RTS Main Issues Report

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SEStran

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1. Introduction

SEStran (the South East Scotland Transport Partnership) is one of seven Regional Transport Partnerships (RTPs) in Scotland, set up under the Transport (Scotland) Act 2005.

SEStran contains eight constituent council areas: City of Edinburgh, Clackmannanshire, East Lothian, Falkirk, Fife, Midlothian, Scottish Borders and West Lothian.

A key requirement under the Act is for RTPs to develop a statutory Regional Transport Strategy (RTS) to provide a strategic framework for transport management and investment for the Partnership area. The purpose of the RTS is to set a policy framework that will guide effective transport provision over the wider city region by marshalling resources, including for cross-boundary measures, by promoting connectivity requirements essential to the whole regional economy and by supporting the transport functions of the constituent local authorities.

The RTS fits within a framework of policies and plans for transport, supporting the achievement of the objectives of the National Transport Strategy, and setting the framework and direction for local transport strategies and development plans.

SEStran's current RTS was published in 2015 and runs until 2025. Since 2015, significant policy, societal and transport system changes have occurred, and for that reason the Board of SEStran agreed in 2019 that a new RTS should be developed.

This report sets out a Main Issues Report, presenting the evidence base for a new RTS.

COVID-19

This report was largely prepared before COVID-19 had any impact on transport demand or capacity. At the time of its completion (May 2020), very little reliable evidence of the impact of COVID-19 on the transport system, or the economy, society and environment is available.

This report therefore sets out a pre-COVID-19 evidence base and the RTS Main Issues are developed from that evidence.

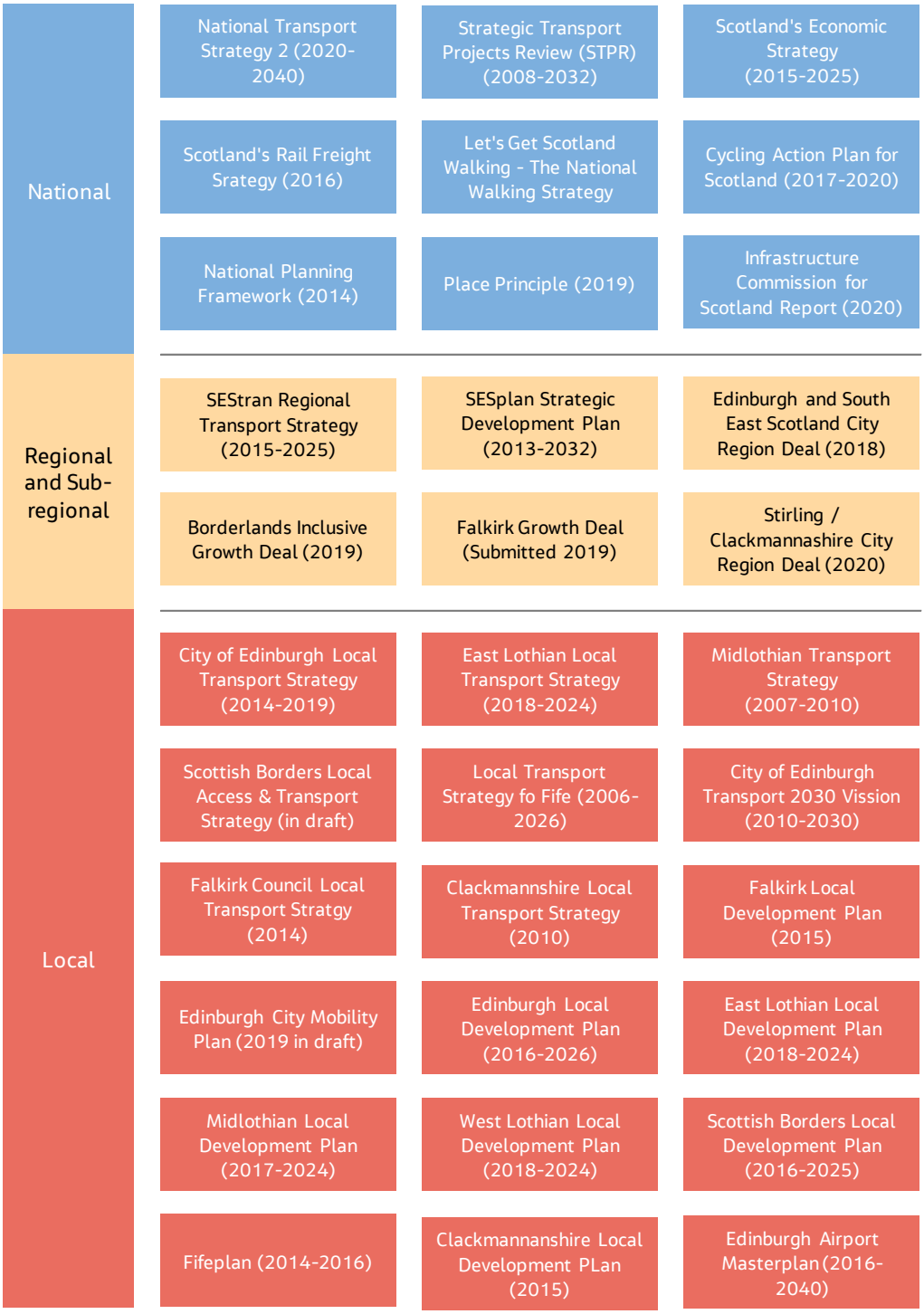
Some of the main anticipated impacts of COVID-19 as currently understood are summarised in section 6 of this report, following the Main Issues.

2. The rationale for a new RTS

This section outlines the reasons why a new RTS for the SEStran region is required at this time.

2.1 Emerging policy directions

SEStran's new RTS is being developed within, and must align to, a rapidly changing policy environment. National, regional and local policies for the environment, health and development, as well as for transport, are all relevant. The most important policies that provide the context for the RTS are shown in the figure below.



Between them, these present a new policy environment, regulation, funding strategies and guidance since 2015, and one which is continuing to evolve at national, regional and local levels. Of particular note are:

- The **Climate Change (Emissions Reduction Targets) (Scotland) Act 2019** has set duties for substantial, rapid reduction of carbon emissions to achieve net-zero greenhouse gas emissions by 2045, with interim targets of reductions of at least 75% (from a 1990/1995 baseline) by 2030, and the "almost complete decarbonisation of the road transport sector by 2050"[1].
- The Scottish Government and some local authorities have declared a **climate emergency** in order to support action to achieve the required changes. Some local authorities have committed to achieving net zero carbon emissions by 2030;
- The Scottish Government has committed to phasing out new petrol and diesel cars by 2032[2];
- The new **National Transport Strategy** (NTS) puts increased focus on inclusive, sustainable and healthy travel, setting out four priorities for Scotland's transport system:
    1) Reducing inequalities;
    2) Taking climate action;
    3) Helping deliver inclusive economic growth; and
    4) Improving our health and wellbeing;
- The NTS also sets out a new **Sustainable Investment Hierarchy** for transport decisions, seeking to refocus transport investment:
    1) Reducing the need to travel unsustainably;
    2) Maintaining and safely operating existing assets;
    3) Making better use of existing capacity; and
    4) Targeted infrastructure improvements;
- **Investment and Growth Deals** have emerged, bringing new opportunities for improving regional economies and including targeted transport infrastructure, and further coordination of transport planning with delivery of other infrastructure. Alongside these geographic-specific deals, a '**Green City Deal**' will, when agreed, unlock additional investment for emissions-reducing infrastructure that supports the transition to net-zero carbon emissions;
- The **Infrastructure Commission for Scotland** has made new recommendations for the development of transport and other infrastructure. Amongst its recommendations are that transport investment decisions should fully address the requirements for traffic demand management, and substantially increase the proportion of journeys by active and public transport modes. It also recommends a presumption against road capacity increases;
- NPF4, emerging national and regional **development plans** will identify new priorities for spatial planning in the region;
- The **Place Principle**, published by the Scottish Government in 2019, requests that all those involved in the planning and delivery of services work together with local communities to support inclusive growth and create more successful places;
- The **Transport (Scotland) Act 2019** gives new powers to the Scottish Government and local authorities, including in relation to Low Emission Zones, Workplace Parking Levies and the franchising of bus services.

[1] https://www.transport.gov.scot/our-approach/environment/carbon-reduction-on-roads/#43155

[2] Programme for Government 2019-20: Protecting Scotland's Future https://www.transport.gov.scot/news/programme-for-government-2019-20-protecting-scotland-s-future/

2.2 Emerging technological transport opportunities

Emerging technological opportunities are providing new opportunities for transport and also some new challenges. Transport authorities and providers will need to understand and respond to them if they are to make a positive contribution to regional transport objectives. Some of the key opportunities which have become more apparent since 2015 are:

	Potential benefits to the region	Potential challenges to monitor
The benefits of mobile data, including improved journey planning and MaaS[3]	People have better information on and ease of paying for a wide range of different transport choices Network problems are identified and communicated more quickly and people able to respond	Tighter network optimisation could result in worse problems in the event of disruption
Electric and/or hydrogen-powered transport and decarbonisation	Reduction in urban air pollution and carbon emissions E-bikes and E-scooters can encourage a shift to active travel	Reduced marginal cost of motoring could further encourage car use Sustainable electricity supply
Autonomous vehicles	Improvements in road safety Better accessibility for people unable to drive	Increased urban congestion Increased use of sedentary travel choices
Shared mobility	More inclusive transport availability Reduced parking pressures, congestion and pollution	Reduced transport costs leads to increased mobility

[3] Mobility as a Service solutions

2.3 Emerging challenges for transport networks

The region's transport network faces a variety of challenges, many of which were identified in 2015, but have become more apparent subsequently. In no prioritised order, these include:

Pressures on the transport sector	Comment
Rail capacity	Rail use is increasing, bringing benefits for sustainable connectivity. But much of the region's peak-time network is operating at capacity, reducing journey quality and capacity for growth. Many station car parks are regularly full, limiting park & ride potential
Road network congestion	Congestion on parts of the road network remains severe at peak times, increasing pollution, harming the competitiveness of public transport and constraining economic performance
Bus network sustainability	Parts of the region have successful, exemplar bus services, but the sustainability of some other routes, especially those away from the main corridors, is marginal. This is leading to accessibility concerns for passengers, especially in rural areas, and revenue funding risks for local authorities
Inequity of access	Public transport costs have continued to rise faster than those for motoring, and those services seeing growth have tended to be on the more popular corridors. This has exacerbated problems of transport inequity, particularly for people on low incomes or that do not wish to make journeys on the main routes
Maintenance	Road, path and footway maintenance is an increasing concern[4]. Although the SEStran authorities typically do better than the Scottish average, around 6% of the region's roads are categorised as 'Red' on the Road Condition Indicator (which covers only roads, not footways), meaning that 'planned maintenance is required within a year or so'[5]. COSLA notes that recent Government decisions have led to "reductions in spending on essential services such as roads, in order to protect services identified as of higher priority locally"[6]
Home deliveries	Internet shopping is generating new demands for home deliveries. In the 10 years to 2017, total car use (veh-km) on Scotland's roads grew by 5% and heavy goods vehicle mileage fell slightly, but veh-km travelled by light goods vehicles grew by 31%[7]. Expectations are for this trend to continue
Development planning	The planning system is under significant pressure to deliver growth in the region, especially in the number of houses. But there is very little evidence of built developments that deliver on objectives to change behaviour, reduce car dependency, and increase instead the use of sustainable or active travel modes
Managing travel demand	Whilst there have been many recent projects seeking to encourage the use of active and sustainable travel projects, overall travel demand has continued to grow. Effectively managing travel demand can be politically challenging
Integrated planning and delivery	Transport delivery in the region relies on the actions of a large number of players from public-, private- and third-sectors. Although many share broadly similar objectives, achieving coordinated planning of actions between them is challenging
Demand for air travel	Edinburgh airport has continued to see substantial increases in demand, both of journeys from the region and from visitors to it, in response to low fares and an increasing number of destinations served

[4] "Current expenditure levels are not enough to prevent a further deterioration in the condition of roads across Scotland" Scottish Parliament Rural Economy and Connectivity Committee, 2019 https://www.parliament.scot/S5_Rural/RECC_20191121_EM_to_Cab_Sec_TIC_-_pre_budget_financial_scrutiny_on_roads_maintenance_issues.pdf

[5] Scottish Transport Statistics No 37, 2018 Edition https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf. Table 4.6

[6] COSLA submission to the Scottish Parliament Rural Economy and Connectivity Committee, 2019 https://www.parliament.scot/S5_Rural/RECC_20191025_COSLA_-_follow_up_from_2_Oct_2019.pdf

[7] Scottish Transport Statistics No 37, 2018 Edition https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf. Table 5.3

2.4 Societal and demographic changes

The population of the SEStran region is changing, and people's attitudes and behaviours are changing travel demands.

The region's population is growing and ageing

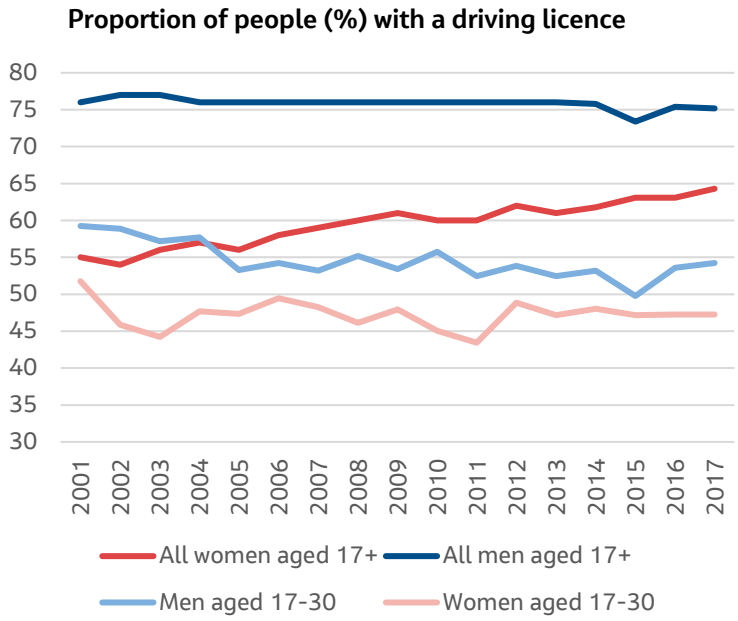
The regional population grew by 12% from 2001 to 2018 (to 1.6M people)[8], inevitably contributing to increased demand for travel.

In the same period, the proportion of people of pensionable age (65 and over) grew by 31%, whereas the number of people aged under 16 was almost unchanged.

Changing trends in driving licence holding

Between 2001 and 2017, there has been a downward trend in the proportion of younger adults holding driving licences, many of whom are choosing different transport choices. This trend is particularly marked amongst young men: in 2001, 59% of men aged 17-29 held a driving licence; this had fallen to 54% in 2017[9].

The overall proportion of Scottish adults holding driving licences grew from 65% to 70% in the same period. The growth has arisen entirely because of the number of women holding driving licences; the proportion of men that hold licences has remained static.



Town centres are changing

Town and city centres are changing, especially as a result of a shift in retail and leisure trends. These trends affect demand for travel to town/city centres, and the need for home deliveries.

High street retail employment fell by 8.5% from 2012 to 2017[10]. High street footfall data shows a trend of decline, including a 2.8% decline in the year to July 2019[11].

Town centres have reduced in importance as service centres; the number of Post Offices in Scotland fell by 28% between 2001 and 2019[12]. Meanwhile, the leisure economy expanded in the same period, and is taking an increasing proportion of high street premises and employment[13].

Internet sales have grown from 3% of total retail sales in 2007 to over 19% in 2019[14].

[8] Scottish Government Population Estimates http://statistics.gov.scot/data/population-estimates-current-geographic-boundaries
[9] Scottish Transport Statistics No 37, 2018 Edition https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/chapter-1-road-transport-vehicles/#tb116
[10] Office for National Statistics, High streets in Great Britain https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/highstreetsingreatbritain/2019-06-06
[11] Scottish Retail Consortium, reported at https://www.retail-insight-network.com/features/uk-online-shopping-growth/
[12] House of Commons Library Briefing Paper: Post Office Numbers. March 2020 http://researchbriefings.files.parliament.uk/documents/SN02585/SN02585.pdf
[13] Retail and Leisure Analysis – H1 2019 update, Local Data Company
[14] Office for National Statistics, Internet sales as a percentage of total retail sales (ratio) https://www.ons.gov.uk/businessindustryandtrade/retailindustry/timeseries/j4mc/drsi

Employment patterns are changing

More people are working part-time. In the UK, the number of part-time employees increased by 23% between 2001 and 2018[15]. The proportion of people employed on zero-hours contracts has increased from 0.6% to 2.5% in the same period[16].

A smaller proportion of people will be making consistent commute journeys as a result.

Environmental awareness is increasing

People's awareness of environmental issues is increasing. A YouGov survey (of people across Great Britain) indicates the proportion of people thinking that "environment" is "one of the three most important issues facing the country at this time" has increased from 9% in 2016 to 27% in 2019[17].

Ninety-three percent of British people feel that "climate change is definitely/probably happening" and 95% think that "climate change is at least partly due to human activity"[18].

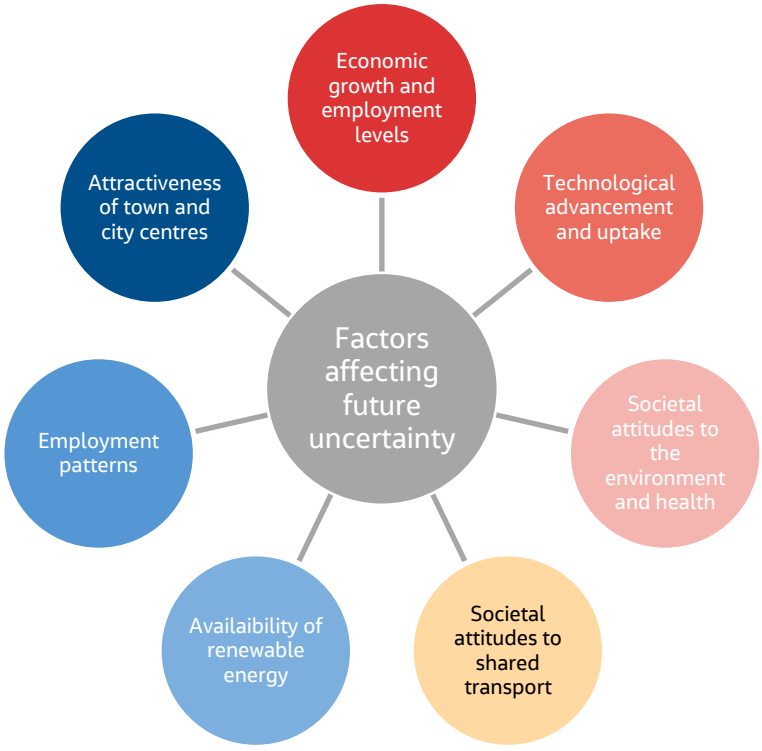
The sharing economy is growing

More people are becoming comfortable with sharing, instead of purchase, as a mechanism to access goods and services, facilitated by easier exchange of relevant data. Already apparent in transport from the increased interest in car clubs, this societal change has the potential to facilitate moves to the uptake of more sustainable travel choices, including through increased acceptance of lift-sharing and public transport use.

2.5 Future uncertainties

The future for transport demand is uncertain. The transport system in the SEStran region needs to be able to respond to these uncertainties, whilst still delivering on its objectives as it does so.

These uncertainties, by their nature, cannot be precisely predicted, but Transport Scotland has developed some 'plausible futures' for how people's use of and attitudes to transport could change without significant policy drivers in place to meet objectives[19]. These futures are based on uncertainties with factors including:



[15] Office for National Statistics, Labour market statistics time series https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/labourmarketstatistics

[16] Office for National Statistics, People in employment on zero hours contracts https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/emp17peopleinemploymentonzerohourscontracts

[17] YouGov Top Issues Tracker (GB), 2019 https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/860hexugwi/YG%20Trackers%20-%20Top%20Issues_W.pdf

[18] The National Centre for Social Research. British Social Attitudes: Climate Change. 2018 https://www.bsa.natcen.ac.uk/media/39251/bsa35_climate_change.pdf

[19] Scenario Planning Process Report. Transport Scotland https://www.transport.gov.scot/media/45142/scenario-planning-process-report.pdf

2.6 Parts of the region's transport network have changed

The new RTS must respond to a range of changes to the transport system in South East Scotland since 2015, selected highlights amongst them being:

- The Edinburgh – Glasgow improvement programme, including electrification of the line (2016) and capacity increases;
- Edinburgh Gateway station opening (2016);
- The Thistle Assistance Programme (card & app) to help people with mobility and accessibility challenges use public transport more easily (2017);
- Significant new support for active travel investments, including new and improved infrastructure and various bike hire and loan schemes; and
- Rail gauge enhancements, to enable the carriage of more freight by rail.

2.7 There are aspirations for other transport changes

A new RTS for the SEStran region is being considered concurrently with a range of other interventions, being developed by SEStran, its constituent local authorities and other partners to tackle transport problems in the region. These cover a broad range of scales, locations and transport modes. Examples include:

- Active travel network enhancements;
- Edinburgh orbital bus service;
- Improved bus priority;
- Edinburgh tram extensions;
- New rail stations;
- Edinburgh Waverley station capacity upgrades;
- Winchburgh rail line remodelling;
- Park & ride expansion;
- The expansion of hydrogen fuel for road vehicles;
- Edinburgh Low Emission Zone.

2.8 Summary of issues

From the evidence presented in this chapter, the following issues are of particular relevance to a new SEStran RTS:

- Much of the policy context for transport decisions has changed since the publication of the current RTS;
- New technologies are providing new opportunities and also new challenges for transport; meanwhile, some long-standing transport problems remain;
- Changing societal attitudes, use of town centres and new employment patterns are changing travel demand;
- The future is becoming increasingly uncertain, and transport plans will need to be able to react to these uncertainties;
- Local, regional and national partners have a broad range of aspirations for change to the transport system in the region.

3. The SEStran region: people, society, environment, economy

This section outlines some of the main environmental and social issues for the SEStran region.

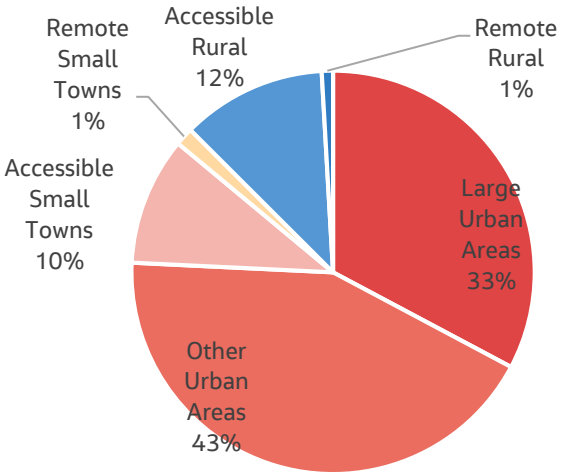
3.1 Where people live

Covering all of the local authority areas of the City of Edinburgh, Clackmannanshire, East Lothian, Falkirk, Fife, Midlothian, Scottish Borders and West Lothian, the SEStran region covers 8,400km^2, just over 10% of Scotland's landmass.

The region is hugely diverse and includes areas which fall into every one of the Scottish Government's six-fold urban-rural classes. The classes, along with examples within the SEStran region are as listed below; the proportion of the region's population that resides in each of them is shown on the chart:

- **Large Urban Areas**: Edinburgh and its suburbs;
- **Other Urban Areas**: including Dalkeith, Livingston, Falkirk, Alloa, Dunfermline and Kirkcaldy;
- **Accessible Small Towns**: including Peebles, Haddington, Loanhead, Winchburgh, Cupar, Clackmannan;
- **Remote Small Towns Settlements**: including Kelso, Dunbar;
- **Accessible Rural Areas**: most of the region outside built-up areas; and
- **Remote Rural Areas**: parts of the Scottish Borders, East Lothian, Clackmannanshire and Fife.

SEStran area: proportion of population living in urban-rural classes



3.2 Demography

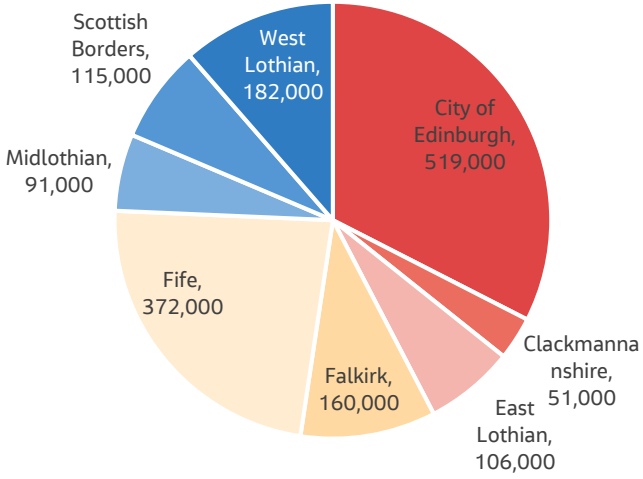
Approximately 1.6 million people live in the SEStran area

The total population of the SEStran region is approximately 1.6 million (2018).

And the population is growing - fast

There has been significant population growth in the region, and this is forecast to continue: the total population in the SEStran region is projected to grow by nearly 6% between 2016 and 2026.

Population by Local Authority

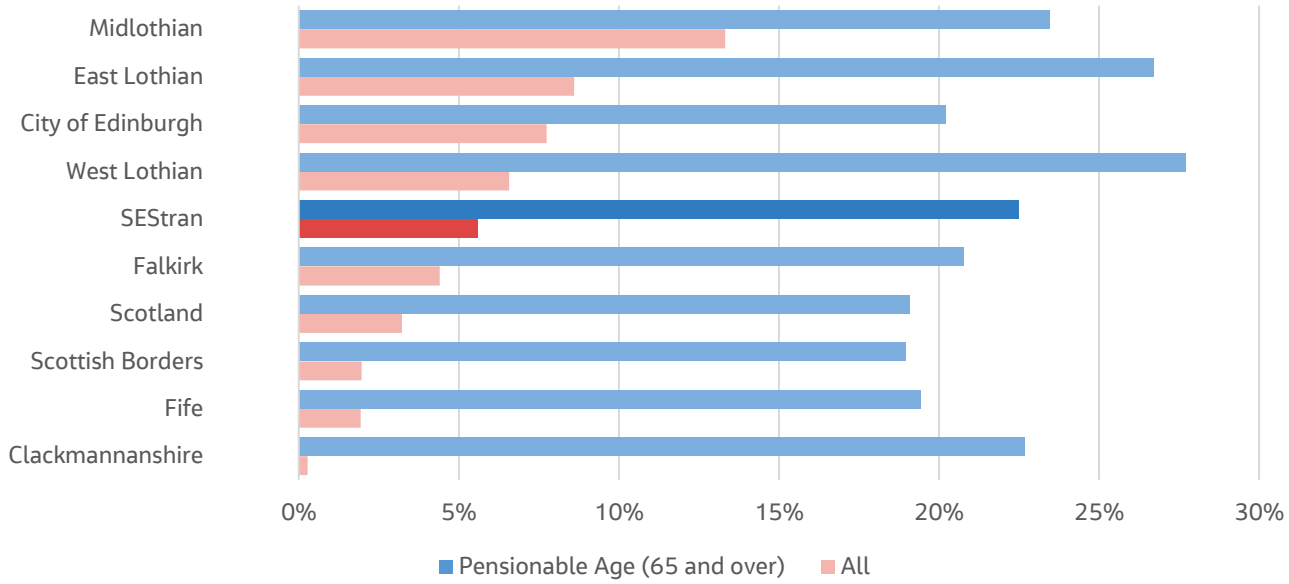


Midlothian is projected to be the fastest growing local authority in Scotland[20], with East Lothian and Edinburgh second and third respectively. While highlighting the attractiveness of the region as a place to live, high levels of growth will place significant additional pressure on transport networks, schools and local facilities.

Note, however, that future housing allocations are yet to be determined, so growth levels remain uncertain. The RTS will need to be able to respond to these changes as they unfold.

Projected population growth 2016-2026	
Clackmannanshire	<1%
East Lothian	9%
Edinburgh, City of	8%
Falkirk	4%
Fife	2%
Midlothian	13%
Scottish Borders	2%
West Lothian	7%
SEStran	6%
Scotland	2%

SEStran Region Population Growth 2016-2026



Changing demographics emphasise the need to provide facilities for all

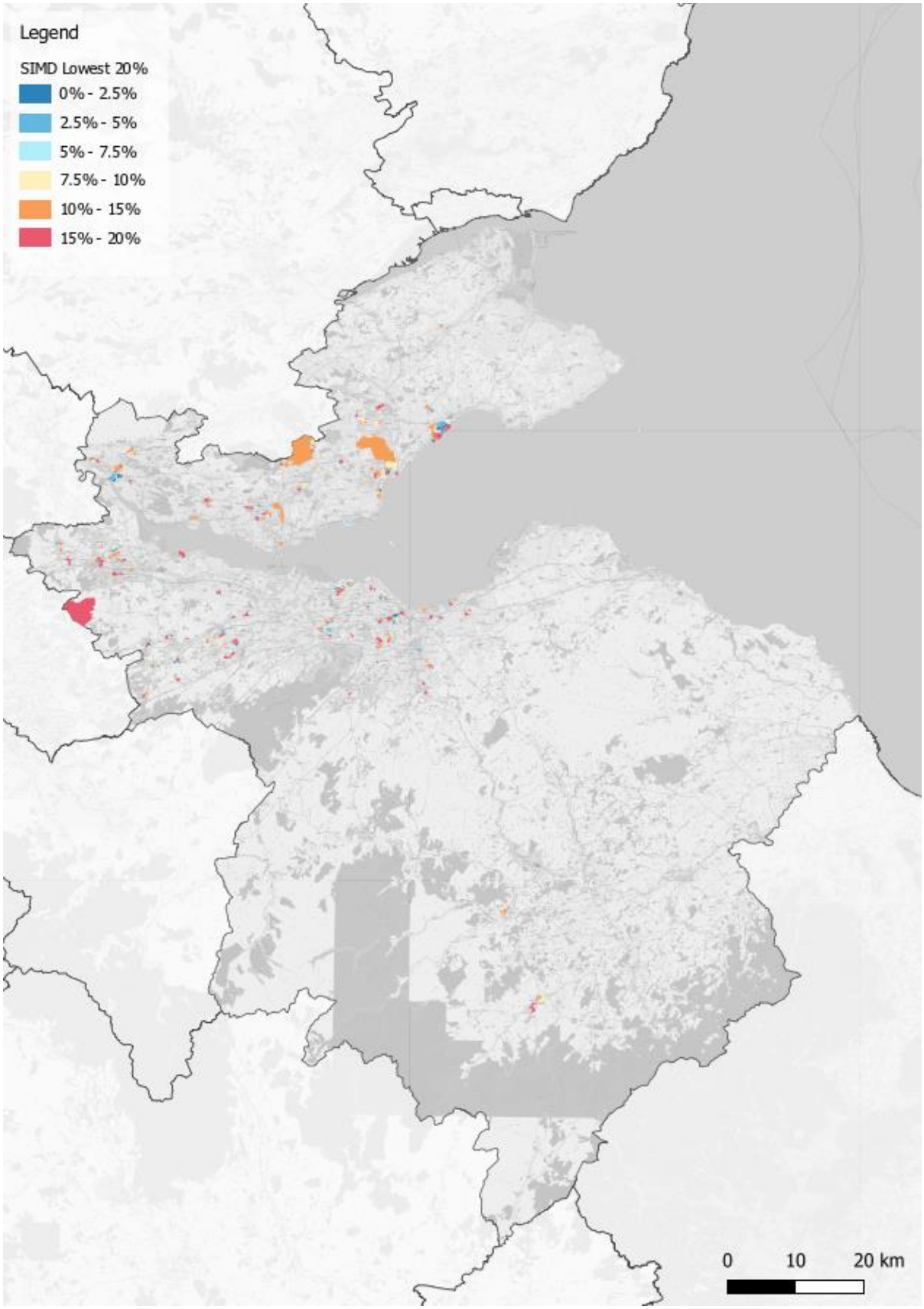
As well as increasing in size, the population is ageing. Within the region, the number of people of pensionable age (65 and over) is anticipated to grow by over a fifth in the 10 years to 2026. The region's transport system will need to adapt to these changes, especially increased demand for supported travel amongst people unable to drive or use scheduled public transport.

Significant inequalities exist between the communities of the SEStran region

Substantial inequalities exist between the people and communities of the SEStran region. According to the 2020 Scottish Index of Multiple Deprivation (SIMD), every one of the region's local authorities has at least one datazone rated in the bottom 10% most deprived nationally and at least one in the least deprived 10%.

[20] Scottish Government Population Projections (2016 base) https://statistics.gov.scot/data/population-projections

SIMD Lowest 20%



Deprivation affects individuals in all communities, but particularly severe pockets of deprivation are apparent in the Levenmouth area, some parts of Edinburgh and parts of the main towns in Fife, West Lothian, Falkirk and Clackmannanshire. Poor geographic access (to goods, services and employment opportunities) is a recognised indicator of deprivation, and is one of seven domain within the SIMD.

The transport system exacerbates gender inequality

Over 75% of Scotland's part-time workforce is female[21], and women are more likely to be in low-paid work[22].

Women who work part-time are more likely to make multi-stop journeys (e.g. to drop off / pick up children to / from school) than women that work full-time or than men, whatever their working status. These journeys are often time-consuming and expensive, especially where reliant on public transport, and are compounded by gaps in provision.

Women are more likely than men to feel unsafe walking alone at night (66% of women feel very or fairly safe, compared to 89%) of men[23].

The transport system exacerbates disability inequality

Nearly a third of the adult population of Scotland lives with a long-term limiting illness[24].

Women are more likely to have such an illness than men, and the proportions for both women and men are increasing quickly: between 2008 and 2017, the proportion of women who had a long-term limiting mental or physical health condition or disability increased from 28% to 34%; the proportion of men increased from 23% to 29%.

People with mobility and accessibility challenges are less likely to be in employment and more likely to live in poverty than the overall population[25]. After a lack of job opportunities, difficulty with transport was the most commonly cited barrier to work among UK adults with impairments[26].

Transport inequality affects disabled people of all ages. Over 60% of young people (aged between 12 and 26) who have a disability or access requirement have reported that they do not feel comfortable using public transport[27].

The challenges that people with mobility and accessibility challenges face on the transport system include being able to access accurate and relevant travel information, being able to access public transport interchanges and vehicles, and concerns regarding safety and comfort.

Fewer people are living in each house

The average size of a SEStran household fell by 4.5% from 2001 to 2018 (from 2.30 residents per dwelling to 2.20)[28]. Travel patterns have become more dispersed, and net travel distances have increased, as a result. This trend of smaller households is predicted to continue, albeit with significant variance in different parts of the region.

[21] Briefing paper: Women and the Economy, House of Commons Library, 2020 https://commonslibrary.parliament.uk/research-briefings/sn06838/

[22] The Living Wage: Facts and Figures, SPICe, 2016 https://www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_16-94_The_Living_Wage_facts_and_figures.pdf

[23] Sexual Harassment of Women and Girls in Public Places, House of Commons Women and Equalities Committee, 2018

[24] Scottish health survey: results for local areas 2014 to 2017 https://www.gov.scot/publications/scottish-health-survey-results-local-areas-2014-2015-2016-2017/pages/4/

[25] Poverty in Scotland 2018, Joseph Rowntree Foundation October 2018 https://www.jrf.org.uk/report/poverty-scotland-2018

[26] UK Government Life Opportunities Survey 2015 https://www.gov.uk/government/collections/life-opportunities-survey

[27] All Aboard: Young people's views and experiences of public transport in Scotland, Scottish Youth Parliament, 2019 https://syp.org.uk/campaign/all-aboard/

[28] Scottish Government statistics. Average Household Size https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Faverage-household-size

3.3 Housing demand and development

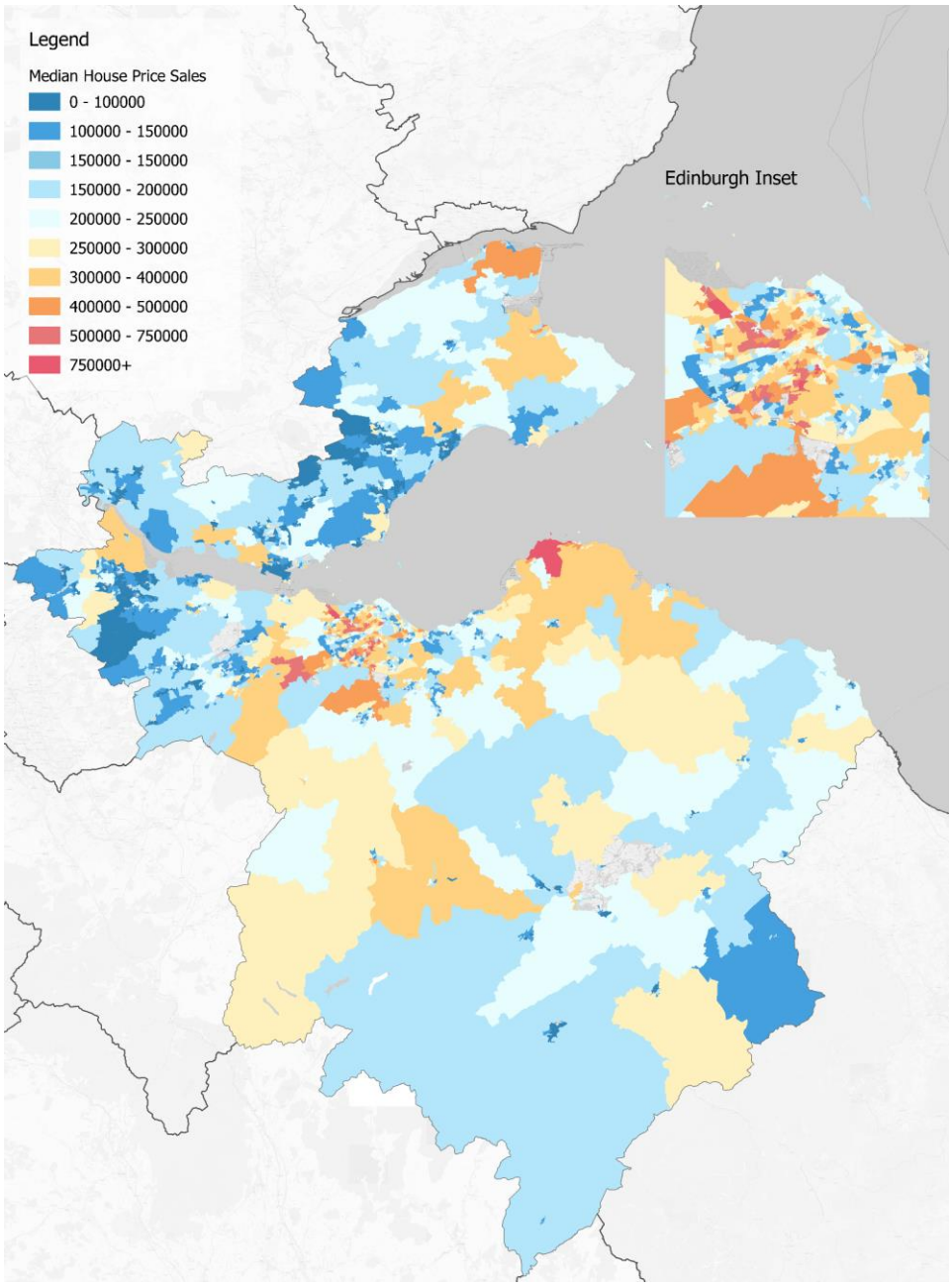
Major developments are needed to support projected growth

Population growth and reducing household size create pressure for new development, especially for housing. Major development sites will result in further demand for travel, and careful planning of transport infrastructure and services will be required if this demand is to be accommodated by sustainable transport modes.

Demand for new development is not equally spread across the region. Key sites for development include:

- Blindwells, East Lothian;
- Shawfair, Midlothian;
- Granton, Edinburgh;
- Winchburgh, West Lothian;
- West Edinburgh;
- Dunfermline, Fife; and
- Longannet, Fife.

2018 Median House Prices



Housing affordability is influencing the need to travel

Ideally, from a transport perspective, people should be able to live close to where they work and socialise, reducing the need to travel. In practice, economic realities make this impossible.

One of the major issues driving the increased demand for housing in new locations is affordability.

Across Fife, East and Midlothian house prices have been increasing rapidly. The Airdrie – Bathgate and Borders Railway lines are now encouraging a new wave of housing development even further from the city. Locating development on rail corridor is regionally sustainable but does impact on the infrastructure on the corridor.

Development planning is not consistently supporting sustainable transport

Much of the development planning activity in the region since the first SEStran RTS was agreed in 2008 has been geared to increasing the supply of housing. But the locations or masterplans for new developments do not always succeed in delivering relevant infrastructure before commencement of occupation, and do not consistently support objectives for enabling sustainable transport choices.

During stakeholder engagement undertaken as part of the preparation of this report, no large-scale developments in the region (beyond those in central Edinburgh) were identified that were felt to be exemplars in terms of sustainable travel, despite a strong policy framework being in place for many years to encourage this.

Through the Planning (Scotland) Act 2019 and the emerging National Planning Framework (NPF4), new Regional Spatial Strategies (RSSs) will plan for key developments, focussing on delivering a wide set of social outcomes. These will be developed by voluntary partnerships of one or more planning authority. However, in circumstances where the boundaries established by these voluntary partnerships are not aligned with those of regional transport and economic strategies, the delivery of co-ordinated, sustainable transport for that housing supply is likely to be more challenging.

Some stakeholders noted that stronger alignment between RSSs (planning for housing development locations and economic growth sites) and Regional Transport Strategies, plus the early delivery of transport infrastructure, will be required if future problems are not to be exacerbated.

Meanwhile, the region has seen increasing centralisation of some services (for example including healthcare and tertiary education). These changes have commonly been undertaken for good reason, including more efficient and/or higher quality provision of these services. However, the transport and access implications have sometimes been challenging; the trend tending to lead to longer journey distances and the requirement for more journeys to edge-of-town locations, less suited to public transport.

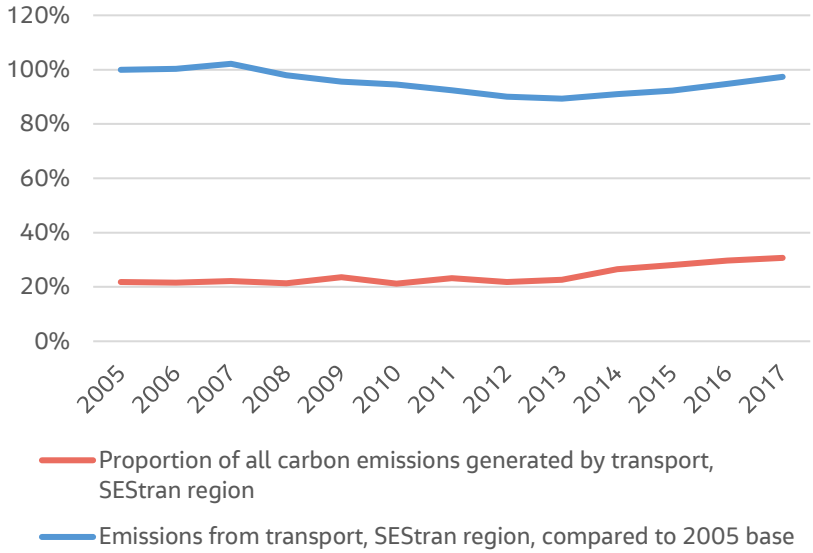
3.4 Environment

Climate policy has changed

The Scottish Government has declared a climate emergency and set targets of net-zero greenhouse gas emissions by 2045, and interim targets in intermediate years[29]. It has committed to the "almost complete decarbonisation of the road transport sector by 2050"[30].

Seven of the eight of SEStran's constituent authorities have developed or are developing carbon management plans, strategies or targets.

Transport Emissions



[29] Of reductions of at least 75% (from a 1990/1995 baseline) by 2030 and 90% by 2040
[30] Transport Scotland https://www.transport.gov.scot/our-approach/environment/carbon-reduction-on-roads/#43155

Transport emissions are not falling, and are increasing as a proportion of all emissions

Although carbon emissions from transport fell a little between 2005 and 2013, they have been rising since then almost back to 2005 levels[31].

As emissions from other sectors fall, transport accounts for a substantially larger proportion of all emissions than in 2005. Emissions in the SEStran region mirror the national trend.

Road traffic accounts for around two-thirds of transport carbon emissions.

Carbon emissions by mode

Carbon emissions by mode	% of transport greenhouse gas emissions	Million tonnes of CO_2 equivalent
Car	40%	6.0
LGV	12.5%	1.9
HGV	12.5%	1.9
Plane	15%	2.2
Ship	15%	2.2
Other	5%	0.7

The transport system must adapt to climate change

Climate models predict that central Scotland is likely to have wetter winters and hotter summers as a result of climate change than would otherwise be the case[32]. These are likely to increase the number and severity of instances when transport systems are disrupted, especially due to flooding.

Air pollution remains above thresholds in some locations

Air quality in much of the SEStran area is good, but there are 16 locations[33] at which pollution levels exceed thresholds and Air Quality Management Areas (AQMAs) are currently in place. All but one of these AQMAs have been declared primarily because of pollution from road vehicles.

In September 2017, the Scottish Government committed to the introduction of Low Emission Zones (LEZs) into Scotland's four biggest cities. The City of Edinburgh Council is working to develop and implement its proposals. The Government also committed to implement LEZs into all other AQMAs by 2023 "where the National Low Emissions Framework appraisal advocates such mitigation"[34].

Given the likelihood that LEZs will impact on the choices of vehicle/mode/destination of travel for anyone planning to enter them, Edinburgh's proposals and any others brought forward could have the potential to influence travel demand over a substantial area, outwith the zone as well as within it.

[31] DfBEIS Emissions of carbon dioxide for Local Authority areas https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas

[32] Met Office UK Climate Projections https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index

[33] Six in Edinburgh (Centre, Glasgow Road, St John's Road, Great Junction Street, Inverleith Road, Salamander Street), one in East Lothian (Musselburgh), four in Falkirk (Grangemouth (not primarily road transport related), Haggs, Falkirk Centre, Banknock), two in Fife (Bonnygate, Cupar and Appin Crescent, Dunfermline) and three in West Lothian (Broxburn, Linlithgow, Newton). Source: http://www.scottishairquality.scot/laqm/aqma

[34] http://www.scottishairquality.scot/lez/

3.5 Public health

Active travel has a role in improving public health

65% of Scottish adults are either overweight or obese[35] and nearly a third of the adult population of Scotland lives with a long-term limiting illness[36].

Changing transport choices away from active modes has been a key contributor to an increase in many people's sedentary lifestyles. *"The potential benefits of physical activity to health are huge. If a medication existed which had a similar effect, it would be regarded as a 'wonder drug' or 'miracle cure'"*[37]. *"For most people, the easiest and most acceptable forms of physical activity are those that can be incorporated into everyday life. Examples include walking or cycling instead of travelling by car, bus or train"*[38].

As well as important for many journeys in their own right, active modes (walking, cycling and wheeling) are essential components of most public transport journeys, so increased public transport use is accompanied by health benefits for most people.

Transport must respond to health needs

Physical and/or mental health problems mean that many of the people suffering from limiting long-term conditions, as well as many more with short-term health problems, are unable to make use of a full range of transport choices.

In response, some people will travel less than they otherwise would, reducing their access to goods and services. Others will rely on assistance from carers or make use of more specialist transport provision, which commonly provides a good service to users but at relatively high cost per journey.

The proportion of people with long-term conditions has been increasing rapidly in recent years and this trend is expected to continue, especially with more elderly residents in the region. The demands for specialist transport are therefore expected to increase significantly in coming years.

Meanwhile, travel to access healthcare remains essential for all the region's residents from time to time. Two percent of all journeys undertaken in the SEStran region[39] are to go to "hospital or other health" facility. Many of the people travelling are unable (because of their health needs) to use a full range of transport choices, and may require specialist support or care during their journey. The projected increasing number of elderly people resident in the region will tend to increase demand for healthcare and specialist transport.

[35] Scottish Health Survey 2016 https://www.gov.scot/publications/scottish-health-survey-2016-volume-1-main-report/pages/46/

[36] Scottish health survey: results for local areas 2014 to 2017 https://www.gov.scot/publications/scottish-health-survey-results-local-areas-2014-2015-2016-2017/pages/4/

[37] Sir Liam Donaldson, Chief Medical Officer, 2009

[38] Department of Health, 2011 Start Active, Stay Active. A report on physical activity for health from the four home countries' Chief Medical Officers.

[39] Transport and Travel in Scotland 2018 - Scottish Household Survey Travel Diary results https://www.transport.gov.scot/media/45463/tatis-2018-travel-diary-tables.xlsx

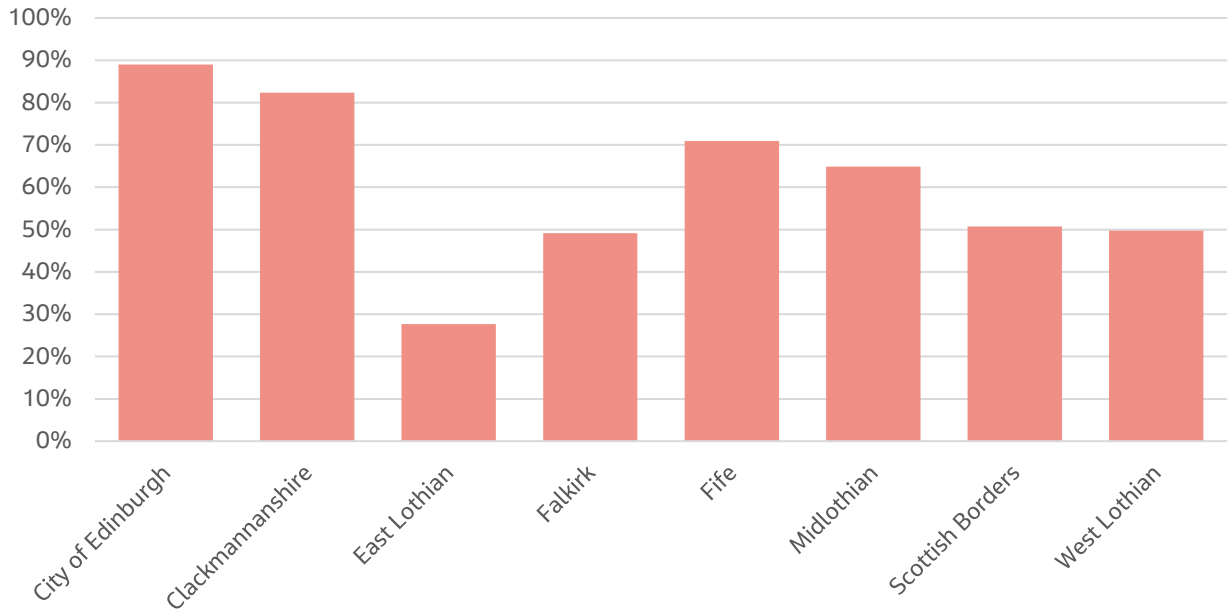
3.6 Education

Many people do not have easy access to further and higher education

There are large parts of the region from which there is no easy access. The graph provides an indication of public transport accessibility from homes to the closest university or college site (which will not necessarily offer the course that the person wishes to study).

For example, almost all residents of Edinburgh can access their nearest tertiary education centre by public transport within 30 minutes of home, but this proportion falls to less than 30% in East Lothian.

Proportion of residents able to access tertiary education within 30 minutes by public transport



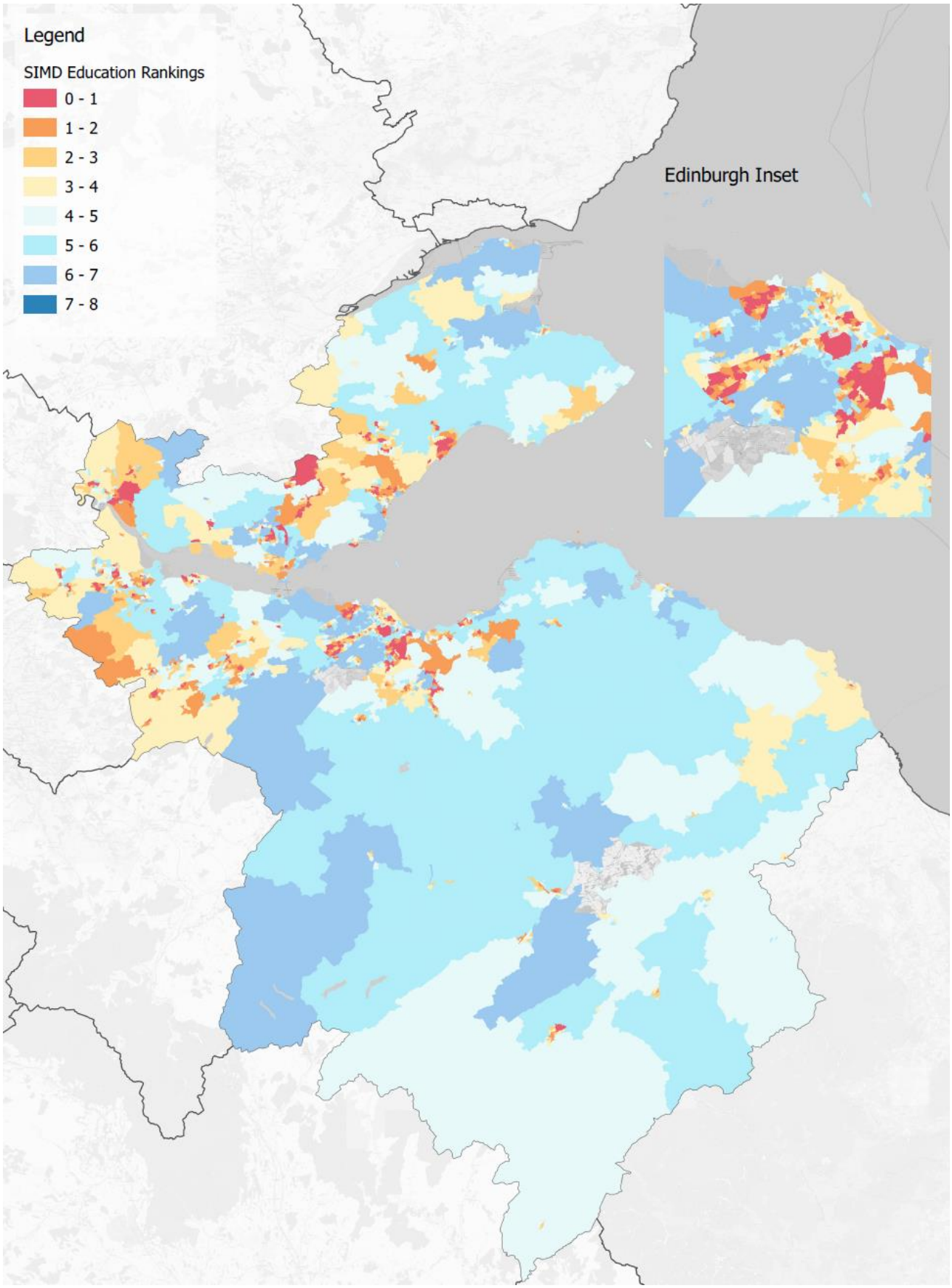
Educational attainment varies across the region and transport influences access to further education

There are substantial inequalities in educational attainment between the communities of the SEStran area. This is indicated by SIMD data, demonstrating that there are areas with significant clusters of communities in which educational outcomes are well below the Scottish average.

"*Learners are often extremely constrained in terms of willingness or ability to travel. Most further education learners (around 70%) travel less than 10km from their home to reach the site of their provider, with 50% travelling less than 6km*". There is "*a small proportion of learners (5%) who travel great distances (more than 50km) to reach their place of learning*"[40].

[40] Understanding the Further Education Market in England, Department for Business, Innovation and Skills, 2016 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/544310/bis-16-360-fe-market-england.pdf

SIMD education rating



3.7 Economy

SEStran's population is relatively economically active

Residents of the SEStran region are more likely to be employed than all Scots, but there are significant variances between the region's local authorities[41]:

There are significant pockets of high unemployment in each of the region's authorities. Nationally, people aged 16-24 are more than twice as likely to be unemployed than all adults. Although the reasons for this are many and various, the cost of transport to employment is a factor in this higher rate[42].

Compared to Scotland as a whole, the SEStran regional economy is relatively highly dependent on banking & finance and transport & distribution, and less so on energy & water and agriculture & fishing.

	Employment rate % (2018)	Change since 2008 %
Clackmannanshire	74.6	4.8
East Lothian	80.8	5.3
Edinburgh, City of	77.0	2.5
Falkirk	75.8	-0.9
Fife	75.2	1.1
Midlothian	79.3	1.4
Scottish Borders	74.3	-3.7
West Lothian	76.1	-0.6
Scotland	74.1	0.5

Public administration is the biggest employment sector in each of the region's authority areas, and more than 36% all employees in Clackmannanshire work in the sector (the regional average is 32%). Edinburgh has a much higher proportion of people working in banking & finance than the regional average (25%, compared to 19% regionally).

Tourism is especially important to some parts of the region (notably Edinburgh and St Andrews), and transport is particularly important to tourism. Effective transport services and information can help enable the economic benefits of tourism to be spread away from the main hub locations. And enabling sustainable travel choices for tourists is important; currently almost all overseas visitors to Scotland arrive by air.

Employment sector by geography of residence	SEStran area average	Difference from Scottish average
Public admin, education & health	32%	1%
Distribution, hotels & restaurants	19%	1%
Banking, finance & insurance etc	19%	4%
Transport & communication	8%	1%
Manufacturing	8%	0%
Construction	6%	-1%
Other services	6%	0%
Agriculture & fishing	1%	-1%
Energy & water	0%	-4%
Total	100%	0%

Productivity is not high

Scotland's productivity is ranked 16th out of 37 OECD member countries, below some comparator countries such as Ireland, Belgium and Denmark. Whilst Scotland's productivity level is not solely driven by the efficiency of its transport system, improvements in transport connectivity between businesses reduces costs and increases productivity, thus generating higher levels of economic growth[43]. This is true for connections for people and for freight movements, which are essential for supporting economic growth and meeting the needs of the region's population.

[41] Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018 https://www.gov.scot/publications/regional-employment-patterns-scotland-statistics-annual-population-survey-2018/pages/4/

[42] 'All Aboard', Young people's views and experiences of public transport in Scotland, Scottish Youth Parliament, 2019 https://d3n8a8pro7vhmx.cloudfront.net/scottishyouthparliament/pages/2916/attachments/original/1555340914/All_Aboard_report.pdf?1555340914

[43] National Transport Strategy. Transport Scotland, 2020 https://www.transport.gov.scot/our-approach/national-transport-strategy/

Jobs are likely to become more geographically concentrated

TELMoS (the Transport/Economic/Land-use Model of Scotland)[44] predicts that, in coming decades, economic opportunities in the SEStran region are likely to become more focussed in areas that are already more economically developed (especially Edinburgh city centre, West Edinburgh, South Fife and West Lothian) than other areas.

This is forecast to result in additional pressure on the transport network in areas where road congestion and public transport capacity issues already exist.

3.8 Summary of issues

From the evidence presented in this chapter, the following issues are of particular relevance to a new SEStran RTS:

Issues relevant to the region's people and places

- The region's population is growing; increased demand for travel will result;
- The number of elderly people living in the region is forecast to grow much more quickly than the total population. This is likely to create significant additional demand for door-to-door and other supported transport;
- A lack of appropriate, affordable transport means that many of the region's people are excluded from accessing a full range of opportunities for education, employment, healthcare and other needs; this disproportionately affects people that are older, are women, have mobility and accessibility challenges, are on low incomes, or live in rural areas;
- An increase in use of sedentary travel choices over recent decades has contributed to high levels of obesity and associated health problems;
- A lack of affordable housing in parts of the region (caused by increasing population and reducing average household size) is contributing to increased travel distances;
- The Development Planning process and powers are not consistently supporting objectives to deliver sustainable development locations and to create conditions to facilitate and promote the sustainable transport objectives in the RTS in advance of development.

Issues relevant to the region's environment and economy

- Scotland is committed to net-zero carbon emissions by 2045 (with interim targets of reductions of at least 75% (from a 1990/1995 baseline) by 2030 and 90% by 2040), but carbon emissions from transport in the region are not falling;
- Climate models predict an increase in the number and severity of extreme weather events, especially of temperature and precipitation. Parts of the region's transport system are likely to need to adapt if network reliability is to be maintained;
- Air pollution from transport is harming people's health in some parts of the region;
- Transport has an important role to play in enabling a vibrant and inclusive regional economy, especially as jobs become more geographically concentrated.

[44] https://www.transport.gov.scot/media/44049/website-telmos05-model-description-report.pdf

4. The SEStran region: transport issues and challenges

This section outlines the main transport issues and challenges of the SEStran region.

4.1 Regional travel demand and patterns

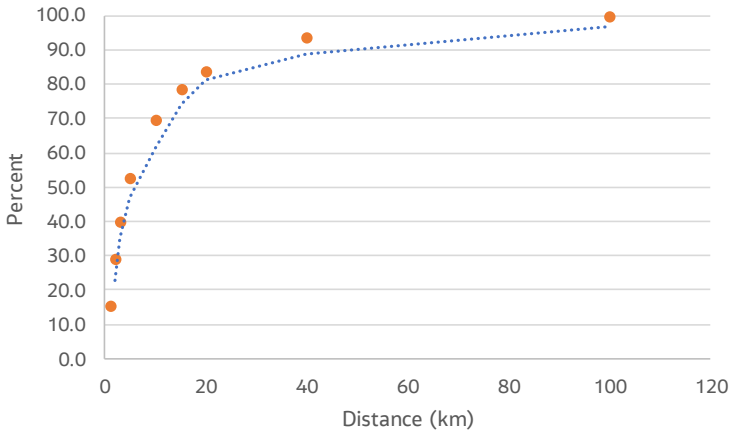
Average journey distances are short

Approximately 80% of journeys within the SEStran region are of less than 20km in length. Over half of all journeys are less than 10km.

Use of different modes varies across the region

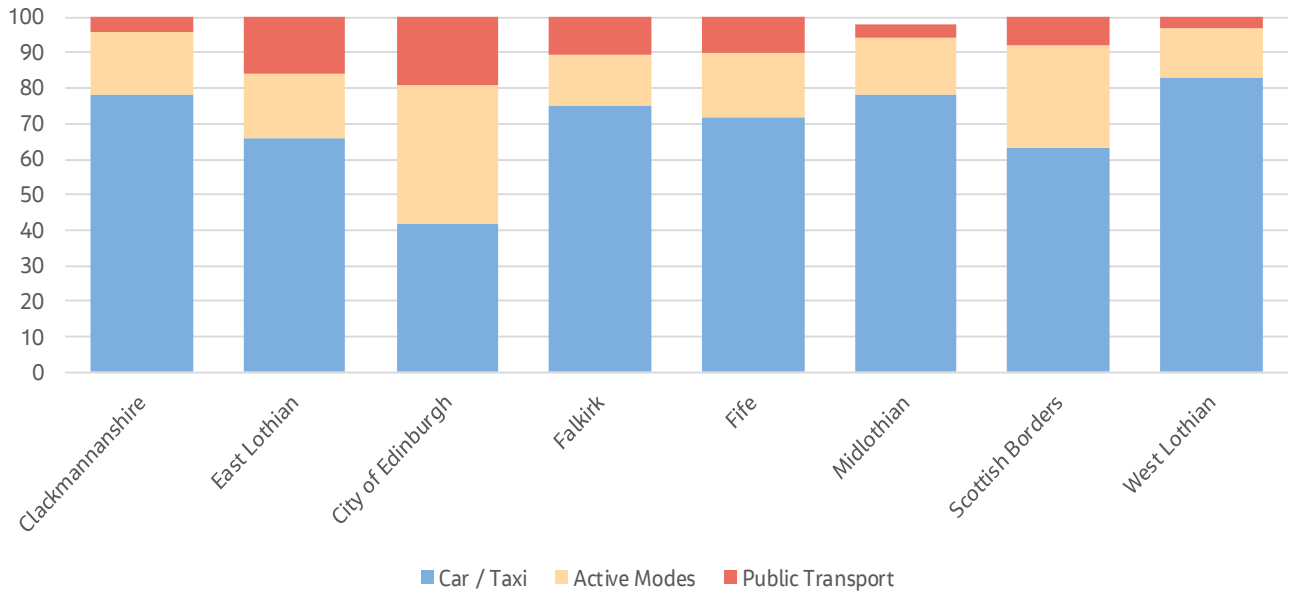
Usage of different modes varies substantially in different parts of the region. The factors dictating journeys by mode are complex and can include public transport availability, age profile, accessibility from housing developments and proximity of housing to employment opportunities

Average journey distance



Mode choice varies substantially in different parts of the SEStran region. Use of active and public transport modes is greatest in Edinburgh: residents of the city council area make only 41% of their journeys by car/taxi. But the highest proportion of car/taxi journeys is by West Lothian residents (at 85%)[45].

Mode Share



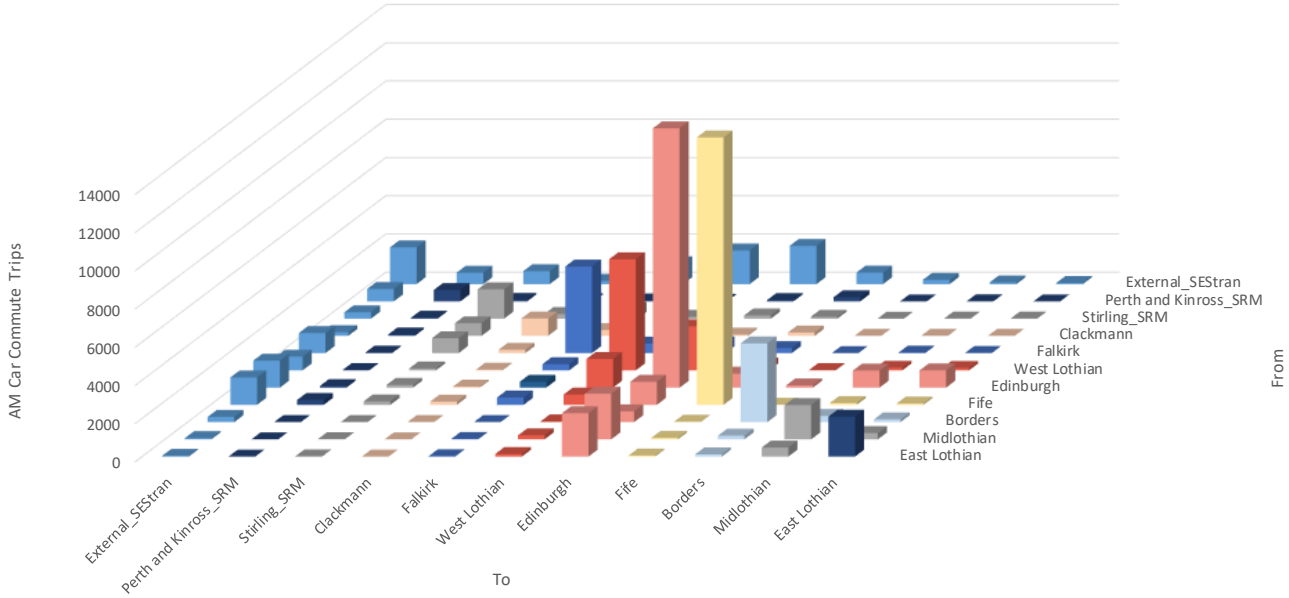
[45] Transport and Travel in Scotland 2018 - Scottish Household Survey Travel Diary results https://www.transport.gov.scot/media/45463/tatis-2018-travel-diary-tables.xlsx

Car commuting is greatest internal to each local authority

Comparing sector to sector movements, the greatest number of car commuting trips are generally wholly within each local authority area[46]. The next largest major movements are radial towards Edinburgh. By comparison, there is a relatively small number of car trips between other local authority areas in the region.

The figure below shows Origin-Destination vehicle movements, including intra-sector values; as shown in the SEStran Regional Model. It illustrates the high volume of car movements that are internal to each local authority. Total car travel within Fife is highest, reflecting the larger geographic area, a more dispersed population and lower overall levels of public transport availability.

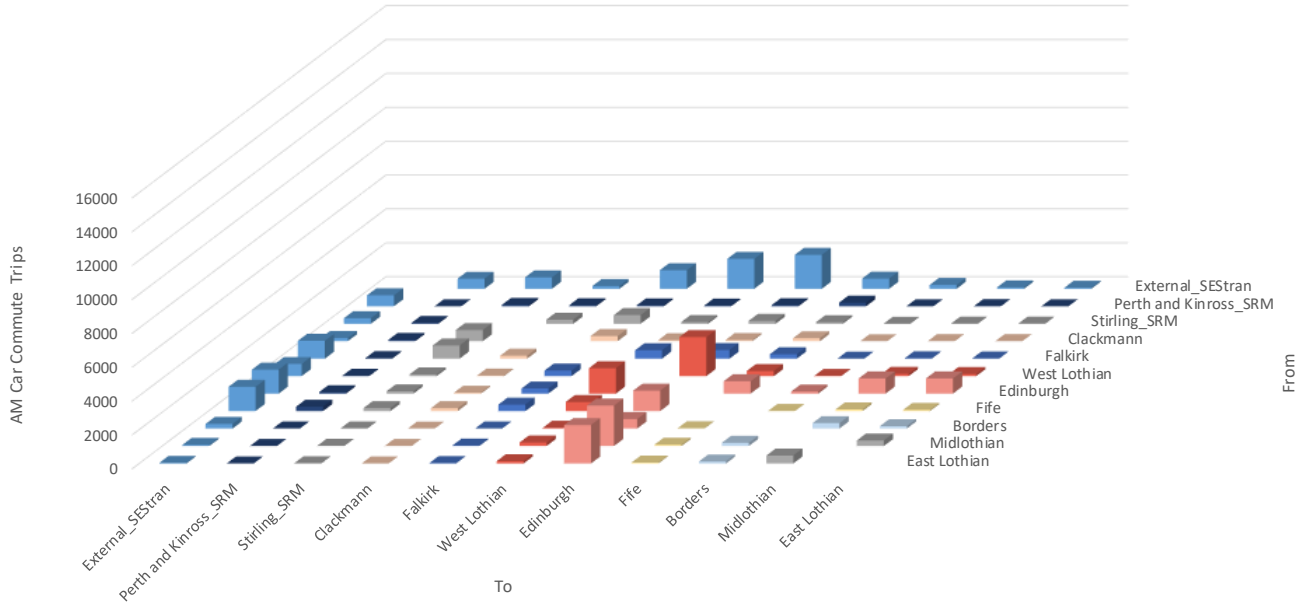
LA to LA O-Ds including intra-zonals



The figure below shows the same data with intra-sector movements within each local authority removed; the graph scale is unchanged to enable comparison.

[46] Source: SEStran Regional Model

LA to LA O-Ds excluding intra-zonals



Some connections within the region are particularly poor

Stakeholder engagement has highlighted several connections within the region, or between the region and neighbouring areas, where current transport infrastructure and/or services are particular poor in comparison with other corridors, or where conflicting demands for the same infrastructure arise. These were:

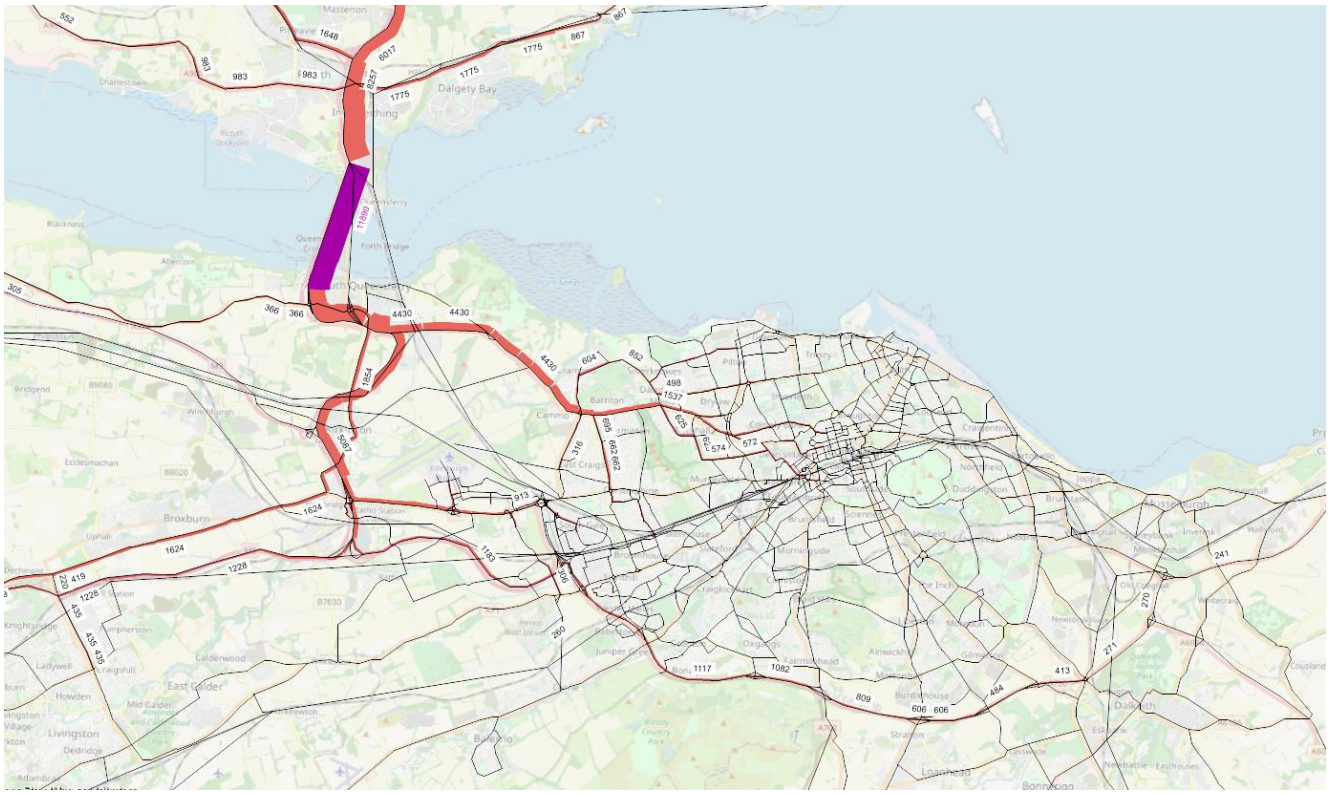
- The Bathgate – Falkirk/Grangemouth corridor;
- From east Fife to Perth;
- From east Fife to Dundee (noting Dundee's importance as a regional centre, especially for healthcare);
- From Falkirk and Clackmannanshire to Stirling (again noting Stirling's importance as a regional centre, especially for healthcare);
- Between Alloa and Dunfermline, and Alloa and Falkirk;
- Between North Lanarkshire and West Lothian (primarily for employment opportunities);
- From Inverclyde to Edinburgh (as a potential aid to Inverclyde regeneration);
- The conflict between aspirations for faster Dundee/Perth – Edinburgh rail services and for more stopping services in Fife;
- The relatively slow rail services between Edinburgh and Dundee, Perth and Stirling in comparison with those from Glasgow; and
- That there are few options for direct sustainable transport access to Edinburgh airport from much of the SEStran region outwith Edinburgh or from neighbouring RTP areas, for which Edinburgh airport is also an important hub.

The Queensferry Crossing and Edinburgh City Bypass are critical connections

The A90 Queensferry Crossing and A720 Edinburgh City Bypass are two key corridors in the region where there is no efficient or effective alternative route. Network resilience is therefore poor, resulting in significant congestion during periods of disruption.

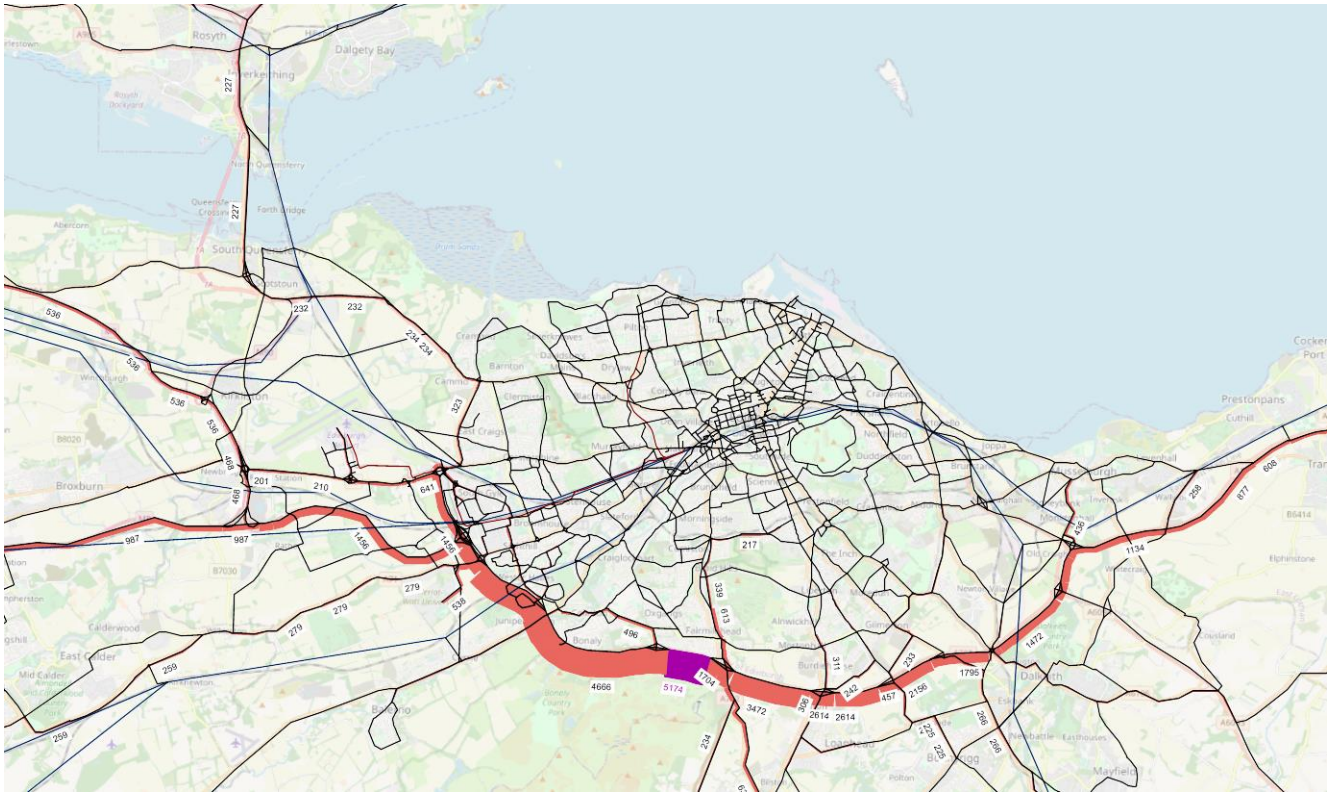
Bus service provision along the A90 is very frequent with a large number of services funnelling towards Edinburgh. By contrast, while the A720 caters for a large number of journeys, there are limited number of large origin / destination pairs. This makes serving these by public transport extremely challenging.

Traffic routeing: Queensferry Crossing Southbound



Southbound Select Link Analysis on Queensferry Crossing (shown in purple) representing 11,890 vehicles (AM 2hr flow).

Traffic routeing: A720 Westbound



Westbound Select Link Analysis on city bypass between Lothianburn and Dreghorn junctions (shown in purple) representing 5,174 vehicles (AM 2hr flow).

Existing public transport provision is primarily radial

As with all almost all regions, the public transport network is primarily radial, focussed on the main centre.

Indicative illustration of Edinburgh bus network

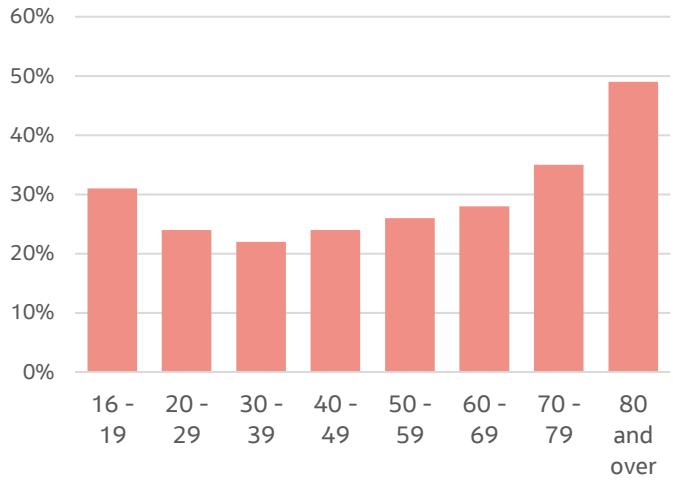
Morning peak public transport mode share to Edinburgh city centre is extremely high, at over 80%, driven by a combination of factors including high car parking charges.

4.2 Inclusiveness

Many people do not travel

Approximately 27% of the population of Scotland does not travel anywhere on any given day[47]. This proportion changes with age; nearly half of Scots aged 80 and over do not travel on any given day:

Proportion of people, by age, who did not travel yesterday



Car ownership rates vary significantly

Car ownership levels in 2017 were relatively similar in most of SEStran's local authority areas at around 600 cars registered per 1000 adult population[48]. There are two outliers: car ownership in the Scottish Borders is a little higher than the regional average at 630 per 1000 adults, but Edinburgh is substantially lower at only just over 400.

[47] Transport and Travel in Scotland 2018 - Scottish Household Survey Travel Diary results https://www.transport.gov.scot/media/45463/tatis-2018-travel-diary-tables.xlsx

[48] Scottish Transport Statistics No 37. 2018 Edition https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf. Table 1.3

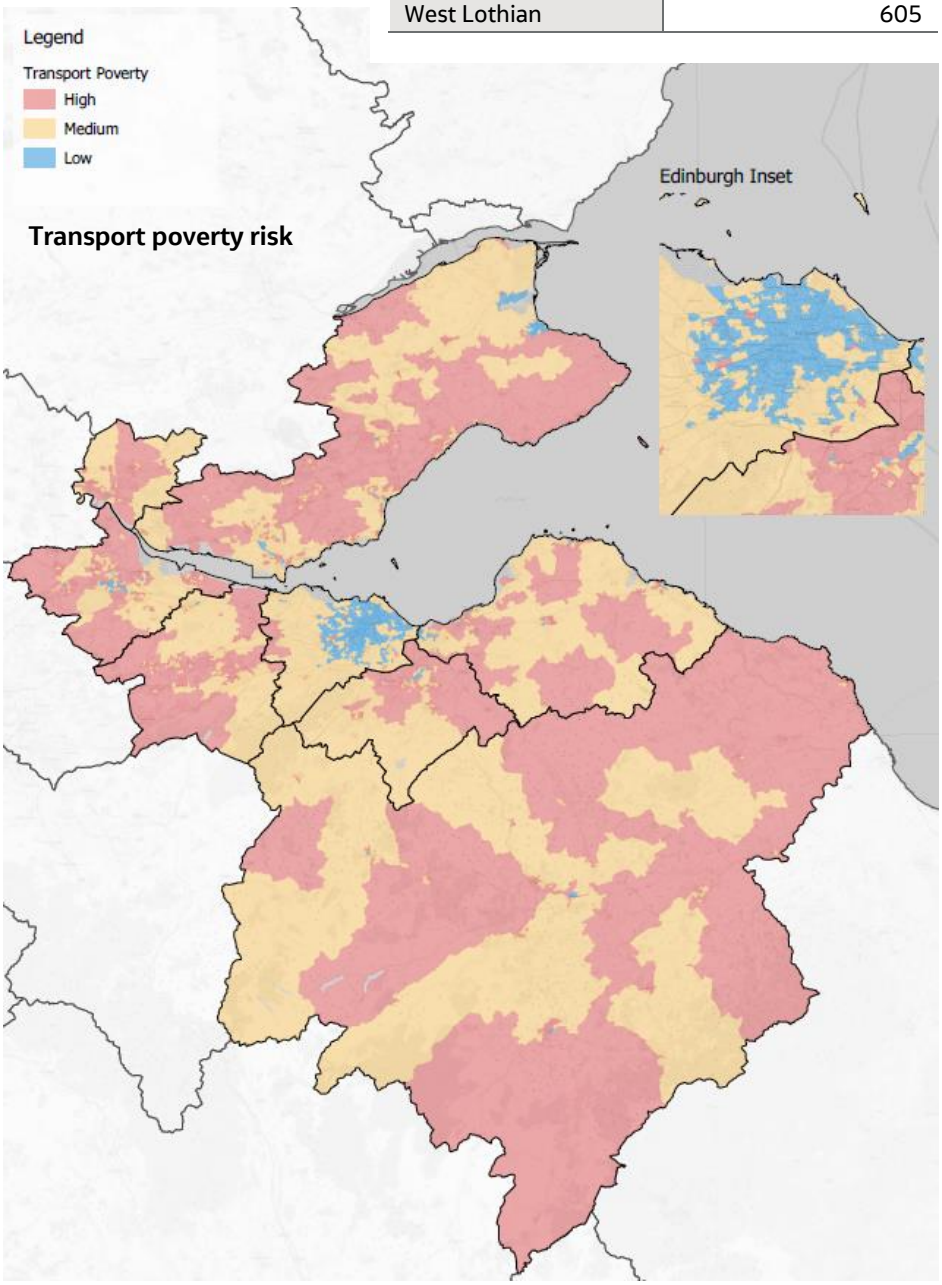
Nationally, only 37% of households whose net annual income was up to £10,000 had one or more cars available for private use, compared with 84% of households whose annual net income were above £25,000[49].

There is also a correlation nationally between car ownership and rurality: 62% of households in large urban areas have cars, compared with 87% in rural areas.

In the UK, car ownership rates are a little below the average of the 28 European Union members (471 per 1,000 inhabitants in the UK, compared to an average of 512)[50], but use of each car is greater (an average of 12,700 km per vehicle per year in the UK, compared to an EU average of 11,900)[51].

Vehicle-km per resident is therefore slightly lower in the UK than the EU average.

Local authority area	Cars registered per 1000 adult population
Clackmannanshire	615
East Lothian	599
Edinburgh, City of	408
Falkirk	608
Fife	590
Midlothian	598
Scottish Borders	630
West Lothian	605



Some people face transport poverty

Sustrans has identified areas where residents are more at risk of transport poverty, based on average levels household income, car availability and access to the public transport network[52]. The assessment shows higher levels of transport poverty in more rural parts of the region, but also pockets elsewhere, including several of the outer suburbs of Edinburgh.

[49] Scottish Transport Statistics No 37. 2018 Edition https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf

[50] Passenger cars in the EU. Eurostat https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Passenger_cars_in_the_EU

[51] Sectoral profile – transport. Odyssee-Mure https://www.odyssee-mure.eu/publications/efficiency-by-sector/transport/distance-travelled-by-car.html

[52] Transport Poverty in Scotland. Sustrans, 2016 https://www.sustrans.org.uk/media/2880/transport_poverty_in_scotland_2016.pdf

4.3 Active travel

Active travel is beneficial

Active travel – walking, cycling and wheeling – "*helps people make healthy living choices and assists in delivering places that are happier, more inclusive and equal, and more prosperous*"[53]. As well as for completing journeys in their own right, active travel is an essential component of most public transport journeys.

The active travel network is extensive but fragmented

There is an extensive active travel network in the SEStran region: parts of the National Cycle Network provide long-distance links, which are supported by local authorities' core paths and networks of paths, footways and streets enabling local connections. But gaps in the network exist which constrain people's journey choices, especially along or across busy roads, and in rural areas.

Network fragmentation is particularly apparent for people trying to make longer and inter-authority active journeys, and to use active modes to connect to public transport. Some stakeholders have also highlighted the often poor level of maintenance of footways and other active travel infrastructure.

Encouraging more people to travel actively more often requires[54]:

- The right **infrastructure** (good quality routes, connecting the right places, associated parking and other elements);
- The right **information**;
- The right **enablers** of change (access to bikes, led walks, etc); and
- The right **attitudes** (active travel seen to be relevant, acceptable).

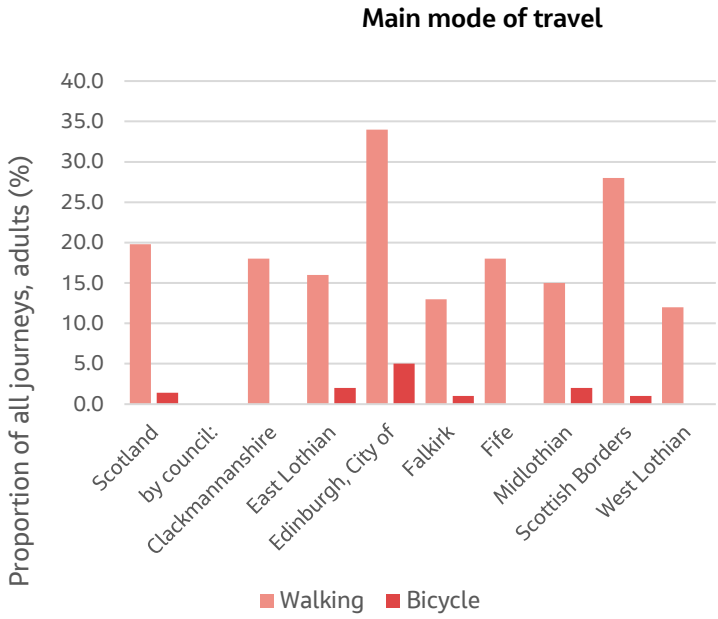
Active travel rates vary across the region

Walking comprises the main mode of 22% of all journeys in the SEStran region; cycling 2%[55].

Rates of active travel vary significantly across the region. Walking is the main mode of travel for 34% of journeys in Edinburgh but only 12% in West Lothian.

In 2018, 24% of SEStran residents did not walk anywhere as a means of transport in the previous week according to a survey[56]; 34% did not walk anywhere for leisure.

People living in deprived communities are much less likely to walk. Only 59% of adults living in the most deprived 20% areas of Scotland walk for more than 30 minutes a month; 77% of adults living in the least deprived areas do so[57].



[53] Scottish Government Active Travel Framework, 2019 https://www.transport.gov.scot/media/46400/sct09190900361.pdf
[54] Adapted from Review of Active Travel Policy Implementation, Transport Scotland, 2016 https://www.transport.gov.scot/publication/review-of-active-travel-policy-implementation/
[55] SHS Travel Diary - Main mode of travel: 2018. Note that sample sizes are modest (~400 respondents) in the region's smaller authorities
[56] Travel & Transport in Scotland, 2018 https://www.transport.gov.scot/publication/transport-and-travel-in-scotland-results-from-the-scottish-household-survey-1/
[57] Scottish Household Survey 2018 https://www.gov.scot/publications/scotlands-people-annual-report-results-2018-scottish-household-survey/pages/8/#f8-10

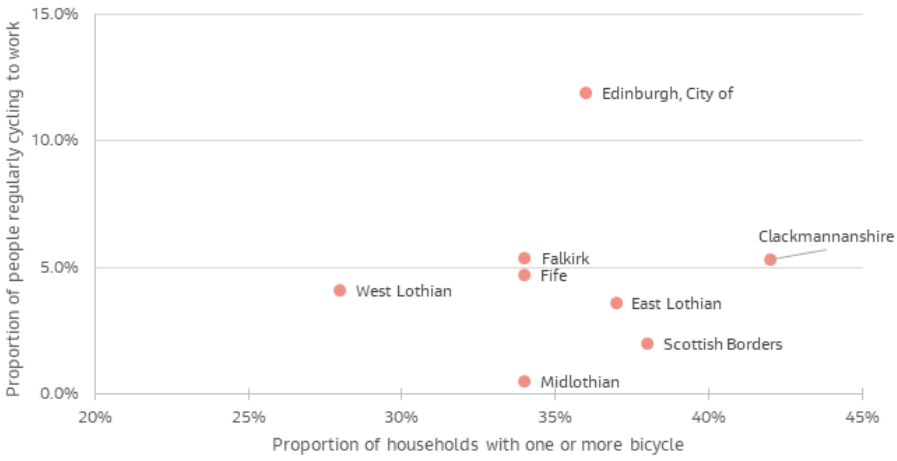
60% of primary school children and 44% of secondary school children in the SEStran region travel actively to school[58]. Rates of active travel to school are, as would be expected, higher in more densely populated areas where journeys tend to be shorter.

65% of households in the SEStran region have no bicycles[59], a rate which varies significantly by area. There is little correlation at a local authority level between cycle ownership and proportion of people cycling to work, indicating that many other factors apart from cycle ownership influence cycle rates.

E-bikes provide new opportunities

Anecdotal evidence suggests that the recent emergence of e-bikes as a more common transport mode is starting to enable more people to cycle, and for longer journeys to be undertaken by bike. E-bikes could therefore have the potential to encourage significantly more journeys to be made by bike, but their potential will not be realised without a coordinated network of consistent longer-distance routes.

Cycle ownership and cycle commuting



4.4 Bus use

Much of the network is radial and usage varies widely

Much of the SEStran region's bus network focusses on radial routes from Edinburgh. Many of the region's settlements therefore have direct links to the capital or other settlements on the same radial corridor, but other connections are often limited.

However, Falkirk, Clackmannanshire and much of Fife have bus networks that are centred on the main settlements there, mostly providing effective local connections.

Many of the region's bus routes serve Edinburgh bus station and/or Princes Street; over 160 buses per hour, per direction, use Princes Street on a typical weekday daytime. This provides good access to the city centre and easy interchange but creates bus congestion so reduces journey time competitiveness and timetable reliability, not only for city services but for those serving much of the region. Evening peak congestion is particularly prevalent.

[58] Hands-up Survey Scotland, 2018 data https://www.sustrans.org.uk/our-blog/projects/2019/scotland/hands-up-scotland-survey/

[59] Scottish Household Survey https://usmart.io/#/org/cyclingscotland/discovery/discovery-view-detail/e37ae792-6b5c-4a3f-9008-f550cac033fb

Bus Use

	Journeys with bus as main mode (%)[1]	People using a bus at least weekly (%)[1]
Clackmannanshire	2.5	31.9
East Lothian	5.9	45.9
Edinburgh, City of	18.4	82.4
Falkirk	6.9	39.5
Fife	6.1	39.5
Midlothian	9.7	56.6
Scottish Borders	5.3	31.8
West Lothian	4.3	40.8
Scotland	8.2	42.9

There are significant differences in the proportion of people that use buses between SEStran's authority areas:

Edinburgh has a much higher proportion of journeys being made by bus than any other Scottish authority (the next highest being Glasgow with 13.3%). Bus use in Midlothian is substantially higher than any of the other SEStran authorities.

But access to bus services varies substantially within local authority areas. The Scottish Access to Bus Indicator shows a strong correlation between rurality and poor bus access.

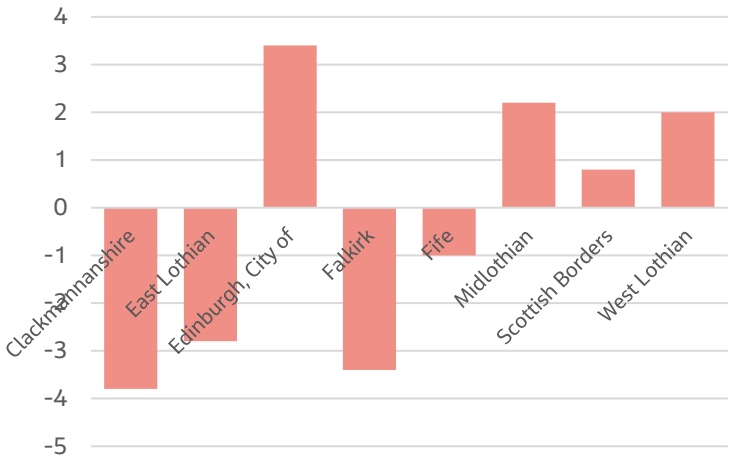
Stakeholders engaged during the preparation of this report noted the particular challenging of serving the region's small and medium-sized towns with attractive bus services.

Overall, bus use is falling

The overall number of bus journeys made in the region fell by 8% from 2006/07 to 2016/17[60].

Notwithstanding that, recent years have seen growth in the proportion of regular bus users in some areas, and substantial growth on some corridors that have benefited from significant investment by operators to increase capacity and service quality. But there has been a decline in regular users in other areas and there appears to be a correlation between these changes and the number of users, suggesting that more popular bus services have become more so, but that the least used are even less attractive.

Change in proportion of people using a bus four or more days per week 2003-2017 (%)



Some people are excluded from bus use

Fares paid depend on the journey being undertaken and relevant ticket type, but nationally bus fares increased by 47% (11% in real terms) between 2007 and 2017[61].

Research in England[62] has suggested that low income families are most affected by fares increases, especially as they are often unable to benefit from discounted offers (such as season tickets).

Although all buses operating in the region are compliant with the Disability Discrimination Act, and therefore accessible for most people, bus stop infrastructure is a barrier to use for some people: not all stops have hard-

[60] Scottish Transport Statistics https://www.transport.gov.scot/publication/scottish-transport-statistics-no-36-2017-edition/chapter-2-bus-and-coach-travel/#Table2.2b

[61] Scottish Transport Statistics https://www.transport.gov.scot/publication/scottish-transport-statistics-no-36-2017-edition/chapter-2-bus-and-coach-travel/#Table2.5

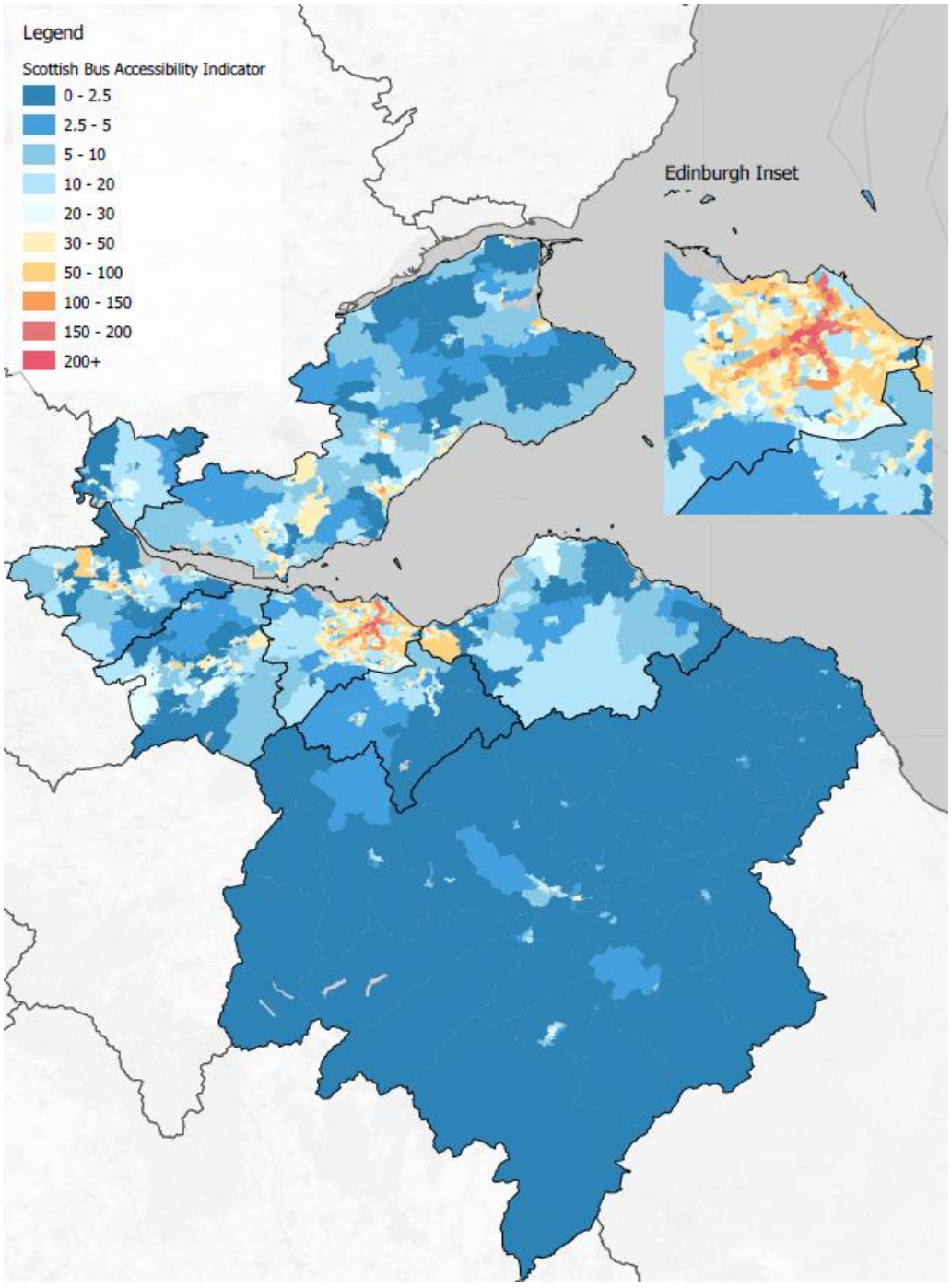
[62] The effect of bus fare increases on low income families. PTEG http://www.urbantransportgroup.org/system/files/Effectofbusfareincreasesonlowincomefamilies.pdf

standing or raised kerbs to enable access. There is also no consistent dataset of bus stop infrastructure availability, so people cannot check their ability to get on and off buses at their chosen stops before their journey.

The bus network is not entirely financially sustainable

The bus network in Edinburgh and on some of the main corridors to it appears to be financially sustainable, but operators in some of the less densely populated parts of the region have been facing declining patronage and increased operating costs. This has led to increased pressures on local authorities' supported bus service budgets, through increased tender prices and/or deregistration of some previously-commercial services.

Accessibility to Bus (https://statistics.gov.scot/data/bus-accessibility)



Research for Greener Journeys highlighted a 'spiral of decline' in bus use, whereby increasing congestion leads to increased operating costs as well as less attractive journeys, pushing up prices and leading to fewer bus journeys. Its case study of Edinburgh states that morning peak and off-peak bus journey times increased by 21% and 19% respectively between 1986 and 2016, and that even off-peak average bus speeds in the city are less than 10mph[63].

[63] The Impact of Bus Passengers on Congestion, Greener Journeys,

Community and demand-responsive transport offer important links

Community and demand-responsive transport providers offer an effective and flexible service for some journeys in the region that are unable (due to personal circumstances or lack of other services) to be made by scheduled public transport. There are many organisations and services operating in the region. All are, however, available only in certain geographic areas and/or to specific groups of users, so there are (as in all regions) significant gaps in provision. As a result, some people have good access to such provision, whereas others are excluded from it, either because of a lack of services in their area or because services do not meet their needs.

MaaS and related technological advances could enable easier booking and payment of these services, so increasing demand for their use.

SEStran is currently investigating the current base levels and the potential for demand-responsive transport to play a greater, and more financially sustainable, role in meeting the region's transport needs.

Integration is not always strong

Several stakeholders have noted that the public transport network is not always well integrated, citing challenges of timetables not enabling easy connections (especially between buses and trains) and of inter-operator ticketing challenges.

4.5 Train / tram

Rail patronage continues to increase

Edinburgh is the busiest long-distance destination in Scotland and both East and West Coast rail lines provide frequent cross-border connections. Until relatively recently, the regional network in south east Scotland was sparse in coverage, with low service frequencies common, particularly when compared with the West of Scotland. The successful opening of the Bathgate line and subsequent increase in service frequency on the Fife Circle helped stimulate passenger growth through the 1990's. Completion of Airdrie-Bathgate line and the Borders Railway have driven the further expansion of network and passenger growth continues.

However, 75% of the population of the SEStran region currently lives more than 1.6km from a rail station[64].

There is a need for more network capacity and connectivity

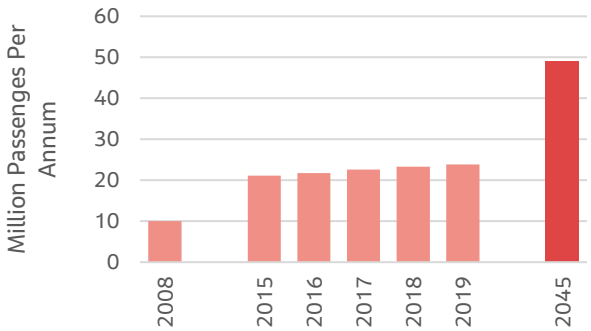
Additional passenger platforms 5 and 6 at Waverley station were completed during 2009. Nevertheless, further major investment will be required to deliver capacity to cater for projected passenger numbers to 2045, including additional through platforms.

[64] TRACC analysis undertaken by Jacobs, January 2020

Forecast Rail Loadings 2024 [65]

Location	Line	Forecast 2024
East of Uphall	Bathgate	86
West of Edinburgh Park	Bathgate, Falkirk	68
Brunstane to Newcraighall	Borders Railway	96
Newcraighall to Shawfair	Borders Railway	80
Eskbank to Newtongrange	Borders Railway	82
East of Linlithgow	Falkirk	65
South Gyle to Dalmeny	Fife	104
Forth Bridge	Fife	109
West of Musselburgh	North Berwick, ECML	107
Wester Hailes to Curriehill	Shotts	89

Waverley Station Patronage [66]



Currently, nearly all local services terminate at Waverley. Until recently, many peak North Berwick services terminated at Haymarket; similarly, a number of Borders Railway services continued onto Fife. Many of these through services have been withdrawn to improve service reliability but at the expense of wider connectivity. This example effectively illustrates the on-going conflicts between the aspirations of the rail network to facilitate sustainable long-distance connectivity and to meet local demands for travel.

Proposed investment, outlined in Section 5 below, could help support the reintroduction of through services, creating new origin / destination combinations across the region. West Edinburgh, in particular, could benefit with a greater range of services from the south and east serving Edinburgh Park and Gateway stations.

Tram completion to Newhaven will drive significant passenger growth

Edinburgh trams commenced operation in May 2014. Patronage has grown year on year to a total of 7.3 million in 2019. On completion of trams to Newhaven in 2023, patronage is forecast to increase to 18 million per annum. A significant bus network review will be required to maximise the benefits of the extension and to deliver improved integration across modes.

4.6 More sustainable car use

Park & Ride has been successful where public transport provision is good, but many sites are now at capacity

Encouraging more sustainable car use is a key theme across all local authority transport strategies. A key intervention has been the implementation of Park & Ride across the SEStran area, which not only helps reduce unnecessary car mileage but can help reinforce public transport services.

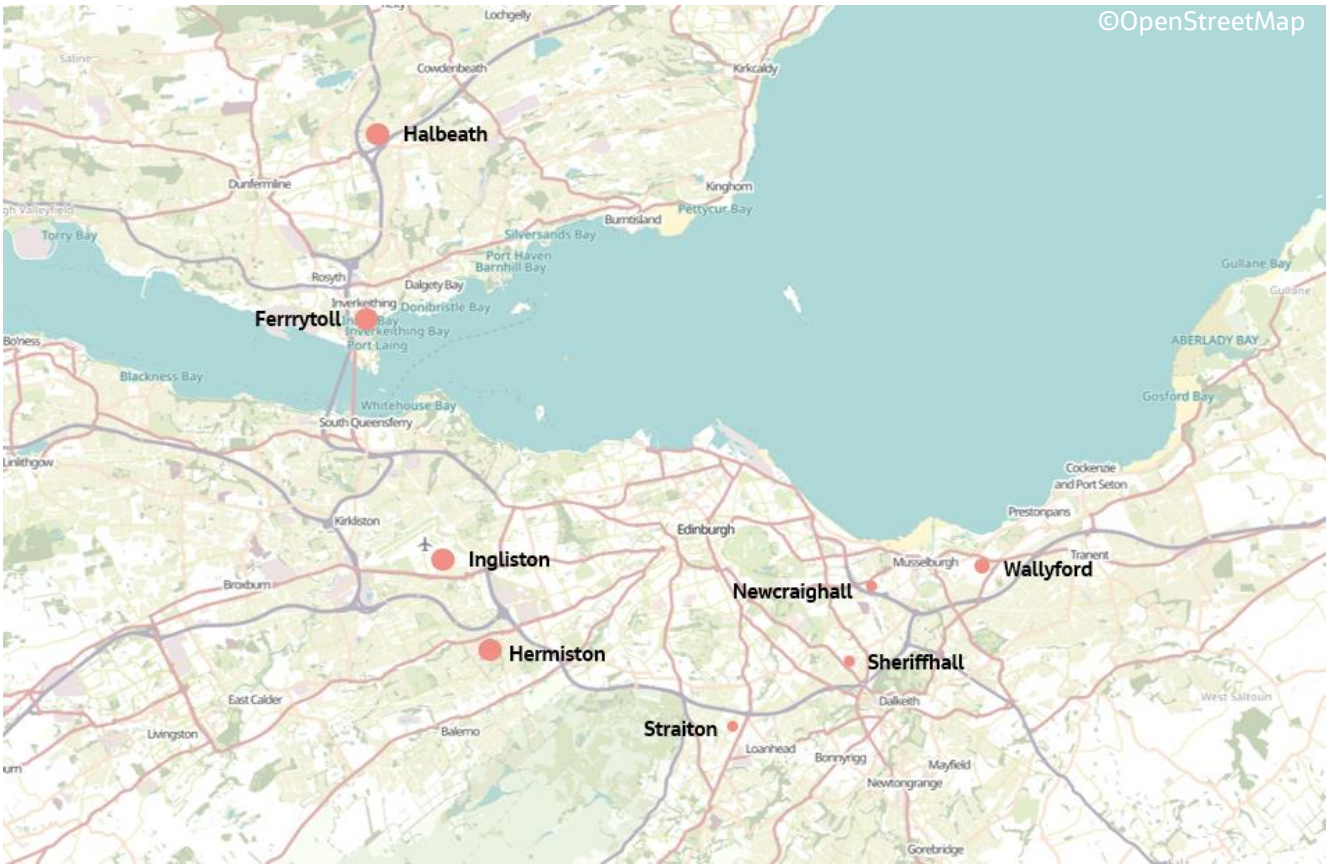
Park & ride sites to the north and west of Edinburgh have been particularly successful. A 1,000-space bus-based site was opened at Halbeath in 2013 and this is now consistently full on weekdays. Sites at Straiton and Sheriffhall have been less successful. Sheriffhall lies inside the bypass and so public transport services do not help bypass local congestion. Straiton is no longer served by a direct bus service and journey times by adjacent bus routes are slow.

Rail-based park & ride is important for many movements, most notably from Inverkeithing and East Lothian stations to Edinburgh, and West Lothian stations to both Edinburgh and Glasgow.

[65] SESplan Cross Boundary and Land Use Appraisal – Final (Transport Scotland, April 2017).
[66] Network Rail Waverley Station Masterplan Consultation, 2019

Further expansion of park & ride services may have the potential to facilitate further sustainable access to Edinburgh, and also to Dundee from Fife.

Current main bus-based park & ride sites



Electric vehicles and car clubs are helping people adopt more sustainable travel choices

Car will remain the mode of choice for many journeys in the region for the foreseeable future, but recent activity is helping support more sustainable choices.

Edinburgh's City Car Club is the largest in Scotland; it currently has over 200 vehicles available for short-term rental. Car clubs "*facilitate lower levels of car ownership and encourage travel by public transport, walking and cycling [and] improve local air quality by using more environmentally friendly cars*" and their usage in Scotland is increasing quickly (up 40% in the year to 2018/19)[67].

Electric vehicle use in Scotland is low but increasing rapidly: the proportion of adults reporting that they own an electric car has increased from 0.3% in 2016 to 1.8% in 2018[68]. Action by some SEStran local authorities to increase the availability of charge points and promote electric vehicle use has helped contribute to this.

Switching journeys from combustion engine cars to electric can reduce local air pollution and carbon emissions, though does nothing to reduce congestion or the ill-effects of sedentary travel choices.

Stakeholder engagement has identified that some confusion remains around electric vehicle charging; not only amongst chargers for individual vehicles but the current uncertainty about the relative responsibilities of public and private sectors for the provision of public chargers. This is felt to be hampering electric vehicle uptake.

[67] Car Club Annual Survey for Scotland 2018/19, CoMoUK https://como.org.uk/wp-content/uploads/2019/04/Scottish-Car-Club-Survey-summary-2018-19-FINAL.pdf

[68] Transport and Travel in Scotland, 2018, Figure 27. https://www.transport.gov.scot/publication/transport-and-travel-in-scotland-results-from-the-scottish-household-survey-1/5-motor-vehicles-traffic-and-driving/

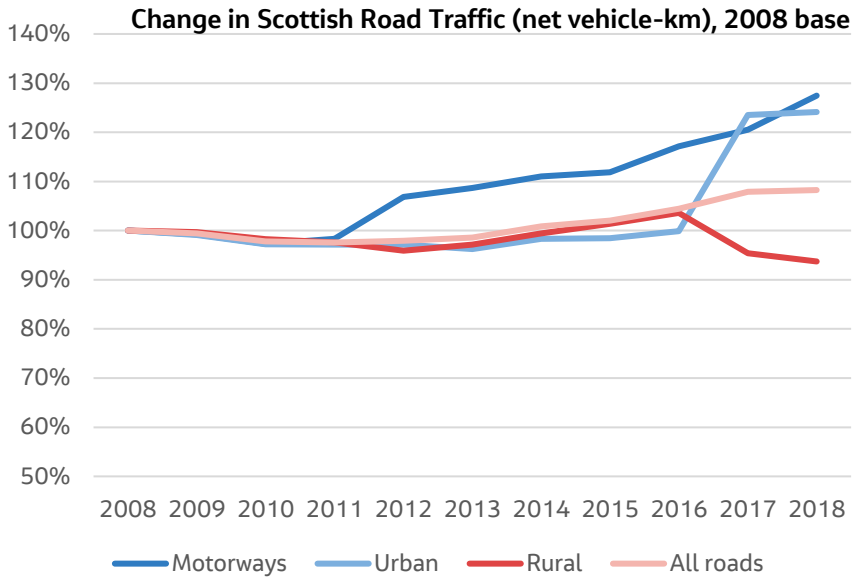
Some people have raised concerns about the social equity impact of widespread promotion of low-emission vehicles[69]; that by doing so, older combustion engine vehicles (which could be excluded from entering low emission zones) could be the only ones that people who are car dependent but on low incomes could afford.

Various initiatives are underway to seek increased use of shared car use, but these are mostly of relatively small scale and are having limited impact at a regional level.

4.7 Road network operation

Road traffic levels have been increasing

Road traffic levels in Scotland have been increasing significantly in recent years. After staying almost unchanged from 2008 to 2014, there has subsequently been an overall increase of over 8% in total vehicle-km. The net change is driven entirely by increases on in traffic on the motorway network and in urban areas; rural traffic levels are reported to have declined.



Stakeholders have noted the increasing duration of peak times, with traffic congestion now apparent for more hours each day.

Limited route choice means a number of strategic links are critical to the performance of the network

The geography of the region means that a number of regional road links are critical to the smooth operation of the road network.

The Queensferry Crossing is the primary link from Fife to Edinburgh and Mid and East Lothian. The Kincardine and Clackmannanshire Bridges provide connectivity across the Forth in the west of the Region. Closures, due to accidents or weather, of any of these key links can quickly result in widespread impacts across the region, as witnessed in recent years by lengthy closures of both the Forth Road Bridge (before the completion of the Queensferry Crossing) and the Queensferry Crossing because of ice hazards.

The Edinburgh City Bypass is the only dual carriageway link between the east and west of the SEStran area. Peak time congestion is common and, again, any incident can quickly result in long delays, often with traffic diverting into the local communities of Dalkeith, Colinton and Fairmilehead with consequent congestion and air quality impacts.

[69] Including in responses to the Scottish Government's consultation on Low Emission Zone proposals https://www.transport.gov.scot/media/41828/analysis-report-february-2018-consultation-on-building-scotland-s-low-emission-zones.pdf

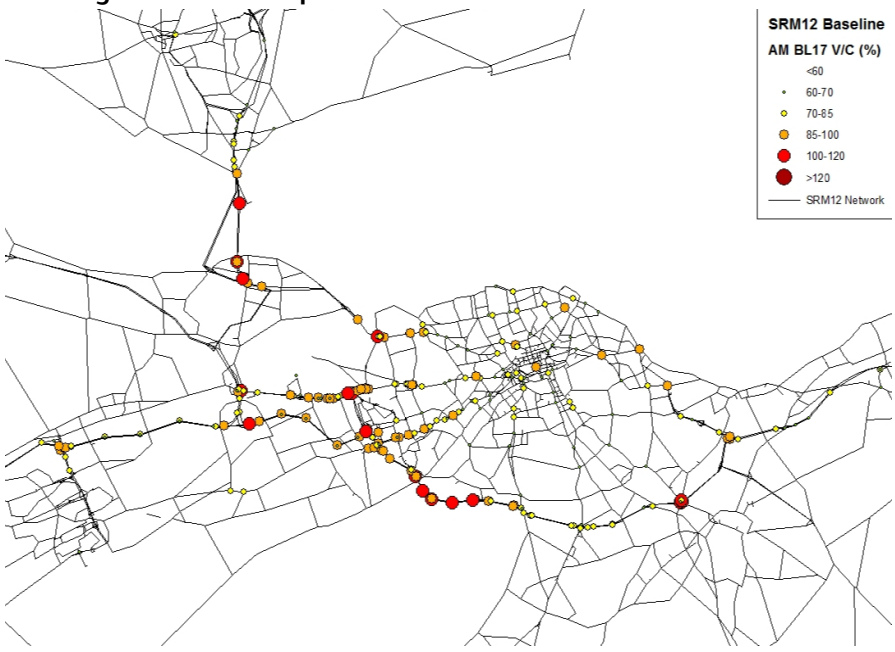
Journey time reliability is poor

The region's strategic road network offers very limited route choice; in part as a result journey time reliability is poor on many key routes.

The SEStran Regional Model highlights significant base year congestion (2017) in some locations on the strategic road network in both morning and evening peak periods. Key hotspots are shown below and include:

- The majority of the western section of the A720 City Bypass;
- Hermiston (M8) and Sheriffhall (A720) roundabouts;
- The Queensferry Crossing north and south approaches; and
- The A8 corridor in the vicinity of Edinburgh Airport.

Strategic Network Hotspots



It is notable that several of these key hotspots are on the transport corridors that serve some of the major development proposals in the region.

The City Bypass can be a major barrier to north / south movement across the corridor. Proposed grade separation of Sheriffhall Roundabout will improve connectivity to and from Midlothian but in the meantime significant delays result. Residents in East Lothian are also directly impacted by the congestion at this roundabout.

Within Edinburgh, the A90 Queensferry Road is by far the busiest corridor, carrying twice the volume of the A8. Public transport reliability is poor, with long delays in both morning and evening peaks. Traffic volumes have changed over many years with the majority of traffic now heading towards Telford Road and north Edinburgh, rather than the city centre. This reflects the poor level of public transport provision to the waterfront area, from locations Fife and West Lothian, compared with the city centre.

INRIX data[70] highlights that traffic speeds are generally lowest within Edinburgh - typically less than 25kph during the peak hours and less than10kph within the city centre.

A number of key routes experience highly variable journey times. In the morning, the most variable routes are shown below (together with the minimum observed speed):

- M8 eastbound (30kph);
- A720 City of Edinburgh Bypass westbound to Lothianburn junction (20kph),
- M9 southbound to M8 Junction 2 (30kph),
- A70 eastbound on approach to Gillespie Crossroads (10kph), and
- A701 northbound towards the A720 (10kph) and A702 northbound on approach to the A720 (10kph).

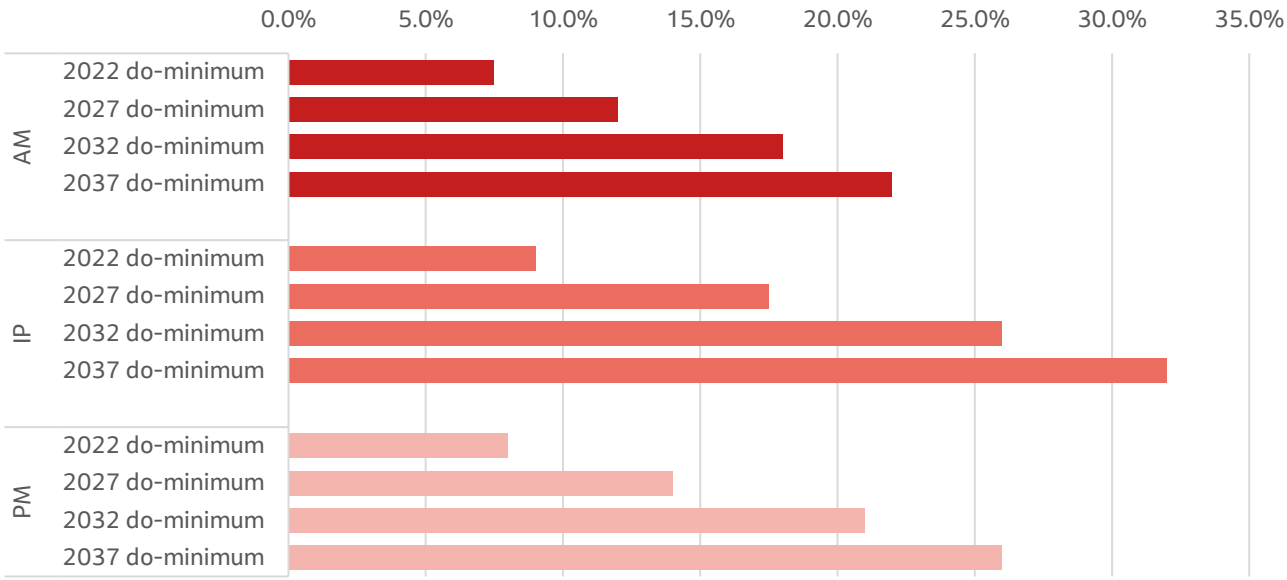
[70] INRIX collects, analyses and publishes a range of data related to transport system usage: https://inrix.com/about/

In the evening peak, the slowest speeds are observed on:

- the M8 westbound on approach to Junction 2 (10kph)
- Queensferry crossing northbound (30kph)
- A8 westbound on approach to Newbridge (20kph), and
- A702 both eastbound and westbound in the vicinity of Hermiston Gait and Baberton junctions (10kph and 20 kph respectively).

Traffic volumes in the region are forecast to continue to grow significantly in coming years in both peak and interpeak periods:

Forecast change in vehicle kms



Change in vehicle kilometres within the Edinburgh and South East Scotland Regions, TMfS:14

There is a need to prioritise public transport – but available road space is a constraint

Buses being delayed with general traffic is a significant barrier to efficient public transport operations. A number of major corridors would benefit from significant investment in priority measures in order to improve the competitiveness of bus over car.

A key consideration is how the A90 corridor can be developed, making best use of the Forth Road Bridge (which is a strategic asset) and the south Fife Park & Ride network, while maintaining an adequate level of general traffic capacity into north west Edinburgh.

The A8/A89 corridor faces similar challenges, with private vehicle and public transport movements to and from West Lothian and beyond, competing for limited road space. Major constraints include Newbridge Roundabout and Gogar and Maybury junctions. Airport growth and future developments along the corridor will only increase demand. City Deal investment is being used to develop and implement the West Edinburgh Transport Improvement Programme (WETIP). This project is promoting improved bus priority along the A8/A89 corridor together with new Park & Ride facilities at Kilpunt. Additional Park & Ride complements existing facilities at Ingliston (A8) which, alongside Hermiston (A71), commonly operates at capacity. A scheme to expand Hermiston is also in development.

Historically, the majority of Edinburgh's traffic problems were to the west of the city but significant housing development in Mid and East Lothian now means that traffic congestion to the south and east of the city is similar to the west, with consequent delays to public transport.

Morning peak bus journey times from Midlothian are especially slow, with bus delays occurring at a number of key junctions than in Edinburgh. Sheriffhall Roundabout is a major constraint and many bus services are routed via the A772 to avoid this. Nevertheless, significant delays occur at the A7 / Lasswade Road junction, delaying journeys from Dalkeith. Services from Bonnyrigg and Lasswade are delayed at the Melville Dykes / Hillhead junction and through Gilmerton Crossroads towards the city centre. Similarly, bus services from East Lothian are commonly delayed on the A1 at The Jewel and Milton Road East, and there are no express services operating on the Cockenzie/Prestonpans/Musselburgh corridor. Addressing congestion in Mid and East Lothian could enable a wider variety of express bus services to operate, helping deliver a network similar to that already successfully operating from Fife.

The recent announcement by the Scottish Government of funding for bus priority measures provides an opportunity to alleviate congestion problems and enhance public transport journey reliability across the region.

Roads are getting safer, but injuries and fatalities remain a concern

The region's roads have been getting safer in recent decades; the total number of people killed or seriously injured in road crashes in the region fell by 47% from 1996 to 2018.

But 494 people were killed or seriously injured on the region's roads in 2018. 70 of whom were children. Residents of more deprived communities are significantly more likely to be killed or injured than the average[71].

4.8 Passenger journeys: mode share

The proportion of journeys by unsustainable modes is increasing

Despite many projects and initiatives intended to encourage travel by more sustainable modes, recent trends show they are not having the desired effect at a regional level.

The proportion of all passenger journeys in the region that are made by car/taxi has increased from 62.2% in 2008 to 64.0% in 2018.

Proportion of journeys by main mode, SEStran region	2008	2018
Driver Car/Van	48.5%	50.0%
Walking	24.6%	22.0%
Passenger Car/Van	12.0%	12.0%
Bus	10.8%	10.0%
Rail	1.3%	2.0%
Bicycle	1.0%	2.0%
Taxi/Minicab	0.7%	1.0%
Other	1.0%	1.0%

Although the proportions of journeys by bicycle and by rail have nearly doubled, both were from a low base. Overall, the proportion of journeys by public transport has remained the same (at 12%) and the proportion by active modes has fallen (from 25.6% to 24.0%).

[71] Trends in pedestrian and cyclist road casualties in Scotland. GCPH, 2015 https://www.gcph.co.uk/assets/0000/5206/Pedestrian_and_cyclist_casualties_analysis_FINAL.pdf

4.9 Air travel and airport access

Edinburgh Airport is the only location in the region offering scheduled passenger flights.

Demand for air travel is increasing

The number of passengers using Edinburgh Airport is increasing rapidly: up 57% between 2011 and 2019 (to 14.5M journeys per annum)[72]. Nearly two-thirds of passengers used international flights.

Edinburgh is Scotland's busiest airport in terms of passengers carried, and serves 157 destinations[73]. Around 85% of overseas tourists to Scotland arrive by air[74].

In 2013, 60% of all passenger journeys through the airport had a final origin/destination in the Edinburgh and Lothians area, 15% elsewhere in the SEStran region, and 25% outwith the region[75].

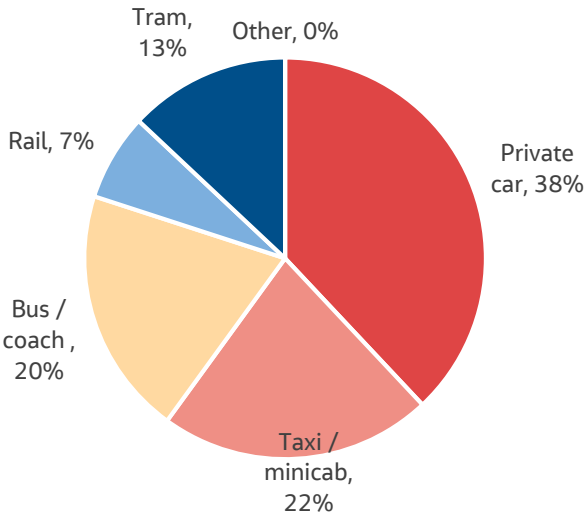
Edinburgh airport is a major employment hub

Five thousand people work at the airport[76].

Car remains the dominant surface access mode

Edinburgh Airport has a much higher use of public transport for surface access than other large Scottish airports (40%, compared to 12% at Glasgow and 16% at Aberdeen)[77]. However, 60% of passengers arrive at/depart from Edinburgh airport by car or taxi.

Main mode of surface access to Edinburgh Airport, 2018



4.10 Freight

The region's transport network is essential for efficient freight movements

The SEStran regional transport network provides essential links for its residents and business to access or move the products they need, but also for the rest of Scotland, providing road and rail connections between England and much of northern Scotland, and Scotland's most important airfreight terminal (Edinburgh airport) and most important freight port (Grangemouth).

Freight transport is largely a private sector activity, and road dominates

The public sector has, in recent decades, had relatively little input or influence in the freight transport sector. In large part because of significant competition, the industry operates extremely efficiently to minimise its own financial costs, but its incentives to minimise other externalities such as pollution and congestion are limited. This desire for short-term efficiency and to maintain the potential to adapt as demand changes pushes much freight operation to road.

[72] 2011 data: Scottish Transport Statistics No 35: 2016 Edition https://www.transport.gov.scot/publication/scottish-transport-statistics-no-35-2016-edition/sct01171871341-11/ 2019 data: Edinburgh Airport https://www.edinburghairport.com/about-us/media-centre/press-releases/a-record-year

[73] As of 10 February 2020: https://www.edinburghairport.com/about-us/facts-and-figures

[74] Transporting Scotland's Trade, Transport Scotland, 2018 https://www.transport.gov.scot/media/43701/transporting-scotlands-trade.pdf

[75] Scottish Transport Statistics No 35: 2016 Edition https://www.transport.gov.scot/publication/scottish-transport-statistics-no-35-2016-edition/sct01171871341-11/

[76] Edinburgh Airport https://www.edinburghairport.com/about-us/facts-and-figures

[77] Civil Aviation Authority, 2018 Passenger survey report https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Consumer-research/Departing-passenger-survey/2018-Passenger-survey-report/

Largely because of this, road is the dominant mode for freight tonnes lifted in Scotland, moving 85% of transported freight[78].

	Freight – tonnes lifted in Scotland (2018)	Freight – tonnes-km lifted in Scotland (2018)
Road	123 million	14.6 billion
Coastal shipping	14 million	8.7 billion
Rail (2012/13)	8 million	2.6 billion

Most freight movements are relatively local (90% of tonnes lifted by road freight in Scotland remain in Scotland)[79]. Rail and ship are more likely to be used for longer-distance and international journeys, so carry a much greater proportion of total tonne-km moved.

There has been a large growth in local deliveries

There has been a major growth in goods vehicle traffic in recent years, largely resulting from internet shopping and home deliveries. Optimisation of logistics networks has resulted in a polarisation of fleets with large HGVs serving major distribution centres close to the motorway network. This has resulted in fewer HGVs in towns and cities but many more local LGV deliveries than previously observed.

Across Scotland as a whole, goods vehicle movements (vehicle-km) increased by nearly 20% between 2007 and 2017 with growth entirely due to more light goods vehicle movements; they increased by over 30% in that period, whilst heavy goods vehicle-km fell by 7%.

Consolidation centres can help reduce vehicle mileage, contributing to meeting climate and air quality targets , but existing networks are optimised for individual operators. Competition and just in time requirements make it difficult to combine networks.

The largest distribution centres are currently too far from main centres of demand to be ideally served by electric vehicles. Nevertheless, there is the potential to serve smaller sites, closer to the main centres, linked to consolidation centres above. Improvements in battery technology will continue to make electric vehicle LGVs more attractive. In the meantime, there is already a significant greening of the LGV / HGV fleet mix.

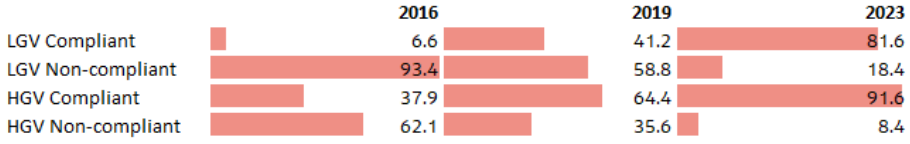
The road network is not optimised and there is no freight routing strategy

Network congestion is a key issue, particularly at the A720 Sheriffhall, M8 Hermiston, M9 Newbridge and on the approaches to the Queensferry Crossing. This impacts on delivery schedules and operational efficiency. There is no direct dual carriageway link from between the SEStran region and England; this means that there is no single 'best' route between the two. Freight therefore uses all of the A1, A697 and A68 corridors when an upgraded A1 could help remove significant strategic freight from other routes in the Scottish Borders and Northumberland.

Generally, there is no freight routing strategy across the region; wayfinding within Edinburgh especially poor.

The commercial vehicle fleet is rapidly moving towards compliance with the latest standards for exhaust emissions, but compliance by heavy vehicles is predicted to be better than that of lighter goods vehicles.

LGV / HGV diesel Euro 6 compliance



[78] Scottish Transport Statistics 2018. https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf Movements by pipeline are excluded

[79] Scottish Transport Statistics 2018 https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/chapter-3-road-freight/

Rail can help remove large numbers of HGVs from the road network

A typical freight train can remove up to 50 HGV journeys from the roads. Existing rail freight traffic in the region includes cement, intermodal containers, waste, oil and petrochemicals, but more could be moved. The Scottish Government has been supporting increased rail freight movements in recent years through its Freight Facilities Grant scheme. A lack of capacity on parts of the region's rail network hampers the potential for growth in railfreight flows, however, and competition between passenger and freight services for scarce capacity is common.

Recently completed projected have improved network capability, including the East Coast Main Line Gauge Clearance scheme (to W12 - the largest on the UK network) and electrification of the line to Grangemouth intermodal rail terminal. Nevertheless, no regular electric service yet operates to Grangemouth and, more generally, further marketing and support is required to encourage the growth of inter-modal services and rail freight in the SEStran area.

Shipping is important in terms of economic benefit

Forth Ports, who operate Grangemouth, Leith and Rosyth ports amongst others, are by far Scotland's largest in terms of (non roll-on, roll-off) freight tonnage. In 2018, over 25,000 tonnes of cargo was handled at Forth Ports[80].

The smooth operation of the region's ports is important both in terms of economic benefits (additional jobs and income to the region) and environmental benefits as less lorry miles are carried out if goods are shipped to a port closer to their destination.

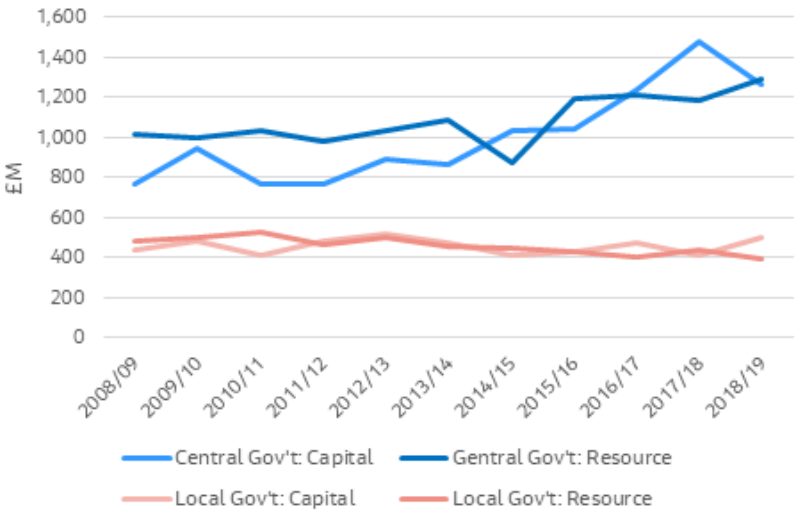
4.11 Transport expenditure

Central government expenditure on transport has been increasing, local government expenditure has not

Scottish Government expenditure on transport has generally been increasing in recent years, with capital and revenue expenditure growing by 64% and 26% respectively between 2008/09 and 2018/19[81].

In the same period, capital expenditure on transport by Scottish local authorities has grown by 12%, but their revenue expenditure has fallen by nearly 20%.

Government expenditure on transport: Scotland



[80] 2018 Port Freight Annual Statistics, Department for Transport https://www.gov.uk/government/statistics/port-freight-annual-statistics-2018-final-figures

[81] Transport expenditure. DfT 2019 https://www.gov.uk/government/statistical-data-sets/transport-expenditure-tsgb13

Driving has become relatively cheaper

Between 2007 and 2017:

- The UK Retail Prices Index rose by 32%;
- Motoring costs rose by 30%;
- Rail fares rose by 51%;
- Bus/coach fares rose by 69%[82].

Public transport has therefore become substantially more expensive than driving.

Transport is a major part of household spending

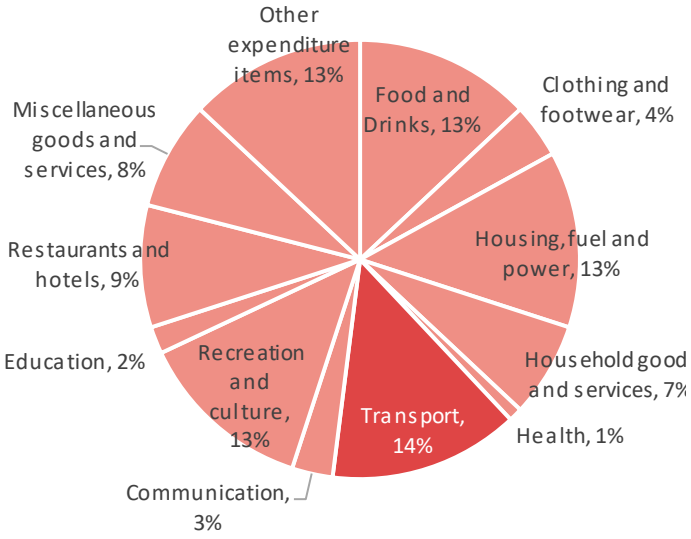
The average Scottish household spends £68.20 per week on transport (all transport costs combined), 14% of total household expenditure[83]. Transport forms the largest single item on average[84]:

Total expenditure on transport by Scottish householders is £8.7bn, 2.5 times the £3.4bn expenditure by Government in Scotland.

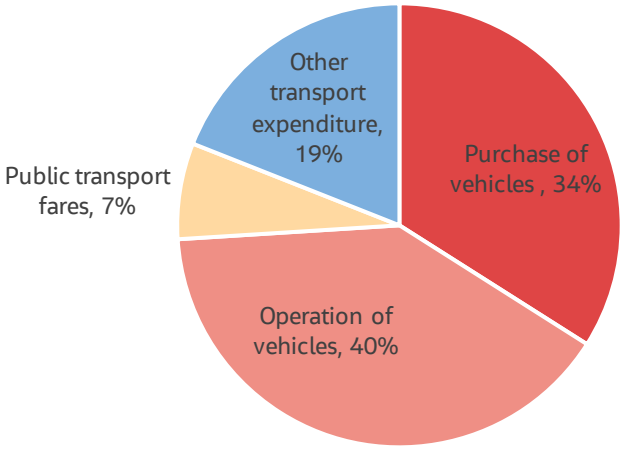
Almost three-quarters of average household transport expenditure is on motoring costs; only 7% on public transport.

Expenditure on transport as a proportion of the total varies across the region. There is a strong correlation between rurality and increased transport expenditure.

Transport as a proportion of all household expenditure



Proportion of household transport expenditure

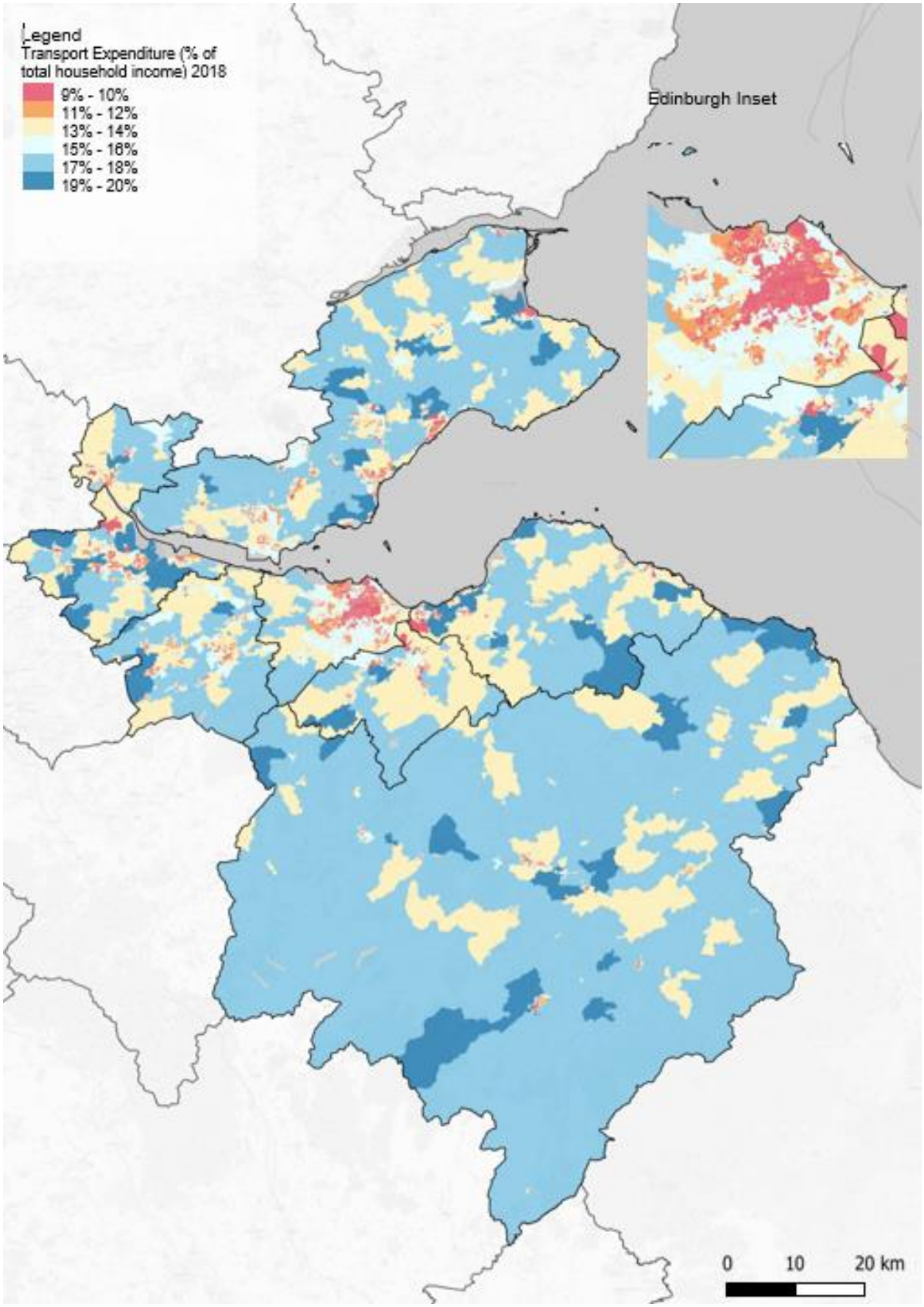


[82] Scottish Transport Statistics. https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf Table 10.7

[83] Scottish Transport Statistics. https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf Table 10.8

[84] ONS Components of Household Expenditure, 2018 https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/componentsofhouseholdexpenditureuktablea1

Proportion of household spend on transport

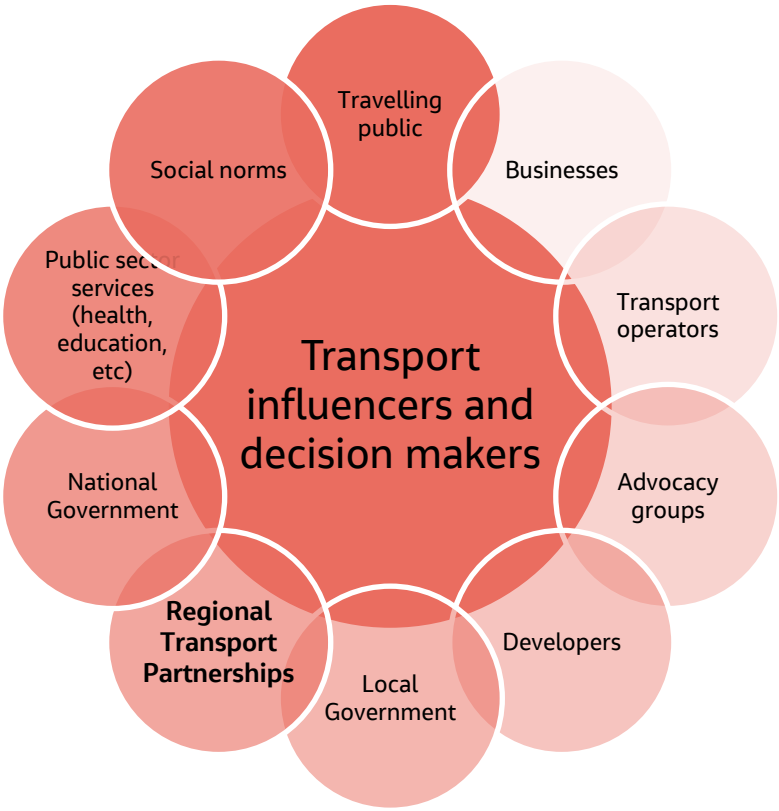


4.12 Transport governance

Partnership working and leadership is required

The figure below illustrates the main influencers of transport decisions in the region[85]. The public sector can influence decisions made by all the other players, but (largely) only indirectly. This emphasises the need for a coordinated approach to the work of government agencies, both for scheme delivery and for influencing other regional players and the travelling public in order to achieve the best outcomes for regional transport.

The RTS must sit within this context, co-ordinating the work of other organisations to ensure that the best regional outcomes are delivered, alongside those that meet local, national, commercial or personal objectives.



Furthermore, there is a long lead-time between the initial consideration of many transport system changes and their implementation, especially if changes to infrastructure or regulation are required. This creates a need for effective, consistent advocacy of change if the right solutions are to be delivered.

Partly as a result, any transformative transport proposals (especially those that result in reallocation of roadspace or introduction of new user charges) commonly require significant political capital to be expended to enable their introduction. UK and international experience shows that many such transformations rely on the drive of one or more high-profile individuals or organisations that are willing to lead those changes and help overcome resistance to them.

There is appetite for stronger regional transport coordination

Growth in the SEStran region is likely to continue to be rapid, but successful economic growth is increasingly reliant upon a more uniform quality of life being available across all communities, alongside wider opportunities for travel, work and leisure.

Stakeholder engagement undertaken during the preparation of this report has highlighted aspirations for stronger regional coordination of the planning and delivery of regional transport priorities. Currently, individual local transport authorities focus delivery on local priorities, often in a climate of diminishing financial and staff resources. Whilst they are supportive of the need to deliver significant, cross-boundary regional interventions, they highlight that it is a challenge for them to prioritise limited resources on these wider regional transport investments. In addition, various voluntary partnerships exist across the SEStran region, with boards overseeing the delivery of specific initiatives or policy developments (spatial or economic) addressing one or more objectives.

[85] Adapted from Review of Active Travel Policy Implementation, Transport Scotland, 2016 https://www.transport.gov.scot/media/10302/tp-active-travel-policy-implementation-review-october-2016.pdf

It has also been highlighted that strengthened planning of regional transport could increase consistency in regional decision-making, help delivery of regional transport priorities and achieve a more balanced influence from partners throughout the region irrespective of size. It could also be able to act as a collective tool for prioritising investment into the region's transport systems. Some stakeholders are debating the most effective arrangements for governance of transport decisions and delivery.

When formed in 2005, RTP's were strategy and delivery bodies with capital funding. In 2008 this changed with the capital funding allocated to individual local authorities to drive local accountability. However, some regional stakeholders have noted that the delivery of the full potential of a strategic layer of interventions has not been achieved.

At the time, the estimated cost of delivering Regional transport interventions identified in the 2008 SEStran RTS was estimated at £150 million over a 15-year time horizon. Most of the outstanding interventions remain relevant to the region's pressing needs, and to the new National Transport Strategy.

4.13 Summary of issues

- From the evidence presented in this chapter, the following issues are of particular relevance to a new SEStran RTS:

Issues relevant to transport demand in the region

- Changing employment patterns, the location at which services are provided and use of town centres are influencing travel demand; commuting patterns are becoming less rigid which is affecting peak demand;
- More than a quarter of the region's population (and over half of people aged 80 and over) do not travel anywhere on any given day, partly due to a lack of appropriate transport;
- Many short journeys are made by car, adversely affecting congestion, pollution and public health;
- The relative cost of car use has fallen compared to that of public transport and general cost inflation; this enables many people in the region to sustain high levels of car use;
- Active travel rates vary significantly across the region. Networks to enable active travel are extensive but fragmented;
- Public transport is optimised to serve major demand flows, leaving gaps in the network away from the main corridors;
- Conversely, the region's strategic road network is being used to connect a large number of diverse origin and destination points, often enabling connectivity for journeys for which public transport does not offer an attractive solution;
- Bus use has been falling in many parts of the region, with the largest falls in areas with weaker service levels, which threatens the viability of parts of the region's bus network. But there are good examples within the SEStran region which illustrate that investment in bus services can increase patronage;
- Many bus services are delayed by traffic congestion and urban bus speeds have been falling in recent years, undermining the competitiveness and attractiveness of public transport;
- Much of the region's rail network is operating at or close to capacity at peak times, limiting the opportunity for further expansion of passenger and freight traffic;
- Various initiatives have been trialled to reduce car usage but to date they have had little effect on demand at a regional level. The proportion of journeys in the region undertaken by car/taxi increased in the decade to 2018;
- Freight demand is changing, driven largely by increasing demand for home deliveries; this is creating new demand for road traffic;

- Rail and shipping provide opportunities to shift some longer-distance freight movements from road;
- Long journey times and journey time unreliability are affecting freight and passenger flows (by road and public transport) reducing the growth potential of the regional economy;
- The number of road accidents in the region in which people have been killed or injured has been falling in recent years, but 494 people were killed or seriously injured on the region's roads in 2018;
- Passenger numbers at Edinburgh airport (the region's only airport with scheduled flights) have been growing quickly, and car/taxi remains the dominant surface access mode.

Issues relevant to transport delivery in the region

- Revenue expenditure is insufficient to maintain the quality of local transport infrastructure and provide services that meet the needs of all people;
- Many transport projects require lengthy timescales between initial planning and completion;
- Partnership working is essential for effective transport delivery but declining local authority budgets and limited cross-boundary coordination between transport agencies is not consistently delivering good regional transport interventions;
- Implementation of radical transport solutions usually requires effective, high-profile leadership;
- There is appetite for stronger regional coordination of transport planning and delivery. Some stakeholders are debating the most effective arrangements for governance of transport decisions and delivery.

5. RTS main issues

The evidence presented in this report highlights a wide-ranging context that is relevant to the development of a new RTS for the SEStran region. From this, 35 issues have been identified as being of particular relevance to the new SEStran RTS; these are listed at the end of each of the preceding chapters of this report.

From them, the evidence and guidance from stakeholders suggests ten key elements, which should be considered to be Main Issues for the new RTS[86]:

- Much of the relevant policy and legislative context for transport investment decisions has changed since SEStran's extant RTS was published: the new RTS should respond to the need to deliver these different outcomes, and also to the new tools, emerging technologies and opportunities that are now available;
- Coordination of planning and delivery resources between transport agencies is not consistent, and could be improved to increase the efficiency and efficacy of regional transport outcomes. Some stakeholders are debating the most effective transport governance arrangements and the most effective model for coordination and delivery of wider regional transport priorities;
- Land use planning decisions are not effectively supporting sustainable travel objectives for the region, and sustainable transport provision is not always delivered early enough in the development process to support modal shift;
- The region's transport network must respond to population growth across all age demographics with by far the largest growth predicted in the elderly population;
- Current action is not delivering a reduction in carbon emissions from transport in the region. There is a need to act quickly if targets for reduction are to be met, and to minimise risks of transport unreliability from more extreme climate events;
- Many of the region's people (especially those that are older, have mobility and accessibility challenges, are women, on low incomes, or live in rural areas) lack appropriate, affordable transport to enable them to meet their needs;
- The relative cost of car use has fallen in recent years compared to that of public transport and general cost inflation; this is enabling many people in the region to sustain high levels of car use;
- There are good examples of initiatives promoting healthier and more sustainable modes in the region, but they are yet to make a significant difference to net demand for car use. The proportion of journeys in the region undertaken by car/taxi increased in the decade to 2018;
- Some parts of the region's transport network lack capacity to enable sustainable peak time growth, especially on the rail network and, on the road network, where buses are delayed by congestion;
- The future is increasingly uncertain, due to both potential changes in technology (e.g. for autonomous vehicles) and in societal attitudes (e.g. changes in employment patterns, changes in attitudes towards single-occupancy car use); the new RTS must be able to respond to these issues and opportunities as they emerge.

[86] The ordering of the Main Issues is not intended to imply priority between them.

6. COVID-19 postscript

The main bulk of analysis work for this report was completed in February 2020, before any transport effects arising from the impacts of COVID-19. This, and the fact that little data on the effects of the virus on travel behaviours or broader economic and societal issues is yet available, means that the MIR presents a pre-COVID-19 evidence base.

It is currently too early to fully predict how COVID-19 will affect all of the issues referred to in this report, but our expectations of the most important effects are set out below.

1) ***Enabling use of the transport system has a key role to play in easing restrictions on society***

Physical distancing restrictions have been most apparent in how they impact on people's ability to access and use transport networks; footways and public transport services in particular. Enabling people to travel whilst maintaining physical distance (through infrastructure and service redesign, as well as changes to travel behaviours) will have an important role in permitting restrictions to be relaxed, and hence a return to more normal social and economic activity.

2) ***Overall demand for travel will reduce but transport inequity increase***

Overall travel demand will be lower post-COVID-19 than before. But the reduction in demand for some types of journeys, and for some modes, will be much greater than others.

We foresee a greater decline in demand for travel to city centres (where a high proportion of journeys have been reliant on public transport, and a large proportion of employees in which may continue to work from home) than for travel to neighbourhood centres and edge-of-town employment and retail sites.

People whose health is at risk are more likely to be sheltering at home, especially if the transport system cannot permit physical distancing, so have their travel demand severely curtailed. This, combined with potentially reduced public transport services away from main corridors, could significantly increase transport inequity.

3) ***Mode share for active travel will increase***

The proportion of journeys made by active modes will increase, both because of a larger proportion of trips made being local (especially by people working at home) and as people seek alternatives to public transport.

This increase, especially whilst the need for physical distancing remains, will lead to footway congestion (and/or potential compromises to physical distancing). It will also lead to road safety concerns as people that are trying to maintain physical distance walk on traffic carriageways.

4) ***Mode share for car will increase***

Car will become the mode of choice for more journeys, as physical distancing can be maintained whilst travelling. Increased traffic congestion, pollution and delays to buses and freight traffic will result.

5) ***Public transport patronage will fall substantially***

Bus and rail patronage will decline significantly, because of both supply and demand factors.

Public transport capacity will be significantly reduced whilst the need for physical distancing remains. Demand will also fall, most especially from the concessionary fares, leisure and business travel markets. Despite this, peak time demand for public transport could significantly exceed capacity.

The financial sustainability of public transport will be substantially undermined as a result of reduced farebox revenue. This, combined with a political imperative to keep public transport services operating in order to meet essential travel needs, will result in on-going requirements for substantially increased revenue funding; which may then have implications for other transport investment decisions.

6) ***The demand for home deliveries will increase***

Demand for home shopping will increase over pre-COVID-19 levels in response to fewer people wishing or being able to visit shops. This will further increase light goods vehicles mileage, exacerbating traffic congestion and emissions.

May 2020