

Draft Edinburgh and South East Region Appraisal Summary Table

A draft Appraisal Summary Table (AST) has been developed for each of the eleven STPR Regions alongside the National AST. The ASTs are set out to provide:

- Regional/National Context, Problems and Opportunities - drawing on data presented in the Initial Appraisal: Case for Change reports¹ this summarises geographic, social, economic, environmental and transport matters in the region as well as the identified problems and opportunities. In line with STAG, appraisals are expected to explore location-specific problems and opportunities. Local problems and opportunities have been considered and presented to gain a full understanding of the regional and national issues, however some options to address these may not be within the scope of this strategic study.
- Package description – this presents the groupings (interventions) that were included in the detailed appraisal for the region.
- Fit with Policy – provides a summary of how well the appraised packages fit with key national policies including the second National Transport Strategy, Climate Change Plan Update, the draft National Planning Framework 4 and relevant regional policies.
- Transport Planning Objectives (TPO) Assessment - An assessment against each of the five TPOs is provided with quantified metrics provided, where appropriate, under the low traffic / emissions demand and high traffic / emissions demand scenarios (further information about these scenarios is provided in Appendix F). A seven point scoring scale is adopted for each TPO which is:
 - + + + = 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 package against each of the STAG criteria is presented with quantified metrics provided where appropriate.
- Deliverability – commentary is provided on the assessment of the package in terms of its feasibility, affordability and public acceptability. Note that due to the nature of a number of the STPR2 interventions, and this presenting the Strategic Case it has not been possible to derive cost estimates on a regional basis. However, broad capital spending ranges have been estimated over the period 2022 to 2042 at a national level.

¹ <https://www.transport.gov.scot/our-approach/strategy/strategic-transport-projects-review-2/>
<https://www.transport.gov.scot/publication/borders-transport-corridors-pre-appraisal/>
<https://www.transport.gov.scot/publication/north-east-region-option-sifting-update-report-feb-2021-stpr2/>
<https://www.transport.gov.scot/publication/south-west-scotland-region-option-sifting-update-feb-2021-stpr2/>

- Other Criteria Assessment – a summary of the performance of the packages against the Strategic Environment Assessment (SEA), the Equalities Impact Assessment (EqIA), Island Communities Impact Assessment (ICIA), Fairer Scotland Duty Act (FSDA), Child Rights and Wellbeing Impact Assessment (CRWIA) is provided. The seven-point scale is adopted in these assessments where appropriate.

The assessments contained in the ASTs assume all interventions in the packages are progressed. However, it should be noted that not all interventions taken through the detailed appraisal will form a recommendation within STPR2.

The National AST is broadly similar to the regional documents, but presents the performance of the full package of interventions taken through detailed appraisal, relying on a combination of quantitative and qualitative information.

Summary of Assumptions

Quantification of the costs and benefits in the packages has been provided through a modelling exercise. Further information has been provided in Appendix F to Technical Report on the modelling scenarios that have informed the assessment of the STPR2 interventions. A summary of key assumptions is provided here:

- Population projections are based on the 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 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)
- The economic results are presented, as is standard within appraisal as discounted values in 2010 prices. As a simple rule of thumb, presenting the numbers in current (2022) prices and discounted to 2022 only would cause the values to approximately double.

Modelling Tools

For the purposes of modelling accessibility by public transport, NaPTAT (National Public Transport Accessibility Tool) has been used. This allows an assessment of journey time to be compared between with and without STPR package.

Due to the strategic and national nature of STPR2, the national Transport Model for Scotland (TMfS) has been used. TMfS is a national scale mode with a focus on inter-urban trips. As such, whilst TMfS provides a suitable level of robustness at this stage of the appraisal for the larger infrastructure based interventions, there are limitations associated with modelling of smaller/discrete

interventions and those that are more urban in nature. As the recommended interventions are developed through the business case process, more detailed modelling will be undertaken using regional and / or local models as appropriate.

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

| Metric | Comment/Consideration |
|-----------------------------|---|
| 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 urban areas due to the more limited representation of urban transport systems and a degree of insensitivity to mode shift mode in TMfS. |
| Change in veh-km 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 and the relative coarseness of the model zone system. |
| Lost Time due to congestion | Likely to underestimate the benefits associated with interventions that would reduce roadspace due to the under-representation of the local/secondary road network in TMfS |
| 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. Likely to overestimate the dis-benefits to car-based trips due to the under-representation of the junctions and local/secondary road network in TMfS. |

Draft Detailed Appraisal Summary Table

Region: Edinburgh and South East Scotland

Regional Context

Geographic Context: Edinburgh and South East Scotland (ESES) region (herein referred to as 'the Region') is a geographically diverse region that includes a major city, urban areas and accessible and remote rural communities. The Region comprises the six local authorities of The City of Edinburgh, East Lothian, South Fife, Midlothian, West Lothian and Scottish Borders, and is a mix of urban and rural settlements and areas.

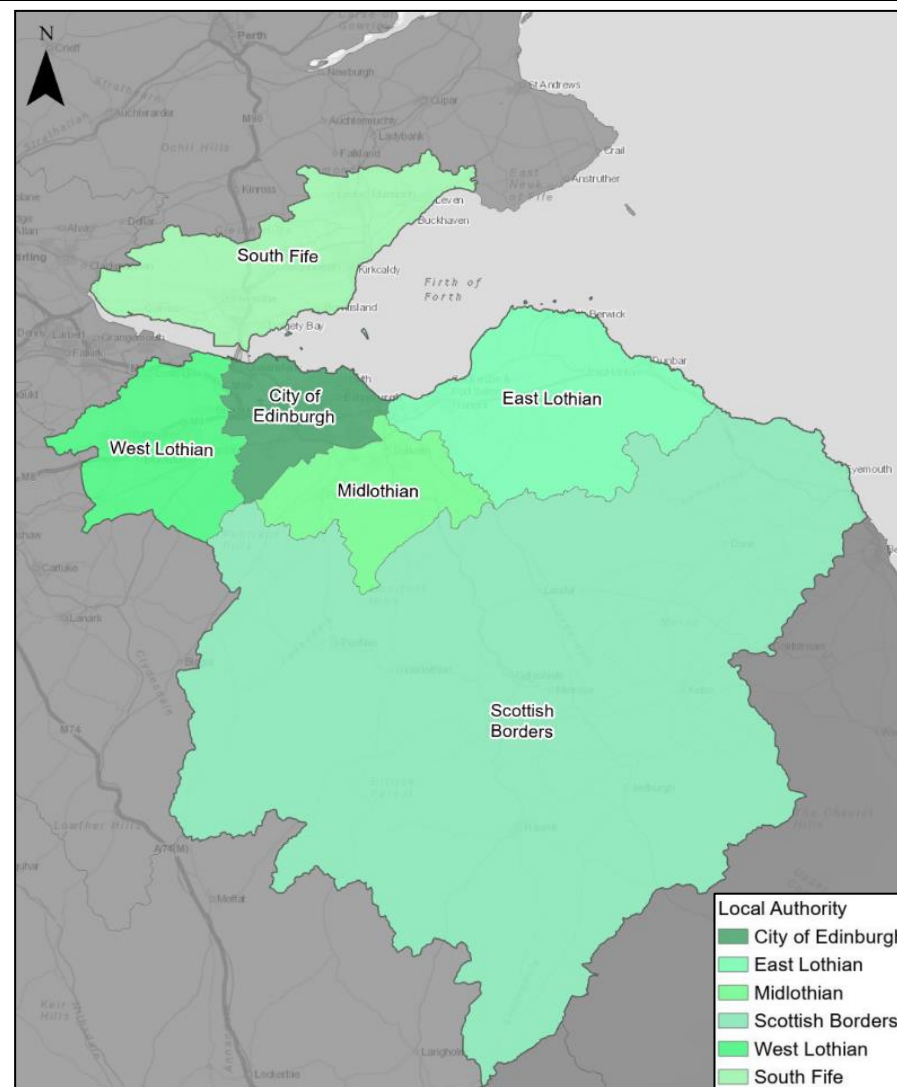
The Scottish Government Urban Rural Six-Fold Classification identifies the Region's population residing in each category as follows: Large Urban Areas (41%), Other Urban Areas (38%), Accessible Small Towns (9%), Remote Small Towns (2%), Accessible Rural (10%) and Remote Rural (1%). This demonstrates that whilst the Region is dominated by the large densely populated urban area of the City of Edinburgh and the immediate adjacent areas, there are also areas of geographical remoteness and of a rural nature within the Scottish Borders and East Lothian. A number of 'accessible small towns' are spread across the Region, for example Burntisland, South Queensferry and Haddington.

The Region has an extensive transport network, including active travel, rail, tram, bus and road networks, park and ride facilities, as well as Edinburgh International Airport and a major port at Leith.

Social Context: The total population in the Region was 1,320,974 in 2019 with Edinburgh, the most populous settlement, accounting for 37.5% of the Region's population. In terms of age structure (2019 mid-year estimate), 17.1% of residents are children (15 and under), 64.7% of working age (aged 16 to 64), and 18.3% aged 65 and over.

Between 2012 and 2016, the population of ESES grew by 3.1% which is the highest rate of growth when compared to the other 3 city regions of the North East (+2.4%), Tay Cities (+1.0%) and Glasgow City Region (+1.6%).

Performance against socio-economic indicators varies across the Region. Overall, the proportion of households with access to a car is slightly higher in the Region compared to Scotland as a whole (69.8% in ESES compared to 69.5% nationally, based on 2011 Census). For the Region,



excluding the City of Edinburgh, 75.7% of households have access to at least 1 car (31.8% have access to 2 or more cars). In the City of Edinburgh this decreases to 60.1% of households having access to at least 1 car. Compared the national benchmark (i.e. average from across Scotland as a whole), the Region has the highest proportion of households with no car (39.9%).

Within the Region, 13.7% (82) of the total number of 2020 SIMD data zones within the City of Edinburgh (597) are ranked as being in the 20% most deprived data zones within Scotland which is lower than Glasgow (48.3%) and Dundee (36.7%) but higher than Aberdeen (7.8%). Similarly, across the wider region (excluding the City of Edinburgh) 15.6% of the data zones are ranked as being in the 20% most deprived within Scotland.

Economic Context: In 2018, the Region accounted for £42.3bn (29.7%) of Scotland's total GVA of £142bn and increased by 24.4% between 2013 and 2018, 9 percentage point higher growth than the national benchmark increase.

Economic activity refers to an estimation of whether usual residents aged 16 to 64 were in work or actively looking for work. Within the Region, 78.2% of the working age population (aged 16 to 64 years) in 2019 were economically active, which is 0.6 percentage points higher than the national benchmark. In the City of Edinburgh this is slightly lower at 77.4%, which is 1.8 percentage points higher than the Scottish city benchmark (average of the 4 larger cities of Aberdeen, Dundee, Edinburgh and Glasgow). The Region did though contribute to just over a fifth (21.2%) of Scotland's total benefits claimants in 2019 and of all benefit claimants nationally 5.6% were in the City of Edinburgh which is low when compared to Glasgow (16.4%), but higher than Dundee (4.3%) and Aberdeen (3.3%).

Over a third (37.3%) of the economically active population in the Region is employed within the City of Edinburgh and 52.8% of jobs are located in the city. Regional employment forecasts show that of the Region's estimated 47,100 new jobs generated between 2019 and 2029, 85.6% (40,300 jobs) will be located in the City of Edinburgh, East Lothian or Midlothian, 10.2% (4,800 jobs) in West Lothian, 2.3% (1,100 jobs) in Fife and 2.1% (1,000 jobs) in the Scottish Borders.

Environmental Context: Within the Region, there are many areas classified as environmentally sensitive, with varying levels of statutory protection. Environmental designations within the Region include biodiversity, landscape and heritage designations which fall either wholly or partly within the Region. In addition, the Region contains a significant number of historic assets, including 2 designated World Heritage Sites (the Old and New Towns of Edinburgh and Forth Bridge between North and South Queensferry) and 20,682 Category A-C Listed buildings. The City of Edinburgh has a rich cultural heritage, with a significant number of listed assets and a high concentration of listed buildings in the city centre.

The greatest modelled noise levels are located around the city of Edinburgh, primarily associated with Edinburgh Airport and the trunk road and motorway network in the vicinity of the City of Edinburgh (including the M9, M8, A720 and A1). There are also relatively high noise levels associated with key local roads that connect to the trunk road and motorway network, as well as the Edinburgh to Glasgow via Falkirk High and the East Coast Main Line rail routes. Settlements at greatest risk of coastal flooding are located along the Firth of Forth and include Cramond, Queensferry and Dunbar with inland areas prone to river flooding predominantly located in the catchments of the River Ore, River Almond, Water of Leith and River Esk. Within the Region there are 11 Air Quality Management Areas (AQMAs), including 6 areas within the boundaries of the City of Edinburgh, 3 in West Lothian and 1 each in East Lothian and South Fife. In 2018, the Region's percentage of total emissions from transport was lower than the Scotland National average (39%) at 30%.

Problems:

Public Transport Connectivity: the configuration of the bus and rail networks in the Region are primarily radial in nature with a concentration on Edinburgh city centre, the main population centre and key trip attractors (employment, education and services) in the City of Edinburgh with a lack of orbital routes connecting destinations out with the city centre. Travel between the city and the surrounding local authorities, and between the surrounding local authorities themselves can be more difficult for some areas as a result and can involve interchange leading to longer and less attractive public transport journeys by bus in particular. The lack of integration between different services and modes of public transport as well as with active travel can also impact on travel choices.

Public Transport Accessibility: existing public transport provision means some areas of the Region are less well served and experience lower levels of accessibility to access employment, education, healthcare and other services by bus, rail or tram.

Relative Cost of Public Transport: there is a perception that the cost of using public transport in ESES is high when compared to the private car. The availability of integrated ticketing between modes and operators is also a factor to the cost of travel across different areas of the Region as well as between ESES and other parts of Scotland.

Active Travel: the active travel network in the Region varies in quality and type, with 40.1% of the National Cycle Network routes categorised as off-road and the remaining 59.9% making use of on-road facilities. A lower active travel mode share relative to the proportion of travel to work journeys under 5km across the Region (2011 Census) suggests that the existing network is not attractive and is a point raised by stakeholders; either routes are not developed to the point where their quality means they attract trips by walking/cycling or they are not providing direct, safe connections between trip origins and destinations.

Operational Constraints: travel to work trips within ESES are mostly made by private car (2011 Census) and focused on the key routes to/from the City of Edinburgh and other employment centres (e.g. West Edinburgh, Edinburgh BioQuarter, Livingston, Dunfermline and Glenrothes) leading to operational issues at certain locations (e.g. A720, M8 and M9 approaches at Newbridge, M8 at Claylands and Hermiston Gate and the M90 approaches to the Queensferry Crossing). Similarly, prior to Covid-19 demand on the rail network focused to/from the City of Edinburgh creating pressure and impacting on service punctuality and network resilience.

Socio-Economic: higher than average property prices and rent in the City of Edinburgh is leading to lower income (and also middle income) households locating further away. This, combined with the concentration of major trip attractors in the City of Edinburgh, results in more trip making and longer journeys. With variable public transport accessibility and connectivity throughout the region, public transport options can be limited and lead to a greater dependence on travel by private car and a greater proportion of household income spent on transport with an associated increased risk of transport poverty.

Health and Environment: all 6 constituent local authorities in the Region have declared a Climate Emergency and committed to reduce their carbon emissions. There are also 11 AQMAs in the Region, with over half located in the City of Edinburgh and a number in proximity to and on local corridors that connect with the trunk road and motorway network. With transport a key contributor to emissions and the predominance of travel by

private car across the Region, there is an increasing need to increase the number of trips by active travel and public transport supported by alternative travel choices for more of the Region's population to help reduce emissions that can impact on health and well-being.

Freight: operational constraints on the trunk road and motorway network are contributed to by freight movements and also directly impact on the movement of goods within the Region, including access to rail, air and port freight terminals. Freight activities are also a contributing factor to CO₂ emissions and local air quality emissions, particularly road freight which has seen an increasing trend in tonne-kilometres moved within the Region as well as vehicle numbers over the past 10 years (especially LGVs). The availability of services, including lorry parking and welfare facilities, is relatively sparse with 3 lorry parking facilities located in the ESES Region. In contrast, there are 11 lorry park facilities located along the M74/A74(M) route alone.

Opportunities:

Active Travel potential supported by policy that places walking, cycling and wheeling at the top of the sustainable travel and investment hierarchies providing a very strong platform to increase the mode share of active travel in the Region.

Public Transport provision, building on existing priority such as the Forth Bridge public transport corridor, quick wins supported by the Bus Partnership Fund and West Edinburgh Transport Improvement Programme City Region Deal project, would encourage mode shift to more sustainable modes.

Tourism is expected to be one of the sectors in the Region to experience strong growth and, together with the range of attractions on offer, sustainable travel choices provide the opportunity to further enhance the Region's attractiveness as a destination.

Changing Legislation such as the introduction of a Low Emission Zone in the City of Edinburgh area, complemented by improving the public transport and active travel provision supports mode shift to sustainable modes.

Digital Connectivity and Technology offers potential for different ways to work, connect and inform people of transport choices, alongside advances in lower emission fuels.

Improved Transport Integration including integration between transport and land use planning, provides the opportunity to increase the mode share of sustainable transport across the Region.

Detailed Appraisal Package Description

Package Groupings: Refer to Annex A for further grouping details

| | | |
|------------------|---|---|
| Active Travel | <ul style="list-style-type: none"> Improving Access to Bikes Connected Neighbourhoods Cycle Parking Hubs Active Freeways Connecting Towns by Active Travel | <ul style="list-style-type: none"> Increasing Active Travel to School Long-Distance Active Travel Network Village – Town Active Travel Connections Improving Active Travel on Trunk Roads through Communities |
| Bus | <ul style="list-style-type: none"> Bus Priority Infrastructure Decarbonisation of the Bus Network | <ul style="list-style-type: none"> Investment in Demand Responsive Transport (DRT) / Community Transport |
| Rail | <ul style="list-style-type: none"> Inter-7-Cities Strategic Corridor Enhancements High Speed Rail Development Decarbonisation of the Rail Network | <ul style="list-style-type: none"> Corridor Enhancements: Central Belt |
| Interchange | <ul style="list-style-type: none"> Mobility Hubs and Multi-modal Interchanges Regional Passenger Facilities/Station Enhancements | |
| Mass Transit | <ul style="list-style-type: none"> Edinburgh and South East Mass Transit Options | |
| Behaviour Change | <ul style="list-style-type: none"> Behaviour Change Initiatives | <ul style="list-style-type: none"> Expansion of 20mph limits and zones |
| Freight | <ul style="list-style-type: none"> Decarbonisation of Freight Deliveries Rail Freight Enhancements Freight Consolidation and Last-Mile Logistics Railway Freight Terminals and Facilities | <ul style="list-style-type: none"> Freight Incentives and Freight Best Practice Freight reliability, resilience and efficiency improvements |
| Resilience | <ul style="list-style-type: none"> Trunk Road and Motorway Network Renewal for Reliability, Resilience and Safety Improve Access to Major Ports and Airports Trunk Road and Motorway Climate Change Adaptation and Resilience | |
| Technology | <ul style="list-style-type: none"> Incident Management Software (IMS) Upgrade Integrated Public Transport Ticketing | <ul style="list-style-type: none"> Intelligent Transport Systems (ITS) Roadside Infrastructure Control Centre of the Future |
| Road | <ul style="list-style-type: none"> Changing Road User Behaviour A National Action Plan to support the transition to Low Emission/Ultra Low Emission/Electric Vehicles South East Trunk Road and Motorway Network Improvements North East Trunk Road and Motorway Network Improvements | |

Fit with Established Policy

Package Performance Against NTS2 Priorities and Outcomes:

| | | |
|---|---|----------------|
| Reduces inequalities | Reduces inequalities | Major Positive |
| | Will be easy to use for all | Major Positive |
| | Will be affordable for all | Minor Positive |
| Takes climate action | Will help deliver our net-zero target | Major Positive |
| | Will adapt to the effects of climate change | Minor Positive |
| | Will promote greener, cleaner choices | Major Positive |
| Helps deliver inclusive economic growth | Will get people and goods where they need to get to | Major Positive |
| | Will be reliable, efficient and high quality | Major Positive |
| | Will use beneficial innovation | Major Positive |
| Improves our Health and Wellbeing | Will be safe and secure for all | Major Positive |
| | Will enable us to make healthy travel choices | Major Positive |
| | Will help make our communities great places to live | Major Positive |

The interventions included within this package support a wide range of national, regional and local policy documents in which transport improvements play a key role in both the enabling and delivery of outcomes.

Key policies supported include the Programme for Government, Infrastructure Investment Plan, NTS2, the Climate Change Plan Update 2018 to 2032, SEStran Regional Transport Strategy, City of Edinburgh Local Transport Strategy, SEStran Strategic Development Plan, and SEStran Freight Study and Action Plan, as well as non-transport-specific plans, such as Accelerating Growth, Edinburgh and South East Scotland City Region Deal.

The Scottish Government's fourth National Planning Framework (NPF4) identifies a spatial strategy that will be used to guide future development through identified action areas. The Region corresponds to two action areas identified by NPF4: central urban transformation and southern sustainability. The priorities for these action areas include decarbonising transport and connectivity, tackling congestion, support sustainable development and to create a low carbon network of town in order to help safeguard the natural systems on which our economy depends.

Interventions included in this package will also develop and improve connections to the draft NPF4 national developments at Edinburgh Waterfront, Edinburgh Urban Mass / Rapid Transit Network and cross border high speed rail with England.

The policy framework for the Region has a strong emphasis on improved connectivity, addressing inequality, and addressing barriers to employment, to help deliver well-connected, sustainable communities, promote modal shift away from private car, increase walking and cycling opportunities, and provide an attractive place for visitors and for businesses to invest and grow. Therefore, the package closely aligns with established policy directives.

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | | Performance Summary |
|---|---|--|--|--|
| | Metric | Low | High | |
| A sustainable strategic transport system that contributes significantly to the Scottish Government's net-zero emissions target. | Change in CO _{2eq} (non-traded and traded emissions from regional road transport inc. grid emissions from charging light-duty vehicles). | <p>27,700 tonnes decrease of 0.5% in 2030</p> <p>21,600 tonnes decrease of 2.8% in 2045.</p> <p>1.3m tonnes reduction, of which - 1.1m were traded, for the 60-year appraisal period from 2030 to 2089.</p> <p>The net economic benefits for the 60-year appraisal period in 2010 prices and values would be in the range £10m to £25m for the Low Travel Demand scenario.</p> | <p>31,300 tonnes decrease of 0.4% in 2030</p> <p>65,300 tonnes decrease of 1.3% in 2045.</p> <p>3.7m tonnes reduction, of which 452,000 were traded, for the 60-year appraisal period from 2030 to 2089.</p> <p>The net economic benefits for the 60-year appraisal period in 2010 prices and values would be in the range £100m to £250m for the High Travel Demand scenario.</p> | <p>CO_{2eq} is treated as a nationally important pollutant so it has not been appraised for individual regions.</p> <p>National CO_{2eq} emissions decrease year-on-year. This is due to decreasing vehicle exhaust (non-traded) emissions as numbers of internal combustion engine vehicles reduces. This is reflected in increasing traded grid emissions from charging increased numbers of battery-electric vehicles, and specifically in the Low Travel Demand scenario.</p> <p>The electricity grid is expected to be using predominantly renewable sources in the future and so increasing adoption of electric vehicles and a shift from direct, non-traded, emission to traded grid-based technology (i.e. battery) will support reducing CO_{2eq} emissions.</p> <p>Across both scenarios the interventions would reduce emissions of CO_{2eq}. There are predicted to be significantly higher overall emissions in the High Travel Demand scenario, either with, or without, the package. There is a relatively smaller overall reduction of emissions due to the interventions in the Low Travel Demand scenario due to the lower overall emissions.</p> <p>The economic impacts associated with air quality were assessed using the Department for Environment Food & Rural Affairs (DEFRA)</p> |
| | Change in mode share by active travel for all journeys | <p>Potential increase in walking from 18% mode share to 24% mode share (6 percentage points)</p> <p>Potential increase in cycling from 1.3% mode share to 20% (over 18 percentage points)</p> <p>The package will increase the proportions of journeys undertaken by active modes. If all the active travel and behaviour change interventions were fully implemented in</p> | | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | | Performance Summary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|-------------------|--|------|---------------------|---------|--|-----------------|--------------------|-------------------|-----|-----|--------------|-----|-----|--------------------------------|-----|-----|------------|-----|-----|--------------|-----|-----|-------------------------|------------|------------|-----------------|---------|--|-----------------|--------------------|-------------------|------|-----|--------------|------|-----|--------------------------------|------|-----|------------|------|-----|--------------|------|-----|-------------------------|-------------|------------|---|
| | Metric | Low | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <p>every relevant location in the Region, rates of walking and cycling are anticipated to increase as shown below.</p> <table border="1"> <thead> <tr> <th rowspan="2">Local Authority</th> <th colspan="2">Walking</th> </tr> <tr> <th>Without Package</th> <th>With STPR2 Package</th> </tr> </thead> <tbody> <tr> <td>City of Edinburgh</td> <td>24%</td> <td>30%</td> </tr> <tr> <td>East Lothian</td> <td>19%</td> <td>25%</td> </tr> <tr> <td>Fife (that part in the Region)</td> <td>18%</td> <td>22%</td> </tr> <tr> <td>Midlothian</td> <td>17%</td> <td>23%</td> </tr> <tr> <td>West Lothian</td> <td>18%</td> <td>23%</td> </tr> <tr> <td>Regional Average</td> <td>18%</td> <td>24%</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Local Authority</th> <th colspan="2">Cycling</th> </tr> <tr> <th>Without Package</th> <th>With STPR2 Package</th> </tr> </thead> <tbody> <tr> <td>City of Edinburgh</td> <td>2.9%</td> <td>25%</td> </tr> <tr> <td>East Lothian</td> <td>0.9%</td> <td>19%</td> </tr> <tr> <td>Fife (that part in the Region)</td> <td>0.6%</td> <td>18%</td> </tr> <tr> <td>Midlothian</td> <td>0.9%</td> <td>18%</td> </tr> <tr> <td>West Lothian</td> <td>0.3%</td> <td>19%</td> </tr> <tr> <td>Regional Average</td> <td>1.3%</td> <td>20%</td> </tr> </tbody> </table> <p>Note that the cycling and walking growth forecasts have been developed independently. Growth in use of one active mode is likely to abstract at least some trips from the other, but this effect is not accounted for within these forecasts.</p> | | Local Authority | Walking | | Without Package | With STPR2 Package | City of Edinburgh | 24% | 30% | East Lothian | 19% | 25% | Fife (that part in the Region) | 18% | 22% | Midlothian | 17% | 23% | West Lothian | 18% | 23% | Regional Average | 18% | 24% | Local Authority | Cycling | | Without Package | With STPR2 Package | City of Edinburgh | 2.9% | 25% | East Lothian | 0.9% | 19% | Fife (that part in the Region) | 0.6% | 18% | Midlothian | 0.9% | 18% | West Lothian | 0.3% | 19% | Regional Average | 1.3% | 20% | <p>Damage Costs Appraisal Toolkit. The larger benefit from the High Travel Demand scenario is due to the greater overall emissions with, or without, the package, although the proportional change is lower.</p> <p>The package will overall contribute to the net-zero emissions target by:</p> <ul style="list-style-type: none"> • Enabling more passenger journeys to be made by active modes and public transport • Decarbonising some public transport operations • Facilitating uptake of electric vehicles • Enabling some road freight to switch to rail or other low carbon modes |
| Local Authority | Walking | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Without Package | With STPR2 Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City of Edinburgh | 24% | 30% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| East Lothian | 19% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fife (that part in the Region) | 18% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Midlothian | 17% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Lothian | 18% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Regional Average | 18% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Local Authority | Cycling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Without Package | With STPR2 Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City of Edinburgh | 2.9% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| East Lothian | 0.9% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fife (that part in the Region) | 0.6% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Midlothian | 0.9% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Lothian | 0.3% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Regional Average | 1.3% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | | Performance Summary |
|--|--|---|---|--|
| | Metric | Low | High | |
| | Change in motorised veh-kms travelled | Reduction of approximately 145 million motorised veh km 3% decrease (see Annex C) | Reduction of approximately 220 million motorised veh km 3% decrease (see Annex C) | |
| | Scoring | +++ | +++ | |
| An inclusive strategic transport system that improves the affordability and accessibility of public transport. | Change in transport poverty risk | Although the STPR2 interventions don't impact on the direct costs of travel (e.g. fares, fuel price), the package of interventions would see a small reduction in transport poverty, due to the overall improvements in public transport availability. | | <p>The package will improve the inclusiveness of the transport system by:</p> <ul style="list-style-type: none"> Improving conditions for people walking, wheeling and cycling, the most inclusive transport modes, with particular benefits for people most often excluded (including children, older and disabled people, and people on low incomes) Improving inclusive accessibility to public transport stops/stations Seeking to promote public transport use and reduce operating costs, hence enhancing network sustainability Provision of an ESES Mass Transit system will greatly enhance accessibility and connectivity in the region providing a high level of for cross-boundary travel. |
| | Change in Accessibility - population catchments increases to key services by journey time by public transport. | <ul style="list-style-type: none"> Major Hospital Accessibility: The largest change in population accessibility of all the destination types considered was for major hospitals, with around an additional 25,900 of the population in the Region now able to access a major hospital within 30 minutes by public transport compared to the without package. This represents a 5% improvement compared to that in the without package assessment. Higher Education Accessibility: Population accessibility of higher education sites by public transport also observed improved accessibility, with around an additional 7,000 people able to access the nearest site for public transport journeys in under 30 minutes compared to the without package assessment. Large Food Stores – population of approximately 3,900 now able to access a large food store by public | | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | Performance Summary |
|---|--|--|---------------------|
| | Metric | Low | |
| | | transport in under 30 minutes compared to that in the without package. (See Annex B for mapping) | |
| | Scoring | ++ | ++ |
| A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing. | Change in mode share by active travel for all journeys | <p>Potential increase in walking from 18% mode share to 24% mode share (6 percentage points)</p> <p>Potential increase in cycling from 1.3% mode share to 20% (over 18 percentage points)</p> <p>These forecasts are subject to all active travel interventions being delivered in all relevant areas of the Region.</p> | |
| | Potential for Change in 'Place' | <p>The package will tend to improve the quality of the Region's places by improving local accessibility and reducing the adverse impacts of road traffic.</p> <p>Particular benefits may arise in neighbourhoods where active travel allows easier walking and cycling conditions in more pleasant and secure conditions. Development around interchanges and stops associated with the ESES Mass Transit system should be considered to ensure the transport provision enhances the sense of place.</p> | |
| | Change in Health Benefits | <p>The health benefits of increased rates of walking and cycling as a result of the package have been quantified using the WHO's HEAT tool. This shows the following benefits by Local Authority:</p> | |
| | | <p>The package will improve communities as places, supporting health and wellbeing by enabling more journeys to be made by active and sustainable modes, and by improving road safety. This will:</p> <ul style="list-style-type: none"> • Improve many people's physical health and mental wellbeing, with particular benefits for people most often excluded (including children, older and disabled people, and people on low incomes) • Reduce the adverse impacts of car use on communities and health (including reduced air pollution, noise, accident risk and perceived road danger) <p>The analysis shows that through improved uptake of walking and cycling, there would be a forecast reduction of 60 premature deaths per annum due to the health benefits arising from active travel.</p> | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | | Performance Summary | | | | | | | | | | | | | | |
|---|---|--|--|--------------------------------------|-------------------|------|--------------|-----|--------------------------------|------|------------|-----|--------------|-----|-----------------------|-------------|--|--|
| | Metric | Low | High | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Local Authority</th> <th>Premature deaths prevented per annum</th> </tr> </thead> <tbody> <tr> <td>City of Edinburgh</td> <td>30.1</td> </tr> <tr> <td>East Lothian</td> <td>5.4</td> </tr> <tr> <td>Fife (that part in the Region)</td> <td>11.2</td> </tr> <tr> <td>Midlothian</td> <td>4.1</td> </tr> <tr> <td>West Lothian</td> <td>8.9</td> </tr> <tr> <td>Regional total</td> <td>59.6</td> </tr> </tbody> </table> | Local Authority | Premature deaths prevented per annum | City of Edinburgh | 30.1 | East Lothian | 5.4 | Fife (that part in the Region) | 11.2 | Midlothian | 4.1 | West Lothian | 8.9 | Regional total | 59.6 | | |
| Local Authority | Premature deaths prevented per annum | | | | | | | | | | | | | | | | | |
| City of Edinburgh | 30.1 | | | | | | | | | | | | | | | | | |
| East Lothian | 5.4 | | | | | | | | | | | | | | | | | |
| Fife (that part in the Region) | 11.2 | | | | | | | | | | | | | | | | | |
| Midlothian | 4.1 | | | | | | | | | | | | | | | | | |
| West Lothian | 8.9 | | | | | | | | | | | | | | | | | |
| Regional total | 59.6 | | | | | | | | | | | | | | | | | |
| | Scoring | +++ | +++ | | | | | | | | | | | | | | | |
| An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland. | Increased labour catchment by sustainable travel (PT/Active Travel) | <ul style="list-style-type: none"> • Access to local employment, which represents improved accessibility of employment located in the surrounding area an origin within a 40 minute public transport journey time, showed improvements in the City of Edinburgh (an average increase of up to 5,000 jobs) and Midlothian (an average increase of up to 2,000 jobs). • Access to regional employment (employment located in Edinburgh) improved in all local authorities within the Region. The modelling shows that an additional 5,000 jobs on average can be accessed within an hours' journey time by public transport as an average across the local authorities, with Midlothian and West Lothian having the highest average increase of approximately 11,000 and 12,000 additional jobs respectively. • Areas categorised as rural and remote geographies (determined using the Scottish Government Urban Rural Classification) observed little change in journey | <p>The package will contribute to sustainable inclusive growth in Scotland by:</p> <ul style="list-style-type: none"> • Improving integration of transport modes (especially between active modes and public transport) and between transport and major developments • Improving journey time reliability • Enabling more people to travel by improving the accessibility and affordability of the transport system, so enabling more people to access local retail and services, and opportunities for employment and education/training <p>Encouraging modal shift to sustainable modes and reducing the volume of vehicles on network is anticipated to improve journey time reliability for all vehicles.</p> | | | | | | | | | | | | | | | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | | Performance Summary |
|--|---|---|---|--|
| | Metric | Low | High | |
| | | times to the nearest employment site within the region by public transport. (See Annex B for mapping) | | Whilst the change in lost time metric shows a reduction in performance it is considered that is largely due to modelling limitations as noted in the introduction to the appraisal summary table. |
| | Change in lost time due to congestion (for business/commercial transport) | Increase of approximately 1.3 million hours (12%) | Increase of approximately 1.3 million hours (7%) | |
| | Scoring | ++ | ++ | |
| A reliable and resilient strategic transport system that is safe and secure for users. | Change in accidents (PIA and 'damage-only') | Accident reduction related to motorised veh km is forecast to be 3% | Accident reduction related to motorised veh km is forecast to be 3% | <p>The package will improve reliability, safety, and personal security on the transport system by:</p> <ul style="list-style-type: none"> Improving journey time reliability, including through reduced likelihood of significant network disruptions. Reducing the risk of road accidents at locations on the trunk road and motorway network. Reducing perceived risks to road safety and to personal security, so enabling more people (particularly children, women and older people) to travel independently. <p>Whilst the change in lost time metric shows a reduction in performance it is considered that is</p> |
| | | The number of accidents involving motorised vehicles is anticipated to reduce following the introduction of the interventions within this package. However, it is anticipated that this package would increase walking and cycling journeys and the number of accidents involving these modes is therefore anticipated to increase due to the overall increase in trip making by these modes, although each individual journey is anticipated be significantly safer. | | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | Performance Summary |
|------------|---|---|---|
| | Metric | Low | |
| | Percentage accident change for Targeted Infrastructure Improvements over 60 years, using default accident rate (PIA only) | Sections of Realignment/Widening - reduction of 23% to 59% | largely due to modelling limitations as noted in the introduction to the appraisal summary table. |
| | | Sections of Overtaking Opportunities -reduction of 35% to 73% | |
| | | Locations of Junction Improvements – change of 42% (increase) to 64% (decrease) | |
| | Change in lost time due to congestion | Increase of approximately 1.3 million hours (6%) | Increase of approximately 0.3 million hours (0.4%) |
| | Journey Time Reliability/Availability of alternatives (modes/routes) | <p>This package is forecast to reduce overall motorised vehicle kilometres by 3% under both the Low and High growth scenarios respectively, reducing the risk of accidents occurring whilst improving resilience by reducing the number of road closures associated with accidents.</p> <p>The bus priority measures and the ESES Mass Transit would provide greater reliability for public transport journeys, particularly during peak periods when congestion can significantly impact bus services.</p> <p>Targeted improvements on the trunk road and motorway network where safety is a problem is forecast to reduce accidents and the associated reduction in road closures from such incidents would also help improve reliability. Improvements in terms of renewals and climate change</p> | |

STPR2 Transport Planning Objectives (TPOs) Assessment

| STPR2 TPOs | Appraisal Metrics | | Performance Summary |
|------------|-------------------|---|---------------------|
| | Metric | Low | |
| | | <p>adaptation to protect the operation of the trunk road and motorway network would also positively impact on the reliability of the network.</p> <p>Encouraging modal shift to sustainable modes and reducing the volume of vehicles on the network is anticipated to improve journey time reliability, as indicated by reducing time lost to congestion of 1.3 million and 0.3 million hours in the Low and High Travel Demand scenarios respectively</p> | |
| | Scoring | ++ | ++ |

STAG Assessment

| STAG Criteria | Sub Criteria | Scoring | | Performance Summary |
|---|---------------------------|---|------|--|
| | | Low | High | |
| Environment | Air Quality | + | + | <p>Total emissions of NO_x were predicted to decrease in future in both the High and Low scenario.</p> <p>Total emissions of NO_x were predicted to be effectively zero in 2045 in the Low scenario, and 2053 in the High scenario either with, or without, the proposed package.</p> <p>Total emissions of PM were predicted to increase in future predominantly due to non-exhaust emissions from road, tyre and brake-wear.</p> |
| | Noise and Vibration | + | + | <p>However, the package will reduce harmful emissions slightly. Over the 60-year appraisal period there was a predicted 100% reduction in NO_x, 1.4% reduction in PM₁₀ and PM_{2.5} in the Low scenario, and a 2.9% reduction in PM₁₀ and a 3% reduction in PM_{2.5} in the High scenario.</p> <p>The anticipated modal shift is also expected to reduce levels of noise and vibration associated with the transport network. There is potential for a localised negative effect on noise and vibration due to the construction and operation of specific interventions, including ESES Mass Transit and High Speed Rail, however the magnitude of effect will depend on the design and location of the interventions.</p> |
| | Biodiversity and Habitats | Please refer to SEA performance summary text in the 'Other Criteria Assessment' section below. Please note, the scoring has been based on the SEA methodology for scoring, which has been agreed with the SEA Consultation Authorities. | | |
| | Geology and Soils | | | |
| Land Use (including Agriculture and Forestry) | | | | |

| | | | | |
|----------------------------------|---|--|---|---|
| | Water, Drainage and Flooding | | | |
| | Air Quality | | | |
| | Historic Environment | | | |
| | Landscape | | | |
| Climate Change | Greenhouse Gas Emissions | + | + | CO ₂ eq is treated as a nationally important pollutant so it has not been appraised for individual regions. |
| | Vulnerability to Effects of Climate Change | ++ | ++ | National CO ₂ eq emissions decrease year-on year, with decreasing direct (non-traded) emissions and increasing traded grid emissions with increased adoption of battery-electric vehicles, and specifically in the Low Travel Demand scenario. |
| | Potential to Adapt to Effects of Climate Change | ++ | ++ | Across both scenario's the package will reduce emissions of CO ₂ eq, although the change is greater in the High scenario due to overall higher emissions. |
| Health, Safety & Wellbeing | Change in accidents (PIA and 'damage- only') | Accident reduction related to motorised veh km 3% | Accident reduction related to motorised veh km 3% | The package will reduce the number and severity of accidents through targeted infrastructure improvements and by encouraging modal shift away from private car, resulting in reduced accident risk due to reduced conflicts. Mode shift to sustainable modes will, by improving natural surveillance, |

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| <p>Percentage accident change for Targeted Infrastructure Improvements over 60 years, using default accident rate (PIA only)</p> | <p>Sections of Realignment/Widening - reduction of 23% to 59%</p> <p>Sections of Overtaking Opportunities -reduction of 35% to 73%</p> <p>Locations of Junction Improvements – change of 42% (increase) to 64% (decrease)</p> | <p>make paths, stops, stations and services less isolated and this, accompanied by improved quality of facilities will improve perceived security.</p> <p>The package will improve communities as places, supporting health and wellbeing, by encouraging modal shift away from private car and towards active travel. This will improve placemaking through reduced noise and better air quality due to reduced traffic, and reduced accident risk. It will also benefit many people’s physical health and mental wellbeing.</p> |
| <p>Security</p> | <p>The package will, by increasing the number of people travelling actively and by public transport, tend to improve natural surveillance and will, through improvements to lighting and urban realm, tend to reduce the number of locations at which security is a concern. New public transport services proposed would be delivered under modern standards with integrated security systems (such as the incorporation of CCTV on vehicles)</p> | |
| <p>Health Outcomes</p> | <p>The package will, by increasing rates of active travel and hence physical activity, improve both health and wellbeing outcomes. The estimated value of health benefits to the Region’s population, appraised over a 60-year period, is in the range £1bn to £5bn.</p> <p>The package will also tend, by encouraging car journeys to switch to less polluting modes, to improve local air quality, and hence health</p> | |

| | | | |
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| | | outcomes. This would be of particular benefit in those areas with identified AQMAs. | |
| | Access to Health and Wellbeing Infrastructure | <p>The largest change in population accessibility of all the destination types considered was for major hospitals, whereby around an additional 25,000 people in the Region are able to access their nearest site under a journey time of 30 minutes by public transport compared to the without package. This represents a 9% improvement for the City of Edinburgh compared to that in the without package assessment.</p> <p>The remaining population increase is found in South Fife and Scottish Borders (approximately 1,100 and 600 additional people, respectively).</p> | |
| | Visual Amenity | <p>The package should have a positive impact on visual amenity through improvements to walking and cycling infrastructure and an improved sense of 'place'. ESES Mass Transit would require to be designed to enhance the sense of place and not act as a visual barrier.</p> <p>Care would be required in the development of rail freight facilities to ensure they did not detrimentally impact nearby communities.</p> | |

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|---|--|---|--|--|
| <p>Economy (<i>Transport Economic Efficiency</i>)</p> | <p>User Benefits (2010 prices and values for a 60 year appraisal period)</p> | <p>Present Value of Benefits (PVB) of approximately £250m to £500m</p> <p>Accidents Present Value of Benefits (PVB) of approximately £25m to £50m</p> | <p>Present Value of Benefits (PVB) of approximately -£50m to -£25m</p> <p>Accidents Present Value of Benefits (PVB) of approximately £50m to £100m</p> | <p>The majority of economic benefits that accrue are as a result of the sustainable transport interventions in the Region's package to enable and encourage mode shift to public transport modes. The Mass Transit intervention, in conjunction with the Bus Priority Infrastructure, Interchange and Rail interventions are the main contributors to the public transport user benefits total in the Low scenario. The remainder of the benefits are largely due to the increase in public transport operator revenue as a result of the increased patronage levels arising from the mode shift away from car.</p> <p>However, the reallocation of road space that would likely be required in order to implement the mass transit intervention would result in an increased level of disbenefit to road users.</p> <p>The level of public transport user benefits remains very similar in the High motorised demand scenario. The significantly higher levels of car-based demand in the High scenario would however result in a larger disbenefit to road users.</p> <p>In terms of accident savings, the level of benefits would be larger in the High scenario. The benefits arise as a result of the reduction in road-based vehicle-kilometres travelled in the region, with the mass transit, active travel and public transport interventions encouraging a mode shift away from private car. As the absolute reduction in vehicle-kilometres as a result of the interventions is larger in the High scenario, this directly equates to the increase in the value of accident benefits.</p> <p>Note that due to the nature of a number of the STPR2 interventions it has not been possible to derive indicative cost estimates on a regional basis.</p> |
| <p>Equality & Accessibility</p> | <p>Public Transport Network Coverage</p> | <p>The Region is expected to see major benefits from public transport coverage through the provision of ESES Mass Transit. This will extend Public Transport to areas not currently served or not well served and provide connections to key services including hospitals and</p> | <p>The package will improve accessibility to public transport by improving the coverage of the network well as walking and cycling routes to access the network. This will provide particular benefits for people often excluded from transport, including older and young people, women, disabled people, and people living in more deprived communities.</p> | |

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| | | higher education as well as better connections for employment. | <p>The package will also improve affordability by reducing car ownership, and situations where taxi is the only viable mode for people without access to a car.</p> <p>By encouraging modal shift to more sustainable modes, the package has the potential to increase demand for public transport and improve commercial performance/viability.</p> |
| | Active Travel Network Coverage | Improvements to the Region's active travel network, both within and between settlements, mean that many more people will have convenient, high-quality and safe infrastructure for walking, wheeling and cycling journeys. | |
| | Comparative Access by People Group | Improvements to active travel networks and public transport will provide positive impacts on groups who are less likely to have access to a car and more likely rely on public transport, walking and cycling for their journeys. This includes women, children and young people, older people, some ethnic minority groups and disabled people. | |
| | Comparative Access by Geographic Location | <p>Journey Time / Population based increase to key services, including population accessibility and journey times, and access to jobs found locally and regionally (Annex B – NaPTAT mapping)</p> <p>For deprived areas in the region, around an additional 1,000 people can now access a major hospital site under 30 minutes by public transport compared to that in the Without Package.</p> | |

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| | | <p>For access to employment, the average number of additional jobs that could be accessed by public transport from data zones in the Region increased by approximately 1,600 locally and 4,000 to employment located in the Region for areas found within the 20% most deprived in Scotland.</p> <p>East Lothian, Midlothian and West Lothian local authorities observed the largest average increase in the number of regional jobs accessible by public transport within 60 minutes from deprived areas (a change ranging from approximately 12,100 to 13,300 additional jobs).</p> <p>The regional package shows a relatively limited increase for the number of regional jobs accessible from deprived areas in South Fife within 60 minutes with an increase of approximately 1,600 jobs.</p> <p>City of Edinburgh is observed to have the most significant increase in the number of local jobs accessible (within a 40 minute public transport journey) from deprived locations, with an average increase of approximately 4,560 jobs.</p> | |
| | Affordability | Although the STPR2 interventions don't impact on the direct costs of travel (e.g. fares, fuel price), the package of interventions would see a | |

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| | | small reduction in transport poverty, due to the overall improvements to access and connectivity between modes. | |
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Deliverability

| Criterion | Summary Assessment |
|----------------------|---|
| Feasibility | <p>The package has been developed with feasibility considerations in mind. The package mostly makes use of existing, proven technology and would generally be expected to largely operate inside existing design standards. There will be further work required on the feasibility of larger infrastructure provision including ESES Mass transit and bus priority interventions (which will need consideration if multiple modes are competing for similar road space for example). Additionally, the historical and protected nature of Edinburgh City Centre, combined with the complex nature and number of utilities, may make the delivery of some types of transport system technology within the inner-city environment difficult. Overall, the package is expected to have a minor positive impact against this criterion.</p> |
| Affordability | <p>The package would require substantial capital and operational funding. Some aspects of the package may generate revenue, which could be used to offset some of these costs. However, whilst the funding is likely to be substantial, it has to be considered in the context of the scale of the interventions being delivered as well as the number of likely users. Overall, the package is expected to have a moderate negative impact against this criterion.</p> |
| Public Acceptability | <p>Public acceptability of the package is likely to be mixed. The package is expected to improve accessibility, connectivity, and choice and to make transport cleaner, more efficient and more attractive. However, there may be acceptability concerns in areas of congestion where road space reallocation or priority measures are proposed however the behavioural change elements of the package should also help to mitigate this. There may also be acceptability concerns where construction works are expected to cause disruption or require land-take. Overall, the package is expected to have a minor positive impact against this criterion.</p> |

| Criterion | Summary Assessment |
|-----------|---|
| SEA | <p>The package supports modal shift to more sustainable modes of transport. An enhanced rail network, improved access to ports and airports and the creation of mobility hubs/interchanges and ESES Mass Transit seeks to encourage modal shift, and, as a result, reduce levels of transport related air pollution and carbon emissions. The decarbonisation of the rail and bus network and freight deliveries will also support a reduction in greenhouse gas emissions and improvement in air quality.</p> <p>The package provides an opportunity to adapt the transport network to the predicted effects of climate change, with one intervention focused on this adaptation and promotes a more sustainable usage of the existing transport network</p> <p>Positive effects are anticipated on Population and Human Health due to an expected increase in sustainable access to essential services, increased travel choice and improved connectivity and planning for the future capacity of public transport. Active travel interventions will have positive outcomes for the SEA Population and Human Health topic - for example through expected improvements in air quality and increased uptake of physical exercise through walking, wheeling and cycling.</p> <p>Road interventions are anticipated to have positive effects on safety. Trunk road improvements which are focused on junction improvements, realignment / widening and overtaking opportunities are also not anticipated to have a notable impact on traffic volumes or mode share and subsequently transport-based emissions in the majority of locations. The construction and operation of these interventions may result in result in minor negative effects on population and human health with the potential for in an increase in noise and vibration during construction and operation. This is dependent on the location and design of individual schemes. There is also potential for a negative effect on material assets due to the use of natural resources.</p> <p>There is potential for negative environmental effects during construction and operation of the ESES Mass Transit, rail network enhancements and High Speed Rail interventions on the Population and Human Health (noise and vibration, public realm, safety), the Water Environment, Biodiversity, Soil, Historic Environment and Landscape and Visual Amenity. In addition, significant quantities of materials and construction related trips would be required. Depending on the source and type of materials/natural resources used, there is the potential for negative effects on Material Assets</p> <p>The Freight interventions are anticipated to result in minor negative effects on material assets as several interventions proposed involve enhancements to rail freight, terminals and facilities and therefore will require the use of natural resources.</p> <p>Where any new infrastructure is required this could result in negative effects on biodiversity, soil, landscape, water, historic environment and material assets however the magnitude of effect is uncertain at this stage and will be determined by the design (and physical footprint) of the interventions.</p> |
| EqIA | <p>The package will improve public transport, including through mass transit, and active travel accessibility to key destinations and services including employment, education, healthcare and shopping for people living in the area. This will have a major positive impact on certain protected characteristic groups who are less likely to have access to a car and more likely to depend on public transport and</p> |

| | |
|-------|---|
| | <p>active travel to make their journeys. This includes women, children and young people, older people, disabled people and people from certain ethnic minority groups.</p> <p>By encouraging modal shift to more sustainable modes, this package could also contribute to improving local air quality. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children, older people, disabled people and pregnant women.</p> <p>The package will reduce the severity of accidents through targeted infrastructure improvements and by encouraging modal shift away from private car, resulting in reduced accident risk due to reduced conflicts. Some protected characteristic groups are more likely to be involved in road accidents, for example, children as pedestrian casualties and young males involved as car drivers and as such would have positive impacts on these groups.</p> <p>Mode shift to sustainable modes will make paths, stops, stations and services less isolated and this, accompanied by improved quality of facilities will improve perceived security. This is likely to provide some benefit to those for whom security is of particular concern including women, the LGBTQ+ community and those from religious backgrounds most subject to hate crime.</p> <p>The package would therefore be anticipated to have a moderate positive impact overall on addressing this criterion.</p> |
| ICIA | <p>The package is not relevant to islands and would therefore have a negligible impact on addressing this criterion.. However, there could be a minor positive impact for those from island communities visiting the mainland for services through improved accessibility to key services within the region.</p> |
| CRWIA | <p>By encouraging modal shift to more sustainable modes, this package could contribute to improving local air quality. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children.</p> <p>The package will also improve public transport and active travel accessibility to higher education institutions and employment opportunities for young people living in the area.</p> <p>Safety is a key issue for children with regards to transport with child pedestrian casualties recorded in Scotland in 2019, accounting for 44% of all pedestrian casualties. In particular, children from deprived areas and certain ethnic groups are more at risk.</p> <p>The package will reduce the severity of accidents through targeted infrastructure improvements and, by encouraging modal shift away from private car, result in reduced accident risk due to reduced conflicts.</p> <p>The package would therefore be anticipated to have a minor positive impact on addressing this criterion.</p> |
| FSDA | <p>The Region is home some of the most deprived areas in Scotland. The package will improve public transport connectivity, including through new mass transit and High Speed Rail services, and can therefore support regeneration and economic development and reduce inequalities caused by socio-economic disadvantage by improving accessibility for deprived communities or communities</p> |

where transport options are limited. For access to employment, the average number of additional jobs that could be accessed by public transport from data zones in the Region is forecast to increase by approximately 1,500 locally and 4,000 to employment located in ESES for areas found within the 20% most deprived in Scotland as a result of the package.

The package would therefore be expected to have a moderate positive impact on addressing this criterion.

Annex A: Grouping Interventions

Edinburgh and South East Scotland

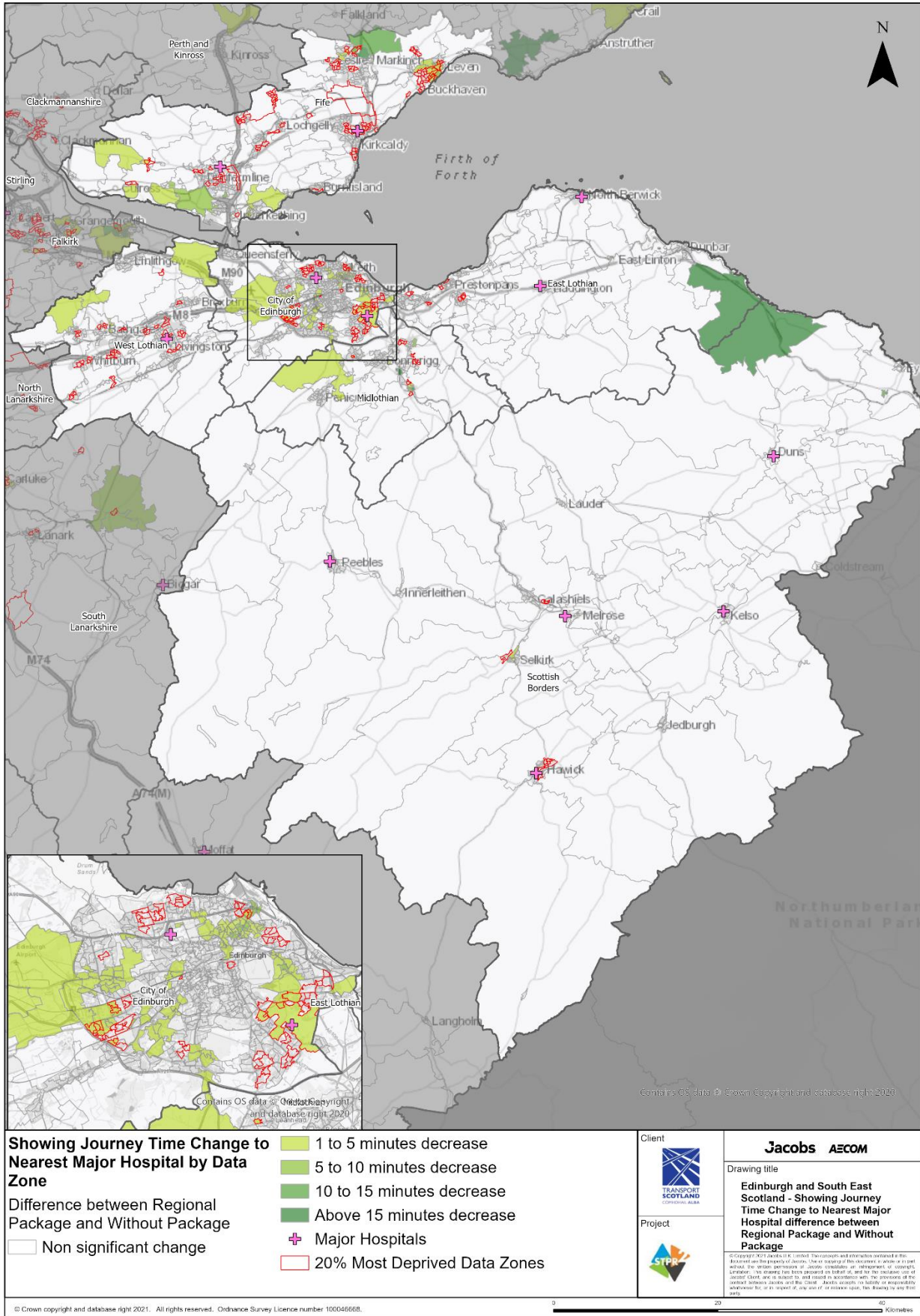
| Grouping Title | Regional Description |
|--|--|
| Improving Access to Bikes | Improve access to bikes through a multi-faceted programme of interventions to enable people to cycle (and also to support walking/wheeling as appropriate), and to give them confidence and skills to do so, such that they can make use of new or existing active travel infrastructure. Measures would be designed to meet local community needs, and address inequality. |
| Connected Neighbourhoods | The transport components of 20-minute neighbourhoods within towns and cities. This would include, for example, packages of improvements to footways, road crossings and urban realm, aiming to make walking, wheeling and cycling more attractive, inclusive and safe. |
| Improving Active Travel on Trunk Roads through Communities | Packages of measures to reduce the adverse effects of Trunk Road traffic on people walking, wheeling and cycling in those communities that have a Trunk Road passing through them (for example by reducing traffic speed and improving road crossing facilities). |
| Increasing Active Travel to School | Improved walking, wheeling and cycling routes to schools, accompanied by traffic speed reduction measures and School Streets schemes where appropriate, as well as behaviour change measures. The types of interventions would often be the same as those of Connected Neighbourhoods, but this intervention is distinct because not all schools are within/close to town/neighbourhood centres. |
| Active Freeways | High-quality segregated infrastructure for people walking, wheeling and cycling on radial routes and other high-demand corridors in Scotland's large urban areas, with priority given initially to the larger cities. |
| Village – Town Active Travel Connections | Active travel routes, segregated from busy roads but making use of quiet roads where appropriate, to connect smaller communities to nearby towns. |
| Long-Distance Active Travel Network | Interurban active travel routes, segregated from busy roads but making use of quiet roads where appropriate, connecting Scotland's cities and regions. The grouping would enhance the existing National Cycle Network to create a strategic national network of active travel routes mirroring in part the Trunk Road and rail networks. |
| Connecting Towns by Active Travel | Segregated active travel routes on interurban connections between adjacent towns in locations where demand is expected to be high. Complements the Long-Distance Network and existing links on the National Cycle Network. |
| Cycle Parking Hubs | High-quality, high-capacity cycle parking facilities in urban centres and at other key trip attractors to cater for increased demand in locations where Active Freeway networks are implemented (in Scotland's large urban areas, with priority given initially to the larger cities). |

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| Behaviour Change Initiatives | Delivery of activities which provide encouragement, enablement and incentivisation for more people to make use of active and sustainable transport choices more often. The initiatives would complement many other interventions being considered for implementation by STPR2 by raising awareness of, and encouraging individuals to use, the most appropriate transport choice for their journey. |
| Expansion of 20mph limits and zones | Provision of new or expanded 20mph schemes across Scotland on appropriate roads in cities, towns and villages. This would reduce traffic speeds and create safer environments which promote and encourage active travel choices. |
| Bus Priority Infrastructure | Bus priority to deliver faster and more reliable journey times for bus passengers, particularly within Scotland's cities and towns where congestion is highest. For ESES: - Support for local/regional schemes to improve bus priority, funding for initial appraisal in some areas is currently being provided through the Bus Partnership Fund |
| Decarbonisation of the Bus Network | Support the decarbonisation of the bus network through continuation of support funding schemes to introduce zero emission vehicles. |
| Demand Responsive Transport (DRT) / Community Transport | Consideration of whether the outcomes from pilot studies funded through Phase 1 of STPR2 would enable capital funding to be used to support Demand Responsive Transport/Community Transport in providing improved public transport connectivity in rural, island and peripheral areas. |
| Decarbonisation of Freight Deliveries | Interventions to support the decarbonisation of freight deliveries, including awareness and education activities, alternative fuel infrastructure and alternative fuel HGV trials. |
| Railway Freight Terminals and Facilities | Improving the modal shift of freight from road to rail primarily for trunk haul movements (but not exclusively) through a network of rail freight terminals and facilities to include direct connections to manufacturing facilities and warehousing. |
| Freight reliability, resilience and efficiency improvements | Freight reliability, resilience and efficiency improvements sets out options on how the road freight industry can be supported by implementing a variety of hard and soft measures that will reduce overall disruption, improving journey times and reducing costs for operators. |
| Freight Consolidation and Last-Mile Logistics | Introduction of measures to improve freight connectivity within urban and rural areas, such as improved access to cargo bikes, approaches to consolidation centres to aid 'last-mile' logistics and use of innovative technologies. |
| Freight Incentives and Freight Best Practice | Evaluation of future of Freight Facilities Grant and Mode Shift Revenue Support to encourage more efficient, environmentally friendly practices within the freight industry, including promoting sustainable transport options |
| Rail Freight Enhancements | Rail freight enhancements required as outlined as part of the Scottish Strategic Freight Network (SSFN) by the Scotland Freight Joint Board in 2017. This infrastructure enables more efficient mode shift from road to rail. |
| Improve Access to Major Ports and Airports | Introduction of a series of infrastructure and public transport service improvements that will provide better-quality surface connections to Scotland's major ports and airports by road, rail and public transport to allow Scotland to fully maximise the potential afforded by all its major ports and airports. |

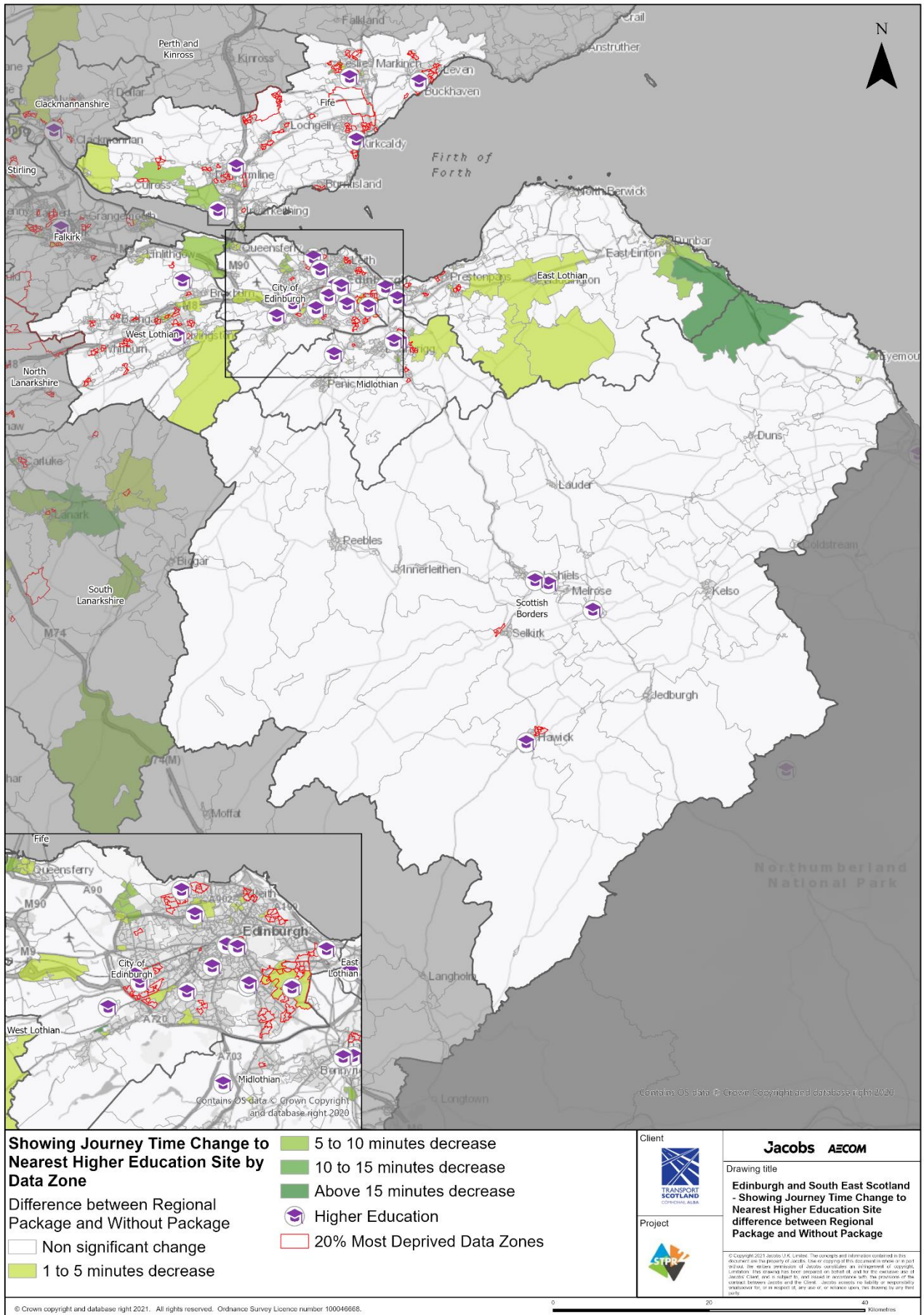
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| Trunk Road and Motorway Network Renewal for Reliability, Resilience and Safety | Renew and improve the resilience of the trunk road and motorway network. This would include preventative and programmed structural renewals of carriageways and network structures for consideration. |
| Trunk Road and Motorway Climate Change Adaptation and Resilience | This focuses on the areas on the trunk road and motorway network most at risk of disruption due to weather events. This would involve identification of priorities and measures to strengthen the resilience of Scotland's trunk road and motorway network to adapt to a changing climate and unplanned events. |
| Edinburgh and South East Scotland Mass Transit Options | The development of the mass transit public transport network within the Region with consideration of bus rapid transit and tram network extension. |
| Mobility Hubs and Multi-modal Interchanges | Construction of new or upgrades to existing mobility hubs, P&R sites and other multi-modal interchanges to improve interchanges between modes. |
| Regional Passenger Facilities/Station Enhancements | Building on the Phase 1 recommendation, improvements to public transport passenger facilities, focusing on bus stations seeking to improve passenger facilities both in terms of improved quality and in terms of improved accessibility for those with reduced mobility. |
| South East Trunk Road and Motorway Network Improvements | Improving trunk and motorway network road safety and strategic access to National Developments and Key Gateways. Road safety improvements will focus on route sections where calculated local KSI and/or PIA accident rates are over 2 times greater than the national rates for routes of a similar nature and standard, over the period 2015 to 2019. Improvements are anticipated to include widening / realignment on single carriageway sections, targeted overtaking opportunities and junction improvements, with a primary focus on helping to achieve the Scottish Government's Target of 'Vision Zero' by 2050. |
| North East Trunk Road and Motorway Network Improvements | Improving trunk and motorway network road safety and strategic access to National Developments and Key Gateways. Road safety improvements will focus on route sections where calculated local KSI and/or PIA accident rates are over 2 times greater than the national rates for routes of a similar nature and standard, over the period 2015 to 2019. Improvements are anticipated to include widening / realignment on single carriageway sections, targeted overtaking opportunities and junction improvements, with a primary focus on helping to achieve the Scottish Government's Target of 'Vision Zero' by 2050. |
| A National Action Plan to support the transition to Low Emission/Ultra Low Emission/Electric Vehicles | A National Action Plan to support the transition to Low Emission/Ultra Low Emission/Electric Vehicles: A National Action Plan to support the transition to Low Emission/Ultra Low Emission/Electric Vehicles to support the delivery of the Scottish Government's net zero targets through a multi-faceted programme of interventions. Measures include funding streams to support the delivery of infrastructure and innovative schemes to allow an equitable transition across the country. |

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| Changing Road User Behaviour | Implementation of speed enforcement technology and national road safety behaviour change campaigns, education and training initiatives to enable all road users to understand their road safety responsibilities, allowing them to improve their attitudes and behaviours for the safety of themselves and others. |
| Inter-7-Cities Strategic Corridor Enhancements | Provision of enhancements on the Inter-7 Cities strategic rail network seeking to improve connectivity by reducing rail journey times on these corridors. |
| Corridor Enhancements: Central Belt | Provision of a platform for rail network enhancements within the Central Belt and on cross-border routes. This covers the Central Belt of Scotland (Glasgow-Edinburgh), communities within a commutable distance of these city regions and the two main rail routes for cross-border travel to England (East and West Coast Mainlines). |
| Decarbonisation of the Rail Network | Delivery of a continued, rolling programme of rail decarbonisation, including consideration of batteries and alternative fuel sources, in line with Transport Scotland's Rail Services Decarbonisation Action Plan (DAP). |
| High Speed Rail | Investment in measures to complement the introduction of cross border High Speed Rail, including options which are required to facilitate Scotland to England rail journeys including HS2 services and options which will facilitate new HSR services within Scotland. |
| Incident Management Software (IMS) Upgrade | Incident Management System replacement to maintain the current level of service across the trunk road network. |
| Control Centre of the Future | This would involve investment enhancement of the capabilities of the Traffic Scotland National Control Centre, and how to plan for the future renewal and replacement of equipment, systems and services to maximise network operations. |
| Intelligent Transport Systems (ITS) Roadside Infrastructure | Investment in ITS which helps to ensure the availability, resilience, safety and quality of the transport infrastructure that is used to actively manage and control traffic during incidents and hazardous weather conditions. |
| Integrated Public Transport Ticketing | Integration of ticketing across public transport (bus, rail and ferries). |

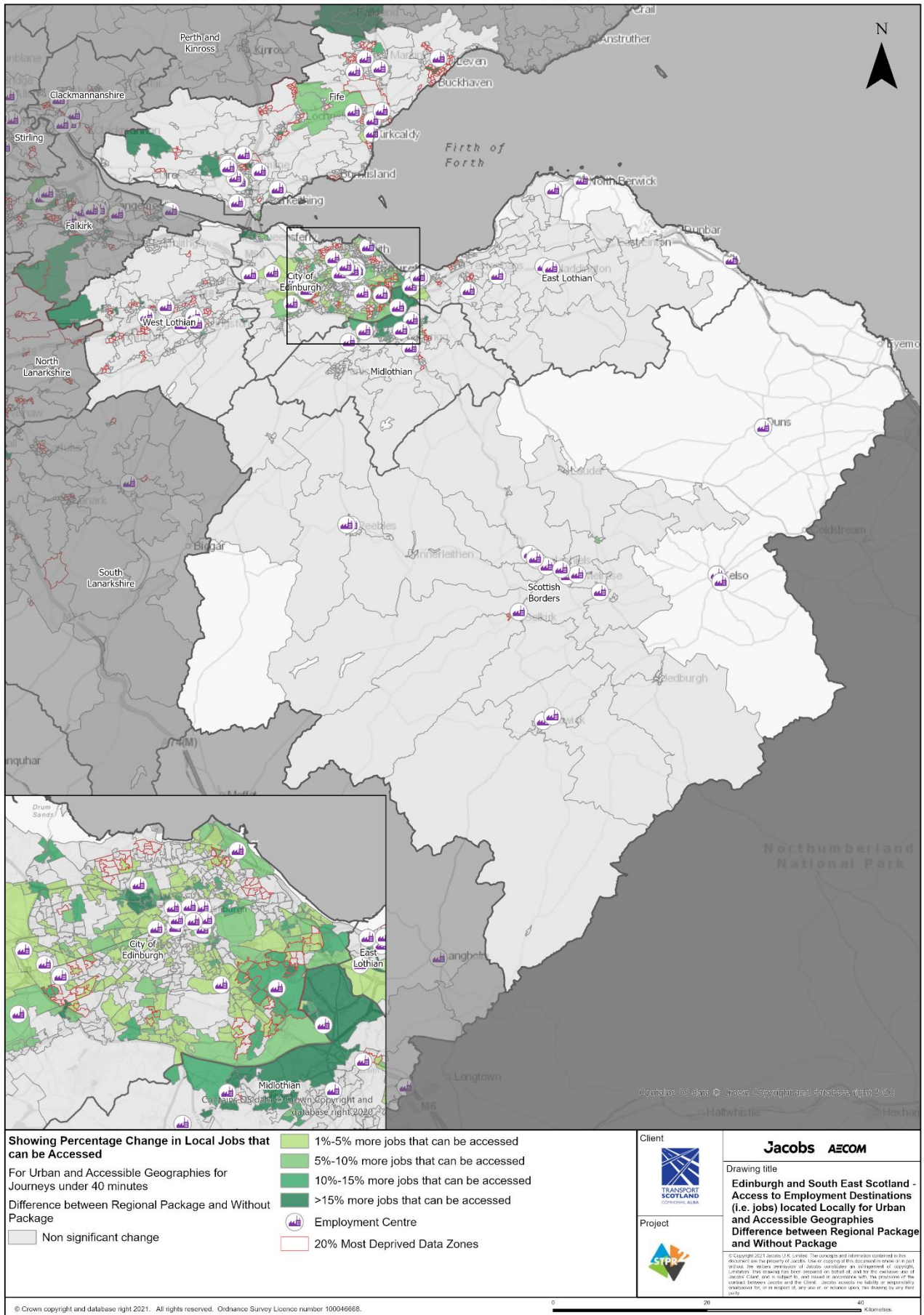
Annex B: NAPAT MAPPING



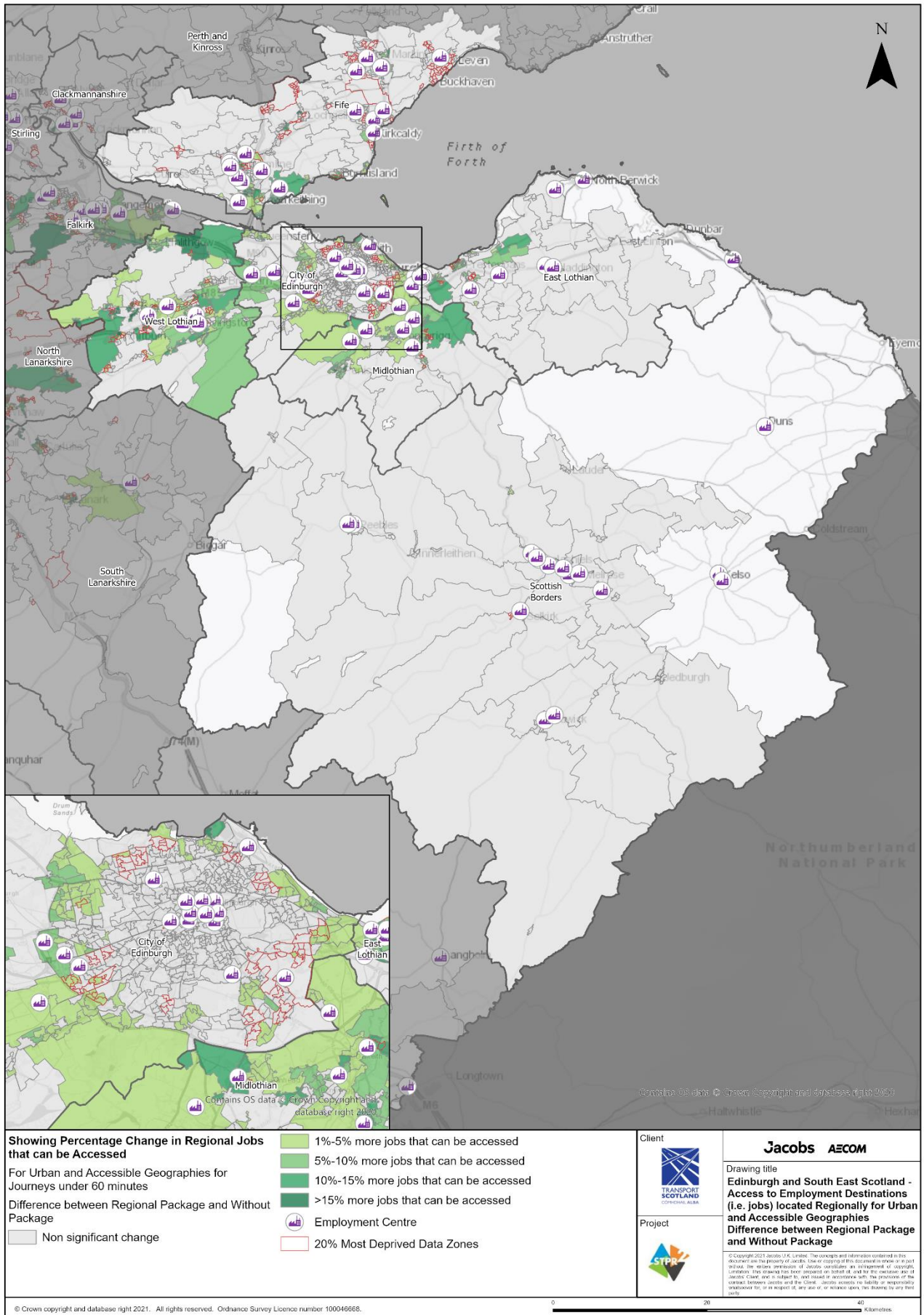
Edinburgh and South East Scotland Region - Showing Journey Time Change to Nearest Major Hospital Difference between Regional Package and Without Package



Edinburgh and South East Scotland Region - Showing Journey Time Change to Nearest Higher Education Site Difference between Regional Package and Without Package



Edinburgh and South East Scotland Region - Access to Employment Destinations (i.e. jobs) located Locally for Urban and Accessible Geographies



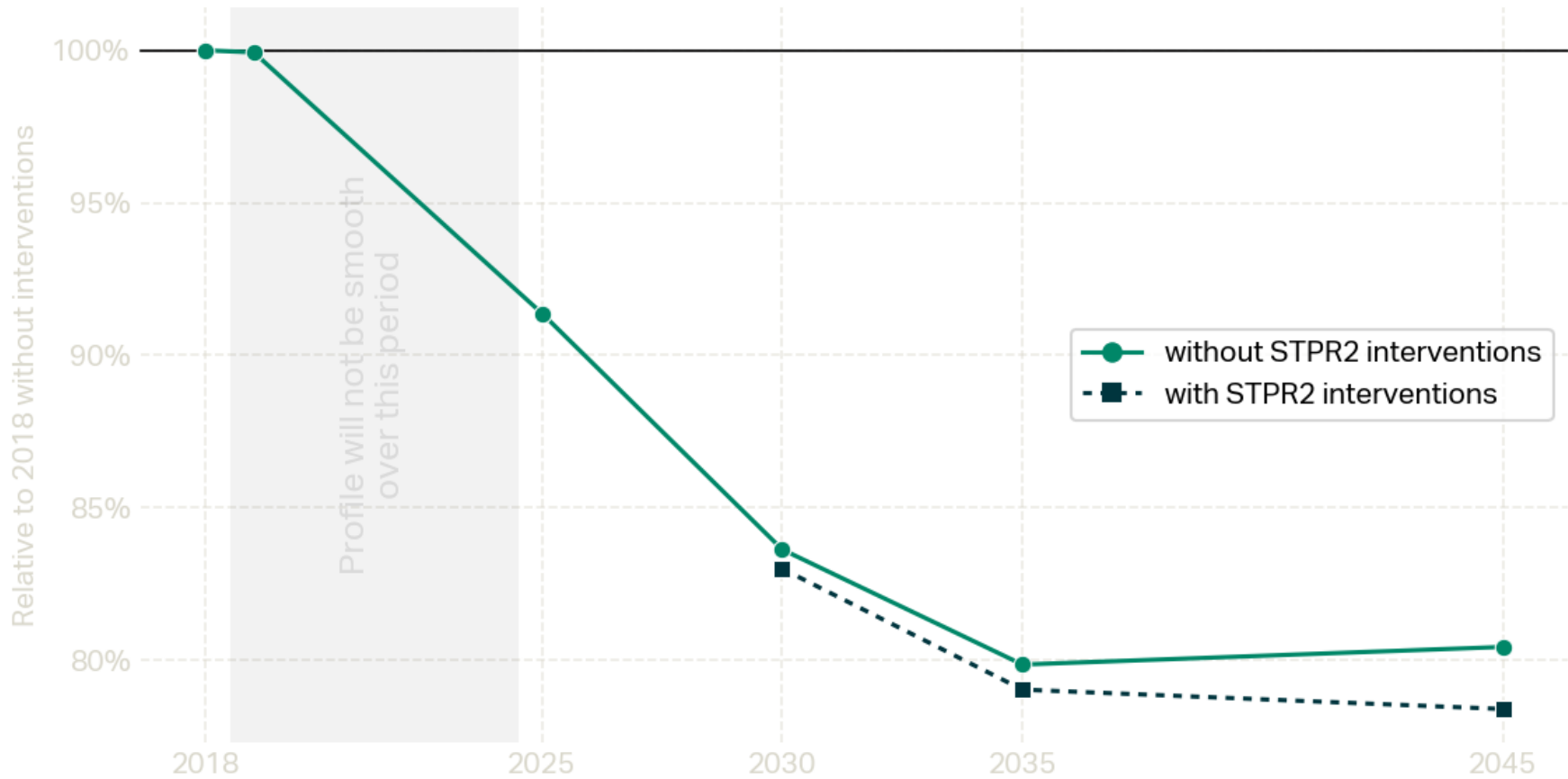
Edinburgh and South East Scotland Region - Access to Employment Destinations (i.e. jobs) located Regionally for Urban and Accessible Geographies

Annex C: Detailed Appraisal Outputs

Traffic Modelling Outputs

Edinburgh & South East Scotland Low Motorised Traffic / Emission Demand

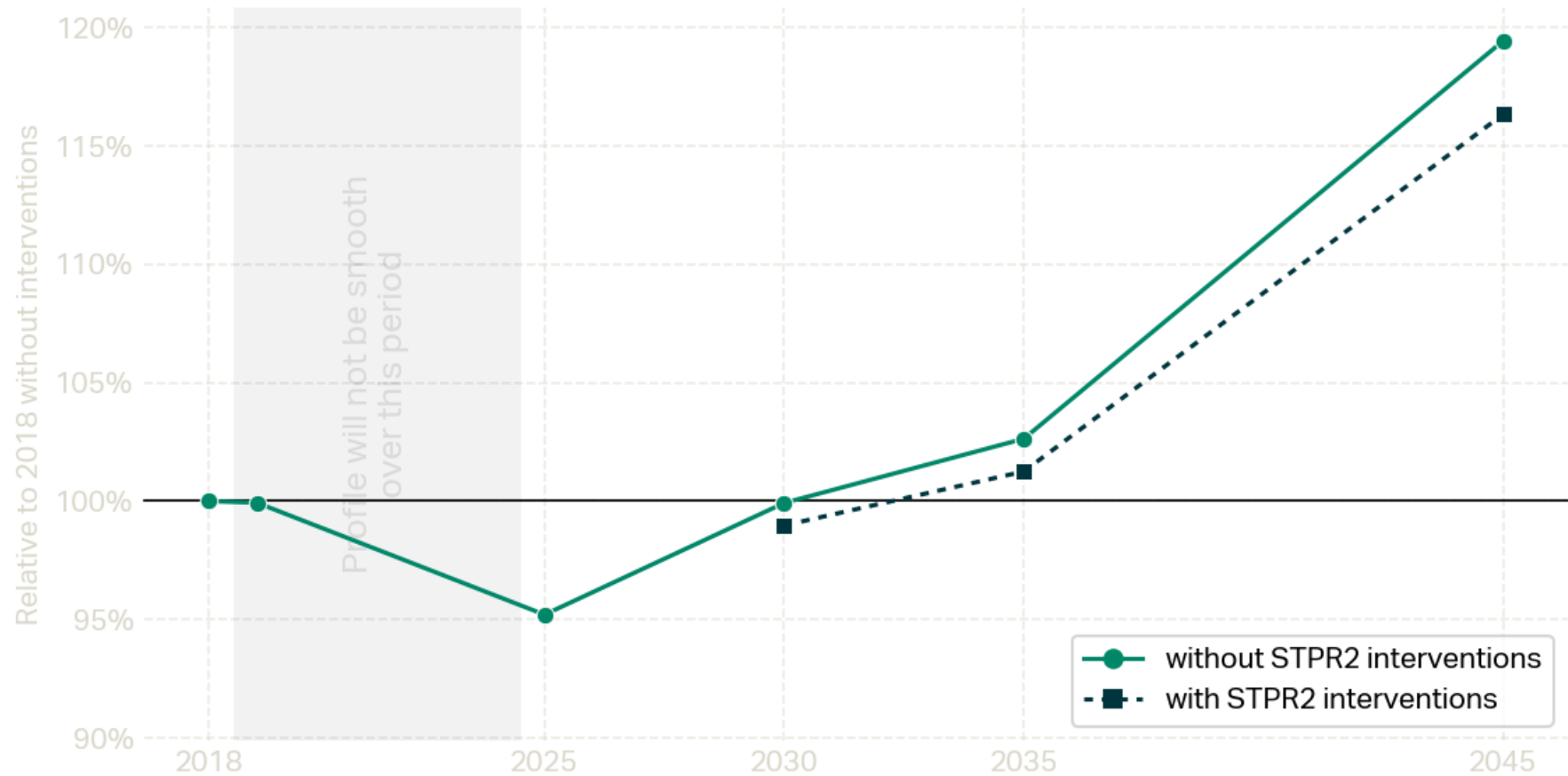
Modelled Annual Road Traffic (vehicle-kilometres)



Analysis undertaken January 2022. "Road" includes both Car and Goods Vehicle trips.

Edinburgh & South East Scotland High Motorised Traffic / Emission Demand

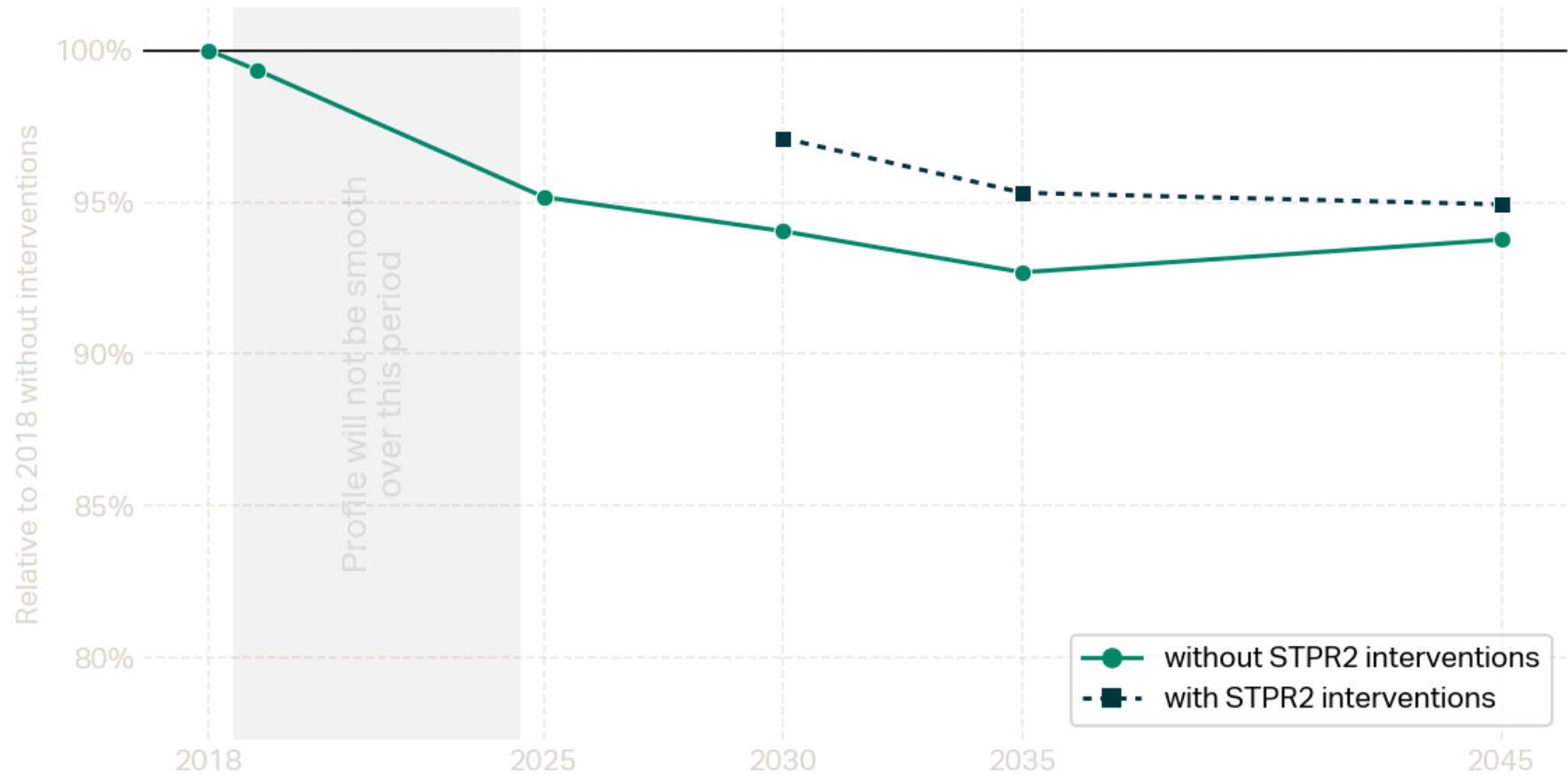
Modelled Annual Road Traffic (vehicle-kilometres)



Analysis undertaken January 2022. "Road" includes both Car and Goods Vehicle trips.

Edinburgh & South East Scotland Low Motorised Traffic / Emission Demand

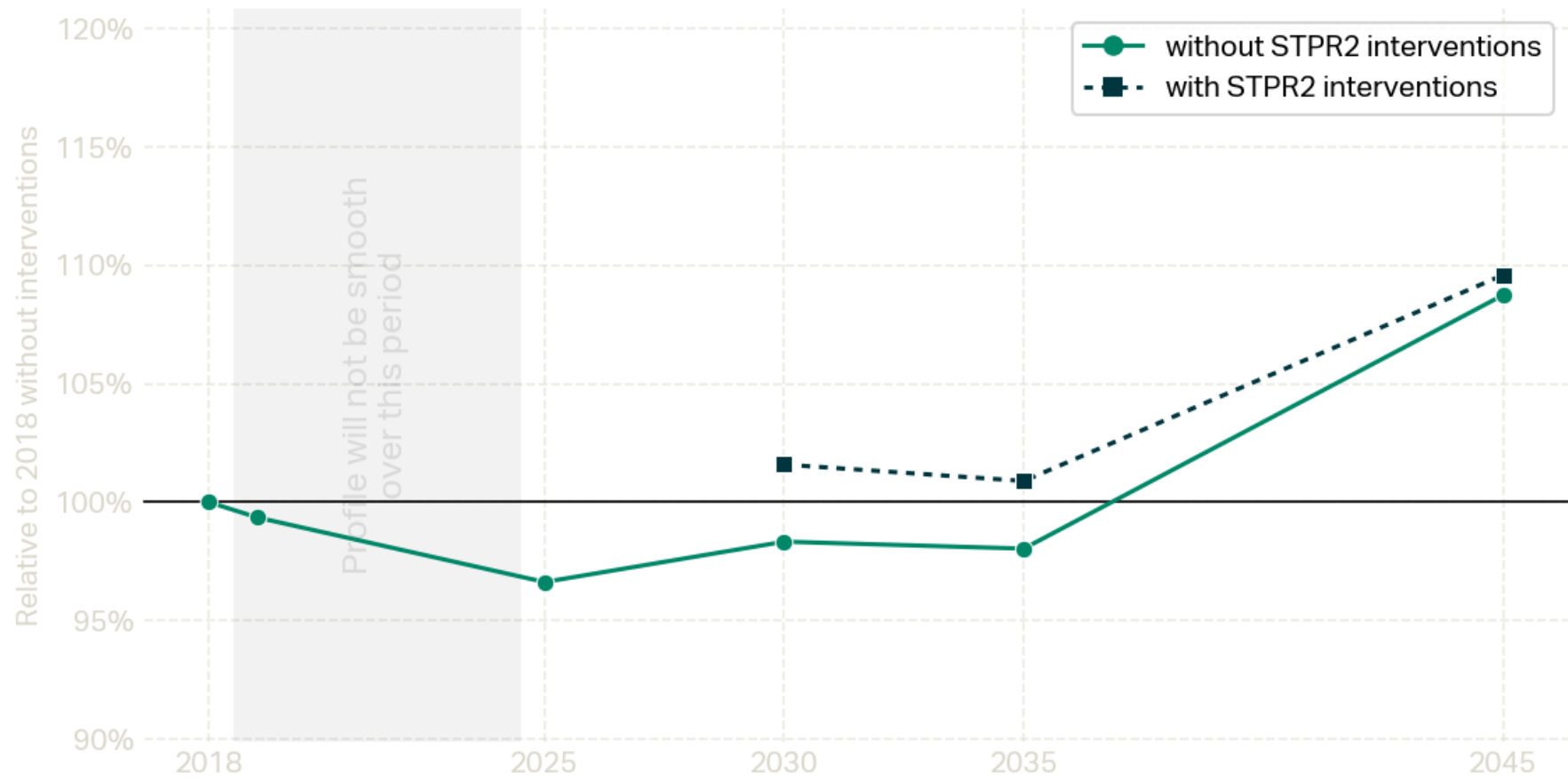
Modelled Road Journey Time (minutes per km)



Analysis undertaken January 2022. "Road" includes both Car and Goods Vehicle trips.

Edinburgh & South East Scotland High Motorised Traffic / Emission Demand

Modelled Road Journey Time (minutes per km)



Analysis undertaken January 2022. "Road" includes both Car and Goods Vehicle trips.