### **Draft National 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 reports 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.
- 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 <sub>2</sub> 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: National

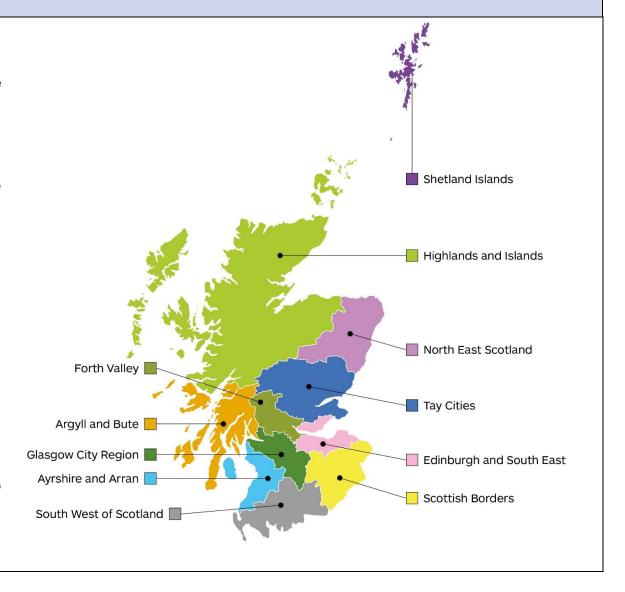
#### Context

Geographic Context: Scotland's geography is unique and varied, ranging from rural lowlands to remote uplands, and from large cities to sparsely inhabited islands, meaning no two parts of Scotland are the same nor are their travel patterns and demands. For that reason, STPR2 has been progressed at both a national and regional level in order to appraise options in the context of place.

Detailed Appraisal Summary Tables (ASTs) present the findings from the assessment of the packages of interventions that have been developed at the regional level covering the eleven regions shown in the map opposite. The assessments undertaken through the regional ASTs will inform the final recommendations for STPR2.

This National AST summarises the performance of the regional packages at a National level against key appraisal criteria including established policy objectives, the Transport Planning Objectives (TPOs), STAG Criteria (Environment, Climate Change, Health, Safety and Wellbeing, Economy, and Equality and Accessibility), and a wider suite of Impact Assessments.

Before presenting the appraisal outcomes, a brief recap is provided on the policy context and key challenges that have guided the development of STPR2.



**Policy Context:** Given the cross cutting nature of transport, there are a number of relevant policy documents which have been considered, to ensure that the aims and objectives of STPR2 are complementary and contribute to the wider policy landscape. The key policies are listed below.

The second National Transport Strategy (NTS2) sets the vision for the country's transport system over the next 20 years. The vision is underpinned by four priorities: Reduces Inequalities, Takes Climate Action, Helps Deliver Inclusive Economic Growth and Improves our Health and Wellbeing, each with three associated outcomes. At the heart of the Strategy is the recognition that we need to deliver a step-change in behaviour and provision of attractive, affordable, accessible and sustainable travel options. Embedded within the Strategy are the Sustainable Travel Hierarchy and Sustainable Investment Hierarchy to manage the demand for transport and support the creation of successful places in the future. The actions to take forward the new National Transport Strategy are outlined in the Delivery Plan 2020-22, published in December 2020. As well as outlining the role of STPR2, it also highlights other parallel workstreams that will deliver on the NTS2 vision, priorities and outcomes. This includes the Island Connectivity Plan (ICP), being prepared as the successor to the Ferries Plan 2013-22 and will be closely linked to the outcomes of the STPR2.

In December 2020, the Scottish Government produced its Update to the Climate Change Plan (CCP), which sets out the approach to delivering a green recovery, with a focus on the period up to 2032. The transport-related components of the Plan build upon NTS2, with a specific commitment to reduce car kilometres by 20% by 2030. The Scottish Government Route Map, published in January 2022, sets out a suite of policies from across Government that will be implemented to support car-use reduction in order to both address climate change and deliver a healthier, fairer and more prosperous Scotland. The Route Map recognises the role of STPR2 in setting out recommendations for future investment decisions.

The Infrastructure Investment Plan (IIP) for Scotland 2021 to 2026, published in February 2021, provides additional detail on expenditure in the next few years to support the commitments made within the Programme for Government and sets the context of future investment in transport to deliver an effective response to the COVID-19 pandemic and also an inclusive net zero carbon economy. It highlights that future transport investment decisions will be assessed through the second Strategic Transport Projects Review; embedding the NTS2 priorities and outcomes and the Sustainable Investment Hierarchy. The IIP also sets out the Scottish Governments Common Investment Hierarchy which aligns with that within NTS2.

By aligning strategy, project and programme funding, the Capital Spending Review (CSR), published in February 2021, provides confidence that the announced plans are affordable and fully funded. The Review also sends a strong signal on the future need to adjust the balance of investment in favour of renewing and extending the life of existing infrastructure, both on environmental and value-for-money grounds.

In July 2021, the Scottish Government published Cleaner Air for Scotland 2: Towards A Better Place for Everyone and an associated Delivery Plan, setting out how the Scottish Government will deliver further air quality improvements over the next five years to secure the vision of Scotland having the best air quality in Europe – a quality of air that aims to protect and enhance health, wellbeing and the environment. It recognises the role of STPR2 in contributing to a reduction in the need to travel unsustainably, making the most of existing transport strategic systems and supporting strategic investments in sustainable, smart and cleaner transport options.

In August 2021, the Scottish Government and the Scottish Green Party Parliamentary Group agreed to work together over the next five years to build a green economic recovery from COVID-19, respond to the climate emergency and create a fairer country. This agreement, along with the shared policy programme, referred to as The Bute House Agreement, details collaboration on the climate emergency, economic recovery, child poverty, the natural environment, energy and the constitution. It sets out a number of commitments to support the priorities and outcomes set out in NTS2, including to reduce car kilometres by 20% by 2030; increase the proportion of Transport Scotland's budget spent on active travel initiatives; invest in the maintenance, improvement and decarbonisation of Scotland's rail network; commission a Fair Fares Review; and progress the on-going review of transport governance in Scotland. These commitments will complement STPR2 and the shared policy programme acknowledges the role of STPR2 in directing future transport infrastructure investment.

The draft National Planning Framework (NPF4) was laid in the Scottish Parliament on 10 November 2021 and is being developed alongside IIP and STPR2. The National Planning Framework (NPF) is a long-term plan for Scotland that sets out where development and infrastructure is needed. NPF4 looks to 2045 and will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities. STPR2, and the Islands Connectivity Plan, represent the national transport investment needed to support NPF4. This presents the opportunity to embed the importance of "place" across land-use planning and transport. It will also set the context for developing an investment programme that is aligned with the Sustainable Travel Hierarchy presented in the NTS2.

### **Problems and Opportunities:**

The development of the NTS2 involved a comprehensive review of the key transport challenges facing Scotland and included extensive engagement with a network of partners and areas across the country comprising individuals, businesses and third sector organisations, to gather the views of a wide range of users of the transport system. Through this process, it was identified that Scotland's transport system faces a number of challenges: many people encounter problems when trying to access the services they need; vehicles continue to emit greenhouse gases and pollute the places residents live and work; businesses still face congestion and delays when reaching their customers; and people still face barriers when wanting to cycle or walk to their destination.

The STPR2 National Case for Change Report published in February 2021 summarised the current and future challenges identified by NTS2, which are outlined below and presented in the same order as they appear in NTS2:

### **Reduces Inequalities**

- Social Isolation: Globally, advances in technology now mean we feel more connected than ever. However, despite this, many people still feel socially isolated, with 6% of adults reporting having met socially with friends, family, relatives, neighbours or work colleagues less than once a week. Many disabled people feel trapped due to the lack of accessible transport, particularly on islands and in remote and rural areas. There is increasing recognition of social isolation and loneliness as major public health issues that can have significant impacts on a person's physical and mental wellbeing.
- Poverty and Child Poverty: Public transport is very important to those on low incomes, yet in many areas of high social deprivation public transport options can be limited and relatively expensive. A key challenge is providing fair and affordable access to the services people need.

- Gender Inequalities: Public transport systems tend to be designed to serve the needs of commuters with traditional 'nine-to-five' working patterns, hence based on a travel pattern that is primarily male. Public transport timetables and routes are, as a result, not designed to fit travel behaviour that is shaped by unpaid care work and part-time employment. Women are also more likely to travel by bus and less likely to travel by rail than men. A lack of adequate public transport provision creates further barriers to women accessing employment and educational opportunities. Evidence across the UK and Europe shows that women are constrained by a number of barriers that shape how they travel and their experiences of those journeys. Over 75% of Scotland's part-time workforce is female, and women are more likely to be in low paid work, with 64% of people paid below the Living Wage being female. Lone parents, the vast majority of whom are women, are more likely to be living in poverty than other single working age adults in Scotland. Women who work part-time are more likely to have a multi-stop journey (e.g. to drop off / pick up children to / from school) than women that work full-time or men, whatever their working status. Women are more likely to feel very or fairly worried about being sexually assaulted and are also less likely to report feeling very or fairly safe walking alone at night compared to men (66% compared to 89%).
- The Changing Needs of Young People: Many young people are communicating more by social media rather than in person and therefore have less need to travel. More young people are in further and higher education, having to spend more on housing and delaying entering employment, therefore having less resources to spend on travel. Key issues for young people include the availability and cost of public transport, particularly to further and higher education and personal safety when using services.
- Meeting the Needs of an Ageing Population: In 2018, 455,000 people in Scotland were aged 75 or over. By 2043, this figure is projected to grow to 776,000, an increase of just over 70%. Older people are healthier, fitter, wealthier and more mobile compared with previous generations: they are likely to want to travel more and the transport system needs to support this to ensure older people, wherever they live, are not socially isolated. Factors impacting on older people include inaccessible vehicles (particularly taxis, buses and trains), journey comfort, frequency of bus services and poor integration between different transport services.
- The Transport Needs of Disabled People: The proportion of adults with a long-term limiting mental or physical health condition or disability is increasing as the population ages. Between 2008 and 2017, the proportion of women who had a long-term limiting mental or physical health condition or disability increased from 28% to 34%. Over the same period, the proportion of men increased from 23% to 29%. Furthermore, a lower proportion of disabled people are in employment compared to those who are not disabled and are more likely to be affected by poverty than those who are not disabled. Key challenges disabled people face on the transport system include being able to access accurate and relevant travel information both before and during the journey; being able to access public transport interchanges; being able to access public transport vehicles; being able to interchange between all modes; and concerns regarding safety and comfort on the public transport network.
- Scotland's Regional Differences: Transport challenges differ across areas and regions of Scotland. Limited supply of affordable city centre housing has led to more suburban areas with greater numbers of housing developments impacting on travel needs and patterns, particularly to city centres. If past trends continue, Scotland's cities will see increases in housing and population over the next 20 years. Rural households tend to drive more frequently than urban households, in many cases due to the limited public transport options available. A particular issue for rural areas is the lack of public transport acting as a barrier for young people accessing education, training and employment and the link to long-term outmigration. The minimum income that households require for an acceptable standard of living in Scotland's island communities is well above that required in the rest of the UK, and in many cases higher than in other areas of rural Scotland. Factors resulting in additional

costs for households in island communities compared to the rest of the UK include longer commuting distances compounded by higher fuel prices, issues around integrated timetabling, the additional cost of the need to make occasional trips to the mainland, and additional ferry/air costs for inter-island travel. Island communities can also face additional delivery and freight costs. Similar to remote and rural areas, transport can have an adverse impact on the long-term sustainability of island communities.

#### **Takes Climate Action**

- Global Climate Emergency: The Scottish Parliament committed to an ambitious target of net zero emissions by 2045 and transport needs to play its part. Transport is currently Scotland's largest sectoral emitter, responsible for 37% of Scotland's total greenhouse gas emissions in 2018. Since 2013 there has been an increase each year, despite more efficient vehicles, due to an increase in vehicle-kilometres driven. The largest source of transport emissions are cars, at 40%, followed by aviation and shipping which are both 15%, with a further 25% of emissions generated by a combination of Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs). In addition to minimising the future impacts of transport on our climate, our transport system needs to adapt to climate change impacts.
- Adapting to Climate Change: Climate change directly affects the transport sector through the increasing number of more severe and
  frequent extreme weather events and the disruption they cause to the transport system. Disruption often disproportionately impacts on
  vulnerable communities with fewer and less resilient transport options. In recent years, there have been several weather events which have
  led to significant disruption and resulted in high economic costs. The 'Beast from the East' in February 2018 cost the UK economy at least £1
  billion per day as gridlocked roads, no trains and no buses meant many workers were unable to access employment.
- Air Quality: Transport generates just over one sixth of Scotland's total particulate matter (PM10) and over one-third of the total emissions of nitrogen oxides (NOx). The majority of these emissions are caused by road transport. Transport, and road transport in particular, remains a significant contributor to poor air quality. Air pollution increases the risks of diseases such as asthma, respiratory and heart disease, particularly for those who are more vulnerable such as the very young and the elderly or those with existing health conditions. Air quality is often worse in areas of deprivation and is a health inequality issue.
- Changing Complex Behaviours: To tackle emissions, a key challenge will involve getting people to change their travel behaviour, both in terms of reducing demand for travel and how particular journeys are made. People's travel choices are complex and influenced by a number of factors. Choices can reflect, for example, personal characteristics (e.g. age, sex and income), and can depend on where people live/work, geography, availability of transport, convenience and the built environment. More time spent on leisure activities, for example, has meant more people travelling greater distances to undertake outdoor activities. The activities for which people travel are changing. In addition, the changing nature and location of work, land use, technology, housing and the move to more online retailing have impacted on and transformed people's behaviour in recent years. Changing people's travel behaviour to use more sustainable modes will have a significant impact on the environment, as well as our health and wellbeing.
- **Decline in Bus Use:** Bus is the dominant public transport mode in Scotland, accounting for three quarters of all public transport trips. It is particularly important to areas which are not served by the rail network, including much of rural Scotland. It can be an important element in multimodal journeys and bus continues to be a sustainable and space-efficient mode of travel. Bus use generally has been in decline since the 1960s for a number of reasons. One of these is due to longer journey times caused by congestion on the road network, particularly in urban areas. Reducing passenger numbers risks driving down revenues and making some services unviable, resulting in their cancellations

and, in some cases, communities becoming isolated . In 2017-18, 388 million journeys were made on local bus services in Scotland. This is down from 487 million (-20.3%) in 2007-08. This trend coincides with an increase of 7.4% in road traffic (vehicle kilometres) in Scotland between 2007-08 and 2017-18. Reducing passenger numbers risks driving down revenues and making some services unviable, resulting in cancellations and, in some cases, communities being isolated.

#### **Helps to Deliver Inclusive Economic Growth**

- **Productivity:** The latest evidence reveals that Scotland's productivity is ranked 16th out of 37 amongst the Organisation for Economic Cooperation and Development (OECD) member countries. This is in the second quartile but below other comparator countries such as Ireland, Belgium and Denmark. Whilst Scotland's productivity level is not solely driven by the efficiency of its transport system, improvements in transport connectivity between businesses reduces costs and increases productivity, thus generating higher levels of economic growth.
- Labour Markets: People often need transport to access employment, education and training and therefore help reduce the numbers out of work and support Scotland's ambitions for growth. Transport can also make sure that the skills and experience of those in the labour force are effectively matched with the needs of businesses, helping to increase incomes and improve productivity. There is evidence that some people out of work see high transport costs as well as physical barriers to access to transport to employment locations as a barrier, particularly for those in more rural areas, people with disabilities and long term health conditions, the young, those on low incomes and families with children, thus limiting the employment opportunities and options available.
- Future Skilled Workforce: An increasing number of workers in the transport sector are retiring or leaving the industry. With a lower number of young people entering the industry to replace them, a skills shortage is developing. The labour market also faces potential disruption through uncertainties related to the European Union (EU) Exit. There are also concerns related to the loss of technical and commercial skills and expertise, an ageing workforce and how new staff can be attracted and retained.
- Trade and Connectivity: Transport is crucial for trade and competitiveness, within Scotland, across the UK and internationally. Trade and connectivity with EU and global markets is impacted by uncertainty around Scotland's future relationship with the EU as a result of the UK EU Exit. There is a particular challenge with the lack of direct freight and logistics routes to the continent, with Scotland currently being dependent on key routes via England for the majority of imports and exports.
- Aviation: To be productive, competitive and successful economically it is important for Scotland to be well-connected and it is recognised that aviation will continue to play a key role in Scotland's connectivity, both in international terms and within Scotland and the UK. However, the environmental impacts of aviation need to be recognised and mitigated if climate change targets are to be achieved. Opportunities for reducing emissions from the aviation sector for people travelling to, from and within Scotland must continue to be explored.
- Freight: Freight is transported around Scotland by road, rail, air, sea and inland waterways. The number of goods vehicle trips, if left unchecked, is forecast to increase by 44% between 2014 and 2037, which will negatively impact on journey times and peak-period delays. Given the economic importance of Scotland's freight haulage industry, these factors will ultimately impact on the performance of the economy if not tackled. There will also be an impact on the environment. In 2017, HGV emissions were 3.5% higher than in 2016 and 5.2% above the 1990 baseline figure. LGV emissions were 6.5% more than 2016 and 95.6% higher than the 1990 baseline figure. The increase in emissions from light goods vehicles reflects increasing vehicle-kilometres. Whilst recognising the importance of freight within Scotland's economy, a key challenge will be to ensure that the negative impacts generated by the movement of goods vehicles are tackled.

- Tourism: Transport plays a vital part in supporting tourism. It enables people to get to and travel within Scotland and allows them to explore the many sights and experiences the country has to offer, including access to the outdoors and the historic environment. In 2018, Scotland welcomed over 3.5 million overnight visitors from overseas, an increase of over 10% on the previous year. Since 2002, the number of international visitors travelling to Scotland by air has more than doubled (+150%), whilst travelling by sea and via the Channel Tunnel have remained fairly stable over the same period, although there has been a marked increase in the number arriving by cruise vessels, with Cruise Scotland reporting a rise from 369 calls with 268,481 passengers in 2010 to an estimated 912 calls with 920,000 passengers during 2019. Ensuring Scotland can continue to welcome a growing number of international visitors requires retaining important air links and also developing new routes, whilst taking measures to minimise the environmental impacts that international tourism generates. People in a number of Scotland's remote, rural and island communities are witnessing deteriorating road networks as traffic increases, with larger and heavier cars, caravans and motorhomes, and vehicle capacity constraints on ferries. Whilst tourism benefits are recognised, tourists should be encouraged to visit/travel using more sustainable means.
- **Digital and Energy:** It is recognised that transport needs to be considered alongside other strategies and initiatives, including digital and energy. The choices that people make about where and when they work, and how companies trade, will be driven as much by changing digital technologies and communications as it will be by transport. Availability of mobile connectivity across the transport system is a key enabler in the adoption of new digital technologies, whilst the availability of ubiquitous connectivity is fast becoming an expectation. Improvements in digital technology and connectivity could impact on ways in which people work and travel, and these links could be an essential part of how transport is able to contribute to Scotland's emissions targets. Access to digital communications is also a vital factor in decisions made by disabled people about location and transport options. Scotland is taking a leading role in promoting electric and other low-emission vehicles, with a commitment to phase out the need for new petrol and diesel cars and vans by 2032. In meeting this ambition, Scotland will need to develop and manage the necessary charging and other network infrastructure, whilst building consumer awareness and confidence.
- Funding and Resources: The way in which the transport system is paid for and funded is complex, but needs to be fair and sustainable and support wider outcomes. The costs of delivering Scotland's transport system are significant. In 2018-19, total public sector expenditure on transport amounted to £2.10 billion. This compares with a figure of £2.72 billion in 2007-08, a decrease of 22.8%. Going forward, there will continue to be competing demands and difficult funding choices to be made for both central and local government. This includes decisions about priorities within the transport infrastructure, and also between transport and other policy areas such as housing, health, education and energy. In addition, achieving the net zero target will put further pressure on limited budgets, as increasing focus is placed on areas where greenhouse gas emissions need to be reduced. A key challenge will relate to managing transport assets effectively and investing efficiently in the resources needed to maintain and safely operate them and make better use of existing capacity.
- Reliability: Some of Scotland's cities experience considerable congestion and associated disruption. Whilst the volume of traffic on Scotland's road network declined between 2007 and 2011 in line with the economic downturn, there have been increases each year since then. Forecast increases in traffic volumes will impact negatively on reliability through increased congestion and more roadworks as greater pressure is placed on the operational efficiency of the network. Reliability is also an issue on the rail network and data shows that reliability has declined from a peak of 93% in 2013 to 89.2% in 2020.

#### Improves our Health and Wellbeing

- Safety and Security: Scotland's transport system needs to be safe. Whilst the number of road accident casualties reduced by 11% between 2017 and 2018, the number of fatalities has increased. There are considerable inequalities: children in Scotland's 20% most deprived areas are more than 3 times as likely to be injured in a traffic accident than those in the 20% least deprived areas. Women and disabled people are more likely to experience affordability barriers to transport: they are less likely to drive and more likely to use public transport, particularly buses. Many women and disabled people feel vulnerable when using public transport particularly at bus stops, train stations or other transport interchanges.
- Spatial Planning: Spatial planning can play a key role in addressing a number of challenges for places. The places where people live and work can have important impacts on health and wellbeing. As land use has continuously evolved, some places have become less sustainable and would benefit from renewal and improvement. Buildings located in areas that are hard to reach and not well served by public transport can result in long journeys to access shopping and work, therefore discouraging walking and cycling and encouraging more car use. The current and future transport needs of people should be at the heart of planning decisions to ensure sustainable places.
- Physical Activity: The importance of active travel is becoming more evident as the consequences of physical inactivity are studied. Over the last few decades increasing reliance on cars has contributed to Scotland becoming less active as a nation. Over two thirds of commuters travel to work by car or van compared to just 12% who walk and 3% who cycle. Research found that around 31% of children in age group 2-15 did not meet physical activity guidelines over the last seven days. There are links between poverty and the availability of bicycles: household access to bicycles increases with household income. In 2017, the national average of households that have access to at least one bike for private use is 34.4%. It is recognised that one of the most effective ways to secure the required 30 minutes of moderate activity per day is to reduce reliance on motorised transport, changing the means of everyday travel to walking and cycling.
- Information and Integration: High-quality journey planning information, both digital and physical, is important to enable a resilient transport system that allows people and goods to get to where they need to get to. Many people choose to travel by car instead of active transport and/or public transport due to the number of necessary interchanges on their journey. In some cases, journeys are not possible due to a lack of connections or accessible modes of transport. In addition, long wait times, the need for multiple tickets and complex connections deter people from some public transport services resulting in many running below capacity. This is a particular issue for wheelchair reliant transport users.
- Resilience: When there are extreme weather incidents and planned or unplanned events which result in network disruption, it is vital that information is given to the public as early as possible so that they can act accordingly. Extreme weather leads to uncertainty about travel conditions for people and businesses. Dedicated walking and cycling infrastructure must be maintained to encourage use. Both trunk and local roads face considerable maintenance backlogs and need significant investment to ensure they are appropriately maintained Both mainland to island and intra-island ferry fleets are ageing. The effective maintenance of transport networks is important in reducing disruption and delivering a resilient and reliable transport system. A key challenge is providing a transport system that is resilient and speedily recovers from disruption, thus minimising impacts of delayed journeys on networks and users. This requires strong planning in relation to physical resilience of the transport system, how disruption is managed and the speed of recovery, together with effective maintenance regimes and investment.

Package De	escription					
Package G	roupings: Refer to Annex A for further grouping detai	Is				
Active Travel	<ul> <li>Improving Access to Bikes</li> <li>Connected Neighbourhoods</li> <li>Improving Active Travel on Trunk Roads through Communities</li> <li>Increasing Active Travel to School</li> </ul>	<ul> <li>Active Freeways</li> <li>Village - Town Active Travel Connections</li> <li>Long - Distance Active Travel Network</li> <li>Connecting Towns by Active Travel</li> <li>Cycle Parking Hubs</li> </ul>				
Bus	<ul> <li>Bus Priority Infrastructure</li> <li>Decarbonisation of the Bus Network</li> <li>Demand Responsive Transport (DRT) / Community Transport</li> </ul>					
Rail	<ul> <li>Inter-7-Cities Strategic Corridor Enhancements</li> <li>Corridor Enhancements: Central Belt</li> <li>Rural Rail Connectivity</li> </ul>	<ul><li>Decarbonisation of the Rail Network</li><li>High Speed Rail</li><li>New Rail Lines</li></ul>				
Interchange	<ul><li>Mobility Hubs and Multi-modal Interchanges</li><li>Region Passenger Facilities/Station Enhancements</li></ul>					
Mass Transit	<ul><li>Clyde Metro</li><li>Edinburgh &amp; South East Scotland Mass Transit</li><li>Aberdeen Rapid Transit</li></ul>					
Behaviour Change	<ul><li>Behavioural Change Initiatives</li><li>Expansion of 20mph Limits and Zones</li></ul>					
Ferries and Ports	<ul><li>Mull Connectivity</li><li>Northern Isles Connectivity</li><li>Outer Hebrides Connectivity</li></ul>	<ul> <li>Arran and Campbeltown Connectivity</li> <li>Islay Connectivity</li> <li>Decarbonisation of CHFS and NIFS Ferry Network</li> </ul>				
Freight	<ul> <li>Decarbonisation of Freight Deliveries</li> <li>Railway Freight Terminals and Facilities</li> <li>Freight Reliability, Resilience and Efficiency improvements</li> </ul>	<ul> <li>Freight Consolidation and Last-Mile Logistics</li> <li>Freight Incentives and Freight Best Practice</li> <li>Rail Freight Enhancements</li> </ul>				

Package D	Package Description					
Package G	roupings: Refer to Annex A for further grouping d	etails				
Resilience	<ul> <li>Improve Access to Major Ports and Airports</li> <li>Trunk Road and Motorway Network Renewal for Reliability, Resilience and Safety</li> <li>Trunk Road and Motorway Climate Change Adaptation and Resilience</li> </ul>					
Technology	<ul> <li>Incident Management Software (IMS) Upgrade</li> <li>Control Centre of the Future</li> <li>Intelligent Transport Systems (ITS) Roadside Infrastructure</li> <li>Integrated Public Transport Ticketing</li> </ul>					
Road	<ul> <li>South West Trunk Road and Motorway Network Improvements</li> <li>South East Trunk Road and Motorway Network Improvements</li> <li>North West Trunk Road and Motorway Network Improvements</li> <li>North East Trunk Road and Motorway Network Improvements</li> </ul>	<ul> <li>A National Action Plan to support the transition to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets</li> <li>Changing Road User Behaviour</li> </ul>				

STPR2 Transport Planning Objectives (TPOs) Assessment						
STPR2 TPOs		Appraisal Metr	rics	Performance Summary		
STPRZ TPUS	Metric	Low	High	Penormance Summary		
A sustainable strategic transport system that contributes significantly to the Scottish Government's net-zero emissions target.	Change in CO <sub>2</sub> eq  (non-traded and traded emissions from regional road transport inc. grid emissions from charging light-duty vehicles).	27,700 tonnes decrease of 0.5% in 2030  21,600 tonnes decrease of 2.8% in 2045.  1.3m tonnes reduction, of which -1.1m were traded, for the 60-year appraisal period from 2030 to 2089.  The economic impacts associassessed using the Departm Rural Affairs (DEFRA) dama The net economic benefits for period in 2010 prices and var £10m to £25m for the low trathe range £100m to £250m for scenario.  The larger benefit in the high due to the greater overall empackage, although the proposition.	nent for Environment Food & age costs appraisal toolkit. For the 60-year appraisal alues would be in the range avel demand scenario, and in for the high travel demand at travel demand scenario is hissions with, or without, the	National CO <sub>2</sub> eq 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, specifically in the low travel demand scenario.  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 <sub>2</sub> eq emissions.  Across both scenarios the interventions would reduce emissions of CO <sub>2</sub> eq.  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.		

STPR2 Transport Planning Objectives (TPOs) Assessment					
STPR2 TPOs		Appraisal Met	Parformanco Summary		
SIFKZ IFOS	Metric	Low	High	Performance Summary	
	Change in mode share by active travel for all journeys	Potential increase in walking 25% mode share (5 percent Potential increase in cycling 19% (over 17 percentage potential)	age points) from 1.4% mode share to	<ul> <li>At a national level the package will contribute to the net-zero emissions target by:</li> <li>Enabling more passenger journeys to be made by active modes and public transport</li> <li>Decarbonising most public transport journeys</li> <li>Facilitating uptake of electric vehicles</li> <li>Enabling some road freight to switch to rail or</li> </ul>	
	Change in motorised veh-kms travelled	Reduction of 666 million motorised veh km 3% decrease	Reduction of 753 million motorised veh km 2% decrease	<ul> <li>other low carbon modes</li> <li>Providing a more resilient road network that will reduce congestion and associated emissions</li> <li>Reducing motorised vehicle kilometres under</li> </ul>	
	Scoring	++	++	both the low and high travel scenarios by 3% and 2% respectively.	
An inclusive strategic transport system that improves the affordability and accessibility of public transport.	Change in transport poverty risk	Although the STPR2 package of measures do not impact on the direct costs of travel (e.g. fares, fuel price), the package would see a small reduction in transport poverty, due to the overall improvements to access and connectivity between modes.		The package will at a national level improve the inclusiveness of the transport system by:  • 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)	

STPR2 Transport Planning Objectives (TPOs) Assessment							
STPR2 TPOs		Appraisal Metr	Performance Summary				
31712 1705	Metric	Low	High	r enormance Summary			
	Change in Accessibility - population catchments increases to key services by journey time by public transport.	with approximately 104, able to access their nea time of 30 minutes by puthe without package. The Higher Education Access Population accessibility public transport also obswith approximately 55,8 access their nearest site under 30 minutes compact This represents a 2% in Large Food Stores:  Additional population of able to access a large for in under 30 minutes compackage.  Major Shopping Centre: Population of approximates a 30 minutes compackage.  GP: Population of approximation of approximation of approximation access major shopping under 30 minutes compackage.	polity estimated to improve 400 additional people now rest hospital under a journey ablic transport compared to its represents a 5% increase. It is is is is is is is is increase. It is is increase is is is increase. It is is increase in it is increase. It is increase in it is increase in it is increase. It is increase in it is increase in it is increase. It is increase in it is increase in it is increase. It is increase in it is increase in it is increase. It is increase. It is increase in it is increase. It is	<ul> <li>Improving accessibility to public transport stops and stations</li> <li>Seeking to promote public transport use and reduce operating costs, hence enhancing network sustainability</li> <li>The national package would improve public transport journeys, particularly in the case of major hospitals and higher education, with improvements in population accessibility to these destination types for public transport journeys under 30 minutes. Population accessibility improvements were found for other destinations, such as retail, nearest major shopping centre and large food stores, and also to the nearest GP.</li> <li>The most significant population accessibility improvements were observed in urban regions and particularly in Glasgow City Region, Edinburgh and South East Region (ESES) and North East region for shorter journeys, attributed to the regional mass transit elements of the national package. Such benefits were found in journey times to the nearest major hospital for public transport journeys under 30 minutes, with populations of approximately 53,800, 25,900 and 7,900 in Glasgow City Region, ESES and North East region, respectively, now able to do so within 30 minutes.</li> </ul>			
	Scoring	++	++				

STPR2 Transport Planning Objectives (TPOs) Assessment						
STPR2 TPOs		Appraisal Metr	rics	Dorformanaa Summaru		
STPRZ TPUS	Metric	Low	High	Performance Summary		
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.	Change in mode share by active travel for all journeys  Potential for Change in 'Place'	were fully implemented in every Scotland, rates of walking are increase as shown below.  Potential increase in walking 25% mode share (5 percents) Potential increase in cycling 19% (17.6 percentage points).  Note that the cycling and was been developed independent active mode is likely to abstrate other, but this effect is not forecasts.  The package will tend to implement and those associated with the cycling and was been developed independent active mode is likely to abstrate other, but this effect is not forecasts.  The package will tend to implement and those associated with the cycling and was active travel allows easier was in more pleasant and secure of the cycling are increased.	undertaken by active modes. haviour change interventions very relevant location in and cycling are anticipated to age points)  from 20% mode share to age points)  from 1.4% mode share to solution and cycling growth forecasts have atly. Growth in use of one fact at least some trips from the accounted for within these prove the quality of the gracessibility and reducing traffic.  In neighbourhoods where alking and cycling conditions are conditions.  In odal interchanges and hubs are Aberdeen, ESES and vistems should be considered arough reductions in traffic	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:  • 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)  The analysis shows that through improved uptake of walking and cycling, there would be a forecast annual reduction of around 261 premature deaths Over the 60 year appraisal period this would be over 15,000 lives due to the health benefits arising from active travel.		

STPR2 Transpo	ort Planning	Objectives (TPOs) Asse	essment	
STPR2 TPOs		Appraisal Metr	ics	Dowforms on an Common on a
31FR2 1F05	Metric	Low	High	Performance Summary
	Change in Health Benefits	The health benefits of increased rates of walking and cycling as a result of the package at a national level have been quantified using the WHO's HEAT tool. This shows the following potential benefits, over a 60-year period:  Premature deaths prevented per annum: 261  60-year value of benefits: £10bn to £20bn		
	Scoring	+++	+++	
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.	Increased labour catchment by sustainable travel (PT/Active Travel)	area of an origin, showed overall with a 3-percentage the national package in padditional 4,000 jobs on a accessed by a data zone by public transport.  • Access to regional employancessibility of employments	ent located in the surrounding dimprovements in Scotland ge point increase to 60% with place. This equates to an average that can be within a 40-minute journey byment, which represents ent destinations located in ed in Scotland overall. The access to employment ge points to 60% with the e, equating to around an average that can be	<ul> <li>The package at a national level will contribute to sustainable inclusive growth in Scotland by:</li> <li>Improving integration of transport modes (especially between active modes and public transport) and between transport and major developments</li> <li>Improving journey time reliability</li> <li>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</li> </ul>

STPR2 Transport Planning Objectives (TPOs) Assessment					
STPR2 TPOs	Appraisal Metrics			Dawfarmanaa Cummari	
STERZ TEOS	Metric	Low	High	Performance Summary	
	Change in lost time due to congestion (for business/ commercial transport)	Increase of 1.34 million hours	Increase of 1.37 million hours		
	Scoring	++	++		
	Change in percentage of accidents (PIA and Damage	A 3% accident reduction related to motorised veh km (85,700 accidents)	A 3% accident reduction related to motorised veh km (98,500 accidents)	<ul> <li>The package will improve reliability, safety and personal security on the transport system by:</li> <li>Reducing overall motorised vehicle kilometre by 3% and 2% respectively under the low ar high travel scenarios, reducing the risk of</li> </ul>	
A reliable and resilient strategic transport system that is safe and secure for users.	Only)	Whilst the number of accided vehicles is anticipated to red of the interventions within the that it would increase walking number of accidents involving anticipated to increase, although anticipated to be significant to the significant with the significant to the significant vehicles and the significant vehicles are significant vehicles.	luce following the introduction is package, it is anticipated g and cycling journeys. The ig these modes is therefore bugh each individual journey	<ul> <li>accidents occurring, whilst improving resilience by reducing the number of road closures associated with accidents;</li> <li>Change attitudes of road users, through behavioural change campaigns. This is anticipated to increase awareness of interactions with those walking, wheeling and cycling as well as changing attitudes towards speed, making the network a safer place for</li> </ul>	
	Change in lost time due to congestion	Increase of 640 thousand hours	Reduction of 1.24 million hours	<ul> <li>all;</li> <li>Whilst the number of accidents involving motorised vehicles is anticipated to reduce following the introduction of the interventions</li> </ul>	

STPR2 Transpo	ort Planning	Objectives (TPOs) Asse		
STPR2 TPOs		Appraisal Metr	Performance Summary	
STERZ IFOS	Metric	Low	High	r enormance Summary
	Journey Time Reliability /Availability of alternatives (modes/ routes)	and high growth scenarios reand hence reduce the risk of result of reduced travel, while reducing the number of road accidents.  Targeted improvements on the network where safety is a preaccidents and the associated from such incidents would all Improvements in terms of readaptation to protect the open motorway network would also reliability of the network.  Bus priority measures across interventions in Aberdeen, E	by 3% and 2% under the low espectively (see Annex C), accidents occurring as a st improving resilience by closures associated with the trunk road and motorway oblem is forecast to reduce direduction in road closures so help improve reliability. In the result is and climate change eration of the trunk road and to positively impact on the second so positively impact on the second so positively impact on the second so positive is public transport times when current bus so by congestion.  In the reliability to public transport times when current bus so by congestion.  In the reliability to public transport times when current bus so by congestion.	within this package, it is anticipated that, nationally, this would increase the walking and cycling journeys with a corresponding increase in accidents, although each individual journey is anticipated to be significantly safer;  • Encouraging modal shift to sustainable modes and reducing the volume of vehicles on the network is anticipated to slightly improve journey time reliability in the high growth scenario. Whilst in the low growth scenario this metric shows an increase in hours lost, it is considered that is largely due to the modelling limitations as noted in the introduction to the appraisal summary table;  • Improving active travel provision and providing more dedicated and segregated routes for walking, cycling and wheeling.
	Scoring	+++	+++	

STAG Criteria						
STAG Criteria	Sub Criteria	Scoring		Performance Summary		
OTAG Officia	ous ontena	Low	High	1 chomianec outlinary		
	Air Quality	Not appraised at the national level	Not appraised at the national level	NO <sub>X</sub> is assessed as a local air quality pollutant and has not been appraised at a national level. Please refer to the regional ASTs.		
	Noise and Vibration	+	+	The anticipated modal shift from the package of measures is expected to reduce levels of noise and vibration associated with the transport network. There is potential for localised negative effects on noise and vibration due to the construction and operation of specific interventions such as Mass Transit, Rail and Road projects, however the magnitude of effect will depend on the design and location of the intervention.		
Environment	Biodiversity and Habitats	Please refer to SEA perform	nance summary text in the "	Other Criteria Assessment' section below		
	Geology and Soils	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 agre the SEA Consultation Authorities.				
	Land Use (including Agriculture and Forestry)					
	Water, Drainage and Flooding					
	Historic Environment					

	Landscape			
Climate Change	Greenhouse Gas Emissions	+		National CO <sub>2</sub> eq emissions decrease year-on year, with decreasing direct (non-traded) exhaust emissions and increasing traded grid emissions associated with increased adoption and charging of battery-electric vehicles, and specifically in the low travel demand scenario.  Across both scenario's the package will reduce emissions of CO <sub>2</sub> eq compared to the corresponding without package, although the change is greater in the high travel demand scenario due to overall higher emissions.
	Vulnerability to Effects of Climate Change	+	+	The package of measures provides an opportunity to adapt the transport network to the predicted effects of climate change, with one
	Potential to Adapt to Effects of Climate Change	+	+	measure specifically focused on this adaptation.
Health, Safety & Wellbeing	Change in percentage of accidents (PIA and Damage Only)	related to motorised veh km	(98,500 accidents)  nts involving motorised duce following the ons within this package, it is ease walking and cycling cidents involving these ed to increase, although	<ul> <li>of accidents through:</li> <li>Targeted infrastructure improvements, such as carriageway realignment and widening, the provision of overtaking opportunities and junction improvements are anticipated to</li> </ul>

	The package will, by increasing the number of people travelling actively, 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.  Development around multi-modal interchanges and hubs and those associated with the Aberdeen, ESES and Clyde Metro Mass Transit system should consider security as part of stop/halt/station design and may provide improved security through higher frequency services than currently provided.	<ul> <li>Encouraging modal shift away from private car, resulting in reduced accident risk due to reduced time on the network.</li> <li>Modal shift to sustainable modes will, by improving natural surveillance, make paths, stops, stations and services less isolated and this, accompanied by improved quality of facilities will improve perceived security, however this is only likely to improve safety and security in more populated areas.</li> <li>Modal shift is also likely to improve communities as places, supporting health and wellbeing, by reducing the number of trips by</li> </ul>
	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 £10bn to £20bn.  The package will also tend, by encouraging car journeys to switch to less polluting modes, to improve local air quality, and hence health outcomes. This would be of particular benefit in areas across Scotland with identified AQMAs.	unsustainable modes. 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.
Access to Health and Wellbeing Infrastructure		

		A population of approximate to access their nearest compared to the without	• •	
	Visual Amenity	The package should have a amenity through improveme interventions and an improveme Mass Transit interventions in Glasgow would require to be sense of place and not act a Care would be required in the road freight facilities to ensuinpact nearby communities	ents to walking and cycling red sense of 'place'. The n Aberdeen, Edinburgh and e designed to enhance the as a visual barrier.  The development of rail and are they did not detrimentally	
		(PVB) of approximately	Present Value of Benefits (PVB) of approximately £1bn to £5bn	The package of measures at a national level is expected to have wide ranging economic benefits across Scotland due to reduced cost and improved efficiency of travel, as well as expanded travel to work catchments.
Economy	User Benefits (2010 prices and values for a 60 year appraisal period)	Benefits (PVB) of approximately	Accidents Present Value of Benefits (PVB) of approximately £100m to £250m	Significant economic benefits accrue from the sustainable transport interventions in the package that enable and encourage mode shift to public transport modes.
(Transport Economic Efficiency)		Present Value of Health Benefits (PVB) due to increased rates of walking and cycling of approximately	Present Value of Health Benefits (PVB) due to increased rates of walking and cycling of approximately £10bn to £20bn	The package at a national level will, by increasing rates of active travel and hence physical activity, improve health and wellbeing outcomes by £10bn to £20bn.  The mass transit interventions in Aberdeen, Edinburgh and Glasgow in conjunction with the Bus Priority Infrastructure, Interchange and Rail interventions are the main contributors to the public transport user benefits. The remainder of the

				revenues as a result of the increased patronage levels arising from the mode shift away from car.  However, the reallocation of road space that would likely be required in order to implement mass transit interventions would result in an increased level of disbenefit to road users.  In terms of accident savings, the benefits arise as a result of the reduction in road-based vehicle-kilometres travelled, with the mass transit, active travel and public transport interventions encouraging a mode shift away from private car.  Whilst STPR2 is looking at a wide range of interventions at a strategic level that are at various stages of development we have estimated broad capital spending ranges over the period 2022 to
				2042. Standard appraisal processes require costs and benefits to be discounted and deflated to 2010 prices to ensure consistency across projects. Applying the discounting process outlined in the HN Treasury Green Book, the Present Value of capital spend is estimated to be in the range £10bn to 20bn (at 2010 prices).
Equality & Accessibility	Public Transport Network Coverage	Major benefits to public transported through the delive Aberdeen, Edinburgh and Gublic Transport to areas nowell served and provide corincluding hospitals and high better connections for emple	ery of Mass Transit in Glasgow. This will extend of currently served or not nnections to key services her education as well as oyment.	The package at a national level will improve accessibility to public transport by improving the coverage of the walking, cycling and public transport networks. 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.
		The implementation of Clyd free up capacity on the hear	e Metro in Glasgow will also vy rail network which will	

	facilitate better services for those areas as well as potential high speed rail connections.  Improving the active travel network and interchanges may provide users with access to a wider public transport network, by enabling easier access to multimodal trips.	The package will also improve affordability by reducing forced car ownership, and situations where taxi is the only viable mode for people without access to a car.  By encouraging modal shift to more sustainable modes, the package has the potential to increase demand for public transport, improving commercial
Active Travel Network Coverage	Improvements to the nation'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.	performance/viability, which could indirectly reduce ticket costs.
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 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	For the 20% most deprived data zones in Scotland, around an additional 23,300 people can now access their nearest hospital within a 30 minute journey time by public transport, a 5% increase for that deprived group compared to the without package.	
	Similarly, an additional population of approximately 11,200 in such deprived areas can now access their nearest higher education site within a 30 minute public transport journey, a 2% increase compared to the without package.	
	For access to employment, the average number of additional jobs per data zone that could be accessed by	

public transport from the 20% most deprived data zones in Scotland increased by approximately 5,400 by public transport to employment opportunities accessible within 40 minutes (referred to as local), and approximately 8,100 by public transport to employment opportunities in key urban areas accessible within an hour (referred to as regional). Glasgow City Region, North East Region and ESES are expected to see the biggest increases in the average number of local jobs accessible from the 20% most deprived data zones (approximately 8,700, 6,900 and 1,600 additional jobs, respectively). The largest improvements in access to regional employment opportunities are expected in the Glasgow City Region (approx. 12,100), followed by Argyll & Bute with its proximity to the Glasgow City Region (approx. 7,200) and the North East Region (approx. 5,500). (see Annex B for mapping) Affordability Although the STPR2 package of measures do not impact on the direct costs of travel (e.g. fares, fuel price), the package would see a small reduction in transport poverty, due to the overall improvements to public transport availability.

Deliverabilit	y 
Criterion	Summary Position
Feasibility	The overall package has been developed with feasibility considerations in mind. The package mostly makes use of existing, proven technology and would generally be expected to operate inside existing design standards. There will be further work required on the feasibility of larger infrastructure projects including Fixed Links, Aberdeen Rapid Transit, Edinburgh and South East Mass Transit, Clyde Metro, CHFS and NIFS ferry renewal and Decarbonisation and High Speed Rail. Additionally, road space allocation across modes will need consideration if multiple modes are competing for similar road space. Overall the package is expected to have a minor positive impact against this criterion.
	A number of the technological, decarbonisation and net-zero measures will rely on technology and innovations that are not as yet available.
	As individual interventions are taken forward, further work will be required to consider the detailed feasibility and associated technical risks.
Affordability	Given the updated financial position following the UK Spending Review, the new Shared Policy Programme commitments, and the ongoing pressure facing the construction sector relating to market conditions, a targeted review of the Scottish Government's Resource Spending will be undertaken in early 2022 and alongside this the Capital Spending Review undertaken in 2021 will be revisited in the light of the changes from UK Government. In conducting such a review, the Scottish Government remains committed to the principles set out in the IIP and the recommendations of the Infrastructure Commission for Scotland i.e. maintaining the vision for future infrastructure to support and enable an inclusive net zero emissions economy.
	The Resource Spending Review Framework was published on 9 <sup>th</sup> December 2021, and the Resource Spending Review findings will be published later in 2022 to give greater financial certainty and focus on long-term priorities. The idea of aligning strategy, project and programme funding is to increase confidence that the announced plans are affordable and fully funded going forward.
	While the upcoming targeted reviews of Capital and Resource spending will provide greater certainty about near-term spending plans, Scottish Government cannot be certain at this point about the capital budget and the affordability of infrastructure investment proposals beyond 2025/26. Ongoing work will therefore be required to consider the final recommendations of the STPR2 and whether there is sufficient budget available to cover the Scottish Government's contribution to the delivery of the recommendations beyond 2025/26.

## Public Acceptability

The package of measures at a national level is multi-modal, wide ranging and significant in scale and ambition. Several measures can be expected to improve accessibility, connectivity, and choice and to make transport cleaner, more efficient and more attractive across Scotland. There may however be 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.

It should be noted that any draft findings or recommendations of STPR2 are not committed to by the Scottish Government. They will be subject to a statutory consultation period. The recommendations will then be finalised and commitment will be subject to prioritisation of available budgets.

Other Criteria	Other Criteria Assessment		
Criterion	Performance Summary		
	Overall, most of the measures included in the package at a national level are anticipated to result in positive effects on reducing greenhouse gas emissions and improving air quality as the package of measures seek to promote a modal shift to more sustainable transport options and decarbonising the transport network. The package of measures also provide an opportunity to adapt the transport network to the predicted effects of climate change, with one measure focused specifically on adaptation.		
SEA	The package of measures, particularly the ones focused on active travel, will have positive outcomes for population and human health - for example through expected improvements in air quality and increased uptake of physical exercise through walking, wheeling and cycling. The package of measures are also broadly expected to improve quality of life and increase sustainable access to essential services, places of employment and the natural and historic environment. The modal shift is also expected to reduce levels of noise and vibration associated with the transport network. Most of the package of measures are anticipated to result in minor positive effects on safety as these interventions will help improve safety on the transport network by potentially reducing the likelihood of transport-related road accidents and casualties, for example through encouraging modal shift and the expansion of 20mph zones and limits.		
JLA	Several measures in the package will not have a significant effect on the 'material assets' topic, with most likely to have a positive effect as they promote a more sustainable usage of the existing transport network. Many of the packages of measures will not require any physical construction and therefore land-take and construction impacts will not generally be significant. However, the construction of any new transport infrastructure, including fixed links to islands, rail corridor enhancements, mass transit or trunk road and motorway improvements, has the potential to require significant quantities of natural resources, which could also potentially affect Scotland's greenhouse gas reduction targets. These same interventions could also cause negative impacts on landscape, soil, cultural heritage, biodiversity and the water environment. Any redevelopment of major railway stations could also potentially lead to negative impacts on cultural heritage, including cumulative effects across Scotland. Due to the uncertain impacts on many SEA topics, a series of strategic mitigation and enhancement recommendations are provided in the SEA, including the requirement for further environmental assessment.		

Protected characteristic groups such as children, younger people, women, ethnic minority groups, disabled people and older people are less likely to own a car and more likely to depend on public transport to make their journeys and access important services such as education, employment, healthcare and shopping. Measures that improve active travel or public transport would have positive impacts on these groups.

By encouraging modal shift to more sustainable modes and decarbonising the transport network, the package of measures would 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. Mode shift to sustainable modes will reduce the perception of isolation on paths, bus stops, stations and services, 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.

EqIA

Further benefits may be realised through the procurement of new vehicles and infrastructure which would typically be designed to improved accessibility standards. This would be of benefit to those with accessibility limitations including older people, disabled people and pregnant women or travellers with pushchairs or young children. Improvements to public transport interchanges and new stations/ stops would be required to be compliant with inclusive design standards and there would be an opportunity with new infrastructure to design-in level access. This would potentially provide greater access and positive impacts to the public transport network for those who are currently excluded due to accessibility barriers.

Accident risk would be reduced 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.

ICIA

The renewal of vessels and related harbour infrastructure is likely to have a positive impact on island communities. Residents of island communities would benefit from improved accessibility at ports and on new vessels. Increased capacity and enhancements for freight would improve the transportation of goods to the island which is of particular benefit to those who have more barriers to travel such as affordability or mobility restrictions or those who live in remote locations.

Decarbonisation of bus and the progressive decarbonisation of ferry travel and the transition to zero emission infrastructure would all have potential positive impacts on island communities by reducing emissions at ferry terminals and to some extent, along bus routes. The installation of charge points at ferry terminals, leading to improved multi-modal integration would have also have a positive impact on island communities. The development of renewable energy

	systems could also lead to the development/installation of infrastructure that can target the natural renewable assets of the Island Communities.
	The investment into decarbonisation of the ferry network would drive island connectivity improvements across the Clyde and Hebrides Ferry Service (CHFS) and Northern Isles Ferry Service (NIFS) networks leading to a beneficial impact on island communities. Further benefits may be realised through the procurement of new vessels and infrastructure which would potentially be designed to improved accessibility standards relative to those currently provided.
	The implementation of fixed links between islands and to the mainland will increase connectivity and access to services as well as potentially supporting job growth on the islands.
	By encouraging modal shift to more sustainable modes, the package of measures would contribute to improving local ai 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.
CDMIA	Improvements to public transport and active travel accessibility to higher education institutions and employment opportunities would also benefit young people.
CRWIA	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. Accident risk would be reduced through targeted infrastructure improvements and by encouraging modal shift away from private car, resulting in reduced accident risk due to reduced conflicts and as such would have positive impacts on children and young people.
	Active travel and public transport infrastructure and interventions could potentially have a positive impact on socio- economically disadvantaged groups with regards to improving access to key services such as education, healthcare, employment, shopping and recreational activities as well as connecting towns and villages. Interventions could target many urban and suburban communities across Scotland, including deprived communities, and could have a positive impact on those with no access to a private vehicle or those who may benefit from more affordable travel options.
FSDA	The package of measures considered would 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 where transport options are limited.
	For the 20% most deprived data zones in Scotland, an additional 23,300 people would be able to access their nearest hospital within a 30 minute journey time by public transport, a 5% increase compared to the without package. Similarly,

an additional population of 11,200 in such areas can now access their nearest higher education site within a 30 minute public transport journey, a 2% increase compared to the without package.

For access to employment, the average number of additional jobs per data zone that could be accessed by public transport from the 20% most deprived data zones in Scotland increased by approximately 5,400 locally (accessible by public transport within 40 minutes), and 8,100 regionally (accessible by public transport within an hour).

Behaviour change initiatives and activities would focus on promoting inclusive transport choices. Financial incentives/discounts can help people find cheaper alternatives to private car travel resulting in more affordable access to essential services such employment, education, healthcare and leisure facilities. Therefore, such interventions could provide positive impacts for socio-economically disadvantaged groups, who experience cost barriers to transport.

## **Annex A: Grouping Interventions**

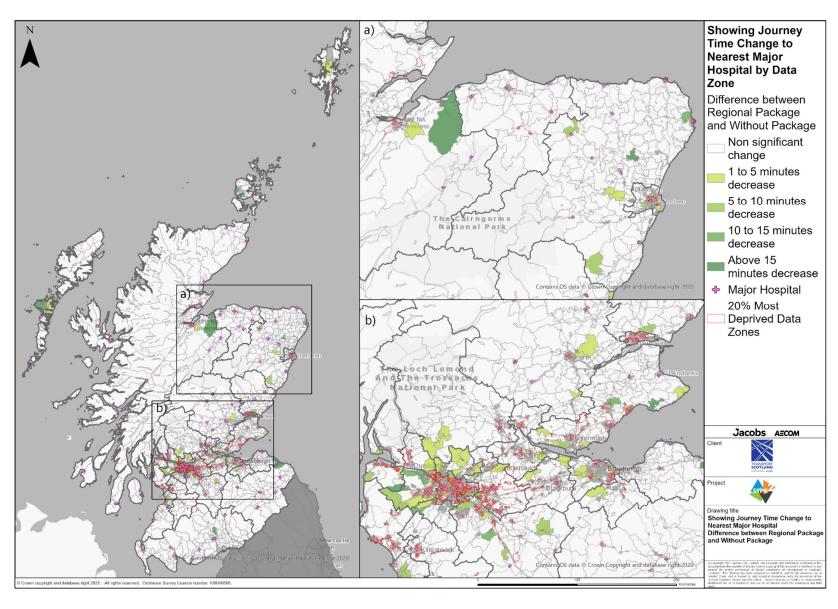
	National
Grouping Title	Grouping Description
Improving Access to Bikes	Improve access to bikes through a multi-faceted programme of interventions to enable people to cycle (and also to support walking/wheeling as appropriate), and to give them confidence and skills to do so, such that they can make use of new or existing active travel infrastructure. Measures would be designed to meet local community needs, and address inequality.
Connected	The transport components of 20-minute neighbourhoods within towns and cities. This would include, for example,
Neighbourhoods	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 footways and road crossing facilities).
Increasing Active Travel to School	Improved and safer 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	Active travel routes, segregated from busy roads but making use of quiet roads where appropriate, to connect
Travel Connections	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 toad and rail networks.
Connecting Scotland's	Segregated active travel routes on interurban connections between adjacent towns in locations where demand is
Towns by Active Travel	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).
Behaviour Change	Delivery of activities which provide encouragement, enablement and incentivisation for more people to make use
Initiatives	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	Provision of new or expanded 20mph schemes across Scotland on appropriate roads in cities, towns and villages.
and zones	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. Identification of schemes for the trunk road and motorway network. 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.
Demand Responsive Transport (DRT) /	Support for local/regional schemes that seek to draw on innovative solutions, perhaps supported by MaaS or smart technology where appropriate, or on international best practice in bus service provision.
Community Transport	These schemes would help to establish whether scarce existing resources could be better utilised across the public network, home to school transport, special educational needs travel and non-emergency patient travel, either on the basis of fixed route services or through flexible routeing.
Decarbonisation of the Bus Network	Bus fleet decarbonisation, including use of funding to further stimulate rapid commercial investment in the roll out of zero-emission buses and associated infrastructure, including for vehicles used by the home to school and community transport sectors.
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 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, such as: strengthening bridges, 50mph speed limits, implementing freight route signage
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.
Decarbonisation of CHFS and NIFS Ferry Network	Decarbonisation of the CHFS and NIFS ferry networks.
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.

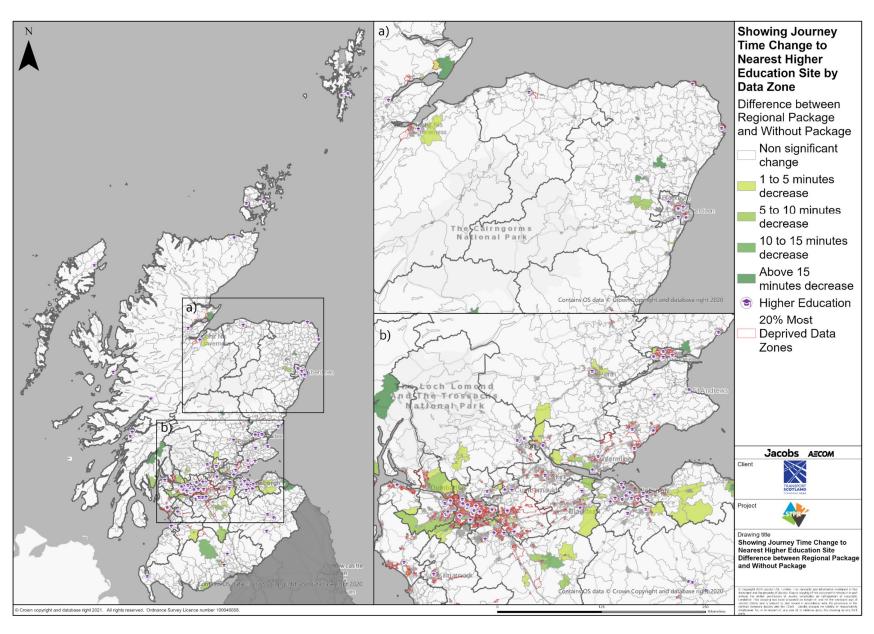
Trunk Road and Motorway Network Renewal for Reliability, Resilience and Safety   Renew and improve the resilience of the trunk road and motorway network. This would include preventative and programmed structural renewals of carriageways and network structures for consideration over and above current maintenance levels.   Potential measures would include carriageway and structure schemes as well as other roadside infrastructure, such as signage and safety barriers.		
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Scottish Government's Target of 'Vision Zero' by 2050.		
North West Trunk Road Improving trunk and motorway network road safety and strategic access to National Developments and Key		
and Motorway Network Gateways. Road safety improvements will focus on route sections where calculated local KSI and/or PIA accident	•	
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2015 to 2019. Improvements are anticipated to include widening / realignment on single carriageway sections,		2015 to 2019. Improvements are anticipated to include widening / realignment on single carriageway sections,

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	Scottish Government's Target of 'Vision Zero' by 2050.
North East Trunk Road	Improving trunk and motorway network road safety and strategic access to National Developments and Key
and Motorway Network	Gateways. Road safety improvements will focus on route sections where calculated local KSI and/or PIA accident
Improvements	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	A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver
support the shift to Low	Scottish Government's net zero targets
Emission/Ultra Low	
Emission/Electric Vehicles	
Changing Road User	Implementation of speed enforcement technology and national road safety behaviour change campaigns,
Behaviour	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	Provision of enhancements on the Inter-7 Cities strategic rail network seeking to improve connectivity by reducing
Corridor Enhancements	rail journey times on these corridors.
Rail Corridor	Provision of a platform for rail network enhancements within the Central Belt and on cross-border routes. This
Enhancements: Central	covers the Central Belt of Scotland (Glasgow-Edinburgh), communities within a commutable distance of these city
Belt	regions and the two main rail routes for cross-border travel to England (East and West Coast Mainlines).
Decarbonisation of the Rail	Delivery of a continued, rolling programme of rail decarbonisation, including consideration of batteries and
Network:	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
Development	are required to facilitate Scotland to England rail journeys including HS2 services and options which will facilitate
	new HSR services within Scotland.
Incident Management	New Incident Management System (IMS) Software to maintain and improve the current level of service across the
Software (IMS) Upgrade	network
Control Centre of the	This would involve investment enhancement of the capabilities of the Traffic Scotland National Control Centre,
Future	and how to plan for the future renewal and replacement of equipment, systems and services to maximise network
	operations.
Intelligent Transport	Investment in ITS which helps to ensure the availability, resilience, safety and quality of the transport
Systems (ITS) Roadside	infrastructure that is used to actively manage and control traffic during incidents and hazardous weather
Infrastructure	conditions.
Integrated Public Transport	Integration of ticketing across public transport (bus, rail and ferries).
Ticketing	

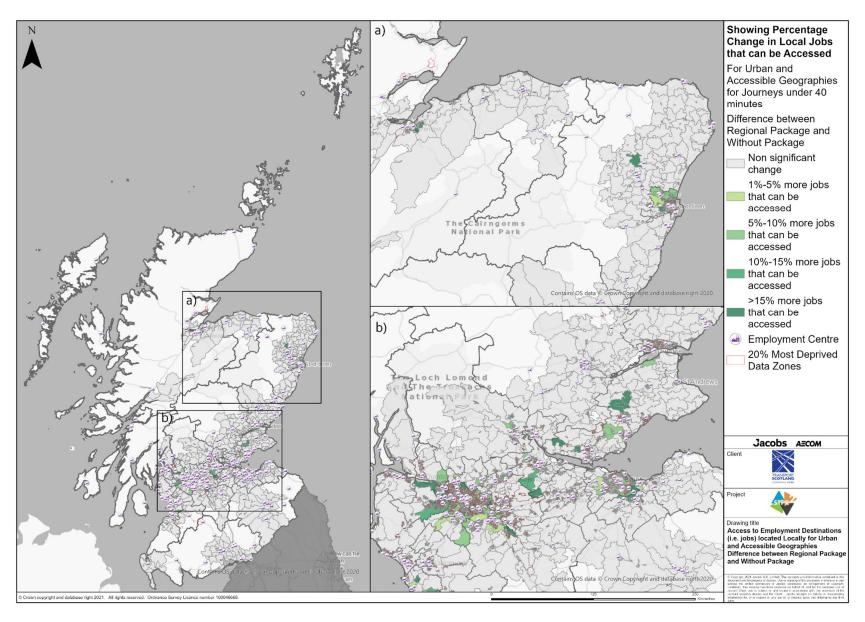
## **Annex B: NAPTAT MAPPING**



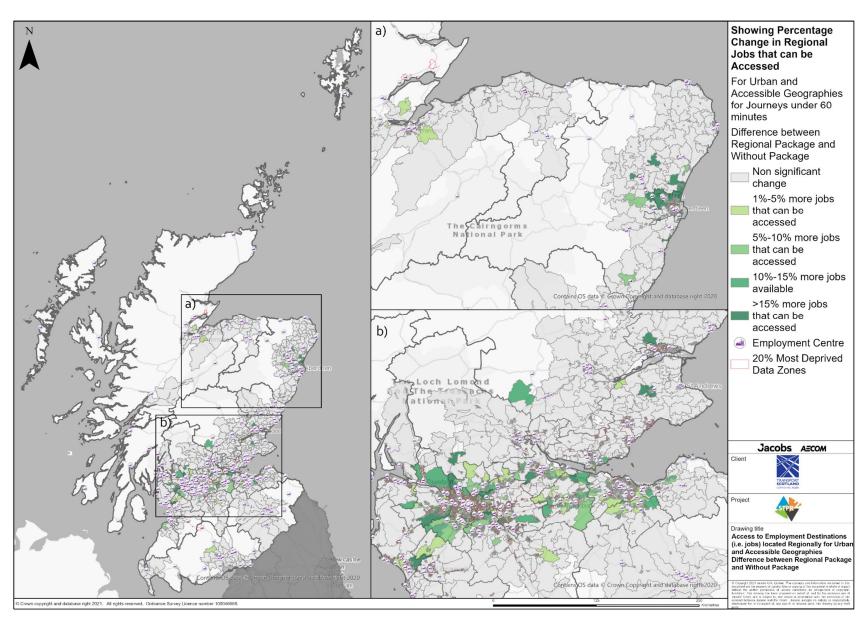
Journey Time Change to Nearest Major Hospital by Data Zone



Journey Time Change to Nearest Higher Education Site by Data Zone



Journey Time Change Forecast to Local Employment Destinations



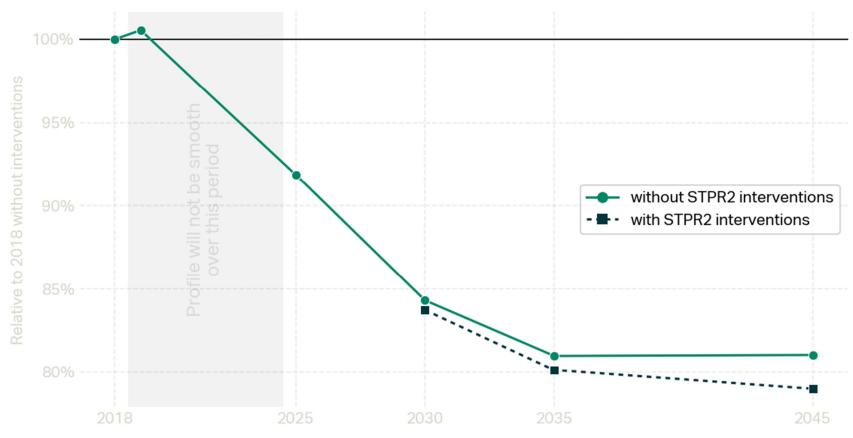
Journey Time Change Forecast to Nearest Regional Employment Destinations

## **Annex C: Detailed Appraisal Outputs**

## **Traffic Modelling Outputs**

## Scotland National Summary Low Motorised Traffic / Emission Demand

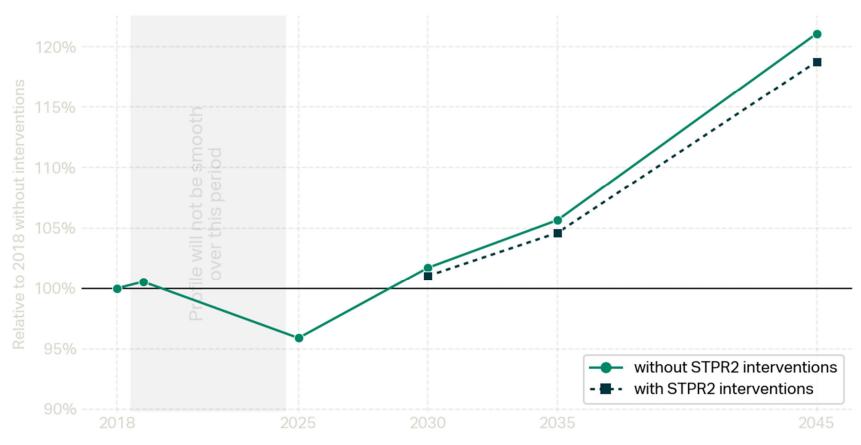
Modelled Annual Road Traffic (vehicle-kilometres)



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

# Scotland National Summary High Motorised Traffic / Emission Demand

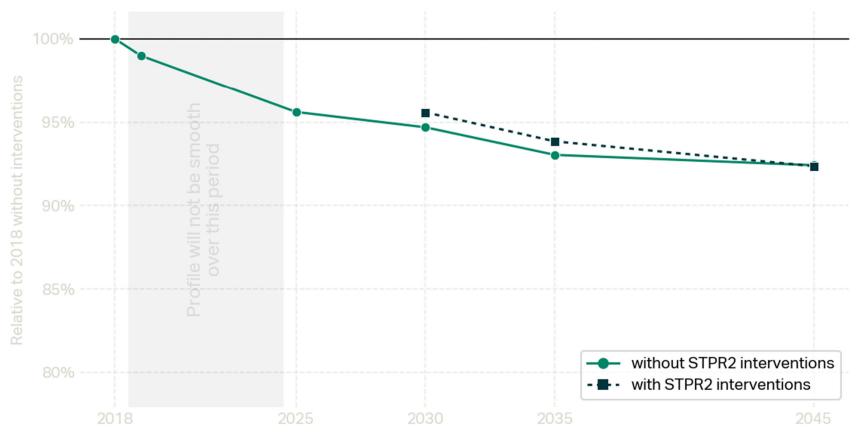
Modelled Annual Road Traffic (vehicle-kilometres)



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

## Scotland National Summary Low Motorised Traffic / Emission Demand

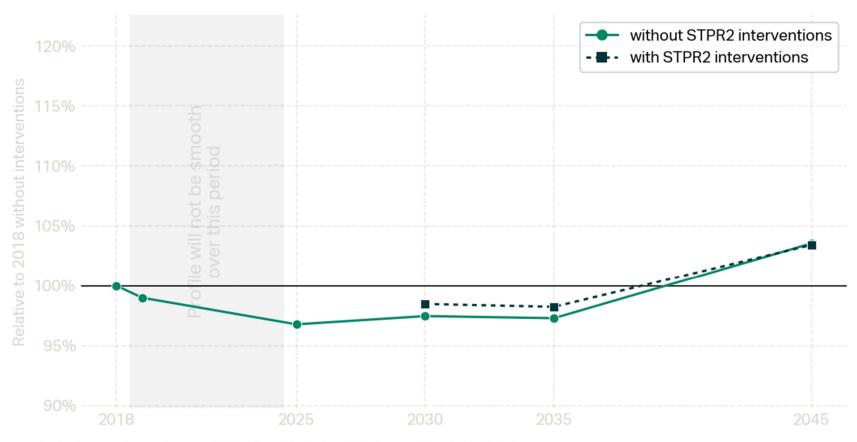
Modelled Road Journey Time (minutes per km)



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

# Scotland National Summary High Motorised Traffic / Emission Demand

Modelled Road Journey Time (minutes per km)



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