

Access to Argyll & Bute (A83) Strategic Environmental Assessment & Preliminary Engineering Services
Route Corridor Preliminary Assessment
Route Corridor 3 – Glen Fyne

Route Corridor Details	
Route Corridor Option	Route Corridor 3 - Glen Fyne
Route Corridor Description	The Glen Fyne route corridor is off-line within Glen Fyne and follows the wider valley floor from the A83 Trunk Road at the head of Loch Fyne, heading generally north-east towards Allt na Lairige reservoir, then again generally north-east to the A82 Trunk Road near Inverarnan. The overall length of the route corridor is approximately 14.5 kilometres. The route corridor passes through similar terrain to that of the Rest and Be Thankful. Road structures and ground engineering measures would likely be required to fit the new road in the topography of the valley.
Rationale for Route Corridor	The Glen Fyne route corridor was identified in the 'A83 Trunk Road Route Study, Part A - A83 Rest and Be Thankful' Report, published in 2013. This route corridor is considered to offer a potential alternative access route into Argyll and Bute bypassing the main landslide risk area on the A83 Trunk Road at the Rest and be Thankful. For traffic travelling to/from the south this would also involve travelling along the A82 Trunk Road between Tarbet and Inverarnan.
Geographic Context	The route corridor lies within the Argyll & Bute region, which comprises solely of the entirety of the Argyll & Bute local authority area. The route corridor end points are located a straight line distance of approximately 37-38 miles from the city of Glasgow. The south-west extents of the corridor is situated at the head of Loch Fyne which is located between Cairndow and Inveraray on the A83 Trunk Road. The north-east extent of the corridor is situated between Ardlui and Inverarnan on the A82 Trunk Road. The route corridor is located partially within the western extremities of the Loch Lomond and The Trossachs National Park (LLTNP). With respect to transport links, the route corridor joins the two aforementioned trunk roads and it also crosses the West Highland Line railway at its north-east extents.
Social Context	<p>Given the geographically remote nature of large areas of Argyll & Bute, reducing the duration of journey times and improving journey time reliability for both strategic and local traffic has the potential to impact positively on deprivation levels, both geographic and economic.</p> <p>The Scottish Index of Multiple Deprivation (SIMD) identifies concentrations of deprived areas across Scotland. Argyll & Bute consists of 125 data zones, with 10 data zones (8%) identified as being amongst the 15% most overall deprived data zones in Scotland. These are located in the region's 5 main towns - Helensburgh, Oban, Dunoon, Campbeltown and Rothesay. The Geographic Access to Services considers deprivation in terms of drive times and public transport times to a selection of basic services such as schools, health services and retail centres. Forty-eight (38%) of Argyll and</p>

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	<p>Bute's data zones are within the 15% most 'access deprived' data zones in Scotland – most of which are located outside the main towns.</p> <p>The region's population has been in decline for over a decade, against a backdrop of a population increase at the national level.</p> <p>Data from NHS Highland estimates that there are 26,000 referrals for Argyll & Bute patients each year, of which 44% are to hospitals within the region and 56% are to hospitals in the NHS Greater Glasgow and Clyde area. Disruption on the transport network can lead to missed appointments and have an adverse impact on patients' health and wellbeing.</p> <p>The region has twenty-three inhabited islands, more than any other local authority in Scotland, with seventeen percent of the regions' population inhabiting the islands. The A83 Trunk Road provides accessibility to services on the mainland via Kennacraig port, where ferry services depart to Islay with onward connections to Jura and Collonsay.</p>
Economic Context	<p>The A83 Trunk Road is one of only two east-west strategic trunk road network connections between Argyll & Bute and the central belt. The lack of a reliable strategic route linking Argyll & Bute with the rest of the country is understood to be constraining economic growth in the region. When the road connection via the A83 Trunk Road is severed, the impact on residents, visitors and businesses is severe due to the lack of alternative transport options.</p> <p>The A83 Trunk Road is known to carry goods of significant value to both the regional and national economy (including whisky and seafood). The A83 Trunk Road is also a key route for tourism, and a proposal to transform the Crinan Canal into a major tourism attraction in Mid-Argyll, could benefit significantly from improved resilience and / or access to the region. Anecdotal evidence suggests closures and restrictions cost the local economy £50k-£60k per day in addition to longer-term impacts on business investment within the region and, subsequently, the region's job market.</p> <p>Due to a large proportion of the region's geographic remoteness from the major economic centres of the central belt, only a few large scale, high skill industries are located within the area. The region's economy tends to be heavily influenced by sectors with lower growth, such as agriculture and public services. Given the focus on economic recovery post-COVID-19, enhanced connectivity for the Argyll & Bute region could contribute towards increasing inward</p>

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	investment and job opportunities for local communities. More reliable access for Bute and Cowal and Mid-Argyll, Kintyre and Islay has the potential to have a transformational effect on local/regional economies.

Transport Planning Objectives		
Objective		Performance against planning objective
TPO1	Resilience – reduce the impact of disruption for travel to, from and between key towns within Argyll & Bute, and for communities accessed via the strategic road network.	<p>This route corridor offers enhanced resilience for both strategic A83 Trunk Road traffic accessing Cowal & Bute and Mid-Argyll, Kintyre and the Islands, and for local traffic travelling to / from and between key towns and communities within Argyll & Bute. The impact of landslide induced closures at the main landslide risk area on the A83 Trunk Road, at the Rest and Be Thankful, is effectively bypassed by this route corridor. Communities located within close proximity to Glen Croe, including Arrochar, Inveraray and Lochgoilhead, which are subject to the longest diversion routes during closure of the A83 Trunk Road at the Rest and Be Thankful, are likely to benefit significantly from the enhanced resilience provided by this route corridor</p> <p>In providing an additional route to the existing A83 Trunk Road (assuming it remains operational) enhanced resilience will be provided for large parts of Argyll & Bute, offering a more reliable connection between the region, the central belt and beyond.</p>
TPO2	Safety – positively contribute towards the Scottish Government’s Vision Zero road safety target by reducing accidents on the road network and their severity.	<p>Minor reductions in transport related casualties could, potentially, be realised as a result of reductions in vehicle kilometres associated with fewer landslide induced road closures and the associated long diversion routes for strategic traffic travelling to and from Argyll & Bute.</p> <p>While the A83 Trunk Road at the Rest and Be Thankful is operating under normal conditions, this route corridor would see reduced travel distances for those trips to/from the region and the A82 Trunk Road north, and during periods of closure the new route would provide a shorter diversion route for trips to the south. In addition, once the improvements to the A82 Trunk Road Tarbet to Inverarnan section currently under development are implemented, this would</p>

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Transport Planning Objectives		
Objective		Performance against planning objective
		result in safety benefits on this section of the trunk road network, which is known to have an accident history.
TPO3	Economy – reduce geographic and economic inequalities within Argyll & Bute through improved connectivity and resilience.	This route corridor does not provide a significant change in connectivity when compared to the existing route, under normal operating conditions as the majority of traffic movements to/from the region are south towards Glasgow, therefore a route corridor to the north does not benefit the majority of users.
TPO4	Sustainable travel – encourage sustainable travel to, from and within Argyll & Bute through facilitating bus, active travel and sustainable travel choices.	It is considered unlikely that this route corridor would have any significant impact on public transport usage, active travel, reducing transport poverty or reducing reliance on private cars. This is primarily due to the nature of the route corridor and the areas within which it is located. Investment in a new route corridor within the region would however provide an opportunity to include enhanced active travel provision as part of the design.
TPO5	Environment – Protect the environment, including the benefits local communities and visitors obtain from the natural environment, by enhancing natural capital assets and ecosystem service provision through delivery of sustainable transport infrastructure. An example of ecosystem service provision is improving water quality regulation.	The range and scale of potential environmental effects identified for this route corridor is such that it is likely that extensive environmental mitigation will be needed and there is the potential for a range of significant environmental impacts that could affect ecosystem service provision.

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Existing Route Corridor Conditions		
Engineering	Route Corridor Length	The route corridor is approximately 14.5km long.
	Existing Roads	<p>The route corridor intersects the A83 Trunk Road at its south-west extents and the A82 Trunk Road at its north-east extents.</p> <p>The route corridor does not intersect any Local Authority operated / maintained 'A' / 'B' / 'C' roads.</p>
	Existing Accesses	<p>A class road: 0 B class road: 0 C class road: 0 Unclassified road/direct access: 5</p> <p>Relative to the other route corridors, the low number of accesses noted above is attributed to the undeveloped, rural setting of the corridor.</p> <p>All local accesses from the A83 in the area around Glen Croe would be retained should this route corridor be taken forward; however, the additional work to retain these accesses has not been included in the Preliminary Assessment of this corridor.</p>
	Topography and Land Use	<p>The route corridor is rural in nature and ground levels along the centre of the route corridor rise from the existing A83 Trunk Road at a height of approximately 5m above ordnance datum to approximately 70m above ordnance datum where a tributary from the Allt na Lairige Reservoir flows into the River Fyne. The route corridor generally follows this tributary, climbing over the next 2 kilometres towards the reservoir dam where the access track to the south-west corner of the dam ends at a height of approximately 300m above ordnance datum. The reservoir creates a pinch point at this location as the valley floor is flooded leaving only the steep side slopes of the valley within the route corridor. Following the pinch point at the reservoir the valley floor to the north-east widens. However, as the centre of the route corridor approaches its highest point of approximately 400m above ordnance datum, to the north of Beinn Damhain summit, the valley floor narrows and the side slopes become very steep. The route corridor from this point falls at a steady grade until it reaches a point north of Garabal Hill where it includes a woodland area. The western edge of the woodland area at this point is approximately 300m above ordnance datum. As the route</p>

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		<p>corridor heads north-east it then descends at a steep gradient towards the existing A82 Trunk Road which is approximately 20m above ordnance datum.</p> <p>Land use within the route corridor includes residential and commercial properties, primarily to the south-west of the Allt na Lairige power station, with a small number located at Inverarnan. Furthermore, there are pockets of mixed/coniferous plantation woodland between Achadunan and Allt na Lairige. There are several locations where agricultural operations are present within the route corridor, again primarily to the south-west of the Allt na Lairige power station. In addition to the Inverarnan 275kV/132kV substation at the north-eastern extent of the route corridor, there are two features within the corridor associated with utilities and infrastructure; Clachan and Allt na Lairige power stations, located 500m and 5.5km from the A83 Trunk Road respectively, both of which are fed by an extensive network of underground, infrastructure. The route corridor also includes a quarry, located approximately 1.5km from the A83 Trunk Road and a brewery located approximately 0.5km from the A83 Trunk Road. A high voltage electricity transmission line also crosses the route corridor from the north-east and then runs generally to the south-west through the route corridor. 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>Geology / Geomorphology</p>	<p>The route corridor follows the U-shaped valley of Glen Fyne north-east from the head of Loch Fyne to the confluence between the River Fyne and the Allt na Lairige. The valley sides in this section are steep and numerous channels provide drainage pathways down the hillsides above, the slopes indicated to be irregular in form with knolls and rock exposures indicated by topographic mapping. The route corridor bears east-northeast within a narrower valley away from Glen Fyne at the confluence between the rivers, following the tributary Allt Na Lairige steeply at first and then more gently towards the reservoir where the Allt na Lairige has been dammed. The route corridor continues east and north-east within this valley, widening out in the vicinity of the reservoir to the saddle between Allt na Lairige and Allt Arnan before descending and eventually opening up in a fan shape north of Garabal Hill approaching Inverarnan.</p> <p>The superficial geology beneath the southern margins of the route corridor at Achadunan, close to the A83 Trunk Road tie-in, is indicated to comprise of isolated pockets of glacial Till (diamicton) which extend up the slope to the south-east.</p>

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		<p>Following the route corridor from Mark Park to Allt na Lairige, Hummocky (Moundy) Glacial Deposits are mapped comprising diamicton, sand and gravel. Extensive deposits of Alluvium comprising clay, silt, sand and gravel are mapped from the confluence of the River Fyne and Allt na Lairige to the head of Loch Fyne. The Alluvium follows the course of the river down to the A83 Trunk Road. It is considered likely that the Alluvium is underlain by further Hummocky Glacial Deposits.</p> <p>At the A82 Trunk Road tie-in at Inverarnan, Alluvium and River Terrace Deposits comprising gravel, sand, silt and clay are mapped along the course of the River Falloch. To the west, a band of glacial Till and morainic deposits is mapped. No superficial deposits are mapped along the route corridor following the course of Allt Arnan between Inverarnan and the western end of the reservoir on Allt na Lairige.</p> <p>Mass movement deposits are mapped along the northwest-facing slopes of the valley between Mark Park and the tie-in with the existing A83 Trunk Road. These are located on slopes formed of metamorphic rocks; most are located where superficial deposits are recorded to be thin or absent; however, one is located within an area indicated to be underlain by glacial Till (diamicton).</p> <p>No artificial ground is mapped within the route corridor; however, made ground is anticipated within the route corridor in association with existing development.</p> <p>The route corridor is predominantly underlain by metamorphic rocks of Dalradian age. Along the Glen Fyne valley west of the reservoir, bedrock comprises psammites, pelites and semipelites belonging to the Southern Highland Group, including the Beinn Bheula Schist Formation and Glen Sluan Schist Formation. In the east of the route corridor, bedrock is predominantly comprised of psammites and semipelites of the Ben Ledi Grit Formation, with various igneous intrusions. The central portion of the route corridor, from the confluence between the Allt na Lairige and the River Fyne to the saddle at the top of Lairig Arnan is underlain by igneous rock of the Garabal Hill-Glen Fyne pluton (granodiorite and hornblende). Further igneous intrusions are recorded throughout the route corridor, generally oriented north-northeast to south-southwest.</p> <p>A significant fault is inferred along the toe of the southeast-facing slopes of the Glen Fyne valley from the A83 Trunk Road tie in. The fault follows the northeast-southwest orientation of the valley before following the orientation of the Merk Burn away from the route corridor along its northern margins. Another major fault crosses</p>
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		<p>the route corridor to the west of Inverarnan and can be seen to affect the course of the Allt Arnan. Other minor faults are present within the route corridor, generally showing northwest-southeast and north-south orientations.</p> <p>References:</p> <ul style="list-style-type: none"> • British Geological Survey, Geological Survey of Scotland, 1:63,360/1:50,000 geological map series. Accessed via BGS maps portal https://www.bgs.ac.uk/information-hub/bgs-maps-portal/, October to December 2020. • British Geological Survey, Onshore GeoIndex, https://mapapps2.bgs.ac.uk/geoindex/home.html, accessed October to December 2020. Datasets used include National Landslide Database (NLD), Mass Movement Deposits (1:50,000 scale), Superficial Deposits (1:50,000 scale), Bedrock Geology (1:50,000 scale), Linear Features (1:50,000 scale), Borehole Records. • British Geological Survey, The BGS Lexicon of Named Rock Units, https://webapps.bgs.ac.uk/lexicon/home.cfm. Accessed October to December 2020.
	Hydrology and Drainage	This is covered under 'Water Environment' in the 'Environment' part of this table.
	Structures	There are no existing structures in the route corridor.
Environment Considerations	Biodiversity, Fauna and Flora	<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 16 parcels of woodland listed on the Ancient Woodland Inventory (AWI) within the route corridor.</p>
	Population and Human Health	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 Allt na Lairig power 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.

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		<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>Water Environment</p>	<p>The route corridor crosses or is in the vicinity of water bodies classified under the Water Framework Directive, including:</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>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% Annual Exceedance Probability (200-year) event). There is potential for existing coastal flooding during a medium likelihood event (0.5% Annual Exceedance Probability (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>

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	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>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.</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</p>

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		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.
	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 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>
	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>
	Cultural Heritage	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.

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	<p>Landscape and Visual Amenity</p>	<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>Traffic</p>		<p>Annual average daily traffic (AADT) flow levels on the A83 Trunk Road in 2019 were 2,300 vpd (vehicles per day) on the stretch between Campbeltown and Tarbert and 4,400 vpd west of Tarbet, with the HGV percentage between 5% and 9%. At the Rest and Be Thankful, A83 Trunk Road traffic volumes were in the order of 4,500 vpd in 2019, with the HGV percentage around 9%, suggesting that, on average, around 400 HGVs pass through Glen Croe, on a daily basis. Additionally, around 17% of average daily traffic in 2019, on the A83 Trunk Road within Glen Croe (approximately 800 vehicles) was a light goods vehicle. Approximately 100 buses and coaches per day passed through Glen Croe via the A83 Trunk Road, in 2019.</p> <p>AADT flow levels on the A82 Trunk Road to the north of Tarbet were 4,000 vpd in 2018, with the HGV percentage between 4% and 7%.</p> <p>Travel routes to/from, and within, Argyll & Bute are highly seasonal, with greater volumes of people movements within the region during the summer months (predominantly as a result of increased visitor levels). Due to the geography and topography of the region, seasonal fluctuations in traffic volumes and the presence of slow-moving</p>

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	vehicles, travel times via the A83 Trunk Road between the key main towns/cities can be long relative to the distances involved and unreliable.
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Implementability		
Engineering	Topography and Alignment Considerations	The topography at the south-west extents of the route corridor is likely to allow for desirable minimum alignment geometry to be achieved at or near existing ground levels and without the need for large embankments or cuttings. Achieving desirable minimum alignment geometry does however mean that several watercourse crossings are required. Due to the topography at the north-east extents of the route corridor, it is not technically feasible to achieve desirable minimum alignment geometry at or near existing ground levels and extremely deep cuttings would be needed to provide a road with earthworks slopes. However, provision of a tunnel approximately 9.3km long would allow for desirable minimum alignment geometry to be achieved where the most challenging topography is found in the route corridor.
	Geology / Geomorphology Considerations	<p>The National Landslide Database records landslides to have occurred within the route corridor. It should be noted that additional landslides may have occurred which are not recorded within the database. Potential landslide hazards may require measures to protect any route alignment and this should be considered as part of detailed assessment should this route corridor be retained. The database records landslides to have occurred at the following locations:</p> <ul style="list-style-type: none"> • Three landslides on the northwest-facing slopes opposite Mark Park. Two of these have associated mass movement deposits mapped by the British Geological Survey (BGS). • One landslide at the southern edge of the corridor above the tie-in to the A83 Trunk Road, in the vicinity of Garbh Allt Mor. Mass movement deposits are mapped in association with this record. • A further landslide is recorded outside of the corridor to the southwest above the existing A83 Trunk Road alignment in the vicinity of Glaschoine, within an area of similar topography and ground conditions. The BGS also records mass movement deposits in association with this record. <p>A review of aerial photography shows several unrecorded landslide scars along the north-west facing slopes of Glen Fyne within the proposed route corridor.</p>

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		<p>An assessment of other potential issues including potentially difficult ground conditions is summarised below:</p> <ul style="list-style-type: none"> • The relatively low resolution of geological mapping means that potentially hazardous deposits such as peat, alluvium and mass movement deposits may not be recorded. • Potential presence of soft or loose deposits (Alluvium and Raised Marine Deposits). • Shallow rockhead and variability in rock strength due to the presence of igneous intrusions of high strength which may cause difficulties for shallow excavations and any tunnelled sections. • Faulting can create zones of weak and/or highly fractured rock which is a significant hazard when tunnelling or excavating cuttings. Conversely, faulting can also create zones of extremely strong 'welded' fault rock, which again would create difficulties for tunnelling or areas of cutting in relation to excavatability. • The presence of faults may provide a preferential pathway for groundwater flow, and groundwater may pose significant issues for excavation in cuttings and for tunnelling if the groundwater table is high.
	Hydrology and Drainage Considerations	This is covered under 'Water Environment' in the 'Environment' part of this table.
	Structures Considerations	<p>The following structures are likely to be needed for a new road within the route corridor.</p> <ul style="list-style-type: none"> • A tunnel approximately 9.3km long. • Approximately 2 no. new multi-span watercourse bridge crossings • Approximately 5 no. new single-span watercourse bridge crossings • Approximately 11 no. new culverts (box or large diam. pipe) <p>Constructability, operation and maintenance in relation to structures is discussed elsewhere within the document.</p> <p>Key issues associated with the likely structures are:</p> <p><u>Glen Fyne Tunnel</u></p> <ul style="list-style-type: none"> • A tunnel is considered to be required to satisfy a practical road alignment through the route corridor. The proposed tunnel would be approximately 9.3km in length with a gradient less than 1% descending from

		<p>south-west to north-east. However the vertical alignment could be 2% upwards to approximately the mid point and 2% down to the exit, which would be better for a number of construction considerations.</p> <ul style="list-style-type: none"> • It is initially considered that the tunnel may be constructed by a single bore providing a single carriageway with bi-directional traffic through the tunnel; however, there are important fire life safety, and associated ventilation and escape provisions, backed up by European and National highways standards that will govern the tunnel configuration. • For a single carriageway, bi-directional tunnel, these provisions are quite complex. The ventilation system must be in permanent operation and in the event of a fire, smoke and heat have to be removed from the tunnel using semi-transverse ventilation, which draws the smoke and heat into an overhead duct. In a long tunnel such as this, exhausts are likely to be required through intermediate shafts. Escape from the fire is also more problematic in that an escape duct has to be provided within the tunnel section. People trapped in the tunnel cannot be expected to be able to walk far through such a narrow duct, and so intermediate shafts or a parallel escape bore must be provided to facilitate escape to free air. Given the depth of intermediate shafts of 200m deep or more, lifts and a recovery suite at the shaft head would have to be provided. Alternatively, a parallel rescue bore could be constructed parallel to the main bore with enough space for rescue vehicles. • Accordingly, a twin bore, dual carriageway tunnel may be more appropriate. In such tunnels, in the event of a severe vehicle fire, longitudinal jet fan ventilation is ramped up to full strength to blow the smoke and heat in the direction of flow of traffic, away from vehicles queued behind the incident, while those ahead of the incident escape by continuing as normal. For those trapped in the tunnel, they can escape into the other non-incident bore through cross-passages, at say 100-300m intervals, and can be evacuated by rescue vehicles. Intermediate shafts would not typically be required other than to vent pollution. <p><u>Other Structures</u></p> <p>On the southern approaches to the tunnel in Glen Fyne, the road alignment crosses a number of minor watercourses requiring single and multi-span bridges. The multi-span bridges would likely be steel composite construction on reinforced concrete piers/bankseats on piled foundations to rock. The single span bridges would likely be composite steel or composite concrete Y beam types on reinforced concrete abutments piled to rock.</p>
	Constructability Considerations	<p><u>Summary of Key Construction Works</u></p> <p>This route corridor connects between the A83 Trunk Road at Glen Fyne and the A82 Trunk Road north of Ardlui. Key</p>

		<p>works in the route corridor would involve construction of a new surface road for approximately 5.5km in proximity to River Fyne in the valley floor, incorporating several bridge crossings of watercourses, leading to a tunnel approximately 9.3km long which is to be constructed under the mountain west of the A82 Trunk Road.</p> <p><u>Major Structures Constructability Considerations – Glen Fyne Tunnel</u></p> <p>The northern portal is situated close to the existing A82 Trunk Road near Inverarnan, which may mean there is a limited opportunity to establish a work site at the northern end from which to manage the tunnel construction arisings. The tunnel also passes underneath the West Highland Line railway parallel to the A82 Trunk Road, so liaison with Network Rail will be required during design and construction.</p> <p>The valley floor in this area is relatively flat so it may be possible to construct a separate haul road using temporary bridges to cross the watercourses where needed and enable the southern portal of the tunnel to be accessed as quickly as possible to commence construction of the tunnel from the south. If it were determined that the tunnel could also be feasibly constructed from the northern end as well then it might be possible to maintain two works fronts depending on the method selected. The tunnelling work at this end would need to transport the arisings from the tunnel along the haul road back to the A83 Trunk Road. The site is located at the top of Loch Fyne so there may be opportunity to establish a marine facility to receive the arisings onto a barge using a conveyor bridge to carry over the A83 Trunk Road and avoid increasing the number of vehicles using the road for removal of cut material. There is very likely be a requirement to install ventilation shafts from the top of the mountain to the tunnel which would involve establishing a working area on top of the hill requiring a haul route to be established to move plant and equipment to the location. There are some existing tracks in the area which could potentially be extended and improved to fulfil this requirement, although this may have a temporary added impact to the landscape during operation which could remain for a period after construction has been completed.</p> <p>The tunnel could be advanced by drill and blast techniques or by using a large Tunnel Boring Machine (TBM).</p> <p>Whichever technique is used, short sections of cut and cover tunnel would be required at each portal location to form a vertical portal face in reasonably competent rock from which the tunnel can be advanced. At each drill-and-blast advance the flat-bottomed “horseshoe”-shaped excavation of newly cut rock would be evaluated by a geologist and strengthened using a combination of rock bolts and sprayed concrete (SCL), to form a stable primary lining before the next advance is drilled and charged with explosive. Although this may seem a slow and laborious process it can be an economic method to construct tunnels in rock the tunnel can be completed more quickly if the drill-and-blast</p>
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		<p>sequence can be repeated at the opposite portal, or even from intermediate shafts. Once the tunnel is completed an in-situ cast secondary lining can be installed to form a durable final structure.</p> <p>Alternatively, the tunnel can be bored using a large Tunnel Boring Machine (TBM), starting at one end and boring the 9.3km of tunnel consecutively. Although this involves a large capital investment in a TBM and large site set-up at the portal locations, when compared with drill-and-blast, the final circular structural lining of pre-cast segments can be formed as the tunnel advances. The construction of a portal at the north-east end of the tunnel adjacent to the existing A82 Trunk Road is likely to be problematic given the potential issues of congestion associated with the presence of the road, the West Highland Line railway and the shoreline of Loch Lomond. Access may be preferred from the SW end of the tunnel, via Loch Fyne, and early completion of the road up to the tunnel portal at Glen Fyne.</p> <p><u>Other Constructability Considerations – Road and Small Structures</u></p> <p>Construction of the new surface road in the valley floor should be relatively straightforward with a fairly broad and flat area available in the valley floor to provide working areas. The new road will likely require relatively substantial embankments which should be able to utilise the arisings from the tunnelling works, meaning commencement of the road construction would likely follow commencement of the tunnel. The bridges over watercourses should also be relatively simple to construct using standard methods. The multi-span bridges would likely be steel composite construction on reinforced concrete piers/bankseats on piled foundations to rock (alluvial surface deposits assumed) and the single span bridges composite steel or composite concrete Y beam types on reinforced concrete abutments piled to rock. During the bridge construction the works may be susceptible to flooding and dewatering of excavations for the abutments and piers will need to be managed.</p> <p>This option has advantages in that it is offline so traffic management requirements will be minimal, reducing impacts to road users. However, the construction of the tunnel is a significant undertaking which will extend the programme length and has the potential to result in substantial increases in traffic from site vehicles, which could be mitigated by use of Loch Fyne for deliveries for earthworks and prefabricated components (steel or prestressed beam) for the structures.</p>
Environment considerations	Biodiversity, Fauna and Flora	<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 major negative environmental effect. Disturbance to breeding golden eagle, a designated feature, could occur during construction and operation. This could result in a major negative environmental effect.</p>

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		<p>There are 16 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 major 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>Population and Human Health</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 general annoyance 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. 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>

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		<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>Construction within the route corridor and operational structures and discharges may affect the hydromorphology and surface water quality of approximately two Water Framework Directive (WFD) classified river water bodies, one WFD coastal water body and approximately 50-60 minor watercourses.</p> <p>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% Annual Exceedance Probability (200-year) event). Potential for coastal flooding during a medium likelihood event (0.5% Annual Exceedance Probability (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 major negative effects on the water environment, subject to appropriate mitigation.</p>
	Soils	<p>The route corridor would potentially require road structures and ground engineering measures and a major negative environmental effect is assessed. This recognises 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>
	Air Quality	<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>

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		<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 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 major negative effect 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 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>With regard to natural material assets, as set out in the Biodiversity section, felling of woodland, including AWI would likely 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 major negative environmental effect on natural material assets.</p> <p>The following elements would require significant material input and have a major 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.

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		<ul style="list-style-type: none"> Numerous structural crossings of watercourses.
	Cultural Heritage	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 negative effects on these.
	Landscape and Visual Amenity	There is potential for major negative effects on the LLTNP, the special qualities of the Loch Lomond NSA, Ben Lui WLA, the North Argyll APO, 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.
Traffic	Traffic Flows	<p>Given the relatively minor connectivity changes provided by implementing this route corridor, changes in traffic levels are likely to be low, in terms of traffic reduction on the existing A83 Trunk Road through the Rest and Be Thankful. This route corridor is proposed to be constructed through a glen which currently has no route, therefore will introduce traffic to the area. The majority of trips to/from the region are to the south towards Glasgow, rather than to the north on the A82 Trunk Road therefore this route corridor is not an attractive option for the majority of users.</p> <p>Should the A83 Trunk Road at the Rest and Be Thankful be closed to traffic, this route corridor would result in increases in the level of traffic using the A82 Trunk Road, north of Tarbet.</p>
	Accidents	Minor reductions in transport related casualties could, potentially, be realised as a result of reductions in vehicle kilometres associated with fewer landslide induced road closures and the associated long diversion routes for strategic traffic travelling to and from Argyll & Bute. While the A83 Trunk Road at Rest and Be Thankful is operating under normal conditions, this route corridor would see reduced travel distances for those trips to/from the region and the A82 Trunk Road north, and during periods of closure the new route would provide a shorter diversion route for trips to the south. In addition, this option includes improvements to the A82 Trunk Road Tarbet to Inverarnan section, which would result in safety benefits on this section of the trunk road network, which is known to have an accident history.
Operational Considerations		From a Trunk Road operation perspective, the main operational considerations within the route corridor are the risk of flooding and/or landslides, based on the steep topography. The centreline of the route corridor has a maximum

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	<p>elevation of approximately 400m above ordinance datum, with significant peaks to the north and south providing shelter. This means it is likely that snow accumulates within the route corridor during the winter months, with potential winter resilience operational issues.</p> <p>Proposed Glen Fyne Tunnel</p> <ul style="list-style-type: none"> • There is a need for regular inspection and maintenance of such tunnels. A tunnel manager, tunnel safety officer and a tunnel design & safety consultative group (TDSCG) must be set up early in the design process and continue through operation. The location and type of tunnel operations centre would need to be reviewed and investigated further, depending on the final location and length of tunnel provided. • A sufficient power supply will be required to allow operation of the tunnel ventilation system and any other systems, particularly those required in the event of an emergency incident. • The use of the tunnel by vehicles carrying potentially hazardous materials or dangerous goods (such as fuel tankers) is largely dependent on fire safety and ventilation, and may require a tunnel ventilation system that allows for a larger design fire size. Dependent on the evaluation of risks, dangerous goods vehicles may need to be escorted through the tunnel in a convoy. It should be noted that a twin bore dual carriageway tunnel configuration is considered likely to result in fewer road traffic accidents (due to no bi-directional traffic flow), theoretically attracting a lower risk of emergency incidents. • For a twin bore dual carriageway configuration, vehicle cross-overs may need to be provided at intervals if practicable, as per recommendation from the European Directive EUD 2004/54 EC. In addition, lay-bys should be provided at intervals. • The development of any tunnel design should be informed by consultation with emergency services and other relevant stakeholders and guided by European and National Standards to ensure that appropriately robust measures in the event of an emergency incident are put in place.
Financial Considerations	The estimated cost range of a scheme within this route corridor is approximately £1.62Bn - £2.14Bn.
Estimated Time to Completion	It is estimated it would take approximately 12.5 years to achieve a fully operational scheme in this route corridor.
Public Acceptability	Consideration of the feedback received during the public consultation held during September / October 2020 shows that there were more statements of opposition to this route corridor than supportive comments.

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STAG Criteria		Assessment Summary
Criteria		Assessment Summary
Environment		Refer to Implementability Assessment – Environment
Safety		Refer to Implementability Assessment – Accidents
Economy	Transport Economic Efficiency	<p>This route corridor does not provide a significant change in connectivity for areas of Argyll & Bute, when compared to the existing route, under normal operating conditions, and is unlikely to provide any significant benefits associated with journey time savings.</p> <p>A high-level cost-benefit analysis undertaken for the different route corridor options proposed suggests that, assuming normal operation of the existing A83 Trunk Road, the benefit to cost ratio for the proposed route corridor is expected to be very low. Quantification of the economic benefits of the scheme will require further analysis of the cost of closures to the economy.</p>
	Wider Economic Impacts	<p>As a result of the enhanced resilience provided through mitigating landslide induced closures and, subsequently, increased business confidence and associated inward investment, this intervention is has the potential to provide a positive contribution towards wider economic impacts within the wider Argyll & Bute region.</p> <p>While this route corridor address issues with resilience, poor reliability and long journey times come about, not only because of issues with resilience at the Rest And Be Thankful. Even under normal operating conditions i.e. when the A83 Trunk Road is fully open to traffic, journey times for both strategic and local traffic using the A83 Trunk Road can be variable, due to slow moving vehicles and tourist/visitor traffic.</p> <p>The current road network and lack of suitable alternative routes inevitably mean that many areas would remain remote even if resilience issues at the Rest and be Thankful were overcome. This suggests that wider economic impacts, simply from removing the risks of landslides or A83 Trunk Road route closures, at the Rest and Be Thankful, may potentially be modest.</p> <p>It is also worth noting that, while rural depopulation (a significant issue within Argyll & Bute) is linked to wider economic outcomes, indications are that headline economic conditions are not the main driver of this. Transport interventions could likely play a part in arresting population decline, but only if considered alongside an integrated package of economic, cultural and social regeneration</p>

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STAG Criteria		
Criteria		Assessment Summary
		measures. A package of measures of this type, coupled with upgraded access to Kintyre, Bute and Cowal, has the potential to arrest population decline and reinvigorate local communities within Argyll & Bute.
Integration	Transport Integration	<p>An integrated transport system aids accessibility by connecting people to opportunities and goods to markets. This route corridor may provide multi-modal opportunities to enhance transport integration.</p> <p>The intervention provides the opportunity to enhance linkages to walking and cycling routes and core paths. As part of the design process, it will be ensured that NMU facilities provided as part of the intervention address the needs of recreational walkers, cyclists and equestrians, as well as, to a more limited extent in this route corridor, commuters.</p> <p>The intervention will provide enhanced resilience and potential journey time reliability benefits for buses and coaches travelling via the A83 Trunk Road. In the context of providing reliable journey times, the length of improvement in the A83 corridor, compared to the overall corridor length, is small. Therefore, although corridor improvements at the Rest and be Thankful will make the route available more often, it will not necessarily provide a step change in overall journey time reliability. The resilience provided may provide bus and coach operators with an opportunity to review timetables, translating to more efficient operations and, potentially, a change in service frequency and the number of communities served.</p> <p>Landslide induced incidents on the A83 Trunk Road at the Rest & Be Thankful can lead to road closures and diversions. Should the Old Military Road also be closed, the diversionary route for A83 traffic between Tarbet and Inveraray is approximately 25 miles longer in length than if using the A83. Depending on journey origin and destination, the longest diversion length experienced by travellers would be over 60 miles. The improved resilience may contribute towards a reduction in the variability of bus journey times and the likelihood of full closures, leading to service cancelations. This may also</p>

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STAG Criteria	
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	<p>provide a health and welfare benefit to bus drivers, due to the reduction in instances where bus services are force to travel via longer diversion routes.</p> <p>This route corridor is not expected to have any material impact on the perception of a seamless public transport journey, as interchange and ticketing will not be affected to any great extent. However, interchange with bus services travelling on the A83 Trunk Road, due to the reduction in cancelled or delayed services discussed above, may be more reliable.</p> <p>The intervention, through the enhanced resilience provided, will enable more efficient opportunities for freight transport, facilitating more efficient and effective transportation of goods of significant value to the regional and national economies, including high value aquaculture produce and whisky.</p>
Transport and Land Use Integration	<p>The main aspect of appraisal within the transport and land-use integration criteria is identifying and mitigating any conflicts between the intervention and land-use planning policy and environmental designations.</p> <p>If selected as the preferred route corridor, a strategic assessment of the impact of the route corridor on the environment would be carried out in the Strategic Environmental Assessment (SEA). More detailed Environmental Impact Assessment would be carried out as part of the DMRB Assessment Process.</p> <p>The route corridor is expected to support enhanced accessibility to and from developments in the wider region, and may support investment decisions in Argyll & Bute, more generally.</p>
Policy Integration	<p>The route corridor contributes to strategic policy objectives set by the Scottish Government and Transport Scotland. A wide range of national and regional level policies from various plans, programmes and strategies have been reviewed, including Argyll and Bute's Local Development Plan, its' Strategic Environmental Assessment and the LLTNP Local Development Plan. The various relevant policies contained within these documents have been taken into account in the TPOs, the</p>

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STAG Criteria	
Criteria	Assessment Summary
	<p>existing corridor conditions and the implementability assessment. No over-riding conflicts have been identified and, in specific instances, the route corridor may contribute towards the delivery of specific policies.</p> <p>The A83 Trunk Road was identified in Transport Scotland's STPR as a route requiring network optimisation through route management and targeted investment. Transport Scotland's emerging STPR2 continues to appraise the need for investment in improved access to Argyll & Bute.</p> <p>It is likely that this route corridor will contribute positively to the NTS2 vision and several of the underpinning priorities and outcomes, including 'takes climate action' and 'helps deliver inclusive economic growth'. Achieving positive outcomes against several of the priorities and outcomes, however, will be dependent on the quality and nature of the infrastructure provided, particularly related with the facilitation and promotion of travel via active modes.</p> <p>This route corridor is likely to contribute positively towards the NPF3 vision, in terms of delivering 'a successful, sustainable place', 'a low carbon place' 'a natural resilient place' and 'a connected place'. NPF3 recognises that Scotland's varied coast and islands have an exceptional, internationally recognised environment and notes the opportunity to secure growth from renewable energy generation as well as other key economic sectors including tourism and food and drink (of key importance to the regional economy). It is recognised that infrastructure investment, including improved transport links are required to bring employment, reverse population decline and stimulate demand for development and services in rural areas.</p> <p>This route corridor is likely to contribute positively towards key objectives as set out within Argyll & Bute's Local Development Plan. An intervention within this route corridor will likely assist in the improvement of:</p> <ul style="list-style-type: none"> - Argyll and Bute's connectivity, transport infrastructure, integration between land use, transportation and associated networks. - Argyll and Bute's main towns and key settlements, as increasingly attractive places where people want to live, work and invest.

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STAG Criteria		
Criteria		Assessment Summary
		<ul style="list-style-type: none"> - the economic and social regeneration of smaller rural communities. - the continued diversification and sustainable growth of Argyll and Bute's economy, with a particular focus on sustainable assets in terms of renewables, tourism, forestry, food and drink, including agriculture, fishing, aquaculture and whisky production. - addressing climate change impacts and reducing the region's carbon footprint. <p>This route corridor is likely to contribute positively towards the strategic principles set out within the LLTNP Local Development Plan. An intervention within this route corridor will contribute to the National Park by aiding the delivery of 'a successful, sustainable place', 'a low carbon place', 'a natural, resilient place' and 'a more connected place'.</p> <p>While the route corridor is likely to largely fit with policies related with transport based emissions, the nature of the construction and engineering activities required to deliver this route corridor are likely to result in significant emissions, on the basis of existing technologies. It is anticipated, however, that efficiencies in construction practices and the materials used, could be identified e.g. sustainably sourced materials, with a lower embodied carbon content. This would aid in ensuring that any emissions associated with construction activities are minimised, as far as practicably possible, making best use of advances in emerging decarbonisation technology.</p> <p>It is expected that the route corridor would be delivered in-line with measures, as set out within the Scottish Government's 'Update to the Climate Change Plan' (2018 – 2032), and associated documents, including the emerging findings from the 'Deep Decarbonisation Pathways for Scottish Industries: Research Report' relating with the decarbonisation of industry, including the construction sector.</p> <p>A further assessment of carbon, and opportunities for carbon reduction in design, would be considered in later stages of the project assessment process.</p>
Accessibility and Social Inclusion	Community Accessibility	It is considered unlikely that this route corridor would have any significant impact on public transport usage, reducing transport poverty or reducing reliance on private cars. This is primarily due to the nature of the route corridor and the areas within which it is located.

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	<p>There exists an opportunity, through the infrastructure provided, to positively impact on the level of active travel undertaken within the route corridor. While there is the potential for local trips to be made via active modes, and for additional trips to be generated resulting from increased use of the infrastructure provided by visitors and tourists, it is unlikely, however, that the future level of active travel trips within the corridor would be significant.</p> <p>This route corridor provides a potential opportunity for the provision of enhanced parking facilities, improving access to the scenic area within which the route corridor sits. This could provide enhanced access to the natural environment for those wishing to park and proceed via active modes.</p> <p>Potential enhancements in resilience provided as a result of mitigating landslide induced closures could aid community accessibility, through better, more reliable access to services, both locally and further afield.</p>
Comparative Accessibility	<p>Due to the rural nature of the Argyll & Bute region, the distances between key towns and a lack of suitable public transport services (in some areas) car ownership levels are greater than the national average. Due to the current high dependency for travel by car, the scale of accessibility benefits that would be delivered to this main user group through delivery of an intervention within this route corridor include more reliable journeys to employment opportunities, recreation, education and health services located both within and outwith the region.</p> <p>Visitors and leisure users would also likely benefit from NMU infrastructure provided, linking to core paths, existing cycle networks, outdoor activities and viewpoints. The design of such infrastructure should ensure that local communities benefit fully from such facilities and are not adversely impacted by them.</p> <p>Freight users may see health and wellbeing benefits from the enhanced resilience provided by this route corridor, with fewer closures resulting in the need for lengthy diversion routes, which can add a</p>

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STAG Criteria	
Criteria	Assessment Summary
	<p>significant duration to journeys, contributing towards driver fatigue and stress. Given the rural nature of the region, journeys made using the A83 Trunk Road, may already be several hours in length.</p> <p>Positive impacts can be expected, in terms of mitigating impacts on socially excluded groups - Argyll & Bute has a higher proportion of older residents than the national average. Enhanced resilience may provide more reliable access to key services, including healthcare.</p> <p>This route corridor could contribute to reducing economic and geographic deprivation for currently socially disadvantaged groups (Argyll & Bute has several areas within the 10% most deprived communities in Scotland) through the improvement of accessibility and the enhancement of business confidence driving an associated increase in inward investment and jobs.</p>

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Assessment Summary

Transport Planning Objectives		Assessment						
Objective		Major Negative	Moderate Negative	Minor Negative	Neutral	Minor Positive	Moderate Positive	Major Positive
TPO1	Resilience – reduce the impact of disruption for travel to, from and between key towns within Argyll & Bute, and for communities accessed via the strategic road network.						✓	
TPO2	Safety – positively contribute towards the Scottish Government’s Vision Zero road safety target by reducing accidents on the road network and their severity.					✓		
TPO3	Economy – reduce geographic and economic inequalities within Argyll & Bute through improved connectivity and resilience.					✓		
TPO4	Sustainable travel – encourage sustainable travel to, from and within Argyll & Bute through facilitating bus, active travel and sustainable travel choices.				✓			
TPO5	Environment – Protect the environment, including the benefits local communities and visitors obtain from the natural environment, by enhancing natural capital assets and ecosystem service provision through delivery of sustainable transport infrastructure.	✓						

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Implementability		RAG Rating		
		RED	AMBER	GREEN
Engineering	Topography and Alignment Considerations			GREEN
	Geology / Geomorphology Considerations	RED		
	Structures Considerations	RED		
	Constructability Considerations	RED		
Environment	Biodiversity, Fauna and Flora	RED		
	Population and Human Health		AMBER	
	Water Environment	RED		
	Soils	RED		
	Air Quality		AMBER	
	Climatic Factors	RED		
	Material Assets		AMBER	
	Cultural Heritage		AMBER	
	Landscape and Visual Amenity	RED		
	Traffic	Traffic Flows	RED	
Accidents				GREEN
Operational Considerations		RED		
Financial Considerations		RED		

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STAG Criteria		Assessment						
Criteria		Major Negative	Moderate Negative	Minor Negative	Neutral	Minor Positive	Moderate Positive	Major Positive
Environment		Refer to Implementability Assessment – Environment						
Safety		Refer to Implementability Assessment – Accidents						
Economy	Transport Economic Efficiency	✓						
	Wider Economic Impacts					✓		
Integration	Transport Integration				✓			
	Transport and Land Use Integration				✓			
	Policy Integration				✓			
Accessibility and Social Inclusion	Community Accessibility					✓		
	Comparative Accessibility					✓		