Prepared by

Jacobs AECOM

for

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

# A96 Corridor Review

## Strategic Business Case – Transport Appraisal Report (Draft) Appendix D: Detailed Appraisal Summary Tables

**2024**

# A96 Corridor Review Detailed Appraisal Summary Table

An Appraisal Summary Table (AST) has been prepared for each of the packages developed for the A96 Corridor Review and for A96 Full Dualling. The A96 Full Dualling AST sets out to provide:

- Detailed Description – this presents the option as assessed in the detailed appraisal, the relevance to transport users in the corridor, the estimated cost of the option, the position in the Sustainable Investment and Sustainable Travel Hierarchies and an overall summary of the appraisal.
- Problems and Opportunities Context – drawing on data presented in the Case for Change report, this summarises the identified problems and opportunities in the corridor that are relevant to the option, and sets out where it complements wider Scottish Government policies and strategies.
- Transport Planning Objectives (TPO) Assessment – an assessment against each of the five TPOs is provided with quantified metrics, where appropriate, under the 'With Policy' Scenario that includes the 20% reduction policy ambition on car kilometres (hereon referred to as the 'With Policy' Scenario) and a 'Without Policy' Scenario with no policy ambition on car kilometres reduction (hereon referred to as the 'Without Policy' Scenario). Further information about these scenarios is provided in Appendix A. A seven-point scoring scale is adopted for each TPO, as follows:
  - + + + = major positive (3 plus signs)
  - + + = moderate positive
  - + = minor positive
  - 0 = neutral
  - - = minor negative
  - - - = moderate negative
  - - - - = major negative (3 minus signs)
- STAG Criteria Assessment – as above for the TPO Assessment, key points regarding the performance of the option against each of the STAG criteria is presented, with quantified metrics provided where appropriate.
- Deliverability – commentary is provided on the assessment of the option in terms of its feasibility, affordability and public acceptability. Note that due to the nature of a number of the interventions, and this AST presenting the Strategic Case it has not been possible to derive a single cost estimate. However, broad capital spending ranges have been estimated for the option.
- Statutory Impact Assessment Criteria – a summary of the performance of the option against the Equalities Impact Assessment (EqIA), Child Rights and Wellbeing Impact Assessment (CRWIA) and Fairer Scotland Duty Assessment (FSDA) is provided. The seven-point scoring scale is adopted in these assessments where appropriate. Note that the separate Strategic Environmental Assessment (SEA) has provided input to the STAG

Environment and Climate Change criteria, with the full SEA including scoring and narrative for each of the Preliminary Appraisal interventions, the Detailed Appraisal packages and for A96 Full Dualling presented in the SEA Draft Environmental Report[i].

## Summary of Assumptions

Quantification of the costs and benefits of the option has been provided through a modelling exercise. Further information is provided in Appendix A of the Technical Report on the modelling scenarios that have informed the assessment of the A96 Corridor Review packages and A96 Full Dualling. A summary of the key assumptions is provided here:

- Population projections are based on the National Records of Scotland (NRS) Population Projections (2018-based).
- Economic projections are a combination of projections by Oxford Economics bought in 2019, the Scottish Fiscal Commission forecasts and more recently the Office for Budget Responsibility (OBR) post-COVID estimates.
- Land use plans are based on data collected for Transport Scotland's Assembly of Planning Policy Inputs in 2018 from Scotland's 34 Planning Authorities.
- Permitting of vacant office and retail floorspace to be converted or redeveloped as housing post 2030.
- Working age is taken to be 16-64 (as a constant) to avoid difficulties with changing state pension age (and to reflect non-mandatory retirement).
- In line with appraisal standards, the present value of benefits within the economic assessment are presented as discounted values in 2010 prices.

## Modelling Tools

Due to the multi-modal appraisal process, the national Transport Model for Scotland version 2018 (TMfS) and the A96 Corridor Road Assignment Model version 1.6 (A96CRAM) have been used. TMfS is a national scale multi-modal transport model with a focus on inter-urban trips and as such has been used to inform the appraisal of the larger scale public transport interventions. The A96CRAM is a strategic highway assignment model which covers the A96 corridor (between Inverness and Aberdeen) and parallel routes and has been used to inform the appraisal of the roads- based options. Whilst TMfS and A96CRAM provide for a suitable level of robustness at this stage of the appraisal there are nevertheless limitations associated with modelling of smaller/discrete interventions and those that are more urban in nature, particularly where the calculation of benefits of an intervention depends upon an accurate representation of the existing urban congestion. Separate forecasts of the potential impacts of active travel recommendations on walking and cycling mode share have therefore been made. As the recommended interventions are progressed through the next stages of development, it is anticipated that more detailed modelling will be undertaken using local models as appropriate.

When considering the outputs presented in this AST, the following metrics should be considered:

- **$CO_2$ emissions:** Likely to underestimate the benefits associated with public transport interventions due to the more limited representation of transport systems in urban areas and a degree of insensitivity to mode shift in TMfS.
- **Mode share:** Likely shift to public transport modes underestimated in the more urban areas due to the more limited representation of urban transport systems and a degree of insensitivity to mode shift in TMfS.
- **Change in vehicle kilometres travelled:** Likely to underestimate the benefits of reducing vehicle kilometres travelled particularly for short distance journeys due to the more limited representation of urban transport systems, the relative coarseness of the model zone system and the lack of direct representation of walk/cycle modes in the transport models.
- **Lost time due to congestion:** Likely to underestimate the benefits associated with mode shift to public transport and walk/cycle modes due to a degree of insensitivity to mode shift in TMfS and the lack of direct representation of walk/cycle modes in the transport models.
- **Change in accidents:** Likely to underestimate the benefits associated with mode shift to public transport interventions due to the more limited representation of urban transport systems and a degree of insensitivity to mode shift in TMfS.
- **Present Value of Benefits:** Likely to underestimate the benefits to public transport users due to the more limited representation of urban transport systems.

# 1. Detailed Appraisal Summary

## 1.1 Option Description

**A96 Full Dualling Hardmuir to Craibstone**

The A96 Full Dualling Hardmuir to Craibstone, hereon referred to as A96 Full Dualling, focuses on improving the trunk road network in the north-east of Scotland to address road safety concerns and provide resilience and reliability improvements for a key connection between Inverness and Aberdeen. The location of the option is illustrated in Figure 1.1.

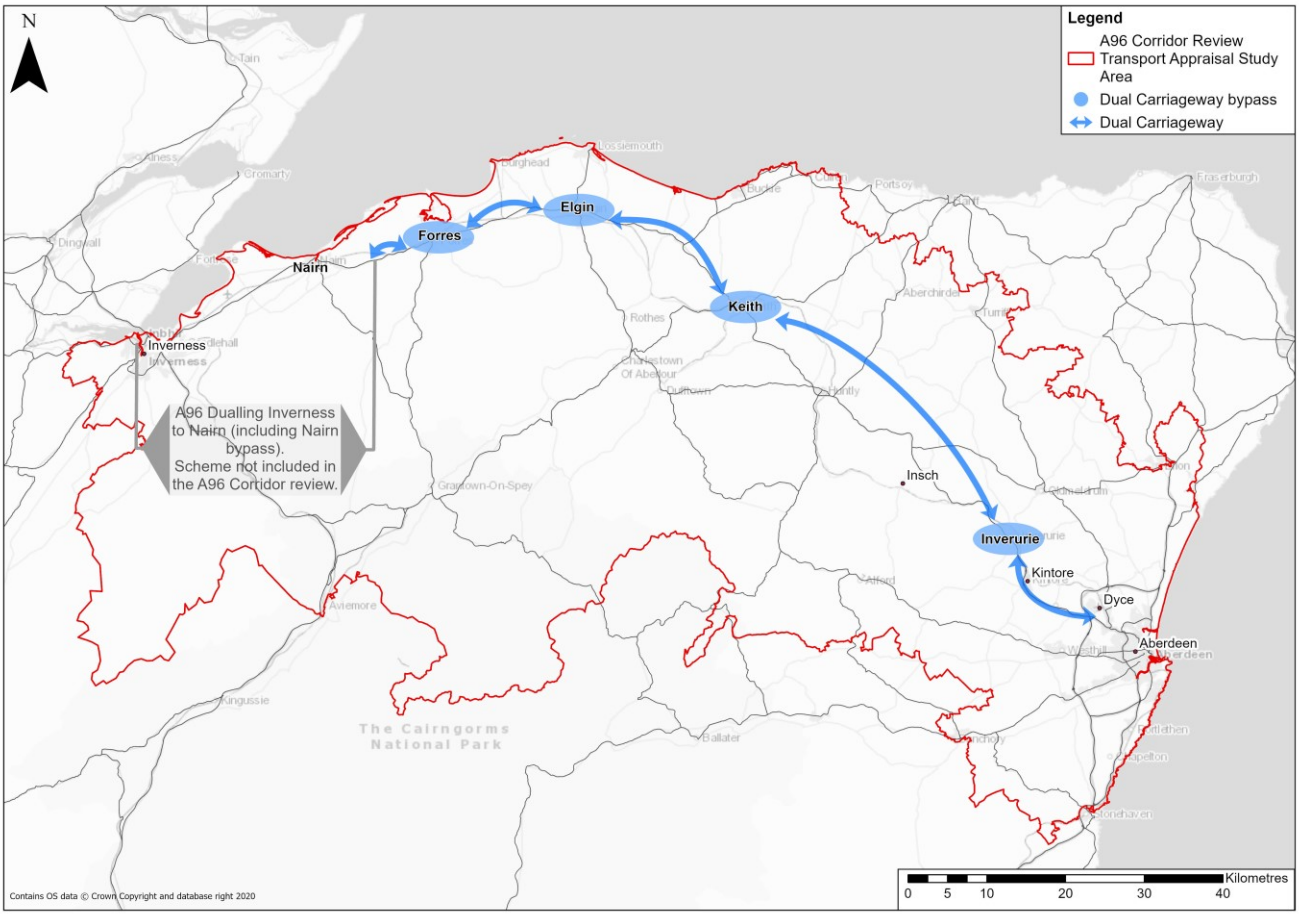


Figure 1.1: A96 Full Dualling Hardmuir to Craibstone Extents

As part of any potential design for the dual carriageway, it is assumed that new active travel provision would be embedded as part of the dual carriageway. This would likely comprise new active travel provision adjacent to the potential route of any dual carriageway as well as facilities at junctions along any potential route. This provision would be anticipated to complement the existing long-distance active travel network in the region and has been considered in the appraisal for A96 Full Dualling. However, specific active travel interventions within the bypassed communities do not form part of the A96 Full Dualling option.

The A96 is a strategic trunk road which is approximately 155km long and routes from Raigmore Interchange, Inverness in the west to Craibstone Roundabout, Aberdeen in the east.

This option considers dualling the full section between Hardmuir (east of Auldearn) and Craibstone Roundabout (west of Aberdeen) which is a total distance of approximately 125km.

It should be noted that the A96 Dualling Inverness to Nairn (including Nairn Bypass) scheme has been excluded from the scope of the A96 Corridor Review as it already has ministerial consent.

The A96 Trunk Road is predominantly single carriageway; however, there are 12 sections which have been upgraded to provide overtaking opportunities via climbing lanes or wide single 2+1 carriageways, equating to approximately 12km of the route. Within the extents being considered as part of this option, the section of the route between Inverurie Roundabout and Craibstone Roundabout is currently dual carriageway, with the majority of junctions being at-grade roundabouts.

This option is designed to deliver economic growth through improving road safety and, as a consequence, improving the resilience and reliability of the route. Due to the nature of the option it is not likely to have a direct influence on the move towards alternative fuelled vehicles, although it is anticipated that the option would as far as possible support the transition to electric vehicles (EVs). For communities and businesses on the corridor, the dualling will provide better connectivity between Inverness and Aberdeen and onwards to the Central Belt and beyond.

## 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. 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 the economy, including a number of key industry sectors along the corridor such as the food and drink production and the agriculture, forestry and fishing industries, 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.

A96 Full Dualling would be expected to generate an increase in road-based travel. However, as part of a potential design of a dual carriageway, it is likely that significant active travel provision would be included, supporting the long-distance active travel network in the region. The option may facilitate opportunities for the development of connected and autonomous vehicle infrastructure and bus priority; however, these do not form part of the core option and are not included in the appraisal.

This option is directly relevant to Scotland's Road Safety Framework to 2030[ii]. 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 the second National Transport Strategy 2 (NTS2)[iii] 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, accident rates for the A96 are lower when compared to national rates for similar road types; however, accident severity on the A96 is higher than national rates for the equivalent trunk A-roads in Scotland. In the urban areas along the route, particularly Forres and Keith, the Killed or Seriously Injured (KSI) accident rate between 2015 and 2019 was higher than the national average for similar route types[iv]. 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. This option would reduce conflicts between local and strategic journeys, reduce accident rates and severity, along with driver stress.

## 1.3 Estimated Cost

**£2,501m – £5,000m Capital**

The full dualling of the A96 Trunk Road between Hardmuir and Craibstone has been considered as part of previous design and preparation work that has been advanced to varying stages and degrees of detail on the A96 Dualling Hardmuir to Fochabers[v] and A96 Dualling East of Huntly to Aberdeen[vi] projects.

The anticipated capital cost estimate for dualling between Hardmuir and Craibstone Roundabout is expected to be between £2,501m and £5,000m (not discounted). This cost takes cognisance of the previous work undertaken, but it is recognised that further interrogation and assessment will also be required if this option is taken forward.

In addition to construction costs, Transport Scotland would be the asset owner on completion and is therefore anticipated to take on the responsibility for operation and maintenance of the new dual carriageway, which will have ongoing costs. It is assumed that the responsibility for operation and maintenance of the sections of the existing A96 that would be detrunked as a result of the option would pass to the relevant local authority.

## 1.4 Position in Sustainable Hierarchies

**Sustainable Investment Hierarchy / Sustainable Travel Hierarchy**

Within the Sustainable Investment Hierarchy, this option sits within targeted infrastructure improvements. Although there would potentially be some benefits for longer distance bus services, this option would be most relevant to the private car tier of the Sustainable Travel Hierarchy.

This option would contribute to eight 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 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 | - | 0 | - | + | +++ | - - - | - | + | ++ | 0 | + | + | + |
| 'Without Policy' Scenario | - - | 0 | - | + | +++ | - - - | - - | + | ++ | 0 | + | + | + |

This option has both positive contributions and negative impacts to the A96 Corridor Review Transport Planning Objectives (TPOs) and Scottish Transport Appraisal Guidance (STAG) criteria, whilst having a positive impact on the Statutory Impact Assessment (SIA) criteria. The following paragraphs provide additional detail on the scoring of the A96 Full Dualling option.

The option would have a major positive impact on the A96 Corridor Review TPO5 for providing a safe, reliable and resilient transport system, as well as a minor positive impact on TPO4 for contributing to sustainable inclusive growth. The option is also anticipated to have a moderate positive impact on the STAG Economy Criteria, and a minor positive impact in relation to the STAG Health, Safety and Wellbeing Criteria. Of the SIAs scored as part of the A96 Corridor Review, the option is anticipated to have a minor positive contribution to all three of the equality impact assessments; the Equality Impact Assessment (EqIA), Child Rights and Wellbeing Impact Assessment (CRWIA), and Fairer Scotland Duty Assessment (FSDA).

This option would provide road users, businesses and communities along the route with a consistent road standard that would provide better connectivity, improve journey time reliability and increase the labour catchment for the area. There would also be anticipated wider economy benefits for local businesses and attracting new investment into the corridor.

However, increasing the capacity and travel speeds of the A96 Trunk Road, over a distance such as this, has the potential to result in an increase in road-based traffic, which is anticipated to increase road-based transport emissions. Although the option would be expected to include provision for active travel along its length, the option overall would have a minor to moderate negative impact under the 'With Policy' and 'Without Policy' scenarios respectively towards the contribution to Scottish Government's net zero targets (TPO1) and the STAG Climate Change criterion. The footprint of the option would have significant adverse

impacts on the natural environment that are expected to contribute to a major negative impact on the STAG Environment criterion under the 'With Policy' and 'Without Policy' scenarios respectively, and a minor negative impact on TPO3 regarding the enhancement of communities as places to support health, wellbeing and the environment.

As the dual carriageway would be considered a trunk road, Transport Scotland would likely be the scheme promoter. Delivery is considered to be feasible at this stage, with Transport Scotland having extensive experience of delivery and implementation of similar projects across the country. Whilst work has been advanced on sections of this route, further work would be required to progress the development of the full corridor.

The capital cost of A96 Full Dualling is estimated to be between £2,501m and £5,000m. Construction costs can vary significantly based on the potential length and preferred route of the dual carriageway and 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. Therefore, at this stage an appropriate level of risk has been included in the overall affordability of the option. Transport Scotland would be the asset owner on completion and is therefore anticipated to take on the costs associated with the operation and maintenance of the dual carriageway.

Overall, there is likely to be general support for the option. There is a notable level of vocal support from the local population along the corridor in favour of dualling of the A96 Trunk Road, with improvements to the safety and journey time reliability of the trunk road and local road network key components and work undertaken to consider dualling already in the public realm. Over half of respondents in the A96 Corridor Review public consultation survey named dualling (either full or partial) as their top priority and suggestion (55% for both), while only approximately 11% noted their opposition to full or partial dualling as one of their three biggest priorities. Notable opposition is likely to come from landowners affected by construction and other stakeholders who have concerns over the potential impacts to the environment and the climate compatibility of full dualling.

# 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**

**Safety and Resilience:** From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accident (PIA) rates lower than or similar to the national average based on all trunk A-roads of the equivalent type. There are, however, particular 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 KSIs 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, Fochabers and Keith, Keith and East of Huntly and 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 Heavy Goods Vehicles (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.

**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 fuelled vehicles would 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 being a major component of the economy in this sector. There are opportunities to change the way in which visitors travel to, from and around the region. 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).

## 2.2 Interdependencies

This option would complement many other areas of Scottish Government activity, including:

- Active Travel Framework (2020)[viii]
- Bus Partnership Fund[ix]
- City Region Deals[x]
- Cycling Framework for Active Travel - A plan for everyday cycling (2023)[xi]
- Infrastructure Investment Plan 2021/22 – 2025/26 (IIP)[xii]
- National Transport Strategy (NTS2)[xiii]
- National Planning Framework 4 (NPF4)[xiv]
- Regional Growth Deals[xv]
- Scotland's National Strategy for Economic Transformation[xvi]
- Scotland's Road Safety Framework to 2030[xvii]
- Strategic Road Safety Plan (2016)[xviii]
- The Place Principle[xix].

# 3. Appraisal

## 3.1 Appraisal Overview

This section provides an assessment of A96 Full Dualling against:

- A96 Corridor Review TPOs
- 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.**

Sub-objectives:

Reduce transport related emissions through a shift to more sustainable modes of transport.

Increase the active travel mode share for shorter everyday journeys.

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

This option provides additional road space, which will increase capacity for motorised vehicles which would generally be expected to induce travel demand, particularly where congestion is considered an issue. Analysis of INRIX traffic data for May 2019 indicates that, generally, traffic flows well through Forres and Keith, with short queues forming on approach to junctions. Congestion is slightly more prevalent in Elgin, with traffic speeds reducing to approximately 50% of free flow speeds at certain locations, and in Inverurie where there are capacity issues. Congestion has been identified on the section of the A96 Trunk Road at Inverurie 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.

The level of congestion experienced on the corridor is anticipated to change moving forward and, in general terms, is likely to be experienced more intensely and for longer periods under the 'Without Policy' Scenario compared to the 'With Policy' Scenario where car vehicle kilometres are anticipated to reduce. However, traffic modelling indicates that time lost due to congestion following implementation of this option is anticipated to reduce for general traffic by approximately 2% and 3% in the 'With Policy' and 'Without Policy' scenarios respectively compared to a 'without option' scenario. This could result in a benefit to road-based transport greenhouse gas emissions as traffic should be more free-flowing. However, over the full A96 corridor study area, air quality modelling has shown that A96 Full Dualling is

estimated to increase road user GHG emissions by approximately 150,000 tonnes $CO_2e$ ($tCO_2e$) and approximately 1,450,000 $tCO_2e$ under the 'With Policy' and 'Without Policy' scenarios respectively over the 60-year appraisal period.

The provision of a dual carriageway would increase the average travel speed along the corridor through a combination of an increase in speed limit and the provision of overtaking opportunities along the full length of the route. The latter would contribute to reducing the occurrence of platooning caused by slower moving HGVs and agricultural vehicles, with a consequential positive impact on the reliability of journey times.

Reduced journey times and improved journey time reliability may also encourage people to relocate further away from their workplace, potentially resulting in more road-based trips and thus increasing car vehicles kilometres and transport related GHG emissions. Traffic modelling indicates that the introduction of a dual carriageway between Hardmuir and Craibstone would increase vehicle kilometres by approximately 8% in the 'With Policy' Scenario and 10% in the 'Without Policy' Scenario due to increased traffic volumes and the dualled route being longer than the existing A96, which is likely to result in an increase in road user GHG emissions, negatively contributing to this objective. As previously highlighted, A96 Full Dualling is not likely to have a direct influence on the move towards alternative fuelled vehicles that would reduce tailpipe emissions, although it is anticipated that the option would as far as possible support the transition to EVs. Should an opportunity be taken to enhance long-distance active travel infrastructure within the corridor as part of the provision of a dual carriageway between Hardmuir and Craibstone, this may increase active travel levels between the villages and towns along the route.

Assuming that new active travel provision would be embedded along the length of the proposed dual carriageway route, the anticipated increase in mode share of walking and cycling are shown in Table 3.1.

Table 3.1: Walking and Cycling Mode Share

| Local Authority Area | Walking Without Option | Walking With Option | Cycling Without Option | Cycling With Option |
|---|---|---|---|---|
| Rural Sections Moray | 12% | 13% | 10% | 11% |
| Rural Sections Aberdeenshire | 13% | 14% | 2% | 6% |

Note that separate methods have been used in the calculation of the potential walking and cycling mode share. The baseline and forecast percentages for walking were developed using Census data zone level information to apply a percentage mode share uplift to each settlement or area. The baseline data for cycling was developed as a single percentage for

each local authority, and the forecast data was developed using an adapted Propensity to Cycle Tool which applies a percentage mode share uplift to each local authority's baseline.

The anticipated mode share values presented above are based on the assumption that the active travel infrastructure links communities, providing a means for walking, wheeling and cycling between the settlements along the corridor. Depending on the alignment of the dual carriageway, the active travel infrastructure provided may result in longer travel distances to the centre of towns. Therefore, the anticipated uplift in walking and cycling mode share could be lower than that outlined in Table 3.1.

This option is also likely to result in the provision of bypasses of certain settlements along the route, which through the removal of through trips, could encourage more sustainable travel journeys, particularly for shorter distance trips within towns. Automatic Number Plate Recognition (ANPR) data collected on behalf of Moray Council in June 2017 indicates that through traffic is approximately 20% of total traffic flow west of Elgin. A96 CRAM[xx] traffic modelling at Inverurie indicates differing levels of through traffic, with 80% of eastbound traffic travelling through the town and onwards to other destinations, and between 20% and 35% of westbound traffic travelling through the town, depending on the peak period. In the smaller towns, through trips are generally higher than in Elgin and Inverurie, with 65% at Forres and between 60% and 75% at Keith. The A96 Trunk Road is also a significant freight route, and many of the freight trips are not destined for the aforementioned towns, with approximately 90% of HGVs travelling through Forres and Keith[xxi].

Traffic modelling indicates that, at a daily level, the introduction of A96 Full Dualling is anticipated to reduce traffic on the A96 through Elgin by between approximately 45-50% in the 'With Policy' Scenario and 50%-60% in the 'Without Policy' Scenario. At Keith, a reduction of through trips of approximately 70% is anticipated in the 'With Policy' Scenario in both directions, and similarly a reduction of over 75% in both directions is anticipated in the 'Without Policy' Scenario. Reductions on the existing A96 at Forres are anticipated to be approximately 55% and 60% westbound in the 'With Policy' and 'Without Policy' scenarios respectively, and approximately 75% in both scenarios for eastbound traffic. At Inverurie, modelling indicates that dualling would reduce traffic on the existing A96 by between 85%-90% eastbound and approximately 45% westbound in both scenarios. However, as the A96 does not pass through the centre of Inverurie and Forres, traffic reduction in the centre of these towns is not likely to be as significant. Therefore, in these towns the potential to encourage a mode shift to more sustainable modes, including active travel, would be more limited than in Elgin or Keith.

Through reducing the overall frequency of road traffic collisions and therefore the associated disruption, there may be slight benefits to road user GHG 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 identified within the A96 Corridor Review Case for Change[xxii] as a prevalent issue, but is anticipated to change moving forward and is likely to be experienced more intensely and for longer periods under the

'Without Policy' Scenario where traffic volumes are likely to be greater, compared to the 'With Policy' Scenario where car vehicle kilometres are anticipated to reduce.

It should be noted that this option does not include the provision of active travel measures within bypassed settlements. It is acknowledged there is the potential for this option to encourage more active travel journeys, particularly for shorter distance trips within bypassed towns where traffic levels are reduced. Whilst this could result in a reduction in vehicle emissions, the impact is expected to be more limited.

Overall, the option is anticipated to have a **minor negative** impact on this objective under the 'With Policy' Scenario and a **moderate negative** impact under the 'Without Policy' Scenario. This reflects the estimated increase in road user GHG emissions associated with A96 Full Dualling under both scenarios and the limited potential to influence a shift to sustainable modes of travel given the nature of the active travel measures considered.

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

Sub-objectives:

Increase public transport mode share by improving connections between sustainable modes of transport.

Reduce the reliance on private car for access to healthcare, employment and education.

Improve mobility and inclusion, recognising the specific needs of disadvantaged and vulnerable users.

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| 0 | 0 |

An inclusive transport corridor should consider the interconnection between modes of transport, especially those between active travel and public transport, so as to not disadvantage travellers who do not have access to a car. Car availability is generally high across the transport appraisal study area[vii], particularly in rural areas, which may be a result of the frequency and integration of public transport services in the corridor. 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.

This option is expected to address some of the problems along the A96 corridor in relation to public transport accessibility and connectivity, specifically in relation to improved journey time reliability for longer distance bus trips and in towns where through traffic is removed and congestion may be reduced, allowing services to run to timetables more accurately. However, the option is not expected to have a direct impact on service frequency and coverage or the cost of fares. It 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 rural areas.

Overall, the provision of a dual carriageway along the length of the A96 corridor is unlikely to notably reduce the reliance on private car for access to healthcare, employment and education. The additional capacity provided by the dual carriageway could potentially encourage those with access to a private car to drive (when they do not currently do so), thereby increasing road-based demand and potentially reducing patronage on existing public transport services.

Where settlements are bypassed as a result of the A96 Full Dualling route, the removal of through trips would provide the opportunity to enhance the sense of place, encouraging walking, wheeling, and cycling and therefore improving the active travel environment for those who are unable to afford a car. This could encourage more sustainable travel journeys, particularly for shorter distance trips, which could improve mobility and inclusion along the corridor. If this were to be the case, car use within these settlements would reduce, helping to contribute to the Scottish Government's net zero emission target. It should be noted that the traffic modelling of this option does not include any mode shift that may occur within bypassed settlements.

Overall, the option is anticipated to be **neutral** (no benefit or impact) on this objective under both the 'With Policy' and 'Without Policy' scenarios as it is unlikely to directly impact the accessibility of public transport in this area.

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

Sub-objectives:

Reduce demand for unsustainable travel by enhancing placemaking within settlements along the A96.

Increase active travel mode share for both shorter and longer distance journeys.

Reduce real and perceived severance caused by the strategic transport network both between and within communities.

Protect or enhance the natural environment and heritage.

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

This option provides additional road space, which would increase capacity for motorised vehicles. This would generally be expected to induce travel demand, particularly in locations where congestion is currently a prevalent issue. Within the context of the A96 corridor, congestion is generally confined to the larger towns, such as Elgin and Inverurie, and on the approaches to Inverness and Aberdeen. The provision of a dual carriageway along the length of the corridor is therefore not expected to reduce demand for unsustainable travel for longer distance trips. The majority of the benefits from this option are likely to be felt by people who have access to a private vehicle and where there is currently a higher-than-average

dependency on car use to access employment, education, health and other services and facilities.

Assuming that new active travel provision would be embedded along the length of the proposed dual carriageway route, the anticipated increase in mode share of walking and cycling are shown in Table 3.2.

Table 3.2: Walking and Cycling Mode Share

| Local Authority Area | Walking Without Option | Walking With Option | Cycling Without Option | Cycling With Option |
|---|---|---|---|---|
| Rural Sections Moray | 12% | 13% | 10% | 11% |
| Rural Sections Aberdeenshire | 13% | 14% | 2% | 6% |

(For further information on the calculation of the mode share baseline and forecasts, please refer to the text below Table 3.1)

The health benefits associated with the above increased rates of active travel have been quantified using the World Health Organisation's (WHO) Health Economic Assessment Tool (HEAT). HEAT estimates the health and economic impacts of increased walking and cycling, providing assessments of the impacts on premature mortality and on exposure to air pollution. Outputs from the tool show that the interventions implemented as part of this option could reduce premature deaths by 0.06 a year, which equates to a benefit of up to (+) £1m-£2m over a 20-year appraisal period. The forecasts that these values are based on assume that the active travel intervention is fully implemented to a high standard and is well maintained on an ongoing basis across the whole corridor.

The anticipated mode share values and health impacts presented above are based on the assumption that the active travel infrastructure links communities, providing a means for walking, wheeling and cycling between the settlements along the corridor. Depending on the alignment of the dual carriageway, the active travel infrastructure provided may result in longer travel distances to the centre of towns. Therefore, the anticipated uplift in walking and cycling mode share and health impacts could be lower than those outlined.

Furthermore, where the alignment of the dual carriageway results in towns being effectively bypassed, traffic modelling indicates that at a daily level the volume of traffic using the existing A96 Trunk Road would reduce through the towns of Forres, Elgin, Keith and Inverurie by between approximately 45% and nearly 90% depending on location. However, as the existing A96 does not travel through the centre of Forres or Inverurie, impacts on the local road network within the towns would be largely unaffected. This reduction in traffic volumes in the centre of Elgin and Keith would provide the opportunity to deliver interventions within

the towns to enhance placemaking and reduce real and perceived severance, reducing demand for unsustainable travel, particularly for shorter everyday trips. Facilitating the transition to sustainable modes could further reduce traffic volumes within settlements along the corridor such as Elgin and Keith, enhancing the sense of place and supporting health and wellbeing. This is also expected to have a positive impact on the environment within any community bypassed, with improved air quality and associated benefits in relation to noise, vibration and visual amenity resulting from reduced traffic volumes within these settlements. It should however be noted that this option does not include the provision of active travel measures within bypassed settlements.

Implementation of A96 Full Dualling could be expected to reduce the number and severity of accidents, resulting in health benefits to individuals through the provision of a safer environment to travel. These impacts could be particularly pronounced where the dualling alignment bypasses settlements within the corridor.

The overall scale of impacts on the natural environment and heritage would be dependent on further design development and the alignment of the preferred route being determined. Whilst A96 Full Dualling could potentially positively affect noise, vibration and air quality within bypassed settlements, the overall scale of the required infrastructure and the required land take out with the extents of the existing A96 carriageway boundaries has the potential to have moderate adverse effects on the natural environment. This includes impacts on the water environment, biodiversity and habitats, landscape, the historic environment, geology and soils, and agriculture and forestry. Additionally, there is the potential for active travel interventions to require land take, resulting in a net loss of green space. Such interventions would, however, look to create more pleasant and visually attractive transport links that would promote an improvement in local air quality. Any reduction in vehicle travel could also improve local air quality and reduce road user GHG emissions.

Overall, the option is anticipated to have a **minor negative** impact on this objective, under both the 'With Policy' and 'Without Policy' scenarios. This considers the positive impacts of the A96 Full Dualling option on improving air quality and reducing severance in bypassed communities i.e. Elgin and Keith and the associated potential for increased travel by active modes within these settlements. However, any positive effects are unlikely to offset the potential adverse impacts on the natural environment and heritage associated with the scale of the infrastructure required.

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

Sub-objectives:

Increase sustainable access to labour markets and key centres for employment, education and training.

Increase the mode share of freight by sustainable modes.

Increase competitiveness of key sectors by improving journey time reliability for commercial transport.

| '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. Consultation undertaken for the A96 Corridor Review revealed that over half of respondents utilise the A96 Trunk Road for business/commuting trips[xxiii]. Distances travelled to work within the study area, specifically within Aberdeenshire, are higher than the national average[vii]. The provision of a dual carriageway between Hardmuir and Craibstone that bypasses communities is anticipated to support inclusive growth by improving the connectivity between businesses and the labour market. Dualling would provide opportunities to widen the labour market and improve access to key centres of employment, education and training, particularly for those who can drive. This is achieved through reducing journey times and improving journey time reliability, with traffic modelling indicating the delay to general traffic would reduce by approximately 4% and 5% compared to the 'without option' scenario in the 'With Policy' and 'Without Policy' scenarios, in 2045, respectively. Time lost due to congestion is also anticipated to reduce for general traffic by approximately 2% and 3% in the 'With Policy' and 'Without Policy' scenarios respectively.

The active travel route adjacent to the dual carriageway could encourage sustainable access to key centres for employment and education, but the impacts are likely to be limited due to the potential route of the dual carriageway bypassing town centres and the travel distances between settlements across the A96 corridor. Buses would likely see some benefits from the journey time savings and reductions in delay that would improve accessibility by this mode, but the extent of this is uncertain as potential route or timetable changes is unknown and would be a decision for operators.

Industries such as food and drink production, agriculture and fishing are all prominent in the area and rely on the A96 Trunk Road for the movement of goods to maintain business productivity. Traffic modelling undertaken indicates that this option is anticipated to reduce delay to business vehicles by approximately 3% compared to the 'without option' scenario in the 'With Policy' Scenario and approximately 4% in the 'Without Policy' Scenario, in 2045, with time lost to congestion by business vehicles reducing by approximately 3% in both

scenarios. This would improve the reliability and efficiency of the trunk road network for freight, which can be critical for those industries transporting perishable goods.

Furthermore, this option may support opportunities to strengthen the reliability of supply chains locally, regionally and nationally. The food and drink industry in Scotland has ambitions to grow significantly by 2030, through increasing output and exports, as well as productivity. The north-east of Scotland accounts for a significant amount of Scotland's food and drink output, with the industry directly and indirectly supporting a large volume of employment in the region. In 2015, a study estimated that the annual value of food and drink transported on the A96 Trunk Road was over £100m, and that freight values in general would be over £850m[xxiv], highlighting the importance of the road for freight reliability and the wider economy. This option would provide additional capacity for road-based trips, which is currently the favoured mode of transport for industry, improving the resilience and efficiency of this key route, supporting the movement of goods. This option is not anticipated to increase the mode share of freight by sustainable modes.

This option would also provide reliability benefits through a reduction in accidents, and resilience benefits through increased roadspace to limit the impact of incidents and road closures. Benefits would relate to all road users including freight movements, helping to improve confidence in the trunk road network. However, as the overall accident rate is lower than the national average for routes of a similar type, any reliability benefits are anticipated to be minor. Further resilience benefits are anticipated during periods of routine maintenance, with the provision of a dual carriageway allowing for one carriageway to be closed for maintenance with the other being used to provide single lane running in each direction by means of a contraflow system.

Overall, 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.**

Sub-objectives:

Reduce the accident rates and severity of transport related casualties in line with reduction targets.

Improve resilience to disruption (from climate change events and maintenance activities) through adaptation of the corridor's trunk road and rail infrastructure.

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| +++ | +++ |

Generally, the PIA rate on the A96 is lower than the national average; however, the KSI rate on some rural sections is higher than the national average[xxv]. 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. Hardmuir to Forres, Fochabers to Keith, Keith to East of Huntly and Kintore to Craibstone are identified as sections of the A96 with a KSI rate slightly higher than the national average. Sections of the A96 through Forres and Keith have

also been identified as having a PIA and KSI rate higher than the national average. At a corridor level, between 2015 and 2019 there were 175 recorded accidents on the A96 between Hardmuir and Craibstone, of which over 40% involved a KSI casualty.

The provision of a dual carriageway between Hardmuir and Craibstone 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. The bypasses created through any proposed route for a new dual carriageway could reduce the number and severity of road traffic accidents on the sections of the existing A96 Trunk Road which route through towns. Traffic modelling indicates that at a daily level the anticipated traffic flow would reduce on the existing A96 Trunk Road through the towns of Forres, Elgin, Keith and Inverurie with A96 Full Dualling in place by between approximately 45% (in Elgin) and nearly 90% (at Inverurie) depending on location. However, as the A96 does not travel through the centre of Forres and Inverurie, impacts on the local road network within the towns would be largely unaffected. The proposed dual carriageway would also remove the need for through traffic to pass through the at-grade junctions and numerous signalised pedestrian crossings within the bypassed towns, reducing conflict and the potential for accidents, whilst also reducing driver stress through the consistent provision of safe overtaking opportunities and greater journey time reliability.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provide an illustration of the potential benefits of bypassing towns, as illustrated by the Three-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[xxvi]. Additionally, the severity of accidents occurring within the town reduced.

A spreadsheet-based process compliant with the Department for Transport (DfT) Cost and Benefit to Accidents – Light Touch (COBALT) software has been used to identify the predicted accident impacts, using default accident rates. The accident analysis indicates that the number of accidents reduce on the corridor following the introduction of a dual carriageway between Hardmuir and Craibstone, with a safety benefit of (+) £40m-£50m in the 'With Policy' Scenario and (+) £70m-£80m in the 'Without Policy' Scenario.

A96 Full Dualling is estimated to reduce the number of accidents within the corridor by approximately 560 in the 'With Policy' Scenario and 1,030 in the 'Without Policy' Scenario over a 60-year appraisal period. The number of casualties is anticipated to reduce by approximately 970 and 1,680, including approximately 190 and 310 KSI casualties, in the 'With Policy' and 'Without Policy' scenarios respectively. However, given the PIA rate on the corridor is lower than the national average for rural single carriageway routes, the accident and casualty savings are anticipated to be lower than this.

Reducing the number and severity of accidents could also improve the reliability and resilience of the road network. Fewer and less severe accidents reduce the risk of road closures and the need for diversions, which can be extremely lengthy in this area. A closure to

the A96 Trunk Road at Huntly for example, which occurred a total of nine times between 2016 and 2021, results in a 65km recommended diversion route. Any reduction in the number of closures is therefore not only a direct benefit for safety, but also important for the reliability of the network and ensuring people and goods can get to where they need to be on time.

The new dual carriageway would also provide enhanced resilience across the corridor in the event of a closure due to incidents that may include traffic collisions, impacts of climate change such as flooding and general planned maintenance. There would be the option to provide single lane running in each direction by means of a contraflow system in the case of planned closures, and the existing A96 Trunk Road would also offer another viable alternative route in case of incidents on the proposed dual carriageway.

The infrastructure implemented as part of this option would be designed to be resilient to impacts arising from current and future weather events and climatic conditions, and designed in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks.

Overall, 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 |
|---|---|
| - - - | - - - |

Depending on the alignment of the dual carriageway, this option has the potential to have positive effects in terms of noise and vibration within the settlements, as it is assumed that dualling is likely to bypass settlements. Scotland's Noise Map[xxvii] illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within the settlements on the A96 corridor and thereby noise effects could be reduced where the proposed dualling bypasses such settlements. A96 Full Dualling would inevitably result in greater noise impacts in proximity to its alignment. The significance of these effects would depend on the preferred alignment and its proximity to sensitive receptors, although noise mitigation could be incorporated. The construction of A96 Full Dualling and associated traffic is also likely to lead to minor negative effects on noise and vibration during the construction phase.

This option has the potential to have positive effects on air quality within settlements. Where the existing A96 Trunk Road alignment passes through settlements that would be bypassed by the A96 Full Dualling option, these areas may experience an improvement in air quality due to a reduction in vehicle emissions, with traffic modelling indicating that at a daily level the anticipated traffic flow would reduce on the current A96 Trunk Road through the towns of Forres, Elgin, Keith and Inverurie with A96 Full Dualling in place by between approximately 45% and nearly 90% depending on location. However, as the A96 does not travel through the

centre of Forres and Inverurie, benefits to air quality would not be as significant in the centre of these towns where traffic volumes are likely to remain relatively unaffected. Negative impacts on air quality may arise in the vicinity of the dualling alignment itself due to an increase in vehicles using the route. However, the negative impacts on receptors are not expected to be significant due to the improved flow of traffic and the likely lower numbers of properties adjacent to the bypass route.

The option is anticipated to increase total emissions of nitrogen oxides (NOx) and particulate matter (PM) over the 60-year appraisal period. This is due to an anticipated increase in road-based trips and an associated increase in car vehicle kilometres. There is a predicted increase of 94 tonnes of NOx and 140 tonnes of PM of 2.5 microns or less ($PM_{2.5}$) emissions in the 'With Policy' Scenario; and an increase of 821 tonnes of $NO_X$ and 159 tonnes of $PM_{2.5}$ emissions in the 'Without Policy' Scenario. For the air quality topic as a whole, a minor negative effect was predicted for Full Dualling.

Due to the overall scale of the required infrastructure, this option has the potential to have major adverse effects on the physical environment (i.e. the water environment, biodiversity and habitats, landscape, the historic environment, geology and soils, and agriculture and forestry). Such impacts could either be direct such as demolition/land loss/habitat loss, or indirect such as impacts on setting or views and would be largely dependent on the alignment of the dualling. Furthermore, there could be additional negative effects on the environment depending on the alignment of the dualling and the design of any required structures. Mitigation could be incorporated where appropriate, such as landscaping and tree planting to reduce impacts on the landscape or biodiversity. Impacts during construction are likely to be short-term and temporary and could be mitigated. The A96 corridor and its surroundings, contain various local, regional, national, and international designated sites, the impacts on which would need to be considered.

In addition, there are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. The construction of a new dual carriageway has the potential to have a major negative impact on water quality of these watercourses and consideration would be needed as to the alignment in terms of water crossings and bridge design.

The physical works associated with the A96 Full Dualling option are likely to have additional negative environmental effects of varying degrees depending on its design and alignment. Raw materials required for construction have the potential to cause a major negative effect on natural resources and at least a moderate negative effect on greenhouse gas emissions, due to the scale of construction required.

The local, regional, national, and international designated sites include for example Special Areas of Conservation (SAC), Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSI). There are large swathes of Long-Established Woodland (of plantation origin), pockets of Ancient Woodland (of semi-natural origin) and areas with Tree Preservation Orders.

The following designated sites are noted in the overall A96 corridor study area:

- 43 SSSIs
- 8 SPAs
- 7 SAC
- 4 Ramsar sites
- 17 Gardens and Designed Landscapes
- 20 Conservation Areas
- 4 Inventory of Historic Battlefield Sites
- 236 Scheduled Monuments; and
- 2 Royal Society for the Protection of Birds Reserves.

Of these sites, the following designations are noted in and around towns that are likely to be bypassed:

Elgin
- 4 Scheduled Monuments
- 2 Conservation Areas.

Inverurie
- 1 Garden and Designed Landscape
- 2 Scheduled Monuments
- 1 Inventory of Historic Battlefields.

Keith
- 1 Scheduled Monument
- 2 Conservation Areas.

Forres
- 1 Garden and Designed Landscape
- 2 Scheduled Monuments
- 1 Conservation Area.

In addition, A96 Full Dualling has the potential to affect the following designations:

- 3 Inventory of Historic Battlefields
- 7 Gardens and Designed Landscapes
- 2 Ramsar sites
- 7 Scheduled Monuments
- 12 SSSIs
- 3 SAC
- 4 SPAs.

Whether there would be any impacts on these designations is not known at this stage, as it would be dependent on the alignment selected for the bypasses and other works around the settlements. Moreover, the scale of the effects would be dependent on the design and alignment of the dualling and further detailed environmental assessment would be required as part of any further option development. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.

This option may support a modal shift to more sustainable transport modes including walking, wheeling and cycling through the active travel infrastructure considered. Depending on the proximity of the infrastructure to the settlements within the corridor, the potential increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare.

Overall, while this option is likely to have some positive environmental effects, the potential environmental impacts of A96 Full Dualling are considered **major negative** on the Environment criterion under both the 'With Policy' and 'Without Policy' scenarios. This is a cumulative effect, that considers the range (minor, moderate and major) of negative effects predicted for various environmental topics. However, the extent of impact would be subject to the final route alignment and design. If environmental constraints such as designated sites can be avoided or mitigated, then adverse environmental impacts may be reduced; however, this is unlikely to change the overall scoring.

## 2. Climate Change

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

The existing A96 Trunk Road is 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. Such areas identified in the environmental assessment for A96 Full Dualling are the floodplains associated with the River Lossie near Elgin, flood risk areas around Keith associated with the River Isla, and flood risk areas around Inverurie associated with the River Urie and River Don.

The transport network improvements are expected to improve the resilience of identified flood risk areas, and other potential climate risks, through the provision of an alternative route to the existing A96 Trunk Road. Key long-term climate change trends for Scotland suggest that average temperatures will increase across all seasons; typically summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on A96 Full Dualling. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents[xxviii].

Paved surfaces created as part of the full dualling and active travel infrastructure might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures.

In order to account for the effects of climate change, the infrastructure would be designed to be resilient to impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that are anticipated to affect the region, and other likely climate risks.

The provision of a dual carriageway would provide additional capacity whilst also increasing the average speed along the corridor through a combination of an increase in speed limit and the provision of overtaking opportunities. Furthermore, the provision of a dual carriageway would result in additional overtaking opportunities which would contribute to reducing the occurrence of platooning caused by slower moving vehicles, with a consequential change on the reliability of journey times. Traffic modelling indicates time lost due to congestion is anticipated to reduce for general traffic by approximately 2% and 3% under both the 'With Policy' and 'Without Policy' scenarios respectively, which is likely to be a result of these factors leading to a more consistent travel speed across the route, which could result in a slight benefit to road-based transport GHG emissions.

Based on the estimated cost range between £2,501m and £5,000m for this option, GHG emissions arising from the construction stage are estimated to be in the range of approximately 700,000 tonnes CO2e (tCO2e) to approximately 1,400,000 tCO2e.

Traffic flows and road user GHG emissions along the A96 and on adjacent connecting routes are predicted to increase as a result of this option due to a combination of reduced congestion, which potentially attracts traffic to the route, and an increase in route length which combined, result in an overall increase in vehicle kilometres under both scenarios, resulting in a net increase in road user GHG emissions. The estimated increase in road user GHG emissions over the appraisal period between the 'with scheme' and 'without scheme' scenarios is approximately 150,000 tCO2e under the 'With Policy' Scenario and approximately 1,450,000 tCO2e under the 'Without Policy' Scenario. The Net Present Value of tCO2e of the option, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3, indicates that road user GHG emissions would increase over the 60-year appraisal period. The outputs indicate an estimated disbenefit under the 'With Policy' Scenario of around (-) £15m-£20m and (-) £100m-£125m under the 'Without Policy' Scenario.

As previously highlighted, A96 Full Dualling is not likely to have a direct influence on the move towards alternative fuelled vehicles that would reduce tailpipe emissions, although it is anticipated that the option would as far as possible support the transition to EVs.

Overall, this option is expected to have **minor negative** impact on the Climate Change criterion under the 'With Policy' Scenario and a **moderate negative** impact under the 'Without Policy' Scenario. This is on the basis that the GHG emissions would increase as a result of A96 Full Dualling. Further assessment should take into consideration mitigation to reduce the impact of construction activities.

**3. Health, Safety and Wellbeing**

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| + | + |

Generally, the PIA rate on the A96 is lower than the national average[xxv] for equivalent trunk A-roads in Scotland; however, some rural sections do indicate a slightly higher than average rate of KSIs. Fochabers to Keith, Keith to East of Huntly and Kintore to Craibstone are identified as

sections of the A96 with a KSI rate slightly higher than the national average. There are however selected urban sections of the A96 Trunk Road that show a PIA rate higher than the national average, with specific locations in Forres and Keith. The rate of the KSI is also significantly higher in these two towns than the national average. 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. The provision of a dual carriageway between Hardmuir and Craibstone would result in the safer operation of the trunk road network. This is particularly relevant at locations where evidence suggests there is a safety problem or there is a potential safety risk. The improvement in safety would likely result in reduced accident rates and severity as well as a reduction in driver stress, through the provision of safe overtaking opportunities.

Evaluations of road schemes following the Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) framework provide an illustration of the potential benefits of bypassing towns, as illustrated by the Three-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[xxix]. Additionally, the severity of accidents occurring within the town reduced.

A spreadsheet-based process compliant with COBALT software has been used to identify the predicted accident impacts, using default accident rates. The accident analysis indicates that the number of accidents reduce on the corridor following the introduction of a dual carriageway between Hardmuir and Craibstone, with a monetised safety benefit of (+) £40-£50m in the 'With Policy' Scenario and (+) £70m-£80m the 'Without Policy' Scenario calculated compared to the 'without option' scenario.

A96 Full Dualling is estimated to reduce the number of accidents within the corridor by approximately 560 in the 'With Policy' Scenario and 1,030 in the 'Without Policy' Scenario over a 60-year appraisal period. The number of casualties is anticipated to reduce by around 970 and 1,680, including approximately 190 and 310 KSI casualties, in the 'With Policy' and 'Without Policy' scenarios respectively. However, given the PIA rate on the corridor is lower than the national average for rural single carriageway routes, the accident and casualty savings are anticipated to be lower than this.

Should an opportunity be taken to enhance long-distance active travel infrastructure within the corridor as part of the provision of a dual carriageway between Hardmuir and Craibstone this may increase active travel levels between the villages and towns along the route. Furthermore, where the dualling route results in a settlement being bypassed, this provides the opportunity to deliver interventions within towns to enhance placemaking, reducing demand for unsustainable travel, particularly for shorter everyday trips. Facilitating the transition to sustainable modes offers the opportunity to further reduce traffic volumes within settlements along the corridor such as Elgin and Keith, through enhancing the sense of place and supporting health and wellbeing. More people walking, wheeling and cycling would improve physical fitness and would be likely to increase communal surveillance, thus improving personal security.

The health benefits associated with increased rates of active travel have been quantified using the WHO HEAT. HEAT estimates the health and economic impacts of increased walking and cycling, providing assessments of the impacts on premature mortality and on exposure to air pollution. Outputs from the tool show that the interventions implemented as part of this option could reduce premature deaths by 0.06 a year, which equates to a benefit of up to approximately (+) £1m-£2m over a 20-year appraisal period. The forecasts that these values are based on assume high quality active travel infrastructure is implemented along the length of the dualled route and is well maintained on an ongoing basis. Depending on the alignment of the dual carriageway, the active travel infrastructure provided may result in longer travel distances to the centre of towns. Therefore, the anticipated uplift in walking and cycling mode share and health impacts could be lower than those outlined. As this option does not propose interventions within bypassed settlements, the forecasts do not take account of any benefits within these localities.

There is the potential for moderate negative environmental effects on visual amenity during construction and operation of the proposed dualling, however, this would need to be assessed in more detail during the development of the option.

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

**4. Economy**

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| ++ | ++ |

The A96 Trunk Road 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. Traffic modelling undertaken indicates that this option is anticipated to reduce delay to business vehicles by approximately 3% compared to the 'without option' scenario in the 'With Policy' Scenario and 4% in the 'Without Policy' Scenario, in 2045. Time lost due to congestion is anticipated to reduce by approximately 3% in both scenarios. Both of these reductions would improve the reliability of the trunk road network, which can be critical for those industries transporting perishable goods such as food and drink.

A high-level economic assessment has been undertaken using a number of tools including the DfT TUBA software (v1.9.17) and the DfT GHG Workbook. The exact details of the alignment of this option have not been developed and the results of the assessment should therefore be treated as an early indication of the potential benefits only. The analysis indicates that the provision of a dual carriageway between Hardmuir and Craibstone is likely to result in user benefits, with road user journey time savings being the main source of benefits. The majority of benefits are anticipated to be higher under the 'Without Policy' Scenario compared to the 'With Policy' Scenario, as traffic volumes are likely to be higher. The journey time benefits are likely to be achieved as the option is anticipated to increase the

speed limit, reduce traffic volumes in urban areas and provide overtaking opportunities along the length of the route.

Increases in road user GHG emissions are forecast as a result of A96 Full Dualling. The option is estimated to increase total vehicle kilometres travelled by approximately 8% in the 'With Policy' Scenario, in 2045, and approximately 10% in the 'Without Policy' Scenario, in 2045.

Overall, the A96 Full Dualling option is anticipated to provide a significant level of journey time reliability for road travel through the provision of overtaking opportunities and routing away from larger towns along the A96 corridor. The core present value of benefits, which included the benefits associated with Transport Economic Efficiencies (TEE), changes in GHG and accident analysis, for A96 Full Dualling are forecast to be (+) £300m-£350m in the 'With Policy' Scenario and (+) £350m-£400m in the 'Without Policy' Scenario, with a large majority of benefits coming from road user journey time improvements. It should be noted that the monetised benefits are discounted to 2010 prices and values.

Additionally, Wider Economic Impacts (WEIs) have been calculated in line with STAG and consider non-transport markets that may be affected by the introduction or change in the transport infrastructure. WEIs have been calculated to provide an estimation of the economic impact on three areas; agglomeration, labour supply and market power. The WEIs for A96 Full Dualling are forecast to be (+) £70m-80m in the 'With Policy' Scenario and (+) £120m-£130m in the 'Without Policy' Scenario, with the majority of this benefit stemming from business agglomeration. Driver frustration benefits have also been calculated as an impact of A96 Full Dualling. This equates to a benefit of approximately (+) £200m-£250m under the 'With Policy' Scenario and (+) £300m-£350m under the 'Without Policy' Scenario.

The health benefits associated with the A96 Full Dualling were measured using the WHO HEAT. Increased levels of physical activity as a result of introducing an active travel route alongside the dual carriageway are forecast to reduce the economic impact of premature deaths up to approximately (+) £1m-£2m over a 20-year appraisal period.

This option would also provide reliability and resilience benefits to road-based freight, as well as other road users, by reducing the impact of accidents on the network, helping to improve confidence in the trunk road network. Further resilience benefits are anticipated during periods of routine maintenance, with the provision of a dual carriageway allowing for one carriageway to be closed for maintenance with the other being used to provide single lane running in each direction by means of a contraflow system.

Furthermore, this option may support opportunities to strengthen the reliability of supply chains locally, regionally and nationally. The food and drink industry in Scotland has ambitions to grow significantly by 2030, through increasing output and exports, as well as productivity. The north-east of Scotland accounts for a significant amount of Scotland's food and drink output, with the industry directly and indirectly supporting a large volume of employment in the region. Moray is 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 the local authority area[xxx]. In 2015, a study estimated that the annual value of food and drink

transported on the A96 Trunk Road was over £100m, and that freight values in general would be over £850m[xxxi], highlighting the importance of the road for freight and the wider economy. This option would provide additional capacity for road-based trips, which is currently the favoured mode of transport for industry, improving the resilience and reliability of this key route and supporting the movement of goods.

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

## 5. Equality and Accessibility

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| 0 | 0 |

The corridor has high car ownership/availability compared with the rest of the country[vii], primarily due to the area being largely rural in nature where there is greater dependency on the private car to access employment, education and services. More rural areas may be impacted to a greater extent by incidents, such as accidents, due to limited alternative routing options. The provision of a dual carriageway between Hardmuir and Craibstone would provide an additional carriageway along the entire corridor, thus improving resilience in the event of a closure, whist also enhancing journey time reliability for local, strategic and road-based freight trips, whilst also improving journey time reliability for trips undertaken by bus.

There are several commercial bus services in operation along the A96 corridor connecting settlements with each other, as well as Aberdeen and Inverness, with local services available within some of the larger towns along the route, including Elgin and Inverurie. The smaller towns in the more rural sections of the study area have a very infrequent bus service at peak times for commuting to employment or education. Aberdeen and Inverness have extensive services locally and connections into commuter towns, including Inverurie and Nairn respectively. However, it is considered unlikely this option would have a significant impact on public transport accessibility in the study area. Whilst this option may address some of the problems along the A96 corridor in relation to public transport accessibility and connectivity, with a focus on improved journey time reliability for longer distance bus trips and in towns where through traffic is removed and congestion may be improved, it is not expected to have a direct impact on service frequency and coverage or the cost of fares. Dualling is also unlikely to have a significant impact on the accessibility to rail services as the alignment is unlikely to be directly within the vicinity of towns where rail stations are generally found therefore journey times to rail stations may not improve. There may be some very minor benefits for access to public transport by active travel in towns where traffic volumes are reduced on the current A96 Trunk Road, in Elgin and Keith for example, as this could reduce the perception of severance for some travellers.

Bus journey times in general may be expected to reduce for longer distance end-to-end trips due to increased travel speeds and increased capacity reducing delays due to congestion, but any improvement may be negated by the additional time and distance required to travel between the proposed dual carriageway and into the population centres along the existing

A96 corridor. As such, operators may retain services between towns using the existing A96 Trunk Road to increase potential patronage, with congestion also being less of a concern due to the dual carriageway reducing traffic flows in towns throughout the corridor.

The provision of a dual carriageway would provide the opportunity to encourage placemaking in towns such as Elgin and Keith, should they be bypassed by the realigned route, which may ultimately create environments more attractive 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, pregnant women, and older people. Whilst active travel infrastructure would be included as part of the design on the new dual carriageway, it is unlikely that this would encourage a large number of people to travel by active modes between settlements due to the potential alignment of the dual carriageway creating longer travel distances to the centre of towns. Any benefits on these more rural sections are therefore anticipated to be minor.

Reference should also be made to the SIAs in Section 3.5 for further evidence on equality and accessibility.

Overall, this option is expected to be **neutral** (no benefit or impact) on the Equality and Accessibility criterion under both the 'With Policy' and 'Without Policy' scenarios.

## 3.4 Deliverability

**1. Feasibility**

As the A96 is a trunk road, and the dual carriageway is expected to form part of the trunk road network, Transport Scotland would likely be the promoter and procuring body. Transport Scotland has significant experience of delivering major roads projects across the country and, as such, they can be considered largely readily feasible. Transport Scotland is also likely to be the asset owner on completion of construction and would likely have overall responsibility for the operation and maintenance of the A96 dual carriageway as part of the wider trunk road network. It is assumed that the responsibility for operation and maintenance of the sections of the existing A96 that would be detrunked as a result of the option would pass to the relevant local authority.

The engineering constraints are anticipated to vary significantly from location to location along the A96 corridor. This would include various existing residential and business properties, roads, rivers and railways. Geotechnical constraints, potentially poor ground conditions and various other environmental and planning/land use constraints would also have to be considered. More detailed assessment would be required at the next stages of design development to understand the extent of these impacts and to ascertain any appropriate mitigation to reduce potential negative effects.

Despite the constraints and challenges outlined above, the work undertaken to date as part of the A96 Corridor Review, as well as the previous A96 dualling appraisal for the A96 Dualling Hardmuir to Fochabers[xxxii] and A96 Dualling East of Huntly to Aberdeen[xxxiii] projects, suggests that this option can be considered feasible.

## 2. Affordability

Overall, taking consideration of previous work undertaken to dual sections of the A96 corridor, the estimated capital cost of A96 Full Dualling between Hardmuir and Craibstone Roundabout, Aberdeen is estimated to be between £2,501 million and £5,000 million. Construction costs for a new dual carriageway can vary significantly based on the potential length and preferred route of the dual carriageway. Therefore, at this stage an appropriate level of risk has been included in the overall affordability of the option.

Whilst it is assumed that active travel provision adjacent to the dual carriageway would be included in any design, the provision at junctions or crossings would depend on the exact layout at each specific location, and therefore a more detailed review would be required to determine the full cost impact. Due to the scale of such a route, ongoing maintenance costs would have to be considered by the asset owner to ensure the safety and high standard of the route is preserved.

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 be the asset owner on completion and is therefore anticipated to take on the costs associated with the operation and maintenance of the dual carriageway.

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. Previous work undertaken to consider the dualling of the A96, as part of the A96 Dualling Hardmuir to Fochabers and A96 Dualling East of Huntly to Aberdeen projects is already in the public domain and is therefore a known option. Support is anticipated from communities along the corridor and stakeholders in the wider business community for improvements to the safety and journey time reliability of the trunk road and local road network within towns bypassed by the dualling.

The A96 Corridor Review public consultation survey[xxxiv] reflects the general positivity around A96 Full Dualling. The need for dualling (either partial or full) was identified to be the top priority and suggestion of respondents, with 55% suggesting this option.

There are likely to be some members of the public who do not support the construction of a dual carriageway. This could include landowners, communities, businesses, and other stakeholders who have concerns over the impact of construction/operation of the dual carriageway or the resulting potential impacts to the environment. The A96 Corridor Review public consultation survey[xxxiv] indicates that 11% of respondents suggested they opposed

dualling (either full or partial), approximately one fifth of the number of people who suggested the need for dualling.

There is also likely to be the need for a Public Local Inquiry for this option, however this would not be unusual for an intervention of this nature and scale.

Overall, public acceptability is anticipated to be mixed, with some groups supporting the option and others disagreeing with the full dualling.

## 3.5 Statutory Impact Assessment Criteria

**1. Strategic Environmental Assessment (SEA)**

An SEA has been prepared and has provided inputs to 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[xxxv].

**2. Equalities Impact Assessment (EqIA)**

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| + | + |

The provision of A96 Full Dualling could improve access to employment, educational, health, open space and leisure facilities for those in protected characteristic groups, particularly in areas where there is a high dependency on private vehicles. There is also likely to be safety benefits for road users and for protected characteristics groups in settlements bypassed by the dual carriageway.

The provision of a dual carriageway could potentially result in adverse health outcomes for some protected groups as a result of negative impacts on air quality and noise levels due to an increase in motorised vehicles along the A96 Trunk Road, as well as construction impacts on local communities. Air quality modelling forecasts indicate that as a result of increased traffic flows and an attraction of traffic to the corridor, NOx and $PM_{2.5}$ emissions are predicted to increase over the 60-year appraisal period under both the 'With Policy' and 'Without Policy' scenarios.

However, the provision of A96 Full Dualling is likely to require towns to be bypassed. Traffic modelling forecasts predict that traffic would divert away from the existing A96 Trunk Road at Forres, Elgin, Keith and Inverurie as a result of A96 Full Dualling in both the 'With Policy' and 'Without Policy' scenarios. Therefore, bypassed towns, particularly Elgin and Keith, could experience air quality improvements as traffic volumes reduce, with resultant benefits in relation to air quality, noise and vibration and visual amenity within these settlements.

Children, pregnant women, disabled and older people are more vulnerable to the adverse health effects of traffic related GHG emissions and noise and are all therefore likely to benefit from this option. A96 Full Dualling is not likely to have a direct influence on the move towards alternative fuelled vehicles that would reduce tailpipe emissions, although it is anticipated that the option would as far as possible support the transition to EVs. Furthermore, the provision of bypasses as part of this option is anticipated to reduce severance impacts within bypassed settlements through reduced traffic volumes, providing benefits from reduced social exclusion.

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 and older people or those who make complex journeys involving 'trip chaining' such as women and carers. For example, these groups could experience a reduction in journey times and an improvement in the reliability of journey times both locally and when travelling to key services such as employment, education, and healthcare.

However, this option could potentially result in negative impacts during both construction and operation stages for children, older people, disabled people, and pregnant women living in local communities along the corridor. 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 will be dependent on the alignment of the route and the types of communities affected. More detailed assessment would be required to understand the extent of these impacts and the appropriate mitigation to reduce any negative effects. In general, air quality modelling has shown that construction is anticipated to produce between approximately 700,000 tCO2e and 1,400,000 tCO2e.

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

**3. Child Rights and Wellbeing Impact Assessment (CRWIA)**

| 'With Policy' Scenario | 'Without Policy' Scenario |
|---|---|
| + | + |

The provision of A96 Full Dualling could improve access to education for children and young people. However, this is likely to result in a minor impact and mainly affect those with access to a car. Bus journey times could reduce when travelling on a dual carriageway due to the higher speed limit, however, any improvement may be negated by the additional time and distance required to travel between the proposed dual carriageway and into the population centres along the existing A96 corridor.

The dual carriageway would bypass the towns located along the existing A96 Trunk Road. Traffic modelling forecasts predict that traffic would divert away from the existing A96 Trunk Road at Forres, Elgin, Keith and Inverurie as a result of A96 Full Dualling in both the 'With Policy' and 'Without Policy' scenarios. Therefore, a reduction in traffic through communities, particularly at Elgin and 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 GHG 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.

The provision of a dual carriageway could potentially result in adverse health outcomes for children living in local communities within the vicinity of the realigned route. This includes noise, vibration and air quality impacts during construction and potential severance, noise, air quality and traffic impacts due to an increase in motorised vehicles travelling on the A96 during operation. Air quality modelling forecasts indicate that as a result of increased traffic flows and an attraction of traffic to the corridor, NOx and $PM_{2.5}$ emissions are predicted to increase over the 60-year appraisal period across both the 'With Policy' and 'Without Policy' scenarios. However, the negative impacts of construction and operation are not expected to outweigh the positive impacts of connectivity and bypasses.

The level of direct impact will be dependent on the alignment of the dualling and proximity to children and young people living or attending schools along the route. More detailed assessment is required at the design stage to understand the extent of these impacts and to recommend effective mitigation.

Overall, this option is expected to have a **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 |
|---|---|
| + | + |

The provision of A96 Full Dualling between Hardmuir and Craibstone could improve access to places of employment and education increasing opportunities for those from socio-economically disadvantaged groups.

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 the absence of viable alternatives for travel, some low-income households may have no alternative to car ownership despite financial constraints. However, there could be benefits through a reduction in journey times and an improvement in the reliability of journey times for these drivers, providing more economical and efficient journeys.

There are also opportunities for safety improvements to benefit socio-economically disadvantaged groups as evidence shows that people from deprived areas are more likely to be injured or killed as road users[xxxvi]. Therefore, improved safety of the trunk road network through overtaking opportunities and reduced traffic flows in bypassed towns could benefit those living in deprived areas. However, 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.

Traffic modelling forecasts predict that traffic would divert away from the existing A96 Trunk Road, particularly through Elgin and Keith, as a result of the proposed scheme in both the 'With Policy' and 'Without Policy' scenarios. This provides the potential for a reduction in inequalities of health in disadvantaged and deprived communities through improved air quality at a local level.

The construction works associated with A96 Full Dualling could result in job opportunities for local communities including those from socio-economically disadvantaged groups.

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

# References

[i] 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/

[ii] Transport Scotland, Scotland's Road Safety Framework to 2030, 2021, https://www.transport.gov.scot/news/scotland-s-road-safety-framework-to-2030/

[iii] National Transport Strategy: Protecting Our Climate and Improving Our Lives, Transport Scotland, 2020, https://www.transport.gov.scot/media/47052/national-transport-strategy.pdf

[iv] Transport Scotland, Reported Road Casualties Scotland table 5(b), 2019, https://www.transport.gov.scot/media/49474/reported-road-casualties-scotland-2019-publication-pdf-version.pdf

[v] Transport Scotland, A96 Dualling Hardmuir to Fochabers scheme - DMRB Stage 2 Scheme Assessment Report, 2018, https://www.transport.gov.scot/publication/dmrb-stage-2-assessment-report-hardmuir-to-fochabers-a96-dualling/

[vi] Transport Scotland, A96 Dualling East of Huntly to Aberdeen scheme - DMRB Stage 2 Scheme Assessment Report, 2020, https://www.transport.gov.scot/publication/dmrb-stage-2-assessment-report-east-of-huntly-to-aberdeen-a96-dualling/

[vii] Jacobs AECOM, A96 Corridor Review Case for Change, 2022, https://www.transport.gov.scot/publication/initial-appraisal-case-for-change-december-2022-a96-corridor-review/

[viii] Active Travel Framework, Transport Scotland, 2020, https://www.transport.gov.scot/active-travel/active-travel-framework/

[ix] Transport Scotland, Bus Partnership Fund, https://www.transport.gov.scot/public-transport/buses/bus-partnership-fund/

[x] Scottish Government, City Region Deals, 2014-2020, https://www.gov.scot/policies/cities-regions/city-region-deals/

[xi] Transport Scotland, Cycling Framework for Active Travel - A plan for everyday cycling, 2023, https://www.transport.gov.scot/publication/cycling-framework-for-active-travel-a-plan-for-everyday-cycling/

[xii] Transport Scotland, Infrastructure Investment Plan for Scotland 2021-22 to 2025-26, 2021, https://www.gov.scot/publications/national-mission-local-impact-infrastructure-investment-plan-scotland-2021-22-2025-26/

[xiii] Transport Scotland, National Transport Strategy: Protecting Our Climate and Improving Our Lives, 2020, https://www.transport.gov.scot/media/47052/national-transport-strategy.pdf

[xiv] Scottish Government, National Planning Framework 4, 2023, https://www.gov.scot/publications/national-planning-framework-4/

[xv] Scottish Government, Regional Growth Deals, https://www.gov.scot/policies/cities-regions/regional-growth-deals/

[xvi] Scottish Government, Scotland's National Strategy for Economic Transformation, 2022, https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/

[xvii] Transport Scotland, Scotland's Road Safety Framework to 2030, 2021, https://www.transport.gov.scot/news/scotland-s-road-safety-framework-to-2030/

[xviii] Transport Scotland, Strategic Road Safety Plan, 2016, https://www.transport.gov.scot/media/10323/ts_strategic_road_safety_plan_2016_digital_sep_2016.pdf

[xix] Place Principle: Introduction, Scottish Government, 2019, https://www.gov.scot/publications/place-principle-introduction/

[xx] Transport Scotland, LATIS, A96 Corridor Road Assignment Model (CRAM)

[xxi] Transport Scotland, LATIS, A96 Corridor Road Assignment Model (CRAM)

[xxii] Jacobs AECOM, A96 Corridor Review Case for Change, https://www.transport.gov.scot/publication/initial-appraisal-case-for-change-december-2022-a96-corridor-review/

[xxiii] Jacobs AECOM, A96 Corridor Review Case for Change, 2022, https://www.transport.gov.scot/publication/initial-appraisal-case-for-change-december-2022-a96-corridor-review/

[xxiv] AECOM, A96 Outline Business Case Technical Note TN11 – Valuation of Freight on the A96 based on Specialised Goods Vehicle Count, 2017

[xxv] Jacobs AECOM, Accident Rates in A96 Corridor Review Case for Change, 2022, https://www.transport.gov.scot/publication/initial-appraisal-case-for-change-december-2022-a96-corridor-review/

[xxvi] Transport Scotland, Scottish Trunk Road Infrastructure Project Evaluation: 3YA Evaluation Report for A68(T) Dalkeith Bypass, 2017, https://www.transport.gov.scot/media/39328/a68-t-dalkeith-bypass-3ya-report-06-feb-2017.pdf

[xxvii] Scottish Government (Environmental Quality Division), Scotland's Noise, 2022, https://noise.environment.gov.scot/noisemap/

[xxviii] Adaptation Scotland (2021) Climate Projections for Scotland, https://www.adaptationscotland.org.uk/application/files/1316/3956/5418/LOW_RES_4656_Climate_Projections_report_SINGLE_PAGE_DEC21.pdf,

[xxix] Transport Scotland, Scottish Trunk Road Infrastructure Project Evaluation: 3YA Evaluation Report for A68(T) Dalkeith Bypass, 2017, https://www.transport.gov.scot/media/39328/a68-t-dalkeith-bypass-3ya-report-06-feb-2017.pdf

[xxx] Highlands and Islands Enterprise, 2019-2022 Strategy, https://www.hie.co.uk/media/5483/hieplusstrategyplus2019-2022plus-update.pdf

[xxxi] AECOM, A96 Outline Business Case Technical Note TN11 – Valuation of Freight on the A96 based on Specialised Goods Vehicle Count, 2017

[xxxii] Transport Scotland, A96 Dualling Hardmuir to Fochabers scheme - DMRB Stage 2 Scheme Assessment Report, 2018, https://www.transport.gov.scot/publication/dmrb-stage-2-assessment-report-hardmuir-to-fochabers-a96-dualling/

[xxxiii] Transport Scotland, A96 Dualling East of Huntly to Aberdeen scheme - DMRB Stage 2 Scheme Assessment Report, 2020, https://www.transport.gov.scot/publication/dmrb-stage-2-assessment-report-east-of-huntly-to-aberdeen-a96-dualling/

[xxxiv] Jacobs AECOM, A96 Corridor Review Stakeholder & Public Engagement Consultation Report, 2022, https://www.transport.gov.scot/publication/stakeholder-public-engagement-consultation-report-december-2022-a96-corridor-review/

[xxxv] 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/

[xxxvi] Ward, H., Lyons, R., Christie, N., Thoreau, R., & Macey, S. (2007). Fatal injuries to car occupants: analysis of health and population data. London: Department for Transport; in Government Office for Science (2019) Inequalities in Mobility and Access in the UK Transport System, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784685/future_of_mobility_access.pdf


ELGIN
FORRES
NAIRN
A96
INVERNESS
A96
KEITH
HUNTLY
INVERURIE
A96
ABERDEEN