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A96 Corridor Review

Strategic Business Case – Transport Appraisal Report (Draft) Appendix C: Preliminary Appraisal Summary Tables

2024

Appendix C. Preliminary Appraisal Summary Tables

Contents

1. Preliminary Appraisal Summary

1.1 Option Description

Active Communities

This option would deliver networks of high quality active travel routes and placemaking improvements within key communities along the A96 Trunk Road corridor. Improving local places and active travel facilities within communities is not dependent on additional trunk road capacity on the A96 or the addition of bypasses. This option would seek to improve the local environment and economy of communities along the A96 corridor and thereby reduce the need to travel unsustainably.

Where bypasses are proposed in certain locations as a result of the A96 corridor review, resulting in reduction of through traffic within communities, then the active travel improvements within this option could be delivered as part of the 'detrunking' work. Creating 'Active Communities' within settlements along the A96 corridor, where road space is prioritised for the movement of people rather than motorised traffic, would 'lock in' the benefits of any proposed bypasses.

This option draws from the '20-minute neighbourhood' concept (10 minutes there, 10 minutes back) and is built around an approximate radius of 800m from the centre of each settlement. Greater space for walking, wheeling and cycling within each settlement would be intended to better connect local centres with nearby residential areas, amenities and public transport nodes. The interventions would aim to create safer routes to school and encourage more inclusive environments for people walking, wheeling, cycling, and spending time in their local areas. Active Communities interventions would integrate with, and build upon, numerous town centre and travel masterplans throughout the A96 corridor, including but not limited to, the Nairn Community Town Centre Plan[i], Elgin City Centre Masterplan[ii], Moray Town Centre Improvement Plans for Forres[iii] and Keith[iv] and the Integrated Travel Town (ITT) masterplans already produced for Huntly and Inverurie[v].

Interventions would be determined by the needs of each key community along the A96 corridor but could include:

- more equitable balance between transport modes
- reallocation of road space to better provide for walking, wheeling and cycling
- improved surfacing and lighting of foot and cycle ways
- improved cycle parking
- removal and/or rationalisation of on-street parking
- measures to reduce traffic volumes and/or speeds
- improved road crossing points
- urban realm improvements

- links to the 'Active Connections' between settlements along the A96 corridor.

1.2 Relevance

Relevant to all active travel users in the corridor

Better active travel provision would encourage more people to engage in active travel, creating more inclusive and equal communities whilst also improving health outcomes by increasing levels of physical activity. There would be particular opportunities for people vulnerable to social exclusion such as disabled, young and older people, and those without access to a car. Providing fair access to cycling, including adaptive cycles and e-cycles, is aligned with the Cycling Framework for Active Travel[vi]. Active Communities is also directly relevant to the Active Travel Framework[vii] and the overriding 2030 vision for walking or cycling to be the most popular choice for shorter everyday journeys in Scotland's communities.

Encouraging increases in active travel use is relevant in providing attractive and flexible alternatives to private vehicle use, especially for shorter distance trips within communities. If the option is successful in engendering a modal shift, this would help to reduce the total amount of greenhouse gas emissions in support of the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[viii], contributing on the path towards net zero emissions.

This option also supports Scotland's National Strategy for Economic Transformation[ix], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions. The strategy is clear on the ambition to make Scotland fairer, wealthier and greener, and a shift towards active travel use within communities can assist in achieving these aims.

This option is relevant to key communities along the A96, although the specific measures undertaken in each would be dependent on community needs and aspirations.

1.3 Estimated Cost

£51m - £100m Capital

Determining the estimated cost of this option is dependent on a number of factors including the location, scale and complexity of providing active travel routes and placemaking improvements within communities. Further analysis and assessment would be required throughout the various stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

As a result, the STAG appraisal does not define the user types, width, surfacing and other aspects such as how active travel routes could be provided within communities. The different types of interventions outlined in Section 1.1 are wide ranging and this has a

significant impact on the potential capital cost of delivering such facilities within communities.

Capital costs for the implementation of Active Communities would depend on local constraints and the scale and number of interventions proposed but would typically be anticipated to be in the range of £0.5m to £30m per community/location. The total estimated cost to introduce Active Communities across the A96 corridor is expected to fall within the range of £51m - £100m.

Dependent on the nature and location of interventions and facilities, the responsible authority and asset owner on completion is most likely to be the appropriate local authority, with Transport Scotland responsible for those located on the trunk road. It is anticipated that the asset owner would take on the responsibility for operation and maintenance of facilities, which would have ongoing costs associated with it, in addition to construction costs.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'reducing the need to travel unsustainably', through delivering high quality active travel routes and placemaking improvements within settlements along the A96 corridor. This option would also sit across both the 'walking and wheeling' and 'cycling' tiers of the Sustainable Travel Hierarchy.

This option would also contribute to all 12 of the NTS2 outcomes, as follows:

- Provide fair access to services we need
- Be easy to use for all
- Be affordable for all
- Help deliver our net zero target
- Adapt to the effects of climate change
- Promote greener, cleaner choices
- Get people and goods to where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Be safe and secure for all
- Enable us to make healthy travel choices
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	+++	+	+++	+	+++	+	+	++	+	+++	+++	+++	+++
'Without Policy' Scenario	+++	+	+++	+	+++	+	+	++	+	+++	+++	+++	+++

This option makes a positive contribution to all the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria in both the 'With Policy' and 'Without Policy' scenarios. Active Communities would aim to increase the mode share of walking, wheeling and cycling in settlements through provision of active travel infrastructure and placemaking improvements, which would have a major positive impact on TPOs for contributing to Scottish Government's net zero targets (TPO1), enhancing communities as places to support health, wellbeing and the environment (TP03) and providing a transport system that is safe, reliable and resilient (TP05). Active Communities can also assist in improving accessibility to public transport (TPO2) and contributing to sustainable inclusive growth (TP04), with minor positive impacts anticipated.

The option would also have a major positive contribution for the STAG Equality and Accessibility criterion due to the benefits expected for all people groups within communities as a result of the enhanced provision of active travel infrastructure for access to key locations. A moderate positive contribution to the Health, Safety and Wellbeing criterion is also anticipated. Active Communities also scores positively against the SIA criteria, with major positive impacts in relation to Equality, Child Rights and Wellbeing and Fairer Scotland Duty.

Active Communities are considered to be feasible and deliverable in key communities along the A96, although costs of implementation could be high depending on the location and scale of the intervention. Detailed local engagement and design work would be required to identify the most appropriate locations and types of intervention. General public support is anticipated for active travel interventions that improve safety and provide traffic-free routes, though there may be some opposition from those who drive if road space is reallocated for active travel.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[x].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accidents (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres and Keith. The rate of Killed or Seriously Injured (KSI) accidents is also significantly higher in these two towns than the national average, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average these being between Hardmuir and Forres, between Fochabers and Keith, between Keith and East of Huntly and between Kintore and Craibstone.

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel for some commutes.

Travel Choice and Behaviour (Problem): The number of homes without access to a private vehicle in the transport appraisal study area is consistently lower than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of cars in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

Travel Choice and Behaviour (Opportunity): Travel choices throughout the transport appraisal study area would be increased through better integration of modes and the provision of more demand-responsive options. Physical accessibility at rail stations could also be improved to reduce the reliance on cars. Active travel will continue to play a key role in the transition to sustainable and zero carbon travel by reducing the reliance on private vehicles. In smaller, more remote areas and towns there is the potential to increase active travel with connections by safe walking and cycling infrastructure.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Active Connections
- Bus Priority Measures and Park and Ride
- Improved Public Transport Passenger Interchange Facilities
- Elgin Bypass

- Forres Bypass
- Inverurie Bypass
- Keith Bypass
- Targeted Road Safety Improvements.

Other areas of Scottish Government activity

- Active Travel Framework (2020)[xi]
- Climate Change Plan 2018-2032 Update[xii]
- Cycling Framework for Active Travel - A plan for everyday cycling (2023)[xiii]
- National Planning Framework 4 (NPF4)[xiv]
- National Transport Strategy 2 (NTS2)[xv]
- National Walking Strategy (2014)[xvi]
- Strategic Transport Projects Review 2[xvii]
- The Place Principle[xviii]
- Town Centre Action Plan (2013)[xix].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Modal shift of short distance trips from car to more sustainable modes of transport (including walking, wheeling and cycling) reduces levels of air pollution and greenhouse gases[xx]. Data presented in the A96 Corridor Review Case for Change[xxi] suggests that walking accounts for over 50% of journeys under 2km for the local authorities within the A96 corridor. Therefore, an opportunity exists to increase this by creating safe active travel infrastructure which enables greater participation. Research carried out in Waltham Forest showed that interventions to reallocate road space from general traffic resulted in 56% reduction in motor traffic on average within one mini-Holland scheme area[xxii]. More recent research on low traffic neighbourhoods shows that reducing the amount of motor traffic locally leads to an increase in active travel without pushing traffic onto neighbouring streets[xxiii]. In Scotland, an evaluation of 30 active travel projects funded by Transport Scotland demonstrated an estimated average rise in active travel trips of 54% after initial delivery[xxiv].

Evidence also suggests that the interventions put forward in this option would positively encourage people to switch to a more active mode of travel for everyday journeys. Research found that, a year after implementation of mini-Holland schemes, it was 24% more likely that respondents had used a bike in the past week and people living near to where schemes had been implemented had increased their past-week time spent walking and cycling by an extra 41 minutes; 32 of the extra 41 minutes were walking, and nine cycling[xxv].

This option is expected to have a **major positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option would increase accessibility to public services by improving facilities for walking and cycling in the local network. Enhancing active travel provision within key communities would connect residential and employment areas to public transport nodes (for example rail stations and bus stops, as relevant to each key community) and increase travel choices.

This option would enhance inclusiveness by improving connections to local shops and facilities without use of private vehicles, and so promoting modes that are accessible to all. This would reduce transport poverty for disadvantaged and vulnerable users and improve mobility and inclusion. Local active travel interventions would also enable a greater number of people to access public transport nodes safer and more convenient. It would be anticipated that this option would bring about an increase in multi-modal journeys within, and between, key communities adjacent to the A96.

Road danger is the biggest single barrier to active travel use[xxvi], with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK[xxvii] as well as a significant barrier to users of adapted cycles. Women are under-represented in cycling[xxviii]. Improved local infrastructure can help overcome barriers for members of these and other disadvantaged groups.

Whilst this option would bring benefits in terms of improving access to transport in rural areas, the focus of this option on key urban/semi-urban communities along the A96 corridor may limit the positive impact on more remote rural areas.

Overall, as this option does not directly impact public transport, it is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Active travel is beneficial to physical health and mental wellbeing. Keeping physically active can reduce the risk of heart and circulatory disease by as much as 35% and risk of early death by as much as 30%, and has also been shown to greatly reduce the chances of asthma, diabetes, cancer and high blood pressure[xxix]. Adults who cycle regularly can have the fitness levels of someone up to 10 years younger[xxx]. People living in walkable, mixed-

use neighbourhoods have higher levels of social capital which positively supports wellbeing[xxxi]. Improved public realm allows for people to gather and socialise. Public Health Scotland[xxxii] have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life.

By creating more pleasant, accessible, safer communities along the A96 corridor, this option would help realise these outcomes, with particular benefits likely to be realised by some of those people often disadvantaged at present, including children and disabled people.

This option could directly improve access to local health and wellbeing infrastructure within key communities, as a result of improved active travel provision. It could indirectly improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services.

This option is expected to have a **major positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Reallocating road space and prioritising active modes can have economic benefits and provide better spaces for people to live, work and shop in. Typical increases in footfall in retail areas of up to 20-30% result[xxxiii]. Well-designed active travel infrastructure can also facilitate branding initiatives by raising the profile of towns and cities among consumers and businesses[xxxiv]. Regeneration of the public realm can boost commercial trade, increase local retail sales, raise rental rates and property values and provide opportunity for cost-saving cycle freight[xxxv].

In Scotland, an evaluation of 30 active travel projects funded by Transport Scotland demonstrated an estimated average rise in active travel trips of 54% after initial delivery[xxxvi]. As such, the active travel improvements within communities along the A96 could improve the sustainable access to labour markets by encouraging employees to travel by active modes wherever possible and particularly for shorter journeys.

This option is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' Scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Improved pedestrian and cycling infrastructure together with other interventions such as speed reduction can significantly reduce road casualties. In 2018, 86% of cycling casualties and 95% of pedestrian casualties in Scotland occurred on built-up roads, with a speed limit of 40mph or less[xxxvii]. Accident survival rates are between about three[xxxviii] and five[xxxix] times higher when a pedestrian is hit by a car driving at 20mph, compared to 30mph. The introduction of a Low Traffic Neighbourhood (LTN) in a London suburb led to a three-fold decline in the number of injuries in the area and estimated that walking, cycling and driving all became approximately three to four times safer per trip[xl].

Public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime[xli]. More people walking, wheeling and cycling in and around key communities would increase natural surveillance and so improve personal security. Findings from Waltham Forest, London, where an LTN has been implemented, shows that street crime reduced by 18% in the three years following implementation[xlii].

This option could also improve the resilience and reliability of the transport network through modal shift from car to active travel journeys, resulting in reductions in road congestion on urban sections of the corridor such as Elgin.

This option is expected to have a **major positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option may result in positive impacts on communities and deliver health and wellbeing benefits (e.g. improved physical heath), as the option seeks to promote and facilitate a modal shift to sustainable and active travel with a focus on improved safety, connectivity and accessibility for all users. The proposal aims to reduce private car use which would have potential positive impacts in terms of reducing noise, air pollutants and greenhouse gases. This would help improve the local environment within communities through which the A96 currently passes where this option is implemented. Creating additional space for active travel would be of benefit to communities, by reducing severance caused by the trunk road network, allowing areas of the settlement to reconnect, and increasing the sense of placemaking. This would be in accordance with TPOs 1 and 3. This would also allow greater connectivity to local services within the community.

However, there is the potential for minor to moderate negative environmental impacts during construction and operation, on natural resources, the water environment, biodiversity, landscape and visual amenity, agriculture and soils, and cultural heritage for example, depending on how these active travel routes and placemaking improvements are

constructed and their precise location. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Further environmental assessment would be undertaken if such options are progressed through the design and development process, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, this option is expected to have a **minor positive** impact on addressing this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the specific effects of the actual interventions chosen.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	+

In the short term, greenhouse gas emissions would be generated due to construction activities undertaken to deliver active travel routes and placemaking improvements, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

However, in the longer term, this option would help facilitate a modal shift from car to active modes for short journeys in key communities along the A96. A reduction in car kilometres travelled would thus lead to a modest reduction in greenhouse gas emissions.

It is estimated that if an average person were to switch one trip per day from car driving to cycling for 200 days per year, they would reduce their carbon footprint by approximately 0.5 tonnes over one year, representing a significant share of average per capita CO_2 emissions[xliii], which equates to approximately 9% of per capita CO_2 emissions (based on 2019 estimates of emissions that place CO_2 per capita emissions for Scotland at approximately 5.7 tonnes[xliv]).

The option has the potential to be vulnerable to the effects of climate change impacting the A96 Trunk Road, e.g. material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. However, new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location.

This option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
++	++

Improved pedestrian and cycling infrastructure together with other interventions such as speed reduction can significantly reduce road casualties. In 2018, 86% of cycling casualties and 95% of pedestrian casualties in Scotland occurred on built-up roads, with a speed limit of 40mph or less[xlv]. Accident survival rates are between about three[xlvi] and five[xlvii] times higher when a pedestrian is hit by a car driving at 20mph, compared to 30mph. The introduction of a Low Traffic Neighbourhood (LTN) in a London suburb led to a three-fold decline in the number of injuries in the area and estimated that walking, cycling and driving all became approximately three to four times safer per trip[xlviii].

More people walking, wheeling and cycling in and around key communities along the A96 corridor would increase natural surveillance and so improve personal security. Public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime[xlix]. Findings from Waltham Forest, London, where an LTN has been implemented, shows that street crime reduced by 18% in the three years following implementation[l].

Walking, wheeling and cycling locally allows more people to feel connected with their local community and would improve public health. Improved public realm allows for people to gather and socialise. Public Health Scotland[xxxii] has linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life.

This option could directly improve access to local health and wellbeing infrastructure within key communities, as a result of improved active travel provision. It could indirectly improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services.

Some negative impacts on visual amenity where new infrastructure is constructed could be anticipated. Further assessment will be undertaken to identify any impacts as part of the design development process.

Overall, this option is expected to have a **moderate positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

This option would also result in wider economic impacts at a local level for both transport users and non-users, with the potential to result in positive changes to economic welfare. There is published evidence of benefits of improvements to public realm, walking and cycling to support to local and regional economies.

Well-planned regeneration of the public realm and accompanying enabling of active travel, using measures of the types proposed in this option, can typically boost local retail trade by up to 20-30%[li].

Residential property values rise 1% if motor vehicle traffic is reduced by 50%[lii].

Cycle parking can deliver five times the retail spend per square metre than the same area of car parking[liii]. Over a month, people who walk to local high streets spend up to 40% more than people who drive to the high street[liv].

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of this option are currently unknown. No significant impact on TEE is anticipated.

This option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios due to the potential benefit to local businesses improvement to the public realm and a reduction in vehicles could bring.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Public realm improvements which support walking and wheeling have a role to play in increasing inclusion and reducing inequality. Between the local authority areas of Aberdeenshire, Moray and Highland, around 15% did not have access to a car in 2019[lv].

This option would improve comparative access and transport inclusivity for commonly disadvantaged groups within key communities along the A96 corridor.

There are many social and community benefits associated with improving conditions for local active travel particularly to young people, older people and people with disabilities, all of whom are more likely to be restricted from accessing services and facilities by traffic dominated environments and other local barriers.

This option would improve active travel network coverage within the Active Communities. Whilst this option would improve active travel access to public transport routes and facilities, it is unlikely to impact on public transport network coverage.

This option would provide low cost travel options (walking, wheeling, cycling) within the Active Communities, but would not impact on the affordability of public transport.

Reference should also be made to the SIAs in section 3.5.

Overall, this option is expected to have a **major positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios as a result of the improvements to comparative access for commonly disadvantaged groups, social benefits created, and the increase in active travel network coverage to access key local destinations.

3.4 Deliverability

1. Feasibility

Dependent on the nature and location of interventions and facilities, the responsible overseeing authority and asset owner on completion could be Transport Scotland or the local authority. This is likely to be a function of the location(s) and types of interventions.

Although responsibility for construction, operation and maintenance is likely to be divided between Transport Scotland and local authorities, initial assessment for this option may be led by Transport Scotland, with input from local authorities and Regional Transport Partnerships.

Active Communities are readily feasible and would comprise more extensive roll-out of interventions for which there is already significant experience of implementation in Scotland.

A detailed assessment would be required to fully establish the details of the most appropriate routes and infrastructure for the development of Active Communities. Depending on the location of any new infrastructure or routes, local authority support may be required.

The engineering constraints would vary significantly from location to location along the A96 corridor within communities. This would include various existing residential and business properties, roads, rivers and railways that may intersect the locations. Any location would also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints which have been discussed in previous sections.

In some instances, infrastructure improvements may require reallocation of road space away from other modes. Where this is the case, design development would require balancing the sometimes competing aspirations for improved active travel routes with other sustainable transport modes e.g. public transport.

It is anticipated that the asset owner would take on the operation and maintenance of facilities post-construction.

Although there are some challenges as outlined above, the work undertaken to date indicates that this option is feasible.

2. Affordability

Delivery of this option would likely be phased over a number of years and would require further assessment to determine the most appropriate approach at each location. The cost in different locations would vary depending on the type and scale of active travel infrastructure introduced and locational constraints that may impact the complexity of construction. Therefore a more detailed review of each community would be required to determine the likely cost impact. Costs would be also dependent on a number of other factors, such as the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering and environmental constraints.

In addition to construction costs, and dependent on the location and nature of the active travel intervention, it is likely that Transport Scotland would be the asset owner for any infrastructure adjacent to the trunk road and the local authority for routes and infrastructure remote from the trunk road. It is anticipated that the asset owner would take on the operation and maintenance of facilities, which would have ongoing costs requiring revenue funding.

3. Public Acceptability

Data from a survey conducted in 2020 shows that the public are in favour of measures to encourage walking and cycling with six and a half people supporting changes to their local streets for every one person against[lvi]. In addition, from surveys in 12 UK cities, 55% of residents think too many people drive in their neighbourhood, 68% support building more cycling tracks even when this would mean less room for other road traffic, and 58% of residents would like to see more government spending on cycling[lvii].

However, whilst Active Communities interventions are typically popular post-implementation, some pre- and post-implementation challenges are expected from people who feel they would be adversely affected, in particular those that drive through affected areas or are directly impacted by construction works.

Public consultation undertaken as part of this review indicated general support for the active communities. There are concerns expressed regarding safety, lack of travel infrastructure, poor active travel links and few provisions for active travel. A total of 43% of those who responded were 'dissatisfied' or 'very dissatisfied' with the availability of safe walking and wheeling infrastructure. Similarly, approximately half of respondents were either dissatisfied or very dissatisfied with the ability to cycle safely. Active Communities would aim to provide safer routes safer for active travel modes. Provision of safer facilities was the number one reason that respondents suggested would get them to use active modes more, with 33% saying they would walk and wheel more with safer facilities in place, and 40% suggesting they would cycle more. This suggests that there would be general support for the Active Communities interventions.

3.5 Strategic Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[lviii].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

This option provides the opportunity for safer and affordable access to services for residents of key communities along the A96. This includes access to employment, education, health facilities and other transport services, including other active travel routes, which are important to many groups with protected characteristics. Through the reallocation of road space and improved surfaces and crossing points, the infrastructure installed could be designed to incorporate adapted cycles and, as such, address mobility issues experienced by commonly disadvantaged groups, such as women, disabled people and older people. Improved safety measures would also reduce road and personal safety concerns for active travel users, including children.

An uptake in active travel may additionally improve physical health and mental wellbeing outcomes and is also likely to lead to air quality improvements if the uptake is matched by a reduction in private vehicle use and traffic congestion. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children, older people and disabled people.

However, the extent to which groups with protected characteristics would benefit from this option would depend on the extent to which all listed interventions can be adopted, as it is noted that this would depend on local circumstances within each key community. In addition, the extent of benefit would depend on the location and routeing of active travel networks and facilities, their proximity to local services and the ability for people to access the network. The effects of reallocation on road space on other road users could also have potential adverse effects on certain groups, such as disabled people who rely on parking spaces close to essential services.

Overall, this option is expected to have a **major positive** impact on addressing this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

This option is likely to lead to significant improvements for children due to:

- a reduction in the perceived danger of road accidents and casualties
- improved air quality if the uptake in active travel is accompanied by a decrease in private vehicle use and traffic congestion
- better and less costly access to education and other services
- the consequential effects of improved access to services for the whole community (such as parent and carer access to employment).

In addition, the habit-forming effect of embedding active travel at a younger age has the potential to have longer term benefits, in terms of moving to a more active population.

However, the extent to which this option would improve outcomes for children would depend on the extent that the interventions listed are adopted (especially in regard to the reallocation of road space and other safety measures), the location of the interventions, and proximity to local services.

This option is expected to have a **major positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Beneficiaries of this option are likely to include more deprived areas within key communities, as this option would have consequential positive effects on improving access to services. As well as benefitting these 'communities of place', this option is likely to additionally improve access to services for 'communities of interest', including those with lower access to private vehicle use (such as women, young people and low-income households) and others who may benefit from less costly travel options. However, the extent to which this option would reduce inequalities of outcome would depend on the extent that the interventions listed are adopted, the location of the interventions, proximity to local services and the ability for those from deprived and disadvantaged communities to access the active travel network.

This option is expected to have a **major positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Active Connections

The A96 Trunk Road between Inverness and Aberdeen passes through several built-up settlements as well as more rural areas. This option focuses on delivering high quality active travel routes for people walking, wheeling and cycling between settlements along the A96 corridor, which if combined with the Active Communities option, could form a largely continuous traffic-free route between Inverness and Aberdeen. To create active travel provision across the full length of the corridor, Active Connections between communities would aim to form traffic-free paths for those walking, wheeling and cycling, which would tie in to active travel infrastructure within communities, in line with the Active Communities option. By connecting communities, this option could also facilitate improved active travel crossings at junctions and safe crossings in rural areas.

In some areas, Active Connections may be further from the main alignment of the A96 Trunk Road in order to reach into and connect key communities such as Nairn, Forres, Elgin, Fochabers, Keith, Huntly and Inverurie.

Examples of such linear and connecting routes in Scotland exist between Oban and Fort William, linking communities along the A828/A82 and forming part of the much longer Caledonia Way, or between Strathyre and Kingshouse on the A84. These routes create connections between settlements for local journeys and in turn form part of the wider National Cycle Network (NCN) which can be used and promoted as a leisure route and recreational resource.

Connecting settlements along the A96 by active travel routes would provide attractive, safe, and convenient choices for many functional and recreational journeys, enabling people to benefit from improved access to key trip attractors in neighbouring settlements, using healthy and non-polluting modes.

This option seeks to address active travel challenges, including providing improved and safer active travel connections for those vulnerable to social exclusion and transport poverty, such as those without access to a car.

The implementation of these routes for people walking, wheeling and cycling between settlements along the corridor has the potential to return significant benefits for community cohesion, environmental protection, physical and social mobility, road safety and employment opportunities.

1.2 Relevance

Relevant to all active travel users in the corridor

Improving and creating active travel connections between settlements is relevant for encouraging modal shift and sustainable trips along the A96 corridor. A modal shift towards walking, wheeling and cycling would help to reduce the total amount of greenhouse gas emissions in support of the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[i], contributing on the path towards net zero emissions.

This option would provide efficient, safer, sustainable travel choices on routes predominantly segregated from traffic, which would be particularly relevant to medium distance functional and recreational inter-urban journeys but would also form a long distance active travel network between Inverness and Aberdeen. With increasing use of e-bikes, which are proven to be successful in enabling longer distance cycling journeys over varying topographies[ii], providing direct active travel routes to facilitate medium and longer distance active travel journeys is of increasing relevance. Providing fair access to cycling, including adaptive cycles and e-cycles, is aligned with the Cycling Framework for Active Travel[iii].

As these connections improve access between neighbouring settlements and key trip attractors, they may be particularly beneficial for connecting more deprived communities with employment and training opportunities. This option therefore supports Scotland's National Strategy for Economic Transformation[iv], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions. The strategy is clear on the ambition to make Scotland fairer, wealthier and greener, and a shift towards active travel for access to employment and training opportunities can assist in achieving these aims.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the location, scale and complexity of providing active travel routes between communities. Further analysis and assessment would be required at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

As a result, the STAG appraisal does not define the user types, width, surfacing, segregation and other aspects such as how routes would be provided between communities. The location(s) and route(s) have also not been defined at this stage, but it assumed that the approximate combined length would not exceed 150km.

Considering the assumed range for the approximate combined length of the active travel routes, the total estimated cost is expected to fall within the range of £101m - £250m.

Dependent on the location and nature of the active travel routes, the responsible authority and asset owner on completion could be Transport Scotland or the appropriate local authority. It is anticipated that the asset owner would take on the responsibility for operation and maintenance of facilities, which would have ongoing costs associated with it, in addition to construction costs.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'reducing the need to travel unsustainably', through delivering high quality active travel routes between settlements along the A96 corridor. This option would also sit across both the 'walking and wheeling' and 'cycling' tiers of the Sustainable Travel Hierarchy.

The option would also contribute to all 12 of the NTS2 outcomes, as follows:

- Provide fair access to services we need
- Be easy to use for all
- Be affordable for all
- Help deliver our net zero target
- Adapt to the effects of climate change
- Promote greener, cleaner choices
- Get people and goods to where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Be safe and secure for all
- Enable us to make healthy travel choices
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	++	+	++	+	++	+	+	++	+	+++	++	++	+
'Without Policy' Scenario	++	+	++	+	++	+	+	++	+	+++	++	++	+

This option makes a positive contribution to all of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria in both the 'With Policy' and 'Without Policy' scenarios. Improving and creating new active travel connections between settlements could encourage modal shift away from cars, reducing carbon emissions and inequalities by improving access to jobs, services and leisure activities between neighbouring settlements. Moderate benefits are anticipated in relation to contributing to Scottish Government's net zero targets (TPO1), enhancing communities as places to support health, wellbeing and the environment (TP03), as well as positively impacting on providing a transport system that is safe, reliable and resilient (TP05). Active Connections can also assist in improving accessibility to public transport (TPO2) and contributing to sustainable inclusive growth (TP04), with minor positive impacts anticipated.

The option particularly contributes to the STAG Equality and Accessibility criterion with an anticipated major positive impact due to the comparative benefits by people group and improvement in active travel network coverage between communities along the A96 corridor. A moderate positive contribution to the Health, Safety and Wellbeing criterion is also anticipated. Active Connections also positively contributes to the SIA criteria around Equality and Child Rights and Wellbeing, as well as Fairer Scotland Duty.

Connecting settlements by active travel routes is considered to be feasible and deliverable, albeit detailed local engagement and design work is required to identify the most appropriate routes. As such, the affordability of the option is uncertain and costs are dependent on a number of factors including the requirement for earthworks and structures, localised ground conditions and the purchase of land. General public support is anticipated for active travel interventions that improve safety and provide traffic free routes.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[v].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accidents (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres and Keith. The rate of Killed or Seriously Injured (KSI) accidents is also significantly higher in these two towns than the national average, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average these being between Hardmuir and Forres, between Fochabers and Keith, between Keith and East of Huntly and between Kintore and Craibstone.

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel.

Travel Choice and Behaviour (Problem): The number of homes without access to a private vehicle in the transport appraisal study area is consistently lower than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of cars in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

Travel Choice and Behaviour (Opportunity): Travel choices throughout the transport appraisal study area would be increased through better integration of modes and the provision of more demand responsive options. Active travel will continue to play a key role in the transition to sustainable and zero carbon travel by reducing the reliance on private vehicles. In smaller, more remote areas and towns there is the potential to increase active travel with connections by safe walking and cycling infrastructure.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Active Communities
- Bus Priority Measures and Park and Ride
- Elgin Bypass
- Forres Bypass
- Inverurie Bypass

- Keith Bypass
- Targeted Road Safety Improvements.

Other areas of Scottish Government activity

- Active Travel Framework (2020)[vi]
- Climate Change Plan 2018-2032 Update[vii]
- Cycling Framework for Active Travel - A plan for everyday cycling (2023)[viii]
- National Planning Framework 4 (NPF4)[ix]
- National Transport Strategy 2 (NTS2)[x]
- National Walking Strategy (2014)[xi]
- Strategic Transport Projects Review 2[xii]
- The Place Principle[xiii]
- Town Centre Action Plan (2013)[xiv].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
++	++

Modal shift from car to more sustainable modes of transport (including walking, wheeling, and cycling) reduces levels of air pollution and greenhouse gases. This option would help encourage modal shift for both functional and recreational journeys. The advent of e-bikes is likely to increase the number of people able to participate in cycling as a practical mode of transport. Research conducted in Norway found that people who purchased an e-bike increased their bicycle use from 2.1 to 9.2km per day on average[xv].

Evidence suggests the usage per km of the National Walking and Cycle Network (including the National Cycle Network, Scotland's Great Trails and Scottish Canals towpaths) in Scotland steadily increased over the period from 2016 to 2019 for both pedestrians and cyclists; 145.1 million trips were made on the National Walking and Cycling Network in Scotland in 2019, up around 12% from an estimated 127.8 million walking and cycling trips in 2016[xvi]. The vast majority of trips taken on the National Walking and Cycle Network were on traffic-free paths, highlighting the value of dedicated, long distance active travel infrastructure in encouraging active journeys[xvi]. Each year the UK NCN benefits the economy by approximately £88m as a direct result of reduced road congestion[xvii], demonstrating the role that a strategic active travel network can play in achieving modal shift from private vehicles and, in turn, generating associated environmental benefits.

This option is therefore expected to have a **moderate positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Not feeling safe on the roads is the biggest single barrier to active travel use[xviii], with children and older people particularly affected. Furthermore, inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK[xix] as well as a significant barrier to users of adapted cycles. Women are also under-represented in cycling[xx]. Improved active travel provision between settlements would help overcome these barriers, though care would be needed in route design to ensure that personal security concerns are minimised.

As the provision of public transport is relatively sparse in rural areas, providing enhanced active travel connections could provide better opportunities to connect with public transport services, which would in turn improve access to healthcare (such as a local GP or nearest hospital), employment and education by sustainable modes. This would include the rural areas along the transport corridor and connections to the larger settlements including Nairn, Forres, Elgin, Fochabers, Keith, Huntly and Inverurie.

Improved active travel connections between settlements are anticipated to facilitate active travel journeys to and from public transport stops and therefore increase public transport accessibility. This option is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
++	++

Active travel is beneficial to both physical health and mental wellbeing; 29% of adult men and 39% of adult women in Scotland do not meet minimum physical activity guidelines[xxi]. Keeping physically active can reduce the risk of heart and circulatory disease by as much as 35%, reduce risk of early death by as much as 30% and has also been shown to greatly reduce the chances of asthma, diabetes, cancer and high blood pressure[xxii]. Adults who cycle regularly can have the fitness levels of someone up to 10 years younger[xxiii].

UK-wide, each traffic-free mile of the NCN is estimated to be used for 77,000 walking trips and 23,000 cycling trips per annum[xxiv], giving confidence that improved inter-urban routes would increase physical activity. Since the implementation of the Pont y Werin Bridge connecting Cardiff and Penarth, which are approximately 6km apart, ,active travel trips between the city and the town have increased by 86%, with 85% of users stating that the scheme had helped them increase their levels of physical activity. The health benefits

arising from the intervention equate to over £4m, contributing to a benefit cost ratio of 3:1[xxv].

The measures may also, by increasing the number of people travelling actively, reduce the number of vehicles within communities, making a positive contribution to places.

This option is therefore expected to have a **moderate positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

By improving residents' access to key trip attractors in neighbouring towns and larger urban areas, for example Forres, Elgin, Fochabers, Keith, Huntly and Inverurie, as well as the cities of Inverness and Aberdeen, this option could enhance social mobility, uptake of employment and training opportunities, and access to goods and services[xxvi]. As noted in Section 2.1, services and employment are concentrated in Inverness, Elgin and Aberdeen and therefore improving connections to these cities and towns from the surrounding areas would contribute towards economic growth. Well-designed active travel infrastructure can improve economic performance of local retail centres, with typical increases in footfall of 20-30%[xxvii], and can facilitate branding initiatives by raising the profile of towns and cities among consumers and businesses[xxviii].

The Linking Communities schemes (an £18m investment to better connect 35 English communities by active modes to economic opportunities), which comprise a network of traffic-free active travel routes, generated a 353% increase in commuter trips, with 30% of users reporting better access to employment[xxix]. The Gellings Greenway scheme, which connects the town of Kirkby to the Knowsley Business Park, Merseyside, via a traffic-free cycling route, increased the number of cycle trips by 126%[xxx]. In Scotland, an evaluation of 30 active travel projects funded by Transport Scotland demonstrated an estimated average rise in active travel trips of 54% after initial delivery[xxxi].

This option is therefore expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
++	++

By providing more segregated and traffic-free routes, which provide active travel provision across junctions and increase opportunities for safe crossings in rural areas, Active Connections would address safety concerns, which are a significant barrier to the uptake of active travel[xxxii]. Evidence suggests that perceived safety is more influential on active travel behaviour than journey time reliability or speed[xxxiii]. As an example, improved perception of safety is considered to be one of the key successes of the Cole Valley Cycle Way, which connects communities around Birmingham via segregated active travel links[xxxiv].

Providing direct active travel routes which offer uninterrupted journeys between settlements, with adequate provision at junctions and with safe crossing points, could significantly improve safety conditions and perceptions for novice cyclists and walkers, especially children and disabled people[xxxv].

This option could also improve the resilience and reliability of the transport network through modal shift from car to active travel journeys, resulting in reductions in road congestion on urban sections of the corridor such as Elgin and Keith.

This option is therefore expected to have a **moderate positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option promotes a shift from the private car to more sustainable modes of travel (walking, wheeling, cycling) and therefore is likely to result in positive impacts in terms of reducing noise and greenhouse gases and air pollutants. The significance of this impact is not totally clear at this stage, as weather conditions and topography along some parts of the corridor may discourage a wholescale modal shift to active travel, even if the facilities were provided.

The option is likely to have a slight negative impact in terms of natural resources as the active travel network would require construction material. The option is, however, likely to have a positive impact in terms of health and wellbeing by promoting activity and active lifestyles and thus improving physical fitness. The option also provides the opportunity to connect populations through alternative transport networks by providing more active travel options and safer routes. This would also help to reduce noise and vibration in both more urban and rural locations.

There is the potential for minor to moderate negative environmental impacts during construction and operation of this option on the water environment, biodiversity, agriculture and soils, cultural heritage and landscape and visual amenity. The extent of these impacts would depend on the routes chosen and the sensitivity of the local

environment. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Further environmental assessment would be undertaken if such options are progressed through the design and development process, in order to identify potentially significant location-specific environmental impacts (and mitigation where appropriate) once the location of interventions is decided. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, this option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the specific impacts of the route chosen.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	+

In the short term, greenhouse gas emissions would be generated due to construction activities undertaken to deliver the high quality active travel network, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

However, in the long term, this option would help facilitate a modal shift from car to active modes, primarily for short and medium length journeys, but also some longer journeys, therefore contributing to a reduction in the number of car kilometres travelled and associated greenhouse gas emissions. This would contribute to the Scottish Government's objective to net zero emissions target.

It is estimated that if an average person were to switch one trip per day from car driving to cycling for 200 days per year, they would reduce their carbon footprint by approximately 0.5 tonnes over one year, representing a significant share of average per capita CO_2 emissions[xxxvi], which equates to approximately 9% of per capita CO_2 emissions (based on 2019 estimates of emissions that place CO_2 per capita emissions for Scotland at approximately 5.7 tonnes[xxxvii]).

This option has the potential to be vulnerable to climate risks during its use, e.g. inaccessible active travel network during extreme weather events, longer vegetation growing seasons leading to increased tree leaf coverage with an increased magnitude and frequency of storm events which could result in tree fall and increased maintenance requirements. However, new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location.

This option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
++	++

By providing more segregated and traffic-free routes, which provide active travel provision across junctions and increase opportunities for safe crossings in rural areas, Active Connections would address safety concerns, which are a significant barrier to the uptake of active travel[xxxviii]. Active Connections could also result in improvements of the personal security of vulnerable sections of the community through high quality design.

The resulting increase in rates of active travel would improve health and could improve access to health and wellbeing infrastructure such as Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, together with regional and local health and wellbeing facilities along the A96 corridor. The implementation of the Pont y Werin Bridge to connect Cardiff and Penarth, which are approximately 6km apart, resulted in health benefits equating to over £4m, contributing to a benefit cost ratio of 3:1[xxxix], demonstrating the potential of Active Connections to improve health.

Some negative impacts on visual amenity where new paths are constructed in rural areas could be anticipated. Further assessment will be undertaken to identify any impacts as part of the design development process.

Overall, this option is expected to have a **moderate positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

This option could also result in some wider economic impacts at a national, regional and local level for both transport users and non-users, with the potential to result in positive changes to economic welfare. The food and drink industry is a key sector nationally, regionally and locally, with Moray being home to world renowned brands such as Walkers and Baxters, as well as forming part of the protected region for distilling Speyside whisky. Tourism is also a key industry within the Inverness to Aberdeen corridor, with significant natural and industrial tourism assets, including the Cairngorms National Park and Royal Deeside. Walking and cycling tourism in Scotland is shown to provide a significant boost to

the economy[xl] and improved active travel connections between towns and key destinations along the A96 corridor can encourage further growth in this area.

By improving access to key trip attractor areas along the A96 corridor, this option could enhance social mobility, uptake of employment and training opportunities, and access to goods and services[xli]. Well-designed active travel infrastructure can improve economic performance of local retail centres, with typical increases in footfall of 20-30%[xlii], and can facilitate branding initiatives by raising the profile of towns and cities among consumers and businesses[xliii].

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of this option are currently unknown. However, no significant impact on TEE is anticipated.

This option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios due to the potential to improve access to labour markets by active travel, the impact of increased social mobility in local communities and the opportunity to increase cycling and walking tourism.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Perceived road danger is the biggest single barrier to active travel use[xliv], with children and older people particularly affected. Furthermore, inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK[xlv] and women are under-represented in cycling[xlvi]. However, research suggests that greater absolute numbers of people cycling contributes to a more inclusive range of people traveling by bicycle[xlvii]. Given the aspiration of this active connections is to expand active travel network coverage and provide safe, segregated/traffic-free provision, this option would improve comparative access and transport inclusivity for commonly disadvantaged groups by providing safe and low cost transport choices along the A96 corridor.

The CityConnect Leeds to Bradford Cycle Superhighway has made it easier and safer to get around on foot and by bike giving residents better access to their local area, increasing travel options and reducing road congestion[xlviii]. The intervention has improved the economic prospects of Bradford's citizens through enabling affordable access to the larger economy of Leeds[xlix].

Whilst this option would improve active travel access to public transport routes and facilities, it would not impact on public transport network coverage.

In some areas, there may be a need for a departure from design standards around gradients of routes due to rural topography. This could also make it difficult for some groups to use.

Reference should also be made to the SIAs in section 3.5.

Overall, this option is expected to have a **major positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios due to the significant increase in active travel network coverage and improvements to the comparative access for commonly disadvantaged groups.

3.4 Deliverability

1. Feasibility

Although responsibility for construction, operation and maintenance is likely to be shared depending on proximity to the trunk road, initial assessment for this option may be led by Transport Scotland, with input from local authorities and Regional Transport Partnerships.

This option can build on the existing NCN, which is located in close proximity to a large proportion of the population of Scotland, and the efforts of many local authorities and partners to improve inter-urban active travel routes. These demonstrate that high quality segregated active travel networks connecting towns are feasible in many locations across Scotland. However, a detailed assessment would require to be undertaken to fully establish the details of the most appropriate routes. Depending on the location of the routes, local authority support may be required.

The engineering constraints would vary significantly from location to location along the A96 corridor, both between, and within communities. This would include various existing residential and business properties, roads, rivers and railways that could potentially intersect a route. Any route would also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints which have been discussed in previous sections. The undulating topography surrounding the A96 in certain locations may also introduce challenges with satisfying vertical geometry design standards and permissible gradients set out in Cycling by Design[l] and Roads for All: Good Practice Guide for Roads[li].

In some instances, the provision of active connections may require reallocation of road space away from other modes. Where this is the case, design development would be required to balance the sometimes competing aspirations for improved active travel routes with other sustainable transport modes e.g. public transport. Although there are some challenges as outlined above, the work undertaken to date indicates that this option is feasible.

2. Affordability

Given the scale of investment required to deliver active connections along the length of the A96 corridor between Inverness and Aberdeen, this option would likely be phased over a number of years. As noted in Section 1.3 above, the cost of different sections of the route would vary depending on locational constraints that may impact the complexity of construction and therefore a more detailed review of each section would be required to

determine the likely cost impact. Costs would be also dependent on a number of other factors, such as the requirement for earthworks and structures, localised ground conditions and the purchase of land.

In addition to construction costs, and dependent on the location and nature of the active travel routes, it is likely that Transport Scotland would be the asset owner for any lengths adjacent to the trunk road and the local authority for routes remote from the trunk road. On completion, the asset owner would also take on the responsibility of operation and maintenance of the routes, which would have ongoing costs associated with it, requiring revenue funding.

3. Public Acceptability

In Scotland, evidence from a YouGov survey[lii] suggests there is strong public support for investing in high quality on and off-road active travel links, with 65% of survey respondents supporting interventions that protect cyclists and pedestrians from cars, including reallocation of road space. There is an appetite for more traffic-free routes: of the 6,000 NCN users surveyed as part of the 2018 Sustrans' review of the NCN, 81% wanted to see "more traffic-free routes where everyone feels safe to get around". Furthermore, 62% wanted to see "a network of routes that connect to towns, cities and the countryside''.

However, whilst experience suggests that active travel network interventions are very popular post-implementation, some pre- and post-implementation challenges are expected from a number of people that feel they would be adversely affected, in particular those that drive through affected areas or are directly impacted by construction works.

Public consultation undertaken as part of this review indicated general support for active travel improvements to increase the safety of walking and cycling, improved connections, linkages and sustainable travel provisions. A total of 7% of respondents considered improving connectivity (e.g. between villages) as a priority. There are concerns expressed regarding safety, lack of travel infrastructure, poor active travel links and few provisions for active travel, with 43% of those who responded to the survey noting that they were 'dissatisfied' or 'very dissatisfied' with the availability of safe walking and wheeling infrastructure.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[liii].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
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This option would potentially provide safer and more affordable access to services. This includes access to employment, education, health facilities and other transport services which are important to many groups with protected characteristics. The infrastructure installed to create the routes would be designed to incorporate adapted cycles and address mobility issues experienced by groups such as disabled people and older people, as well as those who are more likely to lack confidence or are underrepresented, such as women. The targeted safety measures in regard to segregation from traffic would also reduce road safety concerns for active travel users, including children. Moreover, an uptake in active travel may improve health outcomes through physical fitness and would potentially lead to air quality improvements if an uptake in active travel is matched by a reduction in private vehicle use and traffic congestion. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children, older people and disabled people.

However, the extent to which groups with protected characteristics would benefit from this option would depend on the location of routes, proximity to deprived areas and required services and the ability for certain groups to access routes. In some areas, there may be a need for a departure from design standards around gradients of routes due to rural topography. This could also make it difficult for some groups to use.

This option is expected to have a **moderate positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
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Active Connections would have a beneficial impact for children and young people, given that those under 17 are not able to drive and are more likely to depend on active modes of travel and public transport for journeys. Improved active travel connections would enable greater freedom of movement to access education, recreation and services for children and younger people. Segregation from traffic would also reduce road safety concerns as well as improving air quality for active travel users, which is particularly important for children as they are more vulnerable to the adverse health effects of traffic emissions. An overall uptake in active travel may additionally lead to air quality improvements if matched by a reduction in private vehicle use and traffic congestion. In addition, the habit-forming effect of embedding active travel at a younger age has the potential to have longer term benefits in terms of moving to a more active population.

This option is therefore expected to have a **moderate positive** impact on addressing this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Beneficiaries of this option could potentially include deprived communities including areas of Forres, Elgin and Huntly which rank poorly in terms of the Scottish Deprivation Geographic Access Domain. Providing active travel connections between settlements along the A96 corridor would have positive impacts on access to services. As well as benefitting these 'communities of place', the option could potentially improve access to services for 'communities of interest', including those with lower access to private vehicle use (such as women, young people and low-income households) and others who may benefit from less costly travel options. It may also help to decrease household expenditure on transport costs by providing alternatives to car journeys and reducing forced car ownership in rural areas.

This option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Improved Public Transport Passenger Interchange Facilities

The A96 Trunk Road between Inverness and Aberdeen passes through several built-up settlements as well as more rural areas. This option seeks to improve public transport passenger interchange facilities along the A96 corridor and in the adjacent communities, including accessibility and quality enhancements at bus stations and railway stations.

Well designed, high quality passenger facilities and infrastructure can improve wayfinding, provision of information and the quality of the waiting environment, making public transport a more attractive option, thereby encouraging new and unfamiliar users to make their journeys by public transport, as well as increasing the number of journeys made by infrequent users. Enhanced facilities can also improve actual and perceived user safety and security and can promote interchange between and within modes.

Inaccessible infrastructure can exclude people from being able to use public transport. This option seeks to deliver improvements in the accessibility of passenger facilities, reducing barriers to the use of the public transport system, especially for those with reduced mobility.

In response to these issues, improvements could include:

- bus and railway station regeneration and design, including placemaking enhancements and provision of retail facilities
- improved wayfinding to and within interchanges
- enhanced waiting environment, including seating, lighting, climate control, CCTV, information and ticket purchase
- improved accessibility, including lifts and step-free access.

The option may cover the construction of new interchange facilities where a clear need is demonstrated. However, it is expected that improvements to existing facilities (e.g., current train and bus stations along the A96 corridor and in the adjacent communities) would be prioritised in preference to the provision of new facilities.

Measures to improve the quality and accessibility of passenger facilities, especially when taken in conjunction with complementary actions to improve integration of timetables and ticketing, can extend the perceived reach of the public transport network. This can create more sustainable links with employment, healthcare, education and leisure destinations, supporting inclusive growth. Improved facilities can also help to encourage mode shift to public transport, which would further support Scotland's net zero ambition.

This option would build on Scotland's Accessible Travel Framework and Delivery Plan[i] which sets out the national vision and pathway for accessible travel across Scotland.

1.2 Relevance

Relevant to all Public Transport Users in the Corridor

Improved public transport passenger interchange facilities are likely to be relevant across the whole corridor, both in terms of improved quality and in terms of improved accessibility for those with reduced mobility. Around one in 10 disabled people have difficulty getting to a rail, bus or coach station or stop and a similar proportion have difficulty getting on or off these modes[ii].

However, while relevant across the whole corridor, it is most likely that interchange will take place in the towns and more urbanised areas with denser population, so interventions may be targeted at these locations.

The A96 corridor is rural for large sections and long travel distances are necessary for some people, meaning connections between public transport modes can be crucial in accessing key destinations, such as employment centres and hospitals. Therefore, improvements to public transport interchanges would seek to encourage more people to travel by bus and rail instead of by car. This could complement other areas of Scottish Government investment, such as the Bus Partnership Fund[iii], which also seeks to increase bus patronage through bus priority measures. Any mode shift from car to public transport would also support the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[iv], contributing on the path towards net zero emissions.

This option also would also support Scotland's National Strategy for Economic Transformation[v], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions.

1.3 Estimated Cost

<£25m Capital

Determining the estimated cost of this option is dependent on a number of factors including the location, scale, complexity and number of interventions identified. Further analysis and assessment would be required at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

STPR2 recommendation 21 stated that capital costs of between £51m and £100m may be required for improved public transport passenger interchange facilities across the whole of Scotland, with recommendation 19 suggesting a review would be required in order to estimate the likely cost of a fully accessible rail network.

Until this review has been undertaken, it is difficult to fully estimate the potential cost of interventions within the corridor, but based on the national capital cost estimate from STPR2 it has been estimated to have a capital cost estimate for the A96 Corridor Review of less than £25m.

Dependant on the location and nature of the public transport passenger interchange facilities, it is likely that Transport Scotland, appropriate local authorities or private/social enterprises will be the asset owners. It is anticipated that asset owners will take on the operation and maintenance of facilities, which will have ongoing costs associated with it, in addition to any construction costs. It is noted that passenger facilities (dependent on the nature of the interventions) can also generate income streams – for example, through retail facilities.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'making better use of existing capacity', although certain schemes may also require 'targeted infrastructure improvements'. Improvements in quality and accessibility may also deliver mode transfer, therefore additionally fitting with 'reducing the need to travel unsustainably'. This option would also sit within the 'public transport' tier of the Sustainable Travel Hierarchy.

This option would also contribute to seven of the 12 NTS2 outcomes, as follows:

- Provide fair access to services we need
- Be easy to use for all
- Help deliver our net zero target
- Promote greener, cleaner choices
- Get people and goods to where they need to get to
- Use beneficial innovation
- Be safe and secure for all.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	0	+	+	+	+	+	0	+	+	+	+++	+	+
'Without Policy' Scenario	0	+	+	+	+	+	0	+	+	+	+++	+	+

Improved public transport passenger interchange facilities would have a positive contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs) and STAG criteria, and all of the Statutory Impact Assessment (SIA) criteria in both the 'With Policy' and 'Without Policy' scenarios. By increasing the quality of passenger facilities to reduce the perceived disconnect between public transport services, this option would improve the travel experience, especially benefiting those who do not have access to a car and from the most deprived households. As such, the option is anticipated to have minor positive impacts for TPOs for improving accessibility to public transport (TPO2), enhancing communities as places to support health, wellbeing and the environment (TP03) and contributing to sustainable inclusive growth (TP04). Improvements to personal security and reliability of services is also anticipated to have minor positive impacts for providing a transport system that is safe, reliable and resilient (TP05). The option is also anticipated to have minor positive impacts for the Environment, Health, Safety and Wellbeing, Economy and Equality and Accessibility STAG criteria.

The option could reduce barriers to public transport use, especially for those without access to a car, the elderly, those with reduced mobility or impaired vision or hearing and for those who are neurodivergent. Therefore, the option would have a major positive impact in relation to the Equalities Impact Assessment, with minor positive impacts for Child Rights and Wellbeing and the Fairer Scotland Duty assessment.

Delivery of the option is generally considered to be feasible, though local characteristics and varying constraints may create some challenges. Delivery is also considered to be affordable at this stage, with it being assumed that the option would be limited to the provision of targeted improvements at public transport interchange facilities. Public consultation indicated a reasonable level of support for options to improve interchange between different modes.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[vi].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances and public travel choices available for travel between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of bus for commuting to work is significantly lower than the national average, as it is for rail, with only Insch having a mode share above national average. The Scottish Accessibility to Bus Indicator (SABI) demonstrates that across the transport appraisal study area, the accessibility to bus is low outside of the urban areas of Aberdeen and parts of Inverness. Rail station accessibility is also an issue, as raised by stakeholders and the public, with Insch, Nairn and Huntly noted for not being step-free stations, potentially limiting patronage.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Elgin, Inverness or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Competitiveness of Public Transport with Other Modes: Bus journey times are not competitive with train or car for longer trips across the transport appraisal study area. The cost of rail and some longer distance bus trips is higher in relation to car fuel costs (as at March 2022). Public consultation has also revealed that the perception of delay and a lack

of multimodal integration combined with the perceived high cost of fares, particularly for rail, makes travel by public transport unattractive to users.

Travel Choice and Behaviour (Problem): The number of homes without access to a private vehicle in the transport appraisal study area is consistently less than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of car in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% if the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where Personal Injury Accidents and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accidents numbers.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

Travel Choice and Behaviour (Opportunity): Travel choices throughout the transport appraisal study area would be increased through better integration of modes and the

provision of more demand-responsive options. Physical accessibility at rail stations could also be improved to reduce the reliance on cars.

Increasing digital connectivity and technology advancements can help to integrate public transport and provide better information systems to improve the quality of journeys and enhance the travel experience.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Active Communities
- Bus Priority Measures and Park and Ride
- Investment in DRT and MaaS
- Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line
- Improved Parking Provision at Railway Stations
- Development of the A96 Electric Corridor.

Other areas of Scottish Government activity

- Access for All[vii] (a UK Government scheme, with details also provided by Network Rail[viii])
- Accessible Travel Framework – Annual Delivery Plan 2021-22[i]
- Bus Partnership Fund[ix]
- City Region Deals[x]
- Climate Change Plan 2018-32 Update[xi]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[xii]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[xiii]
- Local Rail Development Fund (LRDF)[xiv]
- Low Carbon Travel and Transport Challenge Fund[xv]
- National Planning Framework 4 (NPF4)[xvi]
- National Transport Strategy (NTS2)[xvii]
- Regional Growth Deals[xviii]
- Scotland's National Strategy for Economic Transformation[xix]
- Scottish Cities Alliance Transition to Net Zero Carbon Action Plan[xx]

- Strategic Transport Projects Review 2[xxi].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The level of contribution to the net zero target would depend on the nature and the location of the passenger facilities. However, research by Transport Focus[xxii] indicated that station redevelopment can lead to substantially higher passenger satisfaction, with research also indicating passenger benefits from an enhanced bus waiting environment[xxiii]. This in turn could result in some modal transfer from car, although the overall environmental benefits are likely to be small unless this option is combined with other options.

Overall, this option is likely to have a **neutral** impact against this objective in both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option would deliver improved inclusivity by increasing the accessibility of public transport, particularly for those with reduced mobility, but also for those with impaired vision or hearing and for those who are neurodiverse. Increasing the quality of passenger facilities, would improve the travel experience for those who do not have access to a car,

particularly those from the most deprived households. This option would also improve the travel experience for rural passengers who are often required to change services within settlements when making longer distance journeys. No direct impact on affordability is expected, except where improved accessibility reduces the need for car ownership.

Overall, this option is therefore likely to have a **minor positive** impact against this objective in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Where facilities are associated with improved placemaking and urban realm, these could enhance communities as places. However, most benefits are likely to result from the greater inclusivity of the transport system, with the increased accessibility of facilities improving the health and wellbeing of those with reduced mobility or with impaired vision or hearing and those who are neurodiverse. Improving public transport interchange facilities should also help to improve the environment as it is anticipated to increase patronage and therefore reduce the reliance on private car.

This option is therefore likely to have a **minor positive** impact against this objective in both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improved passenger facilities are likely to increase the attractiveness and accessibility of travelling by public transport, which may increase the perceived level of integration. A requirement to interchange often represents a barrier to public transport use, but well-designed, high quality passenger interchange facilities could help to reduce the perceived disconnect between services, especially where the waiting environment is comfortable. In this case, while no changes would have been made to the services themselves, integration may still be perceived to have improved, because the penalty associated with interchange would have reduced. However, the overall benefits are likely to be small unless this option is combined with other options.

Overall, this option is likely to have a **minor positive** impact against this objective in both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

While improved passenger facilities are unlikely to impact directly on reliability and resilience, if Real Time Passenger Information (RTPI) was provided, this could result in benefits from a reduced perception of unreliability, and this option could also enhance perceived and actual safety and security, through improved lighting and CCTV coverage, passenger assistance and better accessibility for those with reduced mobility or with impaired vision or hearing or those who are neurodiverse.

This option is therefore likely to have a **minor positive** impact against this objective in both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option has the potential to have positive impacts in terms of reducing noise, greenhouse gases and air pollutants as it could encourage a modal shift to more sustainable travel means. It would also have a positive impact on natural resources as it seeks to prioritise the improvement of existing public transport interchanges, rather than creating new facilities which would require additional resources to deliver.

New facilities and enhancements have the potential for negative environmental impacts during construction and operation in relation to water, biodiversity, natural resources, agriculture and soils, cultural heritage, and landscape and visual amenity, for example. This would be dependent on the nature and precise location of the proposals and the sensitivity of the receiving environment. For example, there are designated Sites of Special Scientific Interest and heritage Conservation Areas in the vicinity of Keith and Elgin. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Further environmental assessment would be undertaken if such improvements to bus and rail infrastructure are progressed through the design and development process (once the location and type of new infrastructure and enhancements are identified), in order to identify potentially significant environmental impacts and mitigation where appropriate.

Overall, this option is likely to have a **minor positive** impact on the Environment criterion under both the 'With Policy' and 'Without Policy' scenarios, but this would be subject to the

degree of potential localised negative environmental impacts caused by the infrastructure enhancements and facilities.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	0

In the short term, greenhouse gas emissions would occur due to construction activities undertaken to deliver the improvements to interchange facilities, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

The level of contribution to reducing greenhouse gas emissions in the long term, and hence climate change, would depend on the nature and the location of the passenger facilities. While improved passenger facilities could result in some modal transfer from car, the overall environmental benefits are likely to be small unless this option is combined with other options.

The impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change are expected to be neutral.

Overall, this option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

Where facilities are associated with improved placemaking and urban realm, these could enhance communities as places, improving wellbeing. In addition, the increased accessibility of facilities could improve the wellbeing of those with reduced mobility or with impaired vision or hearing and those who are neurodiverse, also delivering better access to healthcare and wellbeing infrastructure. However, impacts on health are likely to be more limited.

Improved passenger facilities could increase perceived and actual safety and security, through improved lighting and CCTV coverage, passenger assistance and better accessibility for those with reduced mobility or with impaired vision or hearing or those who are neurodiverse. If schemes can reduce car use, there may additionally be a minor positive impact on accidents. The impacts on visual amenity would depend on the location and the nature of the scheme.

Overall, this option is likely to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the locations and standards of the facilities are currently unknown. Congestion is estimated to have cost the UK economy £6.9bn in 2019[xxiv], so action taken to increase the attractiveness of public transport and promote any modal shift away from car to reduce the impact of congestion would be beneficial to the economy. Actions taken to improve the waiting environment, including the removal of physical restrictions and provision of service information, such as live departure times, could also improve accessibility to employment, services and education for those without access to a car and for those with reduced mobility or with impaired vision or hearing or those who are neurodiverse, thereby helping to deliver inclusive growth.

Although there is the potential for positive wider economic impacts in terms of increased employment for those from more deprived households (see also Equality and Accessibility), the impact on specific locations is expected to be limited and the impact on specific markets is expected to be neutral.

Overall, this option is likely to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option would lead to improved inclusivity by increasing the accessibility of public transport, particularly for those with reduced mobility, but also for those with impaired vision or hearing and those who are neurodiverse. By increasing the quality of passenger facilities, this would also improve the travel experience for those who do not have access to a car, particularly those from the most deprived households. Therefore, the option would have a positive impact on comparative access for affected groups and affected locations.

While improved passenger facilities would not change actual public transport network coverage, they could potentially increase the perceived level of integration, thereby improving perceptions of the reach of the public transport network, delivering some benefits in respect to perceived public transport network coverage.

However, no direct impact on affordability is expected, except where improved accessibility reduces the need for car ownership, and the option is unlikely to affect active travel network coverage.

Reference should also be made to the SIAs in Section 3.5.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios due to the comparative access benefits for people groups including those who are most deprived or suffer from reduced mobility.

3.4 Deliverability

1. Feasibility

It is anticipated that the delivery of this option could be led by Transport Scotland, local authorities or private/social enterprises, dependent on the location and nature of the public transport passenger facilities, which will be informed by the outcomes of the review (linked to STPR2 recommendations 19 and 21).

The improved public transport passenger interchange facilities option covers schemes that are proven concepts and are generally readily feasible, subject to local characteristics and the scale of the intervention, although providing full accessibility at certain locations may prove challenging.

The engineering constraints will vary significantly from location to location along the A96 corridor. This will include various existing residential and business properties, roads, rivers and railways that may intersect the locations. Any location will also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that this option is considered feasible.

2. Affordability

Individual schemes may be relatively affordable. There may also be income generated through rental of commercial space to cafés and retail outlets if these are included in the enhancements. While costs for the implementation of a fully accessible public transport network would be substantial, it has been assumed that this option would be limited to the provision of targeted improvements.

It is likely that Transport Scotland, local authorities or private/social enterprises would be the asset owner on completion, and they are therefore anticipated to take on the operation and maintenance, which will have ongoing costs.

3. Public Acceptability

The public acceptability of new or upgraded facilities may depend on their location and scale, with greater acceptability likely in larger populated areas where public transport options are more readily accessible. However, the option should generally be highly acceptable to the public, especially where there is no land-take, with research by Transport Focus[xxii] showing that station redevelopment can lead to substantially higher passenger satisfaction.

Public consultation undertaken as part of this review indicated general support for improved public transport passenger interchange facilities. Of all respondents, 29% suggested improved multimodal hubs and facilities for public transport passenger interchanges. Further suggestions expressed the need for the development of an interchange between active travel and public transport and between different public transport modes. Additionally, 24% of respondents considered general public transport improvements (including transport integration) as a priority. These responses suggest that improved public transport passenger interchange facilities would be supported by the public.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxv].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

All travellers with protected characteristics would benefit from improved passenger facilities, especially those who are more likely to depend on bus and rail services to access key services such as employment, education, healthcare and shopping due to lack of car ownership or access, including children, young people, women, disabled people and older people, people from ethnic minority groups and people at risk of deprivation. However, there would be a specific beneficial impact from fewer barriers to travel for those with reduced mobility, such as older people, disabled people and people travelling with pushchairs and small children. In particular, step-free access at stations would improve

transport choices for people who are currently excluded, and improved facilities may also benefit those with impaired vision or hearing and those who are neurodiverse.

This option is therefore likely to have a **major positive** impact against this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Whilst this option is not targeted directly at children and young people, improved passenger facilities could have a beneficial impact for them, given that those under 17 are not able to drive and improved facilities would increase the attractiveness of public transport. Furthermore,16% of children travel to school by bus[xxvi], and children and young people may be more likely to depend on buses for leisure travel.

In addition, the enhancements would improve actual and perceived personal security for children and young people through the provision of CCTV.

This option is therefore likely to have a **minor positive** impact against this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

There could be a beneficial impact in tackling inequality, with improved public transport interchange facilities supporting reduced social isolation and improved health and wellbeing. Given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[xxvii], the beneficial impacts will be highest for those from the most deprived households.

This option is therefore likely to have a **minor positive** impact against this criterion under both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Bus Priority Measures and Park and Ride

The A96 Trunk Road between Inverness and Aberdeen passes through several built-up settlements as well as more rural areas. This option focuses on implementing schemes targeted at delivering faster and more reliable journey times across the A96 corridor for bus passengers, coupled with the provision of new bus park and ride sites where appropriate. Interventions will differ by location, with consideration given to:

- road space reallocation on both trunk roads and local roads – conversion of existing road space to benefit bus priority such as the introduction of bus lanes
- the introduction of bus lanes – lanes created specifically for use by buses, taxis and cycles, generally located alongside existing carriageways and are primarily used to improve journey times and reliability of bus services
- the introduction of bus gates – short sections of road that are used to restrict access to specific areas (such as high streets for example) to authorised vehicles such as buses but may also include taxis and cycles for example
- traffic signal priority – traffic signals with a bus detection facility used to provide priority for buses over general traffic at signalised junctions
- bus rapid transit[i] – a high quality bus transit system which aims to deliver fast, comfortable, and cost-effective services at high capacities. This is achieved through infrastructure such as segregated busways and bus lanes, off-board fare collection, and fast and frequent operations
- new bus park and ride sites – integration between parking and bus travel to reduce the number of vehicles in congested city/town centres, with complementary bus priority measures introduced to improve bus journey times and reliability.

Bus priority measures are important given the climate emergency and consequent national targets to reduce car kilometres by 20% by 2030[ii] and cut greenhouse gas emissions to achieve net zero by 2045[iii]. As envisaged in the Second National Transport Strategy (NTS2)[iv], it is also anticipated that through a circle of growth, provision of bus priority measures will leverage other bus service improvements, such as increased mileage, with faster bus speeds and punctuality improvements resulting in increased patronage and lower car use, reducing congestion further.

Over and above the emissions benefit, improving bus services contributes to a just transition to net zero by tackling inequalities. This is owing to the demographics of bus users and the reliance of some people on bus, given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[v].

The Scottish Government has already committed to investing in bus priority infrastructure, with the Bus Partnership Fund (BPF) launched in November 2020[vi]. If the current BPF grants prove to be successful, STPR2 has also recommended that funding is either extended or that there is a subsequent round of funding, especially if there is evidence of bus priority investment being leveraged to support other improvements from operators and local transport authorities.

1.2 Relevance

Relevant to all public transport users in the corridor

While bus priority measures and park and ride facilities are likely to be relevant across the whole corridor, they will be most relevant in areas with the highest levels of traffic congestion and a greater number of junctions that delay traffic and consequently existing bus services. However, work undertaken during STPR2 indicated that, measured on the basis of vehicle kilometres per kilometre of road in 2017/18[vii], The Highland, Moray and Aberdeenshire Councils had some of the lowest levels of congestion in Scotland. Therefore, if this option is to be retained, it will be important to identify locations where localised congestion may be delaying buses.

The option also fits with the current strategy of Scottish Government and their BPF[vi] investment commitment of over £500m to deliver bus priority measures on both local and trunk roads. This investment is intended to reduce the impacts of congestion on bus services and counteract a decline in bus patronage, which is noted as being low across the A96 corridor, especially in rural communities with long travel distances to key destinations. Bus journey times are also noted as being uncompetitive with private car in the A96 Corridor Review Case for Change, which bus priority measures could seek to improve.

Quicker and more reliable bus journey times should encourage an increase in bus patronage. If this results in a mode shift away from private vehicles, this option could also support the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[viii], contributing on the path towards net zero emissions. This option also supports Scotland's National Strategy for Economic Transformation[ix], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions.

1.3 Estimated Cost

<£25m Capital

Determining the estimated cost of this option is dependent on a number of factors including the location, scale and complexity of providing bus priority measures and park and ride facilities in the A96 corridor. Further analysis and assessment would be required at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

It has been assumed that a proportion of STPR2 recommendation 14 cost, to implement new Bus Priority schemes across Scotland (£500m and £1,000m), would be allocated to the A96 corridor.

The asset owner would be dependent on the location and nature of the measures, with Transport Scotland likely to be responsible for bus priority measures on trunk roads, appropriate local authorities likely to be responsible for bus priority measures elsewhere and park and ride sites potentially owned by the relevant Regional Transport Partnership or local authority. In addition to construction costs, it is anticipated that the asset owners would take on the operation and maintenance associated with any intervention, which will have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. In addition, increased bus priority and park and ride may also deliver mode shift, therefore additionally 'making better use of existing capacity' and 'reducing the need to travel unsustainably'. This option would also sit within the 'public transport' tier of the Sustainable Travel Hierarchy.

This option would also contribute to seven of the 12 NTS2 outcomes, as follows:

- Provide fair access to services we need
- Help deliver our net zero target
- Adapt to the effects of climate change
- Promote greener, cleaner choices
- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	+	+	+	+	+	+	+	+	+	+	+	+	++
'Without Policy' Scenario	+	+	+	+	+	+	+	+	+	+	+	+	++

Provision of strategic bus priority measures and park and ride facilities could have a positive impact against all of the A96 Corridor Review Transport Planning Objectives

(TPOs), STAG criteria and the Statutory Impact Assessment (SIA) criteria in both the 'With Policy' and 'Without Policy' scenarios.

Delivering faster and more reliable journey times for bus passengers is likely to increase the attractiveness of bus as a mode of transport, resulting in a mode shift from car. Delivering faster and more reliable bus journey times is likely to increase the attractiveness of bus, potentially resulting in a mode shift from car. This is anticipated to result in minor positive impacts for all TPOs and STAG criteria.

The option also positively contributes to the SIA criteria around Equality and Child Rights and Wellbeing, with minor positive impacts expected, and a moderate positive impact in relation to the Fairer Duty Scotland Assessment.

In addition, provision of bus priority measures could reduce bus operating costs, providing the opportunity to leverage other bus service improvements from operators, such as increased mileage.

Delivery of bus priority measures and park and ride facilities is considered feasible, making use of interventions for which there is already significant experience of implementation in Scotland, and should be affordable, with the ability to tailor funding to suit local circumstances. They should also be affordable, with the ability to tailor funding to suit local circumstances. However, a detailed assessment would require to be undertaken to fully establish the details of the most appropriate interventions. Although public consultation indicates a potential level of general support for bus priority measures and park and ride, there may still be challenges associated with public acceptability, especially where provision of bus priority measures requires reallocation of road space or removal of parking.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[x].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of bus for commuting to work is significantly lower than the national average, as it is for rail, with only Insch having a mode share above national average. The Scottish Accessibility to Bus Indicator (SABI) demonstrates that across the transport appraisal study area, the accessibility to bus is low outside of the urban areas of Aberdeen and parts of Inverness.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Elgin, Inverness or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Competitiveness of Public Transport with Other Modes: Bus journey times are not competitive with train or car for longer trips across the transport appraisal study area. The cost of rail and some longer distance bus trips is higher in relation to car fuel costs (as at March 2022). Public consultation has also revealed that the perception of delay and a lack of multimodal integration combined with the perceived high cost of fares, particularly for rail, makes travel by public transport unattractive to users.

Travel Choice and Behaviour (Problem): The number of homes without access to a private vehicle in the transport appraisal study area is consistently less than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of

households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of car in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections of the road where the Personal Injury Accidents and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

Travel Choice and Behaviour (Opportunity): Travel choices throughout the transport appraisal study area would be increased through better integration of modes and the provision of more demand-responsive options.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review options

- Active Communities
- Active Connections
- Improved Public Transport Passenger Interchange Facilities
- Investment in DRT and MaaS
- Elgin Bypass
- Forres Bypass
- Inverurie Bypass
- Keith Bypass
- Development of the A96 Electric Corridor.

Other areas of Scottish Government activity

- Bus Partnership Fund[xi]
- City Region Deals[xii]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[xiii]
- Climate Change Plan 2018-32 Update[xiv]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[xv]
- National Planning Framework 4 (NPF4)[xvi]
- National Transport Strategy 2 (NTS2)[xvii]
- Scotland's National Strategy for Economic Transformation[xviii]
- Scotland's Road Safety Framework to 2030[xix]
- Scottish Cities Alliance Transition to Net Zero Carbon Action Plan[xx]
- Strategic Road Safety Plan (2016)[xxi]
- Strategic Transport Projects Review 2 (STPR2)[xxii].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
+	+

If bus priority measures and park and ride increase the attractiveness of bus as a mode of transport they could result in mode shift from car, with evidence suggesting that implementation of extensive bus lanes can reduce car use by up to 6%[xxiii], which could reduce pollution. Bus priority measures would also reduce pressures on bus operating costs, which could support greater levels of investment in new, lower emission vehicles.

While the location of new park and ride sites would need to be carefully considered to avoid increases in car use as people drive to these sites, a successful park and ride site can reduce the number of cars in a congested urban environment[xxiv], such as Inverness or Aberdeen, as users shift mode to bus for the final leg of their journey.

The option requires further consideration with regards to the specific elements that are likely to be brought forward. This option is therefore expected to have a **minor positive** impact against this objective in both 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Bus priority measures should reduce both journey times and journey time variability, with evidence suggesting that along a 10-kilometre highly congested bus route, fully enforced

bus lanes could reduce bus travel times by seven to nine minutes and traffic signal priorities could reduce bus travel times by two to four minutes[xxv]. This would make bus a more attractive travel option, and would increase accessibility to employment, education, healthcare and leisure activities, especially for passengers from the most deprived households who are less likely to own a car and are more reliant on travel by public transport.

This option could also reduce pressures on operating costs through more efficient journeys, which should in turn lower the likelihood of operators reducing the frequency of services. These efficiencies may be passed onto passengers by operators through increased levels of service, improved quality of services and/or reduced fares; however, given the current commercial viability of services in the corridor the latter is potentially unlikely.

This option is therefore expected to have a **minor positive** impact against this objective in both 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The NTS2 highlighted that the transport system can help to improve the sustainability of placemaking if it can discourage people from owning or using cars[xxvi]. Given that research by Living Streets across 20 communities in Scotland indicated that 83% of passengers value bus reliability as their top consideration[xxvii], bus priority measures could increase the attractiveness of bus as a mode of transport by improving reliability. This could consequently result in a shift from car, enhancing communities as places and reducing pollution. There is also likely to be an increase in active travel as bus travel requires an element of walking to and from stops, which would support health and wellbeing.

Park and ride can also remove cars from congested urban centres, thereby improving air quality in these locations.

This option is therefore expected to have a **minor positive** impact against this objective in both 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The bus priority elements of this option are likely to have a positive impact on this objective through reducing bus journey times, improving sustainable access to labour markets and key centres of employment, education and training, particularly for those from the most

deprived households and those who are less likely to own a car and are therefore more reliant on travel by bus.

While the location of new park and ride sites would need to be carefully considered to avoid increases in car use as people drive to these sites, a successful park and ride site can reduce the number of cars in a congested urban environment[xxiv] such as Inverness or Aberdeen, which is also anticipated to improve access to labour markets by reducing journey times.

This option is therefore expected to have a **minor positive** impact against this objective in both 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Bus priority measures should improve the reliability of the bus network by reducing journey times and reducing journey time variability, with evidence suggesting that along a 10-kilometre highly congested bus route, traffic signal priorities could reduce the variability of travel time by up to 16%[xxviii], although benefits may be more limited across the A96 corridor due to lower levels of congestion[xxix]. Interventions could also increase the likelihood of buses being able to pull in level with the kerb at stops, allowing safer access for those passengers with reduced mobility.

While the location of new park and ride sites would need to be carefully considered to avoid increases in car use as people drive to these sites, a successful park and ride site can reduce the number of cars in a congested urban environment[xxiv] such as Inverness or Aberdeen. This could reduce the number of accidents that occur on the network through reduced car vehicles kilometres travelled.

If the introduction of this option does encourage a mode shift to public transport, there may be a minor positive impact on accidents as a result of reduce car use. There could additionally be benefits in terms of perceived security concerns, such as for vulnerable people travelling alone.

However, this option will have limited impact on resilience, so overall, it is expected to have a **minor positive** impact against this objective in both 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option has the potential to have positive impacts on communities by promoting a modal shift to public transport and reducing the number of vehicles on the corridor.

This option could provide a sustainable alternative for road users to access employment, and services which would have positive impacts in terms of health and wellbeing. The reduction in vehicles on the road could also result in a beneficial impact in terms of reducing noise, greenhouse gases and air pollutants; however, this would depend on the location and choice of the bus priority intervention measures.

The option would also have a positive impact on natural resources as it promotes a more sustainable use and management of the existing transport network. However, the construction of new park and ride facilities or new bus lanes/bus gates, for example, could potentially have a negative impact on natural resources depending on the materials chosen and its source.

There is also the potential for minor to moderate negative environmental impacts during construction and operation on the water environment, biodiversity, landscape and visual amenity, agriculture and soils, and cultural heritage, depending on how the various bus priority intervention measures and park and ride facilities are constructed and their precise location. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Further environmental assessment would be undertaken if such measures are progressed through the design and development process in order to assess the location and scale of specific environmental impacts. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, this option is expected to have a **minor positive** impact against this criterion under both the 'With Policy' and 'Without Policy' scenarios. However, this would be subject to the degree of potential localised negative environmental impacts from any new measures implemented to achieve this option.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	+

In the short-term, greenhouse gas emissions would occur due to construction activities undertaken to deliver the option, including indirect emissions from the manufacture and transportation of materials and emissions from fuel combusted by construction plant and vehicles.

However, evidence suggests that implementation of extensive bus lanes can reduce car use by up to 6%[xxx]. Therefore, in the long term, bus priority measures have the potential to promote a mode shift away from private car use by increasing the attractiveness of buses as a mode of transport. This may contribute to a decrease in associated greenhouse gas

emissions during the operation of the proposed measures, therefore contributing to the Scottish Government's net zero emissions target.

The extent of change in greenhouse gas emissions depends on the location and effectiveness of the new park and ride sites, as certain locations may lead to higher car use generated from people travelling to the site.

Bus priority measures would reduce pressures on operating costs, which could support greater levels of investment in new, lower emission vehicles.

The option has the potential to be vulnerable to the effects of climate change impacting the A96 Trunk Road, for example material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. However, new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location, and the overall impact is expected to be neutral.

Overall, this option is expected to have a **minor positive** impact on this criterion in both 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

The NTS2 highlighted that the transport system can help to improve the sustainability of placemaking if it can discourage people from owning or using cars[xxxi], which may improve wellbeing by enhancing communities. Given that bus travel typically requires walking to and from stops, this will also increase active travel, which should improve health.

There could also be a slight beneficial impact on accidents if overall car use was reduced. If the option resulted in increased bus patronage, there could additionally be benefits in terms of perceived security concerns, such as for vulnerable people travelling alone. Improved journey times could also deliver minor benefits in terms of access to health and wellbeing infrastructure. Further assessment would be undertaken to identify any impacts on visual amenity as part of the design development process.

Overall, this option is expected to have a **minor positive** impact on this criterion in both 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the locations and standard of infrastructure are currently unknown.

There could be a slightly beneficial economic impact if a circle of growth can be unlocked, with priority measures resulting in reduced bus journey times and improved journey time reliability, which may support improved frequency/connectivity, increasing access to education, jobs and services. While it can be difficult to determine causality, an evaluation of Fastlink in Glasgow[xxxii] did identify economic growth in the corridor following scheme completion. Similarly, with Transport for Greater Manchester noting that residential appeal had increased following the completion of the Leigh Guided Busway[xxxiii].

A successful park and ride site could also assist economic growth by reducing the number of cars in congested urban environments as studies have found that congestion impacts the economy through lost productivity, fuel wastage and costs associated with delays in transporting goods[xxxiv].

In addition to the potential for economic growth in the areas where bus priority is implemented, this option could deliver positive wider economic impacts in terms of increased employment for those from more deprived households (see Equality and Accessibility), although the impact on specific markets is expected to be neutral.

Overall, this option is expected to have a **minor positive** impact on this criterion in both 'With Policy' and 'Without Policy' scenarios due to the expected scale of bus priority interventions in particular that could be introduced along the A96 corridor.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

There could be a slightly beneficial impact if a circle of growth can be unlocked, with priority measures resulting in reduced bus journey times that may support operator reinvestment in improved public transport network coverage, providing better comparative access to locations with employment, education, healthcare and leisure activities. This may also have a slightly beneficial impact on affordability, if it allows fares to be reduced; however, given the current commercial viability of services in the corridor the latter is potentially unlikely.

There could be a beneficial impact on improving social inclusion, given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[xxxv]. This would improve comparative access for those affected. However, less than 7% of datazones within the A96 Corridor Review Transport Appraisal Study Area fall within the most deprived quintile so these benefits could be limited by a relative lack of deprivation.

The impact of bus priority measures on the active travel network coverage would depend on the nature and the location of the interventions. Bus priority measures should not be allowed to reduce the active travel network.

Reference should also be made to the SIAs in Section 3.5.

This option is therefore expected to have a **minor positive** impact on this criterion in both 'With Policy' and 'Without Policy' scenarios. The option may potentially improve comparative access by people group and the public transport network coverage though impacts are likely to be limited as a result of the scale of interventions and a relative lack of deprived households across the A96 corridor.

3.4 Deliverability

1. Feasibility

The organisation responsible for delivery will depend on the nature of the measures and their location, with Transport Scotland likely to be responsible for bus priority measures on trunk roads, local authorities likely to be responsible for bus priority measures elsewhere and Regional Transport Partnerships or local authorities likely to be responsible for park and ride sites.

Provision of strategic bus priority measures and park and ride is largely considered feasible, subject to an assessment of specific sites. The targeting of interventions, evaluation of the business case and subsequent construction are in common practice and therefore also raise no concerns regarding feasibility.

The engineering constraints will vary significantly between locations along the A96 corridor, both between, and within communities. This will include various existing residential and business properties, roads, rivers and railways that intersect the route. Any intervention will also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints.

In some instances, the provision of bus priority measures and park and ride facilities may require reallocation of road space away from other modes. Where this is the case, design development would be required to balance the potentially conflicting aspirations for improved bus routes and infrastructure with local access and servicing, active travel connections and placemaking improvements, and aspirations to reduce traffic pollution and congestion.

Despite the constraints and challenges outlined previously, the work undertaken to date indicates that this option is considered feasible.

2. Affordability

Provision of strategic bus priority measures and park and ride generally involves relatively low cost measures when compared against new road construction. The Scottish Government has already committed to long-term investment in bus priority infrastructure.

If this demonstrates value for money, funding could be extended, especially if there is evidence of bus priority investment being leveraged to support improvements from operators and local transport authorities.

The cost of bus priority measures or park and ride sites would vary depending on locational constraints that may impact the complexity of construction and therefore a more detailed review at each location would be required to determine the likely cost impact. Costs would also be dependent on a number of other factors, such as localised ground conditions, land purchase and various other engineering and environmental constraints.

The asset owner would be dependent on the location and nature of the measures, with Transport Scotland likely to be responsible for bus priority measures on trunk roads, local authorities likely to be responsible for bus priority measures elsewhere and park and ride sites potentially owned by a Regional Transport Partnership or a local authority. In addition to construction costs, it is likely that the asset owner would take on the operation and maintenance, which will have ongoing costs associated with it and require revenue funding.

3. Public Acceptability

There are public acceptability risks associated with the provision of strategic bus priority measures, especially where this requires reallocation of road space or removal of parking. This could particularly be the case amongst non-bus users, especially if bus use remains low post-COVID-19, and the acceptability of new park and ride sites may depend on their location and scale. It would therefore be essential for promoters to take these points into account when developing interventions. However, bus priority is likely to be popular with bus users and could improve accessibility to employment, education and other services for those without access to a car.

Public consultation undertaken as part of this review indicated general support for bus priority measures and park and rides. Respondents suggested that bus services could be more reliable, the availability of service information could improve, and more sustainable public transport infrastructure could be implemented along the corridor. Of the respondents, 24% considered improving bus services (including bus connections, cost, and comfort of travel) as a priority, with 38% of respondents expressing concerns with the journey time of bus services in comparison to car or van travel (29%). The respondents also expressed a desire for park and ride facilities, with 30% stating that they are 'very dissatisfied' or 'dissatisfied' with the availability of park and ride facilities.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage,

Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal package is presented in the SEA Draft Environmental Report[xxxvi].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Bus priority measures could provide benefits for groups with protected characteristics who depend on public transport for their journeys and are less likely to have access to a car. This includes children, young people, women, disabled people and older people, people from ethnic minority groups and people at risk of deprivation. More reliable and quicker public transport options can help to improve connectivity to key services such as employment, education, healthcare and shopping for these.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improved bus connectivity could have a beneficial impact on children and young people, given that 16% of children travel to school by bus[xxxvii], and children and young people may be more likely to use buses for leisure travel, given that those under 17 will not be able to drive. Free bus travel for those under 22 will also improve the attractiveness of bus, supporting the option.

This option is therefore expected to have a **minor positive** impact against this criterion, under both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
++	++

There could be a beneficial impact in tackling inequality, with improved public transport connectivity supporting reduced social isolation and improved health and wellbeing. Given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[xxxviii], the beneficial impacts will be highest for those from the most deprived households. The barriers created through not having access to a car are likely to be exacerbated in rural areas where access to public transport is lower, resulting in barriers to accessing employment, education, healthcare and leisure

services. As such, the positive impact of improved public transport for socially excluded groups in these areas is likely to be greater.

Overall, this option is expected to have a **moderate positive** on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Investment in Demand Responsive Transport and Mobility as a Service

The A96 Trunk Road between Inverness and Aberdeen passes through several built-up settlements as well as more rural areas. This option seeks to improve access to travel opportunities in locations with low bus network connectivity or where conventional fixed route services may not be suitable or viable throughout the A96 corridor, which is primarily in more rural areas with a lower population density. In these areas where fixed route services cannot address the problems of rural public transport accessibility and connectivity, flexible services such as Demand Responsive Transport (DRT) or Community Transport (CT), may be able to provide improved public transport links.

This option proposes to develop a corridor-wide pilot for DRT and MaaS as a combined scheme. This would be developed in line with the Second Strategic Transport Projects Review (STPR2) recommendation 20. The pilot could focus on having centralised hubs in settlements that form part of a catchment area serving the wider, more rural local communities. The recent DRT/MaaS pilot in Inverurie also provides an example of how a long-term service within the A96 corridor could operate.

DRT offers flexible services that provide users with shared transport connections to desired locations with a pre-agreed date and time of pick-up and drop-off. This already has a presence within the A96 corridor through schemes such as the Aberdeenshire A2B dial-a-bus and Dial M for Moray. CT are often small buses operated by local community organisations and are intended to be used by people without access to conventional public transport services. Mobility as a Service (MaaS)[i] is a common term covering digital transport service platforms that enable users to access, pay for, and get real time information on a range of public and private transport options. MaaS can also play a role in supporting these services and improving the accessibility of locations that are currently underserved by the public transport network.

Provision of improved network coverage through the use of DRT or CT often involves revenue funding. However, the STPR2 Recommendation 20 proposes that capital funding is used to support pilot schemes and demonstration projects to establish how DRT and CT services could provide improved public transport connectivity and integration without increasing the need for revenue support.

The STPR2 recommended that these pilot schemes should draw on innovative solutions and international best practice, supported by MaaS or smart technology where appropriate. Typically, MaaS includes a digital platform that integrates booking, payment, planning and real time information for relevant modes, and a smartphone application that provides the user interface.

The results from the pilot scheme within the A96 corridor would help to establish whether existing funding resources and vehicle fleet in the area can be better utilised across the public transport network, home to school transport, special educational needs travel and non-emergency patient travel, either on the basis of fixed route services or through flexible routeing.

1.2 Relevance

Relevant to all users in the corridor-wide pilot scheme area with limited access to transport options

Although the A96 corridor bisects several key settlements, the wider local area is largely rural. Evidence from the A96 Corridor Review Case for Change suggests that in these areas along the corridor, traditional fixed route public transport services are infrequent, in some cases expensive, and buses in particular can have longer journey times to key destinations than car. This contributes to public transport being a much less popular mode of travel than car across the corridor.

DRT/MaaS has had a presence in the north-east of Scotland for many years. Aberdeenshire Council is a leader in this field, and introduced its own DRT service in 2004, the A2B dial-a-bus, which over the years has extended to operate across the region. Recognising that the use of bus services has been in decline for several years, even before COVID-19, Aberdeenshire Council recently decided to investigate whether to trial a new type of bus service as operated elsewhere in the UK. Consideration was given to introducing enhanced or digital demand responsive transport (DDRT) services in one or two areas of Aberdeenshire, replacing traditional fixed route timetabled services. A pilot service in Inverurie, Ready2Go, was launched in summer 2021. Following evaluation of the service, the decision was made to extend this by a further year as initial findings suggested that public transport patronage levels increased, with some key 'lessons learned' that could be applicable to other DRT services planned for within the study area[ii]. The development of MaaS has also been supported by Scottish Government[iii] in recent years, committing £2m over three years from 2018 through the MaaS Investment Fund to support five pilots of MaaS in Scotland, indicating that this is a potential area of investment moving forward.

If the corridor-wide pilot scheme is determined to be successful and economically viable, it could subsequently provide a long-term provision of DRT/MaaS. This would further improve public transport connectivity and accessibility, particularly for more rural communities which evidence suggests are often underserved by traditional public transport services, and disadvantaged groups who cannot access public transport services easily.

1.3 Estimated Cost

<£25m Capital

Determining the estimated cost of this option is dependent on a number of factors including the location, scale, complexity and number of interventions identified. Further

analysis and assessment would therefore be required, a level of detail beyond that which is typically undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

STPR2 stated as part of recommendation 20 that funding for the recommended pilot schemes could cost in the range of £5m to £10m and it is presumed a proportion of this capital funding would be allocated for the A96 corridor pilot scheme following the bidding process.

Should the capital funded corridor-wide pilot scheme result in positive outcomes, the development of DRT and MaaS could be retained as a permanent intervention, over the longer term. However, depending on the location and nature of these potential interventions, it is likely any permanent intervention would require revenue funding. Therefore, local authorities or private/social enterprises are anticipated to become the asset owner, assuming responsibility for the operation and maintenance of such interventions. It is noted that passenger facilities (dependent on the nature of the interventions) can also generate income streams, for example through retail facilities.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'reducing the need to travel unsustainably'. This option would also sit within the 'taxis and shared transport' tier of the Sustainable Travel Hierarchy.

This option would also contribute to nine of the NTS2 outcomes, as follows:

- Provide fair access to services we need
- Be reliable, efficient, and high quality
- Help deliver our net zero target
- Adapt to the effects of climate change
- Promote greener, cleaner choices
- Get people and goods to where they need to get to
- Use beneficial innovation
- Enable us to make healthy travel choices
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	+	+	+	+	0	+	+	+	+	+	++	++	++
'Without Policy' Scenario	+	+	+	+	0	+	+	+	+	+	++	++	++

Investment in DRT and MaaS to provide a corridor-wide pilot scheme would aim to deliver improved public transport connectivity in locations with low bus network connectivity or where conventional fixed route services may not be viable. This would be anticipated to have a positive impact against most of the A96 Corridor Review Transport Planning Objectives (TPOs), and all the noted STAG criteria and Statutory Impact Assessment (SIA) criteria, in both the 'With Policy' and 'Without Policy' scenarios. Enhancing accessibility to public and shared transport is anticipated to have a minor positive impact for accessibility to public transport (TPO2) and enhancing communities as places to support health, wellbeing and the environment (TPO3), and the potential to create a mode shift from car would help in contributing to Scottish Government's net zero targets (TPO1) and contributing to sustainable inclusive growth (TPO4). A corridor-wide pilot scheme for DRT and MaaS would also result in minor positive impacts for all of the STAG criteria. Of key importance is the impact that this option might have in reducing inequality of access to the public transport network, given the role that it can play in providing access to employment, education, healthcare and leisure activities, and in integrating with other services and other modes. The option also helps reduce inequalities as it can provide benefits for vulnerable users such as the mobility impaired and the elderly, who may experience challenges with accessing traditional public transport services. The option is therefore anticipated to have a moderate positive impact for all SIA criteria.

While it is considered feasible to deliver the corridor-wide pilot scheme to improve public transport connectivity, the availability of appropriate technology and whether passengers could access this technology, including relevant MaaS applications and bank accounts for payment, for example, would need to be considered. The extent to which DRT and MaaS schemes could operate without the need for additional revenue support would also need considered upon completion of the corridor-wide pilot scheme. Improving public transport connectivity is likely to be acceptable to the public, although if fixed routes are to be replaced or fare costs increase this would be viewed negatively.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[iv].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances and public travel choices available for travel between the three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of bus for commuting to work is significantly lower than the national average, as it is for rail, with only Insch having a mode share above national average. The Scottish Accessibility to Bus Indicator (SABI) demonstrates that across the transport appraisal study area, the accessibility to bus is low outside of the urban areas of Aberdeen and parts of Inverness. Rail station accessibility is also an issue, as raised by stakeholders and the public, with Insch, Nairn and Huntly noted for not being step-free stations, potentially limiting patronage.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Elgin, Inverness or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Competitiveness of Public Transport with Other Modes: Public consultation has revealed that the perception of delay and a lack of multi-modal integration combined with the perceived high cost of fares, particularly for rail, makes travel by public transport in the transport appraisal study area unattractive to users.

Travel Choice and Behaviour (Problem): The number of homes without access to a private vehicle in the transport appraisal study area is consistently less than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of car in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the Personal Injury Accidents and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

Travel Choice and Behaviour (Opportunity): Travel choices throughout the transport appraisal study area would be increased through better integration of modes and the provision of more demand-responsive options.

Increasing digital connectivity and technology advancements can help to integrate public transport and provide better information systems to improve the quality of journeys and enhance the travel experience.

2.2 Interdependencies

This option has potential overlap with one other A96 Corridor Review option and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Bus Priority Measures and Park and Ride
- Development of the A96 Electric Corridor
- Improved Public Transport Passenger Interchange Facilities.

Other areas of Scottish Government activity

- Access for All[v] (a UK Government scheme, with details also provided by Network Rail[vi])
- Accessible Travel Framework – Annual Delivery Plan 2021-22[vii]
- City Region Deals[viii]
- Climate Change Plan 2018-32 Update[ix]
- Community Bus Fund[x]
- Community Transport Association Scotland[xi]
- Future Intelligent Transport Systems Strategy (2017)[xii]
- MaaS Investment Fund[xiii]
- National Planning Framework 4 (NPF4)[xiv]
- National Transport Strategy (NTS2)[xv]
- Network Support Grant[xvi]
- Scottish Cities Alliance Transition to Net Zero Carbon Action Plan[xvii]
- Regional Growth Deals[xviii]
- Smart Ticketing and Integrated Payments Delivery Strategy (2018)[xix]
- Strategic Transport Projects Review 2 (STPR2)[xx].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improving connectivity where current bus services do not provide satisfactory cover or do not operate at all would increase the attractiveness of public transport and could introduce new links that are not currently provided. Also, evidence collected from the evaluation of the Ready2Go around Inverurie digital DRT pilot study suggests that DRT within the A96 corridor could encourage a shift away from car[xxi]. A positive mode shift was observed as 26% of respondents who used the service previously made their current trip by car. The evidence also suggests that the number of people who switched from car to using the DRT service was more than double the number of people who switched from bus to car when the fixed route service they previously used was removed in favour of the DRT service.

Therefore, the corridor-wide pilot scheme has the potential to achieve modal transfer from car, which could help with achieving the net zero target. Whilst service improvements in areas with lower bus service provision and low car ownership would be targeted more at reducing transport poverty, in other areas with higher car ownership, it would be targeted at modal transfer.

This option is therefore expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improving public transport connectivity through the proposed corridor-wide pilot scheme, supported with better travel planning through MaaS to minimise delays in making connections between modes or services, would improve accessibility to employment, education, healthcare and leisure activities. These key services are more commonly available in the larger towns along the A96 corridor and in the two cities at either end. Improving public transport accessibility would be of most benefit to passengers from more deprived households or on lower incomes, who are less likely to own a car and are more reliant on travel by public transport, as well as those living in rural areas who are less likely to reside close to a direct public transport route that serves key destinations. For the Inverurie Ready2Go pilot[xxi], over 20% of survey respondents reported that they used the service to access employment opportunities which they could not access previously, with a further 17% of participants using the service to access educational or training opportunities which they could not access before the service was implemented.

The features of DRT and MaaS may result in a reduced reliance on car for certain trips. This option could assist in trip planning to show alternative means of accessing key services by sustainable modes, such as healthcare appointments or to higher education facilities. The flexibility offered by this option could be of particular benefit to vulnerable users, including the mobility impaired if it were to offer pick-up or drop-off locations more convenient than current public transport stops or stations. Evidence from the Ready2Go around Inverurie digital DRT pilot study[xxi] shows that for over half of trips, the pick-up and/or drop-off location were more than 50m from a withdrawn or operational bus route, demonstrating that people are willing to take advantage of the improved accessibility if provided. Additionally, nearly a quarter of users of Ready2Go Around Inverurie reported making 'new trips', suggesting that a DRT service would continue to open up opportunities for travel which were previously unavailable.

However, if schemes delivered through the option are dependent on MaaS, this is likely to exclude certain groups without access to the technology or bank accounts. For example, research by the Financial Conduct Authority (FCA)[xxii] suggested that 2% of consumers are classified as 'unbanked', meaning that they do not use mainstream financial services or have a bank account. In addition, information from the 2021 census[xxiii] indicated that use of internet banking decreases markedly with age, with 91% of 16-24 year olds having used internet banking in the previous three months, dropping to 51% of 65-74 year olds and 18% of 80+ year olds. Therefore, the elderly may also be less able to benefit from this option if it is dependent on MaaS technology.

There is also the potential that in order to manage resources, some fixed route services would be replaced to allow the operation of a DRT service. This could disbenefit some people who already use the existing bus services if the replacement DRT service cannot offer the same journey routing or time, which may be the case for longer distance trips between settlements.

However, overall, this option is expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improving public transport connectivity, supported with better travel planning through MaaS, could reduce social isolation, enhancing the corridor as an attractive place to live and improving the wellbeing of residents, with better access to healthcare also improving their health outcomes. The Ready2Go around Inverurie pilot showed that 20% of respondents used the service for social/entertainment purposes, 8% for leisure/sport and 8% for health appointments[xxi]. Improving access to public transport should also improve the environment as it is anticipated to increase patronage and reduce the reliance on private car.

However, there is a risk that 'empty mileage', where the service is travelling to a pick-up or drop-off location without passengers, could limit any environmental benefits, though this risk could be limited if alternatively fuelled vehicles were used. Also, as noted above in TPO2, not all potential passengers may be able to benefit from this option if it is dependent on MaaS technology.

This option is therefore expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Technological advances, especially through the use of MaaS, could improve the financial viability of public transport, with increased efficiency of service provision relative to fixed route timetables throughout the corridor with the introduction of the corridor-wide pilot scheme. This could occur if a number of fixed route services can be replaced by a flexible service that is better targeted at demand, both by location and time. Where flexible services already exist, technology that can respond dynamically to different levels of

demand could potentially deliver more efficient scheduling of services, such that operating costs can be reduced, and demand is better served.

Provision of new flexible services could also improve network coverage, which could increase the level of integration between services and modes, making it easier for people to travel where they wish to go by sustainable modes. Even where network coverage is not improved, the use of MaaS could increase the perceived level of integration by providing better information on different travel options through a single app or centralised information platform.

This option is therefore expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
0	0

Improving public transport connectivity through the corridor-wide pilot scheme could provide minor safety benefits where passengers are currently required to walk longer distances to bus stops using roads with poor pedestrian facilities, but these benefits are not likely to be substantial. Research by Transport for London[xxiv] in 2021 regarding two DRT pilots highlighted that safety concerns for users at night, particularly in quiet areas where there was no CCTV. Through use of existing road assets and considered enhancement where appropriate, such as surveillance at existing bus stops and/or on vehicles, these potential risks could be effectively managed from the onset of the corridor-wide pilot scheme.

It is also unlikely that there would be material impacts on reliability and resilience unless the provision of real time passenger information via the MaaS platform can improve the perception of service reliability.

If the introduction of DRT and MaaS does encourage a mode shift to public transport, there may be a minor positive impact on accidents as a result of reduced car use.

Overall, this option is expected to have a **neutral** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option is likely to result in positive impacts in terms of reducing road-based greenhouse gases (GHG) and air pollutants, as it should encourage modal shift away from private car to public transport, even in the 'Without Policy' Scenario. This option has the potential to have positive impacts on communities by promoting a modal shift to public transport and reducing the number of vehicles travelling on routes in and within the vicinity of settlements. Positive impacts could be achieved in terms of sustainable accessibility for communities, through providing greater connectivity for remote communities to healthcare and community facilities.

The option is unlikely to have any significant impacts on noise and vibration, water environment, biodiversity, agriculture and soils, cultural heritage, landscape or visual amenity, as the option would not result in any physical alterations. Nevertheless, further environmental assessment would be undertaken if investment in a corridor-wide DRT and MaaS pilot scheme is progressed through the design and development process, in order to quantify any potential environmental impacts.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improving connectivity where current bus services do not provide satisfactory cover and better provision of information via a MaaS platform would increase the attractiveness of public transport and could result in transfer from the private car. However, the impact on GHG, and hence climate change, depends on the migration to zero-emission fuels over time. Empty mileage of DRT services could also limit any anticipated environmental benefits; however, this again would be limited if a zero-emission vehicle was utilised.

The impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change are expected to be neutral.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

Improving public transport connectivity, supported with better travel planning through MaaS, could reduce social isolation, enhancing the pilot scheme area as an attractive place to live and improving the health and wellbeing of residents. It could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where

people are currently travelling longer distances to bus stops, where roads with poor pedestrian infrastructure may be used.

There could also be a slight beneficial impact on perceived security if people do not feel safe travelling longer distances to bus stops. However, noted concerns on security in DRT trials in London[xxiv] suggest that some users have safety concerns at night or where there is a lack of CCTV. The corridor-wide pilot scheme could manage at least some of these concerns from the offset through the likes of on-board surveillance.

If the corridor-wide pilot scheme for DRT and MaaS can reduce car use, there may additionally be a minor positive impact on accidents. There are, however, unlikely to be any impacts on visual amenity.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal, as the specifics of this option are not known at this stage of the assessment.

There could be a beneficial economic impact through investment in DRT and MaaS, as improved connectivity could increase access to employment opportunities, education and other services, with subsequent benefits for the economy. Where there is currently limited public transport network coverage, the economic benefits could be significant if new flexible services introduced through the corridor-wide pilot scheme are able to provide improved connectivity and employers can access a wider labour market.

There is also the potential for positive wider economic impacts in terms of increased employment for those from more deprived households (see also Equality and Accessibility), which could again be significant where DRT services could improve network connectivity.

However, it is noted that DRT services have often required ongoing revenue support, with research indicating that while some schemes operate without subsidy, an average subsidy of £5 per trip is more common[xxv], with the cost to the local authority for providing the Inverurie Ready2Go service costing approximately three times higher than the withdrawn/partially withdrawn fixed timetable routes[xxi]. Therefore, it would be important for the corridor-wide pilot scheme to identify approaches that could reduce the need for subsidy. Modest revenues could potentially be generated through commercial sponsorship opportunities of fleet vehicles or retail spaces in passenger facilities, though the scale of this would be dependent upon the number of vehicles and its geographic catchment area.

There is also the potential for the DRT service to reduce patronage levels on commercial bus operator services and the number of taxi fares, which would negatively affect the economic potential for these groups.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios, accounting for the benefits improved connectivity can have on access to key areas of employment and education.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

The use of DRT as part of the corridor-wide pilot scheme to improve public transport connectivity could improve access to employment, education, healthcare and leisure activities for those most in need. This would include those from more deprived areas, given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[xxvi]. Therefore, there could be beneficial impacts on public transport network connectivity, on comparative access for the most deprived households and on comparative access for affected areas. However, less than 7% of datazones within the A96 Corridor Review Transport Appraisal Study Area fall within the most deprived quintile so these benefits could be limited by a relative lack of deprivation and the high availability of car.

The option would be anticipated to improve the public transport accessibility for those who are not able to access key destinations such as education or health services through current fixed route bus services. This could include those that are mobility impaired or neurodivergent, as well as those in rural areas where traditional fixed route public transport services can be infrequent or unavailable. As noted above for TPO2, evidence from the Ready2Go around Inverurie digital DRT pilot study[xxi] shows that for over half of trips, the pick-up and/or drop-off location were more than 50m from a withdrawn or operational bus route, with nearly a quarter of users making 'new trips' they would not previously have made, suggesting that a corridor-wide pilot service would continue to open up opportunities for travel to improve accessibility for all groups of people.

If interventions delivered through the corridor-wide pilot scheme are dependent on MaaS, it is likely to exclude certain groups without access to this technology or bank accounts, as noted above for TPO2, and this could disproportionately affect lower income households and the elderly.

Where DRT can provide a public transport link that did not previously exist, this would have a positive impact on affordability for those users who are eligible for free travel. However, the impact on affordability for other users would be dependent on the fares charged.

The option is unlikely to affect active travel network coverage within the study area.

Reference should also be made to the SIAs in Section 3.5.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios as there are benefits for public transport connectivity and comparative access, though may exclude some people without access or knowledge of technology and would not improve affordability of travel for most or active travel network coverage.

3.4 Deliverability

1. Feasibility

It is anticipated that the delivery of this option could be led by local authorities or private/social enterprises, dependent on the location and nature of the interventions, which would be informed by the outcomes of the A96 Corridor Review (linked to STPR2 recommendation 20).

Improving public transport connectivity is feasible, but if technological advances are required to support these improvements, the availability of appropriate technology would need to be considered, as would the extent to which passengers could access this technology. While NaviGoGo[xxvii], the first Scottish MaaS pilot, is now complete and the MaaS Investment Fund is facilitating five pilots - GO-HI[xxviii] in the Highlands and Islands region, Enable[xxix] in the Tayside area, GetGo[xxx] in Dundee, the St Andrews MaaSterplan[xxxi] and Go SEStran[xxxii] in South East Scotland - transport operators' willingness to engage with MaaS systems and passengers' willingness to make use of them on an ongoing basis remain to be confirmed.

These interventions are likely to utilise the existing road network without alterations, therefore it is not anticipated that there would be any engineering constraints to deliver the corridor-wide pilot scheme. It is anticipated that the asset owner would take on the operation and maintenance of the option. Overall, the option is considered feasible at this high level stage.

2. Affordability

The funding of the corridor-wide pilot scheme is anticipated to be affordable and have a relatively low capital cost. Costs could increase dependent upon the overall scale of the pilot, with a larger geographic area and catchment likely to require additional vehicles and employees to enable successful delivery, but is still estimated to be delivered for under £25m.

Investment in DRT and MaaS may not be affordable in the longer term if ongoing revenue support is required. However, if capital funding was provided through a new fund to support further innovative pilot schemes, and/or through new funding targeted at DRT, CT

and MaaS, or at supporting growth in rural and peripheral communities, this may support measures to improve the efficiency of service provision, reducing the need for ongoing revenue support.

3. Public Acceptability

Improving public transport connectivity is likely to be acceptable to the public, although this may depend on how it is to be funded. If these improvements are to be supported through the use of a digital platform, acceptability may also be dependent on passengers' ability to access this platform. It is also noted that research for the Department for Transport[xxxiii] found that public acceptability of MaaS was correlated with offering a service that was not already available via other channels and where travel would be cheaper than through existing fares, ticketing and payment options. If fixed route bus services are removed to reallocate resources for a new DRT service, this may also be viewed negatively by some existing passengers if these changes are not communicated effectively.

Any service that seeks to improve connectivity, particularly in rural areas where the overall transport offering tends to be scarcer than urban areas, would likely be positively received as demonstrated through high rates of satisfaction among users of the Inverurie Ready2Go pilot. However, there may be concern from commercial bus operators and taxi drivers about a potential reduction in users of these services.

The responses to the public consultation undertaken as part of this review were limited in terms of this option and therefore did not indicate opposition or support.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxxiv].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
++	++

Investment in DRT and MaaS could provide benefits for groups with protected characteristics who depend on public transport for their journeys as they are less likely to have access to a car. This includes children, young people, women, disabled people, older

people, people from ethnic minority groups and people at risk of deprivation. More flexible public transport options, such as DRT, can help improve connectivity to key services such as employment, education, healthcare and leisure for these groups who may otherwise be socially excluded by a lack of transport options. There could also be a beneficial impact in terms of reduced barriers to travel for those with reduced mobility if improvements in public transport connectivity delivered through the corridor-wide pilot scheme reduce walking distances to services.

However, if interventions delivered through the corridor-wide pilot scheme are dependent on MaaS, they could exclude certain groups without access to this technology or bank accounts, for example, children and older people, and as such, these groups would need to be considered in the design of the scheme to ensure that they benefit.

Furthermore, in the absence of viable alternatives to travel some low income households living in the area may have no alternative to car ownership despite financial constraint. Therefore, there could be benefits for those groups by providing alternative options to using private vehicles. However, this would depend on fares being affordable to such groups.

Overall, this option is expected to have a **moderate positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
++	++

Improved public transport connectivity could have a beneficial impact on children and young people, given that 16% of children travel to school by bus[xxxv]. Children and young people could be more likely to depend on buses for leisure travel, given that those under 17 are not able to drive and many young people aged 17 and over may have affordability barriers to owning a private vehicle.

In rural areas, children and young people may experience longer walks to bus stops, infrequent services and long waiting times for connecting services. An increase in DRT and MaaS could help to improve connectivity for children and young people, improving access to key services such as education. Improved connectivity could also result in improved personal safety and security through more direct services between home location and journey destinations.

However, if interventions delivered through the corridor-wide pilot scheme are dependent on MaaS, they could exclude children without access to this technology or bank accounts. This would need to be considered in the design of the pilot scheme to ensure that children are able to benefit.

Therefore, this option is expected to have a **moderate positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
++	++

There could be a beneficial impact in tackling inequality, with improved public transport connectivity supporting reduced social isolation and improved health and wellbeing. Given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles[xxxvi], the beneficial impacts would be highest for those from the most deprived households. However, less than 7% of datazones within the A96 Corridor Review Transport Appraisal Study Area fall within the most deprived quintile so these benefits could be limited by a relative lack of deprivation. The scheme would benefit some more vulnerable users, such as the mobility impaired, and allow them improved access to key destinations including healthcare facilities, employment and education.

The barriers created through not having access to a car are likely to be exacerbated where public transport service levels are less frequent, which tends to be in more rural areas or smaller communities. As such, the positive impact of improved public transport for socially excluded groups in these areas is likely to be greater.

Furthermore, in the absence of viable alternatives to travel some low income households living in the area may have no alternative to car ownership despite financial constraint. Therefore, there could be benefits for those groups with regards to the provision of alternative options to private vehicle use and ownership. However, this would depend on fares being affordable. Moreover, if interventions delivered through the option are dependent on MaaS, it is likely to exclude certain groups without access to this technology or bank accounts, as highlighted above, and this would need to be considered in the design of the pilot scheme to ensure the maximum number of people can benefit.

Overall, this option is expected to have a **moderate positive** on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Introduction of Rail Freight Terminals

This option seeks to facilitate the introduction, development and operation of rail freight terminals by the private sector along the A96 corridor. Locations are considered at Keith and Elgin, with associated enhancements made to the rail gauge to facilitate increased freight movements to/from these locations by rail. At this stage, it is envisaged that any proposed rail freight terminal development would be relatively modest in scale and would seek to make use of existing brownfield railway land. Road freight transport is a significant contributor of air/noise pollution and carbon emissions, negatively impacting on climate change. Encouraging freight to be transported by more sustainable modes could reduce the overall level of pollution, noise and carbon created by transporting freight exclusively via road. This could also reduce journey times and improve journey time reliability for other road users travelling on the A96 Trunk Road as freight vehicles over 7.5T are restricted to a maximum of 40mph, which can cause platooning on single carriageway sections and hence increase delays to other road users. Estimates of the forecast demand for rail freight on this corridor ranges from one to three trains per week to three trains a day in each direction. Currently there are no regular scheduled freight trains between Aberdeen and Inverness.

1.2 Relevance

Relevant to businesses and freight

Although rail freight terminals could be developed at specific locations, this option is likely to be relevant across the whole corridor and beyond due to the nature of supply chains which extend well beyond the boundary of this study area. The implementation of this option could help (subject to a satisfactory business case) facilitate the mode shift of freight from road to rail, particularly for longer distance movements but also for shorter distance movement of materials such as timber and aggregates. This would remove some Heavy Goods Vehicles (HGVs) from the road network that cause delays to other motorists and cause a level of frustration on the A96 Trunk Road due to a lack of safe overtaking opportunities. This option could therefore potentially have safety benefits, as well as improve journey times and reliability for general traffic. There is a significant opportunity to connect the distillery and manufacturing supply chains in this area to the Central Belt and onwards movement to England, Wales and for export as well as other significant demand generators in the food and drink sector.

This option is relevant to the continued development of Scotland's net zero strategic transport network, and the transition to more sustainable modes particularly for longer distances. Development of rail freight terminals would assist and facilitate in the decarbonisation of the freight industry and aligns with the vision laid out in Scotland's Rail Freight Strategy[i]. This would have particular benefits for:

- businesses and consumers, who will have additional transport choices to make with regards to the movement of freight by rail
- transport operators, who will benefit from the agglomeration of industrial traffic around rail freight terminals, thereby allowing for increased freight loads.

1.3 Estimated Cost

£25m - £50m Capital

Determining the estimated cost of this option is dependent on a number of factors including the scale and complexity of providing rail freight terminals at the locations noted. Further analysis and assessment would be required at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

Capital costs for the construction of the rail freight terminals could depend on local constraints, the scale of interventions proposed and if the track/hard standing are already present. An indicative cost estimate would typically be in the range of £25m to £50m per terminal.

Dependent on the location and scale of interventions, the responsible authority and asset owner on completion is most likely to be a private sector organisation. It is anticipated that the asset owner would take on the operation and maintenance of facilities, which would be the responsibility of the terminal operator and have ongoing costs. The development cost of the terminal may qualify for the award of Freight Facilities Grant (FFG) from Transport Scotland and other public sector grants which may be available. Freight services which use the terminal may be eligible for revenue support through the Mode Shift Revenue Support (MSRS) scheme.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. However, this option does not fit within any tier of the Sustainable Travel Hierarchy as this only carries passenger trips.

This option would also contribute to five of the 12 NTS2 outcomes, as follows:

- Help deliver our net zero target
- Promote greener, cleaner choices
- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	+	0	+	+	+	-	0	+	+	+	+	+	+
'Without Policy' Scenario	+	0	+	+	+	-	0	+	+	+	+	+	+

This option makes a largely positive or neutral contribution to the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria, and Statutory Impact Assessment (SIA) criteria, with the exception of the STAG Environment criterion. This assessment conclusion is based on evidence from other locations in the UK and beyond where similar schemes have been implemented successfully.

Rail freight terminals aim to provide more opportunities for goods movement across the A96 corridor, encouraging a shift away from road freight vehicles to move goods more sustainably to reduce harmful air and potentially localised noise pollution. The option would therefore contribute positively to the TPOs for contributing to Scottish Government's net zero targets (TPO1), enhancing communities as places to support health, wellbeing and the environment (TPO3), contributing to sustainable inclusive growth (TPO4) and providing a transport system that is safe, reliable and resilient (TPO5).

Rail freight terminals are anticipated to have a minor negative impact on the STAG Environment criterion as there are sensitive environmental designations, in places such as Keith and Elgin, that could be affected by the construction footprints of the terminals. This may affect aspects such as biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity.

New facilities are considered to be feasible and deliverable in connection with Scotland's existing railway network. However, detailed local engagement and design work, including working closely with businesses, could be required to identify the most appropriate locations and types of intervention. Capital costs could vary significantly based upon these assessments. Rail freight terminals are likely to be well received generally due to the potential for carbon dioxide reduction and removal of HGVs from the road network, though some businesses may not favour the option if they are unable to shift modes to move freight by rail.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[ii].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accidents (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres and Keith. The rate of Killed or Seriously Injured (KSI) accidents is also significantly higher in these two towns than the national average, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average these being between Hardmuir and Forres, between Fochabers and Keith, between Keith and East of Huntly and between Kintore and Craibstone.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being

undertaken elsewhere in Scotland in recent years to increase the proportion of rail freight movements.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where PIA and/or KSI accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accidents numbers.

Health and Environmental Impacts of Travel: Reducing the use of HGVs throughout the transport appraisal study area would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line
- Development of A96 Electric Corridor.

Other areas of Scottish Government activity

- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[iii]
- Climate Change Plan 2018-32 Update[iv]
- Decarbonising the Scottish Transport Sector[v]
- High Level Output Specification for Control Period 6[vi]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[vii]
- National Planning Framework 4 (NPF4)[viii]
- National Transport Strategy 2 (NTS2)[ix]
- Rail Enhancements and Capital Investment Strategy[x]
- Scotland's Rail Freight Strategy[xi]
- Scotland's Road Safety Framework to 2030[xii]
- Strategic Road Safety Plan (2016)[xiii]
- Strategic Transport Projects Review 2 (STPR2)[xiv].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Rail freight is the most sustainable option for the long-haul movement of goods, with each freight train estimated to remove a proportion of HGVs off the road[xv]. However, there are also examples where rail freight has been viable for shorter distances, such as the previous route from Elderslie to Grangemouth[xvi] which was only 34 miles long.

The provision of rail freight terminals to consolidate and provide a mode shift for strategic freight movements is a key enabler to support the reduction of carbon emissions from the movement of freight to/from, and within, Scotland. This could be further enhanced as the rail network is decarbonised through electrification/battery/hydrogen traction sources.

This option is therefore expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The option is not considered to have a material impact on public transport, particularly for those in rural areas due to it being a freight-focused transport intervention in nature.

This option is therefore expected to have a **neutral** impact on this option in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Rail freight terminals can contribute to a strategic transport system through the consolidation of freight volume to make strategic rail freight movements viable. Modal shift of freight from road to rail can support health, wellbeing and the environment through the reduction of road congestion and associated vehicular emissions. The option offers potential to cater for a wider variety of businesses and enterprises who produce differing volumes of goods and is therefore likely to have a large catchment area of interested parties.

Overall, this option is expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios, given the contribution to enhancing communities as places and contribution to health and wellbeing.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The option could provide businesses with an opportunity to diversify the movement of their goods to create a more resilient and reliable transport network, increasing the region's competitiveness both domestically and internationally. Through the mode shift, there is the potential to reduce congestion. This would facilitate an improvement in journey times and journey time reliability across the region's transport network which would benefit goods and services that are required to be transported via road. Additionally, there are likely improvements in journey times stemming from the use of rail services, due to the segregated and uncongested nature of the rail network, though this is subject to both available capacity and the current standard of gauge of the rail network which would need to be upgraded. As the option is likely to serve dedicated rail freight facilities, it is likely that it could facilitate the integration of transport modes that move goods, particularly those that are moved via road. Through providing an attractive alternative to the movement of goods via conventional means (e.g. road), there is likely to be a mode shift, particularly over longer distances where rail freight is both more competitive and advantageous.

Overall, this option is likely to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The provision of rail freight terminals enhances safety and security of the strategic transport system through the reduction of long distance road haulage and use of rail instead. The option is expected to encourage a moderate modal shift for the movement of goods via road onto rail. This is expected to reduce the overall number of vehicle kilometres travelled by goods vehicles which, in turn, is likely to improve the overall safety performance of highway networks through a reduction in the frequency of collisions and associated casualties.

The Office of Rail and Road Great Britain Rail Freight Delivery Metric, which measures the proportion of freight trains arriving within 15 minutes of their scheduled arrival time, was 93.0% in 2021-22 Q4[xvii]. In general, terminals provide strategic access and appropriate equipment to allow fast transfers from rail to road freight and vice versa, improving the reliability and resilience of supply chain transfers. The modal shift of freight to rail could help the resilience of supply chains by releasing the requirement for drivers from the trunk haul element of goods movement to the last mile/first mile leg instead.

This option is therefore expected to have a **minor positive** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
-	-

The eight environment sub-criteria have been considered and those aspects considered relevant to the option at this stage are discussed below.

The creation of rail freight terminals is likely to result in positive impacts on reducing greenhouse gases and air pollution as it could lead to a modal shift towards sustainable modes of transport for freight. The number of HGV movements along the A96 is therefore likely to decrease, leading to a positive impact in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 passes through settlements. Noise and vibration may increase along the rail line, however, as a consequence of greater freight movements, which might have a minor negative impact.

Construction of the option is likely to have a slight to moderate negative impact on natural resources depending on the materials chosen and its source.

New rail freight terminals have the potential for negative environmental impacts during construction, many of which would be short term. These could include, for example, negative effects on biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity. This would be dependent on the nature and precise location of the terminals in relation to the existing railway line (and whether any new sections of track are required) and the sensitivity of the receiving environment. For example, there are designated Sites of Special Scientific Interest and heritage Conservation Areas in the vicinity of Keith and Elgin. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Further environmental assessment would be undertaken if such improvements to rail infrastructure are progressed through the design and development process (once the location and type of new infrastructure are identified), in order to identify potentially significant environmental impacts and mitigation where appropriate.

Overall, at this preliminary stage in the appraisal process, the potential impacts of constructing rail freight terminals within the corridor are considered **minor negative** for this criterion under the 'With Policy' and 'Without Policy' scenarios, although this would be subject to final site selection and associated design. This is on the basis that although there are positive environmental impacts associated with this option, these would potentially be outweighed by large scale impacts from constructing new rail freight terminals. The extent of impact would only be known through the design development process. If environmental constraints can be avoided, then adverse environmental impacts can be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	0

The creation of rail freight terminals could lead to a modal shift towards sustainable modes of freight transport, reducing the number of HGV movements along the A96 corridor and therefore the resultant greenhouse gas emissions. However, in the short term greenhouse gas emissions would arise from construction activities undertaken to deliver the terminals, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. The extent of this effect would only be known through the detailed design development process.

This option is unlikely to have any notable impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change sub-criteria. However, the existing railway may be vulnerable to the effects of climate change. The increased frequency and severity of extreme weather events can cause damage to equipment due to storm events, extreme heat, or intense rainfall. This may have a detrimental impact to the transportation of freight as it may result in reduced reliability as a result of the network closures. Whilst there is also the potential for increased climatic events to impact the reliability of the road network, there are diversionary routes in place that would allow

freight to be moved along the corridor in the event of a closure of the A96; however, it should be noted that not all diversionary routes are suitable for HGVs.

Overall, this option is expected to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

The option is expected to encourage a moderate mode shift for the movement of goods via road onto rail. This is expected to reduce the overall number of vehicle kilometres travelled by goods vehicles which, in turn, is likely to improve the overall safety performance of highway networks through a reduction in the frequency of collisions and associated casualties. Should the rail terminals encourage utilisation of the rail network for long distance haulage, such as between the Central Belt and the north of Scotland and between England and Scotland, the expected benefits would be anticipated to be more substantial.

The option may result in some adverse impacts on visual amenity within the vicinity of the rail freight terminals.

Due to the nature of the option, there are not expected to be any impact on the overall security of travellers, health outcomes or access to health and wellbeing infrastructure.

Overall, this option is likely to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the location and standard of infrastructure are currently unknown. Rail freight is a key component in the rail sector's contribution to the Scotland's economy with £670m in Gross Value Added annually, supporting up to 13,000 jobs and facilitating up to a further £650m in wider economic benefits[xviii]. The provision of terminals is expected to enhance economic growth and trade through improved connectivity and facilities for freight. Additionally, rail terminals can act as a catalyst for additional private sector investment in warehousing and other related industries, leading to industrial agglomerations. Recent examples include investments at Mossend International Railfreight Park[xix], Port of Grangemouth[xx] (operated by Forth Ports) and Highland Spring at Blackford[xxi]. While it applies to most sectors of the economy, consumer goods, food and drink manufacturing, building and construction and forestry are expected to be particularly strong. A previous trial in 2013 as part of the HITRANS Lifting

the Spirit project provided a proof of concept of the movement of Scotch Whisky from Elgin to Grangemouth[xxii].

As the option seeks to facilitate the movement of goods via rail freight, the key user groups that could benefit are businesses and enterprises which currently transport goods over medium to long distances via road. Over longer distances, it is expected that the movement of goods via this option could be significantly more economically competitive than road and therefore the increased attractiveness of this option may encourage further usage and overall investment.

Due to the commercial facing nature of the option, there are unlikely to be any other user groups outside of business and enterprise that are likely to benefit through this option. However, if the service further scales whereby sufficient volumes of freight transfer from road to rail there are likely to be benefits for general road users through the reduction of goods vehicles using the highway network, particularly highway links and nodes of a strategic nature.

Given the potential benefits in terms of journey time savings and industrial agglomeration that could be gained, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

Rail freight terminal development could support improved accessibility through access to goods facilities, particularly in rural areas, potentially reducing costs through establishing new supply chains. New rail freight facilities could provide opportunities for improved transportation of exports, providing a more competitive market for suppliers across the corridor. This applies especially in rural areas for extractive industries such as forestry/fishing and quarrying.

It is not anticipated that this option would have an impact on the accessibility or affordability of the public transport network or active travel network.

Reference should also be made to the SIAs in Section 3.5.

This option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios, due to its improvements in comparative accessibility.

3.4 Deliverability

1. Feasibility

Dependent on the location and scale of interventions, the responsible authority and asset owner on completion is most likely to be a private sector organisation.

Rail freight terminals are considered readily feasible and would comprise more extensive roll-out of interventions for which there is already experience of implementation in Scotland and elsewhere.

However, the feasibility at any specific location remains to be tested, and detailed development work and local decision making is required to identify the most appropriate solutions and their preferred fit with the surrounding area.

The engineering constraints could vary significantly between the locations noted for this option. This could include various existing residential and business properties, roads, rivers and railways that may intersect the locations. Any location could also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints.

As with all rail enhancements, a number of risks require consideration. Risks may include strategic (relating to the rail infrastructure, wider transport network and trends with the transport industry for example increased freight traffic), regulatory/legal (alteration of planning legislation) and financial (unforeseen environmental conditions, asset condition, land assembly and acquisition). These would need to be considered alongside any cost, timescale or deliverability risks associated with the construction and operation of the option.

It is anticipated that the asset owner would take on the operation and maintenance of facilities post-construction.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that this option is considered feasible although the overall likely timescales for potential delivery and agreement to be reached between various parties should be considered.

2. Affordability

Delivery is likely to require a sizable amount of funding to facilitate land assembly, technical work required to facilitate delivery in addition to maintaining and operating such a site until it is able to recoup initial costs as well as the potential need to compensate infrastructure providers to access the wider rail network in the first instance. Costs would be also dependent on a number of other factors, such as the complexity of construction, the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering, environmental and planning/land use constraints.

Depending on the overall scale of the site, the potential increase in local highway trips as a result of vehicular movements to/from the site, of which a large proportion could be HGVs, may also require monies to enhance existing transport infrastructure and mitigate impacts.

Development of terminals or facilities would likely be led by the private sector and based on commercial decisions. The Scottish Government could support these developments with grant funding (such as the Freight Facilities Grant) subject to the application satisfying

the criteria and budget availability. Both the private sector facing element of the option and recognition of the commercial activities enabled through the option highlight the numerous potential pathways for the option to generate significant revenues over its lifetime which over the long term, are likely to exceed the initial investment required.

3. Public Acceptability

Rail freight terminals are likely to be well received generally[xxiii], with benefits associated with the potential for improved air quality through the removal of HGVs from the road network. It is anticipated that the option could benefit a significant proportion of businesses as well as increasing the overall coverage and accessibility of transporting freight via rail. However, the economic viability of rail freight movements is uncertain, particularly for shorter trips. Some businesses may not be in favour the option if they are unable to shift to rail as a method to transport goods.

The responses to the public consultation undertaken as part of this review were limited in terms of this option and therefore did not indicate opposition or support.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxiv].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Encouraging modal shift from road freight to rail may contribute to a reduction in harmful transport emissions and improved local air quality. This would particularly benefit groups who are more vulnerable to the adverse health effects of traffic-related emissions including children, disabled people, older people and pregnant women.

However, this option could result in adverse construction impacts and increased traffic in the vicinity of new rail terminals dependent on the scale of the intervention. Therefore, the impact on protected characteristic groups should be considered when siting terminals.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios. However, more detailed assessment work

would need to be undertaken at an individual site level to understand local equality impacts during construction and operation.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Encouraging modal shift from road freight to rail may contribute to a reduction in harmful transport emissions and improved local air quality. This would particularly benefit children and young people who are more vulnerable to the adverse health effects of traffic-related emissions. By reducing the volume of road traffic, safety could also be improved which would benefit children who are more vulnerable to fear of road danger.

However, this option could result in adverse construction impacts and increased localised traffic in the vicinity of new rail terminals. Therefore, the negative impact on children and young people should be considered when siting terminals.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios. However, more detailed assessment work would need to be undertaken at an individual site level to understand impacts on children and young people during construction and operation.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Encouraging modal shift from road freight to rail may contribute to a reduction in harmful transport emissions which in turn could result in a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality.

However, this option could result in adverse construction impacts and increased traffic in the vicinity of new rail terminals. Therefore, the negative impact on areas with high deprivation should be considered when siting terminals.

Rail freight is also a key component of the rail sector's contribution to Scotland's economy. The provision of rail freight terminals could enhance economic growth and private sector investment, thereby creating local employment opportunities and potentially reducing socio-economic disadvantage.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios. However, more detailed assessment work would need to be undertaken at an individual site level to understand impacts on deprived communities during construction and operation.

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1. Preliminary Appraisal Summary

1.1 Option Description

Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Rail Line

The Aberdeen to Inverness rail line runs close by the A96 Trunk Road for sections of its length and has stations in towns including Nairn, Forres, Elgin, Keith, Huntly, Inverurie and Kintore that the A96 interacts with. The rail line is approximately 108 miles long and is primarily single track with passing loops. The current end-to-end passenger journey times are typically around 2 hours 25 minutes, with services operating at irregular intervals following an approximately two-hourly frequency. The service therefore does not currently offer an attractive alternative to road travel.

In addition, there are existing intermodal freight facilities within the A96 corridor at Inverness Needlefield Yard and Raith's Farm near Dyce. A daily intermodal service operates between Eurocentral (near Glasgow) and the Inverness site, but the Raith's Farm site is seldom used with all intermodal traffic terminating south of Aberdeen at the Craiginches Yard.

This option considers three distinct improvements to the route:

- Linespeed improvements to reduce journey times
- The provision of passing loops to enable a more frequent passenger service
- The provision of enhanced freight facilities to enable intermodal freight growth.

Improvements to the rail line and freight facilities aim to encourage modal shift for both passengers and freight, respectively, reducing the number of private vehicles and HGVs on the corridor.

Item 1 – Linespeed Improvements

The passenger service between Aberdeen and Inverness currently operates at an average speed of typically 50 to 60mph when operating between stations (assuming a time penalty of two minutes per station stop) giving an end-to-end journey time of approximately 2 hours and 25 minutes. To operate this service with a two-hour journey time this average speed has to increase to around 65mph between stations.

Many factors affect linespeed on a railway including track condition and components, curve radii, gradient, signalling, structural capacity and indeed the performance characteristics of the rolling stock utilised on a line, but it can be assumed that in order to improve the average linespeed by around 15mph then significant works will be required to one or more of these factors. It is anticipated that investment would be required in new rolling stock as a

minimum; however, there are also known sections of severe gradient and curvature on the line[i] which may be contributing to the limitations on the existing linespeed.

It is also recommended that the limiting factor on the existing linespeed between Insch and Keith be further investigated to determine whether the linespeed can be easily increased in this section to be at least 65mph.

Item 2 – Passenger Capacity Improvements

In order to implement Transport Scotland's stated aim of an hourly passenger service with a two-hour end-to-end journey time it will be necessary to construct additional sections of double track[ii]. High level pathing analysis indicates that whilst there are many options depending on the stagger of the services starting from Aberdeen and Inverness, all options require approximately the same level of intervention, namely two new sections of double track. One option would be to lengthen the passing loop at Keith, through Keith station including a new north platform to serve eastbound trains with an access-for-all bridge, and construct a new dynamic loop between Forres and Elgin, approximately 7km long. Another option would be to increase the linespeed to enable a two-hour end-to-end journey time, and then only the improvements at Keith would be required. Finally, a capacity analysis of Aberdeen station would be required and it is likely that some measures to increase platform capacity for northbound services would be necessary.

Item 3 – Freight Capacity Improvements

It is assumed that freight paths are available along the existing rail line and therefore the current major barrier to their use is a lack of intermodal facilities between Dyce and Inverness. There are, however, several suitable sites where a new intermodal facility could be delivered, with disused yards located on sidings at both Huntly and Keith stations and a large yard at Elgin that is used for track maintenance activities. Of these yards, Huntly is deemed the most appropriate as it is suitably sized for conversion to an intermodal facility and well placed in an industrial estate away from the urban areas of the town with easy access onto the A96 adjacent to the site.

Whilst the yards at Huntly may offer a suitable location, an alternative would be a greenfield site in the vicinity of Elgin that could have potential for development as an intermodal facility but, due to the construction of a potential Elgin bypass, it is not possible to indicate a preferred site at this time as a new intermodal terminal at Elgin would likely interface with any bypass proposal.

Work on the enabling infrastructure to provide a freight connection to the Norbord timber mill site as part of the project to construct Dalcross station has been completed, but the private siding connection is still to be constructed[iii]. This will allow timber to be delivered directly to the site by rail.

1.2 Relevance

Relevant to the Aberdeen – Inverness rail corridor

Transport Scotland's programme of incremental improvements of the Aberdeen to Inverness rail line focuses on service improvements and increased opportunities for freight. Further improvement of these services to make them a more attractive and flexible alternative to private vehicle use has the potential to encourage modal shift while reducing the total amount of greenhouse gas emissions in support of the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[iv].

The passenger service improvements listed within this option are loosely defined in Transport Scotland's objectives for the "Aberdeen to Inverness Rail Improvements" scheme of which Phase 1 was completed in 2019 and included re-doubling of the line to Inverurie, platform extensions at Insch and Elgin and new stations at Kintore and Forres. A further station was delivered at Dalcross to serve Inverness Airport in February 2023, and future phases of the project have the stated aim to provide an hourly frequency service between Aberdeen and Inverness with a two-hour journey time, but this work is not committed and no timescales are given so it is therefore within the scope of this A96 Corridor Review.

Delivering faster journey times, enhanced reliability, network resilience, and increased frequency for passenger services, together with enhanced freight facilities to enable intermodal freight growth, offers economic, social and environmental benefits and would address problems identified with the current rail line.

1.3 Estimated Cost

£101m - £250m Capital

Each proposed infrastructure listed above is approximately priced as follows:

Item 1 – Linespeed Improvements

It is anticipated that six new decarbonised trains would be required to replace the existing rolling stock, and these are anticipated to cost between £25m - £50m.

Item 2 – Passenger Capacity Improvements

Providing passenger capacity improvements may include the extension of Keith passing loop and the provision of a new platform at Keith, the addition of 7km of dynamic loop between Forres and Elgin and/or the provision of additional capacity at Aberdeen station. It is anticipated that these elements would cost between £51m - £100m.

Item 3 – Freight Capacity Improvements

The addition of a simple two siding intermodal yard at one of the locations is anticipated to cost <£25m. The net impact on revenue/subsidy for services on this line would depend on

the specific impact that improvements have on patronage and any additional applicable operational costs.

It should be noted that the identified cost banding of the overall option has been determined based upon the assumption that all of the improvements listed in the three items above are delivered.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. However, with the potential to increase the use of the existing railway infrastructure for medium to long distance corridor travel, this option also contributes towards 'making better use of existing capacity'. This option would also sit within the 'public transport' tier of the Sustainable Travel Hierarchy.

This option would also contribute to seven of the 12 NTS2 outcomes, as follows:

- Help deliver our net zero target
- Provide fair access to services we need
- Promote greener, cleaner choices
- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Be safe and secure for all.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	++	+	+	+	+	-	+	+	++	+	+	+	+
'Without Policy' Scenario	++	+	+	+	+	-	+	+	++	+	+	+	+

This option makes a largely positive contribution to the A96 Transport Planning Objectives (TPOs), Scottish Transport Appraisal Guidance (STAG) criteria, and Statutory Impact Assessment (SIA) criteria, with the exception of the STAG Environment criterion, in both the 'With Policy' and 'Without Policy' scenarios.

This option sets out a broad range of proposals to increase both the passenger and freight capacity on the Aberdeen to Inverness rail line in order to make it a more attractive service and encourage modal shift. Doing so would remove a potential barrier towards using the rail network for medium to long distance travel across the corridor and therefore reduce the inequality of access to the public transport network. As a result, the option is anticipated to have moderate positive impact for contributing to Scottish Government's net zero targets (TPO1), and minor positive impacts for improving accessibility to public transport (TPO2), enhancing communities as places to support health, wellbeing and the environment (TP03), contributing to sustainable inclusive growth (TPO4) and providing a transport system that is safe, reliable and resilient (TPO5). The option would support the Scottish Government's target of achieving a 20% reduction in car kilometres by 2030, as well as contributing to delivering the net zero emissions target.

The construction of new track and freight yards can have a negative impact on other aspects of the environment including visual amenity, cultural heritage and biodiversity, though these negative impacts are anticipated to be minor and could be mitigated as part of the detailed design development process. However, it could deliver moderate positive impacts for the STAG Economy criterion, and minor positive impacts for Climate Change, Health, Safety and Wellbeing and Equality and Accessibility criteria.

The problems and opportunities on the route are complex and interwoven, so it is recommended that a full study be undertaken subsequent to this initial high level analysis to ascertain the precise nature of the interventions required.

Delivery is considered to be feasible at this stage; however, a detailed assessment would require to be undertaken to fully establish the details of the option and impacts of construction. The option is considered to be affordable at this stage, though it is noted that there are some risks with respect to ongoing revenue funding. Support in improving capacity and reliability of the rail network is anticipated by the public and businesses throughout the corridor.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[v].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accidents (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres and Keith. The rate of Killed or Seriously Injured (KSI) accidents is also significantly higher in these two towns than the national average, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average these being between Hardmuir and Forres, between Fochabers and Keith, between Keith and East of Huntly and between Kintore and Craibstone.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

The rail network demonstrates a certain level of unreliability. Services at Aberdeen, Inverness and Inverurie all have a Public Performance Measure (PPM) percentage worse than the national average pre-COVID. This is likely to contribute to the relatively low levels of rail mode share.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of rail for commuting to work is generally lower than the national average, with only the settlement of Insch having a mode share above national average.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Elgin, Inverness or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region. Improving linespeed between Aberdeen and Inverness has the potential to make rail a more attractive choice for travel, allowing tourists to travel by a more sustainable mode than car.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or KSI accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

Health and Environment Impacts of Travel: Reducing the use of car travel throughout the transport appraisal study area, particularly for short trips that could be made without motorised transport at all, would help reduce the transport contribution to CO_2 emissions, an important requirement of the Scottish Government's net zero target. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Improved Public Transport Passenger Interchange Facilities
- Introduce Rail Freight Terminals
- Improved Parking at Railway Stations
- Development of the A96 Electric Corridor.

Other areas of Scottish Government activity

- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[vi]
- Climate Change Plan 2018-32 Update[vii]
- Decarbonising the Scottish Transport Sector (2021) [viii.]
- High Level Output Specification for Control Period 6[ix]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[x]
- National Planning Framework 4 (NPF4)[xi]
- National Transport Strategy (NTS2)[xii]
- Rail Enhancements and Capital Investment Strategy[xiii]
- Scotland's National Strategy for Economic Transformation[xiv]
- Scotland's Rail Freight Strategy[xv]
- Scotland's Road Safety Framework to 2030[xvi]
- Strategic Road Safety Plan (2016)[xvii].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
++	++

For passenger services, the provision of enhanced frequency rail services together with a significant reduction in end-to-end journey time is supportive of this objective by providing enhanced opportunities to travel by rail, encouraging mode shift and therefore contributing to the target for a 20% reduction in car kilometres. The rolling stock replacement in this option is consistent with the aims of the rail decarbonisation strategy and the option demonstrates how replacement of rolling stock is able to provide additional benefits over and above decarbonisation by providing the basis for reduced journey times.

Enhanced freight facilities, combined with a faster linespeed, would help make transporting freight by rail a more attractive option compared to road. Any modal shift resulting from improved rail infrastructure would help to reduce emissions associated with freight transport, contributing toward the net zero emissions target.

Overall, the option is likely to have a **moderate positive** impact against this objective under both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The option enhances the frequency of passenger services and aims to reduce journey times, providing enhanced accessibility to key services such as healthcare, employment and education throughout the corridor. Whilst this option only provides benefits to those with access to the rail network, it would also provide benefit to those without access to a car but with local access to rail, providing a more inclusive transport system for a proportion of the population. Improved connections can also complement, and be complemented by, other transport interventions as part of an inclusive transport network. This opens up new opportunities for young people to access further and higher education, and for elderly people to have access to public services. A more competitive rail system for inter-city travel can also encourage travel by a wide range of users, including leisure, tourist and business travellers. The benefits of this option in relation to this objective are clear; however, this needs to be viewed in the context of the likely scale of impact as benefits rely on impacting journeys that are heavily orientated to facilities in the major centres of population in the corridor that have direct access to railway stations.

Overall, the option is likely to have a **minor positive** impact against this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The option may serve to reduce the number of medium to long distance trips on the trunk road network as it encourages mode shift away from car. The freight enhancements are also anticipated to reduce the number of HGVs travelling on the route. Both of these elements could enhance the sense of place within communities along the corridor, due to improved local air quality and ambience as a result of fewer vehicle movements. This in turn would make communities more attractive for walking and cycling, encouraging a mode shift to active modes for shorter, everyday trips, which would enhance health and wellbeing and benefit the environment by reducing emissions related to road-based transport.

Overall, the option is likely to have a **minor positive** impact against this objective under both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Enhancements that increase capacity and speed of services on the Aberdeen to Inverness rail corridor would contribute to sustainable economic growth by improving connectivity, access to labour markets, and accessibility to employment, education and training.

Enhanced capacity for freight routes would improve the competitiveness of businesses in key markets, by providing more low carbon avenues of trade. Overall, journey time reliability for freight would be improved, due to modal shift from road freight to rail freight. Freight journeys which shift to rail would benefit from the better reliability afforded by rail relative to road, while journeys which remain on road would benefit from reduced congestion on the road network.

This would be anticipated to both support and enhance economic growth.

Overall, the option is likely to have a **minor positive** impact against this objective under both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The provision of modern decarbonised rolling stock on the line is likely to increase the reliability of services, for example by reducing the number of train failures. Similarly, the provision of additional passing loops would serve to increase the reliability and resilience of the rail infrastructure to mitigate the impacts of trains running not-to-time and other incidents, therefore helping to create a network that passengers can rely on. The increase in service frequency would provide a positive impact on resilience by significantly limiting the time delay impact on travel of individual service cancellation.

As this option could also encourage a mode shift from private car and transfer freight from the road network to rail, there may also be a reduction in the number of vehicles using the corridor. Reducing the overall traffic volume would reduce the risk of accidents occurring, improving the reliability of the route. Furthermore, reducing the number of HGVs would also reduce the potential for platooning, and driver frustration, which could also reduce the number of accidents on the route, further improving reliability. The provision of reliable, consistent services is key to encouraging behavioural change, and therefore long term modal shift, for both passenger and freight.

As rail is considered to be one of the safest modes of transport with just under three fatalities per billion passenger miles in 2020-2021[xviii], any mode shift to rail would reduce the number of fatalities by reducing the dependence on other, more dangerous modes of transport.

Overall, the option is likely to have a **minor positive** impact against this objective under both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
-	-

This option is likely to result in positive effects in terms of reducing greenhouse gases and air pollution as it could lead to a modal shift towards sustainable modes of transport for passengers and freight. The number of longer distance HGV movements on the corridor is therefore likely to decrease, leading to a positive effect in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 is located within settlements. This would have some positive effects on amenity and placemaking by reducing some of the HGV trips through settlements. Noise and vibration may increase along the rail line as a consequence of greater freight movements which might have a minor negative effect. Furthermore, there may be localised increases in noise levels and slightly reduced air quality around the freight terminals as the number of short distance HGV trips may increase. In terms of passenger movements, the decrease in travel time on the railway may be more attractive as a mode of travel for individuals travelling to work or reaching the larger settlements, creating benefit for the general population.

The option is likely to have a moderate negative effect in terms of natural resource requirements due to the construction of new freight facilities and dualling of the tracks in certain locations.

A new freight terminal at Huntly and dualling of the existing tracks at Keith has the potential for negative environmental effects during construction and operation in relation to biodiversity, natural resources, cultural heritage, and landscape and visual amenity, for example. The locations chosen are likely to result in a low environmental impact given the locations are adjacent to existing or historic rail facilities and have no significant environmental designations. The extent of the impact would be dependent on the scope of works and precise location of the terminal and the extent of dualling. There are some rows of trees and wooded areas in and around the Huntly and Keith railway stations which may be affected.

Overall, at this preliminary stage in the appraisal process, the potential environmental effects of constructing a rail freight terminal and dualling of targeted sections of the track within the corridor is expected to be minor negative, although this would be subject to final site selection and associated design. This is on the basis that although there are positive environmental effects associated with this option, these would potentially be outweighed by effects from constructing a new rail freight terminal and the dualling of sections of track. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Mitigation measures may be possible to offset the negative impacts through, for example, tree planting; however, the extent of impacts and efficacy of mitigation would only be known through the detailed design development process. If environmental constraints, such as designated sites, can be avoided, then adverse environmental effects can be reduced.

Overall, this option is likely to have a **minor negative** impact against this criterion under both the 'With Policy' and 'Without Policy' scenarios.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	+

The provision of enhanced frequency rail services, together with a significant reduction in end-to-end journey time, would increase the attractiveness of rail as a mode of transport for passenger journeys between Aberdeen and Inverness and could help generate modal transfer from car to rail. This option also seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail, reducing the number of road freight vehicles on the corridor. This would result in a reduction of greenhouse gas emissions associated with road freight transport in the long term. However, in the short term greenhouse gas emissions would arise from construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. The combined extent of overall impact on greenhouse gas emissions would only be known through the detailed design development process. The option has the potential to be vulnerable to the effects of climate change impacting the existing railway, for example damage to railway and drainage systems from periods of heavy rainfall with the potential for increased runoff from adjacent land. However, new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability.

Further environmental assessment would be undertaken if this option is progressed through the design and development process.

Overall, at this preliminary stage in the appraisal process, the potential impacts of the option are considered to be **minor positive** on the Climate Change criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

Through both increased frequency of service, reduction in journey times for passenger journeys and improved journey quality through the provision of new rolling stock, it is likely

that this option would result in modal shift from road to rail freight traffic, replacing longer distance HGV movements in the corridor and beyond. This is expected to reduce the overall number of vehicle kilometres travelled by goods vehicles which, in turn, is likely to improve the overall safety performance of highway networks through a reduction in the frequency of collisions and associated casualties. Additionally, the movement of freight by rail is more secure than by road as rail freight terminals are typically well fenced off with CCTV protection.

However, the level of impact of this modal shift in both cases is likely to be modest given the distributed nature of both trip origins and destinations for journeys impacting on the corridor.

There is potential for negative environmental effects on visual amenity during construction and operation of this option; however, this would need to be assessed in more detail during the development of the option.

It is anticipated that this option will have no impact on the personal security of travellers and their property.

Access to health and wellbeing infrastructure may improve due to improved rail journey times and frequency.

There may be some health benefits from improved air quality due to reduced emissions attributed to modal shift from car to rail and road freight to rail. A reduction in HGVs and LGVs may also improve community ambience as a result of fewer vehicle movements, which can in turn make a community more attractive for walking and cycling, with associated benefits on health and wellbeing. Overall rail is considered a safe mode of travel. In 2020/21[xviii], the Department for Transport reported under 3 fatalities per billion passenger miles. Encouraging modal shift to rail for passenger journeys would therefore be anticipated to support a reduction in accidents. There may be some health benefits from improved air quality due to reduced emissions attributed to modal shift from car to rail and road freight to rail. A reduction in HGVs and LGVs may also improve community ambience as a result of fewer vehicle movements, which can in turn make a community more attractive for walking and cycling, with associated benefits on health and wellbeing.

Overall, this option is forecast to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
++	++

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the standard of the infrastructure proposed is currently unknown.

The Aberdeen/Inverness rail line provides an important economic link between the two cities, within the corridor, and beyond through interchange with other rail services. As well as providing linkages for passenger services, the line is used by freight services.

Increasing the frequency of passenger services coupled with a significant reduction in end-to-end journey time is likely to have a positive impact on this criterion by reducing non-productive time and improving the linkage between economic activity in the two cities. It is also likely to assist in bolstering the local economies of settlements in the corridor that have railway stations, by making them attractive places to live, work and visit, and will improve access to both cities for opportunities for work, education and access to other key services.

In addition to the benefits to rail passengers, this option seeks to facilitate the movement of goods via rail freight. The key user groups that could benefit in this regard are businesses and enterprises that currently transport goods over medium to long distances via road. Over longer distances, it is expected that the movement of goods via this option could be more economically competitive than road and therefore the increased attractiveness of this option may encourage further usage and overall investment.

If sufficient volumes of freight transfer from road to rail there are likely to be benefits for general road users through the reduction of goods vehicles using the highway network.

Additionally, rail terminals can act as a catalyst for additional private sector investment in warehousing and other related industries, leading to industrial agglomerations with recent examples being the private sector investment at Mossend International Railfreight Park[xix], Port of Grangemouth[xx] (operated by Forth Ports) and Highland Spring at Blackford[xxi]. While it applies to most sectors of the economy, consumer goods, manufacturing, building and construction and forestry are expected to be particularly strong.

Overall, this option is forecast to have a **moderate positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

The option enhances the frequency of passenger services and aims to reduce journey times, providing enhanced accessibility to key services such as healthcare, employment and education throughout the corridor, promoting social inclusion and improving comparative access by geographical location. Whilst this option only provides benefits to those with access to the rail network, it will provide benefit to those without access to a car, providing a more inclusive transport system. This option does not impact on the network coverage of public transport nor active transport.

This option also has the potential to encourage freight mode shift from road to rail and there may be examples of some minimal reduction in community severance due to a reduction in the number of goods vehicles on the road.

This option is not expected to impact on affordability.

Reference should also be made to the SIAs in Section 3.5.

Overall, this option is forecast to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3.4 Deliverability

1. Feasibility

The primary method of delivering linespeed improvements is through the provision of new decarbonised rolling stock, with improved power and acceleration/deceleration characteristics relative to current units. For costing purposes, the option has identified a market-available hydrogen unit, which is considered to be a feasible option for future rolling stock. It is noted that further investigation of the potential to raise linespeed between Insch and Keith be undertaken, and that the feasibility of this is not known at this time.

The provision of a dynamic loop between Forres and Elgin and a passing loop at Keith, alongside a second platform is considered likely to be feasible as the one major structure over the railway between Forres and Elgin is already capable of taking dual track. In addition, the land between Forres and Elgin is relatively flat with a low level of adjoining development. It is considered that this would have a high degree of feasibility. The railway and station at Keith are located on the northern edge of the settlement, with works impacting open and wooded ground between the railway and the River Isla. It is considered that there is sufficient space to accommodate both the lengthening of the existing loop, and the provision of a second platform at Keith Station.

The northern approaches to Aberdeen appear to have some degree of latent capacity, as does the station overall looking at the movements versus the platform availability. Notwithstanding this, a full detailed timetabling study would need to be undertaken to assure this in conjunction with any upgrading works. If required, additional capacity is likely to be feasible through one or more of the following:

- Full or partial re-doubling of northern approaches (subject to gauge clearance)
- Altering trackwork in the through platforms to increase operational flexibility and/or
- Reinstating redundant through platforms on the west side.

The technical assessment of freight capacity improvements identifies an opportunity at Huntly to make use of the yard adjacent to the station, which is located close to the A96

and on the outskirts of the town and is considered to be a feasible location for an intermodal freight facility. A second option for the facility, located on the outskirts of Elgin, is also considered to be feasible given the proximity of the railway to the A96, and the availability of relatively flat open land.

Overall this option is considered to be feasible, with proposed enhancements representing tried and tested approaches to improving the rail network, with a number of similar schemes implemented across the Scottish rail network in previous years.

As with all rail enhancements, a number of risks require consideration. Risks may include strategic (relating to the rail infrastructure, wider transport network and trends with the transport industry for example increased freight traffic), regulatory/legal (alteration of planning legislation) and financial (unforeseen environmental conditions, asset condition, land assembly and acquisition). These would need to be considered alongside any cost, timescale or deliverability risks associated with the construction and operation of the option.

In terms of the rail engineering and construction aspects required, there may be negative impacts on the local area and communities associated with construction that would require to be considered, such as increased noise, train movements and dust. Furthermore, there may be unforeseen technical challenges onsite that would make the implementation more complex and expensive, particularly given the age of some structures along the route.

Technologies and construction techniques are generally proven and present no significant risks to delivery, albeit a more thorough, detailed assessment would be required considering local issues and constraints, therefore identifying potential challenges that could lead to increased timescales and costs. However, line upgrades for passenger and rail freight are near continuous within the UK, with Network Rail having expertise of the Scottish railway network, and the necessary work required to deliver upgrades.

In terms of the operational aspects it is considered that implementation of this option would allow Train Operating Companies (TOCs) and Freight Operating Companies (FOCs) more flexibility within the working timetable (due, for example, to more paths and improved linespeeds).

2. Affordability

New rolling stock is already anticipated to occur due to both periodic replacement of older stock and the extant decarbonisation programme, and is therefore deemed to be affordable. Other costs are related to the infrastructure elements and are considered to be of a magnitude that is affordable in the context of rail system interventions.

There are, however, risks with respect to potential ongoing revenue costs, due to uncertainty about future passenger rail demand. There is some early evidence that leisure journeys are recovering more quickly following the pandemic, and whilst there is expected to be a continued reduction in commuting and in-work travel, there is evidence that this

may increase willingness to travel further, potentially increasing demand for longer inter-city trips.

Development of freight terminals or facilities would likely be led by the private sector and based on commercial decisions. The Scottish Government could support these developments with grant funding subject to the application satisfying the criteria and budget availability. The ongoing use/maintenance of private freight facilities is subject to commercial viability for the operator, and this may fluctuate over time.

While there is inevitably some uncertainty around the uptake of new freight paths, overall at the UK level, rail freight has recovered to pre-pandemic levels with the two growth areas being in Intermodal and Aggregates.

3. Public Acceptability

Investment in rail generally is anticipated to have a high level of public acceptability. Passenger rail improvements are typically seen as positive by the public, as they can increase the frequency of services, reduce journey times, improve network resilience (fewer delays and cancellations) and increase accessibility of key locations (for example, employment) by rail.

Rail freight improvements would also be expected to generate support from the public, due to the potential reduction in the number of goods vehicles on the road network, resulting in reduced congestion and environmental benefits. However, some localised increases in HGVs near to freight yards to enable multimodal connections may create some level of discontent from residents close to the proposed yards due to increased emissions and noise.

The option would seek to deliver the longer term aims for the Aberdeen and Inverness line as have been set out in the public domain for some time, and as such is likely to generate support from a variety of business and community groups as well as the general public.

Public consultation undertaken as part of this review indicated mixed levels of support for improvements to linespeed, passenger and freight capacity and improvements on the Aberdeen to Inverness line. In relation to available space and capacity on trains, 30% of respondents stated that they were “very dissatisfied” or “dissatisfied” and 24% of respondents selected “very satisfied” or "satisfied". A total of 30% of respondents considered improving rail services, including train connections, cost, and comfort of travel, as a priority. Furthermore, 14% of respondents suggested more capacity on trains. Other suggestions included increased bike capacity. This suggests that there is demand for improvements to linespeed and passenger capacity.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxii].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Increased capacity and frequency on the passenger network between Aberdeen and Inverness would likely benefit those who do not have access to a private car and are more dependent on public transport to make journeys along the corridor. However, the extent to which groups will benefit will depend on the accessibility of rail services, affordability of fares and connectivity to important services for protected groups such as healthcare, education, employment and shopping.

Rail freight enhancements on the Aberdeen to Inverness line are likely to provide a minor positive impact to individuals in terms of equalities. Encouraging modal shift from road freight to rail may contribute to a reduction in harmful transport emissions and improve local air quality. This would benefit public health, particularly for vulnerable groups such as children, disabled people, older people and pregnant women.

However, this option could lead to increased traffic in the vicinity of the new freight yard and as such the impact on protected characteristic groups living in the area should be considered when siting.

This option is expected to have a **minor positive** impact on addressing this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option could improve connectivity to key services such as education for children and young people living near to rail stations along the corridor. Children and young people tend to be more reliant on public transport services in general, so are more likely to benefit

from rail improvements. However, the extent to which groups will benefit will depend on the accessibility of rail services, affordability of fares, and connectivity to services required.

By encouraging modal shift from road to rail for both passenger and freight movements, this option could contribute to an improved local air quality, which would benefit children and young people as they are particularly vulnerable to the effects of poor air quality.

By reducing the volume of road traffic, safety could also be improved which would benefit children as they are more vulnerable to fear of road danger.

However, it should be noted that a new freight yard could lead to increased localised traffic, which could negatively impact air quality and road safety for children depending on where the freight yard is located.

This option is expected to have an overall **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

Increased capacity and frequency on the rail network between Aberdeen and Inverness would likely benefit those who do not have access to a private car and are more dependent on public transport to make journeys along the corridor. However, the extent to which socio-economically disadvantaged groups will benefit will depend on wider factors such as affordability of fares and connectivity to important services such as healthcare, education, employment and shopping.

Encouraging modal shift from road freight to rail may contribute to a reduction in harmful transport emissions which in turn could result in a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality.

The provision of a rail freight yard could provide local employment opportunities both through construction and operation.

This option is expected to have a **minor positive** impact on addressing this criterion under both the 'With Policy' and 'Without Policy' scenarios.

References

[i] Waterman, 2007, 5 Mile Diagrams.

[ii] Transport Scotland, Aberdeen to Inverness rail improvements, https://www.transport.gov.scot/projects/aberdeen-to-inverness-rail-improvements/aberdeen-to-inverness-rail-improvements/

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1. Preliminary Appraisal Summary

1.1 Option Description

Improved Parking Provision at Railway Stations

This option would provide additional car parking facilities at railway stations within the A96 corridor between Aberdeen and Inverness with the aim of encouraging the use of existing low carbon infrastructure for medium and long distance travel along the corridor. Based on analysis, station parking at Inverurie, Huntly, Elgin, Forres and Nairn would be considered as part of this option.

Where possible, areas of land suggested to accommodate additional parking and access should fall within existing Network Rail ownership to reduce costs. Areas identified for parking should also be situated physically close to the relevant railway station for the public ease of use.

At Inverurie station, land immediately west of the existing station car park could be utilised for additional parking and is ideally located to integrate with existing facilities. The proposed area is in a former railway siding, noting that it would need to be determined if this lies within Network Rail ownership.

At Huntly station, there is the potential to use an area of land immediately adjacent to, and south of, the smaller of the two existing station car parks. This is ideally located to integrate with existing facilities, noting that it would need to be determined if this lies within Network Rail ownership.

Elgin station is constrained by private commercial and residential properties located on all sides of the station. Any additional car parking spaces would likely need to be accommodated within the existing footprint of the station car park, via the provision of a multi-storey car park. Consideration would be given to above and below ground storeys to limit visual impact as required.

At Forres station, the existing parking bays located on the north side of the station car park could be extended by approximately 25 metres to the east, which would accommodate approximately 10 additional spaces. A large additional parking area could also be provided south-east of the station car park (east of the Network Rail compound at this location). The areas suggested appear to be, at least partially, within Network Rail ownership.

At Nairn station, additional car parking could be provided by utilising land south-west of the existing station overflow car park. The area also falls within the railway corridor, noting that it would need to be determined if this lies within Network Rail ownership.

1.2 Relevance

Relevant to all road and public transport users in the corridor

Transport Scotland's programme of incremental improvements of the Aberdeen to Inverness railway line focuses on passenger service improvements and increased opportunities for freight. Improving parking facilities at stations may remove a potential barrier to the use of these enhanced service improvements for passengers. Any mode shift achieved to reduce car use for longer distance trips would contribute to the Scottish Government's target of reducing the number of kilometres travelled by car by 20% by 2030[i], although the option is considered unlikely to have a significant impact.

1.3 Estimated Cost

<£25m Capital

An effort has been made to identify areas of land which may currently be within the ownership of Network Rail. As such, no land purchase is included in the estimated range given.

A significant portion of the estimated cost is assigned to the construction of a multi-storey car park at Elgin railway station, with smaller scale construction at Inverurie, Huntly, Forres, and Nairn at relatively lower costs.

Further analysis and assessment would be required at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

Network Rail or ScotRail would likely become the asset owner on completion of any improved parking provision at railway stations and would therefore be liable for the ongoing operational and maintenance costs.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. However, with the potential to increase the use of the existing railway infrastructure for medium to long distance corridor travel, this option also contributes towards 'reducing the need to travel unsustainably' and 'making better use of existing capacity'. This option would also sit within the 'public transport' tier of the Sustainable Travel Hierarchy.

This option would also contribute to three of the 12 NTS2 outcomes, as follows:

- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Be safe and secure for all.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	-	-	-	0	0	0	0	0	0	-	0	0	0
'Without Policy' Scenario	-	-	-	0	0	0	-	0	0	-	0	0	0

This option is expected to have a neutral or minor negative impact against most of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria.

This option is focused on providing enhanced parking facilities at particular stations along the A96 corridor between Aberdeen and Inverness. The rationale for this is to provide sufficient car parking to make it easier to park at train stations thereby reducing barriers for modal shift from road to rail for medium and longer distance journeys. In doing so, a modal shift would support the Scottish Government's target of achieving a 20% reduction in car kilometres by 2030.

The option is intended to increase the potential to achieve modal shift from private car to rail for longer distance trips through enhanced parking facilities at railway stations. However, any mode shift is likely to be outweighed by the potential generation of additional shorter distance car trips associated with travel to rail stations. This could result in the generation of a net increase in car kilometres. Notwithstanding the fact that many of the stations serve a large rural hinterland, the settlements themselves are generally compact in nature, meaning that there should be opportunity to address local station access through active modes, which is achieved by other options considered in the Preliminary Appraisal.

The performance of the option against the objectives and criteria is marginal and it is anticipated to have a minor negative impact in both transport behaviour scenarios on multiple TPOs relating to contributing to Scottish Government's net zero targets (TPO1), improving accessibility to public transport (TPO2), and enhancing communities as places to support health, wellbeing and the environment (TP03) as it only benefits those with access to a car and encourages its use for at least part of a trip. The option is also anticipated to have a minor negative impact for the Equality and Accessibility STAG criterion in both scenarios, and for the Climate Change criterion in the 'Without Policy' Scenario where car trips are anticipated to be more common.

The option is considered to be feasible from a technical delivery perspective, with no significant construction constraints. Improving parking at railway stations is also considered to be affordable, though costs at individual sites would vary depending on locational

requirements and constraints that may impact the complexity of construction and therefore a more detailed review at each location would be required.

It is considered that Active Communities could provide more significant benefits, better aligns 'With Policy' objectives and does not have as many negative impacts that may result from an increase in car kilometres.

It is recommended that this option is not taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[ii].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of bus for commuting to work is significantly lower than the national average, as it is for rail, with only Insch having a mode share above national average. Rail station accessibility is also an issue, as raised by stakeholders and the public, with Insch, Nairn and Huntly noted for not being step-free stations, potentially limiting patronage.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Elgin, Inverness or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Competitiveness of Public Transport with Other Modes: Bus journey times are not competitive with train or car for longer trips across the transport appraisal study area. The cost of rail and some longer distance bus trips is higher in relation to car fuel costs (as at March 2022). Public consultation has also revealed that the perception of delay and a lack of multimodal integration combined with the perceived high cost of fares, particularly for rail, makes travel by public transport unattractive to users.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport

contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the Personal Injury Accidents and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Improved Public Transport Passenger Interchange Facilities
- Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line
- Development of the A96 Electric Corridor.

Other areas of Scottish Government activity

- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[iii]
- Climate Change Plan 2018-32 Update[iv]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[v]
- National Planning Framework 4 (NPF4)[vi]
- National Transport Strategy 2 (NTS2)[vii]
- Strategic Transport Projects Review 2 (STPR2)[viii].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
-	-

The provision of additional car parking spaces at railway stations could support the overall net zero emission targets as it would help encourage modal shift from longer distance car journeys to a combination of shorter car journey and longer distance rail journeys.

Whilst this mode shift could occur, it is important to consider the way in which rail is accessed and what type of trips are most usefully targeted for a mode shift to rail. Notwithstanding that the railway stations along the corridor serve large rural hinterlands, the settlements themselves are relatively compact. Increasing car parking provision could result in a net increase in short distance car trips, and whilst these could be made by electric/ultra low emission vehicles (EV/ULEV) if the charging provision was included at station car parks, this is not in accordance with the target to reduce car vehicles kilometres by 20%, particularly as such trips could be regular (commuting or similar) rather than less frequent longer distance trips.

Overall, this option is likely to have a **minor negative** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
-	-

The provision of additional car parking at railway stations is likely to increase the overall accessibility of the railway system for those with access to a car by mitigating or removing the risk of not being able to park and ride due to lack of available spaces. This is particularly the case for journeys after the morning peak period, which may have resulted in all available spaces being used. This option would be a particular benefit to those wishing to access the railway network from rural areas as they often cannot access rail stations by other means of transport. However, it would disproportionally benefit those with access to a car (providing no benefit to those without access to a car) and therefore does not support an inclusive strategic transport system.

Overall, this option is likely to have a **minor negative** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
-	-

The provision of additional car parking spaces could encourage a mode shift from road to rail for longer distance trips, which could provide benefits to towns along the corridor which do not have a rail station, as through traffic could reduce. Any reduction in traffic would provide opportunities to enhance the sense of place and encourage active travel within settlements leading to health and wellbeing benefits. However, this option is likely to also encourage short distance car trips to railway stations, potentially increasing the volume of traffic within communities with rail stations, introducing a barrier to active travel. This could potentially negate existing and future initiatives to encourage active travel access to railway stations from the settlements concerned.

Overall, this option is likely to have a **minor negative** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

By improving parking provision at rail stations, the rail network may become more attractive for longer distance trips, providing a more sustainable means of travel to employment opportunities. This could therefore have a positive impact on sustainable access to key trip attractors in neighbouring towns and larger urban areas, for example

Nairn, Forres, Elgin, Keith, Huntly, Inverurie and Kintore, as well as the cities of Inverness and Aberdeen. However, the provision of additional parking spaces would only enhance access to the rail network to those with access to a private car. It would not improve inclusive growth as it would not provide increased opportunities to more disadvantaged groups that do not have access to a car.

Whilst the capacity for integration between modes would be increased by providing additional car parking spaces at the railway station, this could result in an increase in shorter distance car trips, rather than sustainable trips.

This option is therefore expected to have a **neutral** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
0	0

If the option is successful in promoting increased rail travel and delivering a corresponding decrease in private car use, there is the potential for this option to bring journey time reliability and safety improvements as a result of removing cars from the strategic transport corridor. However, this is likely to be negated by an increase in the number of local car trips as residents access the railway stations, with potential associated negative impacts on reliability and safety.

Overall, this option is likely to have a **neutral** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option could result in positive impacts in terms of air quality as it could lead to a modal shift towards greater use of the railway by those who would currently use private vehicles. In particular, it could increase the opportunity for those in rural areas who have limited access to public transport to access the railway stations. A reduction in vehicles on the A96 would have a positive impact in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 is located within settlements. This would have some positive impacts on amenity and placemaking by reducing some of the vehicle trips through settlements on the A96.

It is, however, important to consider the way in which rail is accessed and what type of trips are most usefully targeted for modal shift to rail. Notwithstanding that the railway stations along the corridor serve large rural hinterlands, the settlements themselves are relatively

compact. This means that the railway stations are well within active travel access distances for the settlement populations. Increasing car parking provision could result in a net increase in short distance car trips, which would have a negative impact on air quality and noise within settlements.

Construction of the option is likely to have a slight negative impact in terms of natural resources depending on the materials chosen and its source. In terms of the locations chosen, it is noted that there are no significant environmental designations which would likely be affected by this option. The sites chosen are largely urban in location and include no specific environmental protection. There are trees in the vicinity of the Inverurie, Elgin and Forres sites and trees within the Huntly site; however, these do not have any environmental designation and are not formally protected. The loss of any trees, particularly those within the Huntly site, is likely to have a minor negative impact in terms of biodiversity and landscape, and ecological assessment would be required as to their habitat value for bats and breeding birds for example.

There are likely to be minor negative environmental impacts from the construction process in terms of construction noise, dust generation, natural resource requirements and potential tree/habitat loss. During operation, the option will see an increase in traffic to the railway stations, leading to localised noise and air quality impacts. The option, however, may have positive environmental impacts through increasing opportunity for train travel, particularly for those in the rural areas that have little option but to drive to public transport locations. This could have positive impacts by reducing the number of vehicles on the A96 and reducing associated noise and air quality impacts. Taken together, this is likely to offset the negative impacts of the option. The extent of impact would only be known through the detailed design development process, with appropriate environmental mitigation considered, if necessary, at these stages. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). If environmental constraints such as designated sites can be avoided, then adverse environmental impacts can be reduced. Similar positive benefits could, however, be achieved through the provision of Active Communities or Active Connections, which would increase the opportunity to access the rail network via sustainable means.

Overall, at this preliminary stage in the appraisal process, the impacts of this option are expected to be **neutral** for the Environment criterion in both the 'With Policy' and 'Without Policy' scenarios.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	-

In the short term, greenhouse gas emissions would be generated due to construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plants and vehicles.

In the long term, increasing the parking at the railway stations would increase the attractiveness of public transport and potentially attract new users transferring from private vehicles. This would lead to a modal shift towards sustainable modes of transportation for some passengers and a reduction in vehicles using the A96, resulting in a reduction of greenhouse gas emissions.

It is, however, important to consider the way in which rail is accessed and what type of trips are most usefully targeted for modal shift to rail. Notwithstanding that the railway stations along the corridor serve large rural hinterlands, the settlements themselves are relatively compact. This means that the railway stations are well within active travel access distances for the settlement populations. Increasing car parking provision could result in a net increase in short distance car trips, which would have a negative impact on greenhouse gas emissions and air quality within settlements in the vicinity of the rail stations. The extent of change in greenhouse gas emissions is depends on the migration to zero-emission fuels over time. Negative impacts on greenhouse gas emissions could be reduced by providing sufficient EV/ULEV parking facilities, which could see more electric vehicles being used to travel to the station.

The impact on the vulnerability to the effects of climate change and the potential to adapt to the effects of climate change are expected to be neutral.

Overall, this option is expected to have a **neutral** impact for this criterion under the 'With Policy' Scenario and **minor negative** under the 'Without Policy' Scenario.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option may result in modal shift from longer distance road trips to a combination of short distance road trips to the train station and longer distance rail journeys where people choose to park and ride. This would likely have some marginal positive impacts on reducing overall volumes of traffic across the corridor as a whole and hence associated benefits in terms of accident reduction, health outcomes and access to health and wellbeing infrastructure. However, there is the potential that the provision of additional car parking could result in additional short distance road-based trips, including a shift from active modes to private vehicles, which could result in minor negative impacts such as an increase in road accidents within towns. Overall, any impacts are likely to be marginal.

If the option resulted in increased patronage on the rail network, there could be benefits in terms of perceived security concerns, such as for vulnerable people travelling alone.

The impacts on visual amenity would depend on the location and the nature of the parking facilities.

Overall, this option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
0	0

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the location and standard of the infrastructure is currently unknown. By increasing the physical capacity of the interchange, the scheme provides for growth and new trips. This is likely to be supportive of economic growth in the wider locality.

Encouraging modal shift from car to rail for longer trips could assist economic growth by reducing the number of cars in congested urban environments.

Whilst this option may deliver a degree of wider economic impacts for those with access to a car by enhancing their access to the rail network, these benefits would not be available to those without access to a car. As these individuals could drive to the destinations that they can now access by rail, this option is not anticipated to provide wider economic impacts.

Overall, this option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
-	-

Whilst the provision of additional car parking would result in an increase in provision for Blue Badge users, this option disproportionately benefits those with access to a private car. Whilst, more generally, by removing or mitigating the risk of a lack of capacity, there would be an improvement in accessibility of the rail network, this option does not increase accessibility for protected groups who do not have access to a private car and it could widen the equality gap between the more affluent and those who do not have access to a car.

This option does not impact on the public transport or active travel network coverage, nor affordability.

Reference should also be made to the SIAs in Section 3.5.

Overall, this option is likely to have a **minor negative** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios due to the disproportionate benefits for those with access to a car.

3.4 Deliverability

1. Feasibility

The technical exercise undertaken for the appraisal has identified potential sites for expansion of car parking facilities, but this is at a high level and were this option to be taken forward, more detailed feasibility work would require to be undertaken. Notwithstanding this, four of the five sites have land that is well placed in relation to the railway station entrance, and in a number of cases is likely to be within the existing railway land ownership. Elgin is acknowledged to be a challenge given the constrained nature of the railway station, and the potential for a multi-storey solution would have visual and townscape impacts that would require careful consideration.

The overall concept itself is commonplace across society. With the potential for delivery over a relatively short time period if land currently owned by Network Rail were able to be used, it is likely that the option would be considered technically feasible, with no untried technologies. There may be disruption to traffic during construction of new/extended car parking areas. Network Rail or Scotrail are likely to be responsible for delivery of this option.

2. Affordability

The cost of improving parking provision at railway stations would vary depending on locational requirements and constraints that may impact the complexity of construction and therefore a more detailed review at each location would be required to determine the likely cost impact. Costs would also be dependent on a number of other factors, such as the requirement for earthworks and structures, localised ground conditions, and various other engineering and environmental constraints. Whilst there has been an assumption that the additional car parking could be provided within the boundary of land owned by Network Rail, there may be a need to purchase land following the relevant statutory process.

Delivery of the option in general is expected to have an overall modest cost estimate. However, the public facing nature of the option means that there is likely to be little or no contribution from the private sector, unless there is an expectation for the proposals to be run for profit. Therefore, it is highly likely that Scottish Government funds would be required to deliver the proposal with it also being unlikely that the option will generate revenue.

3. Public Acceptability

At a strategic level, increases in railway station car parking provision generally enjoy high levels of public support through increasing accessibility at railway stations, particularly in the context of the A96 corridor where there are high levels of car ownership and dependency with railway stations having a relatively large catchment area. However, at a localised level, new car parking is likely to increase traffic movements and may be less acceptable to local residents and non-car users. The options may also require land-take; however, it may be possible that existing publicly owned land could be used.

Public consultation undertaken as part of this review indicated general support for improved public transport parking provision. In the consultation, 20% suggested better parking facilities at public transport sites with some respondents indicating that there is a need for improved parking facilities including park and ride. This suggests there is some demand for improved parking provision at railway stations, and improvements would be supported by the public.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[ix].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option is likely to have a neutral impact on protected characteristic groups overall. The increased capacity in parking at stations could result in improved access to the rail network for residents. This in turn could result in more journeys being undertaken by rail, improving air quality along the A96 corridor. The benefits of improved air quality could have a greater impact on those who are more vulnerable to the adverse health effects of air pollution including children, older people, disabled people and pregnant women. However, some localised adverse air quality issues may be experienced due to an increase in traffic movements in towns and around stations impacting on a greater number of people.

To further support access to the rail network for protected characteristic groups, parking facilities should include disabled parking and child and parent parking.

Construction impacts associated with increased car parking capacity could have negative impacts on local residents and passengers. Consideration should also be given to personal security where construction activities may result in reduced natural surveillance for passengers accessing the station.

Overall, this option is expected to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

The increased capacity in parking at stations could result in improved access, with more journeys being undertaken by rail, improving air quality along the A96 corridor. The benefits of improved air quality could have a greater impact on children and young people who are more vulnerable to the adverse health effects of air pollution. However, some localised adverse air quality issues may be experienced due to an increase in traffic movements in towns and around stations impacting on a greater number of people. Construction impacts associated with increased car parking capacity could have negative impacts on children living locally.

Overall, this option is expected to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option would result in increased capacity in parking at stations, which could result in improved access to the rail network for residents. However, the benefits for those from socio-economically disadvantaged groups would depend on the extent to which they are able to access a car.

Encouraging modal shift from road to rail for longer journeys may contribute to a reduction in harmful transport emissions, which in turn could result in a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality. However, the option could also encourage more local car journeys in order to access the rail stations, with negative impacts anticipated within settlements, affecting a greater proportion of the population.

The construction activities associated with this option are likely to result in local employment opportunities.

Overall, this option is expected to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

References

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[vii] Transport Scotland, National Transport Strategy 2, 2020, https://www.transport.gov.scot/publication/national-transport-strategy-2/

[viii] Transport Scotland, Strategic Transport Projects Review 2 (STPR2), 2022, https://www.transport.gov.scot/our-approach/strategy/strategic-transport-projects-review-2/

[ix] Jacobs AECOM, Strategic Environmental Assessment (SEA) Draft Environmental Report - A96 Corridor Review, 2024, https://www.transport.gov.scot/publication/strategic-environmental-assessment-sea-draft-environmental-report-a96-corridor-review/

1. Preliminary Appraisal Summary

1.1 Option Description

Targeted Road Safety Improvements

This option focuses on the delivery of targeted road safety improvements on the A96 Trunk Road. The A96 is a strategic trunk road of approximately 155km in length and routes from Raigmore Interchange, Inverness in the west to Craibstone Roundabout, Aberdeen in the east. The A96 Corridor Review appraisal area covers Raigmore Interchange to Craibstone Roundabout west of Aberdeen.

The existing A96 Trunk Road is predominantly a single carriageway; however, there are sections which have been upgraded either to dual carriageway, climbing lanes, or wide single 2+1 carriageways. This option seeks to improve trunk road safety at targeted locations along the route, reducing both real and perceived safety concerns. The extent of this option excludes the A96 Inverness to Nairn (including Nairn Bypass) scheme as it has received Ministerial consent, as well as the options to bypass the towns of Forres, Elgin, Keith and Inverurie as these are all being appraised separately as part of the A96 Corridor Review. It is considered that the provision of bypasses could reduce or remove existing safety issues in those locations and therefore no further improvements under this option (Targeted Road Safety Improvements) would be necessary.

Although further development is required, it is envisaged that the improvements considered under this option would primarily consist of improvements to road infrastructure which could include, but are not limited to, the following:

- Junction improvements (e.g. right-turn priority; signalisation; at-grade roundabouts; grade-separation)
- Realignment/widening (e.g. at carriageway 'pinchpoints' or where the horizontal or vertical alignment is resulting in a safety problem or risk)
- Provision of overtaking opportunities (e.g. partial dualling, wide single 2+1 carriageways and climbing lanes).

These potential interventions that could be delivered through the option are anticipated to improve the overall safety performance of the A96 corridor through reducing the number of accidents and their severity, in addition to improving the overall reliability of the route by reducing the level of disruption caused to road users and local communities.

1.2 Relevance

Relevant to all road users in the corridor

This option would support the reliability and resilience of the network for communities and businesses by reducing the impact of accidents on the network, which would be of benefit to key industry sectors such as the food and drink sector and tourism, enabling economic

growth to be realised. This option supports Scotland's National Strategy for Economic Transformation, which reaffirms the Scottish Government's commitment to creating a more successful country through increasing sustainable economic growth; a central feature of the strategy is the approach to supporting investment.

Furthermore, a high quality, well maintained and efficient trunk road network also supports other Scottish Government programmes for active travel, development of connected and autonomous vehicle infrastructure and bus priority investment, and thereby contributes to the low carbon economy.

This option is directly relevant to Scotland's Road Safety Framework to 2030. The framework sets out the vision for Scotland to have the best road safety performance in the world by 2030 and the long-term goal of Vision Zero where there are zero fatalities and serious injuries on Scotland's roads by 2050 with ambitious interim targets for the number of people killed or seriously injured to be halved by 2030.

The framework is aligned with National Transport Strategy (NTS2) and embeds the Safe System approach to road safety delivery, which consists of five key pillars focusing efforts not only on road traffic casualty reduction (vulnerability of the casualties) but also on road traffic danger reduction (sources of the danger).

For the period between 2015 and 2019, the Personal Injury Accident (PIA) rate on the A96 is lower than the national average; however, there are urban sections where the PIA accidents rates are higher than the national average. There are a number of sections of the route where the Killed or Seriously Injured (KSI) accident rates are higher than the national average for trunk A-roads of a similar type.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the type, location, scale and complexity of the proposed targeted trunk road safety improvements. At this stage no work has been undertaken to identify specific locations or the potential interventions and it is recognised this would require examination and assessment at the stages of design development, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

In additional to construction costs, Transport Scotland would also likely be the asset owner on completion for any targeted trunk road safety improvements and is therefore anticipated to take on the operation and maintenance of any interventions, which would have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'maintaining and safely operating existing assets' delivering interventions to improve both real and perceived road safety issues. This option would also sit across all tiers of the Sustainable Travel Hierarchy.

This option would also contribute to six of the 12 NTS2 outcomes, as follows:

- Provide fair access to services we need
- Adapt to the effects of climate change
- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Be safe and secure for all.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	0	0	+	+	+++	- -	0	+++	++	+	0	0	0
'Without Policy' Scenario	0	0	+	+	+++	- -	0	+++	++	+	0	0	0

This option makes a generally positive contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs) and STAG criteria, with a number of neutral impacts for all Statutory Impact Assessment (SIA) criteria. However, it is expected that there will be negative impacts resulting from this option in both the 'With Policy' and 'Without Policy' scenarios (which are described in Appendix A of the Transport Appraisal Report), specifically considering the STAG Environment criterion.

This option is focused on improving the safety of the trunk road network through the provision of targeted safety improvements along the A96 corridor. This option is therefore anticipated to have a major positive impact on TPO5 in relation to providing a safe, reliable and resilient transport system, as well as minor positive impacts for enhancing communities as places to support health, wellbeing and the environment (TPO3) and contributing to sustainable inclusive growth (TPO4). In addition to the TPOs, the improvements for road safety are anticipated to have a major positive impact on the STAG Health, Safety and Wellbeing criterion. Economic benefits are expected due to improved reliability and an anticipated reduction in road closures, contributing to a moderate

positive impact for the STAG Economy criterion, and a minor positive impact for the Equality and Accessibility criterion.

However, improving road safety may encourage more car trips to be made that might subsequently generate an increase in car kilometres, and the footprint for some interventions could increase the current road space, potentially impacting negatively on environmental considerations such as water environment, agriculture and soils, cultural heritage and visual amenity.

Delivery is considered to be feasible with Transport Scotland having significant industry experience of implementing the type of options considered. Affordability is dependent on the complexity and scale of options. Wider public support is anticipated for improvements to the safety of the trunk road network, with this being noted as a major concern for users of the A96 Trunk Road.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[i].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall PIA rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres and Keith. The rate of KSI accidents is also significantly higher than the national average in these two towns, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average, these being between Hardmuir and Forres, between Fochabers and Keith, between Keith and East of Huntly and between Kintore and Craibstone.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant due to the effect on HGVs and the movement of goods.

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel.

Public Transport Accessibility: Evidence across the transport appraisal study area suggests that outside of Aberdeen, the level of public transport use is low in comparison to the rest of the country. Outside of Aberdeen City, the use of bus for commuting to work is significantly lower than the national average, as it is for rail, with only Insch having a mode share above national average. The Scottish Accessibility to Bus Indicator (SABI) demonstrates that across the transport appraisal study area, the accessibility to bus is low outside of the urban areas of Aberdeen and parts of Inverness.

Large sections of the population in the transport appraisal study area cannot access key services such as hospitals with emergency departments, or higher education within two hours by public transport. Moray and Aberdeenshire both have low accessibility to these services which are often centralised in more urban areas such as Inverness, Elgin or Aberdeen. As such, public transport is not an option for many trip purposes within the transport appraisal study area.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or KSI accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Active Communities
- Active Connections
- Elgin Bypass
- Forres Bypass
- Inverurie Bypass
- Keith Bypass.

Other areas of Scottish Government activity

- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[ii]
- Climate Change Plan 2018-32 Update[iii]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[iv]
- National Transport Strategy (NTS2)[v]
- National Planning Framework 4 (NPF4)[vi]
- Scotland's National Strategy for Economic Transformation[vii]
- Scotland's Road Safety Framework to 2030[viii]
- Strategic Road Safety Plan (2016)[ix]
- Strategic Transport Projects Review 2 (STPR2)[x].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
0	0

Targeted road safety improvements are not expected to materially influence overall travel demand along the A96 corridor unless capacity improvements were to be delivered through longer sections of partial dualling. Capacity improvements may encourage people to move further away from employment centres as a result of improved journey time and journey time reliability.

Through reducing the overall frequency of Road Traffic Collisions (RTCs) and therefore the associated disruption, there may be slight benefits to transport-related emissions through a reduction in stationary traffic or a reduction in the frequency of lengthy diversions. Implementing improvements to improve safety could also enhance the operation of the network. Given the level of traffic on the majority of the corridor, congestion is not a prevalent issue, and any resulting wider operational benefits are therefore anticipated to be negligible.

Improving the safety performance provides the opportunity to encourage a shift from car-based travel to sustainable modes or improving the reliability and attractiveness of public transport services for local and long distance trips; however, other measures would be required to support modal shift for any significant impact on road-based transport emissions to be realised.

While the types of options within this grouping do not, on their own, prioritise a modal shift to more sustainable modes, they do help support the provision of a safe, efficient and

reliable trunk road network which is integral to wider Scottish Government programmes relating to active travel and bus priority investment.

Overall, the option is scored as **neutral** impact against on this objective under both the 'With Policy' and 'Without Policy' scenarios.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is a problem in the corridor, which is highlighted by the reliance on private vehicle use and by higher than average car ownership levels across the region. This is due to the largely rural nature of the region, where providing public transport can be a challenge due to dispersed population and settlement patterns. While some options could benefit local and longer distance bus services that use the A96 Trunk Road, they are unlikely to have a direct impact on service frequency and coverage. This option is therefore not anticipated to have a notable impact on issues relating to the accessibility of public transport services, which are linked to wider issues related to the provision, frequency and integration of public transport in the area.

Overall, the options are anticipated to have a **neutral** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

A reduction in the number and severity of accidents as a result of the types of improvements considered in this option would deliver health benefits to individuals by providing a safer environment to travel.

Although further development of the option is needed to understand the size, scale, and location of potential targeted safety improvements, this option may address existing severance on the A96 where the route bisects local communities.

Reducing the overall frequency of collisions and their associated impacts are likely to improve the overall sense of place for communities where there are identified safety performance concerns. With several sections of the route having a higher KSI and PIA rates than other comparable road types[xi], it is likely that the option could reduce real and perceived safety concerns on the route. This is anticipated to encourage a shift from car-based travel to active modes, which should result in a minor positive benefit to health and wellbeing in urban areas.

The majority of the benefits associated with this option are likely to be felt most by people who have access to a vehicle within a region where there is greater dependency on car use to access key services such as employment, education, healthcare services[xii].

Overall, it is anticipated the options within this grouping are likely to have a **minor positive** on this objective under both the 'With Policy' and 'Without Policy' scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The trunk road network within the corridor plays a vital role in supporting the local economy, facilitating the movement of goods throughout the area, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

The improvements included within this option may support opportunities to strengthen the reliability of supply chains locally, regionally and nationally by reducing the potential for road closures through addressing road safety concerns. The A96 Trunk Road is important for facilitating local and regional movements whilst also providing access to wider transport links, providing onward links via strategic connections to other areas of Scotland. For example, the A96 connects with the A9 in the west at Inverness, providing links for onward travel towards Perth, Dunblane and Thurso, and in the east, the A96 connects with the A90 Aberdeen Western Peripheral Route and the A92, providing onward links towards locations in Aberdeen City, Peterhead, Fraserburgh and Dundee.

Associated improvements in reliability and resilience from reducing the impact of accidents on the network would help to improve confidence in the trunk road network, providing benefits not only to businesses but also individuals in accessing opportunities both within and out with the region.

Due to the improved confidence in the trunk road network provided for rural and remote communities as a result of enhanced reliability and resilience resulting from a reduction in the impact of accidents on the network, the potential improvements considered as part of the option are expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Generally, the PIA rate on the A96 is lower than the national average; however, KSI rates on some rural sections are higher than the national average[xiii]. There are also perceived safety

concerns on the route, such as the lack of safe overtaking opportunities, which can result in driver frustration and poor driving behaviours.

In the event of closures due to accidents, diversion routes can be significantly longer than the primary route, with closures sometimes lasting several hours or longer. This can lead to significant disruption to road users and also have knock-on effects, particularly where the movement of goods and services is restricted, undermining the confidence in the network.

The types of improvements considered as part of this option would result in safer operation of the network. This would in turn impact on the reliability and resilience of routes through reducing the impact of accidents and associated delays and/or diversions. The options may also address operational issues on some routes, particularly during the peak summer tourist season.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provides an illustration of the potential benefits, as illustrated by the 3-year-after-opening project evaluations for the following schemes:

- A9 Bankfoot junction improvement involving the removal of right-turn movement across the main A9(T) carriageway to/from the B867 and Bankfoot village through improvement to the existing A9/B867 and realignment of a minor road to provide a left in/left out junction on the A9 resulted in an 80% reduction in accidents.[xiv]
- A9 Ballinluig grade-separation resulted in over a 90% reduction in accidents.[xv]
- A9 Helmsdale widening scheme (including the provision of climbing lanes) resulted in a 60% reduction in accidents.[xvi]
- A76 Glenairlie overtaking scheme resulted in a reduction in accidents of 75%[xvii].

Overall, it is anticipated that this option would have a **major positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios due to the potential the reduction in the number and severity of accidents over the whole length A96 Trunk Road and the potential corresponding improvements to resilience and reliability this would have.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
- -	- -

Targeted road safety improvements would likely result in minor positive impacts on the safety of the trunk road network. This could improve connectivity and resilience on the network, assisting with the ability of remote communities to connect with facilities and employment. The trunk road network is important to the operation of bus services both in connecting settlements to the cities of Inverness and Aberdeen, and in connecting the rural environs to the urban settlements. Safety improvements through targeted

improvements/upgrades are likely to reduce disruption from accidents and reduce congestion, supporting enhanced access for all road users. This could enhance opportunities for rural and local communities to access key services, employment opportunities and healthcare for example.

The improvements may increase the overall use of private vehicles through reducing congestion and making car travel more attractive. As a result, the option may result in an increase in traffic and car kilometres travelled which could have a minor negative impact, for example in terms of a slight deterioration in air quality and an increase in noise. This would have a minor negative environmental impact.

This option could have negative impacts in terms of the natural resources required for the construction process. Depending on the scale of the option(s), the materials chosen and their source, there is the potential for a negative effect.

The targeted road safety improvements have the potential for adverse environmental impacts, with some of these being potentially significant for example on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). The A96 corridor and its surroundings, contain various regional, national, and international designated sites, including for example Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Ramsar wetland sites of international importance, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs), and Nature Reserves. The area also contains various Gardens and Designed Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas and undesignated heritage sites. There are also large swathes of Long-Established Woodland (of plantation origin), pockets of Ancient Woodland (of semi-natural origin) and areas with Tree Preservation Orders. The Local Development Plans also contain settlement development limits, which in turn contain areas zoned for various forms of development. A number of areas within the corridor are also susceptible to flooding.

As the appraisal is a high-level, strategic assessment, the construction footprint of the potential improvements, such as Partial Dualling, Wide Single 2+1 carriageways and climbing lanes is currently unknown, hence there is a degree of uncertainty over the environmental impacts. The scale of the impacts would be dependent on further design development and the location of the targeted road safety improvements being determined and therefore at this stage, the extent of impacts is uncertain.

Further environmental assessment would be undertaken if targeted road safety improvements are progressed through the design and development process, in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, at this preliminary stage in the appraisal process, the potential impacts of a suite of targeted road safety improvements are considered **moderate negative** for this criterion in both the 'With Policy' and 'Without Policy' Scenarios, although this would be subject to the location and design of such improvements. If the environmental constraints are avoided or adequately mitigated, then adverse environmental impacts could be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	0

Any new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location to the impacts of climate change such as material deterioration due to extreme weather leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage from periods of heavy rainfall.

In the short term, greenhouse gas emissions would occur due to construction activities undertaken to deliver the various safety improvements associated with this option, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

Targeted road safety improvements are not expected to materially influence overall travel demand and trips along the A96 corridor unless capacity improvements were to be delivered.

The level of contribution to reducing greenhouse gas emissions in the long term, would depend on the nature and the location of the improvements.

Overall, this option is expected to have a **neutral** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Generally, the PIA rate on the A96 is lower than the national average[xiii]; however, KSI rates on some rural sections are higher than the national average. Factors contributing to accidents include characteristics of the road network. For example, a lack of safe overtaking opportunities can increase driver frustration which can contribute towards the occurrence of accidents as drivers attempt unsafe overtaking manoeuvres to pass slower moving vehicles. Road geometry and the understanding of junction layouts can also contribute in some circumstances. This is of particular relevance to tourist routes in the region, with the A96 Trunk Road facilitating access and connectivity to multiple tourism assets.

The types of improvements considered as part of this option would result in the safer operation of the network. This is particularly relevant at locations where evidence suggests there is a safety problem or there is a potential safety risk. With several sections of the route having a higher KSI rates than other comparable road types, it is likely that the option could reduce real and perceived safety concerns on the route.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provide an illustration of the potential benefits, as illustrated by the 3-years-after-opening project evaluations for the following schemes:

- A9 Bankfoot junction improvement involving the removal of right-turn movement across the main A9(T) carriageway to/from the B867 and Bankfoot village through improvement to the existing A9/B867 and realignment of a minor road to provide a left in/left out junction on the A9 resulted in an 80% reduction in accidents[xiv].
- A9 Ballinluig grade-separation resulted in over a 90% reduction in accidents[xv].
- A9 Helmsdale widening scheme (including the provision of climbing lanes) resulted in a 60% reduction in accidents[xvi].
- A76 Glenairlie overtaking scheme resulted in a reduction in accidents of 75%[xvii].

This option has the potential to slightly improve resilience and journey times for those travelling by car or bus, which should provide minor benefits for accessing local healthcare and wellbeing services.

It is anticipated that this option will have no impact on the personal security of travellers and their property.

There is potential for negative environmental effects on visual amenity during construction and operation of the infrastructure. Further assessment would be undertaken to identify and mitigate any impacts as part of the design development process.

Overall, it is anticipated that this option would have a **major positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios, predominantly due to the potential the reduction in the number and severity of accidents over the whole length A96 Trunk Road.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
++	++

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, facilitating the movement of goods throughout the area, connecting people to employment and education opportunities as well as providing businesses with access to the labour market. Safety improvements on the A96 Trunk Road could help support the existing local economy as well as support potential future growth in key industries by creating a more reliable and resilient network.

This option would also result in wider economic impacts at a national, regional and local level for both transport users and non-users, with the potential to result in positive changes to economic welfare. The improvements included within this option may support opportunities to strengthen the reliability of supply chains locally, regionally and nationally, by reducing the potential for road closures through addressing road safety concerns. The A96 Trunk Road is important for facilitating local and regional movements whilst also providing access to wider transport links that provide more strategic connections to other areas of Scotland. For example, the A96 connects with the A9 in the west at Inverness providing links for onward travel towards Perth, Dunblane and Thurso, and in the east the A96 connects with the A90 Aberdeen Western Peripheral Route and the A92, providing onward links towards locations in Aberdeen City, Peterhead, Fraserburgh and Dundee.

Associated improvements in reliability and resilience from reducing the impact of accidents on the network would help to improve confidence in the trunk road network, providing benefits not only to businesses but also individuals in accessing opportunities both within and outwith the region.

Further to likely benefiting local communities and businesses across the region, the role of the A96 Trunk Road as a key transport link to provide access and connectivity to high quality tourism assets is likely to improve the overall attractiveness of using the route for travel and also improve the overall perception for road users who may be relatively unfamiliar with the route itself.

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as no decisions have yet been made regarding the scale or design of any interventions within the option. The interventions within this option are generally not anticipated to result in any notable benefits to both private and business users in terms of travel times and vehicle operating costs. This option is, however, anticipated to provide safety benefits through the reduction of accidents on the route, and hence should increase the reliability of the route, which would provide benefits to users as the requirement for lengthy diversions should reduce.

Overall, this option is expected to have a **moderate positive** impact in both the 'With Policy' and 'Without Policy' scenarios on the Economy criterion due to the potential to create a more resilient and reliable corridor that would benefit suppliers, businesses, visitors, and customers, whilst also encouraging further economic growth through key industries and tourism.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 corridor has high car ownership/availability compared with the rest of the country[xii]. This is primarily due to the area being largely rural in nature where there is

greater dependency on the private car to access employment, education, services and maintain social contact. More rural areas may be impacted to a greater extent by incidents, such as collisions, where remote communities are served by a single access route that forms part of the trunk road network.

The trunk road network is also important to the operation of local bus and inter-urban services. Safety improvements and the associated reduction in disruption from collisions on the network would support access for all road users, particularly for those in rural areas where the road network is of vital importance in linking communities with key services, employment, healthcare and education. However, it is considered unlikely that the improvements considered as part of the option would have a significant impact on public transport accessibility or affordability in the region. The proposed improvements considered as part of the option would also provide fewer benefits to individuals who do not have access to a private car, as well as those unable to drive.

This option is not expected to impact the active travel network coverage along the transport appraisal study area, though designs for individual interventions could include provisions for active travel improvements such as safe crossing facilities, where appropriate.

Reference should also be made to the SIAs in Section 3.5.

Overall, this option is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios as a result of the improved access for all road users, particularly improving the reliability of connections for people in rural areas to access key services.

3.4 Deliverability

1. Feasibility

As the option would constitute improvements on the trunk road network, Transport Scotland would likely be the promoter and procuring body for targeted road safety improvements, which could be delivered on a project-by-project basis. Transport Scotland has a strong track record in delivering road safety improvements across the wider Scottish trunk road network.

A detailed assessment would require to be undertaken to fully establish the details of any targeted road improvements that may be delivered. However, any interventions are not expected to differ from existing road safety improvements which are regularly implemented on other trunk roads throughout Scotland. It is therefore likely that any proposals would have a precedent already in terms of delivery.

Land purchase and Public Local Inquiries could also be a potential requirement.

The engineering constraints could vary significantly from location to location along the A96 corridor, both between, and within communities. This could include various existing

residential and business properties, roads, rivers and railways that intersect the route. Any proposals would also have to consider geotechnical constraints, potentially poor ground conditions. There are also various environmental and planning/land use constraints which have been outlined in previous sections.

Despite the constraints and challenges outlined, the work undertaken to date indicates that this option is considered feasible.

2. Affordability

As the improvements considered as part of the option are yet to be determined, targeted road safety improvements can have a varied associated cost which is primarily dependent upon the scale, complexity and location of any interventions. More significant measures such as junction improvements and route realignments are likely to have a higher cost estimate than less intrusive measures such as the closure of access points off the A96 Trunk Road as well as any signage and lighting improvements. Larger scale options could be potentially more expensive due to specific localised issues, such as the requirement for structures, land purchase or localised ground conditions.

Any improvements delivered on the trunk road network and their associated cost are likely to be borne by Transport Scotland.

3. Public Acceptability

Wider public support is anticipated within the corridor for road safety focused improvements on the trunk road network; however, specific schemes may draw varied public opinion. For example, some potential negative perceptions can be expected from certain stakeholders regarding the perceived road-based focus as well as the impact of construction on communities. This potentially includes landowners and others within communities directly impacted by improvements.

There is, however, likely to be support from stakeholders in the wider business community with there being a view that economic growth may in part be constrained in the region as a result of the lack of reliable and resilient transport infrastructure and poor connectivity. Depending on the response to individual improvements as part of the wider option itself, there may be the need for Public Local Inquiries.

Notwithstanding, stakeholders have raised concerns associated with the current safety performance of the A96 Trunk Road in terms of both the frequency of collisions and their associated casualties but also the significant disruption that can also be caused. As the option would deliver targeted safety improvements to both address corridor-wide issues but also at identified specific areas of concern, it is likely that that interventions within this option would seek to address many of these existing concerns and improve the quality of the route.

Public consultation undertaken as part of this review indicated general support for road safety improvements, with 50% of the respondents considering improving road safety as a

top priority, citing concerns over a lack of overtaking opportunities and traffic volumes in congested and built-up areas.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xviii].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

Targeted road safety measures could potentially provide an improved sense of road safety for all road users including those walking, wheeling, and cycling. This could provide positive impacts for protected characteristic groups who are more likely to walk, wheel or cycle and are more vulnerable to fear of road danger, including children, young people, women and older people.

The improvements included within this option are though not anticipated to have a notable impact on protected characteristic groups with less benefits anticipated for individuals who are unable to drive and/or do not have access to a private car, particularly due to the likely rural location of any improvements where there is greater dependency on travel by private car.

The extent and magnitude of construction required to deliver targeted road safety improvements may result in negative impacts during both construction and operation stages for local communities. The construction of the scheme may impact groups who are more vulnerable to noise, vibration and air quality impacts such as children, older people, disabled people, and pregnant women. Furthermore, during operation, some forms of road safety improvement such as widening or providing overtaking opportunities could create noise, air quality and traffic impacts for communities along the route. There could also be instances of potential severance, though interventions would be designed to account for pedestrian and active travel movements. The level of direct impact will be dependent on the final location of targeted road safety improvements and the types of communities affected.

Overall, the option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

Targeted safety improvements may potentially positively impact children and young people through reducing the frequency of collisions and their associated causalities and severity, which may reduce the proportion of children and young people being negatively impacted.

As the types of interventions included within this option are more likely to be implemented in rural areas, they are not anticipated to have a material impact on child pedestrian casualties, which would be more likely to occur in urban areas.

Overall, this option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

Evidence shows that people from deprived neighbourhoods are more likely to be injured or killed as road users. However, as the types of interventions included within this option are more likely to be implemented in rural areas, the benefit to those from deprived areas is anticipated to be the same as the general population. It is acknowledged that wider factors affect road casualty rates and that more detailed assessment work is required to understand the safety benefits associated with individual schemes and how this might impact on people from deprived areas.

Overall, the option is likely to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

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1. Preliminary Appraisal Summary

1.1 Option Description

Elgin Bypass

This option focuses on improving the safety, resilience, and reliability of the A96 Trunk Road within the vicinity of Elgin through the provision of a bypass of the town. Elgin is shown within the context of the wider A96 Trunk Road in Figure 1.1. Note that due to this being at an early stage of the process, the Scottish Transport Appraisal Guidance (STAG) appraisal does not define the location, route or standard of the bypass.

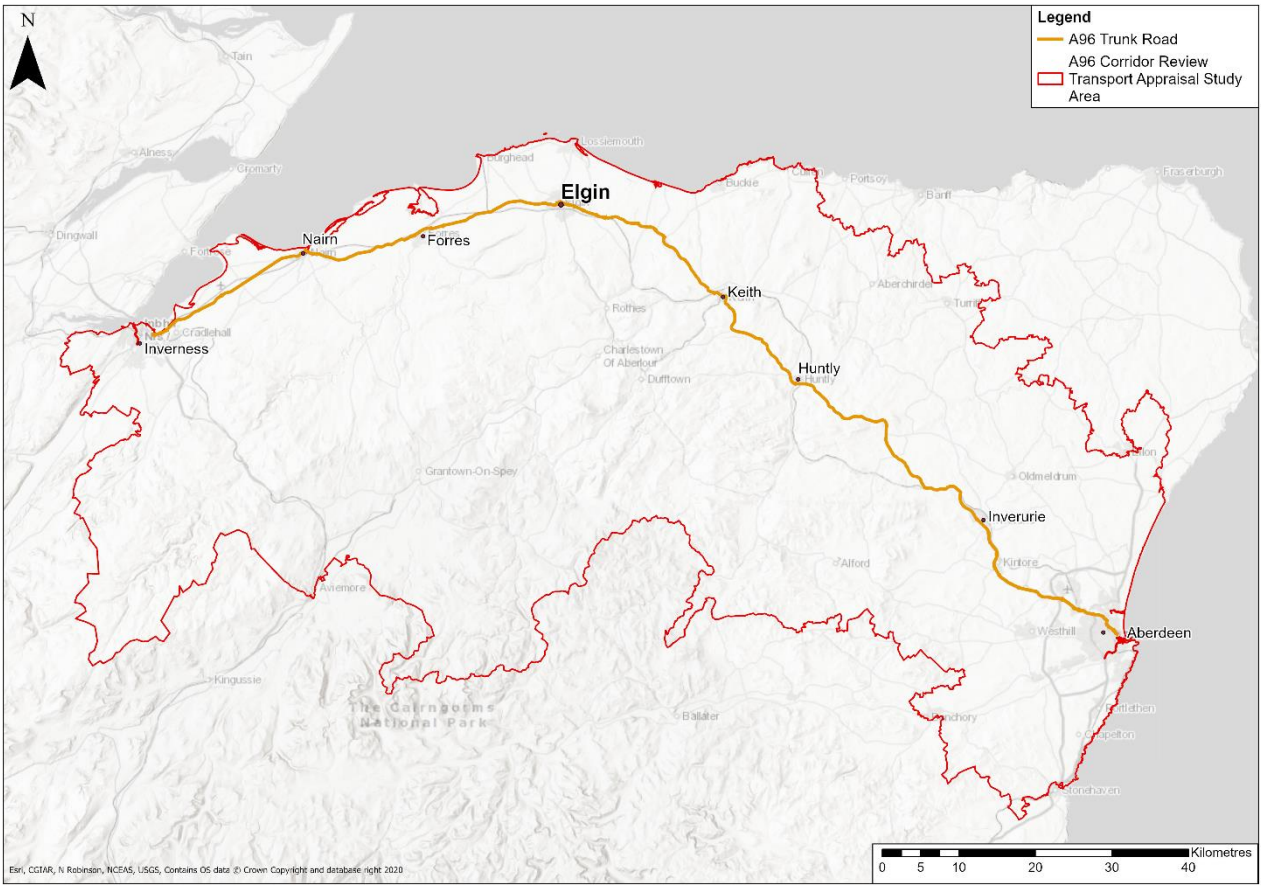

Figure 1.1: Location of Elgin in the Context of the A96 Corridor

The existing A96 Trunk Road passes through Elgin from the town's western boundary at the Morriston Road priority junction, to the Reiket Lane Roundabout at the town's eastern boundary. Within the boundaries of Elgin, A96 traffic is required to negotiate nine at-grade roundabouts, numerous priority junctions and accesses (serving commercial units, industrial units and residential properties), as well as five signalised pedestrian crossings, with potentially three more pedestrian crossings to be added in the near future.

The existing A96 Trunk Road route through Elgin is single carriageway, generally 7.3m wide, with footways along the majority of the route; however, these can be relatively narrow

in places, meaning people cannot pass easily. The speed limit is 30mph for the majority of the urban section within Elgin, reducing from 40mph on the approaches to the town. Outside of the town's boundary, the road is subject to the national speed limit.

This option would help to improve the reliability and resilience of the A96 Trunk Road through reducing the impacts of accidents, as well as supporting access to regionally significant tourism sites and employment opportunities, particularly in the food and drink sector. This option also has the potential to increase the attractiveness of active travel within the town as a result of the removal of through traffic and enable increased opportunities to enhance placemaking throughout Elgin; however, for the purposes of the Preliminary Appraisal these do not form part of this specific option.

1.2 Relevance

Relevant to all road users in the corridor

The A96 Trunk Road plays an important strategic role in the regional economy of the north-east of Scotland. The provision of a bypass of Elgin is likely to improve connectivity between selected origins and destinations within the region by bypassing the existing A96 within the town, avoiding interaction with local traffic and junctions. This would also allow freight to move more effectively, therefore a bypass within the vicinity of Elgin could help reduce costs to business including the food and drink and tourism sectors and contribute to economic growth. This option supports Scotland's National Strategy for Economic Transformation[i], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions.

This option has the potential to support the reliability and resilience of the network for communities and businesses by reducing the impact of incidents on the network. A high quality, well maintained and efficient trunk road network can also support other Scottish Government programmes for active travel, development of connected and autonomous vehicle infrastructure and bus priority investment, and thereby contribute to the low carbon economy.

Scotland's Road Safety Framework to 2030 sets out the vision for Scotland to have the best road safety performance in the world by 2030 and the long-term goal of Vision Zero where there are zero fatalities and serious injuries on Scotland's roads by 2050 with ambitious interim targets for the number of people killed or seriously injured to be halved by 2030[ii]. The framework is aligned with the Second National Transport Strategy (NTS2) and embeds the Safe System approach to road safety delivery, which consists of five key pillars focusing efforts not only on road traffic casualty reduction (vulnerability of the casualties) but also on road traffic danger reduction (sources of the danger).

Generally, the accident rate on the A96 Trunk Road is lower than the national average[iii], and that is also the case within Elgin, although four serious and 12 slight Personal Injury Accidents (PIA) were recorded within the town between 2015 and 2019. This can result in real and perceived safety issues affecting road users and, for example, can act as a barrier

to active travel within Elgin. The provision of an Elgin bypass would reduce the volume of traffic passing through Elgin, which should in turn reduce the number and severity of road traffic accidents on the existing A96 through Elgin. As such, this option would contribute to Scotland's Road Safety Framework to 2030 supporting Vision Zero.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the scale and complexity of the bypass and specific local constraints that would require further examination and assessment at the stages of design development, a level of detail beyond that which is undertaken as part of a STAG appraisal.

As a result, the STAG appraisal does not define the location or route of the bypass, although it has been assumed that the approximate length will range from 10km to 20km. The category of road for the bypass and the number and type of junctions have also not been defined at this stage.

Considering the assumed range for the approximate length of the bypass, the total estimated cost is expected to fall within the range of £101m - £250m.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the operation and maintenance of the bypass, which would have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. This option would also sit within the 'private car' tier of the Sustainable Travel Hierarchy.

This option would also contribute to eight of the 12 NTS2 outcomes, as follows:

- Provide fair access to services we need
- Help deliver our net zero target
- Adapt to the effects of climate change
- Get people and goods to where they need to get to
- Be reliable, efficient, and high quality
- Use beneficial innovation
- Be safe and secure for all
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	0	0	+	+	+	- -	0	+	+	+	+	+	+
'Without Policy' Scenario	-	0	+	+	+	- -	-	+	+	+	+	+	+

This option makes a generally positive contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria, and Statutory Impact Assessment (SIA) criteria. However, it is expected that there would be negative impacts from this option in both the 'With Policy' and 'Without Policy' scenarios, specifically considering the STAG Environment criterion. In the 'Without Policy' Scenario specifically, the option is expected to perform negatively against TPO1, relating to contributing to Scottish Government's net zero targets, and the STAG Climate Change criterion as well.

This option also offers the opportunity to enhance community cohesion and placemaking by addressing the severance issues associated with a busy trunk road bisecting a community. In turn, this could increase the attractiveness of shorter everyday trips undertaken by active modes, positively contributing to TPO3 for enhancing communities as places to support health, wellbeing and the environment, and the STAG criteria for Health, Safety and Wellbeing and Equality and Accessibility. The Elgin bypass would provide additional road space whilst reducing the amount of traffic and delays in the town itself that is also anticipated to positively impact on the TPOs in relation to contributing to sustainable inclusive growth (TPO4) and delivering a transport system that is safe, reliable and resilient (TPO5), as well as the STAG Economy criterion.

Although the Elgin bypass would remove some noise and air pollution from the town, the physical impact of construction could negatively impact the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, with an overall moderate negative impact expected for the STAG Environment criterion in both the 'With Policy' and 'Without Policy' scenarios. In the 'Without Policy' Scenario specifically where traffic demand is likely to be higher with greater vehicle kilometres travelled, the option would have a minor negative impact against TPO1 regarding net zero targets, and the STAG Climate Change criterion.

Delivery of the bypass is considered feasible at this stage; however, a detailed assessment would require to be undertaken to fully establish the details of the bypass including the optimal corridor and junction strategy. Although a bypass of Elgin is considered to be affordable at this stage, capital costs are also highly dependent on the potential length and route a bypass may take. A reasonable level of support for the option from the public is anticipated due to the potential safety improvements and reliability benefits for through traffic.

Although the bypass as a standalone intervention does not perform particularly well against two of the TPOs and the STAG Environment and Climate Change criteria, it would act as a key enabler for sustainable transport and placemaking within Elgin; the removal of traffic from the A96 within the town would present an opportunity for delivering sustainable travel measures and/or placemaking through the reallocation of roadspace.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[iv].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall PIA rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. Whilst the accident rate on the A96 within Elgin is below the national average, there are locations where accidents occur within the town.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the

region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail being a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Targeted Road Safety Improvements
- Active Communities
- Active Connections
- Bus Priority Measures and Park and Ride
- Development of A96 Electric Corridor.

Other areas of Scottish Government activity

- Bus Partnership Fund[v]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[vi]
- Climate Change Plan 2018-32 Update[vii]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[viii]
- National Transport Strategy 2 (NTS2)[ix]
- National Planning Framework 4 (NPF4)[x]
- The Place Principle[xi]

- Scotland's National Strategy for Economic Transformation[xii]
- Scotland's Road Safety Framework to 2030[xiii]
- Strategic Road Safety Plan (2016)[xiv]
- Strategic Transport Projects Review 2 (STPR2)[xv].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
0	-

A review of Automatic Traffic Counter (ATC) data from 2019 indicated that between 16,000 and 22,000 vehicles per day travel on the A96 through Elgin[xvi], which is likely to be a barrier to active and sustainable modes of travel within the town. Analysis of automatic number plate recognition (ANPR) data collected in 2017 indicates that approximately 20% of traffic travelling on the A96 east or west of Elgin is through traffic[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Removing this traffic through the provision of a bypass is therefore likely to contribute to the Scottish Government's net zero emissions target through the reduction of slow moving or stationary traffic, whilst also improving the attractiveness of sustainable modes of travel particularly for shorter, everyday journeys. The provision of a bypass would also reduce the number of commercial goods vehicles, including LGVs and HGVs, travelling through the town, by between approximately 30% and 60%[xvii].

The option would likely act as a key enabler to maximise sustainable transport and placemaking within Elgin, increasing the opportunity to encourage a shift from car-based travel to sustainable modes, particularly for shorter distance journeys. This is likely to be achieved through creating environments that are more attractive for walking, wheeling, and cycling, and by increasing the priority for public transport services, resulting in a positive contribution to this objective under both the 'With Policy' and 'Without Policy' scenarios.

However, a bypass would provide additional road space and therefore increase capacity for motorised vehicles, potentially inducing travel demand. Analysis of INRIX journey time data for May 2019 indicates that congestion occurs within Elgin, with traffic speeds reducing to approximately 50% of free flow speeds. Congestion within Elgin is likely to be experienced more intensely and for longer periods in the 'Without Policy' Scenario compared to the 'With Policy' Scenario, where congestion could be minimal. The provision of a bypass provides an alternative route to avoid any congestion within the town, which could result in more road-based trips, therefore increasing transport-based emissions. This option therefore has the potential to have a negative impact under the 'Without Policy' Scenario and neutral impact under the 'With Policy' Scenario on transport-based emissions.

While a bypass does not necessarily facilitate a modal shift to more sustainable modes, it does help support the provision of a safe, efficient, and reliable trunk road network which is integral to wider Scottish Government programmes relating to active travel and bus priority investment. On balance, the provision of a bypass of Elgin is scored as **neutral** under the 'With Policy' Scenario and **minor negative** under the 'Without Policy' Scenario against this objective.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is a problem along the corridor, and within the vicinity of Elgin, which is highlighted by the reliance on private vehicle use and by higher than average car ownership levels (75%) in the town[xxiii]. This is due to the largely rural nature of the region, where providing public transport can be a challenge due to dispersed population and settlement patterns. While the provision of a bypass benefits local services through the reduction of traffic flows within Elgin, longer distance bus services are unlikely to travel on the bypass as Elgin is a key destination between Aberdeen and Inverness, as the largest town on the corridor, and the main urban centre within Moray.

A bypass of Elgin is unlikely to have a direct impact on service frequency and coverage and is therefore not anticipated to have a notable impact on issues relating to the accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

Overall, the options are anticipated to have a **neutral** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

A review of ATC data from 2019 indicated between 16,000 and 22,000 vehicles per day travel on the A96 through Elgin[xviii], comprising a mix of local and through traffic as well as a mix of vehicle composition. This increases severance in the town, which can create a barrier to active travel and detract from the sense of place. Analysis of ANPR data collected in 2017 indicates that the provision of a bypass of Elgin is anticipated to remove approximately 20% of traffic from the existing A96 at the town[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Reducing the volume of traffic using the A96 through Elgin provides the opportunity to enhance the sense of place as a key enabler to maximise sustainable transport and placemaking within Elgin.

A bypass is anticipated to remove through traffic from within Elgin, providing the opportunity to deliver interventions within the town to enhance placemaking, reducing demand for unsustainable travel, particularly for shorter everyday trips. By facilitating the transition to sustainable models, a bypass could further reduce traffic volumes within Elgin, enhancing the sense of place and supporting health and wellbeing.

In addition to the potential benefits mentioned above, the removal of through trips by providing a bypass of Elgin would likely reduce the real and perceived severance caused by the strategic road network within the town. The option is scored to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios as it would enable the inclusion of infrastructure to encourage mode shift, enhancing the community as a place.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market. The provision of a bypass of Elgin is likely to improve connectivity between certain origin and destinations within the region by bypassing the congested existing A96**Error! Bookmark not defined.** within the town. However, as Elgin is a key destination for many within the region, with large employers such as Dr Grey's Hospital, Moray Council, and Walkers Shortbread Factory located within the town, many road users would remain on the existing A96.

Furthermore, Elgin has been recognised as a 'primary growth area' in the region, providing a good range of services, and acting as an important transport hub[xix]. The town is a key destination for freight, with a Specialised Goods Vehicle Count (SGVC) conducted in May 2015 confirming that of the 820 freight vehicles observed at Elgin, 39% were only recorded at one site, indicating multiple short movements on the A96 within the area local to Elgin[xx].

A bypass of Elgin could support sustainable inclusive growth by improving the connectivity between businesses and the labour market and by improving the efficiency of the movement of goods along the corridor due to the likely associated reliability improvements on the trunk road network. In turn, this would likely support opportunities for employment and for business growth. The removal of through trips from the town would likely alleviate congestion for those travelling to Elgin for employment and for freight. Whilst the majority of the benefits would likely be felt by people who have access to a vehicle, the removal of through trips provides the opportunity to deliver interventions within towns to enhance placemaking, making active and sustainable modes more attractive and therefore reducing demand for unsustainable travel, particularly for shorter everyday trips.

The removal of through trips could also provide opportunities to enhance placemaking within Elgin, enhancing the local economy by providing more attractive surroundings which encourages increased footfall. However, any economic benefits could be negated if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

Overall, a bypass of Elgin is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios due to the improved confidence in the trunk road network provided for rural and remote communities and for the opportunity to provide measures to enhance sustainable access to labour markets within Elgin as a key centre of employment within Moray.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Generally, the accident rate on the A96 is lower than the national average[iii], and this is also the case within the Elgin urban area between 2015 and 2019. However, four serious and 12 slight accidents were recorded within Elgin between 2015 and 2019. Analysis of ANPR data collected in 2017 indicates that the provision of an Elgin Bypass would likely reduce the volume of traffic passing through Elgin by approximately 20% due to the removal of through trips[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. This, in turn, could reduce the number and severity of road traffic accidents at these locations and on the entire A96 through Elgin. The provision of a bypass would also remove the need for through traffic to pass through the nine at-grade roundabouts and numerous signalised pedestrian crossings within Elgin, reducing conflict and the potential for accidents, whilst also improving the reliability of the strategic transport corridor.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provide an illustration of the potential benefits, as illustrated by the 3-year-after-opening project evaluations for the following scheme:

- A68(T) Dalkeith Bypass saw a reduction in the number of accidents within Dalkeith by approximately 30% after opening[xxi]. Additionally, the severity of accidents occurring within the town reduced.

Overall, a bypass of Elgin would have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, with the positive impacts felt by the community within Elgin and the wider communities along the A96 corridor.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
- -	- -

A bypass of Elgin would be likely to result in minor positive impacts on communities and the safety of the local road network and along the A96 by separating a significant proportion of the through traffic from local traffic. This would deliver health and wellbeing benefits to individuals by providing a safer environment to travel. Elgin is the largest settlement on the A96 outwith Inverness and Aberdeen, in terms of population. A bypass of Elgin would reduce the volume of traffic travelling through the town and therefore assist with placemaking by reducing the real and perceived severance with the A96 currently travelling through the centre of the settlement. The re-distribution of a significant proportion of the through traffic to a bypass could produce opportunities to re-orientate the road network and traffic hierarchy around the centre of Elgin, re-connecting communities that may currently feel separated by the road. As a result of the likely reduction in through traffic, a bypass would be anticipated to improve air quality and reduce noise and vibration within Elgin itself, if overall traffic volumes through the settlement were reduced; however, the extent would depend on the proportion of traffic that transfers onto the bypass.

A bypass may also increase the overall use of private vehicles through reducing congestion and making car travel more attractive. There may be a slight deterioration in air quality as a result of any traffic increase; however, the bypass has the potential to improve air quality along the existing A96 within Elgin through reducing traffic volumes, congestion and stationary vehicles within the town.

However, in terms of natural resources, significant quantities of materials and construction-related trips would be required during the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact.

A bypass has the potential for adverse environmental impacts, with some of these being potentially significant for example on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity. There are regionally and nationally important natural and historical designations to the west and north of Elgin, including Sites of Special Scientific Interest (SSSI) and Geological Conservation Review Sites[xxii], and there are large areas of woodland to the south, west and north, many of which are on the

Inventory of Ancient Woodland. There are large areas of flood risk all around the settlement which would be a constraint on the route of a bypass. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

In terms of land use, the Moray Local Development Plan (2020)[xix] outlines settlement expansion, particularly on the northern and southern fringes of Elgin. This includes residential, education, employment, and open space land use designations. The alignment of a bypass would need to take this into consideration, as the route could constrain or have a negative impact on future development. Some of these allocations already have planning permission and have started to be constructed.

Further environmental assessment would be undertaken if a bypass is progressed through the design and development process in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, at this preliminary stage in the appraisal process, the potential impacts of the Elgin bypass are considered **moderate negative** for this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided or appropriately mitigated, then adverse environmental impacts could be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	-

The A96 Trunk Road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to extreme weather leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass is likely to suffer the same vulnerabilities; however, new infrastructure would be designed in such a way as to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore, a bypass should enhance the resilience of the A96, adapting against the effects of climate change.

In the short term, greenhouse gas emissions would occur due to construction activities undertaken to deliver a bypass, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

The provision of an Elgin Bypass would likely reduce the volume of traffic passing through Elgin by approximately 20% due to the removal of through trips[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Removing this traffic from the town through the provision of a bypass could potentially reduce stationary traffic whilst also improving the attractiveness of sustainable modes of travel, particularly for shorter, everyday journeys, through reducing the traffic flow on the existing A96. Therefore, removing this traffic through the provision of a bypass is likely to contribute to the Scottish Government's net zero emissions target through the reduction of stationary traffic. It would also improve the attractiveness of sustainable modes of travel, particularly for shorter, everyday journeys through reducing the traffic flow on the existing A96, including a reduction in the number of HGVs travelling through the town.

A bypass would provide additional road space, which is likely to increase capacity for motorised vehicles and incentivise a greater level of travel. This would lead to induced travel demand, particularly under the 'Without Policy' Scenario, where congestion within Elgin is likely to be experienced more intensely and for longer periods compared to the 'With Policy' Scenario, where congestion could be minimal. Expected impacts under the 'With Policy' Scenario, such as a reduction in car km travelled, could reduce the greenhouse gas emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a minor negative impact under the 'Without Policy' Scenario, and neutral impact under the 'With Policy' Scenario on transport-based emissions. The extent of change in greenhouse gas emissions is also dependent on the migration to zero-emission fuels over time.

The provision of a bypass would act as a key enabler to maximise sustainable transport and placemaking within Elgin, enhancing the opportunity to encourage a shift from car-based travel to sustainable modes, particularly for shorter everyday journeys. This is likely to be achieved through creating environments more attractive for walking, wheeling, and cycling, or by improving the reliability and attractiveness of public transport services, therefore positively contributing to this objective under both the 'With Policy' and 'Without Policy' scenarios.

The provision of a bypass could enhance resilience of the A96 to the effects of climate change. However, given the potential for greenhouse gas emissions to rise during construction and the bypass to induce travel demand, the option is expected to have a **neutral** impact on the Climate Change criterion under the 'With Policy' Scenario, and a **minor negative** impact under the 'Without Policy' Scenario.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
+	+

Analysis of ANPR data collected in 2017 indicates that approximately 20% of traffic travelling on the A96 east or west of Elgin is through traffic[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Removing this traffic from the town through the provision of a bypass would likely reduce some of the key barriers to active modes within Elgin, including real and perceived severance caused by trunk road traffic. This could result in an increase in active travel, providing benefits to health and wellbeing in the town. Furthermore, the bypass would encourage a shift from car-based travel to sustainable modes, particularly for shorter everyday journeys within Elgin. This would be achieved by creating environments more attractive for walking, wheeling, and cycling, providing additional benefits to health and wellbeing.

The removal of through traffic from Elgin through the provision of a bypass is anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes.

Generally, the accident rate on the A96 is lower than the national average[iii], and this is also the case within the Elgin urban area between 2015 and 2019; however, four serious and 12 slight accidents were recorded in Elgin within this period. As explained above, the provision of an Elgin bypass would likely reduce the volume of traffic passing through Elgin. Further, depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. This could, in turn, reduce the number and severity of road traffic accidents at these locations and on the entire A96 through Elgin, and result in safety improvements.

There is potential for negative environmental effects on visual amenity during construction and operation of the bypass; however, this would need to be assessed in more detail during the development of the option.

It is anticipated that this option would have no impact on the personal security of travellers and their property.

Overall, a bypass is anticipated to have **minor positive** impacts under the 'With Policy' and 'Without Policy' scenarios on this criterion as it is anticipated to provide additional opportunities for active travel within Elgin, which could have positive health impacts, as well as reducing the number of accidents within the town.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

This option would result in wider economic impacts at a national, regional and local level for both transport users and non-users, with the potential to result in positive changes to economic welfare. The food and drink industry is a key sector nationally, regionally and locally, with Moray being home to world-renowned brands such as Walkers and Baxters, as well as forming part of the protected region for distilling Speyside whisky. With approximately 44% of all malt whisky distilleries in Scotland being located within Moray[xxiii], the A96 Trunk Road is integral to the sector[xxiv] for transporting goods. Tourism is also a key industry within the Inverness to Aberdeen corridor[xxiii], with significant natural and industrial tourism assets, including the Cairngorms National Park and Royal Deeside. Within Elgin itself, there are a number of attraction sites in close proximity, including distilleries and Elgin Cathedral.

The provision of a bypass of Elgin is likely to reduce the conflict between local and longer distance traffic, improving the efficiency of the movement of goods along the corridor due to the likely associated reliability improvements on the trunk road network, thereby supporting opportunities for employment and for business growth. The removal of through trips could also provide opportunities to enhance placemaking within Elgin, enhancing the local economy by providing more attractive surroundings and encouraging increased footfall. This could be negated, however, if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of the bypass are currently unknown. However, this option is anticipated to result in benefits to both the private and business users in terms of travel times and vehicle operating costs, particularly for longer distance traffic bypassing the town. Benefits are anticipated to arise as vehicles using the bypass are likely to travel at a more efficient speed, without the need to interact with local junctions. Journey time benefits are also anticipated as local congestion is bypassed and through higher travel speeds associated with the route operating at a higher speed limit.

Overall, a bypass of Elgin is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios on the Economy criterion due to the improved journey time reliability for suppliers, businesses, visitors, and customers and the opportunity to provide enhanced placemaking within Elgin, increasing footfall and providing benefits to the local economy.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

Analysis of ANPR data collected in 2017 indicates that approximately 20% of traffic travelling on the A96 east or west of Elgin is through traffic[xvii]. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Whilst this option would not directly impact active travel, the removal of through traffic through the provision of a bypass would likely improve local accessibility and remove some of the key barriers to active and sustainable mode use within Elgin. This option would also reduce severance within Elgin caused by trunk road traffic, whilst also providing the opportunity to enhance placemaking and improve active travel network connections.

Reducing through traffic within Elgin is also likely to improve the perception of road safety and ultimately encourage sustainable modes of travel through creating environments more attractive for walking, wheeling, and cycling, and/or improving the reliability and attractiveness of public transport services for local trips. This would likely provide some positive effects for protected characteristic groups, including children, young people, women, and older people, who are more likely to walk, wheel or cycle, and are more vulnerable to fear of road danger.

This option is not expected to have a significant impact on the public transport network within Elgin. A bypass of Elgin is not anticipated to have a direct impact on service frequency and coverage, nor have an impact on fares. Therefore, this option is not anticipated to have a notable impact on issues relating to the affordability and accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

The potential positive impacts resulting from this option are expected to be most acutely felt by residents within Elgin, while the population along the wider A96 corridor would experience negligible impacts against this criterion.

Reference should also be made to the SIAs in Section 3.5.

Overall, the bypass of Elgin is considered to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios on the Equality and Accessibility criterion as it could encourage more people to travel actively following the removal of through traffic from Elgin. This would reduce real and perceived safety, particularly for protected characteristic groups who are more vulnerable to fear of road danger.

3.4 Deliverability

1. Feasibility

As the bypass is likely to form part of the trunk road network, Transport Scotland would likely be the scheme promoter. Transport Scotland has significant experience of delivering major roads projects and bypasses within Scotland. Transport Scotland would also likely be the asset owner on completion of construction and is readily capable of arranging the

operation and maintenance of the A96 Elgin bypass as part of the wider trunk road network.

The scheme would need to be progressed through an options identification and selection process and development of the preliminary design, including the associated environmental assessments. Any option would also be required to pass through the statutory process, which would require public consultations and could result in the need for a public local inquiry.

Some of the key engineering constraints to the north of Elgin are existing roads including the A941 and B9012, the River Lossie and steep topography from the A96 heading north. The A941 and the River Lossie would also be constraints for a bypass to the south, as would the B9010 and the Aberdeen to Inverness railway line. Any bypass route would have to consider geotechnical constraints around Elgin as well, with infilled quarries and areas of poor ground conditions. There are also various environmental and planning/land use constraints which have been outlined in previous sections.

Detailed development work, including community and stakeholder engagement, would be required to identify the most appropriate preferred route for a bypass.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that a bypass is considered feasible.

2. Affordability

The total estimated cost of providing a bypass of Elgin could range between £101m - £250m, as outlined in Section 1.3. Construction costs can vary significantly based on the potential length, design and preferred route of the bypass. Costs would also be dependent on a number of other factors, such as the complexity of construction, the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering and environmental constraints.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the ongoing costs associated with operation and maintenance of the bypass. It is not anticipated that these costs would be significant in the context of the wider trunk road network which Transport Scotland operates and maintains across Scotland.

The decision to fund capital infrastructure projects ultimately rests with Transport Scotland and the Scottish Government.

3. Public Acceptability

Wider public support is anticipated within the north-east of Scotland for this option, with work undertaken to look at the dualling of the A96 including the A96 Dualling Hardmuir to Fochabers scheme[xxv], being in the public domain. Support is also anticipated from the community in Elgin and stakeholders in the wider business community for improvements to the safety and journey time reliability of the trunk road and local road network.

There are likely to be some members of the public who do not support the construction of a bypass. This could include landowners, communities, businesses, and other stakeholders who have concerns over the impact of construction/operation of the bypass or the resulting potential impacts to the environment.

Depending on the response to the bypass, there is likely to be the need for a Public Local Inquiry.

Public consultation undertaken as part of this review indicated general support for bypasses, with 30% of respondents considering the provision of bypasses as one of their top priorities, and 7% suggesting that bypasses could help to address safety concerns. Furthermore, Elgin was mentioned as a potential location for a bypass. Only 2% of respondents opposed bypasses along the A96.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxvi].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option could result in reduced traffic through Elgin, creating a range of benefits for groups with protected characteristics. A decrease in traffic could result in improved local air quality within the town which would be a particular benefit to those groups who are more vulnerable to the adverse health effects of traffic related emissions such as older people, disabled people, children and pregnant women.

Elgin exhibits a very high use of active modes for travelling to work, at 21% of all trips[xxvii]. A bypass provides the opportunity to build on this by decreasing traffic through Elgin, addressing local severance issues, improving the active travel environment and reducing road safety concerns for those groups who are less likely to travel by car. It could also improve the reliability and attractiveness of public transport services for local trips. This would likely provide some positive effects for protected characteristic groups who are more likely to walk, wheel, cycle or use public transport and are more vulnerable to fear of road danger, including children, young people, women, and older people. At a regional level,

connectivity benefits to employment, education, services and leisure are likely to be experienced by the overall population.

There could also be benefits for certain groups who rely on private vehicle use to access key services due to mobility reasons such as disabled people and older people or those who make complex journeys involving 'trip chaining' such as women and carers. For example, these groups could experience an improvement in journey times and reliability of journey times both locally and when travelling to key services such as employment, education, healthcare, shopping in Elgin and the surrounding area.

The construction of a new bypass may result in negative impacts during both construction and operation stages for local communities. The construction of the scheme may impact groups who are more vulnerable to noise, vibration, and air quality impacts such as children, older people, disabled people, and pregnant women. Furthermore, during operation, the new bypass could create potential severance, noise, air quality and traffic impacts for communities along the route. However, the level of direct impact would be dependent on the route alignment of the bypass and the types of communities affected.

Overall, a bypass of Elgin is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for those protected characteristic groups living along the A96 through Elgin and for those who are dependent on private vehicle use. However, negative impacts could be experienced by those living along a new bypass route and more detailed assessment is required to understand the extent of the impact and the appropriate mitigation to reduce negative effects and enhance benefits for protected characteristic groups.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

A decrease in traffic through Elgin could result in improved local air quality and reduced traffic noise which would be a particular benefit to children, as they are more vulnerable to the adverse health effects of traffic-related emissions and noise. Reduced traffic levels could also help to address local severance issues, improve the active travel environment, reduce road safety concerns, and improve access to education for children and young people.

However, the construction of a new bypass could potentially result in negative impacts during both construction and operation stages for children living in local communities along the bypass route. This includes noise, vibration and air quality impacts during construction and potential severance, noise, air quality and traffic impacts during operation. However, the level of direct impact would be dependent on the location of the bypass and proximity to children and young people living or attending schools along the route.

Overall, a bypass of Elgin is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for children living along the A96 through Elgin. However, potential negative impacts could be experienced under both scenarios for children living and attending school along the new bypass route but the wider benefits to communities are anticipated to outweigh the negative impacts. More detailed assessment is required to understand the extent of these impacts and to ensure effective mitigation.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option would result in reduced traffic through Elgin, creating benefits for socio-economically disadvantaged groups. Reducing the volume of traffic using the A96 through Elgin would be a key enabler for sustainable transport and placemaking within the town. These improvements would benefit those who are unable to afford a car. There is also the potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality.

There is generally a heavier reliance on the use of the private car along the A96 corridor compared with the rest of the country. This is primarily due to the rural nature of the region, where there is greater dependency on the private car to access employment, education, healthcare and for social purposes. In absence of viable alternatives to travel, those on low incomes may be 'forced' into car ownership despite financial constraints. However, there could be benefits through an improvement in journey times and reliability of journey times for these drivers, as well as a more attractive environment for active travel where possible.

With four serious and 12 slight accidents recorded within Elgin between 2015 and 2019[iii], there are opportunities for safety improvements to benefit socio-economically disadvantaged groups as evidence[xxviii] shows that people from deprived areas are more likely to be injured or killed as road users.

However, the extent to which positive effects would be realised depends on the location of a bypass and the level of reduction of through traffic within disadvantaged and deprived communities.

Overall, a bypass of Elgin is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for socio-economically disadvantaged groups.

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1. Preliminary Appraisal Summary

1.1 Option Description

Keith Bypass

This option focuses on improving the safety, resilience, and reliability of the A96 Trunk Road within the vicinity of Keith through the provision of a bypass of the town. Keith is shown within the context of the wider A96 Trunk Road in Figure 1.1. Note that due to this being at an early stage of the process, the Scottish Transport Appraisal Guidance (STAG) appraisal does not define the location, route or standard of the bypass.

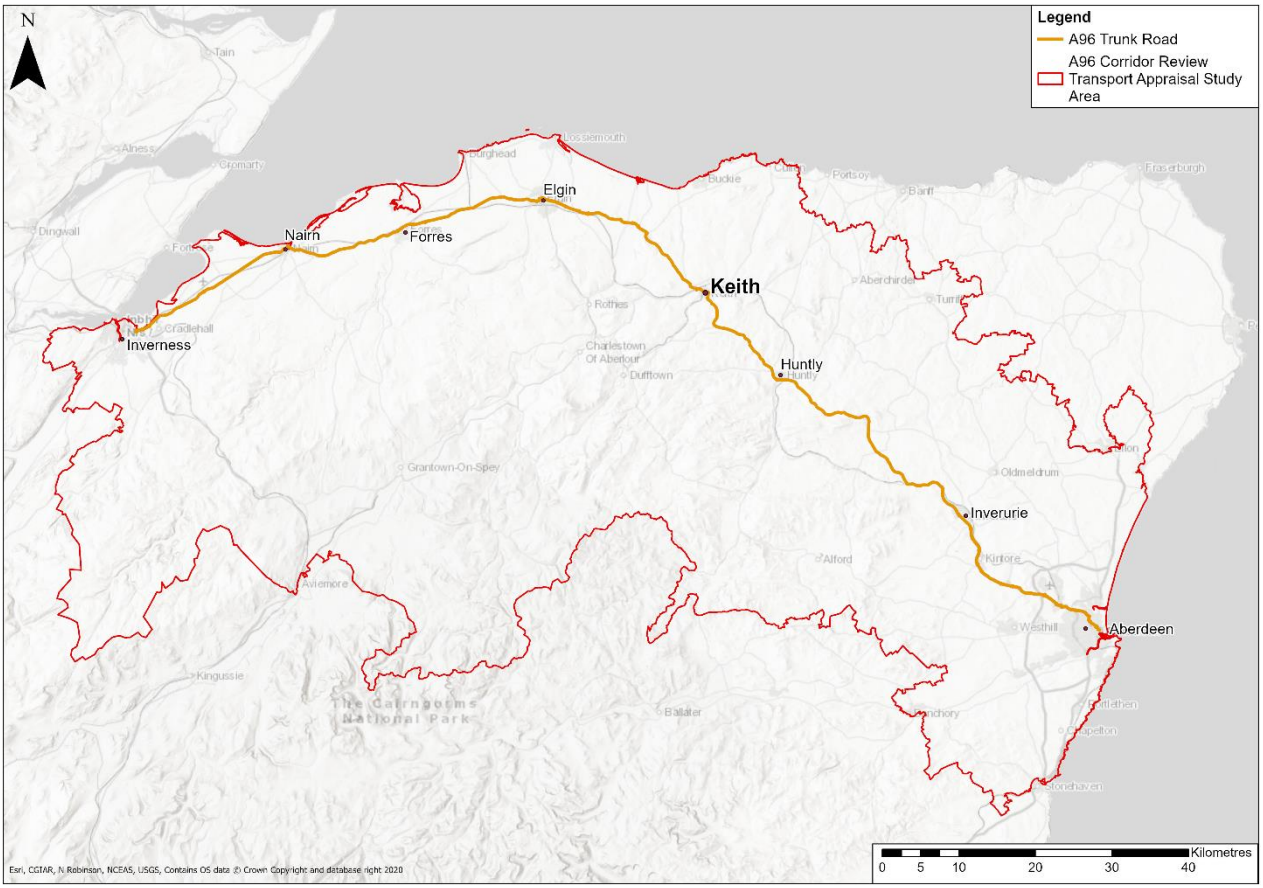

Figure 1.1: Location of Keith in the Context of the A96 Corridor

The existing A96 Trunk Road passes through Keith from the town's western boundary at the A95 Haughs Road/A96 Bridge of Haughs priority junction, to the Denwell Road/A96 priority junction at the towns eastern boundary. Within Keith, A96 traffic is required to negotiate a number of priority junctions, in addition to numerous accesses providing entry to commercial, educational, and industrial units and/or residential properties, as well as a signalised junction and a signalised pedestrian crossing.

The existing A96 Trunk Road through Keith is largely single carriageway, with footways along the majority of the route. The speed limit through the town is 30mph. Outside of the town's boundary, the road is subject to the national speed limit.

This option would help to improve the reliability and resilience of the A96 Trunk Road through reducing the impacts of accidents, as well as supporting access to tourism sites across the region (particularly in the whisky industry) and employment opportunities. This option is also likely to act as a key enabler for sustainable transport and placemaking within Keith whilst delivering a safety improvement.

1.2 Relevance

Relevant to all road users in the corridor

The A96 Trunk Road plays an important strategic role in the regional economy of the north-east of Scotland. The provision of a bypass at Keith is likely to improve connectivity between certain origin and destinations within the region by bypassing the existing A96 Trunk Road within the town, avoiding interaction with local traffic and junctions. This would also allow freight to move more effectively. Therefore, a bypass within the vicinity of Keith could help reduce costs to business, including the food and drink sector, and contribute to economic growth.

This option supports Scotland's National Strategy for Economic Transformation[i], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions. This option has the potential to support the reliability and resilience of the network for communities and businesses by reducing the impact of accidents on the network. A high quality, well maintained and efficient trunk road network also supports other Scottish Government programmes for active travel, development of connected and autonomous vehicle infrastructure and bus priority investment, and thereby contributes to the low carbon economy.

Scotland's Road Safety Framework to 2030 sets out the vision for Scotland to have the best road safety performance in the world by 2030 and the long-term goal of Vision Zero where there are zero fatalities and serious injuries on Scotland's roads by 2050 with ambitious interim targets for the number of people killed or seriously injured to be halved by 2030[ii]. The framework is aligned with the Second National Transport Strategy (NTS2) and embeds the Safe System approach to road safety delivery, which consists of five key pillars focusing efforts not only on road traffic casualty reduction (vulnerability of the casualties) but also on road traffic danger reduction (sources of the danger).

Generally, the accident rate on the A96 Trunk Road is lower than the national average[iii]; however, Personal Injury Accident (PIA) rates between 2015 and 2019 for the A96 through Keith have been identified as higher than corresponding accident rates for Built-Up Trunk A-roads in Scotland (12.1 per million vehicle kilometres (MVKm)) at 22.4 accidents per MVKm[iv]. The Killed or Seriously Injured (KSI) accident rate is also significantly higher than

the national average (2.6 per MVKm) for routes of a similar type at 12.8 accidents per MVKm.

As the A96 Trunk Road bisects the town and community, there are real and perceived safety issues that act as a barrier to active travel within Keith. The provision of a Keith bypass would likely reduce the volume of traffic passing through Keith, which should in turn reduce the number and severity of road traffic accidents on the existing A96 through Keith. As such, this option would contribute to Scotland's Road Safety Framework to 2030 supporting Vision Zero.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the scale and complexity of the bypass and specific local constraints that would require further examination and assessment at the stages of design development, a level of detail beyond that which is undertaken as part of a STAG appraisal.

As a result, the STAG appraisal does not define the location or route of the bypass, although it has been assumed that the approximate length will range from 2.5km to 15km. The category of road for the bypass and the number and type of junctions have also not been defined at this stage.

Considering the assumed range for the approximate length of the bypass, the total estimated cost is expected to fall within the range of £101m - £250m.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the operation and maintenance of the bypass, which would have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. This option would also sit within the 'private car' tier of the Sustainable Travel Hierarchy.

This option would also contribute to eight of the 12 NTS2 outcomes as follows:

- Provide fair access to services we need
- Help deliver net zero target
- Adapt to the effects of climate change
- Get people and goods to where they need to get to
- Be reliable, efficient, and high quality

- Use beneficial innovation
- Be safe and secure for all
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	0	0	+	+	++	- -	0	++	+	+	+	+	+
'Without Policy' Scenario	-	0	+	+	++	- -	-	++	+	+	+	+	+

This option makes a generally positive contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria. This option is expected to perform particularly well against TPO5 providing a safe, reliable and resilient transport system, and the STAG Health, Safety and Wellbeing criterion as the bypass would remove strategic trips from the town where there is a noted accident problem. However, it is expected that there would be negative impacts as a result from this option in both the 'With Policy' and 'Without Policy' scenarios, specifically considering the STAG Environment criterion.

This option also offers the opportunity to enhance community cohesion and placemaking by addressing the severance associated with a busy trunk road bisecting a community. In turn, this could increase the attractiveness of shorter everyday trips undertaken by active modes. As such, a minor positive impact is anticipated for TPO3 associated with enhancing communities as places to support health, wellbeing and the environment. A moderate positive impact is anticipated for the STAG Health, Safety and Wellbeing criterion with further minor positive impacts for the STAG Equality and Accessibility criterion, as well as all three of the SIAs for Equality, Children's Rights and Wellbeing and Fairer Scotland Duty.

Although the Keith bypass could remove some noise and air pollution from the town, the physical impact of construction could negatively impact the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, with an overall moderate negative impact expected for the STAG Environment criterion in both the 'With Policy' and 'Without Policy' scenarios. In the 'Without Policy' Scenario specifically where traffic demand is likely to be higher with greater vehicle kilometres travelled, the option is expected to have a minor negative impact against TPO1 regarding contributing to Scottish Government's net zero targets, and the STAG Climate Change criterion.

Delivery of the bypass is considered feasible at this stage; however, a detailed assessment would require to be undertaken to fully establish the details of the bypass including the optimal corridor and junction strategy. Although a bypass of Keith is considered to be

affordable at this stage, capital costs are also highly dependent on the potential length and route a bypass may take. A reasonable level of support for the option from the public is anticipated due to the potential safety improvements and reliability benefits for through traffic.

Although the bypass as a standalone intervention does not perform particularly well against two of the TPOs and the STAG Environment and Climate Change criteria, it would act as a key enabler for sustainable transport and placemaking within Keith; the removal of traffic from the A96 within the town would present an opportunity for delivering sustainable travel measures and/or placemaking through the reallocation of roadspace.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[v].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall PIA rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Keith. The rate of KSIs is also significantly higher in Keith than the national average.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km, therefore limiting the potential for active travel.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail being major components of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or KSI accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Targeted Road Safety Improvements
- Active Communities
- Active Connections;
- Bus Priority Measures and Park and Ride
- Development of A96 Electric Corridor.

Other areas of Scottish Government activity

- Bus Partnership Fund[vi]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[vii]
- Climate Change Plan 2018-32 Update[viii]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[ix]
- National Transport Strategy (NTS2)[x]
- National Planning Framework 4 (NPF4)[xi]

- The Place Principle[xii]
- Scotland's National Strategy for Economic Transformation[xiii]
- Scotland's Road Safety Framework to 2030[xiv]
- Strategic Road Safety Plan (2016)[xv]
- Strategic Transport Projects Review 2 (STPR2)[xvi].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
0	-

Traffic data from the A96 Corridor Road Assignment Model (CRAM)[xvii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of heavy goods vehicles (HGV) traffic along the A96 passing through the town. Through traffic, and particularly HGVs, can increase perceived safety issues which can act as a barrier to active travel. Removing this traffic (including the number of HGVs) through the provision of a bypass is therefore likely to contribute to the Scottish Government's net zero emissions target through the reduction of slow moving or stationary traffic, whilst also improving the attractiveness of sustainable modes of travel, particularly for shorter distance journeys.

The option would likely act as a key enabler to maximise sustainable transport and placemaking within Keith, enhancing the opportunity to encourage a shift from car-based travel to sustainable modes, particularly for shorter distance journeys. This is likely to be achieved through creating environments that are more attractive for walking, wheeling, and cycling, and by increasing the priority for public transport services, resulting in a positive contribution to this objective under both the 'With Policy' and 'Without Policy' scenarios.

However, a bypass would provide additional road space and therefore increase capacity for motorised vehicles, potentially inducing travel demand. Whilst congestion is not currently a significant issue within Keith, if it were to become an issue in the future, it would be under the 'Without Policy' Scenario rather than the 'With Policy' Scenario. The provision of a

bypass would provide an alternative route to avoid any congestion within the town, which could result in more road-based trips, therefore increasing transport-based emissions. This option therefore has the potential to have a negative impact under the 'Without Policy' Scenario and neutral impact under the 'With Policy' Scenario on transport-based emissions.

While a bypass does not necessarily facilitate a modal shift to more sustainable modes, it does help support the provision of a safe, efficient, and reliable trunk road network which is integral to wider Scottish Government programmes relating to active travel and bus priority investment. On balance, the provision of a bypass at Keith is scored as **neutral** under the 'With Policy' Scenario and **minor negative** under the 'Without Policy' Scenario against this objective.

2. An inclusive strategic transport system that improves the accessibility of public transport in rural areas for access to healthcare, employment, and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is a problem along the corridor, and within the vicinity of Keith, which is highlighted by the reliance on private vehicle use and by higher than average car ownership levels (73%) in the town[xviii]. This is due to the largely rural nature of the region, where providing public transport can be a challenge due to dispersed population and settlement patterns. The provision of a bypass would likely offer benefits to local services through the reduction of traffic flows within Keith particularly as, relative to other towns along the A96, Keith has higher levels of travel to work by bus. Benefits would be anticipated for longer distance limited stop bus services that would likely travel on the bypass for efficient movement between Aberdeen and Inverness.

A bypass at Keith is unlikely to have a direct impact on service frequency and coverage and is therefore not anticipated to have a notable impact on issues relating to the accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

Overall, the options are anticipated to have a **neutral** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health and wellbeing.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Traffic data from the A96 CRAM[xvii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of HGV traffic

along the A96 passing through the town. The traffic, therefore, is largely comprised of through traffic, increasing severance in the town, which can create a barrier to active travel and detract from the sense of place. The provision of a bypass at Keith is anticipated to remove up to 70% of eastbound peak period traffic and 75% of westbound peak period traffic from the existing A96[xix], including the majority of HGVs, providing the opportunity to enhance the sense of place as a key enabler to maximise sustainable transport and placemaking within Keith.

A bypass is anticipated to remove through traffic from within Keith, providing the opportunity to deliver interventions within towns to enhance placemaking, reducing demand for unsustainable travel, particularly for shorter everyday trips. In doing so, the provision of a bypass could do more than remove through trips from the town. By facilitating the transition to sustainable modes, a bypass could further reduce traffic volumes within Keith, enhancing the sense of place and supporting health and wellbeing.

In addition to the potential benefits mentioned above, the removal of through trips by providing a bypass at Keith could reduce the real and perceived severance caused by the strategic road network within the town. The option is scored to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios as it would enable the inclusion of infrastructure to encourage mode shift, enhancing the community as a place.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market. The provision of a bypass of Keith is likely to improve connectivity between certain origin and destinations within the region by bypassing the existing A96 within the town, removing the need to travel through a section of reduced speed limit and negotiate numerous local junctions. Although many people within and around Keith commute towards Aberdeen or Elgin for work[xx], the town is home to three large whisky distilleries (Strathmill Distillery, Strathisla Distillery and Glen Keith Distillery) and a large steel fabricator (W R Simmers Ltd), therefore some road users would remain on the existing A96 and this route may become more free flowing following the introduction of a bypass.

Keith has been recognised as a 'tertiary growth area' in the region, due to the identification of strategic employment land which could support economic growth and attract inward investment[xxi]. The town is well established in the whisky industry, whilst also being an important location in the renewable energy sector, with the recent construction of the Keith Greener Energy Grid Park[xxii].

A bypass of Keith could support sustainable inclusive growth by improving the efficiency of the movement of goods along the corridor as a result of potential reliability improvements on the trunk road network, which could support opportunities for employment and business growth. The removal of through trips from the town could alleviate congestion for those travelling to Keith for employment. Whilst the majority of the benefits would likely be experienced by those who have access to a vehicle, the removal of through trips provides the opportunity to deliver interventions within towns to enhance placemaking, making active and sustainable modes more attractive and therefore reducing demand for unsustainable travel, particularly for shorter everyday trips.

The removal of through trips could also provide opportunities to enhance placemaking within Keith, enhancing the local economy by providing more attractive surroundings which encourages increased footfall. However, some economic benefits could be negated if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

Overall, a bypass at Keith is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios due to the improved confidence in the trunk road network provided for rural and remote communities and for the opportunity to provide measures to enhance access to labour markets, suppliers, and customers along the A96 corridor.

5. A reliable and resilient strategic transport corridor that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
++	++

Generally, the accident rate (2015-2019) on the A96 is lower than the national average[iii]; however, PIA rates between 2015 and 2019 for the A96 through Keith have been identified as higher than corresponding accident rates for Built-up Trunk A-roads in Scotland (12.1 accidents per MVKm) at 22.4 accidents per MVKm[iv]. The KSI accident rate is also significantly higher than the national average (2.6 accidents per MVKm) for routes of a similar type at 12.8 accidents per MVKm.

The provision of a Keith bypass would likely reduce the volume of traffic passing through Keith by up to 70% eastbound and 75% westbound during peak periods from the existing A96[xxiii], including up to 91% of HGVs[xvii]. This, in turn, could reduce the number and severity of road traffic accidents on the A96 through Keith. The provision of a bypass would also remove the need for through traffic to pass through numerous at-grade junctions within Keith, reducing conflict and the potential for accidents, whilst also improving the reliability of the strategic transport corridor.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provide an illustration of the potential benefits, as illustrated by the 3-year-after-opening project evaluations for the following scheme:

- A68(T) Dalkeith Bypass saw a reduction in the number of accidents within Dalkeith by approximately 30% after opening[xxiv]. Additionally, the severity of accidents occurring within the town reduced.

Overall, a bypass at Keith would have a **moderate positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, with the positive impacts felt by the community within Keith and the wider communities along the A96 corridor.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
- -	- -

A bypass of Keith would likely result in minor positive impacts on communities due to improved safety on the local network and on the trunk road network along the A96 by separating a significant proportion of through traffic from local traffic. This would deliver health and wellbeing benefits to individuals by providing a safer environment to travel. The existing A96 through Keith carries a large volume of through traffic, which includes HGVs, due to the strategic nature of the route. The existing A96 also interacts with numerous local roads via at-grade junctions. A bypass of Keith could help to reduce the volume of traffic travelling through the settlement and therefore assist with placemaking by reducing real and perceived severance and improve the sense of place. The re-distribution of a significant proportion of through traffic to a bypass could produce opportunities to re-orientate the road network and traffic hierarchy along the existing road through Keith, re-connecting communities that may currently feel separated or experience severance due to the trunk road. As a result of the likely reduction in through traffic, a bypass would be anticipated to improve air quality and reduce noise and vibration within Keith itself, if overall traffic volumes through the settlement were reduced; however, the extent would depend on how much traffic transferred to the bypass.

A bypass may also increase the overall use of private vehicles through reducing congestion and making car travel more attractive. There may be a slight deterioration in air quality as a result of any traffic increase; however, the bypass has the potential to improve air quality along the existing A96 within Keith through reducing traffic volumes, congestion and stationary vehicles within the town.

In terms of natural resources, significant quantities of materials and construction-related trips would be required during the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact. The A96 currently passes through a conservation area and there are a number of listed buildings within Keith[xxv]. The bypass could be of some slight benefit to these locations as traffic volumes would reduce with a bypass.

A bypass has the potential for adverse environmental impacts, with some of these being potentially significant for example on the water environment, biodiversity, agriculture and soils, cultural heritage, and landscape and visual amenity. The Mill Wood Site of Specific Scientific Interest (SSSI) to the east of Keith, areas of peatland to the north and large swathes of woodland to the south, many of which are regarded as being Ancient or Long-Established. There are numerous heritage assets in the vicinity of Keith which could be affected. There are areas of significant flood risk associated with the River Isla to the north of Keith and some flood risk to the west and south-west to a lesser extent. This is likely to be a key consideration in delivering a bypass in these areas. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

In terms of land use, the Moray Local Development Plan outlines settlement expansion to the east of Keith. The alignment of a bypass would need to take this into consideration, as the route could constrain or have a negative impact on future development. There are large areas of protected greenspace to the west and south of Keith including an area with a Tree Preservation Order (adjacent to the A96/A95 road junction) which could be a potential constraint on the alignment of a bypass.

Further environmental assessment would be undertaken if a bypass is progressed through the design and development process in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage as the design and development process progresses. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, at this preliminary stage in the appraisal process, the potential impacts of the Keith bypass are considered **moderate negative** for this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided or adequately mitigated, then adverse environmental impacts could be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
0	-

The A96 Trunk Road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to extreme weather leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of

heavy rainfall. A bypass is likely to suffer the same vulnerabilities; however, new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore a bypass should enhance the resilience of the A96, adapting against the effects of climate change.

In the short term, greenhouse gas emissions would occur due to construction activities undertaken to deliver the bypass, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

Traffic data from the A96 CRAM[xvii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic, and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of HGV traffic along the A96 passing through the town. The provision of a bypass could potentially reduce slow moving or stationary traffic whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys. Removing this traffic through the provision of a bypass is therefore likely to contribute to the Scottish Government's net zero emissions target through the reduction of slow moving or stationary traffic, whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys. The provision of a bypass would also reduce the number of commercial goods vehicles, including HGVs, travelling through the town.

However, a bypass would provide additional road space and therefore increase capacity for motorised vehicles, potentially inducing travel demand. Whilst congestion is not currently a significant issue within Keith, if it were to become an issue in the future, it is likely to be experienced more intensely and for longer periods in the 'Without Policy' Scenario rather than the 'With Policy' Scenario, where congestion could be minimal. Expected impacts under the 'With Policy' Scenario, such as a reduction in car km travelled, could reduce the greenhouse gas emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a negative impact under the 'Without Policy' Scenario and neutral impact under the 'With Policy' Scenario on transport-based emissions. The extent of change in greenhouse gas emissions is also dependent on the migration to zero-emission fuels over time.

The option would likely act as a key enabler to maximise sustainable transport and placemaking within Keith, enhancing the opportunity to encourage a shift from car-based travel to sustainable modes, particularly for shorter distance journeys. This is likely to be achieved through creating environments that are more attractive for walking, wheeling, and cycling, or by increasing the priority for public transport services, resulting in a positive contribution to this objective under both the 'With Policy' and 'Without Policy' scenarios.

The provision of the bypass could enhance resilience of the A96 to the effect of climate change. However, given the potential for emissions to be generated during the construction period and the bypass to induce travel demand, a bypass of Keith is expected to have a **neutral** impact on the Climate Change criterion under the 'With Policy' Scenario and a **minor negative** impact under the 'Without Policy' Scenario.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
++	++

Traffic data from the A96 CRAM[xvii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of HGV traffic along the A96 passing through the town. Removing through traffic through the provision of a bypass would likely reduce some of the key barriers to active and sustainable modes within Keith, including real and perceived severance caused by trunk road traffic. This could result in an increase in active travel, providing benefits to health and wellbeing in the town. Furthermore, the bypass could encourage a shift from car-based travel to sustainable modes, particularly for shorter distance journeys within Keith. This would be achieved by creating environments that are more attractive for walking, wheeling, and cycling, providing additional benefits to health and wellbeing.

The removal of through traffic from local roads within Keith through the provision of a bypass, and therefore reducing congestion, should provide benefits for accessing local health and wellbeing services, whether it be by car, public transport or by active modes.

Generally, the accident rate (2015-2019)on the A96 is lower than the national average[iv]; however, PIA rates between 2015 and 2019 for the A96 through Keith have been identified as higher than corresponding accident rates for Built-up Trunk A-roads in Scotland (12.1 accidents per MVKm) at 22.4 accidents per MVKm. The KSI accident rate is also significantly higher than the national average (2.6 accidents per MVKm) for routes of a similar type at 12.8 accidents per MVKm.

The provision of a Keith bypass is predicted to reduce the volume of peak period traffic passing through Keith by up to 70% eastbound and 75% westbound[xix] through the removal of through trips. This could, in turn, reduce the number and severity of road traffic accidents on the A96 through Keith, and result in associated road safety improvements.

There is potential for negative environmental effects on visual amenity during construction and operation of the bypass; however, this would need to be assessed in more detail during the development of the option.

It is anticipated that this option would have no impact on the personal security of travellers and their property.

Overall, a bypass is anticipated to have **moderate positive** impacts on this criterion under both the 'With Policy' and 'Without Policy' scenarios as it is anticipated to provide additional opportunities for active travel within Keith, which could have positive health impacts, as well as reducing the number of accidents within the town.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market.

This option would result in wider economic impacts at a national, regional and local level for both transport users and non-users, with the potential to result in positive changes to economic welfare. The A96 is integral to the food and drink sector, a key sector both regionally and nationally, with approximately 44% of the malt whisky distilleries in Scotland located within Moray[xxvi], and Keith being home to three large distilleries: Strathmill Distillery, Strathisla Distillery and Glen Keith Distillery. Manufacturing is the largest employer within Keith, with 20% of the working population working within this industry[xxvii], with a large steel fabricator (W R Simmers Ltd) located within the town[xxviii]. Tourism is also a key industry within the vicinity of the Inverness to Aberdeen corridor[xxix], with significant natural and industrial tourism assets, including the Cairngorms National Park and Royal Deeside. Although Keith is not a significant tourist attractor, the Strathisla Distillery is a high profile attraction as the oldest working distillery in Scottish Highlands, and is part of the Speyside Malt Whisky Trail.

The provision of a bypass of Keith is likely to reduce the conflict between local and longer distance traffic, improving the efficiency of the movement of goods along the corridor due to the likely associated reliability improvements on the trunk road network, thereby supporting opportunities for employment and business growth. The removal of through trips could also provide opportunities to enhance placemaking within Keith, enhancing the local economy by providing more attractive surroundings and encouraging increased footfall. This could be negated, however, if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of the bypass are currently unknown. However, this option is anticipated to result in benefits to both the private and business users in terms of travel times and vehicle operating costs, particularly for longer distance traffic bypassing the town. Benefits are anticipated to arise as vehicles using the bypass are likely to travel at a more efficient speed, without the need to interact with local junctions. Journey time benefits are also anticipated as local congestion is bypassed and through higher travel speeds associated with the route operating at a higher speed limit.

Overall, a bypass at Keith is expected to have a **minor positive** impact on the Economy criterion under both the 'With Policy' and 'Without Policy' scenarios due to the improved journey time reliability for suppliers, businesses, visitors, and customers and the

opportunity to provide enhanced placemaking within Keith, increasing footfall and providing benefits to the local economy.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

Traffic data from the A96 CRAM[xvii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of HGV traffic along the A96 passing through the town. Whilst this intervention would not directly impact active travel, the removal of through traffic through the provision of a bypass would likely improve local accessibility and remove some of the key barriers to active and sustainable modes within Keith. This option would also reduce severance caused by trunk road traffic, whilst providing the opportunity to enhance placemaking and improve active travel network connections within Keith.

Reducing through traffic within Keith is also likely to improve road safety and ultimately encourage sustainable modes of travel through creating environments that are more attractive for walking, wheeling, and cycling, and improving the reliability and attractiveness of public transport services for local trips. This would likely provide some positive effects for protected characteristic groups who are more likely to walk, wheel or cycle, and are more vulnerable to fear of road danger, including children, young people, women, and older people.

This option is not expected to have a significant impact on the public transport network in Keith. A bypass of Keith is not anticipated to have a direct impact on service frequency and coverage, nor have an impact on fares. Therefore, this option is not anticipated to have a notable impact on issues relating to the affordability and accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

The potential positive impacts resulting from this option are expected to be most acutely felt by residents within Keith, while the population along the wider A96 corridor would experience negligible impacts against this criterion.

Reference should also be made to the SIAs in Section 3.5.

Overall, the bypass at Keith is considered to have a **minor positive** impact on the Equality and Accessibility criterion under both the 'With Policy' and 'Without Policy' scenarios as it could encourage more people to travel actively following the removal of through traffic from Keith. This would reduce real and perceived safety, particularly for protected characteristic groups who are more vulnerable to fear of road danger.

3.4 Deliverability

1. Feasibility

As the bypass is likely to form part of the trunk road network, Transport Scotland would likely be the scheme promoter. Transport Scotland has significant experience of delivering major roads projects and bypasses within Scotland. Transport Scotland would also likely be the asset owner on completion of construction and is readily capable of arranging the operation and maintenance of the A96 Keith bypass as part of the wider trunk road network.

The scheme would need to be progressed through an options identification and selection process and development of the preliminary design, including the associated environmental assessments. Any option would also be required to pass through the statutory process, which would require public consultations and could result in the need for a Public Local Inquiry.

Some of the key engineering constraints to the north of Keith are existing roads including the A95, B9017 and B9116, the River Isla and the Aberdeen to Inverness railway line. The A95, the River Isla and the Aberdeen to Inverness railway line would also be constraints for a bypass to the south, as would the B9014 and the Keith to Dufftown heritage railway line. Any bypass route will have to consider geotechnical constraints around Keith as well as infilled quarries and areas of poor ground conditions. There are also various environmental and planning/land use constraints which have been outlined in previous sections.

Detailed development work, including community and stakeholder engagement, would be required to identify the most appropriate preferred route for a bypass.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that a bypass is considered feasible.

2. Affordability

The total estimated cost of providing a bypass of Keith could range between £101m - £250m, as outlined in Section 1.3. Construction costs can vary significantly based on the potential length, design and preferred route of the bypass. Costs would also be dependent on a number of other factors, such as the complexity of construction, the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering and environmental constraints.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the costs associated with the operation and maintenance of the bypass, which would have ongoing costs. It is not anticipated that these costs would be significant in the context of the wider trunk road network which Transport Scotland operates and maintains across Scotland.

The decision to fund capital infrastructure projects ultimately rests with Transport Scotland and the Scottish Government.

3. Public Acceptability

Wider public support is anticipated within the north-east of Scotland for this option. Support is also anticipated from the community in Keith and stakeholders in the wider business community for improvements to the safety and journey time reliability of the trunk road and local road network.

There are likely to be some members of the public who do not support the construction of a bypass. This could include landowners, communities, businesses, and other stakeholders who have concerns over the impact of construction/operation of the bypass or the resulting potential impacts to the environment.

Depending on the response to the bypass, there is likely to be the need for a Public Local Inquiry.

Public consultation undertaken as part of this review indicated general support for bypasses, with 30% of respondents considering the provision of bypasses as one of their top priorities, and 7% suggesting that bypasses could help to address safety concerns. Furthermore, Keith was mentioned as a potential location for a bypass. Only 2% of respondents opposed bypasses along the A96.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxx].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option could result in reduced traffic through Keith, potentially creating a range of benefits for groups with protected characteristics. Firstly, a decrease in traffic could result in improved local air quality within the town which would be a particular benefit to those groups who are more vulnerable to the adverse health effects of traffic emissions such as older people, disabled people, children and pregnant women. A decrease in through traffic

in Keith, particularly HGVs, could also address local severance issues, improve the active travel environment and reduce road safety concerns for those groups who are less likely to travel by car.

There could also be benefits for certain groups who rely on private vehicle use to access key services due to mobility reasons, such as disabled people and older people or those who make complex journeys involving 'trip chaining' such as women and carers. For example, these groups could experience an improvement in journey times and reliability of journey times both locally and when travelling to key services such as employment, education, healthcare, shopping in Keith and surrounding areas.

Drivers are significantly more likely to have an accident in Keith than in equivalent areas and roads across Scotland, and the accident is more likely to be a serious incident. Reducing traffic should in turn reduce the number and severity of road traffic accidents on the A96 in Keith.

The construction of a new bypass may result in negative impacts during both construction and operation stages for local communities. The construction of the scheme may impact groups who are more vulnerable to noise, vibration and air quality impacts such as children, older people, disabled people and pregnant women. Furthermore, during operation, a new bypass could create potential severance, noise, air quality and traffic impacts for communities along the route. However, the level of direct impact would be dependent on the route alignment of the bypass and the types of communities affected.

Overall, a bypass of Keith is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for those protected characteristic groups living along the A96 through Keith and for those who are dependent on private vehicle use. However, negative impacts could be experienced by those living along a new bypass route and more detailed assessment is required to understand the extent of the impact and the appropriate mitigation to reduce negative effects and enhance benefits for protected characteristic groups.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

A decrease in traffic through Keith could result in improved local air quality and reduced traffic noise which would be a particular benefit to children as they are more vulnerable to the adverse health effects of traffic-related emissions and traffic noise. Reduced traffic levels could also help to address local severance issues, improve the active travel environment, reduce road safety concerns and improve access to education for children and young people.

However, the construction of a new bypass could potentially result in negative impacts during both construction and operation stages for children living in local communities

along the route. This includes noise, vibration and air quality impacts during construction and potential severance, noise, air quality and traffic impacts during operation. However, the level of direct impact would be dependent on the location of the bypass and proximity to children and young people living or attending schools along the route.

Overall, a bypass of Keith is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for children living along the A96 through Keith. However, potential negative impacts could be experienced under both scenarios for children living and attending school along a new bypass route. More detailed assessment is required to understand the extent of these impacts and to ensure effective mitigation.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

This option could result in reduced traffic through Keith, creating benefits for socio-economically disadvantaged groups. Reducing the volume of traffic using the A96 through Keith would be a key enabler for sustainable transport and placemaking within the town. These improvements would benefit those who are unable to afford a car. There is also the potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality.

There is generally a heavier reliance on the use of the private car along the A96 corridor compared with the rest of the country. This is primarily due to the rural nature of the region, where there is greater dependency on the private car to access employment, education, healthcare and for social purposes. In absence of viable alternatives to travel, those on low incomes may be 'forced' into car ownership despite financial constraints. However, there could be benefits through an improvement in journey times and reliability of journey times for these drivers as a result of more economical journeys as well more attractive environment for active travel where possible.

There are opportunities for safety improvements to benefit socio-economically disadvantaged groups, as evidence[xxxi] shows that people from deprived areas are more likely to be injured or killed as road users.

However, the extent to which positive effects would be realised depends on the location of a bypass and the level of reduction of through traffic within disadvantaged and deprived communities.

Overall, a bypass at Keith is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for socio-economically disadvantaged groups.

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1. Preliminary Appraisal Summary

1.1 Option Description

Inverurie Bypass

This option focuses on improving the safety, resilience, and reliability of the A96 Trunk Road in Inverurie through the provision of a bypass within the vicinity of the town. Inverurie is shown within the context of the wider A96 Trunk Road in Figure 1.1. Note that due to this being at an early stage of the process, the Scottish Transport Appraisal Guidance (STAG) appraisal does not define the location, route or standard of the bypass.

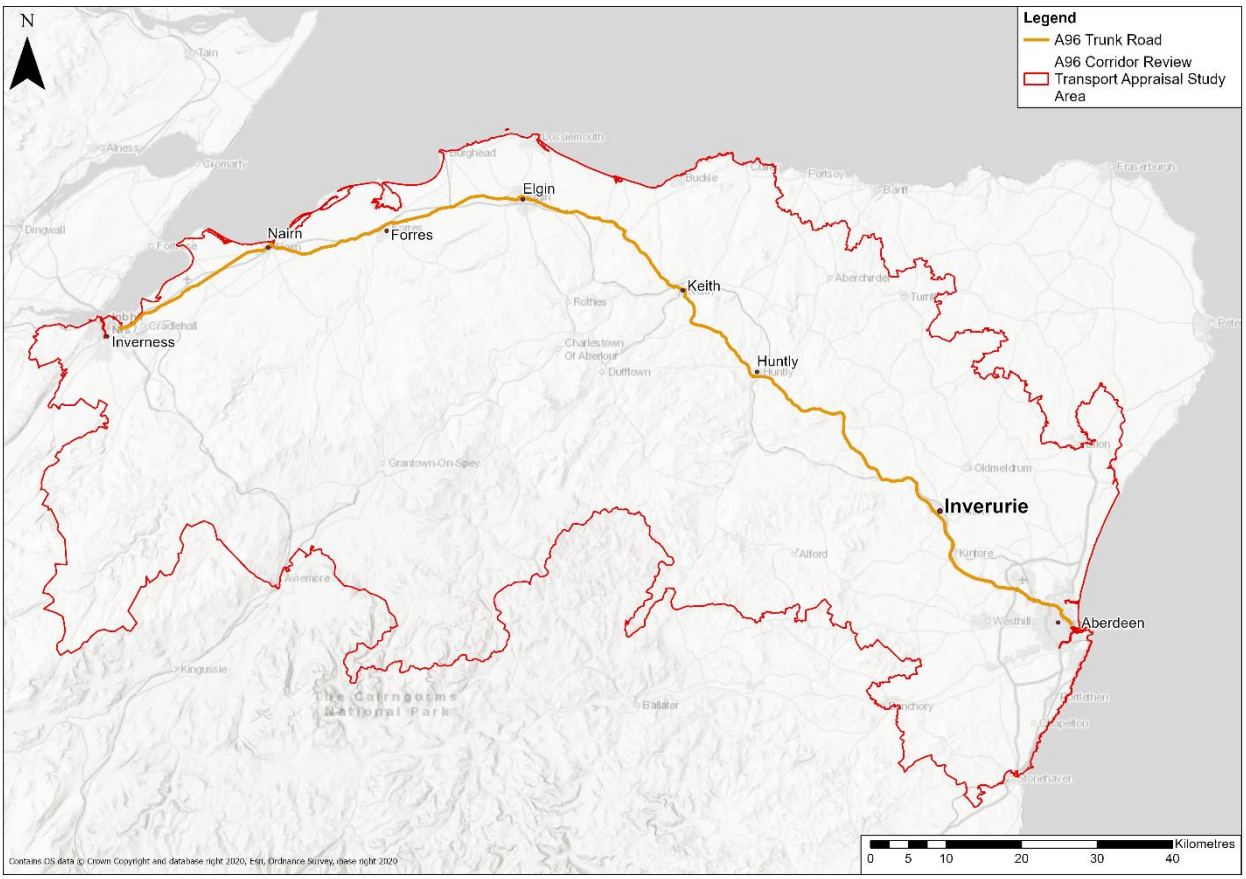

Figure 1.1: Location of Inverurie in the Context of the A96 Corridor

The existing A96 Trunk Road passes along the west of Inverurie, however, development has since occurred to the west of the A96, meaning the route creates severance issues between those developments and the amenities within the town. The A96 Trunk Road through Inverurie routes from the A96/North Street priority junction to the northwest, to the at-grade A96/B993 Inverurie Roundabout to the south, with Blackhall Roundabout, a large at-grade junction located towards the middle of the section. Blackhall Roundabout provides access from the A96 Trunk Road to Inverurie Town lying to the east and to the new developments lying to the west.

The existing A96 Trunk Road through Inverurie is a single carriageway, approximately 7.3m wide, national speed limit road, with no continuous footpaths along the route.

This option would help to improve the reliability and resilience of the A96 through reducing the impacts of accidents and reducing the impacts of road closures; in turn, this could support access to tourism sites, improve access to employment opportunities, and enhance the efficiency of freight movements. This option could address severance caused by the A96 bisecting the town which separates communities east and west of the corridor; residential areas to the west of the A96 would benefit from severance relief. Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce. This could increase the attractiveness of active travel within Inverurie due to the anticipated reduction in traffic flows. In turn, this would increase the opportunities to enhance placemaking on the A96 throughout Inverurie. However, for the purposes of the preliminary appraisal, these do not form part of this specific option.

1.2 Relevance

Relevant to all road users in the corridor

The A96 Trunk Road plays an important strategic role in the regional economy of the north-east of Scotland. The provision of a bypass of Inverurie could enhance connectivity between certain origins and destinations within the wider region by bypassing the existing A96 at Inverurie. This could result in improved connectivity between surrounding towns and Inverurie by reducing the volume of through traffic on the local road network that connects onto the existing A96 Trunk Road. As such, a bypass within the vicinity of Inverurie could help bolster the regional economy by improving connectivity to the food and drink sector and help improve access to key industries local to Inverurie (such as retail and tourism)[i], enabling economic growth to be realised. This option supports Scotland's National Strategy for Economic Transformation[ii], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions.

This option could support the reliability and resilience of the network for communities and businesses by reducing the impact of accidents on the network. A high quality, well maintained and efficient trunk road network can also support other Scottish Government programmes for active travel, development of connected and autonomous vehicle infrastructure and bus priority investment, and thereby contributes to the low carbon economy.

Scotland's Road Safety Framework to 2030 sets out the vision for Scotland to have the best road safety performance in the world by 2030 and the long-term goal of Vision Zero where there are zero fatalities and serious injuries on Scotland's roads by 2050 with ambitious interim targets for the number of people killed or seriously injured to be halved by 2030[iii]. The framework is aligned with National Transport Strategy 2 (NTS2) and embeds the Safe System approach to road safety delivery, which consists of five key pillars focusing

efforts not only on road traffic casualty reduction (vulnerability of the casualties) but also on road traffic danger reduction (sources of the danger).

Generally, the accident rate on the A96 Trunk Road is lower than the national average for similar road types, and this is also the case for the section through Inverurie. However, a number of accidents do occur on the route, particularly at Blackhall roundabout, and between Blackhall Roundabout and Inverurie Roundabout, with two serious accidents occurring on this section of the route between 2015 and 2019[iv]. The provision of an Inverurie bypass would likely reduce the volume of traffic travelling along the existing A96 Trunk Road, and in particular reduce the volume of traffic using Blackhall Roundabout. Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could decrease, in turn reducing conflicts and the potential for accidents. As such, this option would contribute to Scotland's Road Safety Framework to 2030 supporting Vision Zero.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the scale and complexity of the bypass and specific local constraints that would require further examination and assessment at the stages of design development, a level of detail beyond that which is undertaken as part of a STAG appraisal.

As a result, the STAG appraisal does not define the location or route of the bypass, although it has been assumed that the approximate length will range from 5km to 15km. The category of road for the bypass and the number and type of junctions have also not been defined at this stage.

Considering the assumed range for the approximate length of the bypass, the total estimated cost is expected to fall within the range of £101m - £250m.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the operation and maintenance of the bypass, which would have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. This option would also sit within the 'private car' tier of the Sustainable Travel Hierarchy.

This option would also contribute to eight of the 12 NTS2 outcomes as follows:

- Provide fair access to services we need

- Help deliver our net zero target
- Adapt to the effects of climate change
- Get people and goods to where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Be safe and secure for all
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	-	0	0	+	+	- -	-	0	+	0	0	0	0
'Without Policy' Scenario	- -	0	0	+	+	- -	- -	0	+	0	0	0	0

This option has a generally neutral contribution to a number of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria, with some minor positives. However, it is expected that there will be negative impacts as a result from this option in both the 'With Policy' and 'Without Policy' scenarios, specifically considering TPO1 and the STAG Environment and Climate Change criteria. Impacts are anticipated to be greater for TPO1 and Climate Change under the 'Without Policy' Scenario (moderate negative) than the 'With Policy' Scenario (minor negative).

The bypass would remove through trips from the current network, reducing delay experienced by motorists as well as increasing resilience and reducing the accident risk with lower traffic volumes in the urban area. This option is therefore anticipated to have minor positive impacts on the TPOs in relation to providing a safe, reliable and resilient transport system (TPO5) as well as contributing to sustainable inclusive growth (TPO4) and the STAG Economy criterion.

The impact of construction could negatively impact the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, with an overall moderate negative impact expected for the STAG Environment criterion in both the 'With Policy' and 'Without Policy' scenarios. Also, considering the levels of congestion in the area, and the potential for the bypass to induce travel demand, combined with emissions arising during the construction period and the limited opportunities to increase active travel within the town, a complete bypass of Inverurie is expected to have a moderate negative impact on TPO1 regarding contributing to Scottish Government's net zero targets and the STAG Climate Change criterion under the 'Without Policy' Scenario, where overall traffic demand

and vehicle kilometres travelled are higher, and a minor negative impact under the 'With Policy' Scenario. The location of the section to be bypassed means that there are limited opportunities to improve active travel, though the section does form part of the desire line between the local community to the west of the A96 and local amenities. Whilst a reduction in traffic along this section could reduce real and perceived severance, this is unlikely to result in a significant benefit to the community to the west, whose sole crossing point of the A96 is likely to remain the grade separated active travel route to the north of Blackhall Roundabout. Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would likely act as a key enabler for sustainable transport and placemaking within the town. These measures could provide an opportunity to enhance placemaking within the town but would likely only be of limited benefit given the potential volume of traffic that may be removed from the local road network. This option is therefore anticipated to score neutral against TPO3 for enhancing communities as places to support health, wellbeing and the environment, as well as the STAG criteria for Health, Safety and Wellbeing and Equality and Accessibility.

Delivery of the bypass is considered feasible at this stage; however, a detailed assessment would be required to fully establish the details of the bypass including the optimal corridor and junction strategy. Although a bypass of Inverurie is considered affordable at this stage, capital costs are highly dependent on the potential length and route a bypass may take. A reasonable level of support for the option from the public is anticipated due to the potential safety improvements and reliability benefits for through traffic.

Although the bypass as a standalone intervention does not perform particularly well against three of the TPOs and the STAG Environment and Climate Change criteria, it could act as an enabler for sustainable transport and placemaking within Inverurie.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[v].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accidents (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. Whilst the accident rate on the A96 through Inverurie is below the national average, there are locations where accidents occur, such as Blackhall Roundabout in Inverurie.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The A96 route runs through towns within the corridor, including Elgin and Keith, and passes in close proximity to other town centres. This places a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity

and has the potential to create further economic growth by attracting new visitors to the region.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or Killed or Seriously Injured accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Targeted Road Safety Improvements
- Active Communities
- Active Connections
- Bus Priority Measures and Park and Ride
- Development of A96 Electric Corridor.

Other areas of Scottish Government activity

- Bus Partnership Fund[vi]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[vii]
- Climate Change Plan 2018-32 Update[viii]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[ix]
- National Transport Strategy 2 (NTS2)[x]
- National Planning Framework 4 (NPF4)[xi]
- The Place Principle[xii]
- Scotland's National Strategy for Economic Transformation[xiii]
- Scotland's Road Safety Framework to 2030[xiv]
- Strategic Road Safety Plan (2016)[xv]
- Strategic Transport Projects Review 2 (STPR2)[xvi].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
-	- -

Indicative of the high traffic flows along the A96 at Inverurie, the observed annual average daily traffic (AADT) between Inverurie and Kintore was approximately 28,400 vehicles per day (vpd) in 2019; however, this dropped to between approximately 10,500 vpd and 20,000 vpd on the section passing through Inverurie west and east of Blackhall Roundabout respectively[xvii]. A96 Corridor Road Assignment Model (CRAM)[xviii] traffic modelling (2019 Base Year) at Inverurie indicates differing levels of through traffic on the existing A96 Trunk Road, with 60% to 70% of traffic travelling on the A96 section between Huntly and Inverurie (eastbound) continuing on the A96 to Aberdeen and other destinations to the east of Inverurie. Traffic modelling also indicates between 20% and 35% of traffic travelling westbound on the A96 section between Kintore and Inverurie continuing on the A96 to destinations west of Inverurie, for example Insch, Huntly and Keith, depending on the peak period. Similarly, between 75% and 85% of HGVs travelling on the A96 section between Huntly and Inverurie (eastbound) continue on the A96 to Aberdeen and other destinations to the east of Inverurie. The proportion of HGVs travelling westbound on the A96 section between Kintore and Inverurie continuing on the A96 to destinations west of Inverurie, for example Insch, Huntly and Keith, is indicated to be between 20% and 50% westbound, depending on the peak period. Analysis of INRIX traffic data for May 2019 indicates that capacity issues exist on the A96, as through traffic interacts with local traffic. Congestion has been identified on the section of the A96 between Blackhall Roundabout and Inverurie Roundabout during both the morning and evening peak, with average traffic speeds dropping as low as 24% of the free flow speed. Removing this traffic through the provision of a bypass has the potential to improve the

operation of key junctions in the town, including Blackhall Roundabout and Inverurie Roundabout, and contribute to the Scottish Government's net zero emissions target through the reduction of slow moving or stationary traffic.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would likely act as a key enabler for sustainable transport and placemaking within the town. Furthermore, any reduction in traffic flow could improve the reliability and attractiveness of bus services for longer distance limited stop services travelling on the bypass and local services travelling on the A96 and local road network, positively contributing to this objective under both the 'With Policy' and 'Without Policy' scenarios.

However, a bypass would provide additional road space and therefore, increase capacity for motorised vehicles, potentially inducing travel demand. Congestion within Inverurie is likely to be experienced more intensely and for longer periods in the 'Without Policy' Scenario compared to the 'With Policy' Scenario, where congestion could be minimal. Therefore, the provision of additional road space has the potential to have a negative impact under the 'Without Policy' Scenario and a neutral impact under the 'With Policy' Scenario on transport-based emissions.

While a bypass does not necessarily facilitate a modal shift to more sustainable modes, it could help support the provision of a safe, efficient, and reliable trunk road network which is integral to wider Scottish Government programmes relating to active travel and bus priority investment. However, given the levels of congestion in the area, and the potential for the bypass to induce travel demand, combined with the limited opportunities to increase active travel within the town, a bypass at Inverurie is scored as a **minor negative** under the 'With Policy' Scenario and **moderate negative** under the 'Without Policy' Scenario against this objective.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is a problem for settlements along the A96 corridor, including Inverurie. This is highlighted by the higher than average car ownership levels (79%) and the lower than average levels of commuting to work via bus in Inverurie[xix]. The provision of a bypass would benefit services through the reduction of traffic flows on the existing A96 at Inverurie, particularly at the Inverurie Roundabout and Blackhall Roundabout, including longer distance bus services which may stop at Inverurie as it is one of the larger settlements between Aberdeen and Inverness.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would improve the efficiency and reliability of bus services travelling on these routes.

A bypass at Inverurie is unlikely to have a direct impact on service frequency and coverage and is therefore not anticipated to have a notable impact on issues relating to the accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

Overall, the options are anticipated to have a **neutral** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
0	0

Indicative of the high traffic flows along the A96 at Inverurie, the annual average daily traffic (AADT) between Inverurie and Kintore is approximately 28,400 vehicles per day (vpd); however, this drops to between approximately 10,500 vpd and 20,000 vpd on the section passing through Inverurie west and east of Blackhall Roundabout respectively[xvii]. A96 CRAM[xx] (2019 Base Year) traffic modelling at Inverurie indicates differing levels of through traffic on the existing A96 Trunk Road, with 60% to 70% of eastbound traffic travelling through the settlement and onwards to other destinations, and between 20% and 35% of westbound traffic travelling through the settlement, depending on the peak period. Similarly, eastbound between 75% and 85% of HGVs are passing through Inverurie, reducing to between 20% and 50% westbound, depending on the peak period. The removal of through trips by providing a bypass at Inverurie could reduce the real and perceived severance caused by the strategic road network. Any severance relief would largely be experienced by the community located to the west of the A96, which consists of a mixture of residential and industrial developments, and houses less than 10% of Inverurie residents. This community already benefits from a grade separated active travel route to the north of the existing A96 at Blackhall Roundabout. There are currently no other active travel provisions connecting the developments to the west of the A96 with Inverurie, and perceptions of severance are likely to remain. There are therefore unlikely to be any discernible benefits in relation to severance for residents to the west of the A96.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce. The current level of traffic demand could be seen as a barrier to active travel, detracting from the sense of place within Inverurie itself. If the existing through traffic utilised the proposed bypass at Inverurie, this could as a key enabler to maximise sustainable transport and placemaking within the town.

The option is scored to have a **neutral** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, as the potential to improve the sense of place, and opportunities to travel by active modes are limited. This is given that the section of the A96 proposed to be bypassed does not pass directly through the town or connect residents with key local amenities, therefore it is unlikely to be a highly utilised active travel route.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market[xxi]. The provision of a bypass at Inverurie is likely to improve connectivity between certain origins and destinations within the wider region by bypassing any congestion associated with local trips using the A96 junctions at Inverurie. As such, a bypass at Inverurie could support sustainable inclusive growth by improving the efficiency of the movement of goods across the region, due to the associated reliability and resilience improvements on the trunk road network.

As Inverurie is home to numerous building material suppliers, retail outlets, and tourism sites, some road users would likely remain on the existing A96 in order to access the employment and leisure destinations. Alleviating the existing A96 through traffic in Inverurie could reduce queue lengths and improve the operation of key junctions such as Blackhall Roundabout and Inverurie Roundabout. As such, a bypass in Inverurie could support sustainable inclusive growth by improving the efficiency of the movement of goods between the town and local area and alleviating congestion for those travelling to Inverurie for employment or leisure due to the associated reliability improvements on the existing A96. As such, this would support opportunities for employment and for business growth.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would in turn improve the journey time reliability for those accessing the town for work and leisure. Furthermore, the removal of through trips could also provide opportunities to enhance placemaking within Inverurie, enhancing the local economy by providing more attractive surroundings which encourages increased footfall. However, some economic benefits could be negated if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

Overall, a bypass at Inverurie is expected to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios due to the likely improved reliability for vehicles transporting goods across the wider region. Furthermore, the proposed option has the potential to enhance access to labour markets, suppliers, and customers.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Generally, the accident rate on the A96 is lower than the national average for similar route types[xxii], and this is also the case for the section through Inverurie. However, a number of

accidents do occur on the route, particularly at Blackhall Roundabout, and between Blackhall Roundabout and Inverurie Roundabout, with two serious accidents occurring on this section of the route between 2015 and 2019[iv]. The provision of an Inverurie bypass would likely reduce the volume of traffic on the A96 at Inverurie by removing up to 70% of eastbound traffic and 35% of westbound traffic during the peak hours, based on the proportion of through traffic in the A96 CRAM (2019 Base Year). This, in turn, could reduce the number and severity of road traffic accidents on the A96 in Inverurie.

Overall, a bypass at Inverurie would have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, with the positive impacts likely to be experienced by the community within Inverurie and the wider communities along the A96 corridor.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
- -	- -

A bypass of Inverurie would be likely to result in some minor positive impacts on communities, including health and wellbeing benefits. While the A96 is aligned on the south-western periphery of the settlement at present and has a 60mph speed limit, there has been settlement expansion of Inverurie over the last two decades which has seen residential properties and businesses being separated from the main settlement by the A96. A complete bypass of the settlement could provide an opportunity to reduce the barriers and severance for pedestrians and cyclists accessing the town centre and other amenities, therefore improving the wellbeing of residents. The area of expansion includes businesses, retail and leisure facilities which residents of Inverurie can only access by crossing the A96. A bypass could reassign some through traffic from the existing A96, making pedestrian and cycling access to these facilities more appealing. The degree of improvement would depend on how much traffic is transferred to the bypass.

In terms of natural resources, significant quantities of materials and construction-related trips would be required during the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact.

A bypass has the potential for adverse environmental impacts, with some of these being potentially significant, for example on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). There are numerous environmental designations around Inverurie which may be a constraint to the alignment of a bypass without there being significant impacts. To the north of Inverurie are two historic battlefields (Battle of Harlaw and Battle of Barra) which are on the Historic Battlefields Inventory. To the east, is Keith Hall Garden and Designed Landscape. There are large swathes of Ancient and Long-Established Woodland to the east,

west and south-west. There are also areas of significant flood risk to the east and north (associated with the River Urie) and to the south-west (associated with the River Don). There is also a regional landscape designation to the south and west of Inverurie – Bennachie Special Landscape Area. This is designated in the Aberdeenshire Local Development Plan[xxiii]. All of the aforementioned would be key considerations in delivering a bypass alignment in these areas. The scale of the effects would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain.

In terms of land use, the Aberdeenshire Local Development Plan indicates there is some settlement expansion of residential development to the north-east, north-west and south-west. Commercial and business expansion is shown to the south-west. The alignment of a bypass would also need to take this into consideration as the route could constrain or have a negative impact on the future development.

Further environmental assessment would be undertaken if a bypass is progressed through the design and development process in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progress.

Overall, at this preliminary stage in the appraisal process, the potential impacts of the Inverurie bypass are considered **moderate negative** for this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided or adequately mitigated, then adverse environmental impacts could be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
-	- -

The A96 Trunk Road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to extreme weather leading to a deterioration in surfaces such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass of Inverurie is likely to face the same vulnerabilities; however, new infrastructure would be designed to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore a bypass should enhance the resilience of the A96, adapting against the effects of climate change.

In the short term, greenhouse gas emissions would be generated from construction activities undertaken to deliver the bypass, including indirect emissions from the

manufacture and transportation of materials, and emissions from the fuel combusted by construction plant and vehicles.

Traffic data from the A96 CRAM[xviii] (2019 Base Year) indicates that between 60% and 70% of eastbound traffic travelling on the A96 at Inverurie is through traffic, reducing to between 20% and 35% westbound, depending on the peak period. Similarly, eastbound between 75% and 85% of HGVs are passing through Inverurie, reducing to between 20% and 50% westbound, depending on the peak period. Removing this traffic through the provision of a bypass would contribute to reducing congestion on, or approaching, the existing A96 at Inverurie, whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys. The provision of a bypass would also reduce the number of commercial goods vehicles, including HGVs travelling on the existing A96 at Inverurie. Reducing congestion and through traffic, including goods vehicles, on the existing A96 would contribute to fewer emissions being produced around Inverurie.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would likely act as a key enabler for sustainable transport and placemaking within the town. Furthermore, any reduction in traffic flow could improve the reliability and attractiveness of bus services for longer distance services travelling on the bypass and local services travelling on the A96 and local road network, positively contributing to this objective under both the 'With Policy' and 'Without Policy' scenarios.

However, a bypass provides additional road space, which is likely to increase capacity for motorised vehicles, potentially inducing travel demand. Congestion within Inverurie is likely to be experienced more intensely and for longer periods in the 'Without Policy' Scenario compared to the 'With Policy' Scenario, where congestion could be minimal. Expected impacts under the 'With Policy' Scenario, such as a reduction in car km travelled, could reduce the greenhouse gas emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a minor negative impact under the 'Without Policy' Scenario and a neutral impact under the 'With Policy' Scenario on transport-based emissions. The extent of change in greenhouse gas emissions is also dependent on the migration to zero-emission fuels over time.

The provision of a bypass could enhance resilience of the A96 to the effects of climate change. However, given the levels of congestion in the area, and the potential for the bypass to induce travel demand, combined with emissions arising during the construction period and the limited opportunities to increase active travel within the town, a complete bypass of Inverurie is expected to have a **minor negative** impact on the Climate Change criterion under the 'With Policy' Scenario and a **moderate negative** impact under the 'Without Policy' Scenario.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
0	0

Generally, the accident rate on the A96 is lower than the national average for similar road types, and this is also the case for the section through Inverurie. However, a number of accidents do occur on the route, particularly at Blackhall Roundabout, and between Blackhall Roundabout and Inverurie Roundabout, with two serious accidents occurring on this section of the route between 2015 and 2019[iv]. The provision of an Inverurie bypass would be likely to reduce the volume of traffic on the A96 in Inverurie by potentially removing up to 70% of westbound traffic and 35% of eastbound traffic during the peak hours, based on the proportion of through traffic in the A96 CRAM (2019 Base Year). This, in turn, could reduce the number and severity of road traffic accidents on the A96 in Inverurie. The removal of through trips, as a result of the Inverurie bypass, could reduce the real and perceived severance caused by the strategic road network; however, this severance relief would likely be experienced in the main by the community located to the west of A96, which already benefits from a grade separated active travel route under the existing A96 at Blackhall Roundabout. There are currently no other paths connecting the developments to the west with the A96, therefore any benefits are anticipated to be negligible.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which could improve the attractiveness of sustainable modes of travel, particularly for shorter distance journeys. As such, the removal of through traffic within the town could result in an increase in active travel, by creating environments that are more attractive for walking, wheeling, and cycling, providing additional benefits to health and wellbeing.

The removal of traffic accessing the A96 from local roads within central Inverurie through the provision of a bypass, therefore potentially reducing congestion, could provide minor benefits for accessing local health and wellbeing services, whether it will be by car, public transport or active modes.

There is potential for negative environmental effects on visual amenity during construction and operation of the bypass; however, this would need to be assessed in more detail during the development of the option.

It is anticipated that this option would have no impact on the personal security of travellers and their property.

The option is anticipated to have a **neutral** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios, as the potential to improve the sense of place, and opportunities to travel by active modes are limited, given the section of the A96 proposed to be bypassed is not likely to connect residents with key local amenities, therefore it is unlikely to be a highly utilised active travel route.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market[xxi]. The provision of a bypass at Inverurie would result in wider economic impacts locally and regionally, through improving connectivity between certain origins and destinations within the wider region by bypassing the congestion associated with the A96 junctions at Inverurie. As such, a bypass at Inverurie could support sustainable inclusive growth by improving the efficiency of the movement of goods across the region, due to the associated reliability improvements on the trunk road network.

As Inverurie is home to numerous building material suppliers, retail outlets, and tourism sites, some road users would remain on the existing A96 to access the town for work and leisure. Alleviating the existing A96 through traffic in Inverurie would reduce queue lengths and improve the operation of key junctions of Blackhall Roundabout and Inverurie Roundabout. As such, a bypass in Inverurie could support sustainable inclusive growth by improving the efficiency of the movement of goods between the town and local area and alleviating congestion for those travelling to Inverurie for employment or leisure due to the associated reliability improvements on the existing A96. In turn, this could support opportunities for employment and for business growth.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce, which would in turn improve the journey time reliability for people accessing the town for work and leisure. Furthermore, the removal of through trips could also provide opportunities to enhance placemaking within Inverurie, enhancing the local economy by providing more attractive surroundings which encourages increased footfall. However, some economic benefits could be negated if reducing through traffic negatively impacts communities as a result of a reduction in passing trade.

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of the bypass are currently unknown. However, this option is anticipated to result in benefits to both the private and business users in terms of travel times and vehicle operating costs, particularly for longer distance traffic bypassing the town. Benefits are anticipated to arise as vehicles using the bypass are likely to travel at a more efficient speed, without the need to interact with local junctions. Journey time benefits are also anticipated as local congestion is bypassed and through higher travel speeds associated with the route operating at a higher speed limit.

Overall, a bypass at Inverurie is expected to have a **minor positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios due to the improved confidence in the trunk road network provided for moving goods across the wider region, and for the opportunity to provide measures to enhance access to labour markets, suppliers, and customers between Inverurie and its local area via the existing A96 corridor.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
0	0

Generally, the accident rate on the A96 is lower than the national average for similar road types, and this is also the case for the section through Inverurie. However, a number of accidents do occur on the route, particularly at Blackhall Roundabout, and between Blackhall Roundabout and Inverurie Roundabout, with two serious accidents occurring on this section of the route between 2015 and 2019[iv]. The provision of an Inverurie bypass would likely reduce the volume of traffic travelling along the A96 in Inverurie by potentially removing up to 70% of eastbound traffic and 35% of westbound traffic during the peak hours, based on the proportion of through traffic in the A96 CRAM (2019 Base Year). The removal of through trips, by providing a bypass of Inverurie, could reduce the real and perceived severance caused by the strategic road network; however, this severance relief would likely be experienced in the main by the community located to the west of A96, which currently benefits from a grade separated active travel route under the existing A96 at Blackhall Roundabout. There are currently no other active travel provisions connecting the developments to the west with the A96, therefore any benefits are anticipated to be negligible.

Whilst this intervention would not directly impact active travel, depending on the route of the bypass and the location of any intermediate junctions, the bypass has the potential to attract trips from local roads routing through Inverurie to access the A96. This could reduce traffic flows through the town and therefore improve the sense of road safety. In turn, this could allow for active travel network connections to be improved and could encourage sustainable modes of travel through the creation of an attractive environment for walking, wheeling, and cycling. This could provide some positive effects for protected characteristic groups who are more likely to walk, wheel or cycle, and are more vulnerable to fear of road danger, including children, young people, women, and older people.

This option is not expected to have a significant impact on the public transport network within Inverurie. A bypass of Inverurie is not anticipated to have a direct impact on service frequency and coverage nor have an impact on fares. Therefore, this option is not anticipated to have a notable impact on issues relating to the affordability and accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

Any potential positive impacts resulting from this option are expected to be most acutely felt by residents within Inverurie, while the population along the wider A96 corridor would experience negligible impacts against this criterion.

Reference should also be made to the SIAs in Section 3.5.

Overall, the bypass at Inverurie is anticipated to score a **neutral** impact on the Equality and Accessibility criterion under both the 'With Policy' and 'Without Policy' scenarios, as the

majority of the benefits would likely be felt by people who have access to a vehicle. There is the potential to encourage more people to travel actively following the removal of through traffic on the local road network through Inverurie; however, this is highly dependent on the route of the bypass and the location of intermediate junctions, so is largely unknown at this time.

3.4 Deliverability

1. Feasibility

As the bypass is likely to form part of the trunk road network, Transport Scotland would likely be the scheme promoter. Transport Scotland has significant experience of delivering major roads projects and bypasses within Scotland. Transport Scotland would also likely be the asset owner on completion of construction and is readily capable of arranging the operation and maintenance of the A96 Inverurie bypass as part of the wider trunk road network.

The scheme would need to be progressed through an options identification and selection process and development of the preliminary design, including the associated environmental assessments. Any option would also be required to pass through the statutory process, which would require public consultations and could result in the need for a Public Local Inquiry.

Some of the key engineering constraints to the east of Inverurie are existing roads including the B9001, B9170 and B993, the Rivers Urie and Don and the Aberdeen to Inverness railway line. The B993 and the River Don would also be constraints for a bypass to the west, as would the steep topography heading west which includes various hills such as the Hill of Ardtannes, Corsman Hill and Shaw Hill. Any bypass route would have to consider geotechnical constraints around Inverurie as well as infilled quarries and areas with poor ground conditions. There are also various environmental and planning/land use constraints which have been outlined in previous sections.

Detailed development work, including community and stakeholder engagement, would be required to identify the most appropriate preferred route for a bypass.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that a bypass is considered feasible.

2. Affordability

The total estimated cost of providing a bypass of Inverurie could range between £101m - £250m, as outlined in Section 1.3. Construction costs can vary significantly based on the potential length, design and preferred route of the bypass. Costs would be also dependent on a number of other factors, such as the complexity of construction, the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering and environmental constraints.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the costs associated with the operation and maintenance of the bypass, which would have ongoing costs. It is not anticipated that these costs would be significant in the context of the wider trunk road network which Transport Scotland operates and maintains across Scotland.

The decision to fund capital infrastructure projects ultimately rests with Transport Scotland and the Scottish Government.

3. Public Acceptability

Wider public support is anticipated within the north-east of Scotland for this option, with work undertaken to look at the dualling of the A96, as part of the A96 Dualling East of Huntly to Aberdeen scheme being in the public domain. Support is also anticipated from the community in Inverurie and stakeholders in the wider business community for improvements to the safety and journey time reliability of the trunk road and local road network.

There is likely to be some members of the public who do not support the construction of a bypass. This could include landowners, communities, businesses, and other stakeholders who have concerns over the impact of construction/operation of the bypass or the resulting potential impacts to the environment.

Depending on the response to the bypass, there is likely to be the need for a Public Local Inquiry.

Public consultation undertaken as part of this review indicated general support for bypasses, with 30% of respondents considering the provision of bypasses as one of their top priorities, and 7% suggesting that bypasses could help to address safety concerns. Furthermore, Inverurie was mentioned as a potential location for a bypass. Only 2% of respondents opposed bypasses along the A96.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxiv].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option could result in reduced traffic on the existing A96 at Inverurie. The removal of through trips by providing a bypass at Inverurie would reduce the real and perceived severance caused by the strategic road network; however, this severance relief would largely be experienced by the community located to the west of the A96, which already benefits from a grade separated active travel route under the existing A96 at Blackhall Roundabout. There are currently no other active travel provisions connecting the developments to the west with the A96, therefore any benefits in this location are likely to be negligible.

Depending on the route of the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce. The current level of traffic demand could be seen as a barrier to active travel, detracting from the sense of place within Inverurie itself. If this through traffic travelled on the bypass at Inverurie, this could act as a key enabler to maximise sustainable transport and placemaking within the town.

As this option is anticipated to decrease traffic volumes through Inverurie, there are potential benefits for groups with protected characteristics. For example, a decrease in traffic could result in improved local air quality which would be a particular benefit to those groups who are more vulnerable to the adverse health effects of traffic emissions, such as older people, disabled people, children and pregnant women. However, the location of the section to be bypassed means any benefits are likely to be limited.

The construction of a new bypass may result in negative impacts during both construction and operation stages for local communities. The construction of the scheme may impact groups who are more vulnerable to noise, vibration and air quality impacts such as children, older people, disabled people and pregnant women. Furthermore, during operation, the new bypass could create potential severance, noise, air quality and traffic impacts for communities along the route. However, the level of direct impact would be dependent on the location of the bypass and the types of communities affected.

A bypass of Inverurie is expected to have a **neutral** impact under both the 'With Policy' and 'Without Policy' scenarios for those protected characteristic groups living along the A96 through Inverurie and for those who are dependent on private vehicle use.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

A decrease in traffic on the existing A96 at Inverurie could result in improvements in local air quality and reduced traffic noise which would be a particular benefit to children and

younger people as they are more vulnerable to the adverse health effects of traffic-related emissions and noise. The removal of through trips by providing a bypass at Inverurie would reduce the real and perceived severance caused by the strategic road network; however, this severance relief would largely be experienced by the community located to the west of the A96, which already benefits from a grade separated active travel route under the existing A96 at Blackhall Roundabout. There are currently no other active travel provisions connecting the developments to the west with the A96, therefore any benefits in this location are likely to be negligible.

As this option is anticipated to decrease traffic volumes on the existing A96 at Inverurie, there are potential benefits for groups with protected characteristics. For example a decrease in traffic could result in improved local air quality which would be a particular benefit to children who are more vulnerable to the adverse health effects of traffic emissions. However, the location of the section to be bypassed means any benefits are likely to be limited.

The construction of a new bypass could potentially result in negative impacts during both construction and operation stages for children living in local communities along the route. This includes noise, vibration and air quality impacts during construction and potential severance, noise, air quality and traffic impacts during operation. However, the level of direct impact would be dependent on the location of the bypass and proximity to children and young people living or attending schools along the route.

Overall, a bypass of Inverurie is expected to have a **neutral** impact under both the 'With Policy' and 'Without Policy' scenarios for children living along the A96 at Inverurie.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option could result in reduced traffic on the existing A96 at Inverurie, creating benefits for socio-economically disadvantaged groups by improving the active travel environment for those who are unable to afford a car. There is also the potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality. However, any severance relief would largely be experienced by the community located to the west of the A96, which already benefits from a grade separated active travel route under the existing A96 at Blackhall Roundabout. There are currently no other active travel provisions connecting the developments to the west with the A96, therefore any benefits in this location are likely to be negligible.

There is generally a heavier reliance on the use of the private car along the A96 corridor compared with the rest of the country, with Inverurie having a particularly high rate of car ownership. This is primarily due to the rural nature of the region, where there is greater dependency on the private car to access employment, education, healthcare and for social purposes. In absence of viable alternatives to travel, those on low incomes may be 'forced'

into car ownership despite financial constraints. However, there could be benefits through an improvement in journey times and reliability of journey times for these drivers as a result of more economical journeys, as well more attractive environment for active travel where possible.

There are opportunities for safety improvements to benefit socio-economically disadvantaged groups, as evidence[xxv] shows that people from deprived areas are more likely to be injured or killed as road users.

However, the extent to which positive effects would be realised depends on the location of a bypass and the level of reduction of through traffic within disadvantaged and deprived communities.

Overall, a bypass at Inverurie is expected to have a **neutral** impact under both the 'With Policy' and 'Without Policy' scenarios for socio-economically disadvantaged groups.

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1. Preliminary Appraisal Summary

1.1 Option Description

Forres Bypass

This option focuses on improving the safety, resilience, and reliability of the A96 Trunk Road in Forres through the provision of a bypass within the vicinity of the town. Forres is shown within the context of the wider A96 Trunk Road in Figure 1.1. Note that due to this being at an early stage of the process, the Scottish Transport Appraisal Guidance (STAG) appraisal does not define the location, route or standard of the bypass.

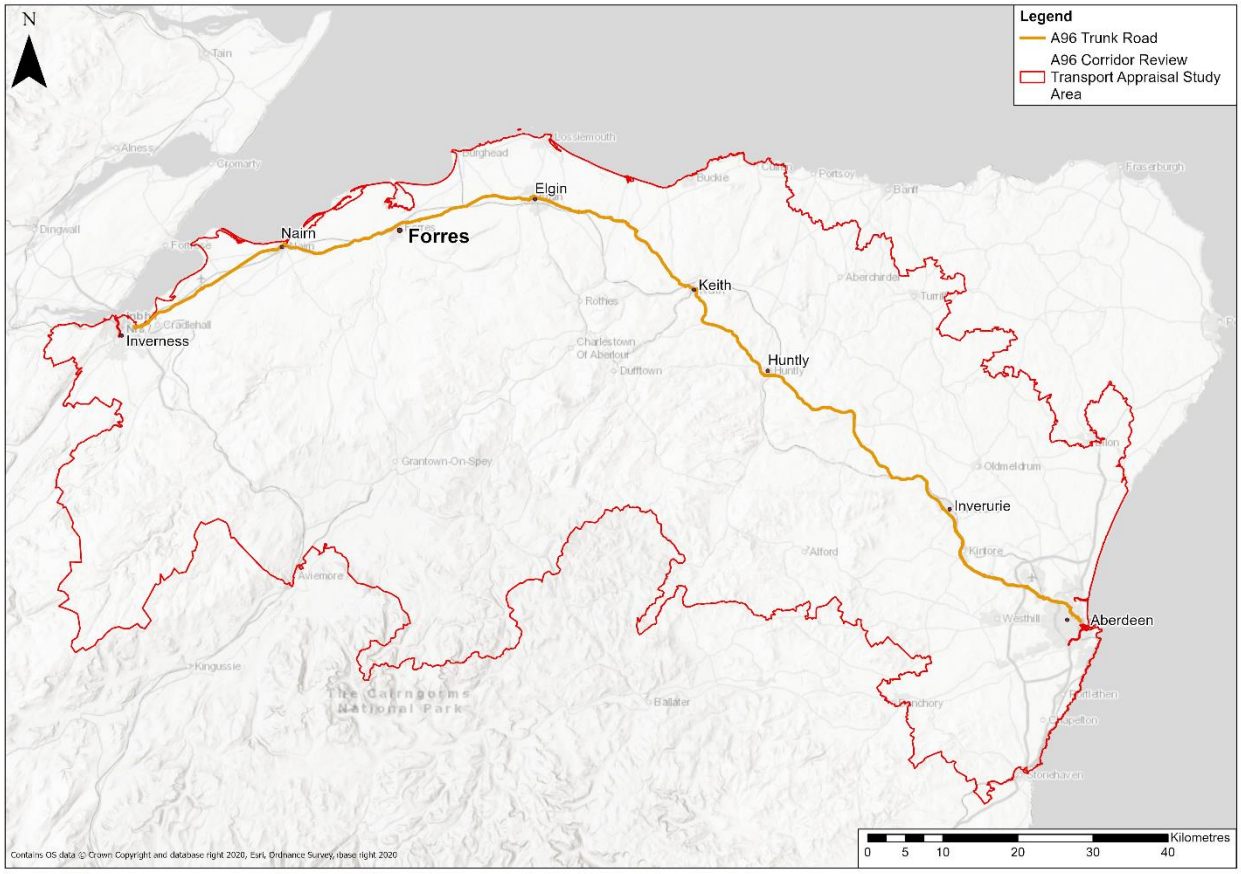

Figure 1.1: Location of Forres in the Context of the A96 Corridor

The existing A96 Trunk Road passes the town of Forres to the north; however, industrial estates, Forres train station and other developments are located north of the A96 corridor. The A96 Trunk Road through Forres routes from the at-grade Greshop Industrial Estate Roundabout to the west, to the at-grade B9011 Findhorn Roundabout to the east, with one at-grade roundabout (Nairn Road/West Road Roundabout) providing access to the developments to the north and the town itself. There are also three priority junctions that access the A96 Trunk Road through Forres, providing access to the train station and waste recycling centre to the north, and the town itself to the south.

The existing A96 Trunk Road through Forres is a 40mph single carriageway, approximately 7.3m wide for approximately 1km from the Greshop Industrial Estate Roundabout in the west, before changing to a wider carriageway with one lane in each direction separated by a wide grass central reservation for approximately 500m. The route then returns to a single carriageway with a national speed limit. There is continuous footway provision on the 40mph section on the south side of the carriageway; however, it is relatively narrow in places. On the north side of the carriageway there is footway provision for large proportions of the route but there are sections where the footway ends, requiring pedestrians to cross the carriageway, at-grade. The national speed limit section has no footway provision.

This option would help to improve the reliability and resilience of the A96 Trunk Road through reducing the impacts of accidents, particularly on the 40mph section of the route. This could support improved access to tourism sites and to employment opportunities, in addition to enhancing the efficiency of freight movements along the A96 corridor. This option could also address severance caused by the A96 bisecting the town, which separates developments and amenities such as the train station to the north, from the community to the south. Given the nature and location of the section of the A96 Trunk Road that would be bypassed, there would be limited direct opportunities to enhance placemaking or the active travel environment within the town.

1.2 Relevance

Relevant to all road users in the corridor

The A96 Trunk Road plays an important strategic role in the regional economy of the north-east of Scotland. The provision of a bypass at Forres could enhance connectivity between certain origins and destinations within the wider region by bypassing the existing A96 at Forres. Depending on the route of the bypass, a reduction in the volume of traffic on the local roads that connect onto the existing A96 Trunk Road could improve the connectivity between surrounding towns and Forres. As such, a bypass within the vicinity of Forres could help bolster the regional economy by improving connectivity to the lucrative food and drink sector and help improve access to key industries local to Forres (such as wholesale and retail trade, manufacturing, and human health and social work activities[i]), enabling economic growth to be realised. This option supports Scotland's National Strategy for Economic Transformation[ii], which sets out the Scottish Government's vision to creating a more successful country through a wellbeing economy, noting the requirement to thrive across the economic, social and environmental dimensions.

This option could support the reliability and resilience of the network for communities and businesses by potentially reducing the impact of accidents on the network. A high quality, well maintained and efficient trunk road network can also support other Scottish Government programmes for active travel, development of connected and autonomous vehicle infrastructure and bus priority investment, and thereby contributes to the low carbon economy.

Scotland's Road Safety Framework to 2030[iii] sets out the vision for Scotland to have the best road safety performance in the world by 2030 and the long-term goal of Vision Zero[iv] where there are zero fatalities and serious injuries on Scotland's roads by 2050 with ambitious interim targets for the number of people killed or seriously injured to be halved by 2030. The framework is aligned with National Transport Strategy 2 (NTS2) and embeds the Safe System approach to road safety delivery, which consists of five key pillars focusing efforts not only on road traffic casualty reduction (vulnerability of the casualties) but also on road traffic danger reduction (sources of the danger).

Generally, the accident rate on the A96 Trunk Road is lower than the national average for similar road types; however, Personal Injury Accident (PIA) rates between 2015 and 2019 for the urban section of the A96 through Forres have been identified as higher than corresponding accident rates for Built-up Trunk A-roads in Scotland (12.1 per million vehicle kilometres (MVKm)) at 16.2 accidents per (MVKm)[v]. The Killed or Serious Injured (KSI) accident rate is significantly higher than the national average (2.6 per MVKm) for routes of a similar type at 8.1 accidents per MVKm. On the rural section, the PIA rate is significantly lower than the national average for Non-Built-Up Trunk A-roads, and the KSI rate is in line with these road types. As such, drivers are more likely to have an accident on the urban section of the A96 through Forres than on equivalent roads elsewhere in Scotland, and the accident is more likely to be a serious incident. The provision of a Forres bypass would likely reduce the volume of traffic travelling along the existing A96 Trunk Road, which would reduce the conflict between local and longer distance traffic on the urban section of the A96 passing through Forres, potentially reducing the number and severity of accidents. As such, this option would contribute to Scotland's Road Safety Framework to 2030 supporting Vision Zero.

1.3 Estimated Cost

£101m - £250m Capital

Determining the estimated cost of this option is dependent on a number of factors including the scale and complexity of the bypass and specific local constraints that would require further examination and assessment at the stages of design development, a level of detail beyond that which is undertaken as part of a STAG appraisal.

As a result, the STAG appraisal does not define the location or route of the bypass, although it has been assumed that the approximate length will range from 5km to 15km. The category of road for the bypass and the number and type of junctions have also not been defined at this stage.

Considering the assumed range for the approximate length of the bypass, the total estimated cost is expected to fall within the range of £101m - £250m.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the operation and maintenance of the bypass, which would have ongoing costs associated with it.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. This option would also sit within the 'private car' tier of the Sustainable Travel Hierarchy.

This option would also contribute to eight of the 12 NTS2 outcomes as follows:

- Provide fair access to services we need
- Help deliver our net zero target
- Adapt to the effects of climate change
- Get people and goods to where they need to get to
- Be reliable, efficient, and high quality
- Use beneficial innovation
- Be safe and secure for all
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	0	0	+	0	++	- -	-	++	0	+	0	+	0
'Without Policy' Scenario	-	0	+	0	++	- -	- -	++	0	+	0	+	0

This option makes a generally positive and neutral contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria and Statutory Impact Assessment (SIA) criteria. Reducing the volumes of traffic within Forres through the provision of a bypass is anticipated to reduce the conflict between local and long distance traffic on the urban section of the A96, potentially reducing the number and severity of accidents which occur at junctions along this route. As such, the option is anticipated to have a moderate positive impact to the TPO5 for providing a safe, reliable and resilient transport network and the STAG Health, Safety and Wellbeing criterion. However, it is expected that there would be negative impacts as a result from this option in both the 'With Policy' and 'Without Policy' scenarios, specifically considering the STAG Environment and Climate Change criteria.

Generally, the provision of a bypass would be expected to better connect residents to key amenities and employment opportunities through the removal of through traffic, with

potential to improve the sense of place and opportunities to travel by active modes. However, the existing A96 does not pass directly through the town, therefore the degree of severance, and associated impact on community cohesion, resulting from the through traffic is relatively minor. Notwithstanding this, by reducing volumes of traffic through Forres, a bypass would likely offer some severance relief for residents accessing the train station, situated north of the A96, by walking, wheeling, or cycling, and therefore positively contributing to the TPO3 regarding enhancing communities as places to support health, wellbeing and the environment, and the STAG criterion for Equality and Accessibility.

However, it is expected that there would be negative impacts as a result from this option, specifically considering the STAG Environment and Climate Change criteria. In the 'Without Policy' Scenario specifically, the option is also expected to have a minor negative impact against TPO1 regarding net zero targets. There is the potential for increases in congestion in the 'Without Policy' Scenario in Forres itself, with the bypass then relieving at least some of this congestion and inducing further road-based travel, therefore increasing vehicle kilometres travelled. The impacts on Climate Change are also expected to be more severe in the 'Without Policy' Scenario (moderate negative) than the 'With Policy' Scenario (minor negative). Although the Forres bypass could remove some noise and air pollution from the town, the physical impact of construction could negatively impact the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, with an overall moderate negative impact expected for the STAG Environment criterion in both the 'With Policy' and 'Without Policy' scenarios.

Delivery of the bypass is considered feasible at this stage; however, a detailed assessment would require to be undertaken to fully establish the details of the bypass including the optimal corridor and junction strategy. Although a bypass of Forres is considered to be affordable at this stage, capital costs are also highly dependent on the potential length and route a bypass may take. A reasonable level of support for the option from the public is anticipated due to the potential safety improvements and reliability benefits for through traffic.

Although the bypass as a standalone intervention does not perform particularly well against three of the TPOs and the STAG Environment and Climate Change criteria, it could act as a key enabler for sustainable transport and placemaking within Forres.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[vi].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Safety and Resilience: From the analysis of accident data, the rural sections of the A96 Trunk Road have overall PIA rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, selected urban sections of the A96 Trunk Road that show an accident rate higher than the national average, with specific locations in Forres. The rate of KSIs is also significantly higher in Forres than the national average.

The A96 Trunk Road is affected by closures and delays due to accidents, maintenance and weather events. Recommended diversion routes can be lengthy throughout the corridor, up to approximately 65km depending on where the closure occurs. The economic impact of closures can be significant for HGVs and the movement of goods.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, while also passing close to other town centres, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity

and has the potential to create further economic growth by attracting new visitors to the region.

Improving Safety: There is the opportunity to reduce the number and severity of accidents on the A96 Trunk Road on those sections where the PIA and/or KSI accident rates are high when compared to the national average for equivalent urban or rural trunk A-roads. Improving safety for road users would contribute to meeting the targets set out in Scotland's Road Safety Framework to 2030 to achieve the 50% reduction in people killed or seriously injured (60% reduction for children). Reducing the level of car-based kilometres travelled would also contribute to a reduction in accident numbers.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Targeted Road Safety Improvements
- Active Communities
- Active Connections
- Bus Priority Measures and Park and Ride
- Development of A96 Electric Corridor.

Other areas of Scottish Government activity

- Bus Partnership Fund[vii]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[viii]
- Climate Change Plan 2018-32 Update[ix]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[x]
- National Transport Strategy (NTS2)[xi]
- National Planning Framework 4 (NPF4)[xii]
- The Place Principle[xiii]
- Scotland's National Strategy for Economic Transformation[xiv]
- Scotland's Road Safety Framework to 2030[xv]
- Strategic Road Safety Plan (2016)[xvi]
- Strategic Transport Projects Review 2 (STPR2)[xvii].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
0	-

Traffic levels along the A96 in the vicinity of Forres are in line with comparable towns along the A96 corridor (such as Inverurie), with approximately 13,000 vehicles per day (vpd) in 2019[xviii]. The A96 through Forres is a significant freight and commuter route, with A96 Corridor Road Assignment Model (CRAM)[xix] traffic modelling (2019 Base Year) indicating that between 45% and 65% of eastbound traffic and between 50% and 65% of westbound traffic in the peak hours travel through the settlement. Additionally, between 85% and 90% of HGVs in both directions are through trips. However, analysis of INRIX traffic data for May 2019 indicates that, generally, traffic flows well through the town. Whilst there are short queues on approach to the at-grade roundabouts, traffic is generally travelling above 60% of free flow speed throughout the day. Whilst removing through traffic from the existing A96 at Forres is unlikely to significantly reduce slow moving or stationary traffic, it would reduce interaction with at-grade local junctions and therefore reduce stop-start traffic. The provision of a bypass may therefore make a small contribution to the Scottish Government's net zero emissions target.

Generally, the provision of a bypass would be expected to better connect residents to key amenities and employment opportunities through the removal of through traffic, with potential to improve the sense of place and opportunities to travel by active modes. However, given the A96 does not pass directly through the town, these benefits are unlikely to be fully realised in Forres. There is a degree of severance as development has occurred to the north of the A96. However, with the exception of the train station, these developments mainly consist of industrial units, which could encourage more sustainable

commuting trips, but are unlikely to be significant trip attractors for other trips via active modes.

Generally, a bypass would provide additional road space and therefore increase capacity for motorised vehicles, potentially inducing travel demand. Congestion within Forres is limited currently and would be expected to reduce under the 'With Policy' Scenario. As such, congestion is unlikely to be suppressing road-based travel demand in this scenario. The provision of a bypass is therefore unlikely to result in an increase in road-based travel under the 'With Policy' Scenario. If, however, the 'Without Policy' Scenario was realised, congestion could increase, increasing the potential for a bypass to induce road-based travel. The provision of additional road space therefore has the potential to have a negative impact under the 'Without Policy' Scenario and neutral impact under the 'With Policy' Scenario on transport-based emissions.

While a bypass does not necessarily facilitate a modal shift to more sustainable modes, it could help support the provision of a safe, efficient, and reliable trunk road network which is integral to wider Scottish Government programmes relating to active travel and bus priority investment. Under the 'With Policy' Scenario, a bypass at Forres is not anticipated to generate road-based travel and therefore is scored as **neutral** against this objective. However, given the potential for the bypass to induce road-based travel demand under the 'Without Policy' Scenario, a bypass at Forres is scored as a **minor negative** against this objective.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is a problem for settlements along the A96 corridor including Forres, with all datazones in the town ranking in the bottom 50% of Scottish Access to Bus Indicator (SABI) rankings nationally[xx]. This is highlighted by the higher than average car ownership levels in Forres (73%) compared to national average (70%) and the lower than average levels of commuting to work via bus in Forres (5%) compared to the national average (11%)[xxi]. The provision of a bypass could offer benefits to longer distance bus services by removing the impact of junction delays associated with Nairn Road/West Road Roundabout; however, any benefit is anticipated to be minimal.

A bypass at Forres is unlikely to have a direct impact on bus service frequency and coverage and is therefore not anticipated to have a notable impact on issues relating to the accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

Overall, the options are anticipated to have a **neutral** impact on this objective in both the 'With Policy' and 'Without Policy' scenarios.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
+	+

Traffic levels along the A96 in the vicinity of Forres are in line with comparable towns along the A96 corridor (such as Inverurie), with approximately 13,000 vpd in 2019[xviii]. The A96 through Forres is a significant freight and commuter route, with A96 CRAM[xxii] (2019 Base Year) indicating that between 45% and 65% of eastbound traffic and between 50% and 65% of westbound traffic in the peak hours travel through the settlement. Additionally, between 85% and 90% of HGVs in both directions are through trips. Generally, the provision of a bypass would be expected to better connect residents to key amenities and employment opportunities through the removal of through traffic, with potential to improve the sense of place and opportunities to travel by active modes. However, as the existing A96 does not pass directly through the town, the degree of severance and associated impact on community cohesion resulting from through traffic at Forres is relatively minor. Developments to the north of the A96 largely consist of industrial units, with the exception of the train station, therefore a bypass would offer some severance relief for residents accessing the station north of the A96, who currently are required to cross the A96 via a staggered uncontrolled pedestrian/cycle crossing.

The option is scored to have a **minor positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, due to the section of the A96 to be bypassed connecting residents to employment opportunities north of the corridor and the train station. However, overall the bypass would provide limited options to improve the sense of place and would not provide opportunities to travel by active modes within Forres itself as the existing A96 does not pass directly through the town.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities as well as providing businesses with access to the labour market. The provision of a bypass at Forres is likely to improve connectivity between certain origins and destinations within the wider region by removing the need to interact with local junctions in Forres, and by bypassing a section of road which is subject to a reduced speed limit. As such, a bypass of Forres could support sustainable inclusive growth by improving the efficiency of the movement of goods across the region, through the associated reliability improvements on the trunk road network. Notwithstanding this, any benefits are anticipated to be relatively low, due to the

low number of junctions on the existing A96 and the relatively short length of route that is subject to a reduced speed limit.

Forres is recognised as a small employment attractor and a 'secondary growth area' in the Moray region[xxiii], with the town being home to Forres Enterprise Park in addition to numerous retail outlets and manufacturing plants. As such, some road users would remain on the existing A96 to access Forres for work and leisure, with the corridor likely to become more free flowing following the introduction of a bypass.

Overall, a bypass of Forres is expected to have a **neutral** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios given the movement of goods and people along the A96 flows well through the town, with a bypass offering negligible benefits to improve this efficiency given the limited number of junctions bypassed and length of route that is subject to a reduced speed limit.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
++	++

Generally, the PIA rate (2015-2019) on the A96 is lower than the national average; however, PIA rates between 2015 and 2019 for the urban section of the A96 through Forres have been identified as higher (16.2 accidents per MVKm) than corresponding accident rates for Built-up Trunk A-roads in Scotland (12.1 per MVKm)[v]. The KSI accident rate is significantly higher than the national average (2.6 per MVKm) for routes of a similar type at 8.1 accidents per MVKm[v]. On the rural section, the PIA rate is significantly lower than the national average for Non-Built-Up Trunk A-roads, and the KSI rate is in line with these road types. As such, drivers are more likely to have an accident on the urban section of the A96 through Forres than on equivalent roads elsewhere in Scotland, and the accident is more likely to be more severe. The provision of a Forres bypass would lower traffic volumes along the existing A96, which would reduce the conflict between local and long distance traffic on the urban section of the existing A96 at Forres, potentially reducing the number and severity of accidents.

The provision of a bypass would remove the need for through traffic to pass through the three at-grade roundabouts and the uncontrolled pedestrian/cycle crossing along the existing A96 at Forres. This, in turn, would reduce conflict with pedestrians and cyclists and the potential for accidents, whilst also likely improving the reliability of the strategic transport network.

Overall, a bypass at Forres would have a **moderate positive** impact on this objective under both the 'With Policy' and 'Without Policy' scenarios, with the positive impacts felt by the community within Forres and the wider communities along the A96 corridor.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
- -	- -

A bypass of Forres would likely result in minor positive impacts on communities due to improved safety on the existing A96 Trunk Road by separating a significant proportion of through traffic from local traffic. This would provide a safer environment to travel in as well as deliver health and wellbeing benefits to individuals. Due to the strategic nature of the route, the existing A96 through Forres carries a large volume of through traffic, with A96 CRAM (2019 Base Year) traffic modelling indicating that up to 65% of general traffic and up to 90% of HGVs travel through the town[Error! Bookmark not defined.]. A bypass could help to reduce the volume of traffic travelling on the existing A96 at Forres and therefore improve the overall amenity for communities and businesses near the existing road. It may also assist with placemaking by reducing real and perceived severance between the majority of the settlement and the employment areas and train station at the northern extents, particularly for those walking, wheeling, and cycling, and improve the overall sense of place. As a result of the likely reduction in through traffic, a bypass would be anticipated to improve air quality and reduce noise and vibration within Forres itself; however, the extent of improvement would depend on how much traffic is transferred to the bypass, and the alignment of a bypass.

A bypass may also increase the overall use of private vehicles by improving the operational efficiency of the route, making car travel more attractive. The risk of a slight deterioration in air quality may increase as a result of any traffic increase; however, this is anticipated to be negligible at this location as there is no significant congestion through the town. The option also has the potential to improve air quality along the existing A96 within Forres through reducing traffic volumes and stop-start traffic within the town.

In terms of natural resources, significant quantities of materials and construction-related trips would be required during the construction of a bypass. Depending on the materials chosen and its source, there is the potential for a minor negative impact.

A bypass has the potential for adverse environmental impacts, with some of these being potentially significant, for example on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). There are numerous environmental designations around Forres which may be a constraint to the route of a bypass without there being significant impacts. To the north of Forres is the Moray and Firth Coast Special Protection Area (SPA) and Ramsar site at Findhorn. There are some areas of Ancient Woodland and large swathes of Long-Established woodland to the south, west and north-west of Forres. Brodie Castle and Darnaway Castle Gardens and Designed Landscapes are large designations to the west of Forres. There are also areas of significant flood risk to the west and north of Forres

associated with the Findhorn River and the coast at Findhorn and to the south-east associated with the Burn of Mosset. Flood mitigation measures are in place at the south-east to address this flood risk. A stretch of the River Findhorn itself, south-west of Forres, is designated as both a Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC). All of the aforementioned would be key considerations in delivering a bypass alignment in these areas. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain.

In terms of land use, the Moray Local Development Plan (2020)[xxiv] shows some settlement expansion to the east of Forres. The alignment of a bypass would need to take this into consideration as the route could constrain or have a negative impact on future development. To the south-east of Forres is a large area allocated for flood alleviation which could constrain the route of a bypass. The Local Development Plan includes a potential route of a bypass to the north of the settlement.

Further environmental assessment would be undertaken if a bypass is progressed through the design and development process in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be developed to consider how to protect and enhance landscape, drainage, amenity, biodiversity, and cultural heritage. Appropriate environmental mitigation and enhancement measures would also be embedded as the design and development process progresses.

Overall, at this preliminary stage in the appraisal process, the potential impacts of the Forres bypass are considered **moderate negative** for this criterion under both the 'With Policy' and 'Without Policy' scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided or adequately mitigated, then adverse environmental impacts could be reduced.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
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The A96 Trunk Road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to extreme weather leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass is likely to suffer the same vulnerabilities; however, flood protection schemes have been implemented within the A96 corridor, including at Forres[Error! Bookmark not defined.], where possible new infrastructure would be designed in such a way as to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore a bypass should enhance the resilience of the A96, adapting against the effects of climate change.

In the short term, greenhouse gas emissions would occur due to construction activities undertaken to deliver the bypass, including indirect emissions from the manufacturing and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

Traffic levels along the A96 in the vicinity of Forres are in line with comparable towns along the A96 corridor (such as Inverurie), with approximately 13,000 vpd in 2019[xviii]. The A96 through Forres is a significant freight and commuter route, with A96 CRAM (2019 Base Year) traffic modelling indicating that up to 65% of general traffic and up to 90% of HGVs travel through the town[Error! Bookmark not defined.]. However, analysis of INRIX traffic data for 2019 indicates that, generally, traffic flows well through the town. Whilst there are short queues on approach to the at-grade roundabouts, traffic is generally travelling above 60% of free flow speed throughout the day. Whilst removing through traffic from the existing A96 in Forres is unlikely to significantly reduce slow moving or stationary traffic, it would reduce interaction with at-grade junctions and therefore reduce stop-start traffic (which typically produces more emissions when compared with vehicles travelling at higher speeds). Similarly, the bypass is likely to have more efficient speed limit, meaning vehicles would be travelling at a more efficient speed than they currently do through the 40mph section, further reducing emissions.

Generally, the provision of a bypass would be expected to better connect local residents to key amenities and employment opportunities with the removal of through traffic, with potential to improve the sense of place and opportunities to travel by active modes to reduce the number of shorter-distance car trips. However, given the A96 does not pass directly through the town, these benefits are unlikely to be fully realised in Forres. There is a degree of severance as development has occurred to the north of the existing A96. With the exception of the train station, these developments mainly consist of industrial units and a significant shift in through traffic to a potential bypass could encourage more sustainable trips to these attractors from residential areas of Forres to the south of the existing A96.

A bypass would provide additional road space and therefore, increase capacity for motorised vehicles and incentivise a greater level of travel, potentially inducing travel demand. Whilst congestion is not currently a significant issue within Forres, in the future, congestion is likely to be experienced more intensely and for longer periods in the 'Without Policy' Scenario compared to the 'With Policy' Scenario, where congestion could be minimal. Expected impacts under the 'With Policy' Scenario, such as a reduction in car km travelled, could reduce the greenhouse gas emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a greater negative impact under the 'Without Policy' Scenario than the 'With Policy' Scenario for transport-based emissions. The extent of change in greenhouse gas emissions is also dependent on the migration to zero-emission fuels over time.

The provision of a bypass could enhance resilience of the A96 to the effects of climate change and offers the potential to increase sustainable commuting trips between key amenities north of the A96 (namely Forres train station) and communities south of the A96. However, with the potential for the bypass to induce travel demand combined with

emissions arising during the construction period, the limited opportunities to increase active travel within the town and the A96 in Forres identified as at significant risk of flooding from various watercourses, a bypass of Forres is expected to have a **minor negative** impacts on the Climate Change criterion under the 'With Policy' Scenario and a **moderate negative** impact under the 'Without Policy' Scenario.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
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Generally, the PIA rate (2015-2019) on the A96 is lower than the national average for routes of a similar type; however, PIA rates between 2015 and 2019 for the urban section of the A96 through Forres have been identified as higher than corresponding accident rates for Built-Up Trunk A-roads in Scotland at 16.2 accidents per MVKm[v]. The KSI accident rate is significantly higher than the national average for routes of a similar type at 8.1 accidents per MVKm[v]. On the rural section, the PIA rate is significantly lower than the national average for Non-Built-Up Trunk A-roads, and the KSI rate is in line with these road types. As such, drivers are more likely to have an accident on the urban section of the A96 through Forres than on equivalent roads elsewhere in Scotland, and the accident is likely to be more severe. The provision of a Forres bypass would reduce the volume of traffic travelling along the existing A96, which would reduce the conflict between local and long distance traffic on the urban section, potentially reducing the number and severity of accidents.

The provision of a bypass would remove the need for through traffic to pass through the three at-grade roundabouts and the uncontrolled pedestrian/cycle crossing along the existing A96 at Forres. This would reduce conflict with pedestrians and cyclists and the potential for accidents, allowing for the creation of attractive environments which provide additional benefits to health and wellbeing.

As the existing A96 does not pass directly through the town, the degree of severance, and associated impact on community cohesion, resulting from through traffic at Forres is relatively minor. Developments to the north of the A96 largely consist of industrial units, with the exception of the train station, therefore a bypass would offer some severance relief for residents accessing the station north of the A96, who currently are required to cross the A96 via a staggered uncontrolled pedestrian/cycle crossing.

Removal of through traffic from the existing A96 at Forres through the provision of a bypass, and therefore reducing congestion, would likely result in minor or negligible benefits for accessing local health and wellbeing services, whether it be by car, public transport or by active modes.

There is potential for negative environmental effects on visual amenity during construction and operation of the bypass; however, this would need to be assessed in more detail during the development of the option.

It is anticipated that this option would have no impact on the personal security of travellers and their property.

The option is predicted to have a **moderate positive** impact on the Health, Safety and Wellbeing criterion under both the 'With Policy' and 'Without Policy' scenarios, with the positive impacts felt by the community within Forres and the wider communities along the A96 corridor. Additionally, the bypass would provide limited options to improve the sense of place and opportunities to travel by active modes within the town itself as the existing A96 does not pass directly through the town.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
0	0

The A96 plays an important strategic role in the regional economy of the north-east of Scotland, connecting people to employment and education opportunities, as well as providing businesses with access to the labour market. The provision of a bypass at Forres is likely to improve connectivity between certain origins and destinations within the wider region, by removing the need to interact with the local junction in Forres, and by bypassing a section of road which is subject to a reduced speed limit. As such, a bypass at Forres could support regional economic growth by improving the efficiency of the movement of goods across the region, due to the associated reliability improvements on the trunk road network. Any benefits, however, are anticipated to be negligible, due to the number of junctions bypassed and the length of route that is subject to a reduced speed limit. Therefore, the wider economic impacts which would result from a bypass at Forres are likely to be minimal.

Forres is recognised as a small employment attractor and a 'secondary growth area' in the Moray region[xxiii], with the town being home to Forres Enterprise Park in addition to numerous retail outlet and manufacturing plants. As there is limited congestion within the town, this option is unlikely to have a significant impact on these businesses.

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of the bypass are currently unknown. However, this option is anticipated to result in benefits to both the private and business users in terms of travel times and vehicle operating costs, particularly for longer distance traffic bypassing the town. Benefits are anticipated to arise as vehicles using the bypass are likely to travel at a more efficient speed, without the need to interact with local junctions. Journey time benefits are also anticipated as local congestion is bypassed and through higher travel speeds associated with the route operating at a higher speed limit.

Overall, a bypass at Forres is expected to have a **neutral** impact on the Economy criterion under both the 'With Policy' and 'Without Policy' scenarios given the movement of goods and people along the A96 currently flows well through the town, with a bypass offering

negligible benefits to improve this efficiency given the limited number of junctions bypassed and length of route that is subject to a reduced speed limit.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
+	+

Traffic levels along the A96 in the vicinity of Forres are in line with comparable towns along the A96 corridor (such as Inverurie), with approximately 13,000 vpd in 2019[xviii].The A96 via Forres is a significant freight and commuter route, with A96 CRAM (2019 Base Year) traffic modelling indicating that up to 65% of general traffic and up to 90% of HGVs travel through the town. Generally, the provision of a bypass would be expected to better connect residents to key amenities and employment opportunities through the removal of through traffic, with potential to improve the sense of place. However, as the existing A96 does not pass directly through the town, the degree of severance, and associated impact on community cohesion, resulting from through traffic at Forres is relatively minor. Developments to the north of the A96 largely consist of industrial units, with the exception of the train station. A bypass would offer some severance relief for protected characteristic groups who are more likely to walk, wheel, or cycle to the train station, and who are more vulnerable to fear of road safety issues, including children, young people, women, and older people.

This option is not expected to have a significant impact on the public transport network within Forres. A bypass of Forres would not have a direct impact on service frequency and coverage nor have an impact on fares. Therefore, this option is not anticipated to have a notable impact on issues relating to the affordability and accessibility of public transport services, which are linked to wider issues related to the provision, frequency, and integration of public transport in the area.

The potential positive impacts resulting from this option are expected to be most acutely felt by residents within Forres, while the population along the wider A96 corridor would experience negligible impacts against this criterion.

Reference should also be made to the SIAs in Section 3.5.

The option is considered to have a **minor positive** impact on the Equality and Accessibility criterion under both the 'With Policy' and 'Without Policy' scenarios, due to the section of the A96 to be bypassed offering benefits for protected characteristic groups who are more likely to walk, wheel or cycle between the residential areas south of the A96 at Forres and the train station to the north of the A96. However, overall, the majority of benefits would be for those with access to a vehicle and a bypass would not provide opportunities to travel by active modes within the town itself as the existing A96 does not pass directly through the town.

3.4 Deliverability

1. Feasibility

As the bypass is likely to form part of the trunk road network, Transport Scotland would likely be the scheme promoter. Transport Scotland has significant experience of delivering major roads projects and bypasses within Scotland. Transport Scotland would also likely be the asset owner on completion of construction and is readily capable of arranging the operation and maintenance the A96 Forres bypass as part of the wider trunk road network.

The scheme would need to be progressed through an options identification and selection process, development of the preliminary design, including the associated environmental assessments. Any option would also be required to pass through the statutory process, which would require public consultations and could result in the need for a public local inquiry.

Some of the key engineering constraints to the north of Forres are existing roads, including the B9011, in addition to the River Findhorn and the Aberdeen to Inverness railway line. The River Findhorn would also be a constraint for a bypass to the south, as would the A940, B9010 and steep topography from the A96 heading south at the eastern extents of the town. Any bypass route will have to consider geotechnical constraints around Forres as well as areas of poor ground conditions. There are also various environmental and planning/land use constraints which have been outlined in previous sections.

Detailed development work, including community and stakeholder engagement, would be required to identify the most appropriate preferred route for a bypass.

Despite the constraints and challenges outlined above, the work undertaken to date indicates that a bypass is considered feasible.

2. Affordability

The total estimated cost of providing a bypass of Forres could range between £101m - £250m, as outlined in Section 1.3. Construction costs can vary significantly based on the potential length, design and preferred route of the bypass. Costs would also be dependent on a number of other factors, such as the complexity of construction, the requirement for earthworks and structures, localised ground conditions, the purchase of land and various other engineering and environmental constraints.

In addition to construction costs, Transport Scotland would also likely be the asset owner on completion and is therefore anticipated to take on the costs associated with the operation and maintenance of the bypass, which would have ongoing costs. It is not anticipated that these costs would be significant in the context of the wider trunk road network which Transport Scotland operates and maintains across Scotland.

The decision to fund capital infrastructure projects ultimately rests with Transport Scotland and the Scottish Government.

3. Public Acceptability

Wider public support is anticipated within the north-east of Scotland for this option, with work undertaken to look at the dualling of the A96, as part of the A96 Dualling Hardmuir to Fochabers scheme being in the public domain. Support is also anticipated from the community in Forres and stakeholders in the wider business community for improvements to the safety and journey time reliability of the trunk road and local road network.

There are likely to be some members of the public who do not support the construction of a bypass. This could include landowners, communities, businesses, and other stakeholders who have concerns over the impact of construction/operation of the bypass or the resulting potential impacts to the environment.

Depending on the response to the bypass, there is likely to be the need for a Public Local Inquiry.

Public consultation undertaken as part of this review indicated general support for bypasses, with 30% of respondents considering the provision of bypasses as one of their top priorities, and 7% suggesting that bypasses could help to address safety concerns. Furthermore, Forres was mentioned as a potential location for a bypass. Only 2% of respondents opposed bypasses along the A96.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxv].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option could result in reduced traffic on the existing A96 at Forres, creating some benefits for groups with protected characteristics. A decrease in traffic could result in improved local air quality, which would be a particular benefit to those groups who are more vulnerable to the adverse health effects of traffic-related emissions such as older people, disabled people, children, and pregnant women. Furthermore, a decrease in through traffic on the existing A96 at Forres could also address local severance issues experienced by those accessing the train station north of the A96 and could reduce road

safety concerns for those groups who are less likely to travel by car. However, due to the location of the existing A96 through Forres there is likely to be a limited impact on the town itself.

There could also be benefits for certain groups who rely on private vehicle use to access key services due to mobility issues such as disabled people and older people, or those who make complex journeys involving 'trip chaining' such as women and carers. These groups could experience an improvement in journey times and reliability of journey times both locally and when travelling to key services such as employment, education, healthcare, shopping in Forres and surrounding areas.

Drivers on the A96 at Forres are more likely to have an accident on the urban section than on equivalent roads elsewhere in Scotland, and the accident is more likely to be severe. Reducing traffic should in turn reduce the number and severity of road traffic accidents on the existing A96 in Forres. The provision of a bypass would also remove the need for through traffic to pass through the three at-grade roundabouts and the uncontrolled pedestrian/cycle crossing along the existing A96 at Forres, reducing conflict with pedestrians and cyclists and therefore the potential for accidents, whilst also improving the reliability of the strategic transport corridor. This could offer benefits for certain groups who are more vulnerable to road traffic accidents, such as child pedestrians.

The construction of a new bypass may result in negative impacts during both construction and operation stages for local communities. The construction of the scheme may impact groups who are more vulnerable to noise, vibration, and air quality impacts such as children, older people, disabled people, and pregnant women. Furthermore, during operation, a new bypass could create potential severance, noise, air quality and traffic impacts for communities along the route. However, the level of direct impact would be dependent on the location of the bypass and the types of communities affected.

A bypass of Forres is expected to have a **neutral** impact under both the 'With Policy' and 'Without Policy' scenarios for those protected characteristic groups.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

A decrease in traffic on the existing A96 at Forres could result in improved local air quality and reduced traffic noise which would be a particular benefit to children as they are more vulnerable to the adverse health effects of traffic-related emissions and traffic noise. Reduced traffic levels could also help to also address local severance issues, reduce road safety concerns and improve access to education for children and young people. However, due to the location of the existing A96 through Forres there is likely to be a limited impact on the town itself.

The construction of a new bypass could potentially result in negative impacts during both construction and operation stages for children living in local communities along the route. This includes noise, vibration and air quality impacts during construction and potential severance, noise, air quality and traffic impacts during operation. However, the level of direct impact would be dependent on the location of the bypass and proximity to children and young people living or attending schools along the route.

The provision of a bypass would also remove the need for through traffic to pass through the uncontrolled pedestrian/cycle crossing along the existing A96 at Forres, reducing conflict with pedestrians and cyclists and therefore the potential for accidents. This could offer benefits for child pedestrians.

Overall, a bypass of Forres is expected to have a **minor positive** impact under both the 'With Policy' and 'Without Policy' scenarios for children living along the A96 through Forres. However, potential negative impacts could be experienced under both the scenarios for children living and attending school along the new bypass route. More detailed assessment is required to understand the extent of these impacts and to ensure effective mitigation.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

This option would result in reduced traffic on the existing A96 at Forres, creating benefits for socio-economically disadvantaged groups by improving the active travel environment for those who are unable to afford a car. There is also the potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality. However, due to the location of the existing A96 through Forres there is likely to be a limited impact on the town itself.

There is generally a heavier reliance on the use of the private car along the A96 corridor compared with the rest of the country. This is primarily due to the rural nature of the region, where there is greater dependency on the private car to access employment, education, healthcare and for social purposes. In absence of viable alternatives to travel, those on low incomes may be 'forced' into car ownership despite financial constraints. However, there could be benefits through an improvement in journey times and reliability of journey times for these drivers as a result of more economical journeys as well more attractive environment for active travel where possible.

There are opportunities for safety improvements to benefit socio-economically disadvantaged groups, as evidence[xxvi] shows that people from deprived areas are more likely to be injured or killed as road users.

However, the extent to which positive effects would be realised depends on the location of a bypass and the level of reduction of through traffic within disadvantaged and deprived communities.

Overall, a bypass of Forres is expected to have a **neutral** impact under both the 'With Policy' and 'Without Policy' scenarios for socio-economically disadvantaged groups.

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1. Preliminary Appraisal Summary

1.1 Option Description

Development of A96 Electric Corridor

The development of electric 'corridors' is an innovative approach to renewing highways. By connecting existing renewable energy strategies, the need for expansion and new provisions would help develop a path to a more sustainable future of travel. Alternative energy sources could pave the way for more solutions and ideas to improve the energy infrastructure and directly enable and support the necessary rapid decarbonisation of the transport sector.

This option therefore proposes both alternative refuelling infrastructure and facilities along the A96 corridor and its interfacing local roads including, where appropriate, strategic economic and transport hubs. This option would directly facilitate the uptake of alternative fuels for various modes of sustainable transport although it is recognised that the option is likely to focus on road vehicles.

The fuel sources are envisaged to be primarily electric and hydrogen-based; however, it is acknowledged that there is potential for other additional fuel sources to be considered such as hydrotreated vegetable oil (HVO) and ammonia.

The option could include a mixture of static and mobile infrastructure to provide various means of both refuelling and to accommodate likely varying demand levels for local communities and business as well as road users along the A96 corridor.

Further development of the option would be needed to understand scope and size as well as the overall delivery and governance structures.

1.2 Relevance

Relevant to all transport users in the corridor

With transport being the largest contributor to Scottish emissions, one of the identified actions to reduce this contribution is the ambition to phase out new petrol and diesel cars and vans by 2030, as set out in the Update to the Climate Change Plan 2018-2032[i]. Alongside this, all sales of new Heavy Goods Vehicles (HGVs) in the UK will be zero emission by 2040[ii], which will contribute to the Scottish Government's drive for net zero emissions by 2045[iii]. Noting the high level of car availability, especially in rural areas and communities, and the volume of HGVs on the A96 Trunk Road, assisting the transition to alternatively fuelled vehicles along the A96 corridor will be essential to phase out petrol and diesel vehicles.

This option is directly relevant to Transport Scotland's Mission Zero for Transport[iv] which outlines its approach to ensure that consumers and businesses benefit from affordable,

reliable and accessible infrastructure to support the needed rapid decarbonisation of the transport sector in Scotland. Mission Zero recognises that strategically coordinated investment in public charging networks and supporting infrastructure is vital to promote range confidence and increase the overall uptake of less polluting vehicles.

With an emerging hydrogen production sector in the north-east of Scotland, there is a recognised opportunity to capitalise upon available renewable energy sources to support decarbonisation efforts of the transport sector. There is a recognised strong aspiration to move towards the production and distribution of alternative fuels with the region already accommodating several innovative trials around this sector.

The targeted provision of additional recharging facilities and other associated infrastructure should expand the overall network coverage for alternative refuelling facilities across the region, increase the confidence for road users that there is sufficient regional and local provision for refuelling of low-emission vehicles. Through consideration of a wide range of likely locations such as at public transport interchanges and economic hubs, delivery of this option has the potential to provide the direct means to both encourage and enable decarbonisation of wider existing vehicle fleets.

Delivery of the option is expected to improve the overall resilience of existing charging networks through providing additional facilities and infrastructure which would benefit both communities and businesses. Improving the overall standard of charging infrastructure along the route is also likely to increase the overall confidence for using zero emission vehicles with key industry sectors in the distribution and warehousing sector likely to be significant beneficiaries. This option therefore supports strategic economic priorities at a national level, including Scotland's National Strategy for Economic Transformation[v] and Just Transition[vi] strategies which both reaffirm the Scottish Government's commitment to creating a more successful and prosperous country through increasing sustainable economic growth as well as ensuring that the transition towards net zero is fair, equitable and that the process does not leave any communities left behind.

Through providing targeted investment to support the low-carbon economy, the option is expected to set out substantial foundations which can be further developed and expanded upon across the long term and be used as a springboard to leverage additional inwards investment in refuelling infrastructure from both the public and private sectors.

1.3 Estimated Cost

£51m - £100m Capital

Determining the estimated cost of this option is dependent on a number of factors including the type, location, scale and complexity of providing targeted low-carbon refuelling infrastructure and facilities. Further examination and assessment would be required, a level of detail beyond that which is undertaken as part of a Scottish Transport Appraisal Guidance (STAG) appraisal.

At this stage no work has been undertaken to identify specific locations or the potential interventions and it is recognised that this would require further interrogation and assessment. However, the estimated cost of between £51m - £100m has been derived from work undertaken for STPR2 and applying a factor to apportion the cost to reflect the approximate length of the transport corridor. The use of available public assets should be explored to accommodate proposed elements to reduce overall costs.

Ownership of the asset is unknown at this time as there are a number of delivery/operational pathways that could be utilised. However, it is likely a collaborative approach involving Transport Scotland, Regional Transport Partnerships (RTPs), local authorities and the private sector would be adopted.

1.4 Position in Sustainable Hierarchies

Sustainable Investment Hierarchy / Sustainable Travel Hierarchy

Within the Sustainable Investment Hierarchy, this option sits within 'targeted infrastructure improvements'. Increasing the network coverage for refuelling zero-emission vehicles would also contribute to 'reducing the need to travel unsustainably'. This option would also sit across all motorised transport tiers of the Sustainable Travel Hierarchy, namely 'private car', 'taxis and shared transport' and 'public transport'.

The option would also contribute to seven of the 12 NTS2 outcomes, as follows:

- Be easy to use for all
- Help deliver our net zero target
- Promote greener, cleaner choices
- Get people and goods where they need to get to
- Be reliable, efficient and high quality
- Use beneficial innovation
- Help make our communities great places to live.

1.5 Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA		
	1	2	3	4	5	Env	CC	HSW	Eco	EqA	EqIA	CRW	FSD
'With Policy' Scenario	+++	0	0	++	+	0	+	0	++	0	+	+	0
'Without Policy' Scenario	+++	0	0	++	+	0	++	0	++	0	+	+	0

This option makes a generally positive contribution to most of the A96 Corridor Review Transport Planning Objectives (TPOs), STAG criteria, and Statutory Impact Assessment (SIA) criteria. The delivery of alternative refuelling infrastructure is expected to significantly contribute towards supporting the rapid decarbonisation of the transport sector, improve the provision of such assets across the region and be sufficiently flexible to accommodate the varying needs of road users of the A96 and local communities. As such, the option is anticipated to have a major positive impact in relation to TPO1 regarding contributing to Scottish Government's net zero targets and a moderate positive impact for contributing to sustainable inclusive growth (TPO4). For the STAG Climate Change criterion, a moderate positive impact would be anticipated in the High scenario, where traffic demand and vehicle kilometres are higher, and a minor positive impact if the Low scenario was achieved.

The delivery of alternative refuelling infrastructure is expected to significantly contribute towards supporting the rapid decarbonisation of the transport sector, improve the provision of such assets across the region and be sufficiently flexible to accommodate the varying needs of road users of the A96 and local communities.

The A96 corridor supports a significant volume of trips with there being a notable proportion of goods vehicles associated with the region's strong manufacturing sector which when coupled alongside local communities presents a modest potential base for both initial and long-term usage of the option. Therefore, it is also anticipated to have a moderate positive impact on TPO4 relating to sustainable inclusive growth and the STAG Economy criterion. There would also be a minor positive impact for TPO5 relating to safety and reliability through the additional infrastructure provided for alternative fuelled vehicles.

The benefits to air quality of alternative fuelled vehicles would be of most benefit to those who are vulnerable to the adverse health effects of traffic-related emissions, including children, disabled people, older people and pregnant women. Therefore, the option is anticipated to result in minor positive impacts in relation to the SIA criteria for Equality and Child Rights and Wellbeing.

The north-east region in particular is an internationally renowned test bed for innovative energy solutions with there being a strong focus on transitioning away from oil and gas and

into renewables. There is emerging growth in the production and distribution of alternative fuels, particularly in relation to electricity and hydrogen with there being a desire for continued expansion and development of these facilities and associated infrastructure.

It is unclear at this stage what the option would look like in terms of location, scale and exact offering in terms of alternative fuel provision as well as whether it is likely to be a range of static, demountable and/or mobile refuelling solutions. However, the option is considered to be feasible and deliverable, with significant experience in delivering elements of alternative refuelling infrastructure facilities within Scotland. Affordability would similarly be affected by the potential location and scale of the option but is likely to be of modest capital cost with revenue streams created to potentially offset initial costs. The current market share of alternative fuelled vehicles is low, but wider public support is anticipated and would further improve as the number of these vehicles increases.

It is recommended that this option is taken forward to the Detailed Appraisal stage.

Details behind this summary are discussed in Section 3.

2. Context

2.1 Problems and Opportunities

This option could help to address the following problem and opportunity themes. Further detail on the identified problems and opportunities is provided in the published A96 Corridor Review Case for Change[vii].

Relevant Problem and Opportunity Themes Identified in the A96 Corridor Review Case for Change

Socio-Economic and Location of Services: Employment and other key services tend to be found in the three most populous and key economic locations within the study area: Aberdeen, Inverness and Elgin. Considering the travel distances between these three key economic centres and the other settlements in the transport appraisal study area, travelling by sustainable modes is relatively unattractive.

The key economic centres contain essential facilities such as major hospitals as well as a much greater density of education facilities. In addition, almost half of the total jobs in the transport appraisal study area are found within these three locations. Outside of these three areas, people making a trip to a workplace are more likely to travel over 10km.

Travel Choice and Behaviour: The number of homes without access to a private vehicle in the transport appraisal study area is consistently lower than the Scottish average. Aberdeenshire has a high level of access to a private vehicle, with approximately 90% of households in Aberdeenshire within the transport appraisal study area having access to at least one vehicle and over half have access to multiple vehicles. There is a greater availability of car in the rural areas across the transport appraisal study area. This combined with the travel to work mode shares, indicates a reliance on private vehicles for travel. Travel to work data suggests older people are more reliant on cars, so with the aging population in the transport appraisal study area, this is likely to increase the use of cars further.

Health and Environment: Transport is a major contributor to CO_2 emissions along the A96 corridor, particularly in the Aberdeenshire and Highland Council areas. Transport contributes over 35% of the total emissions in both Aberdeenshire and Highland Council areas and between 25% and 30% in Aberdeen City and Moray. This is potentially an outcome of the high dependence on cars for travel, long travel distances and the levels of road-based freight movements.

The route of the A96 travels through the centre of towns along the corridor such as Elgin and Keith, which puts a relatively large proportion of the population in close proximity to potential noise pollution and pollutants from transport emissions that affect local air quality.

Sustainable Economic Growth: There is an opportunity to support and enhance sustainable economic growth across the transport appraisal study area. The key industries in the

region, including food and drink production and agriculture, forestry and fishing have a high proportion of goods movement, as evidenced through the relatively high proportion of HGVs on the A96. A shift to alternative sustainable transport modes could improve journey time reliability, resulting in economic and environmental benefits, with trials being undertaken in recent years to increase the proportion of rail freight movements. Alternatively fuelled vehicles would also reduce the transport emissions and the contribution to air quality issues from the road-based movement of goods.

The transport appraisal study area has shown growth in tourism spend in recent years with the rise of whisky tourism and the Speyside Whisky Trail a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to and from the region, and around it. Walking and cycling tourism is one such opportunity and has the potential to create further economic growth by attracting new visitors to the region.

Health and Environment Impacts of Travel: The transition to electric vehicles is underway and progressing rapidly but could be enhanced along the A96 by increasing the quantity, and improving the quality and reliability of charging infrastructure. EVs would reduce carbon emissions and improve local air quality through the lower tailpipe emissions. Alternatively fuelled vehicles for freight and buses would also reduce emissions, along with the electrification of rail. Energy production in the council areas that make up the transport appraisal study area is diversifying rapidly into renewable markets that provide cleaner energy that can help fuel EVs and a further electrified rail line.

2.2 Interdependencies

This option has potential overlap with other A96 Corridor Review options and would also complement other areas of Scottish Government activity.

Other A96 Corridor Review Options

- Bus Priority Measures and Park and Ride
- Improved Public Transport Interchange Facilities
- Investment in DRT and MaaS
- Introduce Rail Freight Terminals
- Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line
- Improved parking at Railway Stations
- Elgin Bypass
- Forres Bypass
- Inverurie Bypass
- Keith Bypass.

Other areas of Scottish Government activity

- Climate Change Plan 2018-32 Update[i]
- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[viii]
- Emerging Energy Technologies Fund[ix]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[x]
- Low Emission Zones[xi]
- National Planning Framework 4 (NPF4)[xii]
- National Transport Strategy (NTS2)[xiii]
- Scotland's Draft Hydrogen Action Plan[xiv]
- Scotland's National Strategy for Economic Transformation[xv]
- Scotland's Road Safety Framework to 2030[xvi]
- Scottish Cities Alliance Transition to Net Zero Carbon Action Plan[xvii]
- Scottish Energy Strategy[xviii]
- Strategic Road Safety Plan (2016)[xix]
- Switched on Towns and Cities Challenge Fund[xx].

3. Appraisal

3.1 Appraisal Overview

This section provides an assessment of the option against:

- A96 Corridor Review Transport Planning Objectives
- STAG criteria
- Deliverability criteria
- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the option when considered under the 'With Policy' and 'Without Policy' Travel Behaviour scenarios (which are described in Appendix A of the Transport Appraisal Report).

3.2 Transport Planning Objectives

1. A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.

'With Policy' Scenario	'Without Policy' Scenario
+++	+++

Delivery of the option, through seeking to increase the provision and coverage of alternative refuelling infrastructure, is expected to directly contribute towards delivery of the Scottish Government's net zero emissions target.

A significant proportion of the vehicles currently using the A96 Trunk Road corridor are powered by an internal combustion engine (ICE). Through providing alternative and greener fuel sources to replace highly polluting fossil fuels, the option would provide the means for low and zero emission vehicles to charge and support the decarbonisation of the transport sector and facilitate an increased uptake of these cleaner and greener vehicles.

Increasing the overall provision and coverage of such alternative refuelling infrastructure is expected to lead in an increase in the overall range confidence for using low and zero emission vehicles. If a range of refuelling solutions is used (e.g. static, demountable and mobile), it is likely that a wider range of road users could be reached.

Overall, the option would not only expand the overall coverage and availability of alternative refuelling provision but also actively promote the transition away from highly polluting vehicles onto more cleaner solutions. This option is scored as a **major positive** under both the 'With Policy' and 'Without Policy' scenarios against this objective.

2. An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The frequency and integration of public transport services is an identified problem for communities across the A96 corridor, which is highlighted by the reliance on private vehicles and by higher than average car ownership levels across the region[xxi]. This is due to the largely rural nature of the region, where providing public transport can be a challenge due to dispersed population and settlement patterns. The option is not expected to have a direct impact on service frequency and coverage nor have an impact on the overall fares for travellers.

The option is therefore not anticipated to have a notable impact on issues relating to the affordability and accessibility of public transport services, which are linked to wider issues related to the provision, frequency and integration of public transport in the area.

This option is scored as a **neutral** under both the 'With Policy' and 'Without Policy' scenarios against this objective.

3. A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.

'With Policy' Scenario	'Without Policy' Scenario
0	0

The provision of targeted alternative refuelling infrastructure along the corridor should facilitate a transition from ICE vehicles. This transition would contribute to reducing noise pollution from engines and improving air quality along the A96 corridor, particularly within settlements where more people reside within a close proximity of the existing route.

The majority of the benefits from the option are likely to be felt most by those who travel by road or benefit through the movement of goods by road, with it being unlikely to benefit those who do not have access to a private car. As there is an identified high reliance on car travel across the region, this option is unlikely to address the key barriers to sustainable travel. The option would not have a significant impact on reducing severance and depending on the scale of facilities would take away land that could otherwise be used for communal spaces.

This option is scored as **neutral** under both the 'With Policy' and 'Without Policy' scenarios against this objective.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.

'With Policy' Scenario	'Without Policy' Scenario
++	++

The trunk road network in the north-east plays a vital role in supporting the efficient and effective movement of goods and people. It also enables high quality access and connectivity to employment and education opportunities, as well as providing businesses with access to labour and distribution markets.

Through enhancing and expanding the network coverage of alternative fuels for vehicles across the corridor, and in turn providing operating benefits and improving range confidence, the option is likely to promote economic growth. If elements are delivered where it is possible to integrate other transport solutions, the option may provide further efficiencies and benefits to wider societal user groups.

This option is scored as a **moderate positive** under both the 'With Policy' and 'Without Policy' scenarios against this objective.

5. A reliable and resilient strategic transport system that is safe for users.

'With Policy' Scenario	'Without Policy' Scenario
+	+

The A96 corridor has an identified poor safety performance record, with there being identified collision clusters at several locations; however, the option is unlikely to contribute towards addressing these concerns and reduce the frequency of collisions and their associated casualties.

Through increasing the provision and overall frequency of alternative refuelling infrastructure across the corridor, the option would increase the overall resilience and reduce the overall disruption caused if one or more assets were to be unavailable at a particular moment.

This option is scored as a **minor positive** under both the 'With Policy' and 'Without Policy' scenarios against this objective.

3.3 STAG Criteria

1. Environment

'With Policy' Scenario	'Without Policy' Scenario
0	0

As the scale and potential locations for the alternative refuelling infrastructure have yet to be defined, it is not possible to identify with any certainty the nature and extent of any associated environmental impacts.

The potential requirement for land take, particularly with the static options (and associated storage facilities) is likely to generate negative impacts from a land use perspective. Moreover, there is the potential for minor to moderate negative environmental impacts during construction and operation, on natural resource requirements, the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, for example. These impacts would depend on how the facilities are constructed and their precise location (and more importantly whether they are static, demountable or mobile infrastructure). Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

Delivery of the option, particularly the static options, is also likely to require the excavation and removal of soils; however, it is not expected that the option would require substantial excavation of ground material.

Although the option may result in there being a localised increase in vehicle trips to access this infrastructure, and therefore a slight increase in the overall noise levels associated with this uplift (e.g. noise and vibration through vehicle tyre usage), it is expected the option would facilitate improved air quality (due to the alternative, cleaner fuel sources being proposed), both within the local area and further afield where such vehicles are likely to be travelling to/from.

Further environmental assessment would be undertaken if such an option were progressed through the design and development process, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.

Overall, the impacts of alternative refuelling infrastructure are considered **neutral** for the Environment criterion in both the 'With Policy' and 'Without Policy' scenarios**,** although this would be subject to review at the next stage and be dependent on the specific interventions identified and their associated impacts.

2. Climate Change

'With Policy' Scenario	'Without Policy' Scenario
+	++

Greenhouse gas emissions would be generated in the short term from construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.

Delivery of the option would directly facilitate the refuelling of vehicles which generate lower greenhouse gas emissions than conventional ICE-based vehicles. Delivery of such infrastructure would improve the overall network coverage and capacity for alternative

fuels which is expected to increase the overall attractiveness and reliability of using low/zero-emission vehicles and enable the decarbonisation of the transport sector. Through this option, it is expected that there would be a significant reduction in greenhouse gas emissions, particularly over the long term as the uptake of low and zero emission vehicles increases. However, consideration may need to be made to better understand the wider processes for generating alternative fuels and whether these processes are likely to give rise to potential negative impacts.

From a hydrogen perspective and relevant to the A96 Corridor Review study area, there is currently no significant domestic producer of green hydrogen (that is, generated by renewable energy) in the UK. This is constrained by the lack of significant quantities of renewable energy required for production which is a highly energy intensive process. According to the UK government factsheet, most hydrogen produced and used in the UK (and globally) is high carbon, coming from fossil fuels with no carbon capture, and is sometimes referred to as 'grey hydrogen'[xxii].

Over the short to medium term, any hydrogen produced for the purpose of powering vehicles would most likely be grey initially, transitioning to 'blue hydrogen' over time. Blue hydrogen is produced from natural gas in the same way as grey hydrogen, but includes carbon capture as part of the production process. Blue hydrogen production is noted to be an increasing area of focus in the north-east of Scotland; however, the reduction in overall greenhouse gas emissions would be greater if the production was based on 100% green hydrogen.

Alternative refuelling infrastructure is not noted to be particularly prone to the identified effects of climate change; however, there may be particular locations where this option could be delivered that may be more vulnerable to the effects impacting the existing A96 (e.g. flooding). Consideration would be made during the site selection process to prioritise locations where there are likely to be minimal potential effects of climate change.

Overall, the option is expected to have a **minor positive** impact on the Climate Change criterion under the 'With Policy' Scenario and **moderate positive** impact under the 'Without Policy' Scenario due to the higher volumes of private car journeys undertaken, and therefore a larger potential uptake in electric vehicles as a result of the infrastructure provided within this option.

3. Health, Safety and Wellbeing

'With Policy' Scenario	'Without Policy' Scenario
0	0

The nature of the option means that it is unlikely to have an impact on addressing both real and perceived safety concerns. Whilst increasing the overall availability of alternative refuelling assets across the region and expand coverage, the option should lower the required distance to reach these assets and reduce the overall number of vehicle

kilometres. This could help contribute towards reducing the overall frequency of collisions and their associated causalities, but this is likely to be minimal.

An increase in the use of alternative fuels by vehicles along the A96 corridor would likely improve local air quality that would, in turn, improve health outcomes especially in more urbanised and heavily trafficked areas. This could have positive effects on all residents, including those groups who are more vulnerable to the adverse health effects of traffic-related emissions such as children, disabled people, older people and pregnant women.

There is potential for negative environmental effects on visual amenity during construction of larger scale elements of the option, particularly where storage facilities are required.

This option is not anticipated to have any notable impact on access to health and wellbeing infrastructure, or the security of travellers.

Overall, alternative refuelling infrastructure is anticipated to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Economy

'With Policy' Scenario	'Without Policy' Scenario
++	++

An economic assessment to calculate the Transport Economic Efficiency (TEE) of this option has not been undertaken at this stage of appraisal as the route and standard of the infrastructure are currently unknown.

With over half the working distilleries in Scotland located in Moray, the A96 Trunk Road is integral to the sector. Tourism is also a key industry within the vicinity of the Inverness to Aberdeen corridor, with significant natural and industrial tourism assets, including the Cairngorms National Park and Royal Deeside.

The option could develop a more resilient transport network by accommodating the necessary charging infrastructure to enable vehicles, powered by alternative fuels, to operate seamlessly throughout the region. This in turn is likely, with the correct deployment of charging infrastructure points, to improve journey reliability. In addition, this would boost the consumer confidence in alternatively fuel vehicles helping to shift to vehicles which have a lower operating cost due to the reduced dependency on fossil fuels.

This option has the potential to reduce vehicle operating costs due to their lower cost per unit when compared to fossil fuels. The cost savings could potentially be reinvested into businesses. It may also in turn attract businesses to the area through the improved connectivity, integration, inclusivity of the regions transport network.

Development of dedicated infrastructure for alternative refuelling would provide the means for decarbonisation of the transport sector and address a significant barrier through expanding the existing network coverage. This capital investment provides the

opportunities for business and enterprise, which are the largest expected user groups to benefit, to invest in other areas and further drive economic growth.

Furthermore, delivering such infrastructure at strategic locations where there are high volumes of existing movements has the potential to attract investment into the local area as users seek to be located next to such infrastructure.

As the option would not solely serve the commercial sector and transport operators, the wider public would be able to use the facilities for refuelling and therefore the expansion of network coverage is expected to further increase overall economic competitiveness.

Overall, this option is likely to have a **moderate positive** impact on this criterion under both the 'With Policy' and 'Without Policy' scenarios due to reducing vehicle operating costs, providing resilience to the alternative refuelling network for both private and commercial traffic and the investment and income opportunities that could be realised around the infrastructure.

5. Equality and Accessibility

'With Policy' Scenario	'Without Policy' Scenario
0	0

Communities across the study area of the A96 Corridor Review have high levels of car ownership when compared to the rest of Scotland. This is primarily due to the area being largely rural in nature where there is greater dependency on the private car to access employment, education, services and maintain social contact. More rural areas may be impacted by a lower provision of alternative refuelling infrastructure and associated facilities than more urban areas, where current provision in the context of the trunk road network is limited.

As the trunk road network is also important to the operation of local and inter-urban bus network, targeted improvements to improve the network coverage and increase the overall provision of alternative refuelling infrastructure would support the operation for all road users. However, it is considered unlikely that the option within this grouping would have a significant impact on public transport and active travel accessibility. The option is unlikely to provide benefits for individuals who do not have access to a private vehicle, as well as those unable to drive.

Reference should also be made to the SIAs in Section 3.5.

Overall, the option is considered **neutral** on this criterion under both the 'With Policy' and 'Without Policy' scenarios as the main benefits will be felt by those who have access to an alternatively fuelled vehicle and has no impact on public transport or active travel network coverage.

3.4 Deliverability

1. Feasibility

Targeted improvements on the trunk road network would typically be for Transport Scotland to lead and could be delivered on a project-by-project basis or potentially through the development of a route action plan or as part of a wider strategy. Improvements on interfacing local roads and/or adjacent to the trunk road network may be led by the respective RTPs and/or local authorities.

There is already significant experience in delivering elements of alternative refuelling infrastructure facilities within Scotland and elsewhere and they are already largely feasible. The north-east region in particular is an identified leader in testing and delivering alternative refuelling solutions, most notably relating to electric and hydrogen refuelling.

The type, location, scale and complexity of providing targeted alternative refuelling infrastructure and facility improvements requires further interrogation and assessment.

The engineering constraints would vary significantly from location to location along the A96 and its interfacing local roads, both between, and within local communities. This would include various existing residential and business properties, roads, rivers and railways that intersect the highway corridor. Any improvements would also have to consider geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints which have been discussed in previous sections.

Land purchase and Public Local Inquiries could also be a potential requirement.

Despite the constraints and challenges outlined, the work undertaken to date indicates that this option is considered feasible.

2. Affordability

Delivering refuelling infrastructure and facilities, depending on their scale and size, can have a varying cost estimate and can range from being relatively modest to quite substantial.

Initial upfront costs would also be required to secure sufficient fuel supply during the start-up period to allow the option to provide refuelling to vehicles. Depending on the nature of the option, monies may also be required for personnel to operate and maintain the sites although it is recognised that this cost could be reduced if the infrastructure is of a self-serve nature. Depending on whether the option would be manned or self-serve, personnel may be required to operate and maintain the infrastructure which if required, would add operating costs.

Notwithstanding expected capital costs for delivery, the option is anticipated to generate a modest revenue steam through the distribution of alternative fuels which is likely to positively offset the delivery costs.

3. Public Acceptability

Wide public support is anticipated across local communities and businesses across the study area of the A96 Corridor Review for targeted improvements relating to enhancing alternative refuelling infrastructure and facilities, particularly in more rural communities which may be currently underserved when compared against more urban areas. As the north-east oil and gas sector transitions to more renewable technologies such as hydrogen fuel there is likely to be strong support from this sector in particular. Additionally, fleet operators, both in the public and private sectors, who wish to decarbonise but are constrained by a lack of appropriate local infrastructure and facilities are likely to be supportive.

However, it is recognised that current uptake is still relatively low, and that the acceptability would further increase as the overall number of these vehicles increases.

As further consideration is needed to understand the scale, size and location for this type of intervention, there is a possibility that some local communities may be impacted by the delivery process, primarily associated with construction impacts. This potentially includes landowners and others within communities directly impacted by improvements.

Overall, this option would directly cater for the needs of both communities and businesses and provide the means to enable the rapid decarbonisation of the transport sector.

Public consultation undertaken as part of this review indicated some support for the development of the A96 Electric Corridor. Approximately 14% of respondents are currently driving, or have use of, a hybrid/electric vehicle and a further 4% expect that their travel choices will change to using electric or hybrid vehicles. Also, 5% responded that the providing infrastructure for an electric highway was a priority and 6% suggested that infrastructure for electric highway should be implemented, including electric charging points.

3.5 Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

An SEA has been prepared and has helped inform the Environment criterion of the STAG appraisal. There is also considerable overlap between the SEA and the Climate Change criterion. The SEA utilises a set of SEA objectives that covers a wide range of environmental topics including Climatic Factors, Air Quality, Noise, Population and Human Health, Material Assets, Water Environment, Biodiversity, Geology and Soils, Cultural Heritage, Landscape and Visual Amenity. The full SEA, including scoring and narrative for each of the Preliminary Appraisal interventions and Detailed Appraisal packages is presented in the SEA Draft Environmental Report[xxiii].

2. Equalities Impact Assessment (EqIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

The area has a higher than average rate of car ownership, with some groups living in the area 'forced' into car ownership despite financial constraints or dependent on a private vehicle due to mobility issues, exacerbated by living in rural areas with a lack of concentration of key services. Therefore, there could be benefits for those groups with regards to availability of options for alternative fuels and future options. An increase in the use of alternatively fuels by vehicles along the A96 corridor could also improve local air quality. In turn, this could have positive effects on those groups who are more vulnerable to the adverse health effects of traffic-related emissions. This includes children, disabled people, older people and pregnant women. More detailed assessment work is required to understand local air quality impacts associated with delivery of the option.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

3. Children's Rights and Wellbeing Impact Assessment (CRWIA)

'With Policy' Scenario	'Without Policy' Scenario
+	+

An increase in the use of alternative fuels by vehicles along the A96 corridor could also improve local air quality. In turn, this could have positive effects on children and young people who are more vulnerable to the adverse health effects of traffic-related emissions. More detailed assessment work is required to understand local air quality impacts associated with delivery of the option in relation to children and young people.

Overall, this option is expected to have a **minor positive** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

4. Fairer Scotland Duty Assessment (FSDA)

'With Policy' Scenario	'Without Policy' Scenario
0	0

Improving the coverage, quality and availability of alternative refuelling infrastructure and facilities for rural and remote communities may contribute towards addressing many of the structural challenges that rural communities face (such as the high fossil fuel costs associated with maintaining and running private vehicles). However, the option is likely to have a negligible impact on socio-economically disadvantaged groups in relation to the population overall. Through providing alternative fuels there is potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality. However, the extent to which positive effects would be realised depends on the

spatial distribution and frequency of proposed elements as part of the option and the levels of air quality improvements through a reduction in ICE vehicles and associated air quality within disadvantaged and deprived communities.

More detailed assessment work at the individual scheme level would need to be undertaken to understand local air quality impacts in relation to deprived areas.

Overall, this option is expected to have a **neutral** impact on this criterion in both the 'With Policy' and 'Without Policy' scenarios.

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