

SEStran 2035 Regional Transport Strategy



Foreword



I am pleased to present SEStran 2035 - the approved Regional Transport Strategy (RTS) for The South-East of Scotland Transport Partnership (SEStran). The Strategy provides the framework and a direction for transport in the south-east of Scotland area covered by the eight partner local authorities: The City of Edinburgh, Clackmannanshire, East Lothian, Falkirk, Fife, Midlothian, the Scottish Borders and West Lothian.

I would like to thank all those partners, stakeholders, community representatives and members of the public who took time

to engage in the development of the strategy through its different stages and whose input helped shape the strategy. Despite the impact of the pandemic, the draft strategy was published for consultation in late 2021 and finalised in September 2022.

The publication of National Transport Strategy 2 (NTS2) in February 2020 set out a strategy that focuses on interventions that aim to deliver on four priorities: Reduces Inequalities, Takes Climate Action, Helps Deliver Inclusive Economic Growth and Improves our Health and Wellbeing. The original RTS was published in 2008, refreshed in 2015 and included many policies and actions which are still relevant. However, a new strategy to reflect a change in emphasis at the national level was necessary. The concept of a Sustainable Travel Hierarchy was reinforced in NTS2. However, the inclusion of a Sustainable Investment Hierarchy and a focus at the national level on the four priorities mentioned above mark a significant change in where investment priorities lie to deliver national transport outcomes.

SEStran 2035 supports interventions to promote behaviour change, modal shift and the use of more sustainable modes of transport for journeys that need to be

undertaken. There is an ever-increasing focus on the climate crisis we are currently facing, and working towards a net zero carbon future will be a major influence on transport and its infrastructure in the decades to come.

The SEStran area's transport challenges range from urban congestion to rural public transport with declining bus services and patronage, and from the need to deliver more integrated mobility to sustainable logistics and freight hubs. The region is highly diverse from both a geographic and socio-economic perspective. While Edinburgh is expected to play a major role in the economic recovery post-Covid, even before the pandemic other communities in the region were severely affected by social and economic deprivation, further impacted by limited access to sustainable and affordable travel choices.

However, the spatial analysis work undertaken to support the draft RTS very clearly shows the dominance of car use for commuting to jobs anywhere other than Edinburgh city centre. It is important to acknowledge that a 'whole region' approach is required if car traffic reduction targets are to be met. Affordable, sustainable travel options between all regions will be needed for effective reduction in car-based transport emissions

to be delivered. Furthermore, revised draft NPF4 has a major focus on development that reflects the sustainable travel hierarchy and sustainable investment hierarchy by making best use of existing infrastructure and services. This emphasis on Liveable Places and a place-based approach to communities support reduced car dominance and will be a key factor in the future.

Covid-19 has had an immediate impact which will be far-reaching, acting as an accelerator for change. Trends that were developing have become accepted behaviour and this has created huge uncertainties. The only certainty is that things are unlikely to be the same again with a greater acceptance and expectation of home working and the growth in online retailing. Pre-pandemic travel patterns and numbers may never return and the future could look very different as people, businesses and communities adapt. Travel

volumes have changed and the pattern of travel demands is different. We must carefully monitor and seek to understand the longer-term changes in travel demand and behaviour that have arisen during this time of flux. SEStran 2035 has policies and actions flexible enough to allow us to respond to future trends and changes.

Whilst levels of bus and rail usage continue to be lower than their pre-pandemic levels, car use has returned to around 100% and the dominance of the car as a preferred mode of transport continues. Therefore, reduction in transport-based carbon emissions remains a key priority for delivery through SEStran 2035.

SEStran 2035 has been developed in partnership. At a time of severe financial constraints the strategy sets out that partnership working across national, regional and local partners and stakeholders is a key requisite to deliver

the vision of a South-East of Scotland fully integrated transport system.

SEStran has at its heart working together as a partnership with stakeholders across a wide range of geographies and interests, and we look forward to continuing to do this in the challenging years ahead. When it is necessary for people to travel either within their neighbourhoods or beyond, we seek to deliver a transport system where it is easy for people to choose active and sustainable transport as their preferred mode of travel.

Colin Davidson



Chair of SEStran
February 2023

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Introduction



1.0 Introduction

1.1. Purpose

This Regional Transport Strategy (RTS) for the South-East of Scotland has been prepared by the South-East of Scotland Regional Transport Partnership (SEStran) which was set up under the Transport (Scotland) Act 2005. It covers eight constituent local authorities as shown in Figure 1.1. This Act also set the requirement to produce a statutory RTS to provide a strategic framework for transport management and investment for the Partnership area.

The RTS has been prepared to replace the Regional Transport Strategy 2015 -2025 Refresh published in July 2015. It replaced the original SEStran Regional Transport Strategy 2008 – 2023 published in November 2008.

It is essential that the RTS addresses the transport problems and issues being experienced in the SEStran area. The purpose of this RTS is to set out these challenges and how SEStran proposes to respond to them.

This RTS has been prepared in accordance with RTS development guidance (Transport Scotland, 2006), the Scottish Transport Appraisal Guidance (STAG) and all relevant legislative and policy requirements. It is supported by a suite of evidence drawn from published policy documents and data analysis, as well as stakeholder and public consultation. This has been set out in the documentation accompanying the development of the RTS. This includes a STAG Case for Change Report which details the problems and issues that need to be considered by the RTS, as well as defining options to address them along with the strategy objectives. The options which emerged from the Case for Change also underwent appraisal with

the findings outlined in the STAG Preliminary Options Appraisal Report.



Figure 1.1 - SEStran Location Plan

The preparation of the new SEStran RTS has also been informed by Strategic Environmental Assessment (SEA) and Equalities Impact Assessment (EqIA) processes, each of which has identified key environmental, human rights and equalities issues which need to be addressed in the new RTS. This RTS is accompanied by proportionate SEA and Equalities Duties Assessment Reports which consider how relevant human rights and equalities and environmental issues have been taken account of to date and provides recommendations to inform the finalisation of the RTS. These processes, along with their associated timescales, are illustrated in Figure 1.2.

It also draws upon the findings of the SEStran Main Issues Report published in June 2020. This was substantially prepared prior to the Covid-19 pandemic and, therefore, primarily reflects pre-pandemic problems and issues. As such, the STAG process has sought to ensure that the RTS is developed upon an evidence base which reflects the latest understanding of problems and issues in the region. Travel behaviour has changed during the pandemic, as in many cases most people were made to work from home, with many companies now

introducing a work-from-home or hybrid working model, which will reduce the number of people commuting to work.

All interventions to be brought forward from this RTS will be developed to ensure efficiency and value for money, and take a whole life cycle approach to cost, accounting for future maintenance requirements. Further, as SEStran's RTS covers a period of extensive societal and behavioural change and rapid technological advancement, the policies are designed to be adaptable and flexible.

Interventions will also, therefore, respond to new opportunities that arise. For example, taking advantage of opportunities from societal changes and advances in technology and engineering to tackle congestion and lower demands for car-based travel can provide the basis for reallocating road space and delivering a more efficient use of the transport network. This can help improve public transport operations and provide for greater levels of mobility.

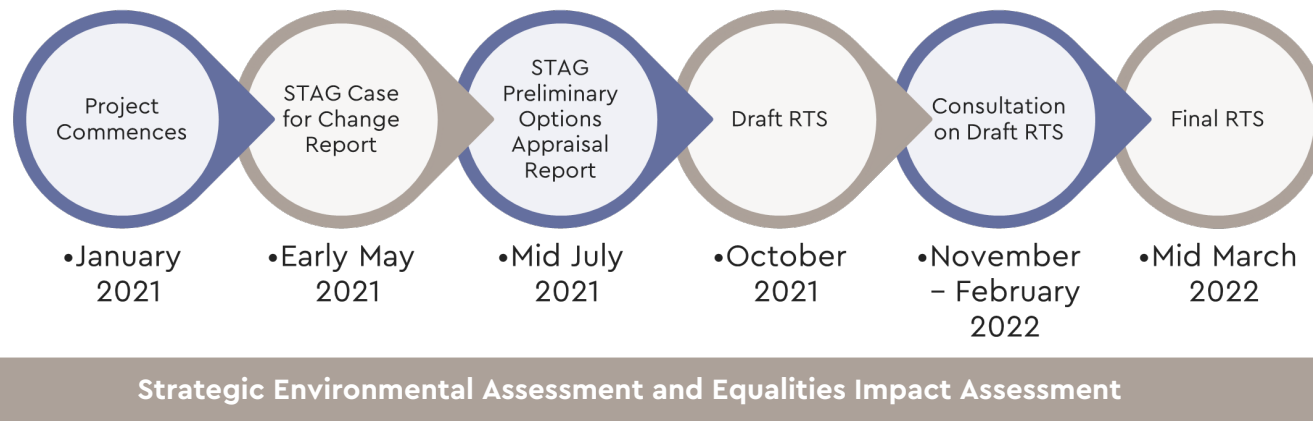


Figure 1.2 - RTS Timescales

1.2. Policy Context

The new Regional Transport Strategy sits within and is being developed in the context of a policy hierarchy which spans the national, regional and local levels. This is illustrated in Figure 1.3 along with some of the key policy documents.

In particular, the RTS is being developed within the policy framework provided by the National Transport Strategy 2 which was published in February 2020. It set out four strategic priorities, as well as defining a Sustainable Travel Hierarchy as shown in Figure 1.4. These four priorities and hierarchy have been used to guide the development of this RTS.

Alongside this, the Scottish Government has also set out ambitious targets to help achieve its overarching target of net zero emissions by 2045. In particular, the Climate Change Plan Update published in December 2020 outlined that by 2030:

- *our roads will contain no new petrol or diesel cars or vans*
- *car kilometres will have reduced by 20%*

This policy context has been used to guide the development of the RTS.



Figure 1.3 - Policy Hierarchy

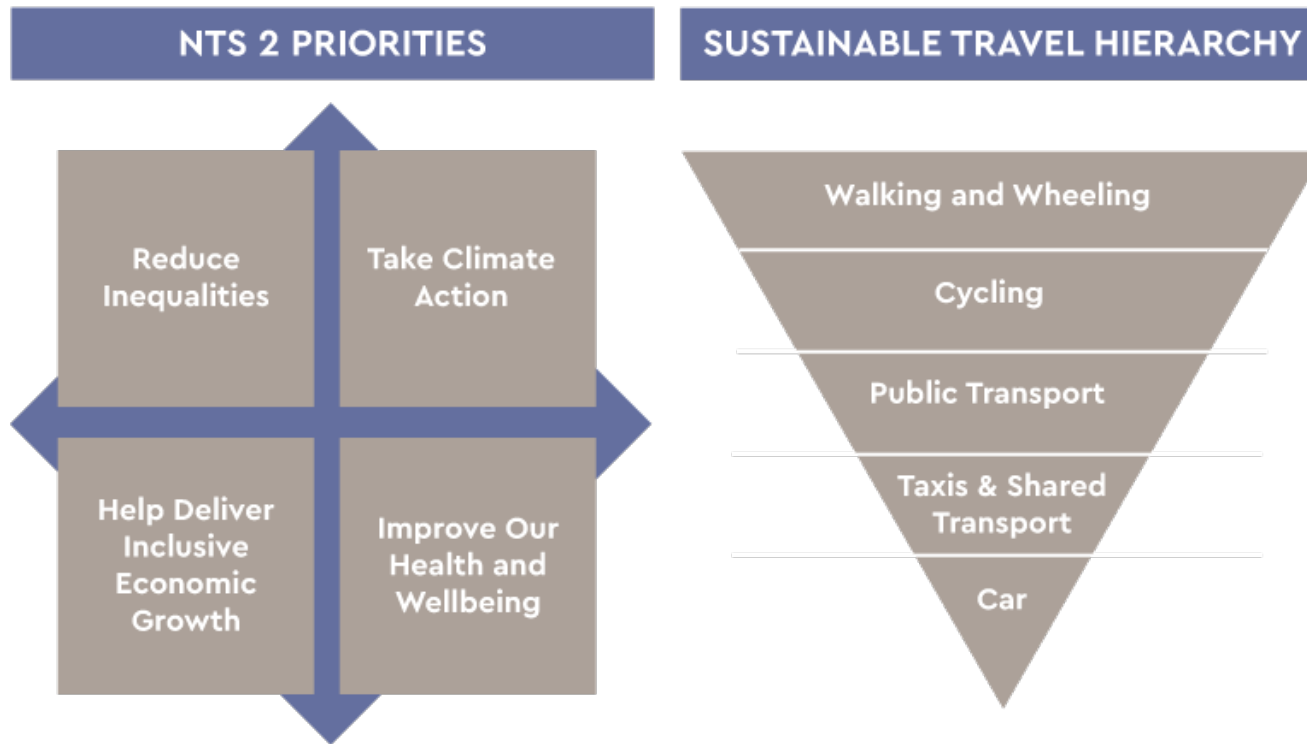


Figure 1.4 - National Transport Strategy Policy Framework

Context



2.0 Context

2.1. Area Demographics

The SEStran region covers 8,400km², which is just over 10% of Scotland's landmass. It is hugely diverse and includes areas which fall into every one of the Scottish Government's six-fold urban-rural classification. The total population of the SEStran area was estimated as 1,609,070 in 2019. The majority of the population is concentrated in the centre of the SEStran area, with a large, sparsely populated rural area to the south, particularly the remote rural areas in the Scottish Borders and East Lothian. The greatest concentration of population is within the City of Edinburgh, which accounts for approximately 33% of the total SEStran region's population. Figure 2.1 illustrates the breakdown of the region using the Scottish Government's six-fold urban-rural classification, which highlights how much of the area is classified as rural. The RTS considers transport issues and opportunities across all areas of the region.

There has also been significant population growth within the SEStran region, with a 7.5% increase between 2009 and 2019. The largest growth has been in the City of Edinburgh (13.3%), with the lowest growth in Clackmannanshire (0.5%). In addition, the population has been ageing, with the number of people in the region aged 65 or more increasing by 23.6% over the same time period. West Lothian has seen the highest growth in the elderly population (34.3%).

The population of the SEStran region is projected to grow by 7.4% between 2018 and 2038, although this masks variations across the region as shown in Figure 2.2. In particular, the populations of Clackmannanshire and Fife are forecast to decline whilst there is

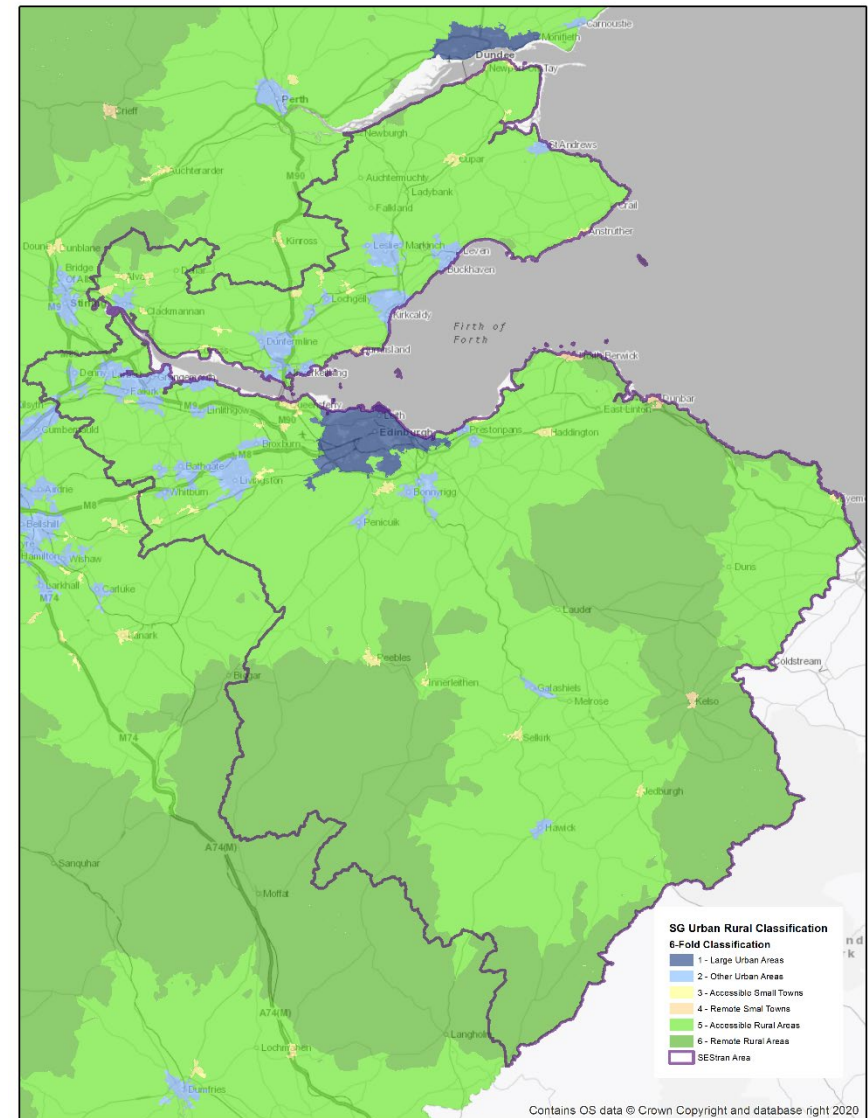


Figure 2.1 - Six-Fold Urban-Rural Classification in SEStran

considerable growth expected in Midlothian. The trend towards an ageing population is also expected to continue, with a 28% increase in people of pensionable age over the period¹. However, it should be noted that these projections do not reflect the potential impact of Brexit on net migration, which has been a primary driver of population growth in recent years.

In addition, the population is also becoming more dispersed as the average size of a household in the region has decreased from 2.30 in 2001 to 2.19 in 2019². These trends will have a range of implications for travel including:

- Increased travel demand linked to a growing and more dispersed population
- Increasing demand for access to healthcare
- More people wanting to use concessionary travel, putting increased pressure on public sector finances
- More dependence on public transport and community transport to access essential services

There are variations in levels of employment across the region, as illustrated in Table 2.1³, although only Clackmannanshire, Falkirk and

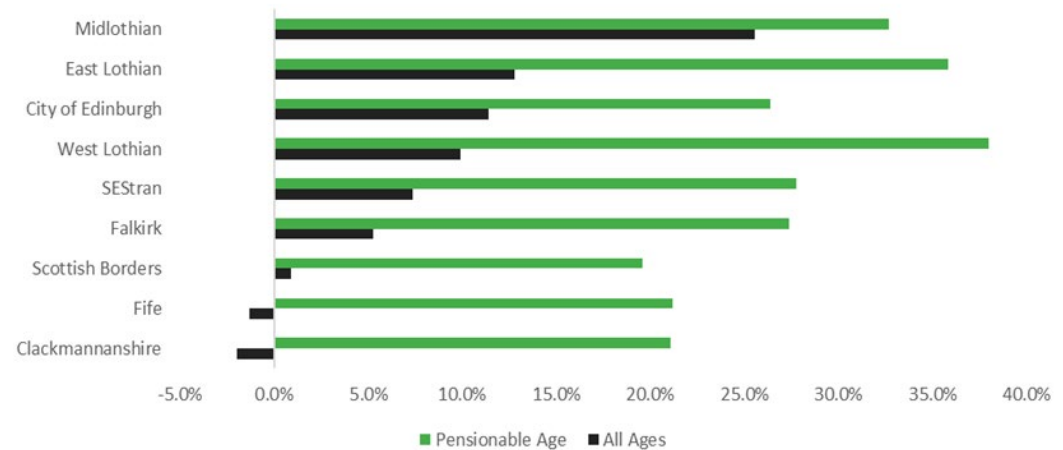


Figure 2.2 - Forecast Population Change in SEStran Region 2018 - 2028

Fife have an employment rate below the national average. All local authorities have experienced a growth in their employment rates since 2009, with the highest growth being in West Lothian.

Levels of walking as a means of transport and as way to keep fit or for exercise are higher in the SEStran region than the national average. This suggests higher levels of physical activity, which is beneficial for health, and this is also reflected in higher life expectancies compared to the national average.

¹ [Population Projections for Scottish Areas \(2018-based\) | National Records of Scotland \(nrscotland.gov.uk\)](https://www.nrscotland.gov.uk)

² [statistics.gov.scot : Average Household Size](https://statistics.gov.scot)

³ <https://www.gov.scot/collections/labour-market-statistics/>

2.2. Land Use Planning

Transport demand is closely related to land use as people travel to reach employment and services like healthcare, retail, education and leisure facilities. Historically, land use and transport planning have often not been undertaken in a wholly coordinated manner, leading to developments which can be difficult to use or access for those without access to a car or who would prefer not to use a car. It is critical to achieving nationally-set environmental targets (e.g. climate change, air quality) that land-use development and transport are better integrated to plan for a future mobility system and low-carbon society. The land-use planning context in the region is influenced by national, regional and local policy. The Scottish Government has prepared the draft National Planning Framework 4 (NPF4), which sets out a plan for Scotland to 2050. It focuses on three key outcomes which include:

- **Sustainable Places** where we reduce emissions and restore and better connect biodiversity
- **Liveable Places** where we can live better, healthier lives
- **Productive Places** where we have a greener, fairer and more inclusive wellbeing economy

The Revised Draft NPF4 also outlines strategic development across five areas of Scotland. The SEStran region is located within both the 'central urban transformation' and 'southern sustainability' areas of the plan. The former's interventions aim to improve urban accessibility and pioneer low-carbon, resilient urban living within the region; whilst the latter aspires to create a network of low-carbon

LOCAL AUTHORITY	EMPLOYMENT RATE	CHANGE SINCE 2009
Clackmannanshire	74.4%	4.7%
East Lothian	78.9%	3.9%
Edinburgh	75.1%	3.0%
Falkirk	74.1%	1.2%
Fife	73.7%	2.5%
Midlothian	80.4%	4.8%
Scottish Borders	76.2%	1.3%
West Lothian	77.8%	5.1%
Scotland	74.8%	2.8%

Table 2.1 - Employment Rate in the SEStran Region 2019

towns which strengthens resilience and decarbonises connectivity. Related transport-based, location-specific actions to achieve the above objectives within these areas include:

- **1) Central Scotland Green Network:** Enhancements to provide multifunctional green infrastructure that improves placemaking and contributes to the rollout of 20-minute neighbourhoods
- **2) National Walking, Cycling and Wheeling Network:** The upgrading and provision of additional active travel infrastructure to develop a sustainable travel network that will provide access within and between settlements, key services, employment and multi-modal hubs

- **3) Urban Mass/Rapid Transit Networks:** Development of Edinburgh mass transit network within the city region
- **6) Digital Fibre Network:** The continued rollout of world-class broadband and associated infrastructure
- **8) Industrial Green Zones:** Creation of a 'Scottish Cluster' of zero-carbon industrial zones in Grangemouth (plus St Fergus and Peterhead)
- **13) High Speed Rail:** Implementation of increased infrastructure to improve rail capacity and connectivity on the main cross-border routes and east and west coast mainlines
- **17) Edinburgh Waterfront Regeneration** of strategic sites along the Forth Waterfront. Includes the creation of new

green and blue infrastructure, new active travel facilities and new/upgraded port facilities.

The draft NPF4 included the 'Minimum All-Tenure Housing Land Requirement' (MATHLR), which sets out housing land allocations for each of the SEStran local authorities for the next 10 years, as shown in Table 2.2. In addition, the percentage increase on the existing housing stock that these housing allocations represent has been calculated to provide an indication of the scale of development. This shows that housing could increase by up to 20% in Midlothian whilst the smallest increase would be in Fife at just 4.2%. Overall, housing in the region could increase by 11.2% on this basis.

AREA	HOUSING LAND REQUIREMENT	TOTAL DWELLINGS (2018)	% OF TOTAL DWELLINGS
Clackmannanshire	1,500	24,451	6.1%
Fife	7,300	176,500	4.1%
Scottish Borders	4,800	58,296	8.2%
Falkirk	5,250	74,594	7.0%
SEStran	80,800	749,642	10.8%
Edinburgh	36,750	248,314	14.8%
West Lothian	9,850	79,483	12.4%
East Lothian	6,500	47,731	13.6%
Midlothian	8,850	40,275	22.0%

Table 2.2 – 10-Year Housing Land Requirements

A new duty has been introduced requiring planning authorities, acting individually or in groupings, to produce a Regional Spatial Strategy as soon as is practicable. In the short term, the Scottish Government has invited planning authorities to form regional groupings and develop indicative Regional Spatial Strategies (iRSS) to feed into the consultation on NPF4. There are two iRSS areas that exist across the SEStran area, including one for the Edinburgh and South-East Scotland City Region and one covering the Forth Valley area.

Through the development of the RTS and iRSSs, it is imperative that there is closer integration between land use and transport planning in the City Region. It is important to understand where growth opportunities will be created and how these can be delivered in a manner that ensures sustainability and inclusivity through equitable access. In addition, there is a need to join up the delivery plans and priorities for transport to support ongoing development.

The iRSS for the Edinburgh and South-East Scotland City Region covers Edinburgh, Fife, West Lothian, Midlothian, East Lothian and the Scottish Borders: an overview of the spatial strategy is shown in Figure 2.3. This sets out a commitment to meeting significant levels of housing growth in the region and providing for sustainable economic development. A key element of this housing delivery focuses around seven strategic sites as follows:

- Blindwells, East Lothian
- Shawfair, Midlothian
- Granton, Edinburgh
- Winchburgh, West Lothian
- East Calder, West Lothian

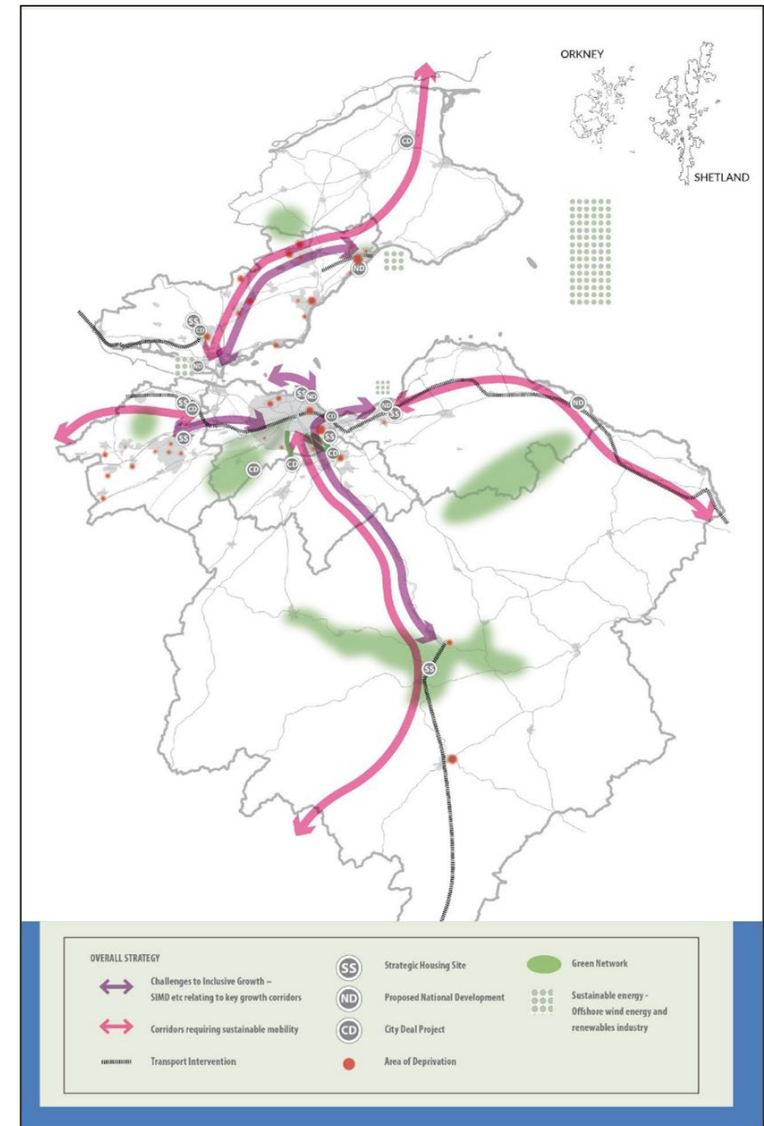


Figure 2.3 - Edinburgh and South-East Scotland City Region iRSS Overall Strategy

- Dunfermline, Fife
- Tweedbank, Scottish Borders

The iRSS highlights the importance of connectivity to the region, noting that it is both about transport infrastructure and strong connections between communities and settlements, to ensure there are no barriers to participation. There are concerns that cross-boundary (i.e. local authority) deficiencies in connectivity and affordable public transport options are leading to disconnection from work opportunities, including in more rural areas.

In terms of transport, the iRSS strategy focus is twofold. Firstly, to improve the linkages along existing major transport corridors to enhance connectivity *beyond the region* and, secondly, enhance the links *within the region*. For new developments, connecting infrastructure and services need to be identified and delivered before sites are completed to give the best opportunity for sustainable habits to become embedded.

The iRSS also outlines that local authorities will aim to ensure that there is a sufficient supply of housing land to meet the housing land requirements set out in NPF4 and indicated in Table 2.2.

Development policy will promote brownfield sites and set minimum levels of density appropriate to urban and edge of urban sites to promote better public transport and active travel provision and more sustainable neighbourhoods, i.e. where the density supports a level of local services, public transport and employment opportunities.

Falkirk and Clackmannanshire Councils are working with Stirling Council on the preparation of an RSS for the Forth Valley area. An iRSS was submitted to the Scottish Government to inform the development of NPF4. This is based around a polycentric approach

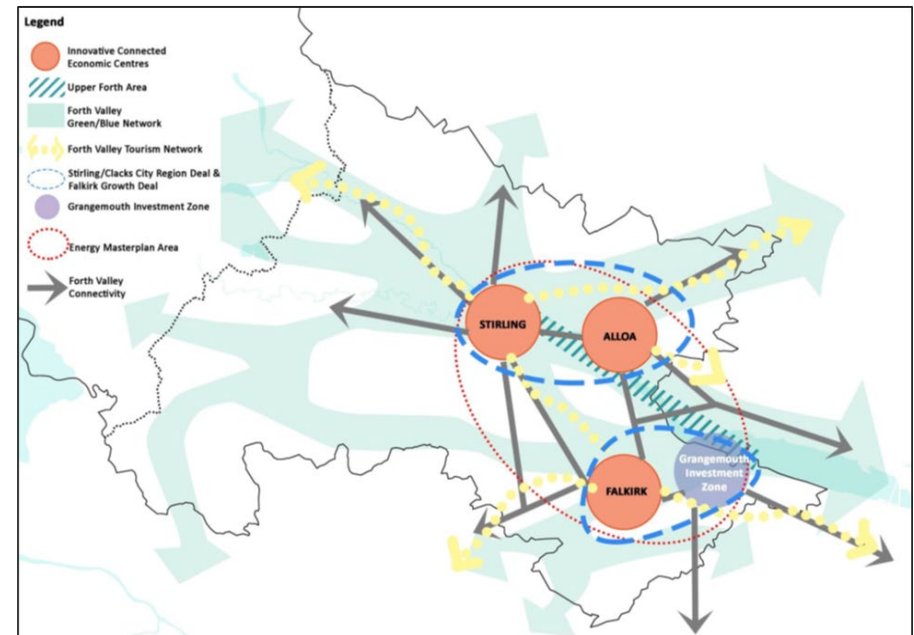


Figure 2.4 - Forth Valley iRSS Overall Strategy

that notes the strategic relationships across the wider area and linking role that the region plays in central Scotland. This is illustrated in Figure 2.4. From a connectivity perspective the iRSS focuses on decarbonising transport through the provision of an electric vehicle charging network, active travel and supporting transport infrastructure, as well as digital infrastructure. In terms of housing, it is highlighted that the NPF4 response to housing targets across the region will influence how the final RSS addresses housing need and demand. However, Falkirk is a distinct housing market area with a closer relationship between Stirling and Clackmannanshire areas.

Furthermore, in September 2021 the Edinburgh and South-East Scotland Regional Prosperity Framework was approved by Joint Committee. The framework builds on the regional partnership that is delivering the £1.3bn Edinburgh and South-East Scotland City Deal. A series of future regional priorities has been identified, based on supporting the region to flourish, encouraging innovation and supporting resilience. Some major regional opportunities have been identified through the framework development process, each aligning with one or more of these themes. Two major opportunities directly relate to transport, which are:

- The creation of sustainable mixed communities and new destinations and attractors across the region. This will be achieved through regeneration and new development with the intention of increasing job density, amenities and housing options, as well as providing services and infrastructure within more self-contained, 20-minute neighbourhoods.
- Promoting sustainable transport and mobility to reduce car dependency and the need to travel unsustainably right across the region, by delivering key aspects of the National and Regional Transport Strategy, such as interconnected, cross-boundary, active travel links and better infrastructure for public transport provision. A new mindset is needed which recognises the essential contribution that rural and less urbanised parts of South-East Scotland make to the economy and society. We will provide affordable, coordinated public transport options for those who live in transport poverty for access to employment, training and education opportunities.

Moreover, City Region and Growth Deals have been signed for Stirling and Clackmannanshire, Falkirk and Borderlands. When combined with that for Edinburgh and South-East Scotland, these

will deliver well over £1bn worth of investment in infrastructure, innovation and skills in the region, including £10m for investigating an extension of the Borders Railway. This investment is designed to unlock economic growth and to tackle inequality and deprivation.

Interlinking with the above policy landscape is the Strategic Transport Project Review 2 (STPR2) which will help inform transport investment in Scotland for the next 20 years. A total of 45 recommendations were developed. A full list of regional interventions is contained in STPR2 Report - Appendix H: Appraisal Summary Table – Edinburgh & South-East Scotland [\[LINK\]](#). Key interventions here include:

- **Edinburgh & South East Scotland Mass Transit (12):** A mass transit system for the region which would provide more public transport options for cross-boundary travel. The system would focus on key corridors of demand and disadvantaged areas with greatest dependence on public transport.
- **Provision of strategic bus priority measures (14):** Reallocation of road space on local/trunk road networks. Includes progression of plans on the M8, the CAVForth Project between Fife and Edinburgh and appraisal of interventions on the M90 and A90.
- **Edinburgh/Glasgow-Perth/Dundee Rail Corridor Enhancements (17):** A programme of enhancements to improve journey times and line capacities. Subject to business case processes, improvements could include Greenhill Junction and Edinburgh western station approaches.

- **Rail Decarbonisation (25):** Priorities for rail decarbonisation include the Borders and Fife -> [Perth] -> Dundee -> Aberdeen -> Dyce lines
- **Sustainable access to Grangemouth Investment Zone (39):** Multi-modal improvements that will enable sustainable access to the area
- **Trunk Road and Motorway network renewal for reliability, resilience, and safety (32):** A co-ordinated programme of planned renewal and refurbishment includes focus on maintaining the M8 and strengthening major bridges (including Kincardine Bridge)
- **Major Station Masterplans (43):** Improvements to the functionality, capacity, ambience and intermodal connectivity of Edinburgh Waverley
- **High speed and cross border rail enhancements (45):** Improvement to inter-regional train lines. Includes upgrades to East Coast Mainline

It should be noted that the non-location-specific interventions also have relevance for the SEStran region. These can be grouped into the themes below:

- Improving Active Travel Infrastructure
- Influencing Travel Choices and Behaviour
- Enhancing Access to Affordable Public Transport
- Decarbonising Transport
- Increasing Safety and Resilience on the Strategic Transport Network
- Strengthening Strategic Connections.

These interventions will have a transformative impact upon the way people and goods travel within and beyond the SEStran region – helping achieve national environmental and economic policy goals.

The RTS has been developed at a time when significant national and regional policy proposals are being brought forward. At the national level, STPR2 and NPF4 will fundamentally alter transport across Scotland and help deliver net zero ambitions. At the regional scale, the various iRSSs and City Region and Growth Deals will redefine the spatial and economic landscape of the SEStran region. It is within this land-use planning and economic development context that the RTS has been developed, ensuring synergy between the RTS and the wider land-use and transport context.

2.3. Travel Behaviour Change

There is a long-term trend of people making fewer trips, as reflected in the DfT's long-running National Travel Survey. On average, people are making 13% fewer trips per annum compared to the mid-1990s. All of the main travel purposes have seen a decline, with only education and some of the less frequent leisure trip categories seeing an increase. The average distance travelled has declined at a lower rate (7%), meaning the average trip length has increased over this period. Reflecting this, average trip duration has also increased from 20 to 23 minutes. At the UK level, this reduction in travel per person has been offset by growth in population of 15% over this period. Population growth has therefore been the main driver of growth in travel, offsetting the reductions in travel at the individual level. Population projections are therefore a key element of thinking in the RTS development process and were discussed further in Section 2.1. More recently, travel patterns have been influenced by the Covid-19 pandemic, with potential long-term implications for how, where, when and how often people travel. This is discussed in Chapter 17.

Transport Challenges in the Region



3.0 Transport Challenges in the Region

3.1 Defining Transport Problems

Developing the RTS starts from a set of transport problems and, to a lesser extent, transport opportunities. To be meaningful to the public, the transport problems which the RTS is aiming to address must reflect problems experienced in everyday life by individuals, organisations and businesses in the SEStran area. These vary across the region, with those being faced in rural areas often differing from those in urban areas.

From a **user perspective**, these transport problems will impact on individuals and groups (including those with protected characteristics), but are likely to be related to a relatively small number of parameters which define any travel, such as:

- cost of travel (especially relative to disposable income)
 - lack of public transport connectivity, low service frequency or no service at all, especially in rural areas
 - confusing travel information
 - multiple ticket types and different tickets per mode or operator
 - personal security/safety
 - physical accessibility of services, poor supporting infrastructure (particularly in rural areas) to support travel and interchange
 - punctuality of travel (public transport punctuality/congestion making road-based journey times unreliable)
- quality and comfort of journey
 - reliability of travel (cancellation of public transport services)
 - requirement for excessive interchange
 - travel time (relative to other modes)



- poor digital infrastructure in rural areas to support RTPI and mobile journey planning and ticket purchase

As shown in the **Problems Framework** illustrated in Figure 3.1, these transport problems as experienced by the user:

- can usually be traced back to a **root cause**, associated with the transport supply side, which in turn informs the identification of Transport Planning Objectives and options
- can have a **travel choice consequence**, e.g. use of less sustainable modes, journeys not being made
- have a wider **societal consequence**, e.g. economic (wasted time), environmental (emissions), health & wellbeing (reduced

levels of walking), social (exclusion from employment opportunities)

This Framework has been used to organise and present the transport problems to be addressed in the RTS. These have been identified from a range of sources including:

- **Main Issues Report:** SEStran published an RTS Main Issues Report in June 2020. This was substantially prepared prior to the Covid-19 pandemic and therefore primarily reflects pre-pandemic problems and issues, although consideration was given to anticipated impacts.
- **Policy Review:** Over 90 local, regional and national policy documents were reviewed, spanning transport, land-use

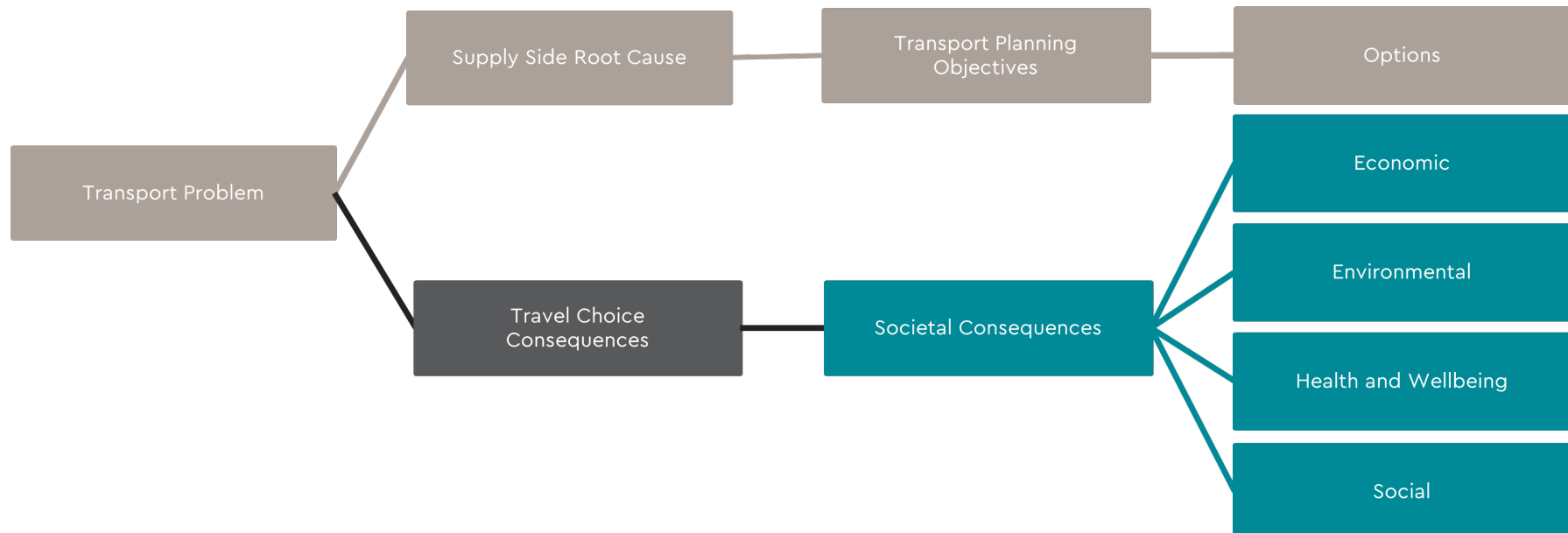


Figure 3.1 - Transport Problems Framework

planning, economic development, health, energy, digital connectivity and the environment

- **Stakeholder Engagement:** Over 130 stakeholders were invited to participate in consultation either through workshops, individual meetings or by responding to briefing notes. In total, 11 workshops and 21 meetings took place and 62 written responses were received.
- Edinburgh & South-East Scotland City Region Deal – Workforce Mobility Project Survey Report Surveys 2021.
- **Public Consultation:** A public survey was undertaken online over a six-week period between 8th March and 19th April 2021. This explored pre-pandemic travel patterns and anticipated post-pandemic travel behaviour, along with the reasons for these travel choices. In total, 998 responses were received.
- **Case for Change Consultation:** The STAG Case for Change was subject to a four-week public consultation period between 29th June and 26th July 2021. Responses were collected via an online survey, with a total of 21 responses received.
- In accordance with statutory requirements, **Strategic Environmental Assessment (SEA)** and **Equalities Impact Assessment (EqIA)** processes are being undertaken to respectively assess likely significant environmental impacts and apply relevant equalities duties throughout the RTS development process.

The following problems have been identified through this process and form the basis of the policies and actions defined in the RTS. In addition, these have been defined and appraised in accordance with

the requirements of STAG and taking into account the policy framework provided by NTS2. Key guiding principles throughout this process have been the Sustainable Transport Hierarchy and the Sustainable Investment Hierarchy.

All Modes

The following problems are common to all modes of transport and are experienced by users regardless of how they choose to travel. On this basis they need to be considered in relation to all modes of transport.

1. **Those living in new developments or travelling to new developments can have long journeys and/or implied car use to undertake day-to-day activities:** there has been a lack of integration between land-use and transport planning, which has led to car dependency for accessing many new developments. Significant land-use development is planned for the region, and this requires careful integration with transport to ensure that sustainable transport provision is planned and delivered from the outset.
2. **Use of the transport system brings the risk of collisions and personal injury:** whilst the number of road collisions has been declining over recent years, there is still a risk of injury on the road network. Modes of transport which do not utilise the road network (e.g. air, rail, sea) present a significantly lower risk of injury or collision, but nonetheless this must still be taken into account.

Active Travel

Walking and cycling are the most appropriate mode of transport for short journeys. However, analysis has shown that whilst walking was the main mode used for 23% of all journeys in the SEStran region, it was only 2% for cycling. This can be linked to the fact that two-thirds of households in the SEStran region have no access to a bicycle.

Consultation with active travel groups highlighted the main barriers to walking and cycling are safety, accessing bikes and a lack of dedicated infrastructure, whilst maintenance costs are also a key concern for the infrastructure providers. The lack of cross-boundary cycling routes was also raised as a concern, along with physical barriers like the Edinburgh City Bypass and River Forth. The public highlighted the quality of walking paths and degree of segregation from traffic when cycling as the factors they were least satisfied with. Additionally, some stakeholders noted that the weather and low temperatures are both factors which affect the seasonal patterns of walking and cycling.

3. **Many do not find cycling a realistic option:** low levels of cycling are indicative of the fact that it is unattractive to many potential users. A lack of access to bikes and poor integration across networks are key barriers to greater cycling.
4. **Walking or wheeling is not an attractive option for some short journeys:** whilst levels of walking are higher than cycling, it still remains unattractive to many, with over a quarter of people in the region not using walking as a mode of transport on a regular basis. This is likely to be the case particularly for people who face mobility impairments or disabilities which make walking or wheeling challenging.

Public Transport

Analysis of bus journey times across the region highlights that they can be up to five times longer than the equivalent car journey time at peak periods, whilst road journey times show there is a high degree of variability between peak and off-peak periods. This affects the attractiveness of bus services, particularly longer bus trips. Lothian Buses highlighted that their problems include congestion, road



space allocation and service reliability. Congestion was also acknowledged as a key factor affecting buses by City of Edinburgh Council, Falkirk Council and Fife Council which impacts on the viability of smaller bus operators in particular. It also impacts on the efficiency and attractiveness of rural services which access the city centre when compared to cars. Rural operators highlight rising costs of operating services on high-mileage routes between rural conurbations; continued uncertainty in farebox revenue following Covid-19; and the increasing reliance on public funding to remain in operation. The challenge faced is to speed up journey times to encourage people to use public transport and to make journeys more integrated and connected across all public transport modes, including better multimodal ticketing between operators.

Analysis also found that some public transport journeys between the main settlements across the region require up to three interchanges, whilst others cannot be undertaken at all within a two-hour time period. Interchange and long journey times are known to be significant barriers to public transport use which will undoubtedly cause people to choose alternative modes for these journeys. Furthermore, a number of locations have been identified which suffer from a combination of deprivation and poor public transport connectivity to healthcare, employment and education, relative to other areas of similar geographical type, therefore covering urban and rural areas.

The findings from passenger satisfaction surveys highlighted that around 20% of passengers have difficulty with the levels of crowding and availability of seating on train services. These findings reflect pre-Covid-19 circumstances and may therefore change as a result of the pandemic, so peak-hour crowding on public transport services is a problem that will require ongoing monitoring. Network Rail and ScotRail emphasised that there are capacity issues on the Fife Circle

and Borders Railway, but that capacity-related infrastructure projects have taken a step back due to post-pandemic uncertainty. There is also a pinch point at Edinburgh Waverley and Haymarket stations resulting from Portobello junction and Abbeyhill junction. Problems with capacity on the East Coast Main Line through East Lothian were similarly raised by stakeholders.

The survey also highlighted value for money of rail services as a concern for nearly half of respondents. Along with the findings from a similar survey of bus users, which suggests that a quarter of people are dissatisfied with the value for money provided by bus services, this highlights a potential issue with public transport. Fife Council underlined that the cost of rail travel is often felt to be disproportionately high in the area. Affordability of transport is a key factor affecting those on low incomes, with those in lower income households more likely to travel by bus, while people in higher income households are more likely to drive or take the train.

Access to the public transport network can also be a challenge for some. Analysis of Scottish Household Survey data identified that 23% of the region's population have a limiting long-term physical or mental health condition, whilst 19% are over the age of 65, with significant growth in elderly population anticipated in the future. These groups, along with others like those with disabilities, the mobility impaired and parents with pushchairs, can experience physical barriers to accessing public transport networks and services. This was highlighted as a particular concern by stakeholders at the active travel workshop, citing the need for step-free access at stations. Fife Council outlined that some stations in their area are not compliant with the Equality Act 2010, which prohibits discrimination, harassment or victimisation of people who possess a protected characteristic.

Up to a third of bus passengers and a quarter of train passengers do not feel safe when travelling by public transport in the evening. These problems are particularly acute for the most vulnerable groups, including the young, elderly, disabled, women and ethnic minorities. In addition, some users have difficulty accessing public transport information. This is also likely to be a problem for infrequent or non-public transport users who are less familiar with where and how to access public transport information.

5. **Peak period bus-based journey times can be much longer than off-peak:** peak period congestion causes delays which make journey times longer
6. **Peak period bus-based journey times can be much more variable than off-peak:** as well as being longer, journey times are more variable and less reliable at peak periods, which can make buses unattractive, particularly when people need to travel to and from work
7. **Some direct public transport journey speeds are slow, so journey times are substantially longer than going by car:** this makes public transport unattractive compared to cars for many trips
8. **Some travel by public transport requires interchange(s) – adding to journey times, access issues, inconvenience and cost:** this also makes public transport unattractive when people cannot make a direct journey between their origin and destination
9. **People can't get a seat on some public transport services:** overcrowding on public transport may only be perceived as an inconvenience for many, but for some it could lead them to choose to travel by car instead. This is particularly the case for vulnerable groups who may have mobility impairments or additional requirements, such as parents with pushchairs.
10. **Travel by bus or rail is unaffordable for some, particularly the unemployed or those on low incomes:** these groups are also likely to be those most dependent on public transport
11. **Some journeys cannot be made by public transport:** a lack of connections means some journeys are not possible by public transport at all, or within a reasonable timescale, and is evidenced by higher car ownership in remote rural areas. This means that in rural communities and sub-urban settlements there is no alternative transport option to the private car, which affects access for work, healthcare, education, training, wellbeing and social activities.
12. **Physical access to, and use of, the public transport network is a problem or not possible for some users, like the elderly, those with disabilities, parents with pushchairs and the mobility impaired:** who may be amongst those who are most dependent on public transport to access essential services and can also be those who face the greatest physical barriers to using it
13. **Vulnerable groups (e.g. young, elderly, disabled, women, ethnic minorities) not feeling safe on public transport:** these groups are often those who feel the most unsafe when using public transport, which can discourage them from using it, particularly in the evenings
14. **People do not have full awareness of their public transport options:** people who do not know how to find public transport information will not know what services they could potentially make use of. This is likely to be a particular problem for those

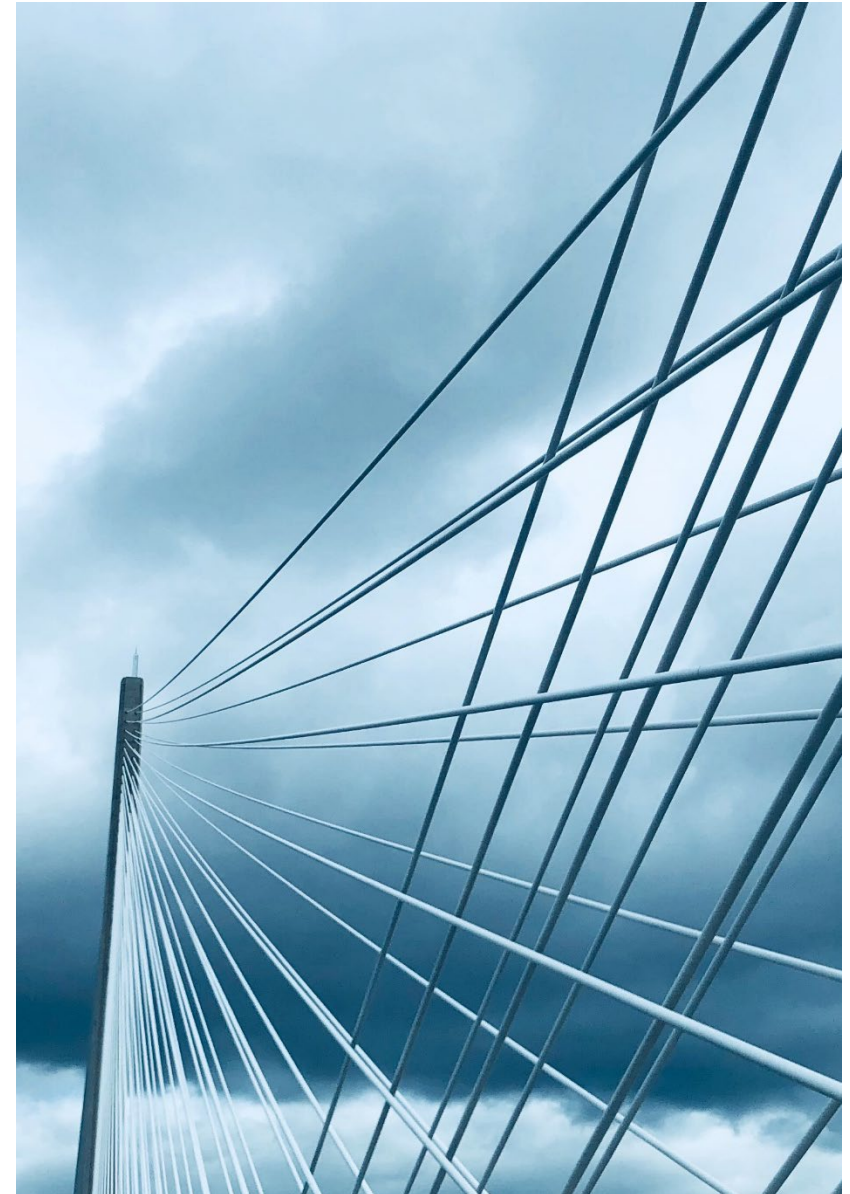
with learning difficulties or who have a sight or hearing impairment which may make accessing public transport information more challenging.

Mixed Mode

Stakeholders highlighted that there are barriers to combining the use of public transport and bikes. The active travel workshop attendees outlined that it was important to integrate bike with bus and train in terms of parking and space on vehicles, whilst Fife Council and Scottish Borders Council outlined that there are issues with taking bikes on buses and trains. Stakeholders also emphasised that there is a lack of integrated ticketing and no single source for journey planning for transport across the region. These fragmented sources of data cause problems in relation to the integration between transport modes, which makes it more difficult to make multi-modal journeys in the SEStran region.

Furthermore, Scottish Borders Council and existing Demand Rapid Transport users highlighted that the inconsistent quality of broadband and mobile connectivity is constraining the development of digital transport information and service platforms. Real Time Passenger Information infrastructure, customers' mobile travel planning and ticket purchasing and future MaaS and DRT all rely on digital connectivity. These initiatives can only be delivered fairly across the region if rural connectivity is improved to match that of the urban areas.

Rail patronage has grown considerably at the majority of stations across the region. This has had a corresponding impact on the demand for Park and Ride. Clackmannanshire Council, Falkirk Council, Fife Council and West Lothian Council all stressed that many station car parks are operating at capacity.



15. **Combining cycling and public transport use is not possible:** few buses and trains have facilities to carry bikes, whilst those that do have low capacity, which creates a degree of uncertainty for users
16. **Preferred Park and Ride station cannot be used due to lack of parking during commuter (i) peak and (ii) inter peak:** some station car parks are full at the beginning of the AM peak and remain so throughout the day, meaning there is no capacity available for people travelling later on. This leads to people choosing to use other modes instead or to drive further to reach less popular Park and Ride sites.

Freight

Road-based freight suffers from some of the same problems as public transport, such as delays and long journey times caused by congestion on the network, but without the level of priority given to public transport. Analysis found that off-peak journey times can often be much quicker than peak journey times and the latter are subject to more variability.

It was also suggested by road freight operators and industry representatives that there is insufficient formal lorry parking in the region, affecting drivers' ability to properly rest, and potentially resulting in inappropriate parking. Tired drivers are more likely to have collisions, and with freight vehicles being larger and heavier, this has more chance of resulting in severe injuries or fatalities. There are currently eight driver rest areas in the region.

The commercial vehicle fleet is also heavily dependent on fossil fuels, with only a small proportion being ULEVs. Whilst the switch to alternative fuels is underway for private vehicles, this is more difficult

to achieve for commercial vehicles, as electric vehicle technology has not yet advanced sufficiently to provide a viable alternative to fossil fuels.

Constraints on the rail network, including discrepancies in gauge clearance, limit the scope to transfer more freight to rail, although there are some rail freight facilities in the region. In particular, Forth Ports outlined that they are trying to develop Grangemouth as a rail freight hub.

Whilst Forth Ports account for 43% of the total freight through Scottish ports with a high proportion of exports in 2018 (76% of total freight through these ports), the withdrawal of the DFDS freight ferry service from Rosyth to Zeebrugge in 2018 has left the region, and Scotland as a whole, with no direct ferry service to the EU, restricting trade links.

17. **In places, peak period, commercial, vehicle-based journey times can routinely be much longer than off-peak:** congestion causes delays to freight vehicles, which increases supply chain costs and reduces productivity
18. **Peak period, commercial, vehicle-based journey times can be much more variable than off-peak:** unreliable journey times affect the ability to deliver a 'just in time' service, affecting supply chains across the economy
19. **Cost and practicality of rail freight prevents widespread use:** the fixed nature of the rail network makes it impractical for some freight movements
20. **Commercial vehicle drivers have limited options for secure parking and rest:** whilst rest facilities are available, these are insufficient and not always sited in the most convenient locations

21. **Commercial vehicles are currently reliant on fossil fuels in the absence of viable/cost-effective alternatives:** ULEV technology has yet to provide a viable alternative for commercial vehicles, affecting the ability to decarbonise the sector
22. **Direct sea-based international connectivity is poor:** there is no ferry service between Scotland and the EU since the withdrawal of the DFDS freight ferry between Rosyth and Zeebrugge in 2018

Car

Car journey times suffer from the same delays on the road network as buses, particularly at peak periods. Analysis has shown the variability between peak and off-peak journey times, and that peak journey times can be much longer than their off-peak equivalent. Falkirk Council pointed out that most of their transport problems were related to peak-time congestion and that this is especially an issue on the Camelon corridor. City of Edinburgh Council highlighted the problem of congestion on the A90 which also impacts on buses, whilst Fife Council outlined a related problem of congestion on the Forth crossings.

Travel around the region by road can also be slow where some journeys can take over two and a half hours. This illustrates both the size of the region and the fact that, in some areas, the network is still of a low standard. In addition, Fife Council and Scottish Borders Council both emphasised that tight maintenance budgets impact upon the ability to provide a high-quality road network.

Analysis of the public survey results showed that parking costs are a source of dissatisfaction for 45% of respondents across the region, with this rising to over half in some parts such as Midlothian. The public survey also highlighted that 38% of respondents were

dissatisfied with parking availability in the region. Fife Council outlined that parking is generally operating at capacity in areas at peak times, stressing that there can be a lack of available parking as a result. City of Edinburgh Council suggested that this leads to parking outside the controlled zones. This can be inconvenient for those trying to park, whilst also having a negative impact on areas that are affected by overspill parking. In addition, Falkirk Council highlighted that much of the parking provided in town and city centres is privately owned, meaning they have no direct control over it. This shows that parking is a problem faced by all local authority areas but highlights that it is to a varying extent across the SEStran region, with differing impacts in rural and urban areas.

Fleet transition from fossil fuels to ULEVs also faces barriers. The low proportion of ULEVs owned in the region (0.6% in 2019) highlights that these are yet to be mainstreamed. Analysis also pointed out the low number of electric vehicle charging points in the region, which underlines why they are currently not seen as being a practical option for many. Fife Council and Scottish Borders Council both identified another barrier: SP Energy Networks note significant issues with the capacity of the electricity grid, which could lead to issues for provision of adequate charging infrastructure. City of Edinburgh Council also highlighted a problem for urban residents who live in flats not being able to charge their cars. Finally, whilst the total lifetime costs of an electric vehicle are less than an equivalent petrol vehicle, the higher initial outlay for the vehicle will remain a barrier for some who cannot afford it, or who do not consider the whole lifetime cost of owning and operating the vehicle.

23. **In places, peak period, car-based journey times can routinely be much longer than off-peak:** peak period congestion causes delays which make journey times longer

24. **Peak period, car-based journey times can be much more variable than off-peak:** as well as being longer, journey times are more variable and less reliable at peak periods, which may contribute to people being late for work or appointments, or having to build in additional time for their journeys
25. **High cost of town/city centre parking:** dissatisfaction with parking charges may lead people to choose not to travel, or to switch their destination to an edge/out-of-town location which they know offers free parking rather than travelling in to town or city centres
26. **Lack of availability of parking is inconvenient:** this creates a mismatch between supply and demand leading to frustration, with people potentially favouring locations where they are confident of being able to park
27. **Road-based travel on the regional road network, including some external links (such as ports and airports), can be slow, even when traffic volumes are relatively low:** some journey times are unattractive due to poor quality roads, lack of overtaking opportunities and so on, making travel around the region difficult
28. **Electric car operation and ownership not practical for all:** constraints exist around provision of charging infrastructure which could inhibit the uptake of electric vehicles
29. **Cost of electric cars is higher than equivalent ICE cars and too expensive for many at present:** whilst total lifetime costs are less than petrol cars, the initial outlay for an electric car is significantly higher, which could present a barrier to their uptake

unless this differential is eliminated, increasing inequality of access

Sitting above a number of the transport problems is the major negative societal consequence generated by unsustainable travel behaviour and high levels of dependence on carbon-emitting fossil fuels which drive transport's contribution to the global Climate Emergency. On this basis, responding to the Climate Emergency and enhancing environmental quality are also fundamental matters to be addressed through the RTS.

3.2. RTS Constraints

One main constraint has been identified through the process of developing the RTS which has emerged through the stakeholder engagement process and by undertaking a review of what has been achieved since the initial SEStran RTS was published in 2008. This document set out an ambitious plan for a range of cross-boundary schemes and interventions which required an integrated approach across a range of industry partners for their successful delivery.

However, upon review of the previous RTS and the refreshed version published in 2015, it was found that limited progress had been made towards delivering many of the cross-boundary schemes that had been identified. This was largely attributed to difficulties with the existing delivery mechanisms and in coordinating cross-boundary and multi-partner schemes. In addition, given SEStran's position as a 'Level 1' Regional Transport Partnership (and the limited statutory powers this conveys) along with a lack of dedicated funding to support delivery of the RTS, it was highlighted that the current regional governance arrangements present a constraint to the delivery of cross-boundary schemes and interventions emerging from the RTS.

As part of development of the National Transport Strategy 2, work to review transport governance was undertaken by the 'Roles and Responsibilities Group'. The review also recognised this barrier to delivery. The Roles and Responsibilities Group continues to consider this issue and, until a decision or direction is given, this barrier could continue to affect the ability for SEStran and its partners to deliver cross-boundary and multi-partner schemes that emerge from the new RTS.

However, the Transport (Scotland) Act 2005 (2005 Act) allows for arrangements and associated functions that could be developed for cross-boundary or multi-partner RTS schemes which can be agreed and brought into effect through the provisions of sections 10 and 14 of the 2005 Act. SEStran, in consultation with its constituent authorities and other stakeholders, will consider use of these powers as appropriate in relation to such schemes.

3.3. RTS Opportunities

The Covid-19 pandemic has had wide ranging repercussions on society, with travel behaviours being one aspect which has potentially been permanently altered during this time. The result of various lockdowns and restrictions on travelling has been a dramatic shift to homeworking for many and thus has significantly impacted

commuting patterns, particularly to locations with high numbers of 'location independent' jobs.

The high number of jobs which can now be conducted remotely means that there are fewer people commuting out of more rural areas to larger towns and cities. This shift could offer economic opportunities for more local centres, as there is more money being spent locally rather than in town and city centres. There is still significant demand for travel within rural areas for other types of employment.

As more people stay within rural areas within the SEStran region, there is scope to promote the '20-minute neighbourhood' concept to sustainably access goods and services locally within an acceptable radius of where they live. However, further development of the concept is needed to link rural neighbourhoods/communities together. This would go some way to achieving the 20% reduction car kilometres target set by the Scottish Government, and may encourage increased footfall for local businesses rather than the larger retail centres. This would generate more revenue for local urban centres within the region, although it would have knock-on impacts for larger retail centres.

Vision and Strategy Objectives



4.0 Vision and Strategy Objectives

4.1. Vision

The vision for the RTS has been developed to reflect new national, regional and local policy priorities. It sets out the type of region we want the South-East of Scotland to be and how transport can contribute to achieving that for everyone. The vision also shapes the strategy objectives by providing a high-level context and long-term focus for the strategy.

A South-East of Scotland, fully integrated transport system that will be efficient, connected and safe; create inclusive, prosperous and sustainable places to live, work and visit; be affordable and accessible to all, enabling people to be healthier; and delivering the region's contribution to net zero emissions targets.

Alongside this is SEStran's aim as an organisation, which is to make sustainable modes of transport easier, more appealing to use and more accessible.



4.2. Strategy Objectives

Drawing upon the problems outlined in Chapter 3, a series of 29 Transport Planning Objectives (TPOs), each linked to a specific problem, were identified. These were subsequently used to define four Strategy Objectives which provide the transformative strategic framework for the RTS to provide a step change for transport in the region. These are set out below, along with the societal outcomes that they will deliver. Key Performance Indicators (KPIs), linked to the Strategy Objectives, that can be used for the purposes of monitoring and evaluation of the strategy are provided in Chapter 19.

Strategy Objective 1: Transitioning to a sustainable, post-carbon transport system		
	<p>Climate Change and Net Zero</p> <p>Air Quality Transformed</p> <p>Equitable Access to Transport</p>	
Strategy Objective 2: Facilitating healthier travel options		
	<p>Improved Physical & Mental Health and Activity</p> <p>Increased Wellbeing</p> <p>Transformed, Liveable Neighbourhoods</p>	
Strategy Objective 3: Transforming public transport connectivity and access across the region		
	<p>Greater Equality of Opportunity</p> <p>Travel Barriers Removed</p> <p>Reduced Social Isolation</p>	
Strategy Objective 4: Supporting safe, sustainable and efficient movement of people and freight across the region		
	<p>Reduced Road Casualties</p> <p>A Just Transition in Inclusive Economic Growth</p> <p>Improved Regional Competitiveness</p> <p>Climate Change Adaptation</p>	

Table 4.1 compares the Strategy Objectives to NTS2's Priority Outcomes, highlighting the close relationship between them.

National Transport Strategy 2 Priorities and Outcomes	Strategy Objective 1: Transitioning to a sustainable, post-carbon transport system	Strategy Objective 2: Facilitating healthier travel options	Strategy Objective 3: Transforming public transport connectivity and access across the region	Strategy Objective 4: Supporting safe, sustainable and efficient movement of people and freight across the region
Priority: Reduces inequalities				
Will provide fair access to the services we need			✓	✓
Will be easy to use for all			✓	
Will be affordable for all	✓		✓	
Priority: Takes climate action				
Will help deliver our net zero target	✓	✓		
Will adapt to the effects of climate change	✓			✓
Will promote greener, cleaner choices	✓	✓	✓	✓
Priority: Helps deliver inclusive economic growth				
Will get people and goods to where they need to be			✓	✓
Will be reliable, efficient and high quality			✓	✓
Will use beneficial innovation	✓	✓	✓	✓
Priority: Improves our health and wellbeing				
Will be safe and secure for all	✓			✓
Will enable us to make healthy travel choices		✓		
Will help make our communities great places to live	✓	✓	✓	✓

Table 4.1 - Mapping of Strategy Objectives to NTS2 Priorities and Outcomes

4.3. Regional Mobility Themes

Following on from the Strategy Objectives, a set of Regional Mobility Themes were defined which collate the options that have been demonstrated to contribute to delivering the objectives under a series of relevant headings. These are:

1. Shaping development and place
2. Delivering safe active travel
3. Enhancing accessibility of public transport
4. Transforming and extending the bus service
5. Enhancing and extending rail services
6. Reallocating road space on the regional and local network
7. Delivering seamless multi-modal journeys
8. Decarbonising transport
9. Facilitating efficient freight movement and passenger travel
10. Working towards zero road deaths and serious injuries
11. Reducing car kilometres
12. Responding to the post-Covid-19 world

The Regional Mobility Themes have been mapped against the Strategy Objectives in Table 4.2 which shows the relationships between the two.

Regional Mobility Themes	Strategy Objective 1: Transitioning to a sustainable, post-carbon transport system	Strategy Objective 2: Facilitating healthier travel options	Strategy Objective 3: Transforming public transport connectivity and access across the region	Strategy Objective 4: Supporting safe, sustainable and efficient movement of people and freight across the region
Shaping development and place	✓	✓		✓
Delivering safe active travel	✓	✓		
Enhancing accessibility of public transport	✓		✓	✓
Transforming and extending the bus service	✓		✓	✓
Enhancing and extending rail services	✓		✓	✓

Regional Mobility Themes	Strategy Objective 1: Transitioning to a sustainable, post-carbon transport system	Strategy Objective 2: Facilitating healthier travel options	Strategy Objective 3: Transforming public transport connectivity and access across the region	Strategy Objective 4: Supporting safe, sustainable and efficient movement of people and freight across the region
Reallocating road space on the regional and local network	✓	✓	✓	
Delivering seamless multi-modal journeys	✓	✓	✓	✓
Decarbonising transport	✓			
Facilitating efficient freight movement and passenger travel			✓	✓
Working towards zero road deaths and serious injuries				✓
Reducing car kilometres	✓			✓
Responding to the post-Covid-19 world	✓	✓	✓	✓

Table 4.2 - Mapping of Regional Mobility Themes to Strategy Objectives

The Regional Mobility Themes form the structure for the RTS and are set out in the chapters following the Spatial Strategy. More detail on specific initiatives and actions associated with each theme are contained in each of the Regional Mobility Themes, chapters 6 to 17.

The Spatial Strategy which follows provides a geographic context for the Regional Mobility Themes, as well as setting out two themes it is important to address in order to deliver transformative change to the way people travel to, from and within the region.

Spatial Strategy



CITY CENTRE →



5.0 Spatial Strategy

5.1 Spatial Context

The RTS sets out a range of policies and actions which will shape investment in and the management of transport in the region for the next 10 to 15 years. Crucially, in response to the Climate Emergency, the Scottish Government has set a target to reduce car traffic levels (car km) by 20% by 2030. This is a fundamental point for the RTS to address and it is important, therefore, to understand car-based travel in the SEStran area to appropriately focus initiatives aimed at reducing car km. Whilst providing a framework for all travel and transport in the region, the RTS has a particular focus on **regional travel**, i.e. travel between local authorities as opposed to travel wholly within local authority areas. To understand this, although now dated, the census of 2011 provides the most comprehensive and detailed picture of (pre-Covid-19) commuting travel in the SEStran region – this is taken as a proxy for all travel for the purposes of analysis here. Typically, commuting sees a higher share of public transport than for other travel so, if anything, this may underestimate the scale of the 'problem'.

How significant is regional travel?

The chart in Figure 5.1 shows the total volume of commuting trips (by all modes) within the SEStran area by main geographical movement. The highest volume of commuting (36%) was within SEStran local authorities, excluding Edinburgh, (e.g. within Fife), with a further 31% of trips within Edinburgh. Commuting between local authorities accounts for the remaining **one-third** of all commuting wholly within the SEStran area. The dominance of Edinburgh as an employment centre is still obvious, with Edinburgh the destination

for around 45% of all commuting trips among SEStran residents. **Total commuting by all modes within the SEStran area can be thought of roughly in thirds – one-third *within* Edinburgh, one-third *within* the other seven council areas, and one-third *between* the eight council areas.**

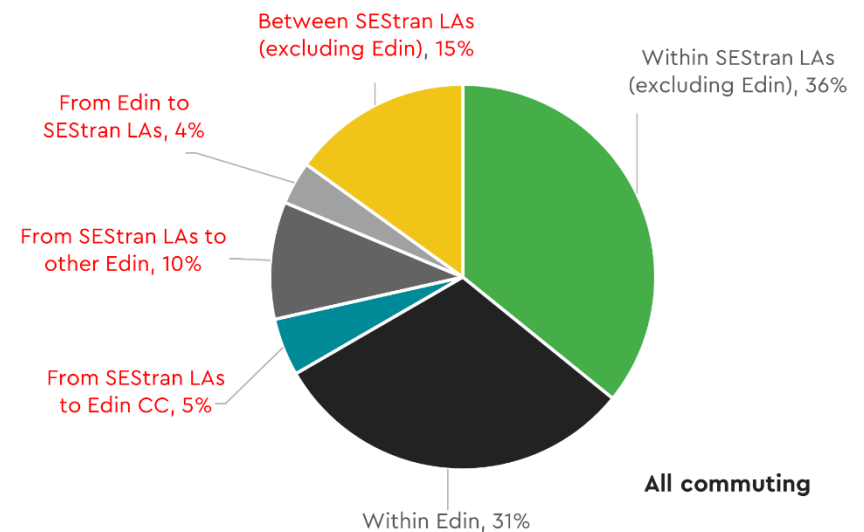


Figure 5.1 - Commuting by All Modes within SEStran Region

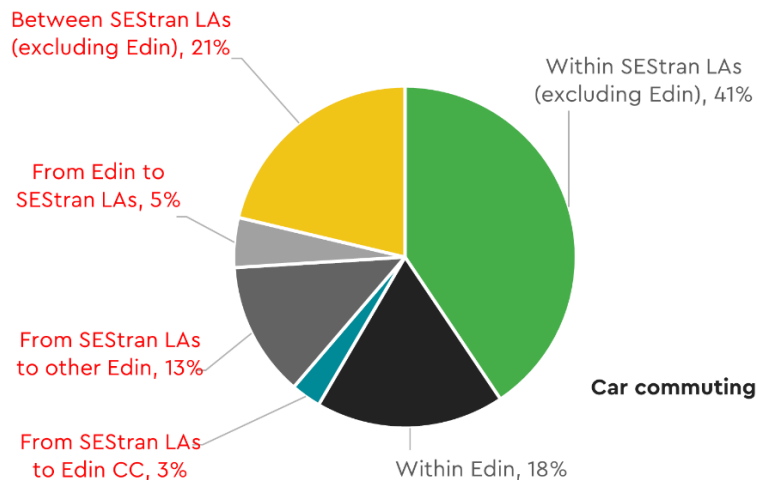


Figure 5.2 - Commuting by Car within SEStran Region

How significant is regional car travel?

If only car-based commuting is considered, as shown in Figure 5.2, the proportion of commuting between local authorities rises to **42%**. As these trips will be longer than many car trips within council areas, travel between council areas likely accounts for **around half of all car commute km** in the SEStran area. Note that car-based commuting from outside Edinburgh to Edinburgh city centre accounts for a very small proportion (3%) of car commuting. Any attempt to reduce car travel in the SEStran area, therefore, requires a 'whole region' approach. **Car-based commuting within the SEStran area can be thought of as roughly 20% within Edinburgh, 40% within the other seven council areas, and 40% between council areas (20% involving Edinburgh).**

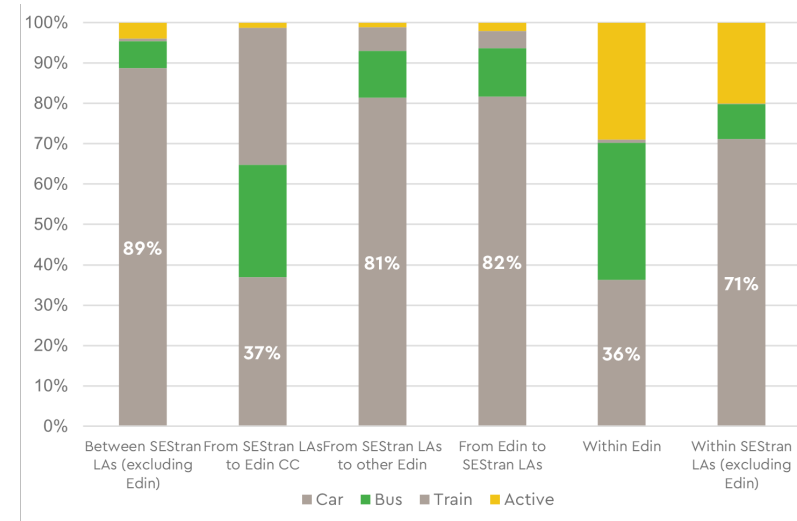


Figure 5.3 - Mode Share for Regional Commuting

How does mode share differ?

These different types of commuting trips have very different **mode shares**, as shown in Figure 5.3. It can be seen how dominant car-based travel is for all commuting trips, except within Edinburgh and from SEStran local authorities to Edinburgh city centre. The contrast in car mode share between travel from outside Edinburgh to Edinburgh city centre (37%) and the rest of Edinburgh (81%) is particularly stark. The mode share of car is highest when commuting between SEStran LAs (excluding Edinburgh) at almost 90%, whilst bus only accounts for 7% of these trips. **With the exception of trips to Edinburgh city centre, regional commuting between council areas is therefore heavily dominated by car (85%)** with public transport usage very low by comparison (12%). Within council areas there is a big contrast between Edinburgh, with high public transport

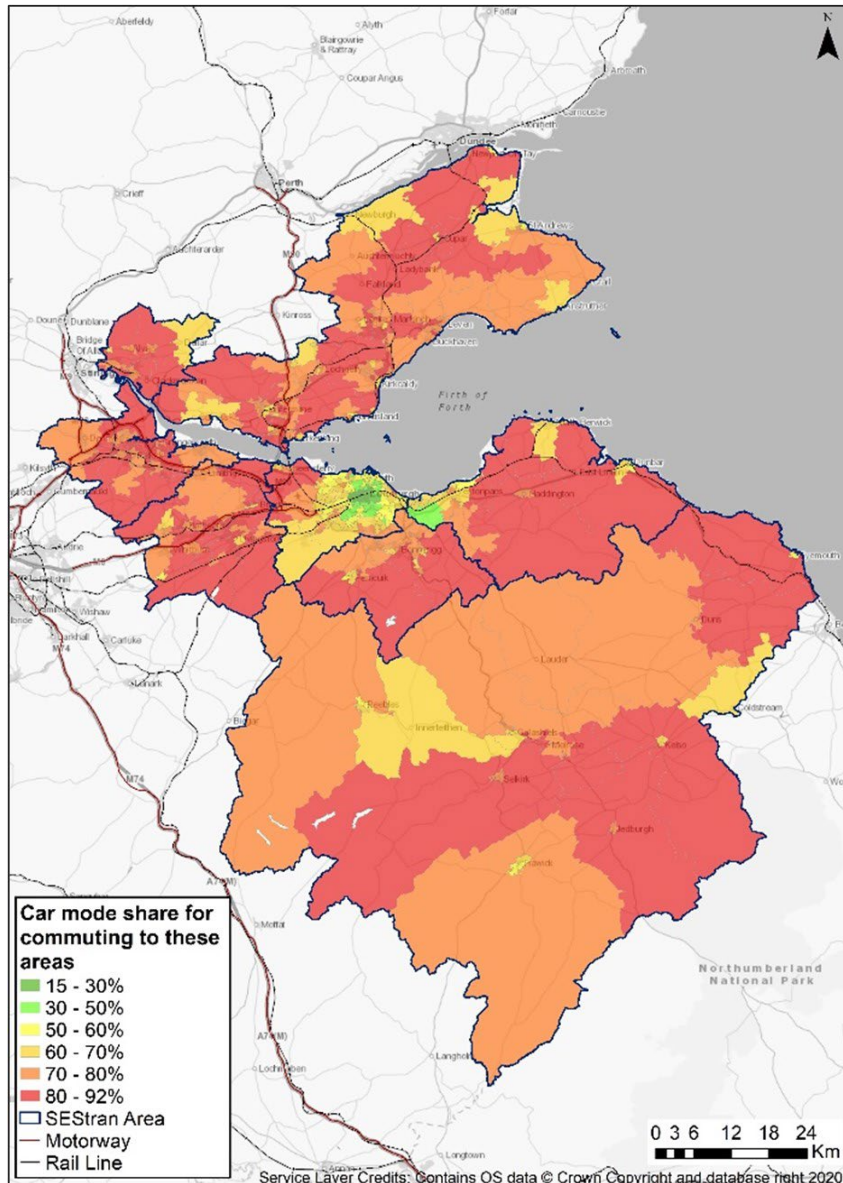


Figure 5.4 - Car Mode Share for Regional Commuting

and active travel mode share, and the other SEStran council areas where the mode share of car is around double that of Edinburgh. Further illustrating this, Scottish Household Survey Travel Diary data suggests that if Edinburgh is excluded, 80% of SEStran residents use the bus less often than once a fortnight.

The map shown in Figure 5.4 further illustrates how dominant car use is for commuting to all parts of the region, with the exception of Edinburgh and Edinburgh city centre in particular. Commuting into the region's other urban areas and rural areas sees a typical mode share of 70% or more and over 80% in the areas shaded red here.

How important is commuting to Edinburgh for residents of the other seven local authority areas?

To analyse this, the SEStran area has been divided up into a number of local authority subareas, which are shown in Figure 5.7.

Edinburgh is clearly the main employment centre, but its importance varies across the region. There is very low dependence (<5% of resident workers) on Edinburgh jobs in Clackmannanshire, Fife Mid, Fife North-East, Borders Central and Borders East.

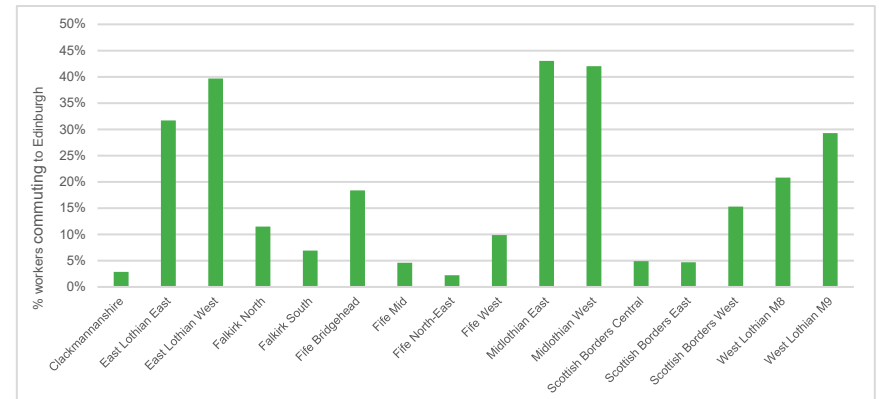


Figure 5.5 - Percentage of Workers Commuting to Edinburgh

In contrast, there is high dependence (30%+) on Edinburgh jobs in Midlothian (East and West) and East Lothian (East and West). Typically, around 80% of Edinburgh residents work in an Edinburgh workplace. These trends are illustrated in Figure 5.5.

What are the commuting volumes into Edinburgh?

The largest commuting movement into Edinburgh in volume terms is from the West Lothian M8 sector. Similar volumes (7.5-10k) commute into Edinburgh from the Midlothian East and West, Fife Bridgehead, and East Lothian West and East sectors as shown in Figure 5.6.

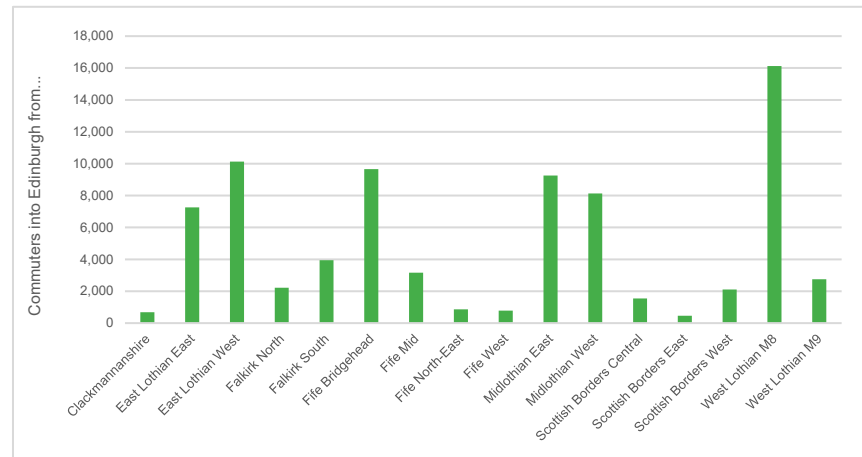


Figure 5.6 - Commuting Volumes into Edinburgh

Commuting into Edinburgh is therefore a major source of congestion, pollution and noise.

Of all car-based commuting trips with workplaces in Edinburgh, around half come from outside Edinburgh – so at least half of car-

based emissions (from commuting) in Edinburgh are caused by cross-boundary car commuters.

Commuting into Edinburgh has a markedly different profile, with the mode share of car into Edinburgh's suburbs more than double that of

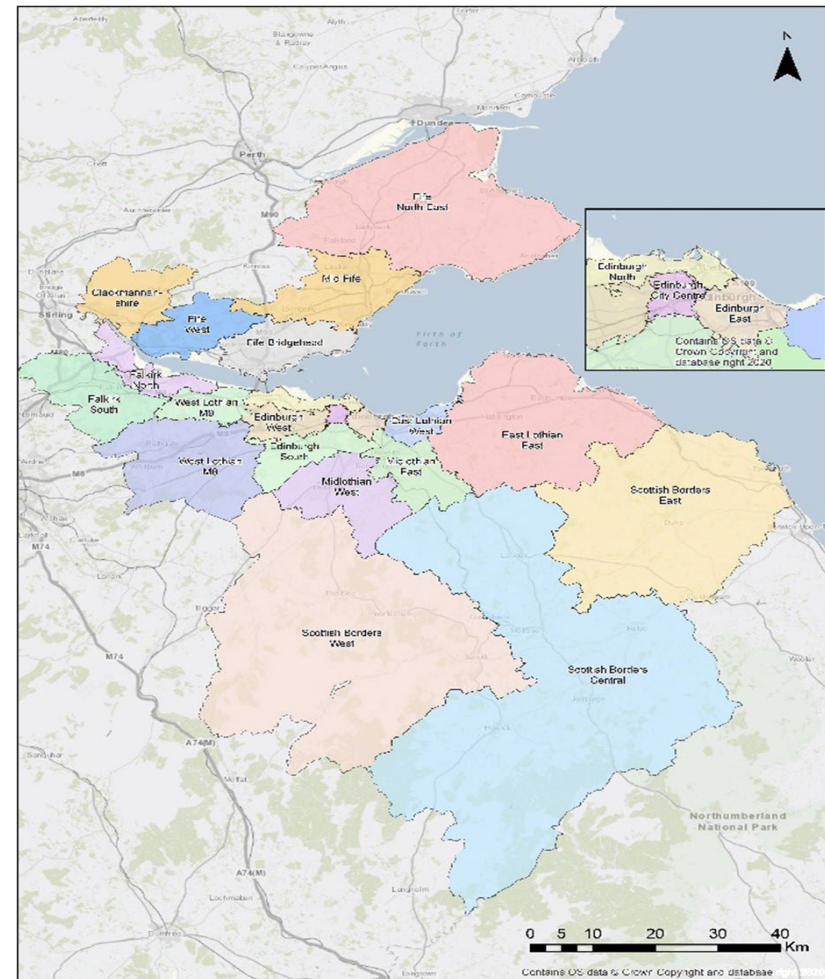


Figure 5.7 - SEStran Region Subareas

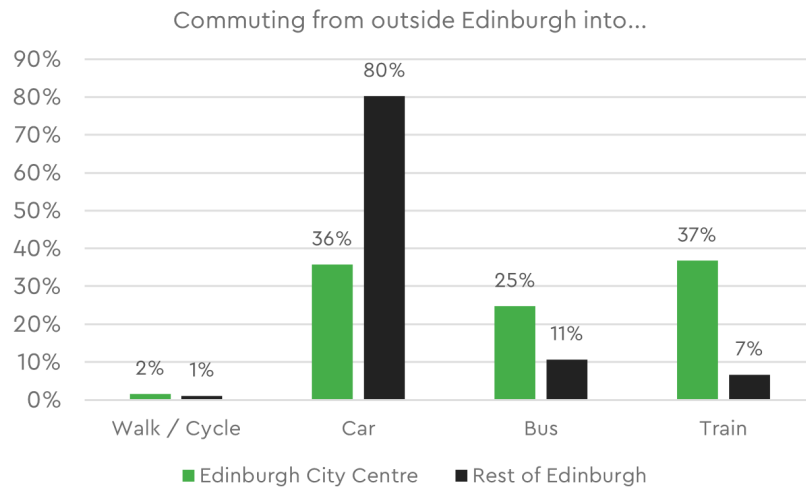


Figure 5.8 - Commuting from Outside Edinburgh by Mode

the city centre, as illustrated in Figure 5.8. This is primarily due to the availability and cost of parking, congested journey times to the city centre, and the city centre being the focal point of the local and regional public transport network.

In 2011, there were around 90,000 people who lived outside but worked in Edinburgh – of these around one-third worked in the city centre and two-thirds worked elsewhere in Edinburgh.

How important is commuting to neighbouring cities/areas for SEStran area residents?

There are significant (>5% of resident workers) outflows:

(i) to Stirling from Clackmannanshire, Falkirk North and Falkirk South

(ii) to Lanarkshire from Falkirk South

(iii) to Dundee from Fife North-East

These trends are illustrated in Figure 5.9.

What are the commuting volumes into these other cities?

The highest volume of out-commuting is from Clackmannanshire to Stirling, and from Falkirk South to Glasgow, Stirling and Lanarkshire, to which there are also outflows from West Lothian, as shown in Figure 5.10. There is also a significant cross-border outflow from Borders East to the Berwick-upon-Tweed area (not shown due to data limitations). Collaboration with neighbouring local authorities and regional transport partnerships will be required to deliver measures to ensure these commuting flows are sustainable.

5.2. Defining Regional Corridors

To further understand the nature of regional travel within and to/from the SEStran area, 'regional corridors' have been defined which form the 'building blocks' of regional travel across the area. These corridors are shown in Figure 5.11 and were defined based on travel between the local authority subareas as defined above.

- East Coast: Connecting Berwickshire and East Lothian to Edinburgh and beyond, and England
- Midlothian East: Connecting the Bonnyrigg/Dalkeith/Gorebridge triangle to Edinburgh and beyond - also main connection to Galashiels area

- Midlothian West: Connecting Penicuik/Loanhead to Edinburgh and beyond - also main connection to Peebles area
- Borders Central: Connecting the central Borders to Midlothian and Edinburgh via the A7 and A68 corridors and on to England
- Borders West: Connecting the western Borders to Midlothian and Edinburgh and on to England
- Cross Edinburgh: Providing across and around Edinburgh connections for a wide range. Connecting the central Borders to Midlothian and Edinburgh via the A7 and A68 corridors
- West Lothian North-South: Connecting the M8 at Bathgate with the M9 at Polmont, accessing the Grangemouth area
- Fife West: Connecting the Dunfermline area with Kincardine/Alloa
- Fife Central: Connecting East Fife, Kirkcaldy and Glenrothes with Dunfermline/Queensferry
- Fife East: Connecting East Fife to Kirkcaldy and Glenrothes
- West Lothian South: A key travel corridor linking west central Scotland, West Lothian, East Central Scotland and Fife
- West Lothian North: Linking Falkirk, West Lothian to Edinburgh

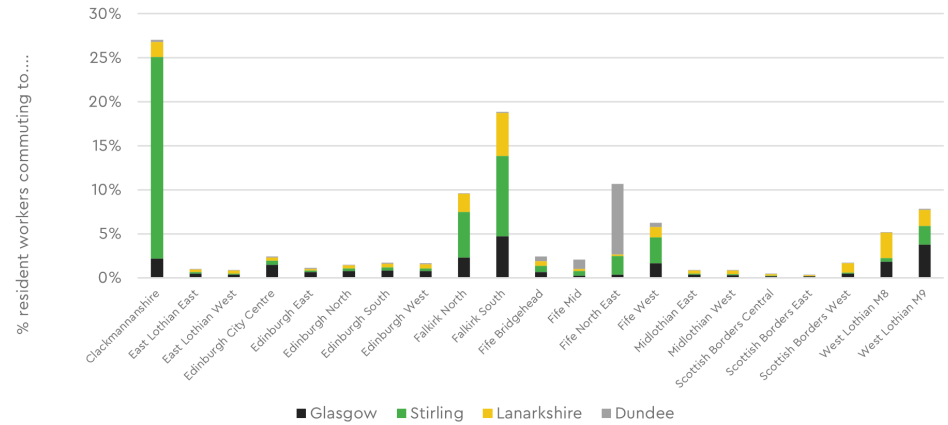


Figure 5.9 - Commuting to Neighbouring Areas

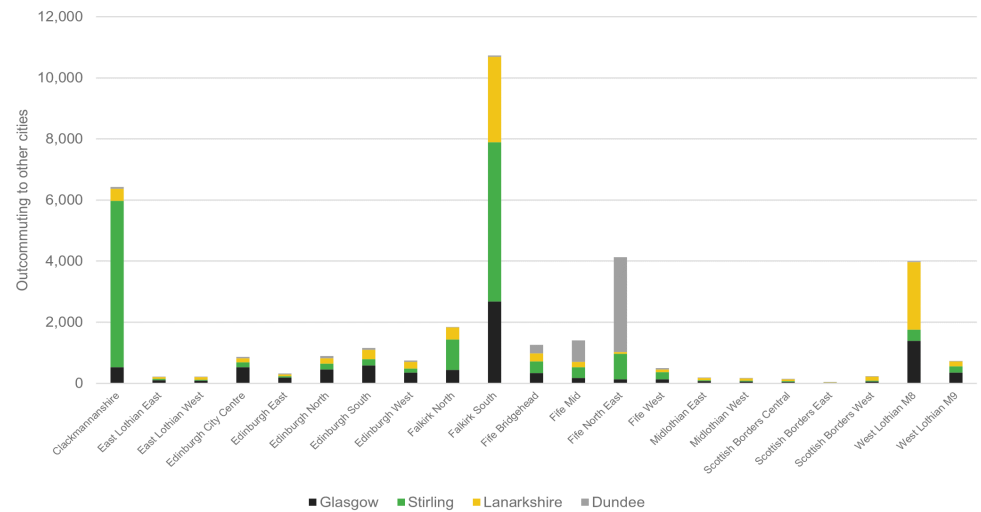


Figure 5.10 - Commuting Volumes to Neighbouring Areas

- Falkirk Central: A central corridor providing external connections to Stirling and North Lanarkshire, as well as Kincardine and West Lothian
- Tay Bridges: Rail connection and road link between East Fife and Dundee
- Queensferry: National north-south and east-west road and rail corridor linking Fife, Edinburgh and West Lothian
- Kincardine: Connecting West Fife and Clackmannanshire with Falkirk and motorway network
- Borders - Lanarkshire: Connecting the Borders east-west movements to South Lanarkshire
- Clackmannanshire North-East: Linking Clackmannanshire to the north

By allocating census data for each local authority subarea to local authority subarea movement to the series of corridors that would be used in making each movement, a picture was generated of (home to work) commuting travel volumes by mode which use each corridor, as shown in Figure 5.12. This includes commuting into and out of the SEStran area.

The volume of travel (line width) and the share of active travel, bus, train and car-based travel (pie charts) varies widely across the region.

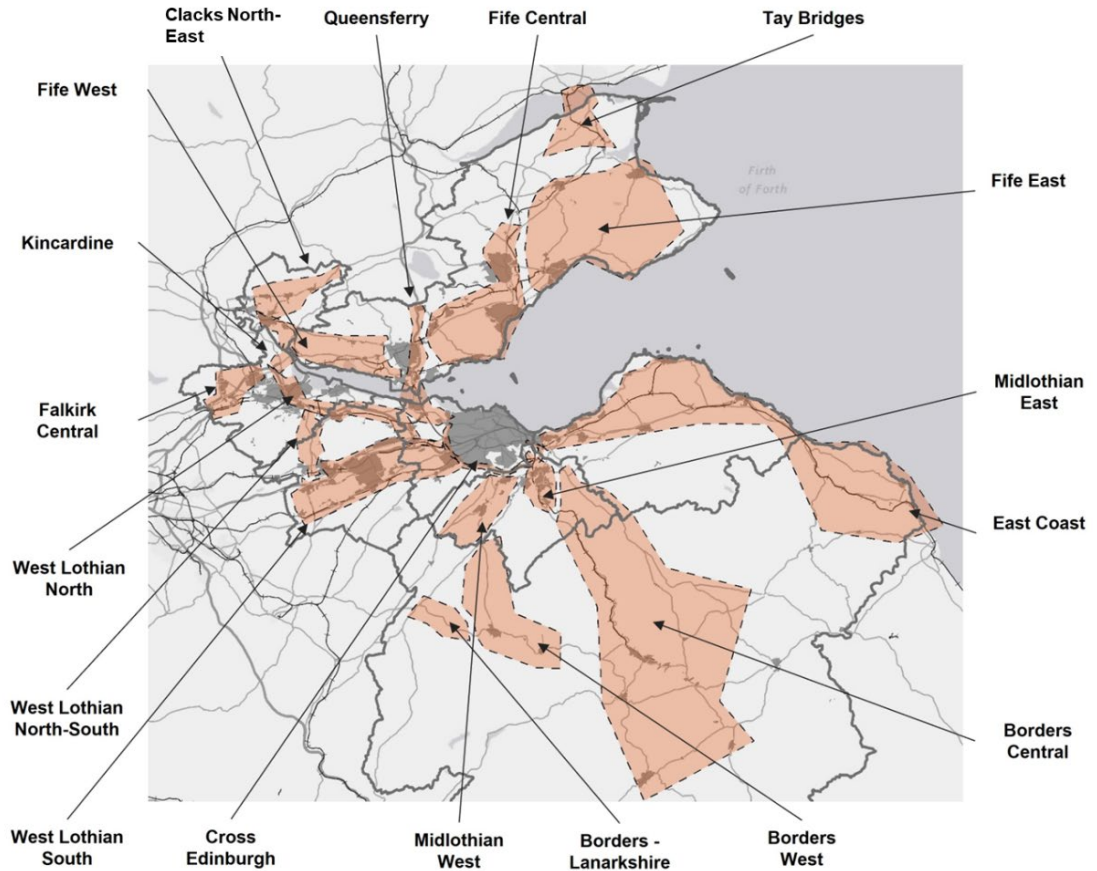


Figure 5.11 - Regional Corridors

The highest regional travel volumes are seen in the West Lothian South, Cross Edinburgh, West Lothian North, Queensferry and East Coast corridors, which account for 60% of all regional travel. Travel

volumes are much lower in corridors where there is little 'through' traffic. Local travel will be the predominant factor in these areas.

Levels of active travel are typically low but are slightly higher in the corridors in closer proximity to Edinburgh. The use of public transport varies widely from 2% to over 30%. This usually reflects the provision of rail services in particular, and the amount of travel in the corridor destined for central Edinburgh. Overall, rail at 10% accounts for a higher proportion of regional commuting than bus at 9%, reflecting the longer distances involved in regional rather than local commuting. Car-based travel accounts for 80% of commuting and peaks in corridors where public transport is very limited.

Figure 5.13 provides an overview of key external linkages between the region and neighbouring areas. There are strong links from parts of the SEStran area to surrounding areas for travel to healthcare, education, employment, retail and leisure purposes. For example, in the north, residents of Fife travel to Dundee to access healthcare. To the west, there are strong links to the labour market and employment opportunities in the Glasgow city region and around Stirling. In the south of the region there are links with Northern England, whilst Dumfries and Galloway is home to the strategically important port of Cairnryan.

These external linkages closely mirror the regional corridors and provide a continuation of the internal connections they offer within the SEStran area. As such, these corridors should be

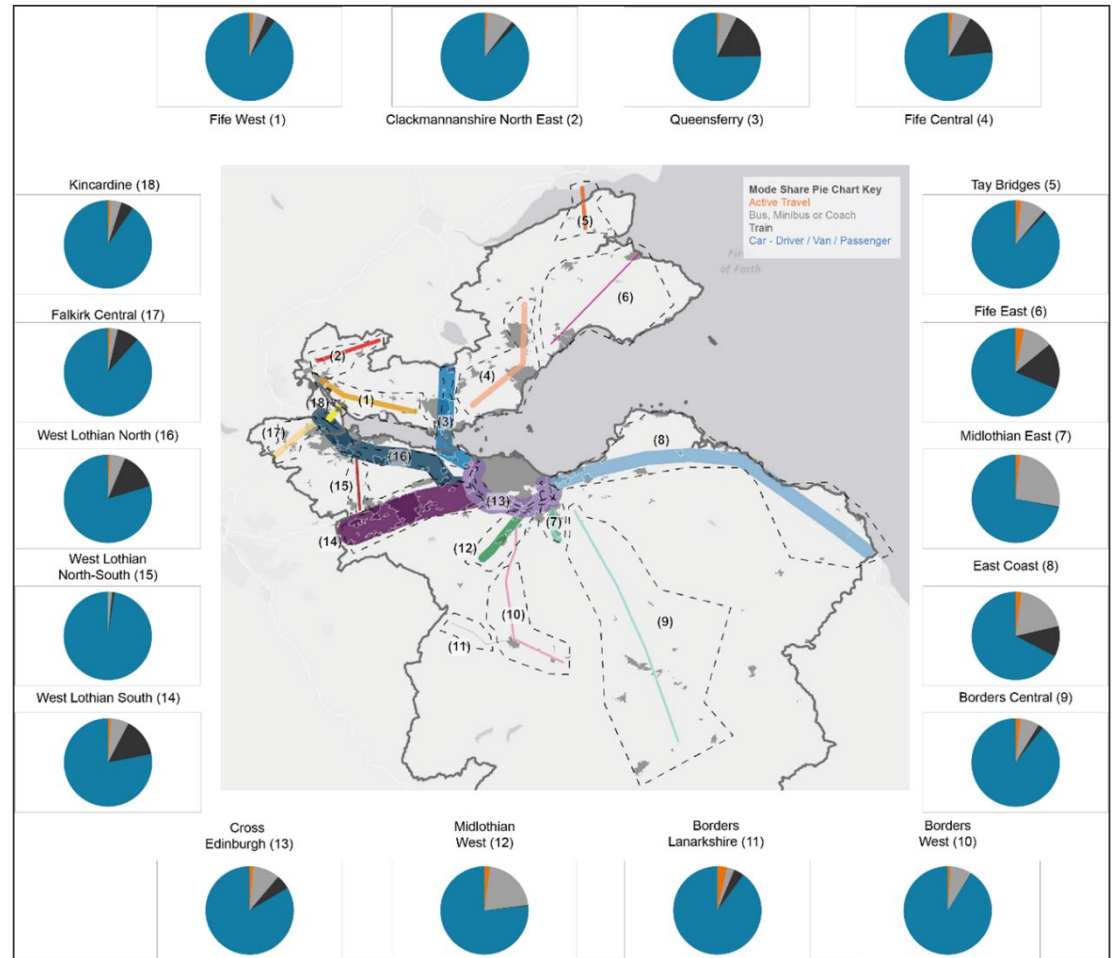


Figure 5.12 - Regional Corridor Commuting Demand

considered as continuous and not constrained by the boundaries of the region.

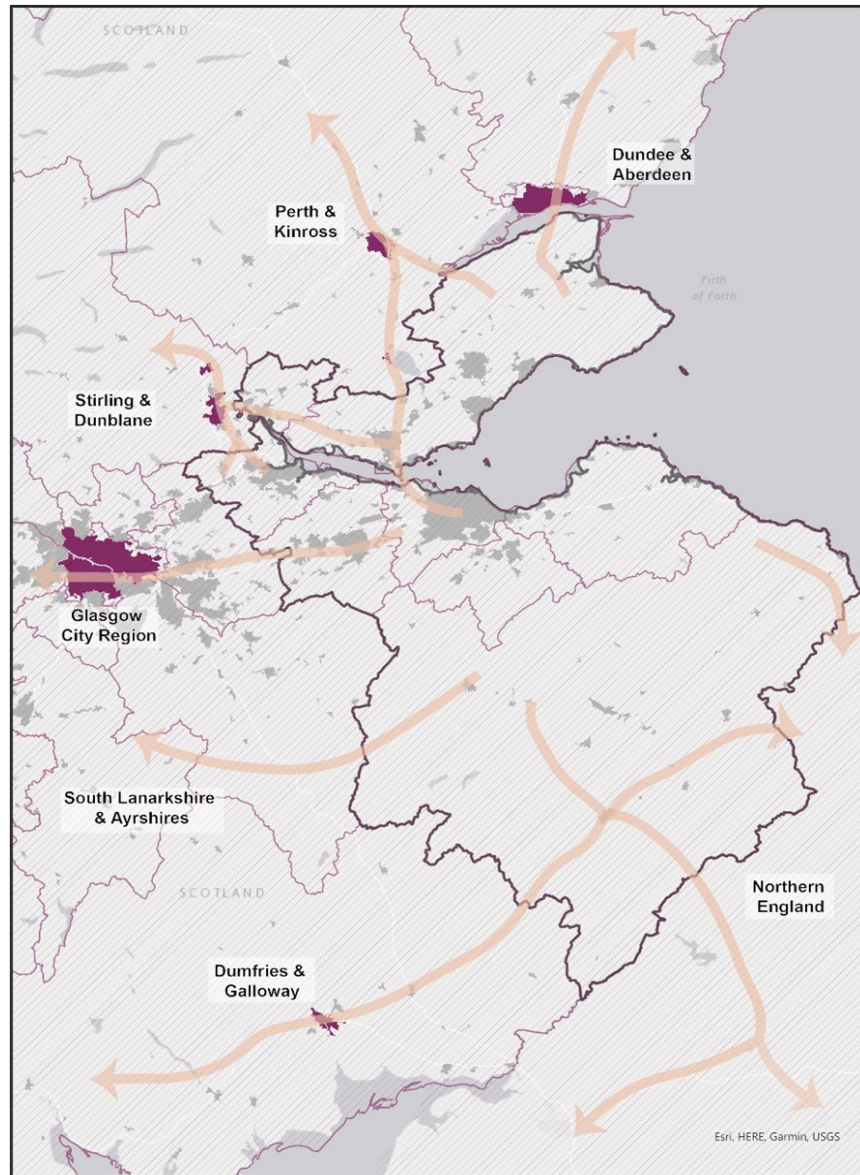
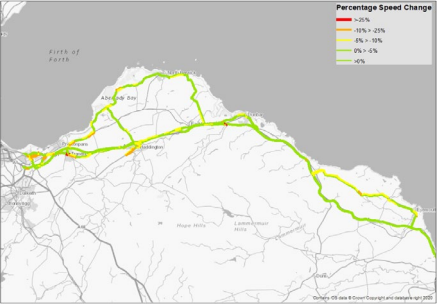
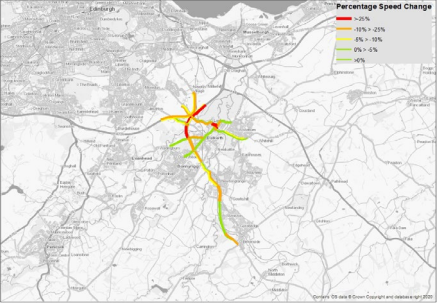


Figure 5.13 - External Connections

Close coordination with neighbouring Regional Transport Partnerships and local authorities will be required to ensure that coherent and integrated proposals are brought forward for cross-boundary interventions.

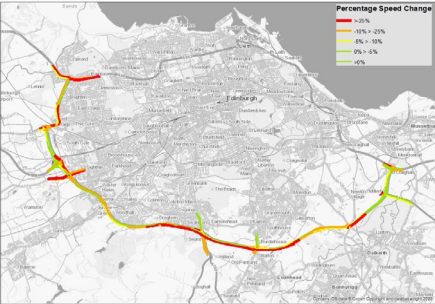
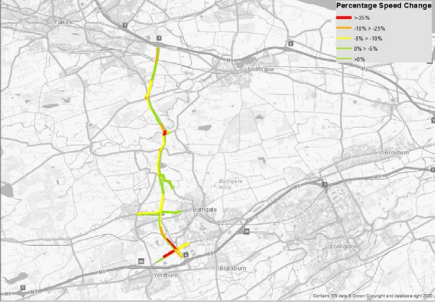
Nonetheless, the focus within the region should be upon the corridors that provide key internal linkages; exhibit highest demand; and also link into reductions in car usage and modal shift to sustainable modes of travel in line with the sustainable travel hierarchy.

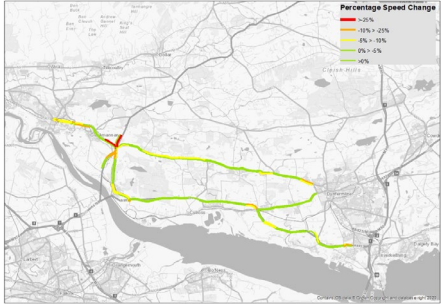
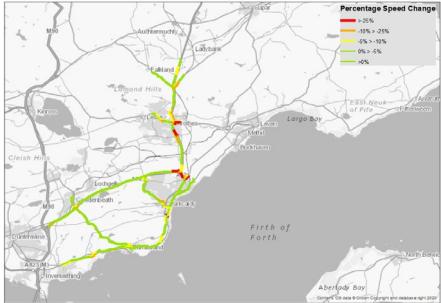
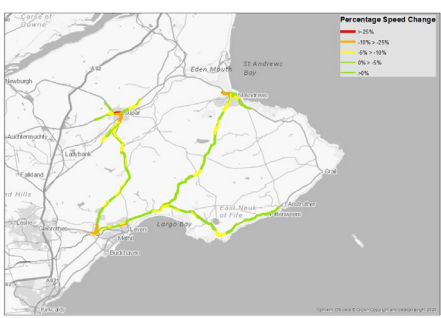
The table on the next pages sets out a high-level 'audit' of these **regional corridors** from the perspective of regional bus, rail, park-and-ride and road travel.

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
East Coast	East Coast Buses – North Berwick, Dunbar and Haddington to Edinburgh CC. One Musselburgh-Midlothian connection. Borders Buses connect east of Dunbar to Edinburgh and Berwick-upon-Tweed.	East Coast Mainline to Edinburgh (occasional Glasgow) and stations south of the border. North Berwick and Dunbar local services. Reston and East Linton stations being delivered.	Rail based P&R available at most stations, limited at some locations. High-capacity park and choose at Wallyford and Newcraighall with plentiful capacity. New options at Reston and East Linton stations	A1 (dualled from Edinburgh to Dunbar) A198 linking coastal settlements A199 Musselburgh-Edinburgh Congestion focussed at western end of corridor in Musselburgh and Old Craighall	
Midlothian East	Lothian Buses provide many connections to Edinburgh south and city centre and a Penicuik – Musselburgh service. Borders Buses traverse corridor from Carlisle/Hawick/Galashiels, Jedburgh and Kelso	Borders Railway	Modest rail-based P&R at Borders Railway stations. Sheriffhall bus-based P&R with plentiful capacity	A7, A772 and A6106 linking eastern Midlothian and A720/Edinburgh Congested corridor along A7, in Dalkeith and on approaches to Sheriffhall. Incidents on A720 cause blocking back into the corridor.	

⁴ Based on 'INRIX' traffic data, 2019 AM Peak, green areas showing free flow travel speed and shades to red showing slower speeds due to traffic congestion

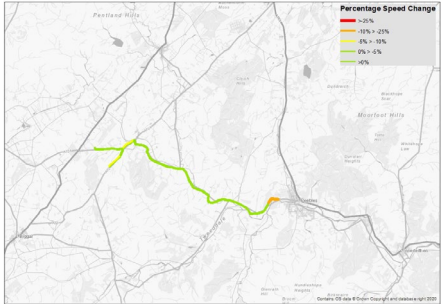
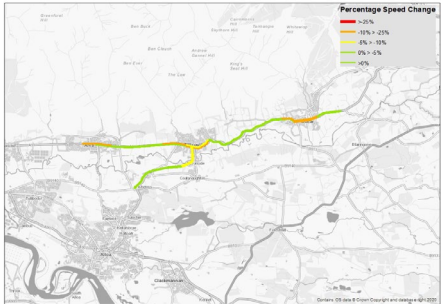
Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
Midlothian West	Lothian Buses provide many connections to Edinburgh south and city centre and a Penicuik – Musselburgh service. Borders Buses traverse corridor from Galashiels via Peebles	None	Bus based P&R at Straiton with plentiful capacity	A701 A703 A702 Congestion typically seen on A701 through Bilston and at A703/A702 junction. Incidents on A720 cause blocking back into the corridor.	
Borders Central	Borders Buses connect A7 and A68 communities to Midlothian and Edinburgh. Services from Carlisle/Hawick/Galashiels, Jedburgh and Kelso	Borders Railway	Tweedbank P&R, modest provision at Stow	A7 A68 A6091 Routes are typically congestion free	
Borders West	Borders Buses traverse corridor from Galashiels via Peebles	None	Nearest for users of the corridor is bus-based P&R at Straiton with plentiful capacity	A703 A72 Routes are typically congestion free	

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
Cross Edinburgh	None on A720 and few orbital buses inside City Bypass. Virtually all cross-Edinburgh movements require interchange in Edinburgh	All via Edinburgh city centre - very few through Edinburgh connections	None other than national rail	A720 City Bypass. Previous Edinburgh ring road used as diversion. Typically, the corridor is heavily congested at peak and shoulder peak periods. Sheriffhall, M8, Gogar and other junctions (on-slips) are often the focus	
West Lothian North-South	None	None	None	A801 A706 A800 Avon Gorge is a pinch point for larger vehicles. Congestion at A801/A706 roundabout	

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
Fife West	A985-based service between Glasgow and Falkirk, and Dundee, St Andrews, Dunfermline, Kirkcaldy, Glenrothes and Dunfermline and Alloa	None	None	A985 Dunfermline to Kincardine, A907, A91 Congestion identified at A977/A907 roundabout	
Fife Central	Many connections to main towns in Clackmannanshire, Falkirk, Edinburgh, Glasgow, Dundee	All cross-Forth services - Fife Circle, ScotRail and UK	All station car parks but limited capacity. Main volume parking is at Kirkcaldy and Markinch (with plentiful capacity at the latter)	A92 M90 to Glenrothes, A921 coast road Congestion identified at A92/A921 Redhouse Roundabout and A92 Queensway Roundabout in Glenrothes	
Fife East	St Andrews to Edinburgh (via East Neuk), Dundee, Glasgow. Leven to Edinburgh connections	Stations north of Markinch provide local and national connections. <i>Levenmouth link</i>	Leuchars Station	A915 A91 A917 Routes are typically congestion free, although some congestion evident in Cupar	

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
West Lothian South	Lothian County and FirstBus services to Edinburgh west and city centre - focussed on A89/A899 and A71 Services to Glasgow	Airdrie-Bathgate line Shotts line Carstairs line	Many rail options to Edinburgh, Glasgow, Stirling but capacity often limited. Tram/bus at Ingliston with plentiful capacity. Bus at Hermiston with plentiful capacity	M8 A71 A70 A89 Widespread congestion across the corridor – A71, A8, M8, A89 all affected	
West Lothian North	Falkirk to Edinburgh Stirling to Edinburgh via Linlithgow Linlithgow Bo'ness	Edinburgh-Stirling line Edinburgh-Falkirk High-Glasgow Queen Street	Many rail options to Edinburgh, Glasgow, Stirling but capacity often limited. Tram/bus at Ingliston with plentiful capacity	M9, A904 Limited congestion around the M9 until approaching Newbridge roundabout	
Falkirk Central	Falkirk to Glasgow services Falkirk – Dunfermline Glasgow to Clackmannanshire, Fife and Dundee	Edinburgh-Falkirk High-Glasgow Queen Street, Alloa to Glasgow services	Many rail options to Edinburgh, Glasgow, Stirling but capacity often limited	M876, M80 Main routes are typically congestion free but issues around M876 Junctions 2 and 3	

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
Tay Bridges	Scottish Citylink Dundee/Edinburgh Regional Fife to Dundee services	Edinburgh to Dundee and Aberdeen, and LNER/ CrossCountry services	None: Leuchars closest option	A92 Tay Bridge Routes are typically congestion free	
Queensferry	National services to Perth, Edinburgh, West Lothian, Glasgow, Edinburgh Airport. Regional Fife to Edinburgh (west and city centre) connections	Cross-Forth services - Fife Circle, ScotRail Aberdeen and Dundee services and LNER/ CrossCountry services	Bus - Ferrytoll and Halbeath with plentiful capacity Rail - Inverkeithing and a range of other smaller station car parks	A90 & M90 Barnton / M9 to Kelty Significant congestion on the A90 approaches to Edinburgh. Congestion on approach routes to M90 in Fife as roads converge to cross the Forth.	
Kincardine	A key link for service between Glasgow and Falkirk, and Dundee, St Andrews, Dunfermline, Kirkcaldy, Glenrothes and Alloa	None – Alloa via Stirling only	None	Kincardine and Clackmannanshire Bridges, M876 connection to M9 Congestion on Kincardine Bridge and at Kincardine Bridge/ Clackmannanshire Bridge roundabout	

Corridor	Regional Bus Connections	Rail	Park and Ride	Key Trunk and Regional Roads	Typical Congestion Locations on Trunk and Regional network ⁴
Borders – Lanarkshire	None	None	None, but connects to Glasgow rail options in South Lanarkshire (e.g. Lanark, Carluke)	A72 Routes are typically congestion free	
Clackmannanshire North-East (external)	FirstBus provide connections to Stirling and Kinross	None	None	A91 – links Clackmannanshire and West Fife to M90 at Kinross and Stirling. Routes are typically congestion free but evidence of congestion through the biggest settlements on the A91.	

Finally, Scotland's national transport model has been used to provide a benchmark of *regional flows* (for all travel purposes) along these corridors at the network level, firstly for bus and train, as shown in Figure 5.14, and secondly for car/commercial vehicle, shown in Figure 5.15, using varying bandwidths to represent travel volumes. Within this model, it is possible to assign only travel between local authorities: the graphics here and overleaf show the resulting pattern of flows for the modelled base year (2018). Also included for context are the seven '2020-2030 Planned Interventions -Strategic Sites' indicated in the *interim Regional Spatial Strategy (iRSS) for Edinburgh and South East Scotland City Region*. In addition, the draft NPF4 has identified 'National Developments' within the region at Grangemouth and Edinburgh Waterfront.

The current importance of rail compared to bus for regional travel is illustrated in Figure 5.14. For bus, there is a concentration of regional travel in the Midlothian corridors and the connections from

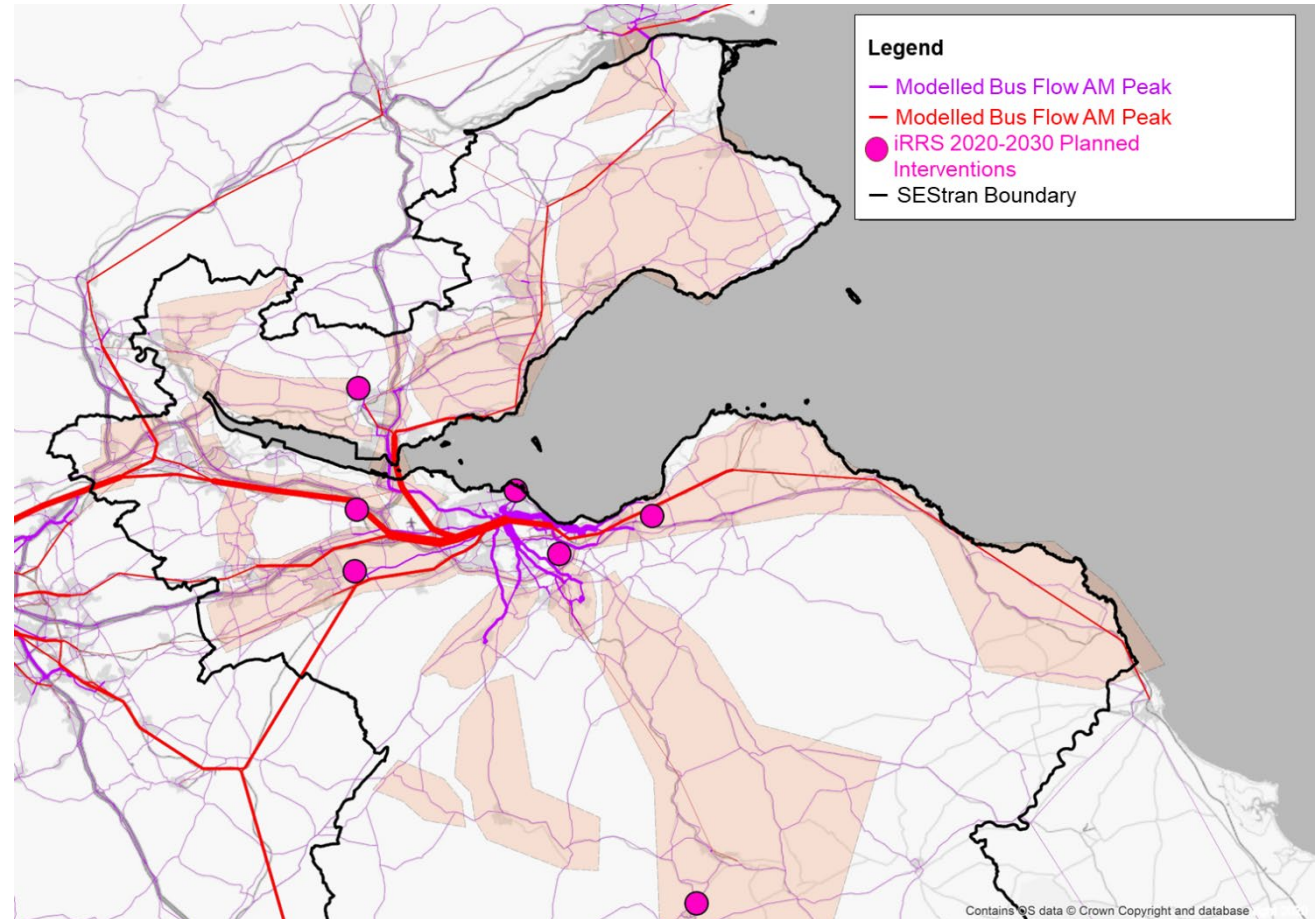


Figure 5.14 - Regional Bus and Rail Demand

Musselburgh in particular. The absence of regional orbital bus travel in Edinburgh is clearly illustrated. Many other parts of the region see very little in the way of regional bus travel in particular, confirming the earlier census data-based analysis.

The relative importance of the different elements of the region's road network is also clearly seen in Figure 5.15. The motorway network provides a focus for regional travel, and it can be seen how the congestion illustrated in the previous section is caused by the convergence of routes into pinch points, including the City Bypass, the Queensferry corridor and the M8 approaches to Edinburgh. The north-south West Lothian corridor movement can be clearly seen here, but there is very little in the way of equivalent bus travel in this corridor. The gradual build-up of traffic on the East Coast and Borders corridors can also be seen. These graphics provide an indication of where regional car-based volumes are highest and regional bus travel is lowest – information which can be used in the subsequent development of initiatives aimed at reducing car km and improving regional public transport connectivity.

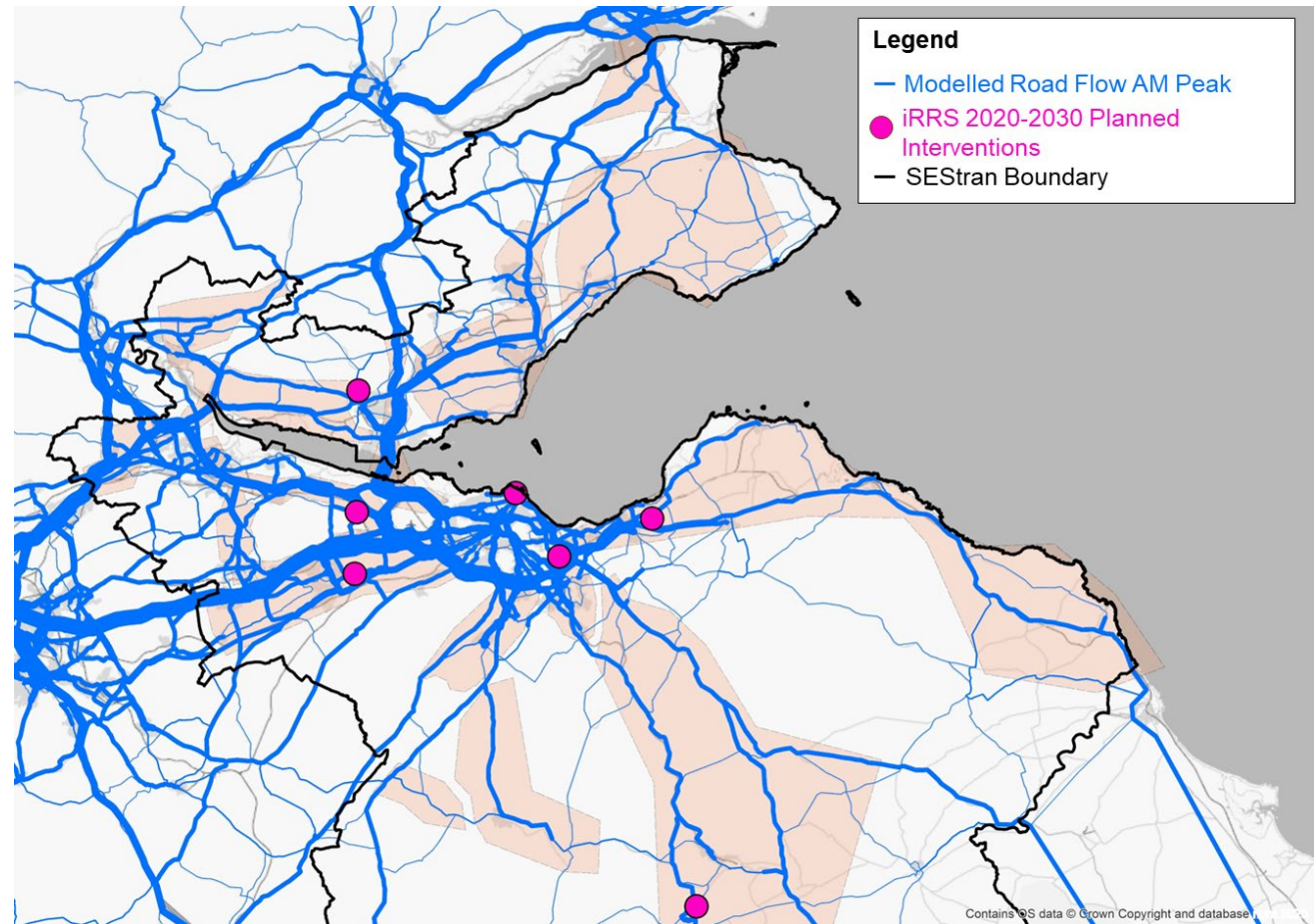


Figure 5.15 - Regional Road Network Demand

5.3. Regional Spatial Strategy - Principles

The RTS does not set out or commit to specific transport projects. Instead, it sets a direction of travel and a policy environment in which individual projects should be progressed. In terms of where interventions are required, there are perhaps two main themes to the spatial strategy:

- **Theme 1** - Reducing car km and car mode share which has been the focus of the above sections
- **Theme 2** - Better connecting communities affected by deprivation to a wider range of opportunities which is discussed in Chapter 8

Theme 1 - Reducing car km and car mode share

- Aside from travel into central Edinburgh, car is very much the dominant mode across the SEStran area. A 'whole-region' approach is therefore required if the level of car km, and associated emissions and energy usage, is to be reduced – targets are unlikely to be met only by incremental infrastructure improvements.
- Edinburgh is home to around 45% of the region's jobs, so 55% of commuting by residents of the area does not involve Edinburgh – commuting between non-Edinburgh SEStran local authorities has a 90%+ car mode share. Reducing car-based commuting to Edinburgh's suburbs and into the region's other major settlements and employment centres is a key priority.
- Car-based commuting from outside Edinburgh into Edinburgh's suburbs in particular contributes heavily to

congestion and emissions in the city. Other than on the corridor of approach, public transport connectivity around Edinburgh's suburbs is poor – more direct connections and improved interchange are necessary to allow easier movement between corridors and avoid the need to travel through the city centre if using public transport.

- Direct cross-Edinburgh and round-Edinburgh connectivity by public transport is very limited, leading to high car use for trips around Edinburgh. Cross-Edinburgh and orbital connectivity improvements are required to narrow the gap between car and public transport for these trips.
- Congestion continues to be a problem on radial corridors approaching Edinburgh. Bus priority and park-and-ride opportunities should be significantly extended into the Lothians, providing car users with an earlier and easier opportunity to switch to bus, tram or train.
- Regional public transport across the area remains Edinburgh-focussed and use of bus for travel between local authorities is limited. Initiatives to improve regional bus connectivity should be targeted where car-based travel volumes are high. Park and Ride, and associated town centre measures, should be used to encourage a switch to more sustainable modes early in the journey.
- Regional public transport connectivity must be a focus for planning of the 'Strategic Sites' and the 'National Developments' in the iRSS and NPF4.
- There is greatest scope to encourage mode shift from car where public transport is already more competitive and where relatively small improvements in public transport (or disincentives to car use) can make the change happen.

Regional projects should be developed and assessed in this context.

- There is greatest scope to reduce car km in corridors in an absolute sense where the volume of car travel is high and these have been identified here. Regional projects which aim to reduce car km should be developed and assessed in this context, i.e. to maximise car km reductions per £ spent.

Theme 2 - Better connecting communities affected by deprivation to a wider range of opportunities

- The following chapters in the RTS identify locations where poor public transport connectivity may be contributing to deprivation. These locations have been identified separately for more rural and more urban areas. Where tackling inequalities is the objective, these areas should be the

primary geographical focus of improving connectivity and, hence, life opportunities.

These connectivity improvements should be focussed on improving employment, training and educational opportunities, as well as making it easier for people to access key services, including health facilities and affordable retail opportunities.

The following chapters outline the Regional Mobility Themes which detail the RTS policies and actions. Our policies set out a statement of intent or provide guidance around decisions and actions which should be undertaken in order to achieve a desired goal which links to wider policy aspirations. In some instances, they also articulate SEStran's position in relation to key strategic issues.

Shaping Development and Place



6.0 Shaping Development and Place

6.1 Overview

Transport plays an essential role in linking land uses and enabling people to get where they need to go. People travel to get to employment, essential services, leisure facilities, where they live and other land uses, so it is key that the transport system caters for this demand in an effective, efficient and sustainable manner. In addition, transport also contributes to our built environment, playing an active role in **placemaking** and the attractiveness of spaces in which to live, work, visit and spend time.

Land-use planning heavily influences this process, with spatial decisions often determining where people travel to, and how they do so. Consequently, land-use planning decisions are critical in achieving transport objectives, and are a vital tool in promoting more sustainable forms of travel within the region. This link between the planning system and transport planning is reflected in the Revised Draft NPF4, with it emphasising the need for the planning system to support development that minimises car dependency and unsustainable travel through its Infrastructure First approach. In turn, this supports the NTS2's Sustainable Travel and Sustainable Investment Hierarchies.

The RTS is also a material consideration, both during the process of preparing a Local Development Plan and when determining planning applications. The rest of this section outlines key concepts which should be considered by local authorities during the development of future Local Development Plans and when considering proposals for new development. Planning for transport as part of new

developments is essential to ensure that they are created in a manner that embeds the **Sustainable Travel Hierarchy** from the outset and prevents car dependency from becoming entrenched. This can be achieved by ensuring that the land-use and transport planning process are closely

integrated with sustainable principles at their heart. The concept of Transit Oriented Development should be utilised wherever practical to provide sufficient population density to make high quality, regular public transport services viable. This requires the concentration of major trip generating developments around public transport corridors, stops and stations to be effective, along with the development of local environments tailored to walking, wheeling and cycling. This concept can be applied in all settings with development densities, adjusted to reflect more urban or rural environments.

Placemaking and the development of a high-quality urban realm are also essential to creating spaces that people want to spend time in and feel safe walking, cycling and wheeling to get around. This is closely tied to the concept of **20-minute neighbourhoods**, which aims to create attractive, interesting, safe, walkable environments which connect people to the facilities and services for their everyday needs via short, convenient active travel without depending on a car. By designing with this concept in mind, planning focuses on walking, cycling and wheeling rather than car travel, helping to align spatial planning and transport planning at a local scale. It can also enhance the inclusivity of areas through aiding the accessibility of services which may not have been within reach of some people and/or those who do not have access to a car.

The implementation of 20-minute neighbourhoods will be more suited to some parts of the region than others. Urban areas naturally lend themselves more to the concept than rural locations, and its application, therefore, needs to be flexible to reflect the differing characteristics of our communities, given that a high proportion of the region is non-urban. In more rural locations, the 20-minute neighbourhood concept – to sustainably access goods and services locally within an acceptable radius of where they live – may be limited to ensuring access to local public transport and safe walking, wheeling and cycling networks that provide onward links to employment and service centres or travel hubs. Further development of the concept is needed to link rural neighbourhoods/communities together. There would be benefit in developing a rural alternative by linking services within a series of smaller communities together via transport services or infrastructure, acknowledging the need for vehicular travel. It will require the provision of walking and cycling route infrastructure improvements that join up development sites to wider networks and make active travel the most attractive choice for short and medium-length journeys. This reflects the approach outlined in the Revised Draft NPF4 and illustrated in the adjacent diagram.



Source: victoriawalks.org.au

Transit Oriented Development and 20-minute neighbourhoods are equally as applicable to existing communities as they are to new developments, but, in the case of the former, they may require a process of transformation to provide the range of services, amenities and facilities necessary to enable them to be successfully

implemented. In a rural context, to support the sustainability and prosperity of rural communities and economies, the concepts of Transit Oriented Development and 20-minute neighbourhoods should only be applied in ways that align with spatial strategies set out in the Local Development Plans. This approach would help

prevent the suburbanisation of non-urban areas, restrict the unsustainable growth of long-distance, car-based journeys, and help promote wider, more equitable investment in rural areas.

In some instances, the application of Transit Oriented Development and 20-minute neighbourhood principles may make it possible to explore the implementation of zero car developments. These can be supported by **shared mobility** solutions which break traditional ownership models and allow people access to transport, including cars, on an on-demand basis. Shared Mobility is based on providing people with short-term access to vehicles like cars, bikes and scooters on an on-demand basis. This removes the need for vehicle ownership and provides people with a wider range of sustainable transport options than they would have available under the traditional ownership-based approach.

Shared mobility should be an integral part of all significant new developments in the future and will also provide scope to reduce the amount of parking provision. This would present an opportunity to increase density or to create additional green space within new developments. In the future, electric vehicle charging provision will be a fundamental requirement in all new developments as well.

6.2. Policies

- a) Local authorities should apply the Infrastructure First approach to new developments
- b) Local authorities should ensure that Local Development Plans and new development proposals align with policies outlined within the RTS
- c) New developments should be located to (i) reduce the need to travel and (ii) minimise the use of unsustainable modes by the application of Transit Oriented Development, 20-minute neighbourhood and shared mobility concepts
- d) 20-minute neighbourhoods should be implemented in urban and rural areas and existing developments where active travel, public transport and shared mobility provision enable sustainable access to local services and amenities in a safe and sustainable manner
- e) New residential development should be located where connectivity by sustainable modes to existing and planned employment centres – as well as key services such as education and leisure – is high
- f) New public services should be located where connectivity by active travel and public transport to the public is high but particularly with regards to the location of 'deprived' communities (e.g. health provision should be located with connectivity to health-deprived communities in mind)
- g) Local authorities should engage early with SEStran on Local Development Plans and large scale development proposals to assist in the identification of suitable sustainable transport connections to support the development
- h) Local authorities should seek developer contributions to support the implementation of strategic sustainable transport interventions through appropriate Local Development Plan policies
- i) Developers should refer to RTS policies when planning their developments to ensure consistency with the principles and aspirations of the RTS

6.3. Actions

- Partner councils work with SEStran through the statutory planning processes to implement RTS policies with regards to major developments
 - SEStran to engage with local authorities during the development of Local Development Plans on transport planning matters
 - Undertake a regional audit of Local Development Plans, Indicative Regional Spatial Strategies, Regional Economic Strategy, Local Transport Strategies and relevant national plans (including the Strategic Transport Projects Review 2) to identify synergies and areas where partnership working is required to ensure consistency with the policy outlined in the RTS
- Develop regional guidance around best practice on sustainable transport provision for new developments and local place planning
 - Partner councils work with SEStran to implement best practice guidance through participation in the planning and development process
 - Work with partner councils to create a developer contribution mechanism for regionally strategic, sustainable transport schemes
 - Pursue legislative change to enforce good practice in transport and connectivity for new developments through the planning system and building regulations

Delivering Safe Active Travel



7.0 Delivering Safe Active Travel

7.1. Overview

Enabling safe active travel in the region requires the provision of **integrated and high-quality routes** for walking, wheeling and cycling that join up settlements and destinations. This is essential to support the vital role walking and wheeling have to play in enabling people to make healthy living choices and assist in delivering places that are happier, more inclusive and equal, and more prosperous.

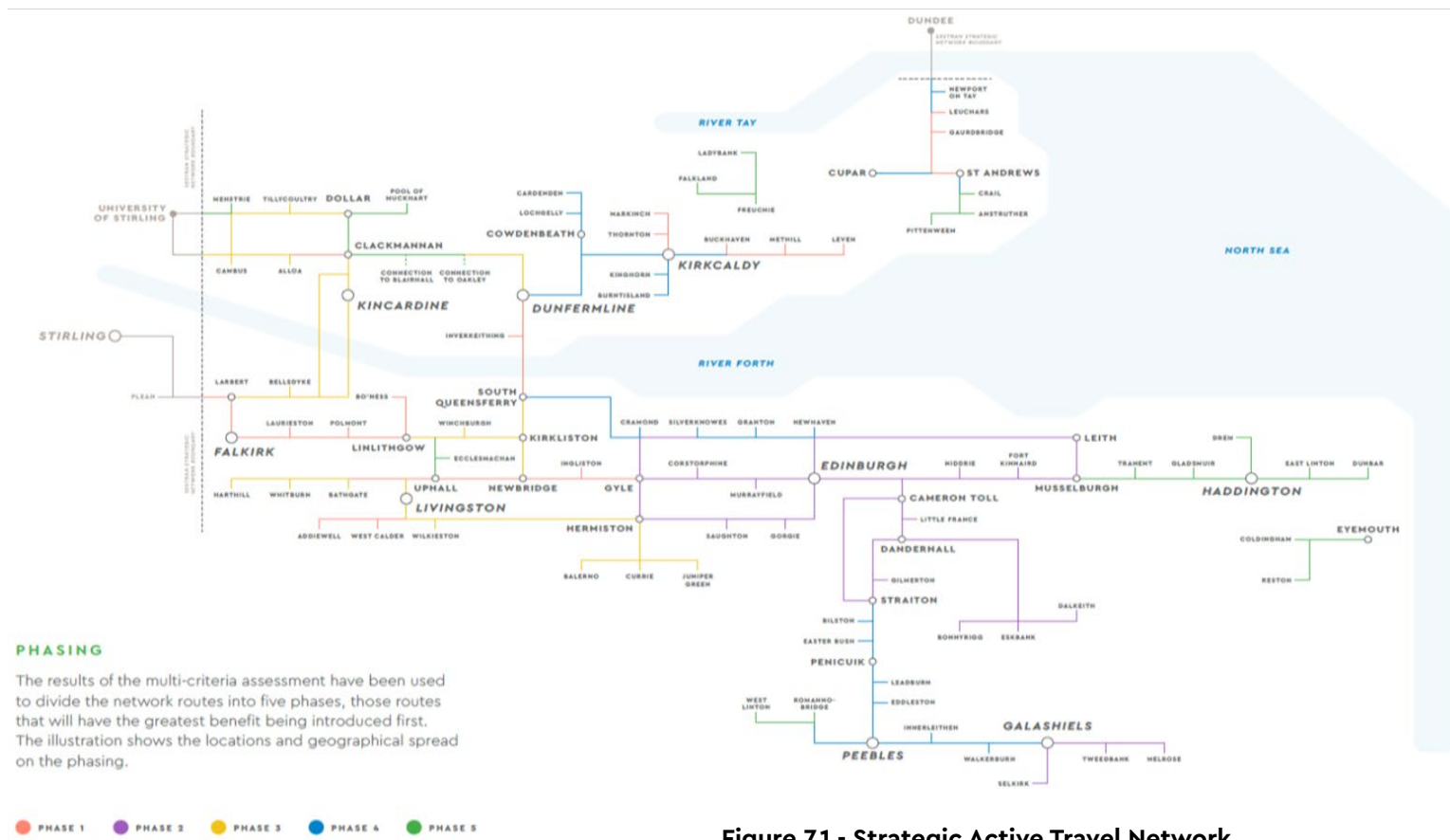


Figure 7.1 - Strategic Active Travel Network

Travelling by foot or cycle, or with a personal mobility aid such as a mobility scooter, is a realistic option for almost all local journeys as individuals. High quality routes are continuous, providing an attractive, safe, comfortable and direct connection linking multiple destinations. They should be physically separated from traffic, have a smooth surface and be appropriately lit so that everyone can use



them to walk, cycle or wheel their journey. SEStran has developed an integrated active travel network for the region as illustrated in Figure 7.1

The region's active travel network will need a combination of segregated off-road and on-road routes, making use of reallocated road space where appropriate. The **safety** of people using our active travel networks is paramount: it is essential they are designed to the highest current standard whilst conflicts with vehicles are minimised. The proposed regional network will make use of existing high-quality infrastructure and parts of existing routes that require relatively minor improvements or maintenance, ensuring that well-used routes with which users are already familiar can be integrated into a network of longer, more strategic cross-boundary routes.

Local authority partners have a number of local active travel schemes under development and identified which improve local access and connect to the wider Strategic Active Travel Network. These active travel schemes are fully supported by SEStran and are vital to connectivity within and between the local authority partner areas.

When joined in a comprehensive and consistent way, these high-quality routes combine together, resulting in a regional network that will also facilitate longer-distance active travel journeys. The next step now is to facilitate its delivery through the process of working with partners. This provides a framework for coordinated development of cross-boundary active travel routes connecting cities, towns, neighbourhoods, settlements and public transport hubs.

Active travel also provides important **health and wellbeing** benefits. Promoting these, along with the environmental benefits of walking, wheeling and cycling through educational campaigns, will be a key means of encouraging greater uptake of these modes. Opportunities

will be sought to overcome barriers presented by a public realm and urban environment not designed with active travel users in mind by facilitating placemaking and reducing car dominance. Promotion of current best practices and street design guidance will ensure that all street furniture settings take account of users such as the mobility impaired, blind, deaf, parents with pushchairs, the elderly and people in wheelchairs, resulting in a network that is **accessible for all**. In our urban environments, traffic calming, 20mph zones, pedestrianisation, walk-to-school initiatives and other road safety measures (such as minimisation of junction entry and exit flares) will be required to ensure people can walk, wheel and cycle safely.

In 2019 two-thirds of households in the SEStran region did not have access to a bicycle. Encouraging the uptake of active travel will,

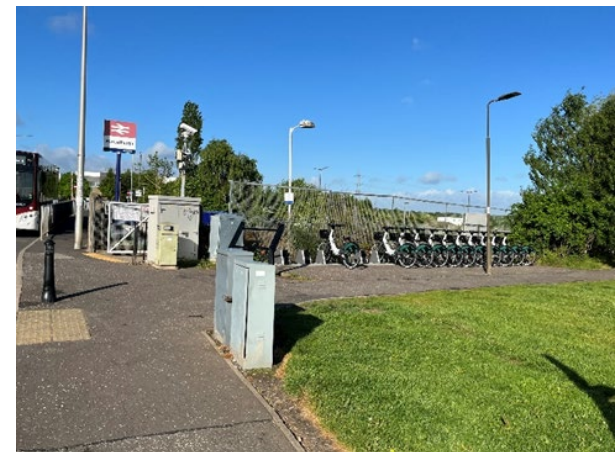
therefore, depend on increasing people's ability to **access bikes**, either through supporting the cost of purchasing a personal bike or by providing enhanced coverage of bike-sharing schemes, like SEStran's GO e-Bike electric cycle hire initiative.

As outlined previously, e-bikes also provide an opportunity to facilitate longer journeys by bicycle than previously would have been possible for many people. The widespread uptake of e-bikes can, therefore, help to reduce car dependency and contribute to modal shift for a wider range of journeys than before.

Case Study: Go e-Bike, SEStran Region

The Go e-Bike project was developed by SEStran. The project involved setting up a series of hubs across the region. The hubs are developed with a mix of local community organisations, charities and academic institutions. Each hub is unique and tailored to its community to support long-term sustainability.

E-Bikes and support infrastructure are provided based on an assessment of the requirements of the proposed hub in partnership with local stakeholders. There are currently ten hubs across the region, with 119 e-bikes in total available across all sites. To date, over 1,000 journeys have been made using the scheme.



7.2. Policies

- a) The RTS seeks the implementation of measures which improve facilities for those walking, wheeling or cycling
- b) The progression, implementation and ultimate completion of the SEStran Strategic Network is a key policy
- c) Active travel infrastructure should be inclusive by design
- d) The RTS seeks the implementation of initiatives which widen access to bicycle ownership or hire through bike-sharing schemes
- e) Road space for active travel should be prioritised in towns and cities in line with the sustainable travel hierarchy, and this should be integrated into local strategies and policy documents

7.3. Actions

- Progress the delivery of the SEStran Strategic Network and broader cross boundary networks with partners. Develop further phases of this network to ensure a long-term pipeline of investment

- Review destinations served by the active travel network to identify gaps and locations where cross-boundary schemes may be required to ensure an integrated, high-quality network exists
- Promotional and communication campaigns to highlight the benefits of active travel across the region and encourage people to adopt it where possible
- Deliver road safety measures that enable people to safely use active travel within the region
- Expand the provision of bike-sharing initiatives across the region
- Consider the case for amendments to legislation to ensure that the requirements of all users are appropriately taken into consideration in the planning and implementation of our active travel network

Enhancing Access to and Accessibility of Public Transport



8.0 Enhancing Access to and Accessibility of Public Transport

8.1. Overview

Providing access to public transport safe to use for all is essential to ensure that the region realises a transition to a decarbonised transport network in an inclusive manner. Transport is essential to enable people to access employment and essential services like healthcare, retail and education, but some people face physical and other barriers that prevent them from using the public transport services that provide these links. This can lead to disadvantage, social exclusion and deprivation, and is a major driver of transport poverty. Furthermore, the impacts tend to be most acute for the most vulnerable groups within the region, such as the elderly, the

young, those with disabilities or mobility impairments, ethnic minorities, women and people on low incomes.

Tackling this will require coordinated action to address a number of related access issues. First and foremost, the public transport system must be physically accessible, which necessitates measures to improve access to vehicles and at stations, stops and interchanges. At the basic level, this requires step-free access to enable easy boarding and alighting for all users, particularly those with disabilities or mobility impairments. Improving the environment and security at these locations is also important by ensuring there is adequate lighting and, where appropriate, CCTV provision.

It is also essential that everyone has easy access to the information they need to be able to plan journeys. The provision of online-only journey planning information is not sufficient for all users and, in particular, those who do not have access to an internet-connected device or are not confident using the internet for these purposes. This means travel-planning information needs to be available in a variety of formats, such as traditional paper copies, large print, braille and audio for those with sight difficulties. This needs to be supported by high-quality, wayfinding information on the network itself, so people do not become lost or confused during their journey. SEStran introduced a Real Time Passenger Information (RTPI) system across the region to provide up to date public transport journey information on the network and assist real time journey planning. There is an opportunity to build upon and expand this provision to enable everyone to plan and track public transport services. This will allow for more efficient multi-modal trips to be taken through the availability of accurate arrival times. Improved availability of real-time public transport information enhances customer satisfaction, as the



perceived wait time is reduced, which in turn can encourage a growth in patronage. However, digital connectivity in more rural areas is unreliable and inconsistent, which could restrict access in some parts of the region.

The public transport system should also be affordable for all. Bus fares are set by commercial operators whilst on the rail network, some fares are set by commercial operators, whereas ScotRail fares are overseen by Transport Scotland. Multi-operator and multi-mode journeys can incur several different fares, with discounts usually limited for those not purchasing season tickets. Opportunities must, therefore, be explored to provide more affordable fares for those groups most in need. Peak spreading (or reductions in peak-hour commuting) could also influence fares policy and reduce the need for premium fares at traditional commuting times which are unaffordable for some users. However, fares are also likely to be influenced by the impacts of the Covid-19 pandemic on public transport demand, which are explored further in Chapter 17.

Wider rollout of shared mobility solutions is another means by which access can be improved in the region. This is likely to offer particular benefits for those who do not have access to a private car (or who would prefer not to use a car) or own any other form of transport. In addition, it would also benefit those required to spend a disproportionate amount of their income on transport due to 'forced' car ownership. As such, the ability to access a range of transport options on demand without the need to own the mode of transport itself presents significant opportunities to alleviate these burdens and provide more flexible transport solutions.

Case Study: Thistle Assistance



Thistle Assistance is an initiative to help people feel safer and more comfortable when using public transport. For example, if you need more time to get to your seat or would like your driver to speak more slowly and clearly, then the Thistle Assistance card and app can be used to let transport staff know in an easy and subtle way what extra support is required. The Thistle Assistance card and app are recognised by many public transport operators across Scotland, including buses, trains and ferries. It can be used by showing your personalised card or app to their staff so that they will understand what additional assistance you require.

8.2. Policies

- a) The public transport network should be physically accessible for all, including vulnerable groups such as those with disabilities, mobility impairments and the elderly. This requires full compliance with the requirements of the Equality Act 2010.
- b) Public transport information should be provided in a variety of formats to meet the specific needs of all users
- c) Real Time Passenger Information should be made available for all public transport modes
- d) The public transport system should be affordable for all, based on their ability to pay
- e) Shared mobility solutions should be implemented to provide enhanced access to a wider range of transport options without the requirement for ownership

8.3. Actions

- Regional audit to identify stops, stations and interchanges (and access routes) which do not meet accessibility requirements and to develop a prioritised list of interventions
- Deliver improved public transport information in a variety of formats, supported by appropriate wayfinding infrastructure on the transport network
- Introduce Real Time Passenger Information for public transport services through mobile applications, stations and stops and across all parts of the region
- Identify areas of poor digital connectivity where RTPi facilities may be ineffective and work with partners to resolve these issues
- Resist pressures to increase public transport fares and explore opportunities to provide more affordable public transport for those least able to pay for it
- Identify locations where implementation of shared mobility solutions could be beneficial and reduce the level of 'forced' car ownership

Transforming and Extending the Bus Service



9.0 Transforming and Extending the Bus Service

9.1. Overview

The bus network is at the heart of the region's public transport system. Almost half (47%) of residents of the region used a bus service at least once a month in 2019. However, this figure is heavily skewed by Edinburgh – if Edinburgh residents are excluded, this figure drops to an average of 34%. In addition, demand has been heavily impacted by the Covid-19 pandemic. To realise our aspirations to decarbonise the region and provide sustainable, affordable access for all, bus services will need to play a pivotal role. Therefore, the RTS sets out a foundation that seeks to rebuild demand for buses in the wake of the pandemic and firmly places the role of buses at the centre of the strategy.

Analysis has shown that bus services suffer from delays, leading to variable and, hence, unreliable journey times, predominantly on congested urban routes. This reduces their attractiveness relative to other modes, particularly the private car, leading to reduced patronage. There is consequently a need to ensure that journey times are reliable on the key regional bus corridors. This can be achieved by the provision of appropriate **bus priority measures** that enable reliable travel around the region. The purpose of bus priority measures should be to provide journey times which are more comparable with the car wherever possible. A network of regional, cross-boundary, high-quality bus corridors should, therefore, be developed that link up urban ossiblecentres and seek to provide journey times which are comparable with the car wherever possible. These should build upon existing bus priority measures wherever possible, supplemented by additional reallocation of road space (see Chapter 11), park and rides, bus lanes, bus gates, bus pre-signals and



dedicated busways where appropriate. This should supplement work being undertaken in the region to deliver bus priority measures via Transport Scotland's Bus Partnership Fund. Bus priority may not be appropriate in all locations, and interventions should be proportionate to the environment and scale of the problem. For example, in rural towns and villages, the level of bus priority required is likely to be much less than that needed in urban centres. Bus priority should also be designed into major infrastructure schemes as appropriate. In addition, to be effective, it will be crucial that there is

adequate enforcement of bus priority measures to ensure they are not abused by other road users.

Where bus priority measures may not be sufficient to provide the level of journey time competitiveness required on a corridor, it may be appropriate to introduce **Bus Rapid Transit (BRT)** instead. BRT may provide a highly effective solution along congested corridors, or those requiring much greater bus transport capacity, where segregated routes are necessary to give the degree of priority required to buses. These corridors can also be used as enabling infrastructure for more significant fixed-link public transport systems, like light rail or trams, as was the case with elements of the Edinburgh Tram, which started as a BRT route before being converted to tram. As such, where high-demand corridors are identified and sufficient priority cannot be provided within the constraints of the existing carriageway, consideration should be given to the implementation of BRT systems within the context of the wider public transport network. This should be considered within the framework of a wider Edinburgh & South-East Scotland Mass Transit network, which is discussed in more detail in Chapter 10.

In some areas, **bus service improvements** will be required to enhance connectivity to essential services. To understand this in more detail, analysis was undertaken of the relationship between connectivity to services and levels of deprivation across the SEStran region. This classifies postcodes into three tiers, based upon the combination of their deprivation, drawing upon the Scottish Index of Multiple Deprivation 2020, and public transport connectivity problems, taking into account locations with no service provision, by a combination of TRACC connectivity analysis and weighting the attractiveness of each destination. The resultant tiers are therefore defined as:

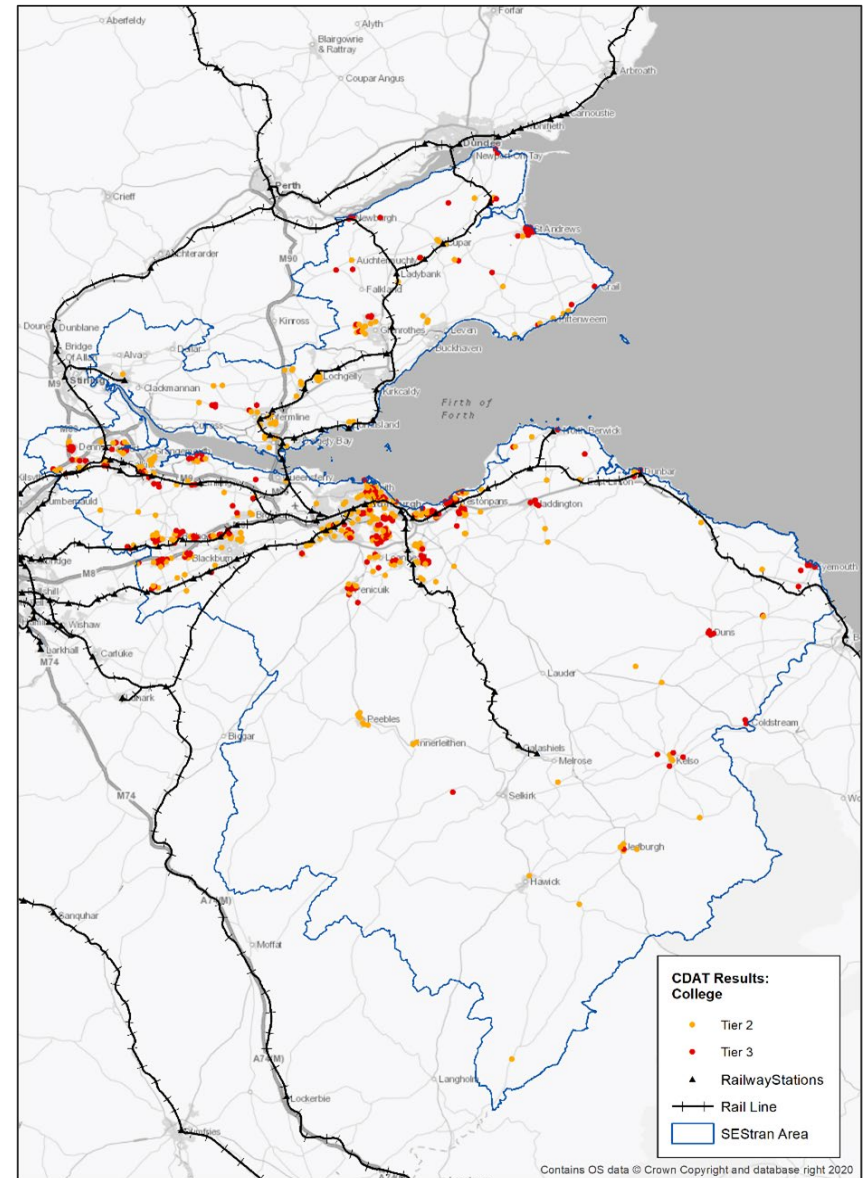


Figure 9.1 - Connectivity to Colleges

- **Tier 1:** these have the least deprivation and fewest public transport connectivity problems
- **Tier 2:** these show a potential correlation between deprivation and public transport connectivity and are classed as being at risk
- **Tier 3:** these show the greatest correlation between deprivation and public transport connectivity, suggesting a relationship may exist

The analysis examined connectivity to colleges, universities, employment and hospitals for residents of the SEStran region, with Tier 2 (orange) and Tier 3 (red) locations shown in Figure 9.1 to Figure 9.4 below. It can be seen in the colleges and universities analysis that there are variations across the region, but in both there are concentrations of Tier 3 postcodes in Edinburgh, West Lothian, Falkirk and Fife in particular. These areas have relatively poor connectivity to tertiary education and relatively low levels of educational attainment (both relative to all postcodes within the same Scottish Government urban/rural classification level).

The findings of the employment analysis are illustrated in Figure 9.3 which highlights a concentration of Tier 3 postcodes around the periphery of Edinburgh, as well as in the Scottish Borders, Clackmannanshire and Levenmouth in Fife. In the case of hospitals, shown in Figure 9.4, there are concentrations of Tier 3 postcodes, which are those showing the highest correlation between the SIMD health deprivation index and poor public transport connectivity to healthcare, around the periphery of Edinburgh, in West Lothian, Falkirk, Clackmannanshire and the Levenmouth area of Fife in particular. The RTS has a statutory duty to consider access to healthcare as outlined in the Transport (Scotland) Act 2005.

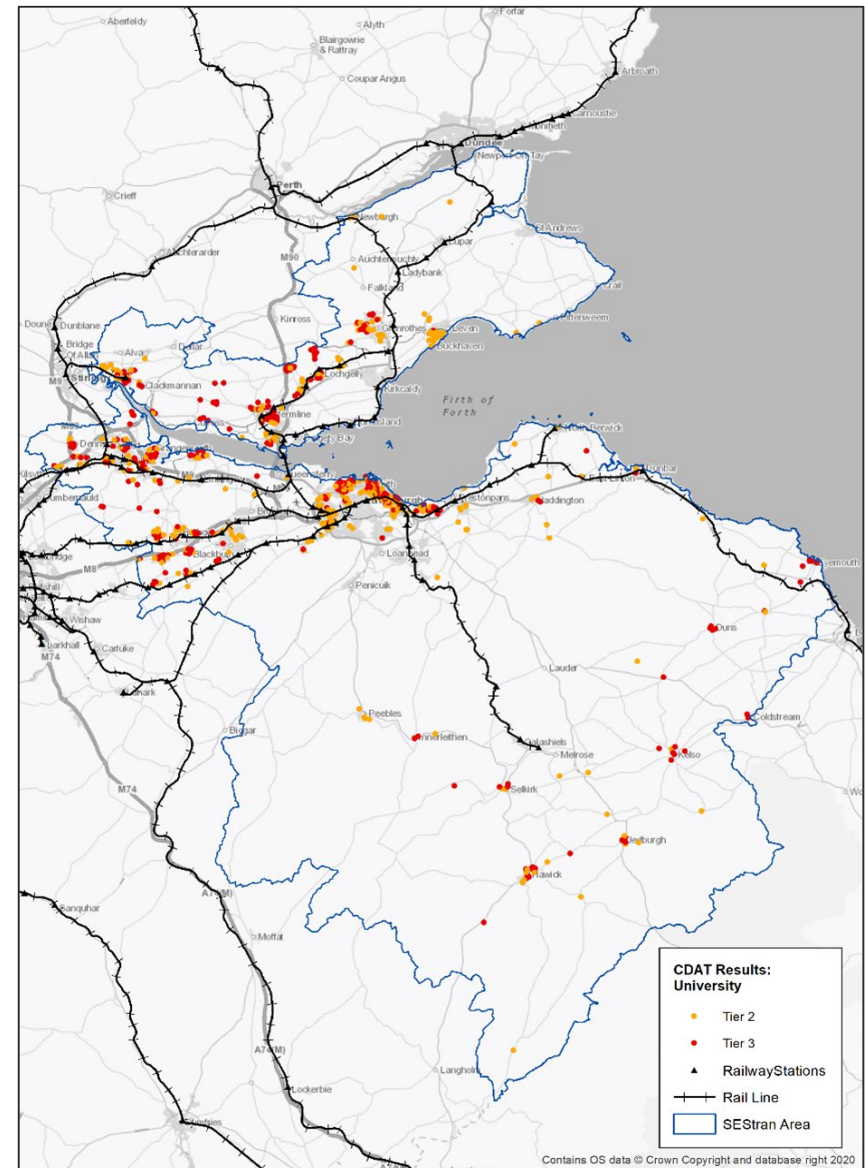


Figure 9.2 - Connectivity to Universities

This analysis highlights locations across the region where public transport services need to be enhanced to improve access to essential services and reduce the likelihood of people suffering from transport-induced deprivation. In these and potentially other locations, a combination of **new bus services** or **increased frequencies** on existing bus services could help to reduce transport poverty and deprivation. It is important that services are responsive to the needs of the region's users who may require later or earlier services in some instances (e.g. for leisure purposes or for access to shift-related employment). In addition, there are parts of the region that could benefit from direct public transport connectivity where multiple interchanges are currently required. Some of our main settlements require three interchanges when travelling between them by public transport whilst others have journey times that exceed two hours, making them unattractive to most users. Consequently, inter-local authority bus use (outside Edinburgh) is very low. More direct bus services, at least part of the day, could alleviate these problems and reduce car dependence for journeys between locations outwith Edinburgh. Furthermore, journey times could be improved by the provision of more express services making use of bus priority measures.

In more rural areas it may not be viable to provide scheduled bus services due to the level of demand and associated costs of providing them. The region's rural bus network has become increasingly fragile in the wake of the Covid-19 pandemic as a result of decreasing passenger numbers, with patronage levels hovering around 65% of the 2019, pre-Covid-19 levels as we emerged from the pandemic in early 2022. Sustaining rural bus services is, therefore, increasingly challenging, with a consequent need for more subsidies to maintain a basic service that is frequently catering to fewer and fewer passengers. The provision of a core rural bus network is essential for social inclusion and wellbeing purposes and should be

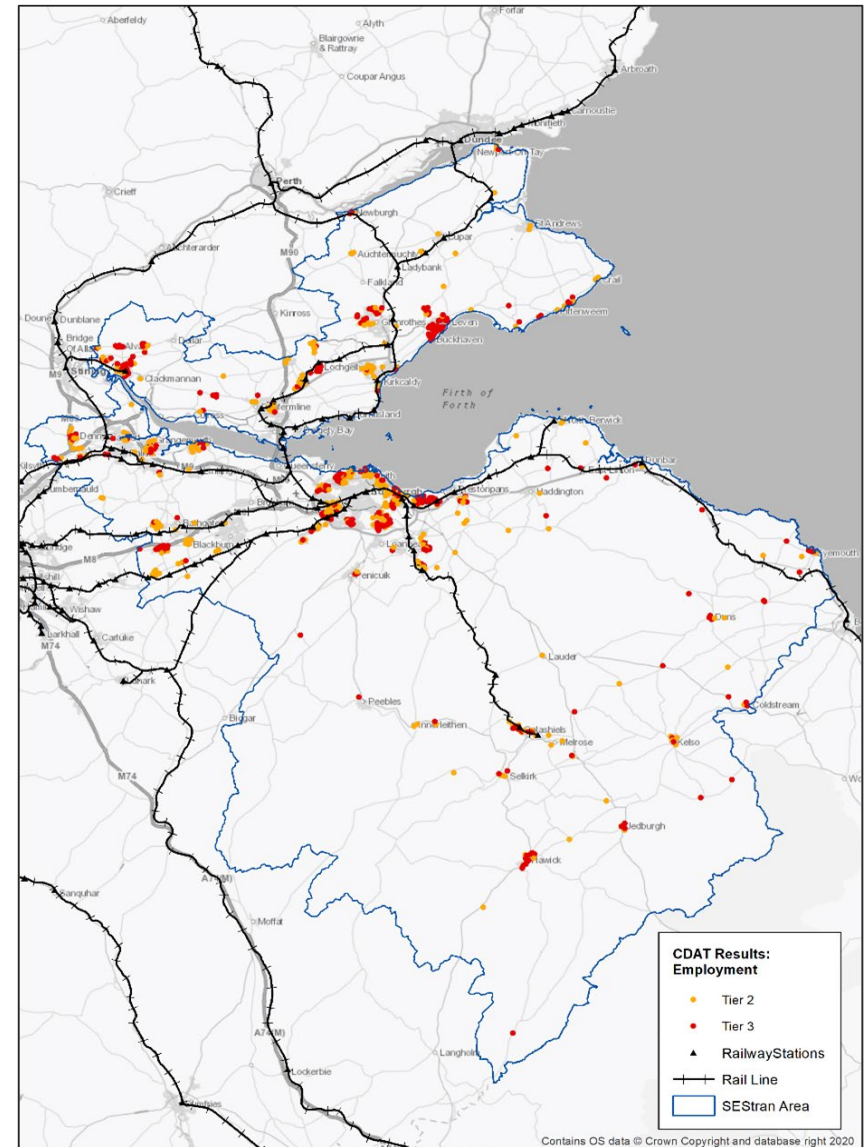


Figure 9.3 - Connectivity to Employment

retained wherever possible. However, in some instances, the provision of **Demand Responsive Transport (DRT)** may be more appropriate, alongside other interventions to improve partnership working and data sharing to identify opportunities to increase patronage, as piloted by the Edinburgh & South-East Scotland City Region Deal Workforce Mobility Project. SEStran has undertaken a Strategic Demand Responsive Transport Study which has set out a series of conclusions and recommendations about how to overcome the challenges facing DRT in the region, like increased service costs. Further information about how DRT can help to address rural public transport problems is provided in Chapter 12.

The Transport (Scotland) Act 2019 provides **new powers** in relation to buses, including the ability to introduce Bus Service Improvement Partnerships and Local Franchising. The application of these powers may be appropriate in some instances to deliver the enhancements to the bus network required in the region and will be explored as part of the suite of potential interventions to improve public transport provision. To support the modal shift, there also needs to be some consideration of the reimbursement rate for fares associated with concessionary travel in rural areas, as it is harder to attract new patronage. It is easier to generate patronage in a city environment whilst reducing income associated with fare revenue in a rural area, where there is not the additional patronage, further compounds the impact in a rural setting.

It is possible that **connected autonomous vehicles** will be increasingly used as part of the bus network in the region in the future as well. The CAVForth project will see a fleet of five autonomous buses operate a scheduled service between Ferrytoll Park and Ride in Fife, across the Forth Road Bridge to Edinburgh Park. It is one of the world's most complex and ambitious autonomous bus

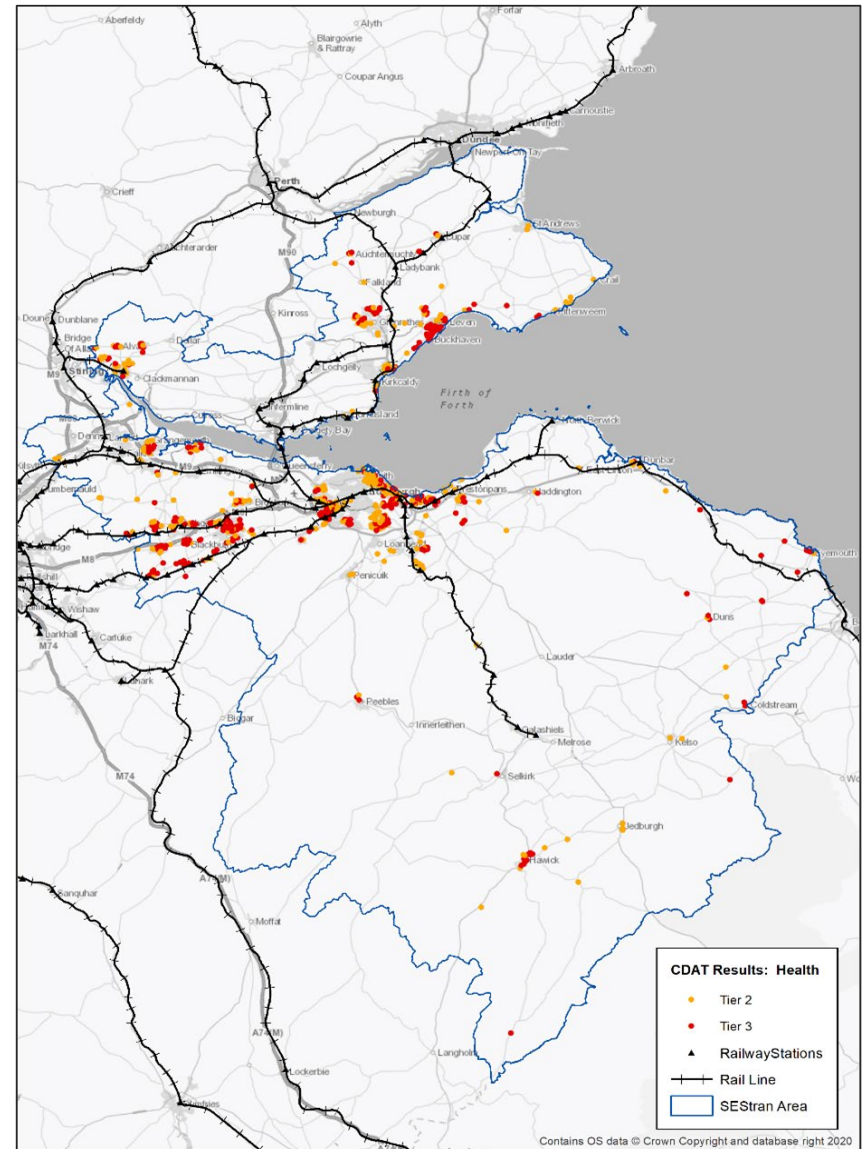


Figure 9.4 - Connectivity to Healthcare

pilot projects and could provide the foundation for more widespread implementation of similar services across the region.

9.2. Policies

- a) Bus priority measures should be implemented to deliver a network of regional, cross-boundary, quality bus corridors that link up key urban centres, building upon existing bus priority measures
 - b) The purpose of bus priority measures should be to provide journey times which are comparable with the car wherever possible
 - c) Bus priority should also be designed into major infrastructure and new development schemes
 - d) Bus priority measures should be supported by adequate enforcement measures
 - e) Consideration should be given to the implementation of BRT on high-demand corridors where sufficient priority cannot be provided within the constraints of the existing road network
 - f) Service improvements should be implemented in locations identified as at most risk of a combination of transport poverty and deprivation
 - g) Bus improvements should support access to healthcare facilities where practical and appropriate
 - h) A core network of rural bus services should be retained wherever practical and feasible within available resource and demand constraints
- i) Demand Responsive Transport should be implemented where traditional scheduled bus services are not feasible, particularly in rural and remote areas
 - j) The application of bus-related powers, granted through the Transport (Scotland) Act 2019, should be explored to support the delivery of an enhanced bus network in the region
 - k) Opportunities for the more widespread usage of connected autonomous vehicles for the provision of bus services should be kept under review pending the outcome of the CAVForth pilot project

9.3. Actions

- Undertake a Regional Bus Connectivity study for non-Edinburgh travel to identify settlement pairs where travel demand is high and bus services are poor, as a means to promoting new routes and connectivity (in partnership with other policies)
- Undertake a Regional Bus Priority study which will identify regional, cross-boundary, quality bus corridors and key bus priority interventions to reduce bus journey times and improve bus journey time reliability where Edinburgh is likely to be a focus
- Deliver the bus priority interventions funded by Transport Scotland's Bus Partnership Fund and subsequently identified by the Regional Bus Priority study
- Undertake further analysis to develop options to improve bus service connectivity to areas identified as being poorly

connected to essential services and suffering from related deprivation. This could include increased service frequencies, new services, more direct services and/or more express services. This will build upon work undertaken by the Workforce Mobility Project.

- Support the delivery of bus services and infrastructure measures which ensure access to healthcare for all
 - Work with partners to implement new direct and express services to link settlements across the region that currently require multiple interchanges or excessively long journey times
- Implement the findings of the SEStran Strategic Demand Responsive Transport Study
 - Review the bus powers detailed in the Transport (Scotland) Act 2019 and identify if they could be implemented across all or parts of the region within an integrated strategy to enhance the bus network
 - Review the findings of the CAVForth pilot project and identify whether there are further opportunities for provision of bus services using connected autonomous vehicles in the region

Enhancing and Extending Rail Services



10.0 Enhancing and Extending Rail Services

10.1. Overview

The rail network (comprising 'conventional' heavy rail and light rail/tram) plays a key role linking up the region, as well as providing connectivity to external locations. The region has benefitted from the construction of the Borders Railway which opened in September 2015. The line carried 1,737,000 passengers by the end of its fourth year of operation (October 2019), which is over 22% more than during its first year. Whilst demand has subsequently been impacted by the Covid-19 pandemic, nonetheless, this highlights the role that new rail infrastructure can have in driving public transport usage across the region. Indeed, evaluation published by Transport



Scotland of both the Borders Railway and the Airdrie Bathgate Rail Link (opened in 2010) has demonstrated the value of these investments to the SEStran area.

The pandemic has had a significant impact upon public transport passenger numbers and has reversed the previous long-term trend of growth in patronage on the rail network. The longer-term implications of this are currently uncertain, but in the short term there are likely to be some changes around the rail industry as different travel demand patterns emerge. However, enhancing and extending rail-based services within the region is still regarded as a fundamental component of the strategy, as a viable public transport alternative will be essential to encourage modal shift and facilitate decarbonisation and network efficiency.

In the east, the rail network is less densely developed than other parts of Scotland, notably around Glasgow. Consequently, there may be greater opportunities to **expand the rail, light rail and tram network** in the region and these should be explored through appropriate appraisal and business case development. This approach has seen the successful commitment to the reopening of the Levenmouth rail link which will connect Leven and Cameron Bridge to the network.



Similarly, more of the region's towns and settlements could be connected to the existing rail network by the provision of new stations. This is particularly important where significant new developments are proposed, and opportunities should be sought to connect these to the rail network where appropriate. SEStran, along with local authority partners, was instrumental in delivering and supporting the existing commitments to deliver new stations at East Linton (East Lothian), Winchburgh (West Lothian) and also the now-operational Reston (Scottish Borders). However, it is imperative that any new station needs to be supported by an appropriate level of

service provision that enables a meaningful travel option for local residents and supports the principles of inclusive economic growth and low carbon travel. Proposals for new stations in other locations should be subject to an appraisal process that identifies improved partnership working between rail and bus operators and helps support and deliver improved integration.

Enhancements to **rail services** can also deliver improved public transport connectivity. This could take a number of forms, such as more direct through services between locations, reducing the need for interchange on existing routes, increased frequencies on particular routes or at key times of the day. Analysis has identified that there may be merit in exploring enhanced cross-Edinburgh services to cater for demand between East Lothian, Midlothian and the Scottish Borders to, for example, Edinburgh Park and South Gyle. Opportunities should, therefore, be sought to improve existing rail services, including longer trains, more frequent services, new routes, earlier and later services on an ongoing basis, taking into account emerging travel patterns, including the possible reduction of peak-hour commuting in the wake of the Covid-19 pandemic. However, the RTS does not support reductions in rail service frequencies or levels of provision unless it can be clearly demonstrated that there will be no detriment to the region's communities and residents, particularly those most vulnerable to social exclusion. In addition, this should take cognisance of the at-risk areas identified as potentially suffering from a correlation between a lack of public transport connectivity to essential services and deprivation outlined in Chapter 9.

Many parts of the region's rail network, such as Edinburgh Waverley and the East Coast Main Line, suffer from **capacity constraints** which limit the ability to provide additional passenger and freight services (see Chapter 14). The resolution of capacity constraints like these will be necessary in some instances to enable the provision of new

stations, new routes and increased service frequencies. The further electrification of the rail network is also essential in the decarbonisation of transport with the Borders Railway, Fife Circle and parts of the East Coast Main Line yet to be electrified. As part of Phase 1 of the improvements to the Borders Railway, the line will be electrified. Where overhead line electrification is not possible, battery-powered trains may provide a viable alternative for electrification. Transport Scotland and Network Rail have an ongoing programme of investment managed through five-year-long Control Periods. It is important, therefore, to ensure that investment in the region's rail network is programmed into these Control Periods to ensure capacity constraints and other issues are addressed.

In the longer term there are potential opportunities to link the region into the emerging **High Speed Rail** network for the UK via a link to North-East or North-West England. This would provide faster journey times and enhanced inter-regional links, bringing reductions in internal UK short-haul flights and economic benefits to both locations. The business case and technical feasibility of High Speed Rail serving the east coast of Scotland requires further development, and SEStran will support Transport Scotland, along with the UK Government, in investigating these further. SEStran is similarly supportive of further work to improve cross-border connectivity between the cities of Edinburgh and Carlisle, and also to provide potential access to High Speed Rail at a revamped Carlisle Station, with £10 million identified through the Borderlands Inclusive Growth Deal for the development of the case for extending the Borders Railway. This process will identify improved partnership working between rail and bus operators and helps support and deliver improved integration.

At the other end of the spectrum, our urban areas could benefit from improved connectivity provided by **light rail and tram** solutions.

There are a range of proposals for extensions to the existing Edinburgh Tram network with the Newhaven tram extension due to become operational in Spring 2023. STPR2 and NPF4 both support the development of an Edinburgh & South-East Scotland Mass Transit system which potentially comprises a mix of tram and bus-based transit modes, including Bus Rapid Transit (BRT), and involves reallocating existing road space to reduce the impact of congestion on public transport journey times and reliability, with the latter being discussed in more detail in Chapter 9. The system would complement and integrate with the region's current bus, tram, heavy rail and active travel networks. It would also connect with existing and new Mobility Hubs/Transport Interchange locations in the region to facilitate the cross-boundary connectivity.

Any new mass transit routes or further tram extensions will require appraisal and business cases to be developed accordingly. STPR2 highlights opportunities for mass transit to improve connectivity between Edinburgh and the surrounding communities in the region, as well as to provide more direct connections between communities outside Edinburgh. As such, there may be opportunities to introduce light rail/mass transit systems in other parts of the region, within existing dense urban areas or as part of new developments. Again, these initiatives are supported in principle, particularly where they create a step-change in public transport quality.

It is also essential that our rail network is **affordable** and not seen as only for better-off commuters. There has been a historical disparity in rail fares across Scotland, and within the region itself. Fares rationalisation should, therefore, be explored to provide more equitable access to train services across Scotland as part of a strategy to make public transport within everyone's means.

In the future there is also scope for greater **automation and innovation** to be integrated into the heavy and light rail network.

Automated train operations (ATO) offer predictable running times, higher capacity, energy optimisation, automated and computerised failure detection and response, and enhanced safety, as well as the potential for driverless train operation (and therefore cost savings or the ability to provide more services for the same money). ATO is expected to considerably alter the interaction between infrastructure and the day-to-day running of rail operations. Some automated and driverless rail systems are already in operation, such as the Docklands Light Railway (DLR) in London, and opportunities for driverless operation across the region should be kept under review.

10.2. Policies

- a) Opportunities should be explored with partners to expand the rail network across and beyond the South-East of Scotland through new lines and stations where appropriate, cost-effectiveness and in line with strategy objectives
- b) The RTS supports the delivery of new stations at East Linton, Winchburgh and at Leven and Cameron Bridge as part of the delivery of the Levenmouth rail link
- c) Opportunities should be explored with partners to introduce new services, including more direct links across the region, national boundaries and cross-city connections
- d) The resolution of key capacity constraints on the rail network should be taken forward as a priority
- e) The full electrification of the rail network in the region should be delivered in line with Transport Scotland's decarbonisation strategy
- f) Opportunities to link the region to the emerging High Speed Rail network should be explored. The RTS supports reduced cross-border rail journey times as a means to improve competitiveness with short-haul flights and reduce emissions.
- g) Implementation of an Edinburgh & South-East Scotland Mass Transit system is supported in principle and should explore further opportunities to develop BRT and expand the regional light rail and tram network
- h) The rail network should be affordable for all and opportunities for fares rationalisation across Scotland should be explored to ensure parity of access and affordability

10.3. Actions

- Support/undertake appraisal and business case development for new rail and light rail/tram infrastructure, such as lines, stations and services, including longer-distance, cross-boundary opportunities
- Work with Transport Scotland and Network Rail to deliver new rail infrastructure in the region, where appraisal and business case development has demonstrated its merits
- Investigate the merits of introducing enhanced cross-Edinburgh train services to cater for demand between East Lothian, Midlothian and the Scottish Borders to Edinburgh Park/South Gyle
- Identify capacity constraints upon the rail network and appropriate resolutions to enable the provision of passenger and freight services that meet both current and future needs

- Work with Transport Scotland and Network Rail to seek the acceleration of the electrification of the rail network of the region
- Support Transport Scotland and the UK Government in the development of a business case for High Speed Rail serving South-East Scotland
- Undertake appraisal and business case development for an Edinburgh & South-East Scotland Mass Transit system, including BRT, new light rail and tram links within the region, in partnership with ongoing development of STPR2.
- Engage with Scottish Government for a national review of rail fares and a rationalisation of fares across Scotland, drawing on Transport Scotland's 'Fair Fares' review findings.
- Develop a concordat/partnership agreement with rail operators and associated rail industry partners to foster even closer working relationships and deliver rail-related priorities

Facilitating Efficient Freight Movement and Passenger Travel



11.0 Facilitating Efficient Freight Movement and Passenger Travel

11.1 Overview

The efficient movement of people and freight around the region requires high-quality transport networks which are fit for purpose and that minimise the impacts of congestion and delays on journey times. To achieve this, in some instances there is likely to be a requirement for targeted infrastructure investment, particularly aimed at tackling congestion hotspots. On the strategic road network, whilst traffic management will be key, these should also incorporate bus priority and active travel measures where relevant and practical.

There will likewise be a need to adapt our transport networks to be resilient in the face of the impacts of climate change by ensuring they are more able to accommodate extreme weather events and by providing appropriate diversionary routes, in the event that incidents require primary routes to close temporarily.

Enhanced external connections may also be required in some instances to ensure the region remains competitive and linked to key external markets. The loss of the ferry link to Europe from Rosyth in 2018 reduced trade links with Europe, and opportunities should be sought to reestablish direct passenger and freight links with the continent where appropriate and viable. Alongside this, there is need to support international air connections through Edinburgh Airport, and to seek to ensure that the number of direct linkages is maximised in the wake of the reduced demand created by the Covid-19 pandemic, particularly as aviation becomes more sustainable. Furthermore, there may also be a need to upgrade the strategic road network that links the region to surrounding areas where it has been

identified as a potential impediment to the efficient intra-regional movement of people and freight due to a lack of capacity, long or unreliable journey times within the context of NTS2's Sustainable Investment Hierarchy.

For freight, the provision of new, secure rest facilities for commercial vehicle drivers on the strategic road network should be explored. There are currently eight driver rest areas in the region. These help to reduce tiredness amongst drivers, which has safety implications for all road users. The provision of additional rest areas would provide further opportunities for drivers to take breaks and reduce the likelihood of incidents occurring due to tiredness on the region's strategic road network.

The region could also benefit from the introduction of Freight Consolidation Centres in key locations. The majority of goods travelling between South-East Scotland and other regions arrive from either North-West England or West Central Scotland. For those goods destined for Edinburgh city centre, they will likely travel via the M8 or A702 from North-West England. A consolidation centre located close to the A720 City of Edinburgh Bypass, between its junctions with the M8 and A720, could serve freight vehicles from both regions. From there, a dedicated consolidation centre vehicle(s) could serve Edinburgh, ideally powered using alternative fuels. Further support could be provided for the consolidation centre vehicle(s) through the permitted use of bus lanes as discussed in Chapter 11.

For goods from the South and North-East England, Leith Port could act as an eastern consolidation centre, potentially rail-connected, where goods could be brought in by road or rail. Given the port's

proximity to Edinburgh city centre, the 'first and last mile' could be undertaken by cycle logistics or electric, temperature-controlled vans. Opportunities should also be explored to implement micro-consolidation centres: smaller facilities that can be placed close to the areas that they serve. Often no bigger than a shipping container, they are particularly suited to high-density urban areas where space is at a premium. Usually served by cycle logistics and smaller electric vans, these can be sited in locations such as squares or car parks. Where possible, these should be linked to multi-modal mobility hubs, discussed in Chapter 12, which offer the possibility of integrating (semi-) urban deliveries with pick-up points (click & collect) at key interchanges.

It will also be important to seek to facilitate modal shift from road to rail freight. Rail freight is typically well-suited to regular journeys of bulk commodities over longer distances, where the paths can be scheduled on the rail network. However, there are a number of constraints on the rail network that can inhibit the ability to increase the amount of rail freight carried. Gauge clearance is highest on the East Coast Main Line, but there are parts of the region's rail network where lower gauge clearances restrict the type of freight containers that can be carried. This particularly affects rail movements to the north and east, as much of the network north of the Forth is W8 or below. Enhancements to gauge clearances, therefore, present an opportunity to broaden the range of rail freight services operating in the region. In some instances, the gauge clearance on the route may be sufficient, but there may be insufficient train paths to allow more freight services to operate. This has been established as one of the key barriers to increasing rail freight, with particular constraints identified on the East Coast Main Line and at Edinburgh Waverley. The introduction of loops can alleviate some of these constraints by enabling trains to wait off the main line before rejoining it once it is clear. If one or more of these loops were introduced, then the case

for further services to existing terminals or new facilities could be strengthened, and suitable opportunities for their implementation should be explored.

Case Study: SEStran, SURFLOGH & ZEDIFY E-Cargo Bike Pilot



Through the SURFLOGH project, SEStran is working with ZEDIFY Scotland to design an e-cargo bike 'first and last mile' delivery pilot in the City of Edinburgh. ZEDIFY has received £50,000 funding to boost e-cargo bike deliveries within Edinburgh launching with a new delivery hub in Spring 2021. As an international collaboration, SURFLOGH aims to green 'first and last mile' delivery, developing cargo hubs that are really 'smart', efficient and sustainable. The project is a collaborative, transnational partnership focussed on shared and exchanged information from different perspectives, backgrounds and nationalities.

Switching from road to rail freight may not always be commercially viable for logistics providers and the companies they serve. On this basis there may be a requirement to provide more funding support to facilitate modal shift for these journeys. This could help to stimulate new rail freight services between locations where services currently do not exist, or to increase volumes on some existing services. One opportunity is for a multi-user freight train running a regular circuit, serving locations such as Grangemouth, Inverness and Aberdeen moving goods arriving at port around the region and to/from North-East Scotland. However, funding may be required to procure wagons, following assessment to support an initial trial.

The use of mainline railway stations as hubs for freight, utilising carriages to deliver parcels into the city and town centres, and thereby integrating freight and passenger services, has a long history in the UK. Changes in carriage and locomotive design, as well as increased focus on security and higher passenger numbers, meant that this service ceased. However, reduced passenger demand through changes to working patterns as a result of the Covid-19 pandemic could allow spare capacity to be utilised off-peak for parcels or other types of freight. This could then be collected by vehicles or cycle logistics from platforms to be taken to their destination. As such, opportunities for innovative, passenger train forming which incorporates the ability to carry freight should be explored.

In the future, automation and innovation are likely to play an increasingly prominent role in freight and logistics. There has been some development of drone technology to aid delivery services, with both airborne and land-based robots being developed for 'first and last mile' freight for parcels under a certain weight.

Case Study: Amazon Scout



These robots autonomously navigate residential neighbourhood routes for 'first and last mile' parcel delivery services. They operate at a walking speed and can navigate around pedestrians, pets and other things that cross their paths. Amazon Scout robots are currently undergoing a pilot in the USA within Washington. The company has subsequently announced plans to bring these autonomous delivery robots to the UK after establishing an Amazon Scout team at their Cambridge Development Centre.

On the road network, vehicle platooning could help to increase freight capacity and reduce costs. This generally involves a lead vehicle, which is manually driven to navigate the road traffic and route, followed by other vehicles which are driverless. This technology has not been implemented as a viable commercial

product, but there are active pilots which show potential. In 2016, the first cross-border truck platooning trial was successful in reaching its destination in the Port of Rotterdam. This form of automation could also begin to emerge, therefore, as a viable means of transportation during the lifetime of the new RTS.

Furthermore, there is scope for sea vessels to operate without the need to have a large crew, as they could be automated or piloted via remote control. This has many safety benefits, as workers would not be exposed to harsh sea conditions, making the movement of freight less hazardous. Whilst this is unlikely to be adopted immediately, there may be a phasing of implementation, resulting in a mix of traditionally crewed vessels and autonomous vessels sailing at the same time.

11.2. Passenger and Freight Policies

- a) The RTS supports targeted infrastructure investment, including new road links or increased road and junction capacity:
 - o only in line with the Transport Scotland sustainable travel and investment hierarchies and when all other avenues are exhausted
 - o where significant economic opportunities would otherwise not be realised or are being severely impacted under the status quo
 - o where bus priority and/or active travel is integral where appropriate
- b) The transport network should be robust and resilient to adapt to the impacts of climate change, with suitable diversionary routes

in place for instances when key primary routes are required to close temporarily

- c) Opportunities should be sought to reestablish direct passenger and freight ferry links with Europe
- d) The RTS supports maximising international air linkages through Edinburgh Airport

11.3. Freight Policies

- a) Additional locations for secure, commercial vehicle driver rest areas on the strategic road network should be investigated
- b) Freight Consolidation Centres should be implemented at key locations on the strategic network, including potentially on the A720 Edinburgh City Bypass and Leith Port
- c) Micro-consolidation centres should be implemented in conjunction with multi-modal mobility hubs and supported by sustainable 'first and last mile' logistics, including cycle logistics and electric vans
- d) Opportunities should be sought to enhance gauge clearances on the rail network to enable a wider range of freight wagons and containers to operate on the region's network, and for the number of rail freight services to be increased accordingly
- e) The RTS seeks the implementation of loops and other appropriate infrastructure that will enable additional train paths for freight services to be provided in the region
- f) Where appropriate, funding support should be used to implement new or enhanced rail freight services in the region

- g) Opportunities for innovative passenger train forming which incorporates the ability to carry freight should be explored
- h) Beneficial innovation and automation should be used to increase the efficiency of freight and logistics networks across the region

11.4. Passenger and Freight Actions

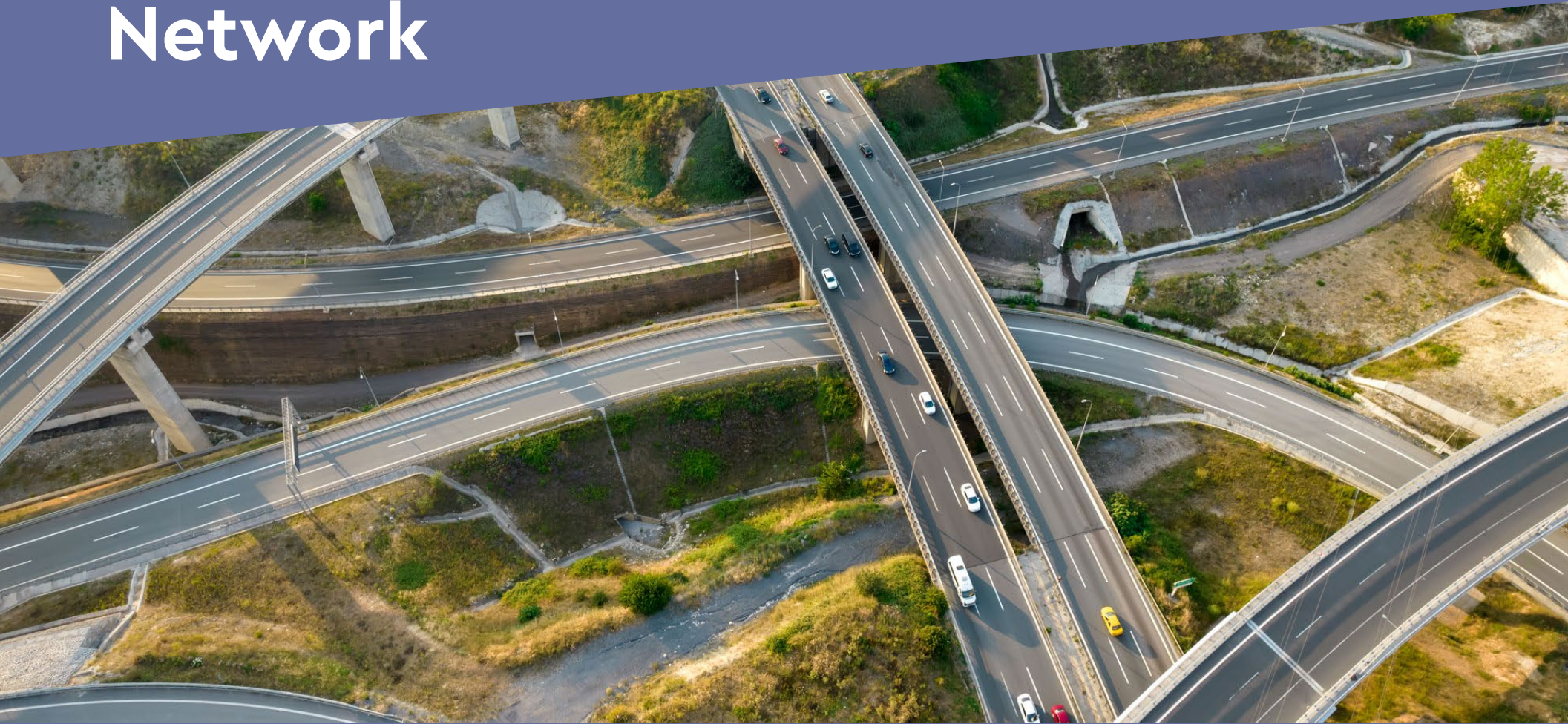
- Work with partners to identify locations where targeted infrastructure investment may be required and work to deliver it where appropriate
- Work with partners to undertake analysis to identify locations most vulnerable to the impacts of climate change, and where diversionary routes are least adequate, and develop a set of interventions to improve the resilience of the strategic transport network
- Engage with partners to explore opportunities to reintroduce ferry links with Europe
- Engage with Edinburgh Airport to support the development of international air linkages

11.5. Freight Actions

- Undertake analysis to identify locations where additional, secure, commercial vehicle driver rest areas may be required on the strategic road network
- Work with partners to identify, through the further development of the SEStran Freight Strategy, locations where Freight Consolidation Centres could be located

- Implement micro-consolidation centres alongside the delivery of multi-modal mobility hubs with supporting cycle logistics and electric van 'first and last mile' logistics
- Work with partners to identify, through the further development of the SEStran Freight Strategy, locations where gauge clearances should be increased to enable new and enhanced rail freight services to operate in the region
- Work with partners to identify, through the further development of the SEStran Freight Strategy, locations where passing loops or other capacity improvements may be required to provide additional train paths for rail freight services
- Further develop proposals for new rail freight services, including a potential multi-user freight train running a regular circuit between Grangemouth, Inverness and Aberdeen, as part of the development of the SEStran Freight Strategy
- Engage with the rail industry to undertake a pilot of freight carriage on passenger trains
- Identify opportunities to implement innovation and automation in the freight and logistics industry in the region, including the delivery of relevant pilot projects

Reallocating Road Space on the Regional and Local Network



12.0 Reallocating Road Space on the Regional and Local Network

12.1. Overview

Encouraging more people to use public transport and active travel will depend upon the provision of high-quality infrastructure that makes these modes as attractive as possible in comparison to a car. In some instances, this may require parts of the road network to be reallocated in order to give greater priority to alternative modes. There are a number of ways in which road space could be reallocated, including:

- **Walking and Wheeling:** widening footways provides more room for walking and wheeling, whilst upgraded links can make previously dangerous or unappealing routes suitable for a much wider range of users, including those with mobility impairments or disabilities
- **Cycling:** depending on traffic volumes and speeds, cycle lanes or fully segregated cycleways provide dedicated space for cyclists and prevent them from having to mix with general traffic, making it safer and more appealing to a wider range of users
- **Shared-Use Active Travel:** rather than being dedicated to pedestrians or cyclists alone, where volumes are low, shared-use facilities can be used by both, making them attractive to all types of active travel
- **Buses:** facilitating bus priority measures such as busways, bus lanes, pre-signals and gates that enable buses to avoid congestion and provide a quicker journey time, particularly at peak periods, compared to cars
- **Freight:** the provision of loading bays and dedicated freight-only lanes are ways in which access can be improved for freight vehicles. There is also the possibility of enabling HGVs and/or LGVs access to some bus lanes.

In the case of freight, it is important to strike a balance between ensuring goods can access our urban areas in an efficient manner and minimising the adverse impacts these vehicles have on other users of the network, particularly public transport, and the environment. For example, whilst allowing goods vehicles access to bus lanes may increase efficiencies of deliveries, it could have an adverse impact on public transport services, leading to fewer people choosing to travel by bus as a result and contributing negatively to air quality in urban areas.

Overall, the goal of road space reallocation needs to be to reduce reliance on private cars and encourage the use of more sustainable alternatives. Opportunities should therefore be sought throughout the region to reprioritise the regional and local road network in line with the sustainable travel hierarchy. This approach should also be reflected in the road space allocation within new developments.

12.2. Policies

- a) The RTS encourages the reallocation of road space away from general traffic to specific groups of road users, including for public transport and active travel
- b) The principles of the sustainable travel hierarchy should be applied to reprioritise the local and regional road network wherever possible
- c) The sustainable travel hierarchy should be used as a material consideration to prioritise the allocation of road space within new developments in the region
- d) SEStran will work with local authority partners to deliver significant road space reallocation initiatives locally and regionally
- e) Opportunities to provide road space reallocation to support the efficiency of freight movements should be explored where these will not significantly disadvantage public transport users, communities or the environment

12.3. Actions

- Develop a framework and set of criteria to assist partners in identifying and delivering local and regional road space reallocation proposals reflecting both urban and rural areas. This should be undertaken in an inclusive way and in line with the NTS2's sustainable travel hierarchy.
- In collaboration with bus operators, undertake analysis of regional and cross-boundary corridors where congestion is impacting on bus operations and identify locations where road space reallocation may be required
- Explore the shared use of bus/commercial vehicle lanes through the development and implementation of the SEStran Freight Strategy

Delivering Seamless Multi-Modal Journeys



13.0 Delivering Seamless Multi-Modal Journeys

13.1 Overview

Enhancing the integration between modes reduces the barriers to interchanging between different types of transport which are often perceived as a significant impediment to users, and will lead to a transformational change in how the transport network is accessed and used. The role of walking and wheeling as an integral part of the end-to-end, multi-modal journey and the importance of how this active travel part of the trip links to other sustainable transport

modes is a key element of the overall journey. The delivery of a more seamless transport network for the region will make travelling by public transport and active travel more attractive for a wider range of journeys and reduce the high levels of car dependency, with 64% of journeys to work by residents of the region being made by car drivers or passengers in 2019. This seamless transport network will be aided through an **integrated ticketing scheme** incorporating fare capping and measures to reduce two fare trips or a more targeted initiative. To be truly effective these schemes need to operate across different operators and modes.

Case Study: London Integrated Ticketing and Fare Capping

Travelling within and between London Zones was simplified in 2003 with the introduction of Oyster cards. These allow users to travel via different modes using a single form of payment. This progressed in 2005 to include fare capping, limiting how much a user pays for their journeys across a 24-hour day, or within a week, once their accumulative fares add up to a certain amount. After fares reach a 'capped' price, a user can make as many journeys as they wish within that time frame for no further cost. The capping charge varies at peak or off-peak times and whether a user is travelling within or between zones. In 2014, integrated ticketing and fare capping was also introduced for people tapping their contactless bank cards or banking apps on mobile phones, which has become more popular than Oyster cards.



'Tap' Oyster card, contactless or device at a card reader to begin a journey



At the end of the journey, 'tap' out with the same device to ensure all your journeys are logged



At the end of the day or week, your journeys will be logged and fare capping applied if necessary

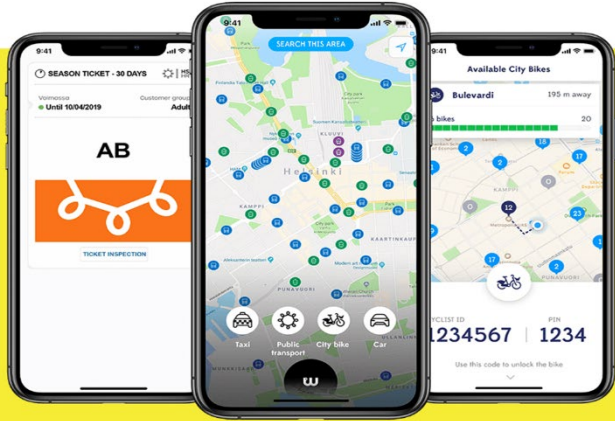
kilometres or impacts on local community networks, in line with the established investment hierarchies. Priority should be given to railway stations which have good strategic links and are easily accessible for all modes, including opportunities to interchange between bus and rail. Priority should also be given to addressing localised parking issues at existing park-and-ride sites, where there is evidence of overspill and excessive parking, which impacts on local residential neighbourhoods. In addition, whilst the term 'park and ride' is indicative of car-based travel, increasing car parking at existing sites should be assessed in the context of other opportunities to improve accessibility by active travel and bus.

Mobility as a Service (MaaS) envisages users buying transport services (including public transport, car usage, access to active travel, taxi, demand responsive transport) as packages based on their needs instead of buying the actual means of transport or in a series of distinct packages. It is being driven by digital innovation, which presents the opportunity to combine transport provision through a single platform. The implementation of MaaS within the region presents an opportunity to create a seamlessly integrated, sustainable travel system that meets the needs of users as effectively and efficiently as possible. However, given the uncertainty at this time around the ways that MaaS will develop, there is a need for the public sector and bodies like MaaS Scotland to guide and shape MaaS provision to ensure its successful delivery by supporting a broad, collaborative and multi-modal approach. MaaS will also be reliant on the improvement and equality of broadband and mobile digital access across the region.





Electric Scooter Sharing



It is currently illegal to ride an electric scooter on a footway or road in the UK, although they are subject to trials within four Future Transport Zones in England. It is anticipated that these will establish the foundations for regulations that will enable the use of electric scooters, and open up opportunities to introduce scooter-sharing schemes across the country. Nonetheless, legislative and safety issues surrounding electric scooters remain at this time and these will need to be taken into consideration before any decisions are taken to introduce scooter-sharing schemes in the region.



Find your plan

			
<p>Whim Urban 30</p> <p>€59,7 / 30 days</p> <p><small>30-day HSL ticket, City bike, €10 taxis and access to book and pay TIER e-scooters.</small></p> <p>read more</p>	<p>Whim Weekend</p> <p>€249 / 30 days</p> <p><small>Weekend rental car, 30-day HSL ticket, city bike, TIER e-scooters and discounted taxis.</small></p> <p>read more</p>	<p>Whim Unlimited</p> <p>€499 / month</p> <p><small>Access to car, taxi, public transport, TIER e-scooter and city bike.</small></p> <p>read more</p>	<p>Whim to Go</p> <p>Pay as you go</p> <p><small>Each trip is paid separately with no subscription fee.</small></p> <p>read more</p>

Case Study: Whim, Helsinki

In Helsinki, MaaS Global is the first commercial start-up to develop a MaaS subscription service. This was created in October 2016 through the launch of its Whim app. It offers several levels of service, ranging from a pay-as-you-go option to an unlimited-use package which includes public transport, taxis, bike and car-sharing.

Whim was enabled by Finnish Ministry of Transportation legislation, which itself was informed by the deregulation of their telecoms market, making it mandatory for public transportation to allow access to their Application Programming Interfaces (APIs) and ticketing systems on vendor platforms. Phase one of the legislation came into effect in January 2018, with phase two implemented in January 2019.

Whim now has 13,000 active users per month in Helsinki and has expanded its service to several other European cities, including Antwerp and Birmingham. Within Helsinki, Whim currently has less than 1.5% of the total mobility market, but aims to shift the market from ownership to usership, with its unlimited package costing less than car ownership.

Any MaaS scheme in the SEStran region would need to be capable of meeting the differing needs of both urban and rural areas, which must be considered when planning the ecosystem. The geographical scale at which a MaaS scheme operates also needs to be considered, as artificial boundaries could be created which limit its effectiveness.

On this basis, a regional scheme may be most effective. In urban areas, MaaS will predominantly provide a more comprehensive, sustainable mobility package that provides an attractive alternative to the private car, leading to a reduced need for ownership and usage.

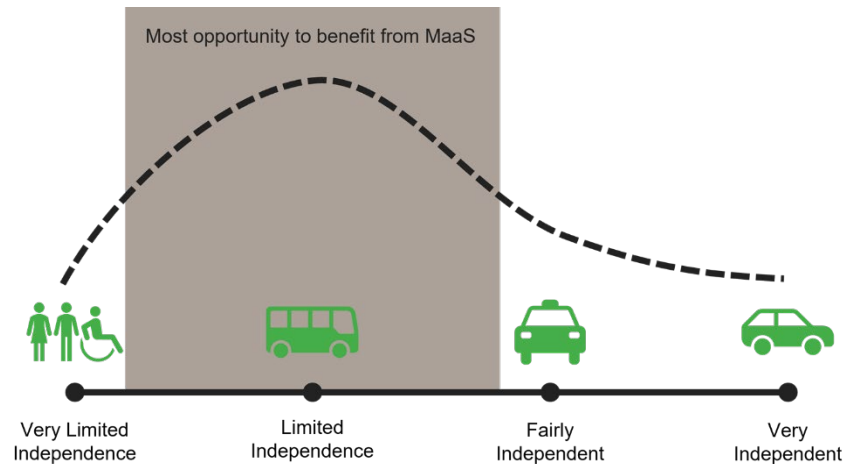


Figure 13.1 - Rural Independence and Opportunity for MaaS Adoption

In our rural areas, MaaS needs to ensure that people are provided with effective and affordable links to essential services, particularly for those who do not own a car, or who would prefer not to use a car. Rural residents with lower levels of independence are likely to be the users who have the greatest potential to benefit from MaaS, as shown in Figure 12.1⁵. Within this group, planned journeys, where the person knows in advance where they want to go, are likely to be those with the greatest opportunity to be delivered by new transport methods through MaaS. Here, users typically have more notice to consider their journey method ahead of time. They also have a greater degree of flexibility over their journey compared to commuting or spontaneous trips. In rural areas, MaaS providers and

⁵ Adapted from Transport Catapult: Ready for Innovation – The Opportunity for Innovation in Rural Transport

transport operators should be seeking to increase convenience, decrease cost or ideally do both in order to help create a desirable proposition for passengers.

The greatest opportunity lies in the field of **Demand Responsive Transit (DRT)** as illustrated in Figure 12.2. Whilst DRT is not a new concept and is already widely operating across rural areas in the region, there are opportunities to deliver DRT services to a wider user base at a lower cost to users, predominantly in urban settings. Current examples of rural DRT are operating at higher costs than fixed route services, so the right level of support is required to maximise the potential to rural communities. SEStran will continue to work with local authorities and Transport Scotland to expand the pilot DRT services and use the data collected to make the case for additional support where required. The opportunity for transport suppliers is to make more use of existing spare capacity on their services. This capacity comes in the form of spare seats, empty running and vehicle downtime or, when renewing fleet, consideration should be given to smaller, more flexible buses that can be used for fixed route and DRT. Data capture, data sharing, partnership working and innovation can help to tackle these inefficiencies by increasing viability of services, making booking services easier and smarter routing. The benefit to customers would be optimised services, providing better accessibility and meeting their needs more effectively. DRT could play a much wider role than it does currently, by harnessing emerging app-based systems and booking and scheduling technology ('enhanced' DRT); by partnership and integration between existing DRT operators and the wider public transport network; and being viewed as a realistic alternative to expensive fixed-route bus services. To achieve this, it will require changes in funding priorities, as well as greater support for the

community transport providers who face particular challenges of finance and human resources.

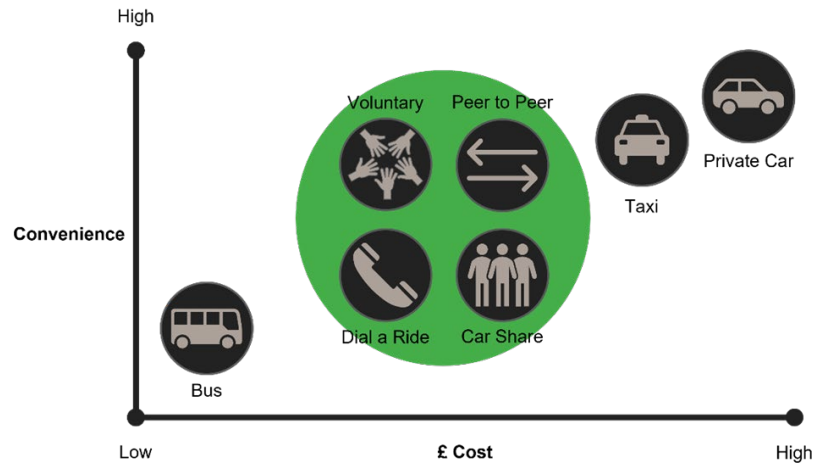


Figure 13.2 - Convenience v Cost of Rural Transport Modes

Where fixed-route or demand-responsive bus services are not viable, **subsidised taxis** may provide the only viable alternative to ensure people have access to the transport that they require. These involve a fleet of taxi vehicles which, in addition to their normal core service, operate a bookable, shared, demand-responsive public transport service. The service utilises a centrally operated call centre to take passenger bookings, integrating with local bus, rail and other transport networks to ensure connectivity and seamless travel.

More broadly, **taxis, ride sourcing and community transport** all have a role to play in providing mobility where public transport is not available or convenient, as well as where people do not have access to their own private transport. In particular, these can provide vital

links for people who are elderly, require special assistance or, for mobility or other reasons, cannot access public or other private transport.

Bike-carrying capacity is available on all trains, with at least two bike spaces onboard all ScotRail, Caledonian Sleeper, London North Eastern Railway and CrossCountry services. The ability to plan your train journey and book a bike space is available. Guide to travelling with a bike on trains | ScotRail.

Finally, the further rollout of **bike-buses** presents an additional opportunity to improve integration between modes. These have been successfully introduced by Borders Buses, with 23 bike-friendly vehicles now operating with space for between two and four bikes. These have enabled people to combine bike and bus journeys where previously this wouldn't have been possible. In the future, similar provision should be further extended on train services where practical.

13.2. Policies

- An integrated ticketing system is supported and should be implemented across all modes of transport in the region
- A network of integrated, multi-modal mobility hubs should be implemented across the region, starting with the eight pilot locations identified in the SEStran Mobility Hub study
- Local access to multi-modal mobility hubs should be facilitated by high-quality active travel routes that enable safe walking, wheeling and cycling

- d) Park-and-ride provision should be enhanced where (i) there is evidence of sufficient residential walk, cycle and drive-in catchment, (ii) where there is evidence of localised parking issues, such as overspill and excessive parking, which impact on local residential networks, and (iii) where it can be shown that it will result in a reduction in car km
- e) The implementation of a regional MaaS scheme is supported in principle
- f) Opportunities to expand and enhance DRT provision should be sought and to make the most efficient usage of capacity available on existing transport services
- g) Opportunities should be sought to expand the provision of bike-buses across the region to facilitate more integrated journeys
- h) Measures to continue to further increase the number of safe, secure bike spaces on trains is supported

13.3. Actions

- Deliver integrated ticketing systems, potentially incorporating fare capping, which can be used across all modes of public transport and operators, taking into account the digital provision differences in urban and rural areas
- Identify a network of region multi-modal mobility hub locations, building upon the initial pilot locations, along with the infrastructure and services required at each, taking into account their urban or rural location and the anticipated scale of demand
- Deliver the eight pilot multi-modal mobility hubs as defined in the SEStran Mobility Hub study
- Review the findings of electric scooter-sharing pilot schemes and determine whether their implementation in the region is feasible and appropriate
- Identify locations where increased park-and-ride capacity may be required, taking into account findings from recent SEStran and ScotRail park-and-ride studies
- Deliver a regional MaaS pilot scheme with a view towards establishing the long-term viability of MaaS in the region
- Work with DRT and community transport operators to deliver more widespread and efficient usage of services in areas where traditional fixed-route bus services are inappropriate. Differing approaches may be required for urban and rural areas.
- Support provision of taxis, ride sourcing and community transport for vulnerable groups and people without adequate access to public or private transport. Differing approaches may be required for urban and rural areas.
- Work with partners to deliver more buses in the region with the facilities to carry bikes
- Pursue opportunities to increase capacity on identified routes with high demand for the carriage of bikes

Decarbonising Transport



14.0 Decarbonising Transport

14.1. Overview

In the SEStran region, the transport sector is responsible for over 26% of CO₂ emissions⁶, the majority of which derive from road transport, which is highly dependent on fossil fuels. This high contribution to emissions has detrimental impacts on the environment, ecosystems and air quality, notably for those living in densely populated urban areas and near main roads. As the Scottish Government is aiming to phase out the need for new petrol and diesel cars by 2030, as outlined in the Update to the Climate Change Plan Update published in December 2020, it is paramount to critically consider alternative fuels and environmentally friendly technologies, not only for cars, but across the transport sector. Overall, a holistic solution is required to decarbonise the transport sector which prioritises the sustainable travel hierarchy. However, where travel by private vehicle is necessary, it is essential that a transition to alternative fuel sources is facilitated to minimise carbon emissions.

Electric vehicles (EVs) are currently viewed as the future of road transport and are gaining in market share, with pure EVs accounting for nearly 5% of new car sales in 2020⁷. There are numerous benefits to EV use, including zero tailpipe emissions and lower levels of noise. EVs offer the potential, therefore, to make a significant contribution to decarbonising the private vehicle fleet and tackling the Climate Emergency. Battery technology is also becoming more advanced and, with more widespread uptake, there has been an associated decline in EV costs. This decline is expected to bring the price of an



EV into line with an equivalent fossil-fuel-powered car in the coming years.

The manufacture of EVs remains a carbon-intensive process: they require electricity, which can come from fossil-fuelled power stations, and the mining required to provide materials for batteries brings its own environmental issues. There is some debate about how much less carbon-intensive an EV is over its lifecycle compared to a fossil-fuelled car, but there is little doubt that where a car trip has to be made, it is better made in an EV. At present, once someone purchases an EV, their per-mile travel costs are substantially reduced. Nevertheless, the shift to EVs will not resolve the problems around

⁶ Local Authority territorial CO₂ emissions estimates (kt CO₂), Department for Business, Energy & Industrial Strategy

⁷ <https://www.smm.co.uk/vehicle-data/car-registrations/>

high levels of congestion on the roads and the associated delays, unreliable journey times, noise and particulate emissions which come with continued car use. The 20% reduction in car kilometres target set by the Scottish Government would also not be achieved through the shift to EVs, as many journeys will continue to be made by car. This is covered in more detail in Chapter 16.

However, there are still many factors **hindering the uptake** of EVs. Despite the benefits of lower operating costs, the price of an EV remains high compared to a petrol or diesel-powered car, preventing some people from entering the market. Whilst grants were previously available from central government to support the uptake of EVs, these are now winding down. There is potential for local or regional incentives to be offered in their place or alternatively to wait for the market to respond to increased demand and drive down prices.

In addition, whilst the technology is developing, range anxiety is still prevalent due to battery capabilities and a still-developing network of charging infrastructure which can further dissuade potential buyers. There are many options for the provision of charging infrastructure, ranging from being fully market-led to fully public-sector-led. There are also challenges presented by different environments, with highly urbanised environments making provision of residential on-street charging infrastructure difficult, whilst rural settings will require provision of on-street charging infrastructure to ensure that range limitations do not prohibit the uptake of EVs in these more car-dependent areas. Adapting existing urban/rural environments also presents significant challenges, with the retrofitting of existing public space representing a barrier to the wider provision of public charging infrastructure. These challenges also exist within new housing developments.

Transport Scotland's A Network Fit for the Future: Draft Vision for Scotland's Public Electric Vehicle Charging Network outlines the increased adoption of electric vehicles will accelerate the public charging network's growth, resulting in a shift towards a network largely financed and operated by the commercial sector. The public sector will continue to play a role in the development and co-ordination of the network by ensuring that the market does not exclude any sections of society (e.g. rural areas which may not be commercially viable) and by playing a key enabling role for investment. There is a risk, for example, that those without a driveway and, therefore, unable to charge from home will have to pay more, and by definition this on the whole benefits those who are better off already.

The capability of the **electrical grid** to provide the capacity required for a widespread rollout of EVs is also an issue – analysis of this at the regional and local level remains at a relatively early stage and will also be a consideration for local authorities in terms of the delivery of their services using EVs (refuse collection, etc.). This is likely to vary across the region and there may be local areas where upgrades are required to support the necessary charging infrastructure to facilitate the fleet transition.

A shift to alternative fuels will also have implications for **tax revenues** for the UK Government, due to a loss of fuel duty and VAT which will likely require consideration of how we pay to use the road network. In the short term, there is a key risk that the decarbonisation of the car fleet in particular brings renewed traffic growth, as users feel 'greener' and the costs to the user are reduced. This unintended consequence would lead to other negative impacts such as **congestion, delays** and **unreliable journey times**. As such, a range of policy measures, which may include new taxes or road user charges, encouraging modal shift to public transport and active travel, will still

need to be pursued to achieve both decarbonisation aspirations and an efficient and sustainable transport system. The replacement of one set of taxes (fuel duty and VAT) with another (e.g. road user charging) does, however, risk creating 'winners and losers' unless the system operates on a uniform per-mile basis analogous to petrol/diesel consumption. The impacts of any such change would need careful assessment from a human rights and equalities perspective.

In addition to EVs, **electric bikes** (e-Bikes) have now also emerged as a genuine alternative mode to private car for some journeys. The assistance provided by the battery, either through peddling (pedelecs) or via a throttle, lets you cover longer distances, making trips that were once only viable for more 'committed' cyclists now more accessible to a wide range of people. In addition, e-cargo bikes are becoming a potential option for 'first and last mile' freight logistics and deliveries. Electric scooters are likewise being trialled as a form of urban mobility and are discussed further in Chapter 12. Furthermore, electric drive has already been adopted for the region's trams and much of the rail network with its further electrification discussed in Chapter 10.

Nonetheless, whilst electric power appears to be emerging as the dominant technology, it will not necessarily be appropriate for all modes of transport. For example, large vehicles like buses and HGVs could have difficulty carrying batteries large enough to power. Although technology continues to advance and improve in this field, it is suggested that decarbonisation of these modes may require **alternative fuels**, such as green hydrogen. The use of hydrogen as an alternative fuel source in cars and other vehicles is in continuous development and could produce greater benefits than electric vehicles. Therefore, if the capabilities of the hydrogen surpass those of electricity, policies and infrastructure will adapt accordingly to hydrogen to ensure the continued shift to net zero. Similar to EVs,

there are a range of issues around the provision of the necessary supporting infrastructure for these alternative fuels, and there may be a need for public sector investment or partnerships to ensure that suitable alternative fuels are available for commercial vehicles and buses, along with the network of fuelling infrastructure they need.

14.2. Policies

- a) The RTS seeks the implementation of measures which facilitate the decarbonisation of the vehicle fleet, including cars, buses, vans, trains, ships and aircraft, in line with national requirements
- b) The RTS recognises the risks associated with lower car-running costs and supports measures (subject to equality impacts) to prevent renewed growth in private car travel, and to encourage the use of alternative modes in line with the NTS2 sustainable travel hierarchy and national car kilometre reduction targets
- c) SEStran supports suitable taxation measures for ICEs, EVs and other alternative-fuel vehicles that ensure their usage is managed in line with the NTS2's Sustainable Travel Hierarchy and which also accord with the 'polluter pays' principles
- d) The RTS seeks the roll out of EV charging infrastructure for all to support decarbonisation of car-based travel and support development in areas which may be commercially unviable for private sector investment
- e) The RTS seeks to implement infrastructure (including covered parking at residential and employment facilities) which supports the wider uptake of e-bikes and e-cargo bikes

14.3. Actions

- Engage with Scottish Government for effective national strategy/guidance/specifications on fleet decarbonisation and rollout of appropriate and future-proofed supporting infrastructure. This should include legislation to manage on-street charging provision and the provision of chargers in new developments.
 - Work with the private sector and partners to develop a regional electric vehicle (and e-bike) investment and charging strategy, with associated technical guidance, including a spatial strategy across the area for long journey, rapid-charging facilities and for local area hub/community charging
 - Develop and coordinate a regional information strategy, including messaging around the need to ensure EVs are not regarded as a green light to increased car use and the range of issues associated with this. Strategy includes highlighting the potential of e-bikes and e-cargo bikes as viable modes of passenger and freight transport.
- SEStran and its partners will seek to engage with national governments around suitable taxation measures for ICEs, EVs and alternative-fuel vehicles and how they could potentially be applied as demand management measures
 - Collate data/knowledge around green hydrogen/fuel cell technology, EV charging technology (e.g. on-street/at home/workplace/forecourt) and regularly monitor both emerging technology and trends
 - Undertake a regional exercise to determine the supply, demand and infrastructure requirements to support the decarbonisation of the HGV and Heavy Duty Vehicle fleet.
 - Facilitate pilot projects to encourage transition to alternative fuels for all modes
 - Support alternative fuels for modes such as commercial vehicles and buses by actively engaging in and funding pilot projects across the region

Reducing Car Kilometres



15.0 Reducing Car Kilometres

15.1. Overview

The Scottish Government has set out a target to reduce car kilometres in Scotland by 20% by 2030. Reducing the dominance of private cars offers significant benefits both to individuals and wider society, including improved health and wellbeing, reduced inequalities and more inclusive economic prosperity. Reducing car use will also improve our public places, making them more attractive, safer and healthier spaces in which to live, work and spend leisure time.

To achieve this in South-East Scotland, the focus will be on reducing the more **'avoidable'** car kilometres in the first instance, with a particular emphasis on single-occupancy car journeys. Avoidable journeys are those that could be more readily undertaken by alternative modes of transport but that are currently undertaken by car. For example, in Figure 16.1 it can be seen that 80% of the commuting journeys into Edinburgh to locations outside the city centre are made by car. This equates to ~49,000 car trips and presents a much , greater opportunity to reduce car kilometres than journeys into the city centre, where public transport usage is already much higher. However, in some instances, the use of a car will be essentially unavoidable. This is likely to be particularly the case in the more rural and isolated parts of the region, although some journeys within urban parts of the region are also currently heavily car dependent – where no practical alternative currently exists, e.g. at certain times of the day. In rural areas there may be much less scope to reduce car kilometres, but there may be more opportunities to reduce single-occupancy car journeys in the first instance. This can be achieved through the improved provision of public transport

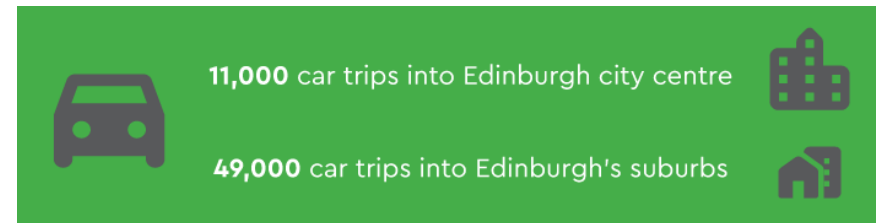
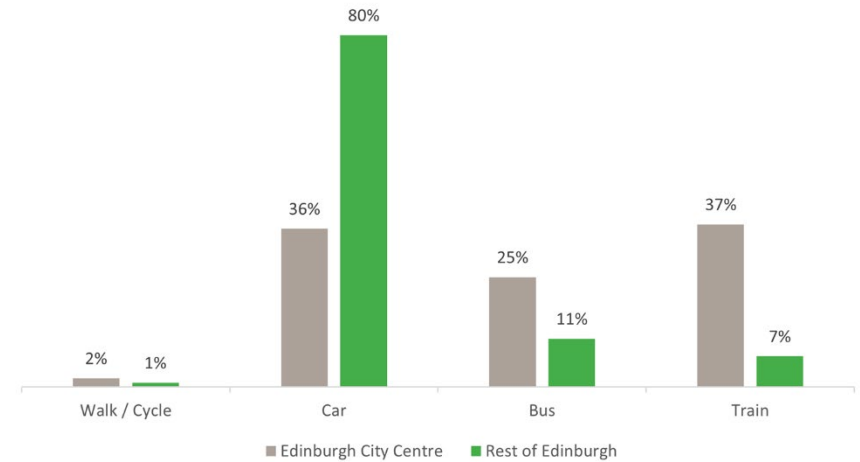


Figure 15.1 - Cross Boundary Commuting into Edinburgh 2011

services or alternative provisions to encourage shared car use/multi-modal journeys. Digital connectivity is one means of potentially reducing car use that could be particularly effective in rural areas, although this depends upon suitable infrastructure being in place to facilitate it. Generally, it is likely that different parts of the region will make differing contributions to achieving the overall 20% reduction in car kilometres. It is important to note that within *"Reducing car use for a healthier, fairer and greener Scotland"*, the 20% reduction target is for a total national reduction, and it is not expected that car

use in rural community areas will necessarily reduce at the same rate as in towns and cities. Edinburgh has set a target to achieve a 30% reduction in car kilometres by 2030, which highlights how denser urban areas have a greater potential to deliver a higher proportion of the overall target reduction.

The first step to achieving a reduction in 'avoidable' car kilometres is to ensure that suitable **alternative modes**, where feasible, are in place. This is discussed in detail in relation to the other Regional Mobility Themes which set out our approach to enhancing the region's active travel, public transport and shared mobility provision including:

1. Shaping development and place
2. Delivering safe active travel
3. Enhancing accessibility of public transport
4. Transforming and extending the bus service
5. Enhancing and extending the rail services
6. Reallocating road space on the regional and local network
7. Delivering seamless, multi-modal journeys

Alongside these, there will also be a requirement for **measures to reduce car use**, particularly where a reasonable alternative exists. SEStran supports the implementation of Edinburgh's Low Emission Zone (LEZ) as a means of improving air quality and, to a lesser extent, potentially reducing traffic in the city. Further implementation of LEZs should be considered where National Low Emission Framework (NLEF) appraisals show this is the correct mitigation for areas suffering from poor air quality. Furthermore, additional demand management measures may be required in urban areas across the

region to discourage short car trips which could include parking management and charges, reduced parking provision, road space reallocation, improved enforcement of parking regulations, and Workplace Parking Levies. It is also likely that road user charging will become more pressing as the shift to EVs impacts upon fuel-related taxation, and this could also have a role to play in helping to reduce more avoidable car use.

Whilst the RTS does not seek to put measures in place that would reduce the mobility of those living in areas with limited public transport provision, it does seek to provide alternatives which make car ownership less necessary, in particular, to reduce the need for multi-car households. The provision of **trip sharing and car sharing** services are means by which the need to own a car, or an additional car, can be reduced. Trip sharing or carpooling is one of the most well-known forms of shared mobility, where people with similar travel requirements share one vehicle rather than make separate trips. SEStran supports trip sharing in the region and is looking to develop a more sustainable and financially viable delivery model. Furthermore, there needs to be additional development to make this a sustainable way to travel in the region. The Covid-19 pandemic is likely to reduce the willingness for people to trip share with strangers in the short to medium term. On this basis there is a need to examine best practice for a sustainable delivery model for the future.

Car sharing differs from trip sharing in that people share access to a vehicle, like bike sharing, rather than sharing a journey with someone. This means people can enjoy the freedom and benefits of the car without the responsibilities and costs of owning one. Customers typically access vehicles by joining a car-sharing organisation that provides a fleet of vehicles in the local area, and wider rollout of car-sharing vehicles across the region could help to reduce the need to own a car by allowing people to hire one as and when required.

Case Study: Co-wheels, Midlothian and East Lothian

Co-wheels is the UK's biggest car-sharing company providing car-sharing facilities in East Lothian at Musselburgh and Dunbar and in Midlothian at Dalkeith. Cars are available 24 hours a day, seven days a week and can be booked for an hour, a day or as long as you want.

Vehicles were also previously available in Haddington and North Berwick but were removed in June 2019 due to low usage.

Increasing usage of car sharing will be dependent upon provision of a comprehensive network of vehicles across the SEStran region.



Other factors can also influence the extent to which people need to travel by car, including **land-use planning policy**, which is discussed in Chapter 6, and levels of **digital connectivity**, which is enabling more flexible and agile working practices whilst reducing the need for people to travel. In more peripheral parts of the region there may also be a need to expand **park-and-ride** provision to enable people to switch from car to public transport for at least part of their journey, which is discussed further in Chapter 12.

Transport Scotland's draft Reducing Car Use for a Healthier, Fairer and Greener Scotland Route Map encompasses all of the above by identifying behaviour change actions and associated interventions to achieve the 20% car kilometres reduction target. It centres around four behaviours:

- **Reducing the need to travel:** such as using online options to access goods, services, amenities and social connections
- **Living well locally:** by choosing local destinations which can make it easier to use sustainable modes, and will reduce distances driven if a car is still used
- **Switching modes:** to walk, wheel, cycle or use public transport where feasible
- **Combining or sharing car trips:** with another person (in line with prevailing public health guidance) if car use remains the only feasible option

The aim of the framework is to empower people to choose an option that fits their circumstances and travel needs, acknowledging that

what may work in one area, may not be successful in another. Behavioural change in society is the key to unlocking a modal shift to active travel alternatives. Programmes of engagement with schools, communities and businesses – to educate and upskill travellers in the alternative modes – will be required across the region to support the ambition to be net zero by 2045 and the 20% reduction in vehicle kilometres by 2030. SEStran partners will work with regional partners, Transport Scotland and the Scottish Government to identify solutions that can be coordinated and delivered regionally. For example, providing support to educational facilities and local authorities for U22 National Entitlement Card applications is essential to improving the mindset of future generations so they continue to use public transport long into their adult lives. This approach relies on substantive behaviour changes which have not been seen before, highlighting the need for the RTS to lead the way in both the educational and behaviour change agenda for public transport and active travel within the region.

The Route Map also contains a range of demand management interventions to accompany the wider positive 'carrot' behaviour-change initiatives, which on their own may not be enough to achieve the required traffic reductions. In particular, it is highlighted that a review of vehicle taxation, which is reserved to Westminster, is likely to be necessary to provide the level of disincentive needed to facilitate modal shift away from car on the scale required to achieve the target.

A combination of all these factors will be involved to enable the region to make an active contribution to delivering the Scottish Government's target. It will consequently require both improvements to active travel and public transport, along with measures to discourage car use, to be effective.

15.2. Policies

- a) The RTS seeks the implementation of low and zero emission zones where appropriate alternatives are provided and supports the delivery of the Edinburgh Low Emission Zone
- b) The RTS is supportive of appropriate demand management measures where suitable active travel and public transport alternatives are in place
- c) Further expansion of trip-sharing and car-sharing services should be undertaken across the region to reduce the need for car ownership
- d) Ongoing expansion and upgrading of digital connectivity is supported to reduce the need to travel and enable the adoption of flexible and agile working patterns
- e) Park-and-ride provision should be enhanced, where required, to enable car journeys to transfer to public transport for at least part of the trip
- f) Support behaviour change and the use of more sustainable modes of transport by a combination of enhanced infrastructure, information provision, innovation and measures to discourage car use.
- g) The RTS will support the national, regional and local behaviour change and demand management Route Map interventions to encourage a long-term, sustainable change to daily public transport/active travel habits

15.3. Actions

- Undertake further analysis to identify the scope and scale of 'avoidable' car kilometres across the region, particularly on corridors where the volume of car travel is high, which can then be targeted through improved information, improvements to public transport and appropriate demand management measures
- Research demand management measures which may be appropriate for the region, including parking management and charges, reduced parking provision, improved enforcement of parking regulations, Workplace Parking Levies as well as congestion and/or road user charging
- Drawing upon the analysis undertaken, develop and implement an action plan to deliver measures in the SEStran region to support the delivery of the Scottish Government's car traffic reduction target across the region, taking into account the interventions outlined in the Transport Scotland Route Map
- Explore the most effective model for regional delivery of trip-sharing and car-sharing services across the region

Working Towards Zero Road Deaths and Serious Injuries



16.0 Working Towards Zero Road Deaths and Serious Injuries

16.1. Overview

The number of reported road collisions to Police Scotland in the region has decreased by 43% between 2010 and 2019. This demonstrates a general trend towards improving road safety. It is important to build upon this success by implementing further **road safety measures** across the region. These should be targeted at locations with collision clusters on both the strategic and local road network. Whilst it is important to minimise the number of incidents that occur on our road network, the priority is to reduce the number of casualties, and interventions should focus on delivering this. In some instances, there will be merit in implementing higher-value road safety improvements to engineer out risks at locations where collision clusters continue to occur. This could include more significant infrastructure measures such as roundabouts, junction amendments and carriageway widening.

On some roads there may be a need for a comprehensive approach to safety along the entire route rather than treatment of isolated collision clusters. Typically, the risk of injury is greater in the rural environment where speeds are higher and there is scope for conflicts between high-speed through traffic and low-speed vehicles entering and exiting junctions and accesses. Furthermore, many of these older road layouts have more restricted geometry and visibility. On these corridors there may be a need for **Route Action Plans** that consider both the current and future needs of the network to determine whether changes to the existing carriageway, junction types or road layout may be necessary. Improving junction safety in rural areas by considering aspects like protected right turns and improved sightlines, as well as reviewing the junction provision, can help to



reduce the number of people killed or seriously injured on the road network.

Frustration can also be a cause of collisions, which can often occur on single carriageway, rural routes when slow-moving vehicles such as tractors and HGVs create long delays and convoys of traffic. Usually, this results from a lack of **safe overtaking opportunities**. On some routes there may consequently be a requirement to provide climbing lanes and, where appropriate, sections of dual carriageway to address the safety issues this creates. In particular, this needs to be considered in the case of regionally strategic freight corridors where there is likely to be a higher proportion of HGVs and other large vehicles.

In some locations it may also be appropriate to review and amend **speed limits** to reflect the characteristics of the road network and the nature of the environment. SEStran supports a national review of speed limits, whilst also seeking local amendments to speed limits to improve safety where appropriate. In some instances, this may need to be accompanied by physical or geometric changes to the road network or active monitoring of speeds to enforce reduced speed limits, as without these measures, there is unlikely to be a significant change in drivers' mean speed. In our urban environments this could include implementation of 20mph zones with associated traffic calming and other road safety measures to provide a safe environment for all users of the road network, particularly vulnerable groups, like people walking, wheeling and cycling.

Automation and innovation will also have a role to play in making our roads safer. It ultimately aims to complement the existing network by applying technological advancements to enhance the efficiency and safety for network users. Automation can generally be split up into automated features and automated capabilities. Automated features are already present in cars available on the market today, such as automatically regulating a safe distance to the vehicle ahead, lane assist technologies, blind spot detection or cameras and sensors when cars are reversing. The capability of an automated vehicle refers to several systems or automated features which work together to conduct an overall task with little or no human intervention, creating a connected autonomous vehicle. This is an attractive concept, as it has the potential to revolutionise the way people can be transported, i.e. driving time could be spent productively engaging in other activities.

These vehicle automation advancements can be complemented by **Intelligent Transport Systems (ITS)** that manage the transport network via the utilisation of 'big data' and artificial intelligence to

implement the most effective solutions to improve network efficiency and safety. ITS integrates technologies, including sensors, computers, electronics, communication devices and other automated technologies within transport infrastructure and individual vehicles, with the aim being to improve efficiency, safety, sustainability, travel time reliability and to reduce the cost of travel.

Together these measures will help the region to deliver its contribution to achieving the target of **zero fatalities and serious injuries** in road transport by 2050 as defined in Scotland's Road Safety Framework.



16.2. Policies

- a) The RTS supports the implementation of road safety schemes on the regional network targeted at locations of collision clusters and corridors where a consistent and comprehensive approach is required to safety along the entire route
- b) SEStran supports a national review of speed limits, whilst also seeking local amendments to speed limits to improve safety where appropriate
- c) In urban and rural settings 20mph zones, traffic calming and other road safety measures should be used to provide a safe environment for all users of the road network
- d) Automation and innovation should be used to make our roads safer and more efficient by combining the benefits of automated features and capabilities with Intelligent Transport Systems
- e) Target zero fatalities and serious injuries on the region's roads by 2050

16.3. Actions

- Identify collision cluster locations for the implementation of road safety schemes
- Develop Route Action Plans for key rural corridors which require a coordinated approach to road safety along their route where there is greater scope for conflict between high-speed through traffic and slow-turning traffic
- Undertake analysis to identify single carriageway routes with high proportions of HGVs and other large vehicles, where the implementation of safe overtaking opportunities may be required to prevent frustration which can lead to unsafe overtaking manoeuvres
- Pursue a national review of speed limits
- Identify locations where local speed limit amendments may be required to improve safety
- Provide supporting infrastructure, including the implementation of Intelligent Transport Systems at appropriate locations across the road network in the region, to enable the safe operation of connected autonomous vehicles

Responding to the Post-Covid-19 World



17.0 Responding to the Post-Covid-19 World

17.1. Overview

The Covid-19 pandemic, and its potential aftermath, has introduced a high degree of uncertainty into all aspects of transport planning. The short-term picture (during the pandemic and the various levels of restriction) is well understood, with the impacts on transport demand in Scotland illustrated in Figure 17.1.

During the pandemic, there was a decline in public transport usage whilst cycling and car use increased. Walking is down overall but has fluctuated and at times has been above pre-pandemic levels. Demand for all modes has been noticeably impacted by the level of restrictions in place at a given time, whilst active travel can also be seen to be seasonal and weather dependent. Latest data from the Department for Transport suggests that, as of February 2022, all traffic is around 97% of pre-pandemic levels, but both HGVs and LGVs are above their March 2020 levels. Bus is only around 74% of pre-pandemic demand, whilst rail is only at 58%.

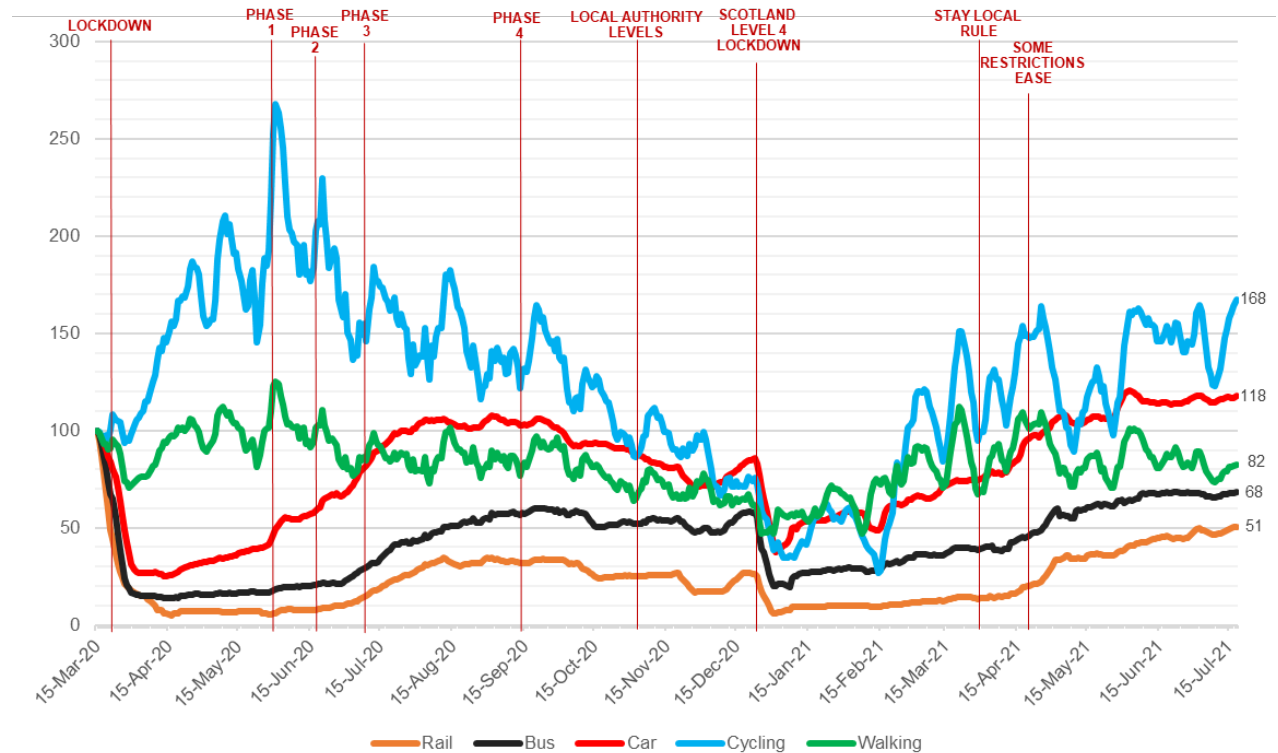


Figure 17.1 - Indexed Travel Demand by Mode in Scotland 15th March 2020 to 18th July 2021

However, there is significant uncertainty regarding the structural changes in people's behaviour once the pandemic is behind us and the extent to which some of the travel behaviour changes witnessed during the pandemic will become embedded long term. There are a wide range of surveys (with businesses and the public) and other data which provide an indication of what the post-pandemic world

might look like. SEStran has undertaken a Travel Attitudes Survey throughout the pandemic, with Wave 2 being reported in March 2021, and this provides a useful summary of what is now something of an emerging consensus. The key findings are shown in Figure 17.2.

In general terms, these stated intentions represent an acceleration of many of the trends which were already underway and outlined in Section 2.3. The unknown here is the extent to which these stated intentions become reality as and when the pandemic is fully behind us and all restrictions are lifted. It is likely that there will be a degree of oscillation in people's behaviour before a new equilibrium is reached. The level of behavioural change that this new equilibrium represents relative to 2019 is, however, impossible to estimate at this stage.

The main components which will determine this change will be:

First and foremost is **reduced commuting** as people adopt more flexible working arrangements. This will be focussed on 'location independent' jobs, i.e. the jobs which can most easily be done without being at the workplace. As an example, the analysis presented in Figure 17.3 shows the number of jobs in the 'Information

Looking to the future

Challenges..



Expectations for the future (% of eligible population who agree):	
I'd prefer my children to avoid public transport for the foreseeable future	67%
I'd prefer to avoid public transport for the foreseeable future	63%

Opportunities...



Expectations for the future (% of eligible population who agree):	
I would like to use local shops and businesses more often	62%
Longer term I would like to make fewer non-essential journeys	54%
Longer term I would like to work from home more often	49%

Activities would like to do MORE often than before Covid-19



Activities would like to do LESS often than before Covid-19

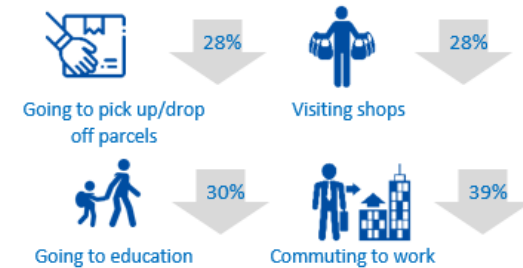


Figure 17.2 - Anticipated Travel Behaviour Changes Post-Covid-19 Pandemic

& Communication', 'Professional, Scientific & Technical' and 'Financial & Insurance Services' industries in the City of Edinburgh by datazone⁸.

It can be seen that the darkest dots are concentrated in the city centre and along public transport corridors. Fewer people travelling to these jobs would, therefore, disproportionately affect the demand for public transport, and the fact that many of these jobs will be based on the conventional working day means that peak-hour

⁸ [Home Working Socio-Economic Analysis: Research Findings](#)

demand for public transport could be significantly reduced. This could have implications for high-capacity public transport provision, both now and with respect to future investments.

These areas with high numbers of location-independent jobs are, therefore, at risk of much **reduced footfall**, with all the implications for businesses which rely on this footfall for their trade. If this happens at scale, there may be a need to repurpose office buildings and, more generally, the areas affected by a loss of their main purpose for being. A substantial policy response may be required to revitalise these areas. Furthermore, there may be increased demand for housing in rural areas as people move to take advantage of larger properties and access to greenspace.

The impact of reduced commuter footfall would be amplified by the more general shift away from high-street shopping to **online shopping**. Town and city centres may have to innovate and develop a new style of retail, hospitality, cultural and leisure offer if they are to retain their role as focal points.

Allied to this, there will be a redistribution of footfall to neighbourhoods where people are now **working from home** more often. Assuming people do leave their homes, there will be

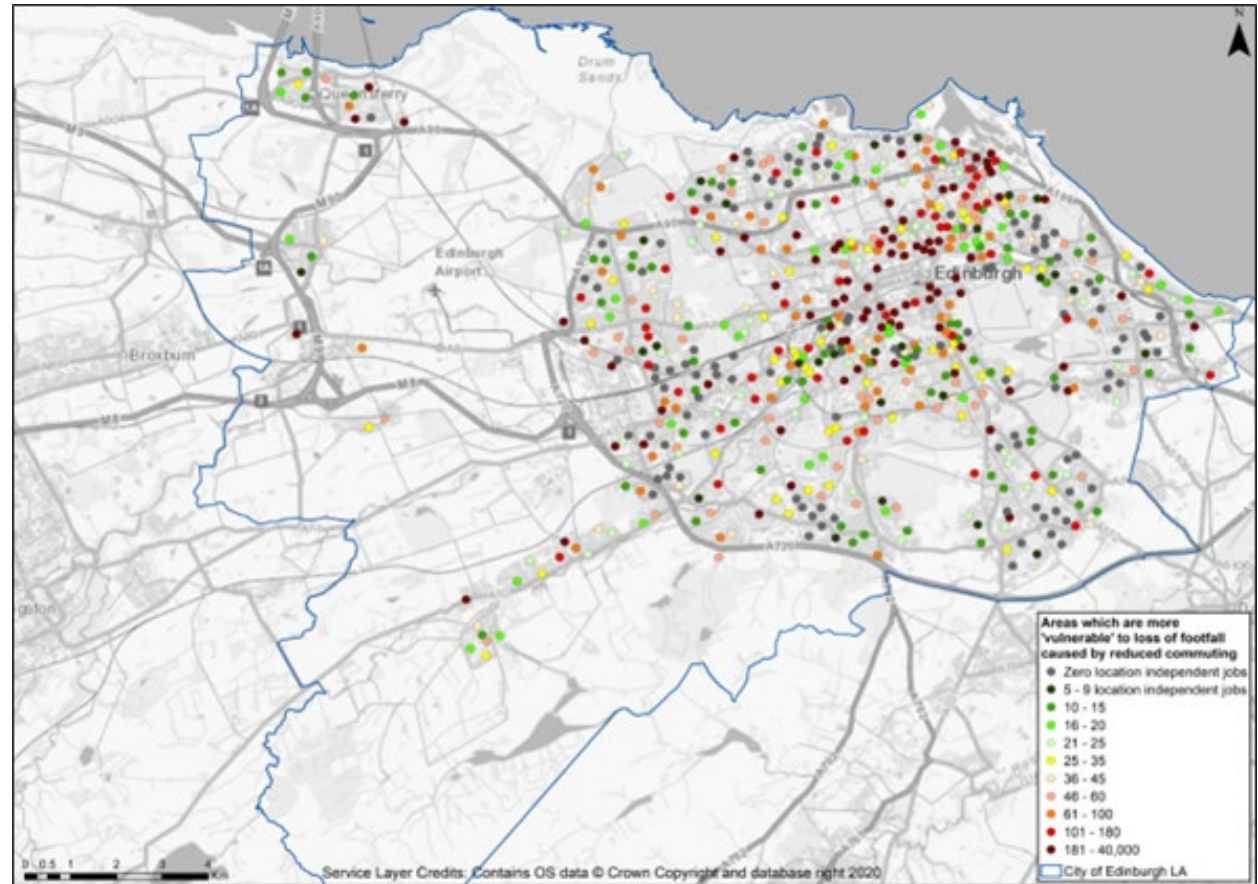


Figure 17.3 - Location Independent Jobs in Edinburgh

opportunities in retail and hospitality in these areas, as well as providers of other services. This would, of course, be beneficial in terms of aspirations for more 'local' living, working and shopping, as represented by the 20-minute neighbourhood concept discussed in Chapter 6.

Case Study: Workforce Mobility Project

This project aims to work across sectors to improve communication and the effectiveness of local transport to support the ambitions of the Integrated Regional Employability and Skills (IRES) programme. Several barriers to transport were outlined which include affordability, accessibility complexity, integration and declining service provisions.

The first phase, covering the Scottish Borders, is due to be completed by March 2024 and is focussed on improving bus services, using demand data from the existing community workforce. This will be analysed to optimise the public transport network and identify opportunities with participating employers to provide incentives to employees to use the new transport options.



As noted in Section 2.3, **business travel** has been declining for some time. With the widespread adoption of platforms such as Zoom and MS Teams, the move to remote meetings has been rapidly accelerated by the pandemic. Whilst there will undoubtedly be some return of business travel, all the evidence suggests it will be at a lower level than before.

The SEStran survey has indicated, however, that **leisure travel** will increase, again reflecting medium-term trends. In part this may reflect less time spent commuting and shopping, freeing up time for more leisure-based activities.

The surveys also suggest a residual **reluctance to use public transport** due to lasting concerns about the virus and perhaps a greater awareness of the risk of infectious diseases more generally. This allied to reduced commuting trips could have major implications for the finances of public transport delivery. What are currently commercial services may now require subsidy, and subsidised services may now require more subsidy. In response to reduced fares revenue, frequencies may be reduced and/or services may be withdrawn, diminishing public transport connectivity and potentially adding to car use. There is possibly a higher risk of this in remote and rural areas, where public transport demand was already lower. Public

transport operators may, therefore, have to review the nature of the services they provide (or are specified to provide) in response to a new, more leisure-focussed and cautious public. Current models of season tickets may also need to be revised to account for the more flexible travel patterns likely to be adopted by many who previously commuted five days per week.

In the longer term, as the **link between the workplace and the home** is reduced or broken completely for some types of jobs, some may reconsider where they wish to live. This is likely to lead to a more dispersed population, which may bring pressures to the communities affected by in-migration and a mix of environmental and travel impacts.

More generally, structural changes resulting from the pandemic may bring significant **changes to the economy** and the types of activity undertaken at different locations, with retail perhaps being the sector most 'at risk' from permanent changes in behaviour.

Overall, this highlights some of the uncertainties surrounding the post-pandemic world. It has accelerated a number of long-term travel behaviour change trends, including increased working from home, more online shopping, reduced trip making, decline in bus use and increased car use. In addition, it has also stimulated new travel behaviours, including a decline in the previously growing train patronage and increases in walking and cycling, as illustrated in Figure 17.4.

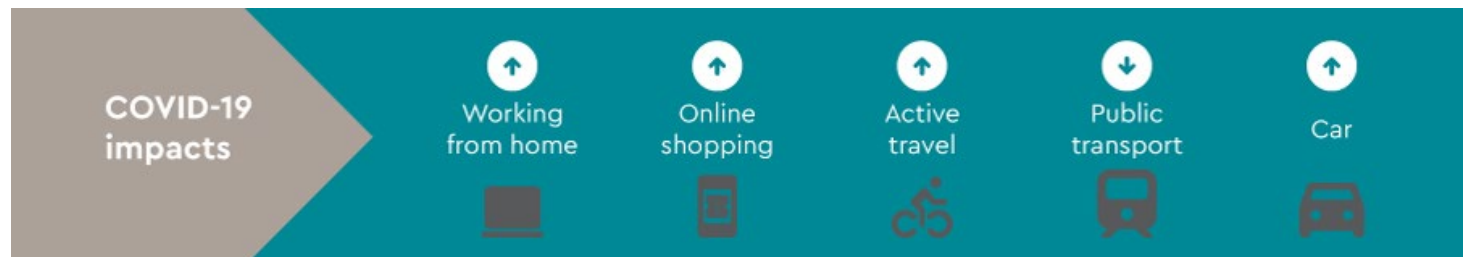


Figure 17.4 - Overview of Covid-19 Impacts

As noted above, the key issue here is the scale of these impacts, and the implications could range from transformative to marginal. It is unknown the extent to which these changes will become embedded long term, but, at the very least, it is likely to take time for travel patterns to stabilise and return to close to pre-pandemic levels. Peak period commuting could be particularly affected if there is a permanent shift to increased home and flexible working, potentially leading to less strain on public transport services and less congestion on the road network at these times. It is also unclear how public transport patronage will recover in the wake of the pandemic. If this displaced demand shifts to private car, then achieving the 20% car kilometre reduction targets referenced in Chapter 16 may become a more difficult endeavour. Still, the 'return to normality' presents a unique opportunity to rebuild confidence in public transport and create long-term changes to people's travel behaviours. Consequently, the RTS sets out a foundation during this time of transition to 'build back' better and induce long-term changes to people's everyday travel habits to help achieve wider policy goals referenced in NTS2 and NPF4.

Overall, the RTS covers a period of ongoing uncertainty, meaning that it will be crucial to keep its policies under review to adapt to future uncertainties and changes.

17.2. Policies

- a) The RTS recognises that the Covid-19 pandemic is anticipated to have a wide range of permanent impacts on transport and society and will monitor and respond to these
- b) The RTS will be flexible in responding to these changing travel behaviour trends and adapt accordingly as it becomes clearer what the 'new normal' will entail
- c) Measures to mitigate the impacts of the Covid-19 pandemic, and the resulting implications for towns and cities, will be supported, providing they maintain consistency with the wider policy set out in the RTS
- d) Measures to rebuild public confidence in public transport to increase the level of use/vitality of services will be supported, providing they maintain consistency with the wider policy set out in the RTS

17.3. Actions

- Produce a two-yearly monitoring report setting out key regional transport and behavioural trends, set against the trend over the decade pre-Covid-19 (2010-19), including both the bus and rail supply side and road network congestion
- Drawing on the findings of the monitoring reports, revisit the RTS when the post-pandemic picture has stabilised to determine any policy adjustments required to reflect the 'new normal' circumstances
- SEStran will engage with relevant bodies and stakeholders to develop and implement interventions which reassert public confidence in public transport services

Delivery



18.0 Delivery

18.1. Overview

The RTS is a long-term strategy intended to provide the policy context for the South-East of Scotland over a 10 to 15 year horizon. However, the successful delivery of the strategy will require close partnership working between SEStran, its constituent local authorities, Scottish Government/Transport Scotland and other key industry stakeholders to take forward the actions and implement the policies set out within this document. In addition, an ongoing programme of interventions (both physical and non-physical) will be required to deliver the vision of the RTS. These will be identified throughout the lifetime of the strategy by supporting analysis and appraisal work following the framework set out here.

The interventions identified will be used to populate a Programmed Investment Plan which, as part of the Monitoring of the RTS outlined in the following chapter, will be reviewed and updated regularly to reflect the changing status of interventions. It will contain a range of projects, proposals and initiatives, agreed with partners, along with key project risks, and set out how these contribute to the Strategy Objectives, whilst recording their status in terms of the project lifecycle, from concept through to implementation, and subsequent monitoring and evaluation. The first Programmed Investment Plan will be prepared by SEStran, along with its partners, following adoption of the RTS.

The implementation of interventions set out within the Programmed Investment Plan may be the responsibility of numerous stakeholders which may or may not include SEStran directly. However, all the interventions identified within it must make a direct contribution towards delivering the vision, objectives and wider policy goals of the RTS.

18.2. Policies

- a) Along with its partners, SEStran will maintain and regularly review a Programmed Investment Plan which sets out physical and non-physical interventions to implement the RTS

18.3. Actions

- Following adoption of the RTS, SEStran will work with partners to prepare a Programmed Investment Plan
- SEStran will review the RTS Programmed Investment Plan on a regular basis along with key partners

Monitoring



19.0 Monitoring

19.1. Overview

It will be crucial to monitor the RTS to understand its success in delivering the Strategy Objectives and Vision. A set of Key Performance Indicators (KPIs) linked to the Strategy Objectives has, therefore, been defined and set out below. The KPIs closely reflect those developed for the purposes of monitoring the National Transport Strategy 2. These will be used to measure the change in the performance of the transport system of the region against an established baseline, initially formed through the STAG Case for Change report prior to the implementation of the RTS.

Monitoring reports will be produced on a two-yearly basis, setting out the key regional transport and behavioural trends against the KPIs. In addition, these monitoring reports will also contain an overview of progress towards the defined actions outlined in relation to each of the Regional Mobility Themes.

19.2. Key Performance Indicators

Strategy Objective 1: Transitioning to a sustainable, post-carbon transport system

KPIs for Monitoring and Evaluation

- Transport emissions in the SEStran region (Department for Business, Energy & Industrial Strategy)
- Car kilometres in the SEStran region (Scottish Transport Statistics)

- Number of Air Quality Management Areas (Scottish Transport Statistics)
- Proportion of road vehicle fleet which is ULEVs (DfT Vehicle Licensing Statistics)

Strategy Objective 2: Facilitating healthier travel options

KPIs for Monitoring and Evaluation

- Number of bikes available for private use by households (Scottish Household Survey Travel Diary)
- Adults (16+) - frequency of walking in previous seven days (Scottish Household Survey Travel Diary)
- Main mode of travel – walking (Scottish Household Survey Travel Diary)
- Main mode of travel – bicycle (Scottish Household Survey Travel Diary)

Strategy Objective 3: Widening public transport connectivity and access across the region

KPIs for Monitoring and Evaluation

- Use of local bus services in previous month (Scottish Household Survey Travel Diary)

- Use of local train services in previous month (Scottish Household Survey Travel Diary)
- Main mode of travel – bus (Scottish Household Survey Travel Diary)
- Main mode of travel – rail (Scottish Household Survey Travel Diary)
- Satisfaction with public transport (Scottish Household Survey Travel Diary/Transport Focus surveys)
- Percentage of average weekly household expenditure on transport (Scottish Transport Statistics)
- Connectivity and deprivation analysis for key healthcare, education and employment destinations (TRACC)
- Public transport labour market catchments of largest employment sites (TRACC)

Strategy Objective 4: Supporting safe, sustainable and efficient movement of people and freight across the region

KPIs for Monitoring and Evaluation

- Reported road collisions (Scottish Transport Statistics)

- Perceptions of safety and security on bus services (Scottish Household Survey Travel Diary)
- Perceptions of safety and security on train services (Scottish Household Survey Travel Diary)
- Road journey times by time period (INRIX)
- Ratio of peak journey time to inter-peak journey time (INRIX)
- Typical number of interchanges between major settlements (TRACC)
- Congestion delays experienced by drivers and car occupants (Scottish Household Survey Travel Diary)
- Average freight lifted by UK HGVs in the SEStran region (Scottish Transport Statistics)
- Foreign and domestic freight at Forth Ports (Scottish Transport Statistics)
- Breakdown of Forth Ports freight by commodity (Scottish Transport Statistics)
- Tonnes of air freight lifted at Edinburgh Airport (Scottish Transport Statistics)

Glossary



20.0 Glossary

Term	Description
20-Minute Neighbourhoods	20-Minute Neighbourhoods are a method of achieving connected and compact neighbourhoods designed in such a way that all people can meet the majority of their daily needs within a reasonable walk, wheel or cycle (within approx. 800m) of their home. The application of the 20-Minute Neighbourhoods will vary across Scotland and requires adjustment to suit local circumstances, particularly in rural areas where the delivery of services and the extent of local infrastructure may not necessarily be supported by the surrounding density of population.
BRT	Bus Rapid Transit is a bus-based public transport system designed to have better capacity and reliability than a conventional bus system.
CAVForth	CAVForth comprises a consortium of partners to build, test and deliver an autonomous, scheduled bus service between Fife and Edinburgh.
DRT	Demand Responsive Transport is a form of public transport where vehicles alter their routes each journey based on particular transport demand without using a fixed route or timetabled journeys.
EqIA	An Equality Impact Assessment is a process designed to ensure that a policy, project or scheme does not unlawfully discriminate against any protected characteristic.
EV	Electric vehicle
ICE	Internal combustion engine
Infrastructure First	The Infrastructure First policy within Draft NPF4 puts infrastructure considerations at the heart of placemaking. The policy supports the provision of infrastructure, services and facilities that are necessary to create liveable and sustainable places. It also supports a more sustainable use of infrastructure, making better use of existing assets and prioritising low-carbon infrastructure, helping Scotland's transition to net zero.

Term	Description
iRSS	Indicative regional spatial strategy
MaaS	Mobility-as-a-Service is an emerging type of service that, through a joint digital channel, enables users to plan, book and pay for multiple types of mobility services.
Multi-Modal Mobility Hub	A transport node that interconnects multiple modes of transport, and, consequently, improves the efficiency and speed of movement.
NPF4	National Planning Framework 4
NTS2	The National Transport Strategy 2 sets out a vision for Scotland's transport system for the next 20 years.
Rail Gauge	The distance between the inner sides of the two parallel rails that make up a railway track.
RTP	Regional transport partnerships were established on 1 st December 2005 to strengthen the planning and delivery of regional transport so that it better serves the needs of people and businesses.
RTS	The Transport (Scotland) Act 2005 placed a statutory duty on the seven Regional Transport Partnerships in Scotland to produce a Regional Transport Strategy for their area. The RTS influences all of the future plans and activities of the organisation, is informed by the National Transport Strategy and informs local transport strategies.
SEA	Strategic Environmental Assessment is the process of predicting and evaluating the impact of a strategic action on the environment and using that information in decision-making.
SIMD	Scottish Index of Multiple Deprivation is a tool for identifying the places in Scotland where people are experiencing disadvantage across different aspects of their lives.
STAG	The Scottish Transport Appraisal Guidance represents best practice in transport appraisal for projects and strategies.

Term	Description
STPR2	The Strategic Transport Projects Review 2 will inform transport investment in Scotland for the next 20 years (2022-2042) by providing evidence-based recommendations on which Scottish Ministers can base future transport investment decisions.
Sustainable Investment Hierarchy	Investment promoting a range of measures, including innovative solutions, to make better use of existing capacity to ensure that current transport networks and systems are fully optimised.
Sustainable Travel Hierarchy	Promoting walking, wheeling, cycling, public transport and shared transport options in preference to single-occupancy private car use for the movement of people.
TRACC	TRACC quickly calculates journey times to destinations from a number of origins, demonstrating travel time analysis to a set location.
Transit Orientated Development	Transit Orientated Development involves the creation of compact, pedestrian-oriented, mixed-use communities centred around high-quality public transport links. It involves increasing the density of development around key public transport stops and stations, as well as designing local environments that can easily be navigated by walking, wheeling and cycling.
ULEV	An Ultra-Low Emission Vehicle is a car or van that emits 75g/km CO ₂ or less.