long at fluvial flood risk from Loin Water, Allt Coiregrogain and Kinglas Water during a medium likelihood event. . As the route corridor option is primarily a tunnel, negative effects from landslides and flooding at ground level would be avoided.</p> <p>As indicated in the 'Soils' section, there are areas peatland that could be affected by the route corridor, leading to its degradation and release of carbon, although this is assessed as being a minor negative or uncertain environmental effect. Mitigation is likely to be achievable to reduce the potential for significant negative environmental effects</p> <p>There are areas of forestry in the route corridor and any felling would release sequestered carbon and reduce the carbon sink value of forests within the corridor. As stated in the Biodiversity section, the loss of woodland would have significant negative environmental effects. Woodland and Forestry Strategy areas, including existing planted woodland, potential, preferred and sensitive sites, need to be considered in the corridor selection process. The method of tunnel construction used would affect the impacts on surface natural assets.</p> <p>As stated in the 'Material Assets' section, engineering solutions would be required to accommodate aspects of the various options being considered for the route corridor construction. The construction of the tunnel would have a significant amount of embodied carbon in material usage and emissions from construction activities. Release of carbon emissions to construct the scheme and for vehicles using during operation would have a cumulative impact on increasing atmospheric carbon concentrations, contributing to climate change.</p>
Material Assets	<p>The route corridor is located in a rural environment and is offline from its start point within Glen Loin, where it heads north west across the mountain range towards the A83 Trunk Road at Butterbridge.</p> <p>As stated in the Climate section, natural material assets within the route corridor include forestry and peat soils. There is evidence of agricultural activity at the</p>	<p>The route corridor is offline from Glen Loin across the mountain range. Due to the topography of the corridor, significant engineering solutions would be required to achieve compliance. The route corridor is 8.6km in length would require significant raw material inputs and earthwork activities to construct including:</p>

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>settlements at Feorlinn within Glen Loin. There is also a mixed/coniferous woodland plantation on both sides of Glen Loin.</p> <p>Built material assets within the route corridor include power cables within Glen Loin. There are no additional infrastructure assets within the route corridor.</p> <p>The closest commercial waste disposal site is located in Helensburgh to the south.</p>	<ul style="list-style-type: none"> ▪ Total route corridor length: 8.6km ▪ Tunnel length: 7.3km ▪ 2 new single 20m span composite concrete deck road underbridge on RC abutments. ▪ 2 new single 20m span composite concrete deck watercourse underbridge on RC abutments <p>There are natural material assets in the route corridor, including forestry areas that would likely require felling for the corridor option, resulting in loss of natural material assets and having moderate negative environmental effects as stated in the Biodiversity section.</p> <p>Peat soils would also be affected by the route corridor, resulting in minor negative or uncertain environmental effect as stated in the Soils section.</p> <p>Short sections of cut and cover tunnels would be required at either end of the portal location with a drilling or a TBM being used to construct main section. The use of a tunnel would minimise the effects on surface material assets.</p> <p>Due to the rural nature of the route corridor option and use of a tunnel, environmental effects on built material assets would not be expected.</p>
Cultural Heritage	<p>There are two designated cultural heritage resources within this route corridor. These are two Category C Listed Buildings at Succoth.</p> <p>There are no other designated cultural heritage resources within the route corridor, but there is potential for undesignated or undiscovered cultural heritage resources (e.g. archaeological remains) to be located here.</p>	<p>As there are relatively few designated cultural heritage resources, no significant impacts on cultural heritage are predicted. However, any construction works or temporary access routes would need to avoid impacts on the two Listed Buildings within the route corridor. There is also potential for construction works and tunnelling to damage unknown archaeological resources.</p>
Landscape and Visual Amenity	<p>The route corridor is approximately 9km long. The route corridor is situated between Arrochar, one of the main gateways to the Argyll Forest Park, and Butterbridge, and lies entirely within the LLTNP. There are no National Scenic Areas or Wild Land Areas within</p>	<p>This route corridor has the potential to result in significant adverse effects on the special qualities of the LLTNP, such as such as the high relative wildness on and around the Highland summits, as well as the local landscape and seascape character and landscape elements including the rugged topography, watercourses, native and coniferous plantation woodland and Ancient Woodland sites due to the</p>

Table 15: Corridor 15 – Arrochar - Butterbridge		
SEA Topic	Baseline	Assessment
	<p>the route corridor, however the central part of the route corridor around the summits is characterised by steep rugged terrain with a considerable degree of wildness, remoteness and tranquillity. This route corridor is located predominantly within the Highland Summits Landscape Character Type (LCT) with small sections also located within Settled Coastal Fringe and Upland Glens - Loch Lomond & the Trossachs LCTs as well as Head of Loch Long Seascape Character Area (SCA).</p> <p>There are several existing tracks in the eastern part of the route corridor and no existing roads or tracks or other large-scale man-made elements in the central or western part of the route corridor (which passes between the Arrochar massif summits of Beinn Narain, Beinn Luibhean and Beinn Ime) until the existing A83 Trunk Road and Glen Kinglas access track at the route corridor's western end.</p> <p>Land cover within the route corridor consists mainly of open grassland, moorland, rocky outcrops and numerous watercourses with pockets of native broadleaved woodland, including Ancient Woodland sites, as well as commercial coniferous forestry in the east at the head of Loch Long and a large block of young native woodland to the west. All of these are located within the Argyll Forest Park. In addition, the LLTNP Trees and Woodlands Strategy (2019) identifies areas around the Highland summits as preferred or potential native woodland creation opportunities.</p> <p>Two of Scotland's Great Trails, Three Loch Way and Cowal Way, and a number of LLTNP core paths are located at the eastern end of the route corridor. Several hill walking trails are also located within this route corridor. Butterbridge, an old stone single arched bridge over Kinglas Water and a popular viewpoint, is located just outside the route corridor at the western end of the route corridor and the A83 in this location is part of the scenic Argyll Coastal Route.</p>	<p>construction and operation of the carriageway and supporting infrastructure such as the tunnel vertical ventilation and escape shafts and tunnel portals.</p> <p>There is also potential for significant adverse effects on sensitive visual receptors such as the residents of Arrochar and Succoth, walkers on the nearby trails including the Three Lochs Way and Cowal Way (Scotland's Great Trails), LLTNP core paths, the Arrochar Alps hill walking routes and the summit viewpoints on Beinn Narain, Beinn Luibhean and Beinn Ime. There is also potential for adverse effects on the landscape setting and views of and from the old bridge at Butterbridge and on views experienced by travellers on the Argyll Coastal Route.</p> <p>As the majority of the route corridor would need to be in a tunnel, the significance of the landscape and visual effects during operation would partially depend on the type of construction technique used, however it is considered unlikely that major significant adverse effects could be avoided.</p>

Table 16: RAG rating for each corridor

	Corridor 1	Corridor 2	Corridor 3	Corridor 4	Corridor 5	Corridor 6	Corridor 7	Corridor 8A	Corridor 8B	Corridor 9	Corridor 10	Corridor 11	Corridor 12	Corridor 13	Corridor 14	Corridor 15
Climatic Factors	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Air Quality	-	-	-	-	-	-	-	-	-	-	-	-	--	--	--	-
Population and Health	-	-	-	--	-	-	-	-	-	-	-	-	-	-	-	--
Material Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	--	--	-
Biodiversity	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Water Environment	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Soils	-	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-
Cultural Heritage	-	-	-	-	--	--	--	--	--	--	--	--	-	-	--	-
Landscape and Visual Amenity	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

RAG rating criteria used for assessing environmental effects

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