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Levenmouth Sustainable Transport Study

Initial Appraisal: Case for Change, Final Report, November 2018

On behalf of **Transport Scotland**



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1 Introduction

1.1 Background

1.1.1 In May 2015 Fife Council commissioned an appraisal to assess measures to enhance sustainable transport options for the Levenmouth area of Fife, with ‘a view to improving its economic viability’. The work was to update a previous appraisal undertaken in 2008. The brief for the study explained it was to be undertaken in accordance with Transport Scotland’s Scottish Transport Appraisal Guidance (STAG). The STAG Report concluded with a ‘recommendation’ to re-open the rail line between Thornton North Junction and Leven.

1.1.2 Peter Brett Associates LLP (PBA) was commissioned to undertake a review of the 2015 study. The findings of the review are provided in Appendix A to this report, but in summary there were limitations in parts of the appraisal that detract from the robustness of the analysis and conclusions. The key limitations were:

- there is considerable disconnect between the evidence gathered to inform the problems, opportunities, issues and constraints and some of the Transport Planning Objectives (TPOs);
- this disconnect continues between the TPOs and option development, meaning that there is limited confidence that the options appraised fully capture all potential option scenarios and will address the appropriate problems, opportunities, issues and constraints;
- there is no convincing evidence presented that there is actually suppressed demand for the use of rail freight, which is an important component of the preferred option;
- there is minimal evidence that current transport is acting as an inhibitor of investment in the area, as claimed in the Report;
- the appraisal includes limited assessment of how the options developed perform against the TPOs and focuses much more on the STAG criteria;
- while a timing issue, the economic analysis used an earlier edition of the STAG guidance and is not consistent with the most up to date version and doesn’t include analysis of the impacts of Wider Economic Benefits;
- the methodological approach used to inform the demand forecasting analysis has a number of limitations and consequently will have impacted on the robustness of the quantified/monetised impact of the transport economic benefits;
- ongoing work considering options for a new ScotRail express timetable, which will impact on Fife, may affect the rail options covered in the appraisal and these need to be revisited to fully understand whether they are still viable;
- the costs used as part of the value for money assessment are very dated (2008) and need to be revisited to determine if they are still accurate and robust; and
- key risks that are identified have not been quantified to understand their impact on the relative performance and results of the appraised options.

1.1.3 There are other, more minor, shortcomings with the appraisal but the bullets above represent the key areas that needed to be addressed to ensure the process is in line with the Guidance and the findings are robust.

1.1.4 Following the review of the STAG Report, PBA was commissioned to undertake further work to fill the identified gaps in the analysis and complete the appraisal in line with the Guidance. Importantly, the work undertaken for the appraisal was not to start from scratch. The aim was

to build on the work undertaken in the previous study but, importantly, seek to address the limitations identified above and ensure an evidence-based and robust appraisal in line with STAG.

1.2 The Structure of the Report

- 1.2.1 Following this brief introductory chapter, Chapter 2 discusses the methodology that has been applied in carrying out the work. It sets out details of the sources of data used, geographic coverage applied and an outline of the types of engagement undertaken. On the latter, it sets out who was involved, and the methods adopted to capture views.
- 1.2.2 Chapter 3 provides background and context for the area of Levenmouth. It includes details of the location and geography as well as its proximity to other areas of Fife and beyond. The chapter also includes discussion and analysis of the social and economic performance of the area and particularly, where possible, how this compares with Fife as a whole and to Scotland. Finally, the chapter also includes details of the current provision of transport serving the area and its accessibility / connectivity to and from other areas. All of this information provides valuable background and context to help inform the understanding of the current situation in Levenmouth.
- 1.2.3 In addition to the use of various official data sets to develop a strong understanding of the current situation, primary research has been carried out to gather views of residents and users of transport services in the local community. This includes a thorough stakeholder engagement exercise. Details of the findings of the exercise are set out in chapter 4. The chapter also sets out the findings of the public and business surveys that were undertaken to capture what the local residents and business community viewed as the current problems, opportunities, issues and constraints with transport networks and services in the area.
- 1.2.4 Chapter 5 focuses on developing the evidence-base of the problems, opportunities, issues and constraints suggested through the engagement exercise. Data has been gathered and analysed to understand whether the views expressed in the engagement exercise can be evidenced.
- 1.2.5 Following on from the evidence of the problems, opportunities, issues and constraints, Chapter 6 sets out the TPOs that are designed to reflect the changes sought to address the evidenced transport problems and opportunities. In line with the Guidance. The intention is that if options appraised meet the objectives then they will, at least in part, contribute to addressing the evidenced problems and also realise the opportunities.
- 1.2.6 Following the design of the TPOs, a number of multi-modal transport options were considered that could help achieve the objectives and address the problems etc. Chapter 7 sets out details of the option generation and the options that are to be taken forward to the Preliminary Options Appraisal stage of the STAG process.
- 1.2.7 Finally, Chapter 8 sets out the recommendations and next steps.

2 Methodology

2.1 Introduction

2.1.1 The STAG process is essentially split into four parts as set out in Figure 1 below: Initial Appraisal – Case for Change, Preliminary Options Appraisal, Detailed Options Appraisal and Post Appraisal. This chapter sets out the structure and methodological approach to the Initial Appraisal – Case for Change¹ element. In particular, it sets out the information that has been gathered to develop a robust evidence base of the problems, issues and constraints to be addressed, and the opportunities not being realised, as a direct consequence of the transport network serving the Levenmouth area. It also sets out details of the consultation and engagement exercise undertaken to supplement the assessment of secondary data sources.

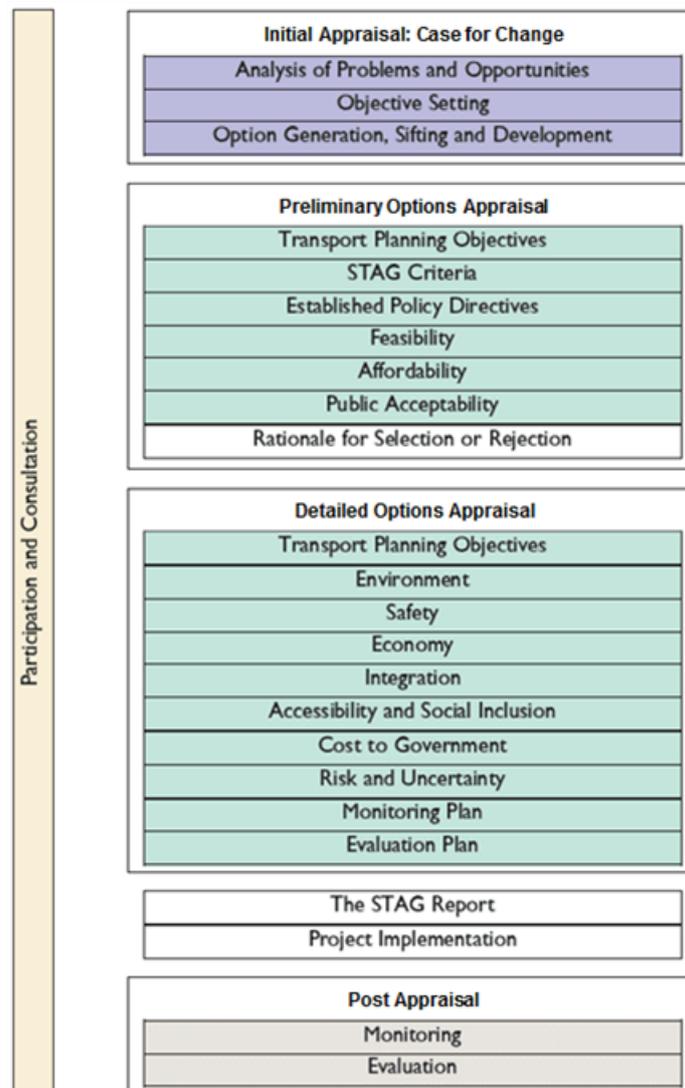


Figure 1: STAG Process

2.2 Initial Appraisal: Case for Change

2.2.1 A key element of any appraisal is the case for change. This, importantly, provides the foundations for the appraisal going forward, such as the assessment of the options. If the case for change is not robust it is likely that one will end up with the wrong solution. The case for

¹ Details of the Preliminary and Detailed Options Appraisal will be set out in subsequent reports.

change needs to be built on sound evidence of the problems, issues and constraints to be addressed and opportunities which are not being realised. It also needs to be objective led, with the objectives reflecting the evidenced-based problems etc. This chapter therefore presents the updated Initial Appraisal: Case for Change covering the areas outlined in the first box of the diagram above.

- 2.2.2 The first stage is crucial and involves gathering robust evidence of the transport problems, issues, constraints and opportunities. This then informs the development of a robust and credible set of TPOs that accurately reflect the problems etc. A robust set of TPOs then allows a meaningful set of options to be generated and give confidence that the options appraised have the potential to meet the objectives and therefore address the problems, opportunities, issues and constraints being impacted by the current provision of transport networks and services in the Levenmouth area.
- 2.2.3 The analysis and outputs in this report seek to address the first four bullets included in the list set out in 1.1.2. The focus is on gathering more information and analysing further evidence to ensure a more robust link between the problems, issues, constraints and opportunities and the TPOs and then the options. For example, a more robust engagement exercise has been carried out to gather a wider range of views from stakeholders, including public and business surveys. This has been supplemented through more detailed gathering and analysis of the evidence from various sources.
- 2.2.4 The points set out in the other bullets highlighted in 1.1.2 will be addressed when undertaking the appraisal of the impacts of the options. The multi-modal options to be appraised are the final output of the Initial Appraisal and those to be taken forward for the Levenmouth study are included towards the end of this report in Chapter 7.

2.3 Stakeholder Engagement

- 2.3.1 Engagement in particular can help to inform the STAG process and a properly designed plan should be one which runs concurrently through the various stages of the appraisal, allowing the two-way flow of information between client/appraisers and stakeholders. Such an approach can contribute to a greater understanding of issues and provide an opportunity for the local community to feed in to the process and, importantly, allow transparency throughout the appraisal.
- 2.3.2 It is recognised that a number of stakeholders were consulted over the course of the previous appraisal and a significant amount of information was gathered to inform the development of the original problems, objectives, options and other elements of the appraisal. PBA has used this information as a starting point, and augmented and supplemented it with its own primary research to develop an understanding of the current situation and case for change.
- 2.3.3 An extensive engagement plan was developed and undertaken in partnership with both Transport Scotland and Fife Council. Various approaches to engagement were adopted in order to best facilitate the programme and work with each stakeholder. The engagement programme is provided in Appendix B to this report. Engagement and consultation has included the following formats:

- Group workshops;
- Individual meetings;
- Telephone interviews;
- Online public survey; and
- Online surveys with the business community.

2.3.4 Specific preparation was undertaken for each session, tailoring questions and themes to be explored around the skillset and experiences of the respondent. Similar themes were however explored across each session, ensuring a consistency of approach. Themes explored included:

- Current views on problems and issues related to the transport network – multi modal question including road, bus, rail and active modes;
- Developing an understanding of which groups are affected by various transport problems and issues and how do they impact upon each;
- How any issues raised support or impact upon local, regional and national connectivity;
- How any problems and issues raised, support or impact on economy, society and environment; and
- Understanding of any potential opportunities not being realised due to current transport provision.

2.4 Data

2.4.1 The analysis has used a range of data from various sources to understand the evidence supporting the findings from the engagement, public and business surveys discussed above. Secondary data used includes a variety of sources [e.g. from the census, official labour market and employment data, transport operator information, websites and the use of accessibility software]. In all cases, the latest data available has been used whenever possible.

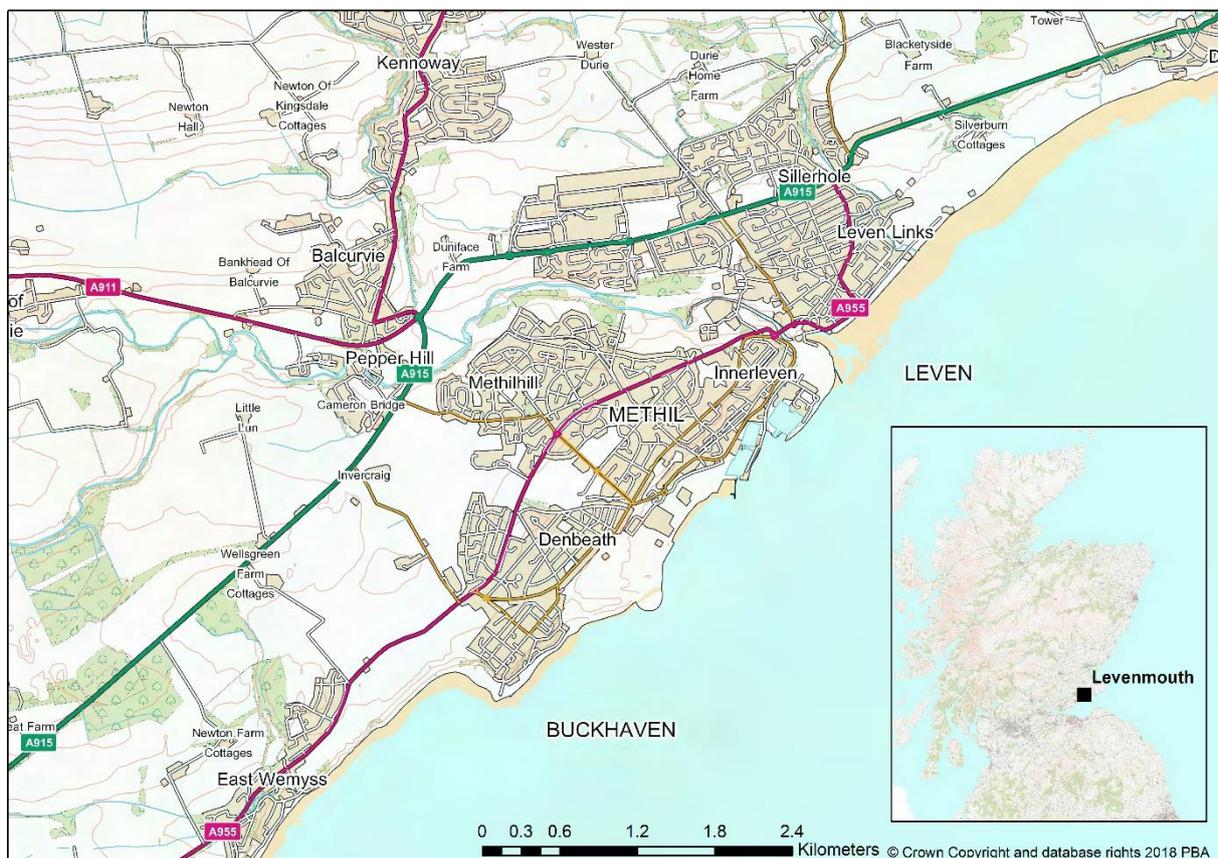
3 Local Levenmouth Context

3.1 Introduction

3.1.1 This chapter provides a summary of the geographic, social, economic and transport context of the Levenmouth area. It considers key topics such as demographics, education, areas of multiple deprivation and access to key services and facilities. The aim of the chapter is to provide background and context to the area and inform the analysis of the problems, opportunities, issues and constraints. The information gathering and analysis in this chapter focuses on secondary data sources. The next chapter provides details of primary data gathered via an engagement exercise, including public and business surveys.

3.2 Geographic Context

3.2.1 The area of Levenmouth lies in east Fife and provides a gateway to a large part of the East Neuk in north-east Fife. The area comprises an amalgamation of coastal and inland settlements surrounding the core urban centre of Leven, including Methil, Buckhaven, Methilhill, Windygates and Kennoway as shown below.



3.2.2 The traditionally industrial towns of Buckhaven and Methil lie on the south bank of the River Leven and the seaside town of Leven is on the north bank. The A955 "Bawbee Bridge" links the two sides of the river.

3.2.3 The road network is characterised by a number of main routes connecting the principal towns. This includes the A915 Standing Stane Road linking Leven with Dysart/Kirkcaldy to the south west and St Andrews to the north east. The A955 links Leven with Lower Largo to the north east. In addition, the A911 connects Levenmouth to Glenrothes and the A916 to Cupar. Connections to the A92 trunk A-Road, which links into the M90 towards Edinburgh in the south and to Dundee and Aberdeen northwards, are primarily via the A955 and A911 to the west/south west of Leven.

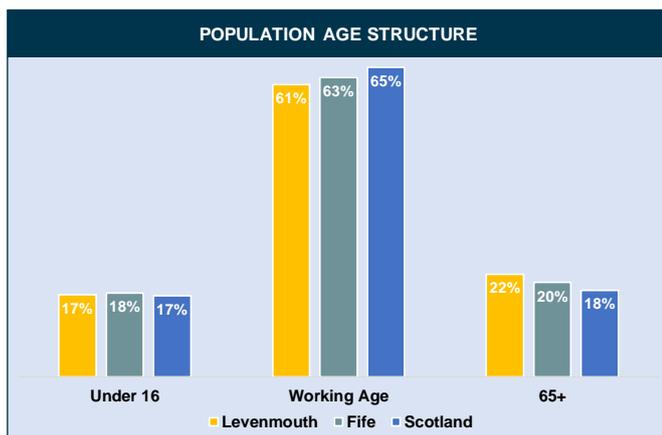
3.3 Social Context

This section considers the demographic profile of the Levenmouth area and discusses key indicators, including population, car availability, education and multiple deprivation. This is important to understand the general make-up of the area and the role transport plays in supporting the residents, businesses and commuters.

3.3.1 Population (National Records of Scotland, NRS)

In 2016, the population of the Levenmouth area² was 35,090, making it the 4th largest settlement in Fife and 25th largest settlement in Scotland.

The population age structure shown below reveals that the Levenmouth area, and Fife in general, has a lower percentage of population of working age (61% versus 65%) relative to Scotland as a whole. The figure also reveals that Levenmouth also has a higher proportion of people of pensionable age when compared to Scotland as a whole (22% versus 18%).



[Values rounded to nearest percentage]

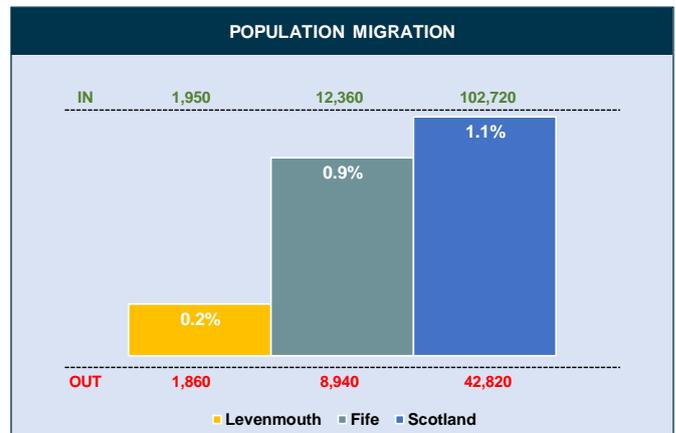
Since 2012, in Levenmouth the population aged 65 and over is the only age category to consistently have shown an increase over time. The Levenmouth area experienced a 7% increase and Fife showed a 10% increase. This is similar to the national increase of 8% over the same period. These relative changes indicate an ageing population, and this is forecast to continue into the future as discussed in Chapter 5.

Key point – the Levenmouth area has a higher proportion of people of pensionable age relative to Fife and Scotland as a whole. In line with the national trend, there is an ageing population which is forecast to continue into the future.

² Levenmouth area comprising Methil, Leven, Buckhaven, Lower Largo, Lundin Links, East Wemyss and Coaltown of Wemyss.

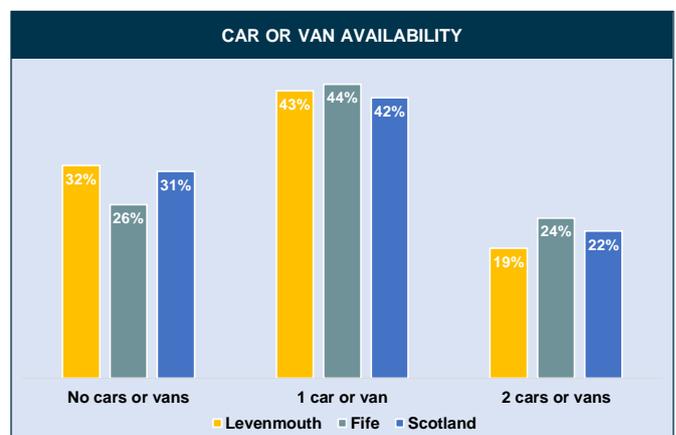
3.3.2 Migration (NOMIS 2011)

The net migration statistics for the population of the Levenmouth area showed no real material change in 2011 (a net 0.2% increase).



Net migration for Fife and Scotland as a whole showed an approximate 1% increase, higher than Levenmouth. While the net migration into Levenmouth was positive (+90), the figures reveal the rate of increase for people moving into the Levenmouth is less than the Fife average. Without any further supporting information, it is difficult to determine the key drivers behind the net migration statistics.

3.3.3 Car Availability (2011 Census)



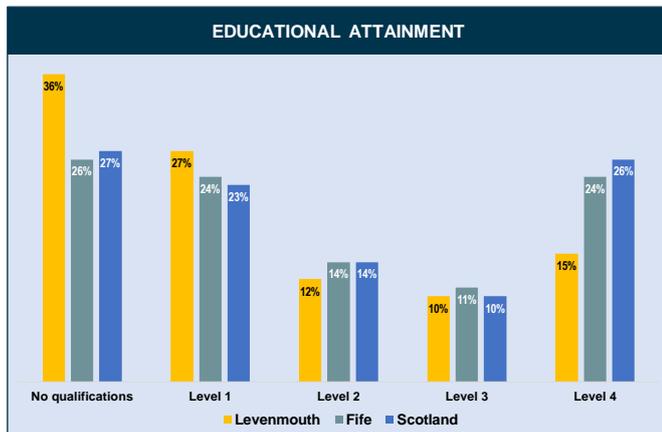
[Values rounded to nearest percentage]

Thirty-two percent of households in the Levenmouth area have no access to a private car or van and are therefore more reliant on public transport. This figure is higher than that for Fife (26%) and slightly higher than for Scotland as a whole (31%). Whilst those residents who have access to one car or van is similar across the three geographies, those who have access to two cars

or vans is notably lower in Levenmouth (19%) than in Fife (24%) and Scotland (22%).

Key point – Levenmouth has a slightly higher percentage share of households without access to a car than Scotland but four percentage points higher than that for Fife.

3.3.4 Educational Attainment (2011 Census)



[Values rounded to nearest percentage]

- Level 1: O Grade, Standard Grade or equivalent
- Level 2: SCE Higher Grade or equivalent
- Level 3: HNC, HND or equivalent
- Level 4: Degree or Postgraduate qualifications

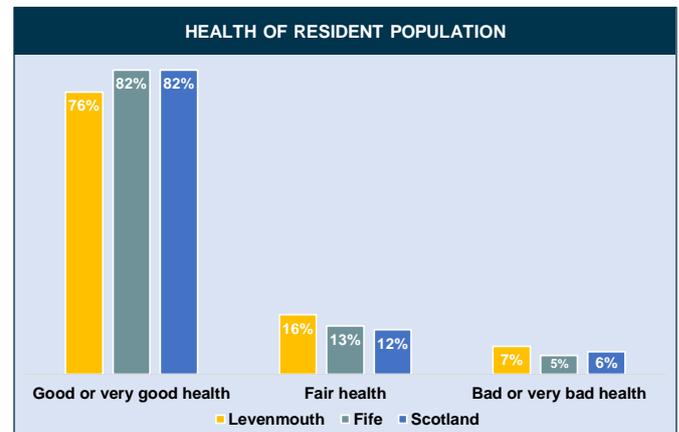
There appears to be a disparity in education levels in the Levenmouth area when compared to Fife and Scotland as shown in the graphic above. The educational attainment of residents in Levenmouth is relatively low, with those with no qualifications making up 36% of the relevant population. This compares with 26% for residents of Fife as a whole and 27% for Scotland. While Levenmouth residents score better for those with Level 1 qualifications, for Level 2, 3 or 4 Levenmouth is equal to or lower than Fife and Scotland in all categories. Indeed, for Levenmouth only 15% of residents have a degree or postgraduate qualification, compared to 24% and 25% for Fife and Scotland respectively.

Although not shown above, the figures are even more pronounced in the Buckhaven, Methil and Wemyss Villages area where those with no qualifications exceeds 40%. In addition, this area has less than half the national average qualified to Degree level or equivalent.

Key point – levels of educational attainment in Levenmouth are relatively low, with a higher share of people with no qualifications and much lower share of people qualified to degree level.

3.3.5 Health (2011 Census)

The figure below shows health classification from the Census 2011. It can be seen that the Levenmouth area suffers from lower levels of good health and higher levels of bad health compared to both Fife and Scotland respectively.



[Values rounded to nearest percentage]

Whilst this problem affects the whole Levenmouth area, Buckhaven, Methil and Wemyss Villages have the largest concentration of health problems.

Key point – Levenmouth has a lower share of residents in good or very good health, and a higher share of residents in fair, bad or very bad health relative to Fife and Scotland.

3.3.6 Scottish Index of Multiple Deprivation (SIMD 2016)

SIMD is the Scottish Government's official tool to identify areas of poverty and inequality across Scotland. More specifically, it is used to identify areas where many people experience multiple deprivation and, hence, finding areas of greater need for public support and intervention/investment.

SIMD considers multiple types of deprivation because 'deprived' does not just mean 'poor' or 'low income' – it can also mean, for example, people have fewer resources and opportunities in, say, health and education.

SIMD combines 38 indicators across seven domains: Income; Employment; Education; Health; Access to Services; Crime; and Housing. An overview of each domain is provided below:

- Income:** percentage of people who are income deprived and receive certain benefits or tax credits.

- **Employment:** percentage of working age people who are employment deprived and receive certain benefits
- **Education:** considers working age people with no qualifications; proportion of people aged 16-19 not in full-time education, employment or training; and proportion of 17 to 21 year olds entering into full time higher education.
- **Health:** considers hospital stays related to alcohol and drugs misuse, emergency stays in hospital and proportion of population being prescribed drugs for anxiety, depression or psychosis.
- **Access to Services:** considers average drive or public transport travel time to access services such as a GP surgery, retail centre or schools.
- **Crime:** recorded crimes of violence, sexual offences, domestic housebreaking, vandalism, drugs offences, and common assault per 10,000 people
- **Housing:** percentage of people living in households that are overcrowded and/or have no central heating.

deprived areas of Scotland shaded in red. The graphic also shows areas of least deprivation immediately adjacent to and surrounding Levenmouth.

Six of the ten **most deprived** data zones (DZs) in Fife, which are ranked amongst the 5% most deprived areas of Scotland, are located in the Levenmouth area, affecting approximately 4,200 people, or 12% of the population.

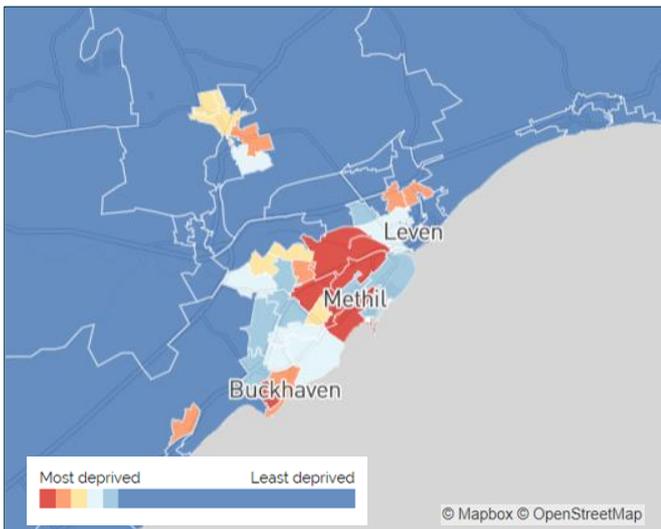
These DZs are listed below, with population in 2014 in brackets:

- Buckhaven South (670)
- Methil Memorial Park (541)
- Methil Savoy (753)
- Aberhill (902)
- Methil Kirkland (741)
- Lower Methil (626)

The Levenmouth area local share³ of the 20% most deprived areas in Fife is **5%**. This is higher than the local share for other selected areas within Fife, including Glenrothes (3%) and Kirkcaldy (4%).

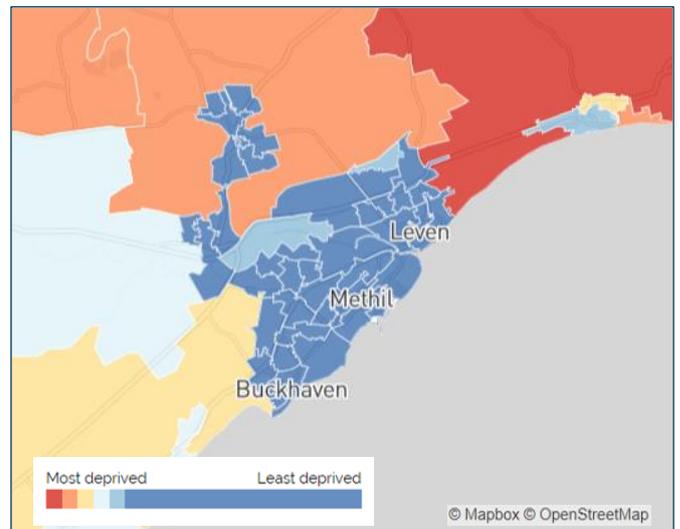
The generally accepted point at which an area is defined as deprived is when it is classified within the '20% most deprived' areas in Scotland.

3.3.7 Overall Index



The overall index reveals that there are areas in Levenmouth that experience high levels of multiple deprivation when all domains are considered. This is illustrated in the graphic above with the 20% most

3.3.8 Access to Services

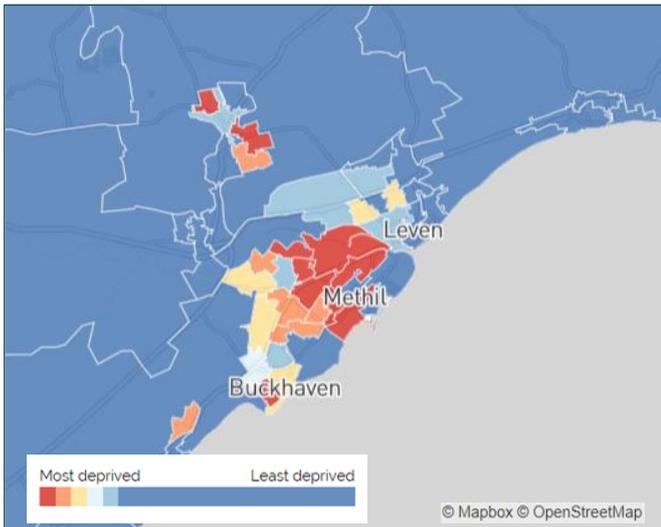


The graphic above shows that the area is not amongst the most deprived when Access to Services is considered independently. The two indicators under this domain, however, are (i) the average drive time to a petrol station, a GP surgery, a post office, a primary school, a secondary school, a retail centre, and (ii) public transport travel time to a GP surgery, a post office, a retail centre. The indicator does not, therefore, take into account the quality or choice of the public transport, or the frequency or timetable of the services available, it

³ Local share is used to compare deprivation between areas. This is calculated by dividing the number of deprived DZs in the Levenmouth area by the number of all DZs in Fife.

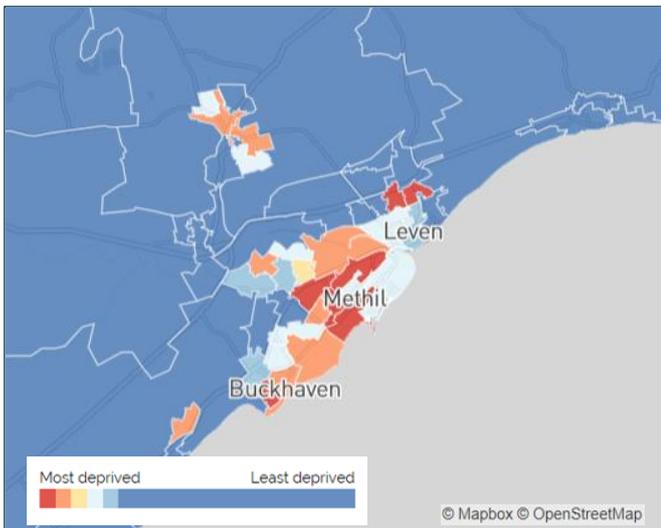
simply focuses on the travel time. Neither does it take account of non-local services. However, based on the definition within the SIMD, the area of Levenmouth is regarded as one of the least deprived areas relative to other parts of Scotland when its performance is measured against access to services.

3.3.9 Education



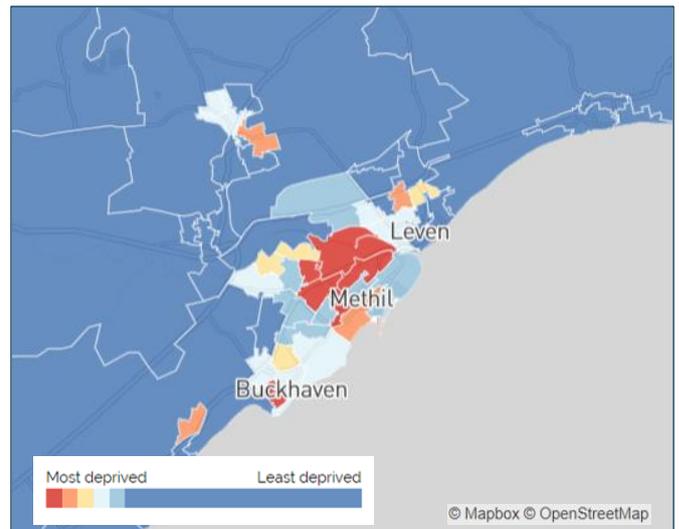
The graphic above shows there are areas within Levenmouth suffering from education, skills and training deprivation relative to other parts of Scotland, with many included within the 20% most deprived in Scotland.

3.3.10 Employment



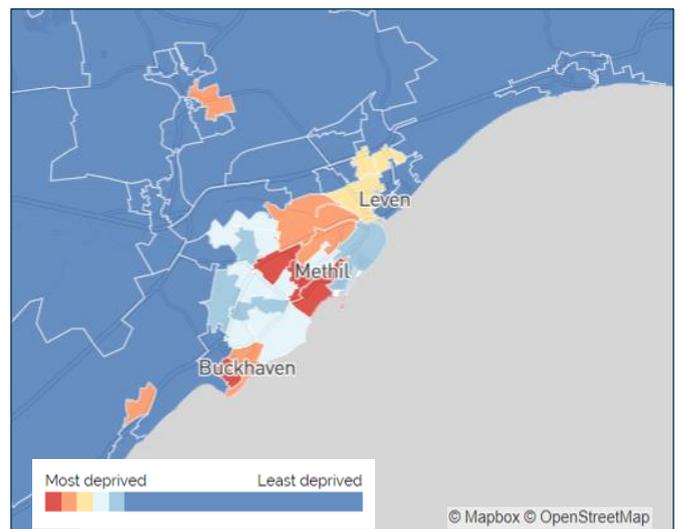
Looking at the employment indicator within SIMD also reveals many parts of Levenmouth experience employment deprivation [i.e. included within the most 20% most deprived areas of Scotland].

3.3.11 Income



Similarly, with income deprivation, the graphic above reveals that there are pockets of Levenmouth where those living in income deprivation are in the 20% most deprived in Scotland.

3.3.12 Health



The pattern shown for education, employment and income is very much repeated for health, with parts of Levenmouth classified as being in the 20% most deprived areas of Scotland.

Key point – under almost all domains Levenmouth suffers from high levels of social deprivation, with many parts included within the 20% most deprived areas of Scotland. This is a common theme across the categories of employment, education, income and health. The domain where it is regarded as being least deprived is access to services.

3.3.13 Social Context, Summary of Key Points

In social terms, Levenmouth can quite clearly be seen as performing relatively poorly compared to other parts of the country, including within Fife. It has an ageing population and one that has a record of poor health, low incomes and low levels of education attainment. The Scotland Index of Multiple Deprivation (SIMD) reveals that the area experiences high levels of multiple deprivation across a number of categories with many sub-areas having levels of deprivation that are in the top 20% in Scotland. The area where it performs relatively better is in terms of access to local services, albeit simply in terms of car or public transport drive times. In addition to high levels of multiple deprivation, households in Levenmouth have relatively low levels of car availability compared to Fife as a whole.

3.4 Economic Context

3.4.1 Economic History of Levenmouth

The local economy in Levenmouth was traditionally focussed on mining and heavy industry and the area has struggled economically since the decline of these sectors, particularly the coal industry, from the 1960s.

The growth of these industries was initially fueled by the opening of the Leven Railway in 1854, linking the town with the Thornton Junction on the Edinburgh to Aberdeen main line. In the late 19th century, this was extended to the Leuchars junction via St Andrews. The railway between Leven and St Andrews closed in 1964. The Leven and Thornton Junction was closed to freight in 1966, and to passengers in 1969.

During the 1960s, coal mining, large-scale manufacturing and port-related activities were significant employers in Levenmouth. Methil was a principal producer and exporter of coal for many generations, and coal mining was a vital source of employment in the local area. The Wellesley Colliery closed in 1964, followed by The Michael Colliery in 1967. The collapse of coal mining in the late 1960s, and the disappearance of much manufacturing activity around Methil had a significant adverse impact on the Levenmouth economy. Indeed, the demise of coal mining and other traditional industries during this period, combined with a limited number of replacement employment opportunities, marked the start of Levenmouth's struggle with high unemployment and associated economic and social deprivation.

A key business in the area is Diageo. Diageo opened its first bottling plant in Leven in 1973, to bottle various Scotch whiskies. The £22m extension to the United Distillers (now Diageo) Cameron Bridge grain distillery was officially opened in May 1991, making it one of the largest distilleries in the world. While the Diageo operation has been a success in the area, to a large extent this has been outweighed by a number of local business closures that have had a detrimental impact on the local economy. These include:

- British-Norwegian oil and gas construction firm Kvaerner came to Methil in 1972, with demand for off-shore construction expected to last just 5 years. However, Kvaerner operated from its Methil Docks base for almost 30 years, and employed around 2,000 staff at its peak. The company ceased production of its off-shore structures in Methil by the end of 2001.
- Scottish Power's coal slurry-fired power station was mothballed in 2000. The Methil power station, which had employed around 70 staff, was eventually demolished in 2010.

- Methil-based bogie manufacturer ABC Naco closed in 2002, with the loss of 145 jobs. The closure was due to the difficulties facing the steel sector and the subsequent lack of investment from its US parent company.
- Wemyss Brickware closed in 2002, with the loss of 60 jobs. The closure was blamed on difficulties in sourcing good quality 'red-burning' facing bricks, and a major rise in gas prices. The company had been in Leven for almost 100 years and was one of the last independent brickware companies in the UK.

Despite these closures, there has been some significant investment in the area since the turn of the millennium that has had a positive impact. A selection is set out below:

- Burntisland-based, off-shore oil and gas fabrication company BiFab, expanded its business operations to Methil in 2003. The company took over the former Kvaerner yard at Methil Docks, providing some new employment opportunities in the local area, including a number of Modern Apprenticeships. BiFab was taken over by JV Driver in 2018.
- The Offshore Renewable Energy (ORE) Catapult has been granted a 10-year extension by the Scottish Government to operate its 7-MW Levenmouth offshore wind demonstration turbine for research and technology development until 2029.
- Diageo invested £2.6m in its bottling plant in Leven in 2003, followed by a £9m expansion in 2006, to run new products and increase the company's flexibility to meet future demand. In 2009, the company announced a £86m investment in a new packaging plant that led to the creation of over 400 jobs. In November 2012, Diageo's Scotch whisky bottling facility was officially opened. Diageo continues to be a major employer in the Levenmouth area, with more than 1,250 people employed at its 171-acre site at peak times.
- The new £1.5m Leven Bus Station was opened in 2007.
- Phase 1 of the Energy Park Fife at Methil Waterfront was completed in 2006, and in 2009 Scottish Enterprise committed a further £13m to upgrade the quayside and improve coastal protection. The Energy Park was identified as a key project to receive accelerated funding, as part of the Scottish Government's response to the economic downturn.

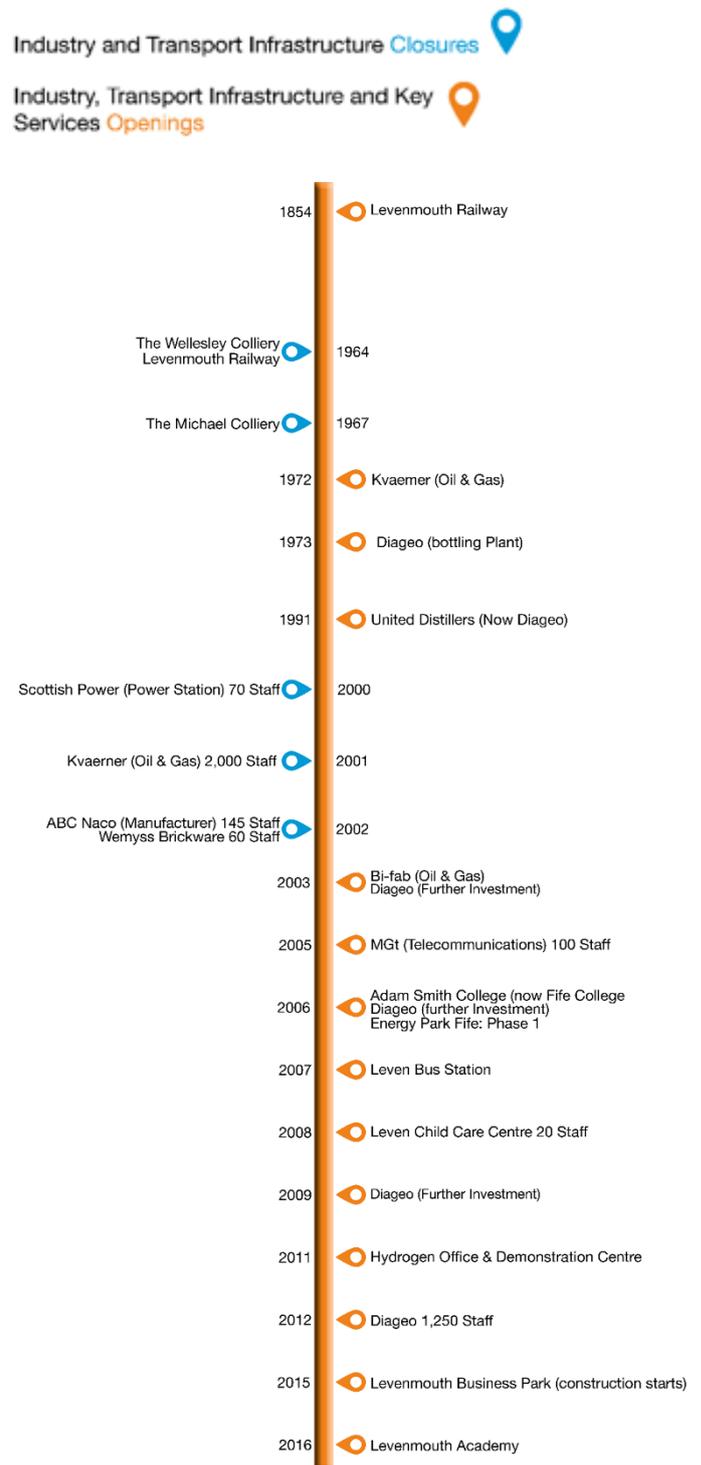
In addition to these investments, fourteen Strategic Land Allocations were laid out in the Fife Structure Plan 2006-2026, showing large-scale expansion in Fife over the next 20 years:

- The Levenmouth Strategic Development Area (SDA) is a mixed-use land allocation for 1,650 houses, 15 hectares of employment land, community facilities and greenspace, a new link road and new and improved footpath/cycle routes. The development area is 107.5 ha and has an estimated value of £235m.
- The new Levenmouth Academy, which opened in August 2016, sits at the heart of the site, and a new Fife College building lies adjacent to the school, creating a complementary campus.
- In June 2015, Fife Council commenced construction of the Low Carbon Investment Park (now known as Levenmouth Business Park) - a 16.5 ha, inland supply chain business park, within the SDA. Levenmouth Business Park builds on the success and future potential of Energy Park Fife, one of 11 sites identified across Scotland within the National Renewables Infrastructure Plan.

A timeline of changes in industry, transport infrastructure and key services affecting the Levenmouth economy is provided opposite.

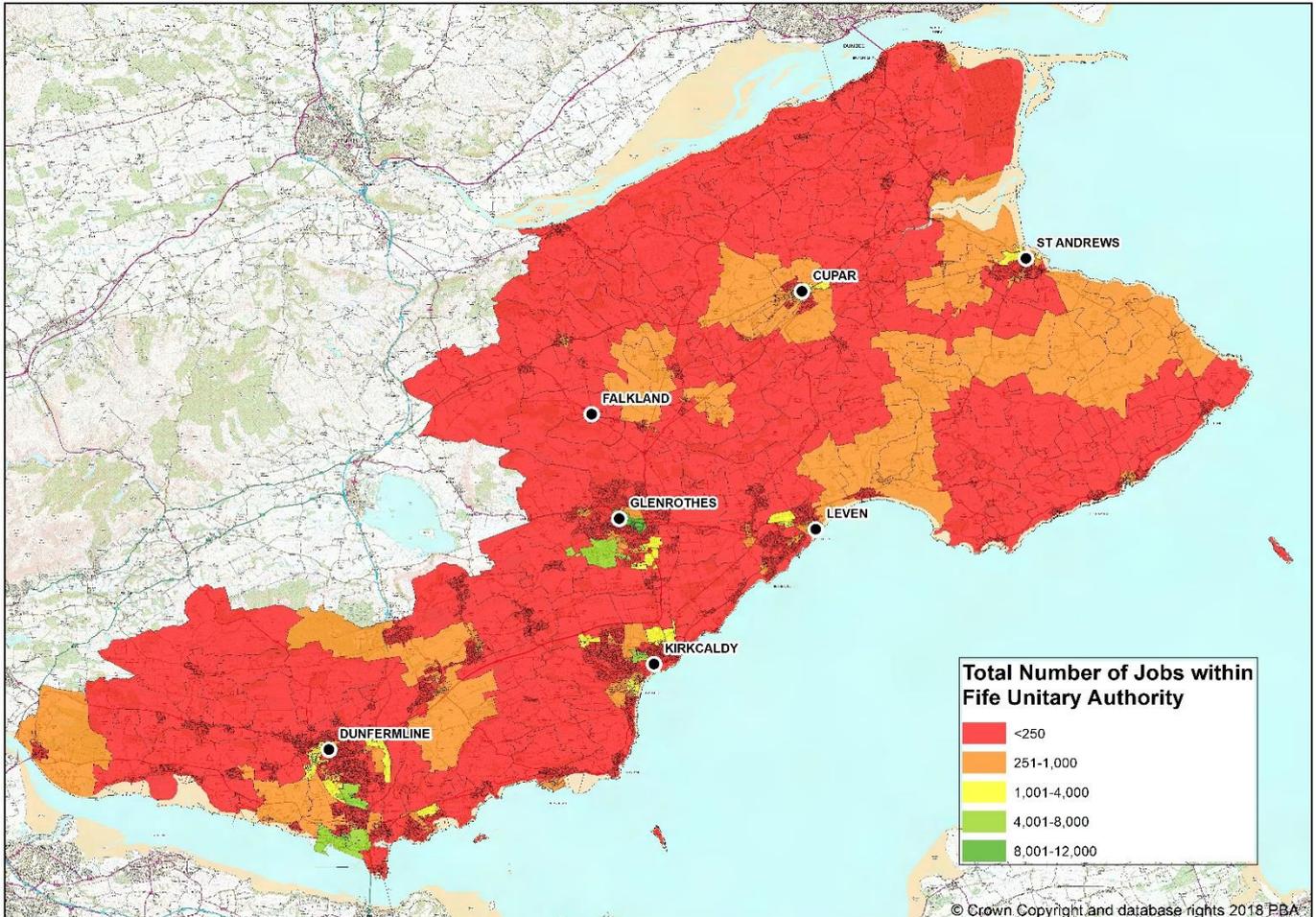
The timeline reveals a significant change in the industrial make-up of the Levenmouth area in the last half century. There has been a decline in traditional manufacturing industries that employed large numbers of local residents. New businesses have started up to replace the old, but with a lower number of total employees. This has resulted in many local residents in recent years having to look further afield for employment and led to a different pattern of commuter travel and one that is more dependent on transport, either car or public transport services.

Key point – the Levenmouth area has seen significant change in its industrial make-up, consequently leading to a change in travel patterns and demand for public transport services from commuters.



3.4.2 Total Number of Jobs (BRES 2016)

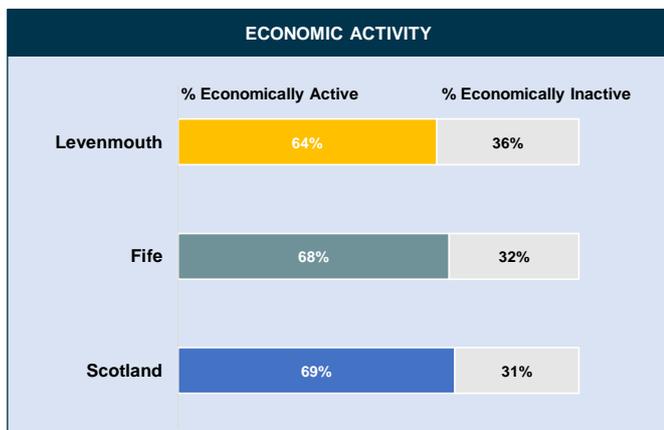
The graphic below shows the distribution of jobs within the Fife local authority area. Relatively high concentrations of employment (8,001 to 12,000 per area) are reflected by darker green, while relatively low levels of jobs (less than 250 per area) are represented in dark red shaded areas. Most of Fife, including much of the Levenmouth area, has less than 250 jobs per area, with higher pockets of employment in Dunfermline, Glenrothes and Kirkcaldy.



3.4.3 Economic Activity (2011 Census)

The graphic below shows the percentage of all persons aged between 16 and 74 and resident in Levenmouth, the wider Fife area and Scotland as a whole who were economically active or economically inactive.

Economically active covers those who were in full or part-time employment and those not in employment but actively seeking and available for work (unemployed). Economically inactive covers those who were not in employment or actively seeking and available for work, due to being retired, looking after home or family, long-term sick or disabled, students or other reasons.



The graphic reveals that Levenmouth's share of those aged between 16 and 74 who were economically active was 64%. This compares with figures of 68% and 69% for Fife and Scotland as a whole respectively. This lower share of economically active means it has a higher share of economically inactive residents.

Key point – of those aged between 16 and 74 living in the Levenmouth area, there is a lower proportion who are either in work or actively seeking work compared to those living in the wider Fife area and Scotland as a whole.

3.4.4 Benefits Claimants (NOMIS 2016)

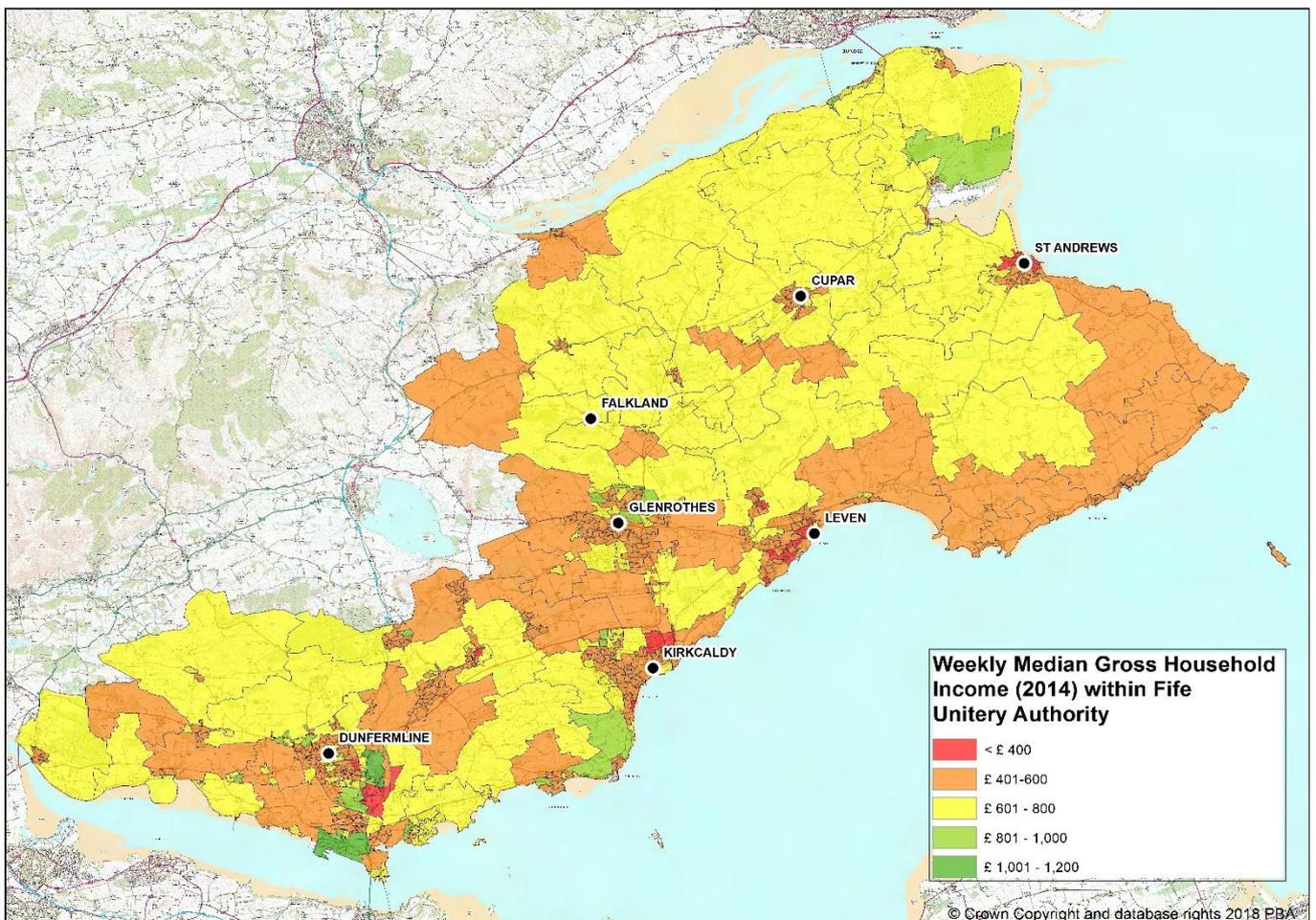
The analysis of Jobseekers Allowance Claimants shown below reveals that the Levenmouth area had a percentage share of residents claiming Jobseekers Allowance of 4.2%. This was 2.5 percentage points above the national average and 1.8 percentage points higher than that for Fife as a whole.

Key point – Levenmouth has a higher proportion of Jobseekers Allowance Claimants than Fife and Scotland as a whole.



3.4.5 Household Incomes (Scottish Government 2014)

The graphic below illustrates graphically weekly median gross household income within the Fife local authority area. The darker green areas reveal those of relatively high incomes of between £1,001 and £1,200, while the red shaded areas represent the lowest income levels of less than £450. From the graphic, it is clear that Leven consists of areas with the lowest levels of household income. The other areas of Fife with similar levels of household income are in pockets of Dunfermline, Kirkcaldy and St Andrews, the latter reflecting the large student population in the town.



Key point – Leven consists of areas with the lowest levels of household income in Fife.

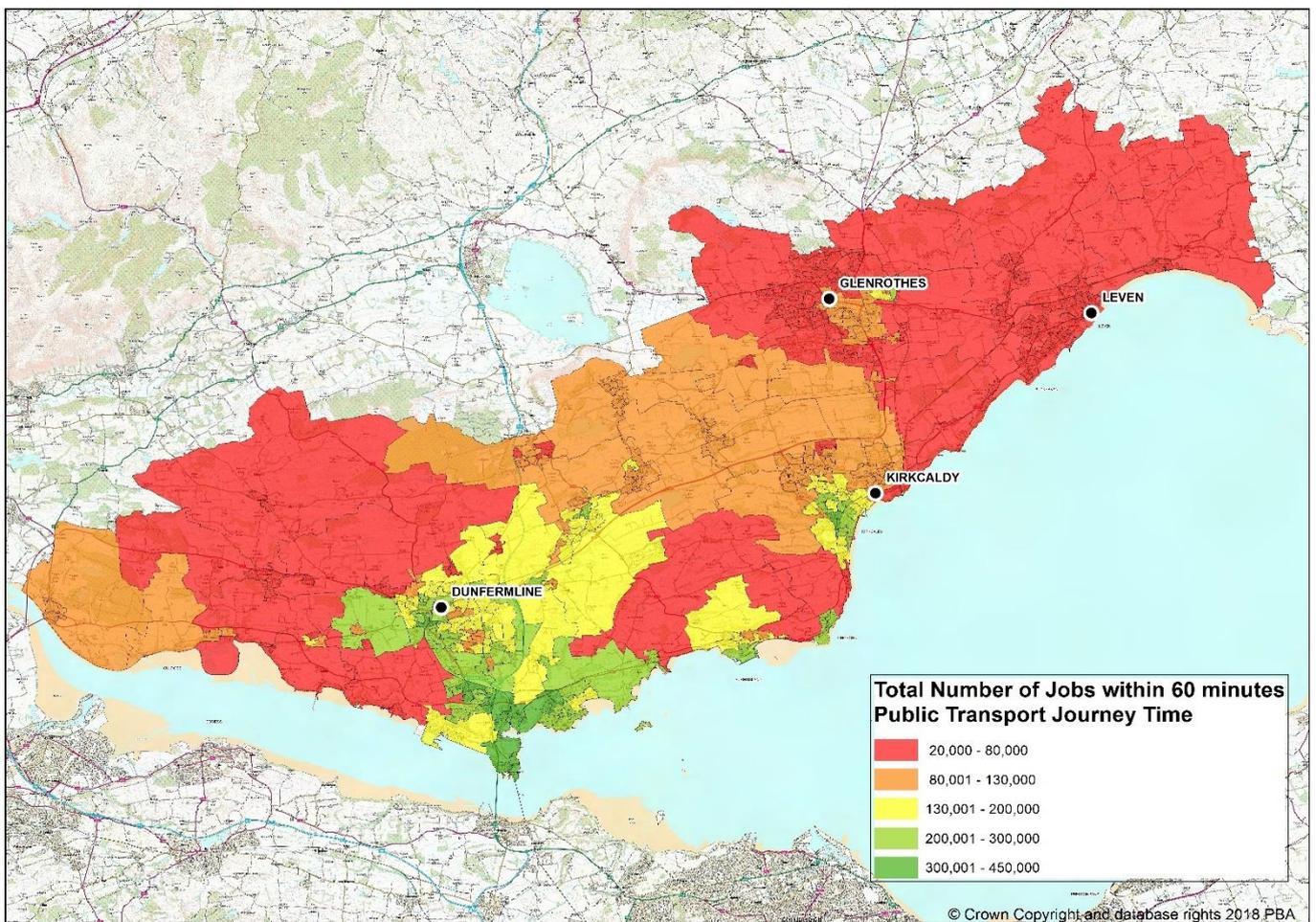
3.4.6 Industry Workplace (BRES 2016)

The graphic on the right shows the breakdown of employment in Levenmouth by industry. The total number of employees is circa 9,000. Over half (54%) of these are spread across three particular industry sectors of health, manufacturing and retail, with 3,000 alone being employed in beverage manufacturing (Diageo) and health (Cameron Hospital and Randolph Wemyss Hospital). These figures reveal a high dependency on a small number of sectors



[Values rounded to nearest percentage]

3.4.7 Access to Jobs by Public Transport (TRACC)



The figure above provides a graphic representation of the number of jobs within one-hour access by public transport on an average weekday between 630am and 930am. The highest number (300,000 to 450,000 jobs) is represented by green shading, followed by yellow (200,000 to 300,000 jobs). The lowest number (20,000 to 80,000 jobs) is captured by the red shading. The graphic shows that most of the areas with access to high numbers of jobs are located near to the Forth crossings, giving likely access to Edinburgh and the Lothians, as

well as urban areas of Fife. There are also other parts of Fife which have access to high numbers of jobs. These tend to be in those areas located near to rail stations with fast services into Edinburgh in the south or perhaps Dundee in the north. It is also clear from the graphic that that the area of Levenmouth, the fourth largest populated area of Fife, is within an hour's access by public transport to a significantly smaller number of jobs as represented by the red shaded [i.e. 20,000 to 80,000].

Key point – the area of Levenmouth, which is the fourth largest populated area of Fife, has a relatively low number of jobs within a 60-minute travel time by public transport.

3.4.8 Economy, Summary of Key Points

The Levenmouth area has gone through a period of considerable change over the last fifty years. It has witnessed a decline in the traditional heavy industrial manufacturing jobs, particularly mining. While many of the old jobs have been replaced by new employment opportunities, these have not been sufficient to replace all. Figures reveal that the area faces economic challenges, with relatively high levels of unemployment and benefit claimants, coupled with relatively low levels of household income compared to other parts of Fife. The decline in local job opportunities also means that the local working population has to travel further for employment with over 60% working outside the local Levenmouth area. The distance to travel for employment can be considerable and the evidence shows that there is a relatively low number (20,000 to 80,000) jobs within 60-minutes travel time by public transport relative to many other parts of Fife, particularly those places nearest to Edinburgh and in close proximity to rail services linked to areas with high numbers of jobs.

3.5 Transport Context

Having established the social and economic context, it is also necessary to understand the transport context to assist in the identification of problems and opportunities.

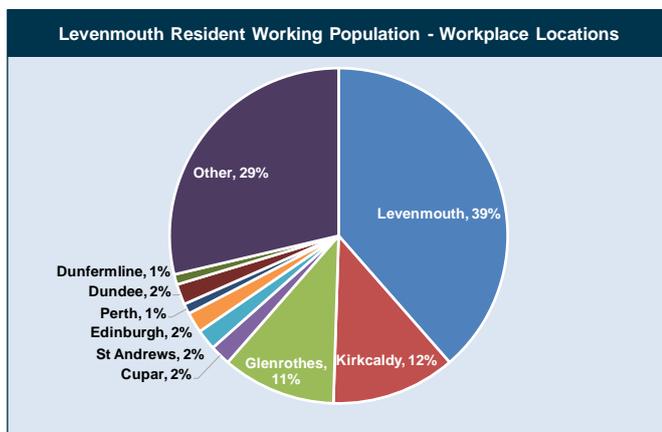
Transport is crucial to the sustainability of an area or community. Transport services allow people to connect to key facilities such as health, education, shopping and employment. The latter is particularly important in the case of Levenmouth given the changing nature of the industrial make-up of the area and the relatively high levels of unemployed and economically inactive. Transport services also allow people from outside to access the area, whether that is commuters getting to work, tourists visiting, or suppliers serving local businesses.

This subsection describes the transport provision serving the Levenmouth area as well as road network performance, covering the following key topics and indicators:

- Workplace locations and travel-to-work mode share for Levenmouth residents.
- Public Transport services [e.g. bus and rail destinations, timetables, frequencies and fares].
- Public Transport journey time accessibility to key services and facilities [e.g. to employment, health services, and education and leisure facilities].
- Road traffic levels and accidents.

3.5.1 Residents – Workplace Locations (2011 Census)

The figure below reveals the workplace location for the resident working population.



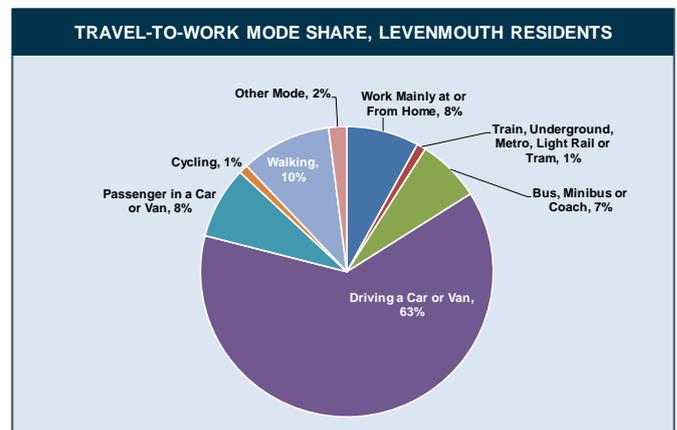
The figure shows that most people work or study in Levenmouth itself (39%) followed by Kirkcaldy (12%) and Glenrothes (11%). It is notable that a small

percentage of the working population work or study in Edinburgh (2%) and that this is of a similar magnitude to those that work or study in Cupar, St Andrews, Dundee and Dunfermline. This does not necessarily mean that this is due to choice but perhaps due to the transport services available to access the opportunities in the area.

Key point – in terms of current work locations, the vast majority of residents of Levenmouth are currently dependent on access to jobs in Fife, particularly Levenmouth, Kirkcaldy and Glenrothes.

3.5.2 Mode Share (2011 Census)

The graphic below shows the overall travel-to-work mode share for Levenmouth residents in employment obtained from the 2011 census [i.e. it shows the travel mode that individuals generally use to access their employment or study location].



From the evidence of travel-to-work mode share, it can be seen that:

- For the resident population, over 70% of all work trips are made by car or van, either driving or as a passenger – this is higher than other selected comparator areas, including Kirkcaldy [69%], Dunfermline [67%], Cupar [65%], and Scotland as a whole [60%] (see Appendix C for details). The vast majority of the remaining trips are made by active travel modes [i.e. walk and cycle], bus/coach/train or people working from home.
- Under 10% of commuting trips were made by public transport.

Further analysis of the data is provided in Appendix D to this report. This reveals that:

- For the resident population working in the Levenmouth area itself (excludes those travelling to work outside the Levenmouth area), approximately 50% travel to work by car and only 5% use the bus. A larger proportion (23%) use active travel modes

[i.e. walk or cycle]. One fifth (20%) of the resident population work from home.

- For travel-to-work trips to other locations within Fife, such as Glenrothes, Kirkcaldy, and to Dundee, car is the most dominant mode of travel, accounting for 80%-90% mode share.
- For those working in Edinburgh, approximately two thirds travel by car, with the remaining third using public transport (a larger proportion uses the train than the bus).
- The largest proportion [i.e. approximately 10%-15%] travelling to work by bus are to jobs located in St Andrews, Kirkcaldy, Dunfermline and Edinburgh.

The proportion travelling by bus to these more regional job locations is higher than the proportion using the local bus commute to jobs located within the Levenmouth area.

Key point – a significant majority of working residents in Levenmouth travel to work by car or van. Only a small minority use public transport. A higher share uses public transport to work in St Andrews, Kirkcaldy, Dunfermline and Edinburgh.

3.5.3 Bus Services

This subsection considers the bus network serving the Levenmouth area, both at a local and regional level.

3.5.4 Local Bus Services

Local bus services are mainly provided by Stagecoach. The routes radiate from Leven bus station to Methil, Lower Methil, Methilhill, Buckhaven, Windygates, and Kennoway. The services (updated July 2018) are summarised in the graphic below and service destinations, frequencies and average journey times are shown in Table 1 below.



Table 1: Local Bus Services from Leven Bus Station: Destination, Frequency and Average Journey Time

Destination	Morning Peak 7am-10am	Inter-peak Period 10am-4pm	Evening Peak 4pm-7pm	Average Journey Time (in minutes)
	Local buses per hour			
Buckhaven	5	7 to 8	7 to 8	11
Methil	3 to 4	4	2 to 3	5
Lower Methil	2 to 3	2 to 3	2 to 3	3
Methilhill	3 to 4	4 to 5	4 to 5	12
Windygates	2 to 3	2 to 3	3 to 4	17
Kennoway	3 to 4	3 to 4	4	16

The number of buses per hour for each destination has been coloured green, orange or red (with green indicating a relatively good level of service [i.e. a bus at

least every 20 minutes]; orange indicating a reasonable level of service [i.e. a bus at least every 30 minutes]; and

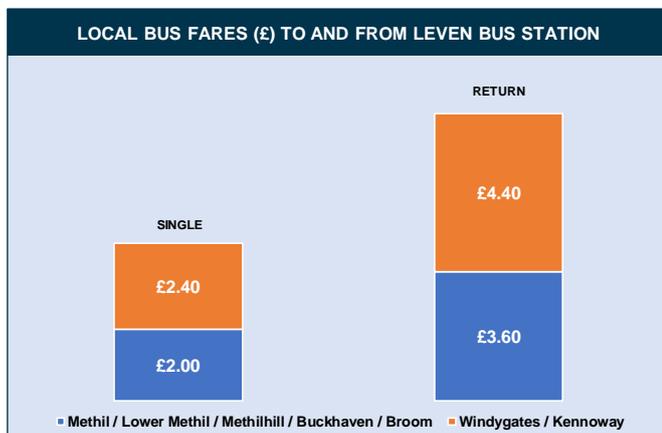
red indicating a relatively poorer level of service [i.e. a bus at least every 3 hours).

The following observations can be made from Table 1 above:

- During the morning peak period, Buckhaven is served by more buses per hour than any other destination (five per hour). The same trend is also shown for the Inter-peak and evening peak periods, with up to 8 buses per hour serving the town. Buckhaven is served by more buses across the whole day because all services from Kirkcaldy (services 7, 7A, X58 and X60) stop in Buckhaven before reaching Leven bus station.
- In Methil, Lower Methil, Windygates and Kennoway there are between two and four buses per hour in the morning and evening peak periods, meaning a bus at least every 30 minutes and, in some cases, every 15 minutes during peak times.
- All destinations can be reached within 20 minutes by bus from Leven Bus station.

3.5.5 Local Bus Fares

Single and return fares are set out in the table below. For Methil, Lower Methil, Methilhill and Buckhaven the single fare is £2.00 and £3.60 for a return. For Windygates and Kennoway the single and return fares are £2.40 and £4.40 respectively.



Stagecoach also offers day and season tickets covering the Levenmouth area which allow passengers to make unlimited journeys within the stated period. The prices and types of tickets are listed below.

- Day Ticket (£3.40)
- Weekly ticket (£11.80)
- Monthly (£45.40)

3.5.6 Regional Bus Services

Regional bus services are also, in the main, provided by Stagecoach. The Express City Connect Network provides a number of direct and indirect⁴ regional bus services connecting Leven with other settlements across Fife and beyond, including Cupar, St Andrews, Glenrothes, Kirkcaldy, Markinch, Dunfermline and Edinburgh. For Levenmouth residents wanting to travel to these destinations, other than Edinburgh, they would need to interchange at Glenrothes Bus station.

The Express City Connect Network services from Leven (updated July 2018) are summarised in the graphic and selected destinations, frequencies and average journey times from these services and other Stagecoach regional services are shown in Table 2 below. The table includes direct services only and does not include the time getting to Leven bus station and from the destination.

⁴ Bus services requiring an interchange

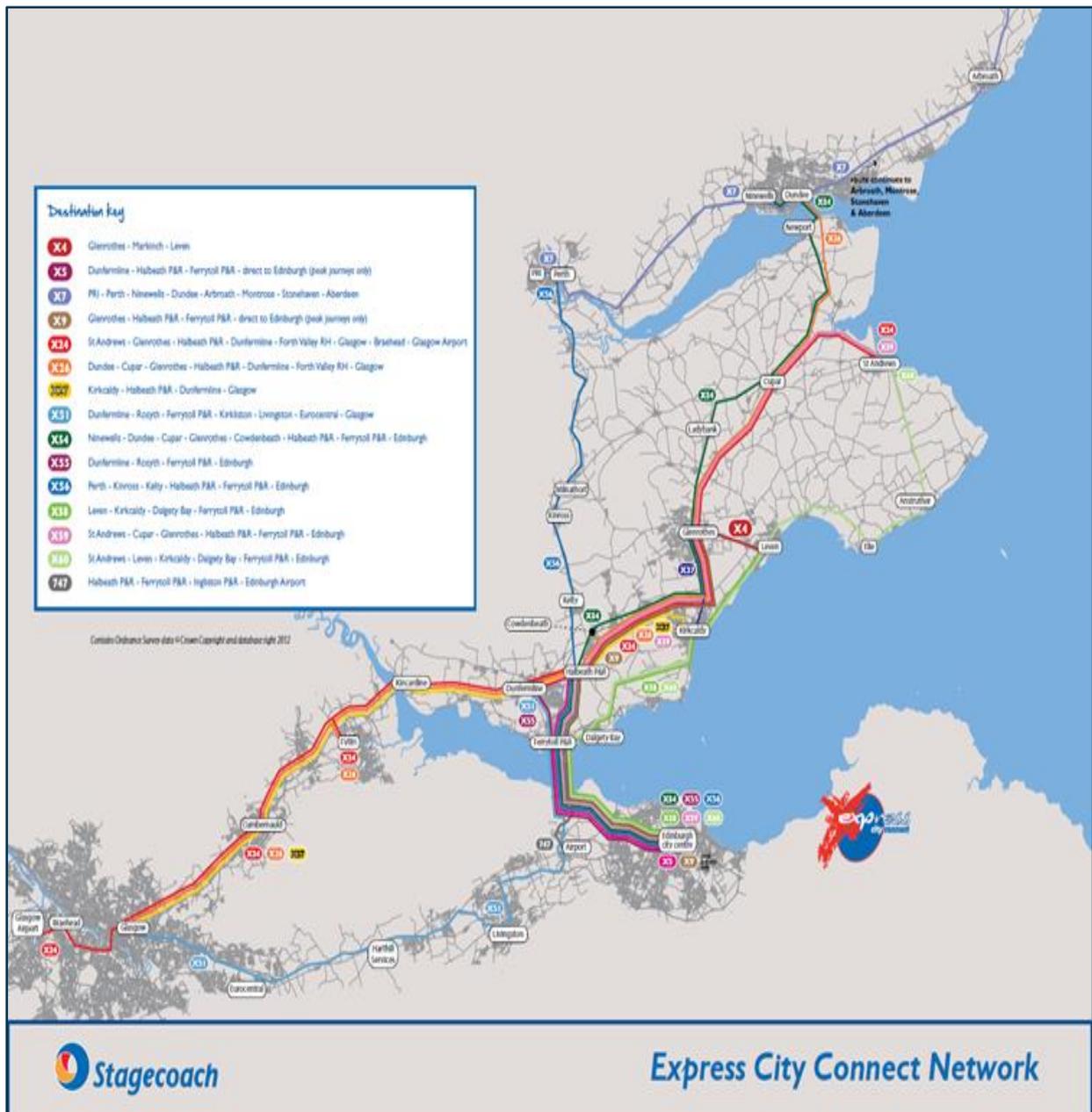


Table 2: Direct Regional Bus Services from Leven Bus Station to selected Destinations: Frequency and Average Journey Time

Destination	Morning Peak 7am-10am	Inter-peak Period 10am-4pm	Evening Peak 4pm-7pm	Average Journey Time (in minutes)
	Regional buses per hour			
Cupar	1 every 3 hours	1 every 6 hours	2 every 3 hours	38
Dunfermline	2	2	2	142
Edinburgh	1 to 2	2	1 to 2	105
Glenrothes	4 to 5	4	3	30
Kirkcaldy	5	6	5	38

Destination	Morning Peak 7am-10am	Inter-peak Period 10am-4pm	Evening Peak 4pm-7pm	Average Journey Time (in minutes)
	Regional buses per hour			
Markinch	4	3	2 to 3	24
St Andrews	1	2	1 to 2	53

The number of buses per hour for each destination has been coloured green, orange or red (with green indicating a relatively good level of service [i.e. a bus at least every 20 minutes]; orange indicating a reasonable level of service [i.e. a bus at least every 60 minutes]; and red indicating a relatively poorer level of service [i.e. a bus at least every 6 hours]).

The following observations can be made from Table 2:

- There is a relatively good level of service from Leven to Glenrothes, Kirkcaldy and Markinch, with a direct bus at least every 15-20 minutes across the day. Kirkcaldy is served by more direct buses per hour from Leven than any other selected destination.
- There is a reasonable level of service to St Andrews, Dunfermline and Edinburgh, with a direct service at least every hour across the day. At many times of the day, these towns and cities are served by a direct service every 30-minutes.
- Cupar has a relatively poor level of service and is served by the least amount of buses across the day. In the Inter-peak period (10am-4pm), there is only one bus linking the towns.
- Most selected destinations can be reached within one hour from Leven. It takes just under two hours to reach Edinburgh but over two hours to reach Dunfermline using a direct service from Leven.

While the table focusses on a morning peak of 7am to 10am, it must be recognised that if travelling to Edinburgh for a 9am work start, it is likely that someone would have to set off before 07:00. Buses from Leven station to Edinburgh before this time are at 04:45, 05:50 and 06:30 and would be a 'red' categorisation.

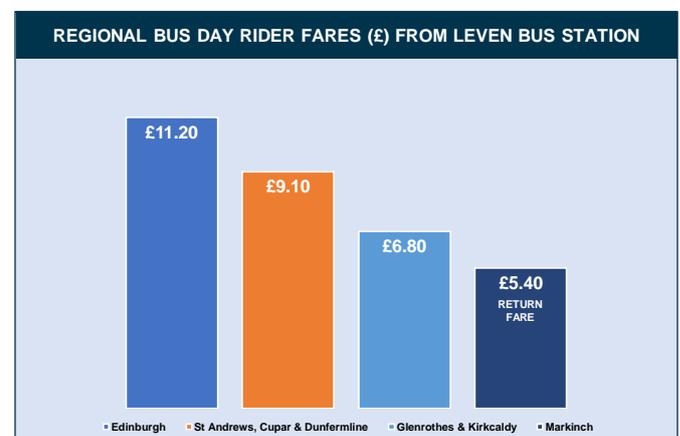
A key conclusion from the analysis has also shown that, while there are services involving interchange, there are no direct services from Leven to the following destinations:

- Dundee.
- Glasgow.
- Glenrothes with Thornton (rail station).
- Halbeath Park and Ride.

Glenrothes Bus station is the main interchange for services to these destinations. It takes approximately 30 minutes to travel to Glenrothes Bus station from Leven.

3.5.7 Regional Bus Fares

The graphic below shows the cheapest day-rider fares from Leven bus station to a selection of destinations.



For people travelling from Leven to Edinburgh, it takes around 105 minutes from Leven bus station and costs £11.20 for a return journey. £11.20 is the price of a Stagecoach Fife dayrider+ day ticket, which covers all the journeys made in a day in Edinburgh and Fife on Stagecoach services. This is cheaper than buying a day return ticket.

Key point – the level of service for local and regional bus services is mixed. For local services from Leven, some destinations have relatively high frequency at all periods [e.g. Buckhaven], with others having less frequent destinations. All local destinations have at least two buses per hour up to 7pm, however many services stop after at this time. For regional services, many destinations have a reasonable service with at least one direct bus per hour [e.g. Kirkcaldy, Glenrothes, Dunfermline and Edinburgh], however the timetable is limited if one was to travel to Edinburgh for a 9am start. Cupar is less well served, with direct buses much less frequent. There are no direct services to Glasgow, Dundee, Glenrothes-with-Thornton rail station or Halbeath Park & Ride.

3.5.8 Rail Services

There are three railway stations outside of the Levenmouth area that connect people to other areas of Fife and beyond. These are Markinch, Glenrothes-with-Thornton and Kirkcaldy. The stations are represented by the three red dots on the map below, with the area of Levenmouth captured in the blue dotted line.

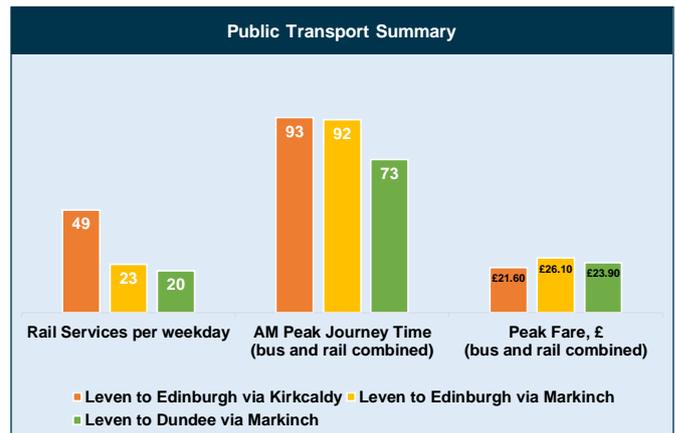


The nearest rail station is Markinch, just under six miles from Leven bus station, and is served by the X4 Express Bus Service. The average bus journey time from Leven to Markinch railway station is 20 minutes.

Kirkcaldy rail station is accessed by local bus service number 7 and express services X58, X60 and X62. All of these services stop at Methil, Methilhill, Buckhaven and Leven, providing access for the majority of areas of Levenmouth. However, the corresponding journey times, including walk time to and from the bus, range from approximately 30 minutes to 45 minutes depending on the service used.

There are no direct bus services from Leven to Glenrothes-with-Thornton railway station. There are, however, bus connections available and these journeys on average take over an hour to reach the station.

The graphic opposite summarises selected public transport journey details from Leven to Edinburgh via Markinch and Kirkcaldy, and to Dundee via Markinch.



To Edinburgh via Kirkcaldy – the graphic reveals that there are 49 rail services per weekday between Kirkcaldy and Edinburgh. This includes 11 in the AM peak and 20 in the Inter peak. The average AM peak journey time is 93 minutes, ranging from a minimum of 75 minutes to a maximum of 114 minutes. The peak and off-peak return train fare is £14.80. If travelling from Leven to Kirkcaldy by public transport, then an additional £6.80 would need to be added for the return bus journey, giving a total of £21.60.

To Edinburgh via Markinch – there are 23 rail services per weekday from Markinch to Edinburgh. The quickest AM peak journey time is 86 minutes and the longest journey time is 100 minutes. The return fare from Markinch during the peak period is £20.70, with the off-peak fare lower at £11.80. If travelling by bus to and from Leven, then an additional £5.40 would need to be added to the train fare and £4.70 if travelling from Kennoway / Windygates. This would give a total daily cost of £26.10 in the peak and £17.20 in the off peak from Leven.

To Dundee via Markinch – it is also possible to travel to Dundee from Markinch frequently each weekday. The graphic reveals that there are 20 rail services per day, with four in the AM peak and five in the inter peak. The journey time ranges from 61 minutes to 78 minutes, with an average of 73 minutes. The cost of the fare in the peak period is £18.50, falling to £13.50 in the off peak. Interestingly the peak fare is lower but the off peak is higher compared to the fare from the same station to Edinburgh. Similarly, travelling to Edinburgh from Leven, a return bus fare would be required, costing £5.40, meaning a total cost in the peak of £23.90 for public transport to and from Dundee and £18.90 in the off peak.

Whilst the above has focussed on travelling to and from Leven to the rail station by public transport, the journey would be reduced by around five to 10 minutes depending on time of day if accessing the station by car. For those with access to a car, free parking is available at Markinch station (143 spaces) and also Kirkcaldy (625 spaces). While at sometimes demand can be high, survey evidence suggests there are parking spaces most times of the day/week.

Key point – there are three potential options / routes for people travelling from Leven to Edinburgh using rail. However, only two of the options can be deemed practical (Kirkcaldy or Markinch) given the journey time accessibility issue with Glenrothes-with-Thornton. On average, it takes around 90 minutes for the one-way journey via Kirkcaldy or via Markinch. During the AM Peak period, a return journey through Kirkcaldy costs £14.80 and £20.70 if the rail connection is made at Markinch. This is on top of the bus fare to the rail station if travelling by public transport which could cost between £4.70 and £6.80 return depending on time of day and which rail station is used. Travelling to Edinburgh by regional bus is slower (over 100 minutes), but the cost is lower at £11.20.

3.5.9 Public Transport Accessibility to Key Services

3.5.10 The figure below illustrates graphically public transport accessibility to the centre of Edinburgh which is used as a proxy for a location of key services such as health, education, employment and culture. The graphic reveals that, from Kirkcaldy, the travel time for a return trip to Edinburgh by public transport can be made in under two hours. From Glenrothes, however, the return trip is likely to take between 2.5 and 3.5 hours, with some places actually more than this and some less than two hours. This pattern is similar in the Levenmouth area, albeit the areas represented by a greater than 3.5 hours return journey time or less than two hours return journey time are more limited. Indeed, there are no areas in Levenmouth where the return journey time to Edinburgh city centre is less than two hours.

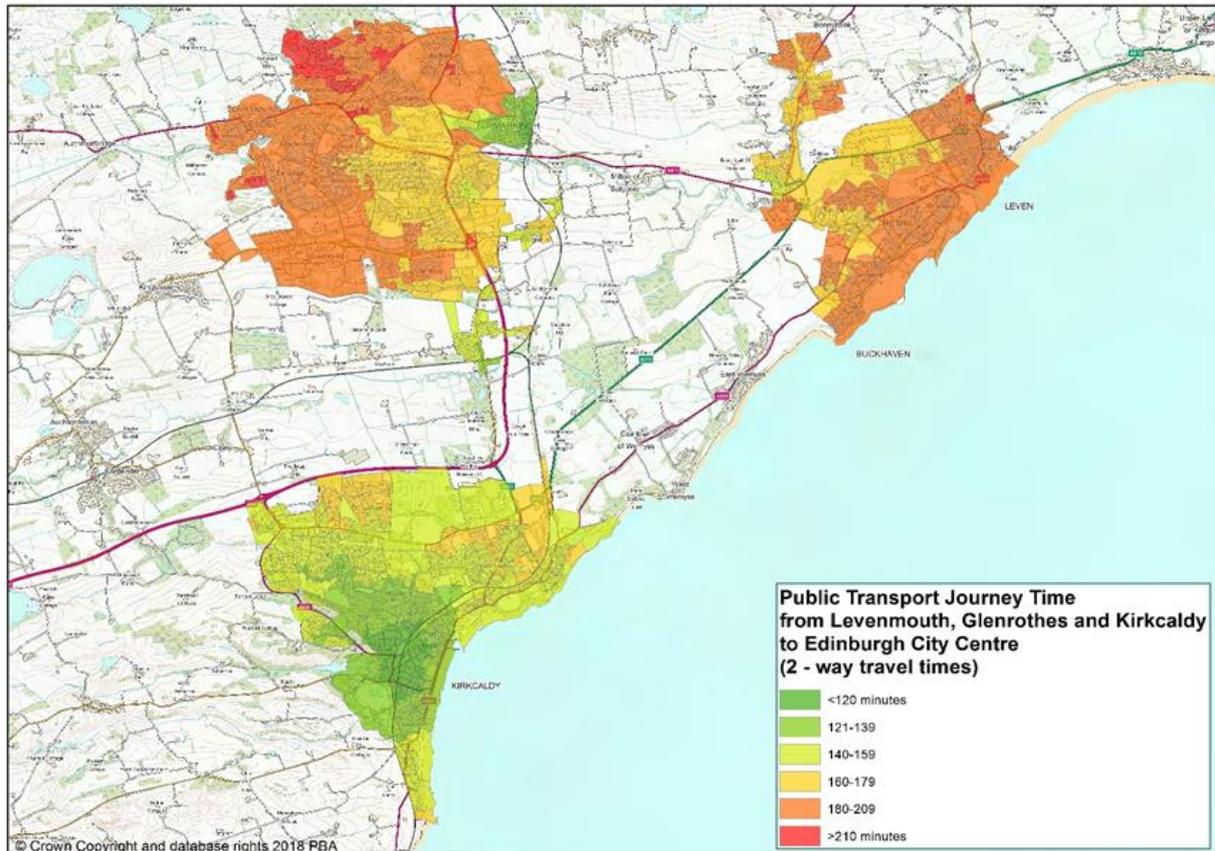


Figure 2: Access to Edinburgh City Centre by Public Transport⁵

3.5.11 Whilst the above figure focuses on access to Edinburgh city centre, it is recognised that people may be going beyond this location to visit other services offered in the capital. Figures 3, 4 and 5 below therefore present similar maps, providing a small selection of examples, revealing journey times from the same areas to education (University of Edinburgh King’s Buildings); health (Edinburgh Royal Infirmary Hospital); and shopping (Gyle Centre). The maps show a similar pattern to the one above with the majority having a journey time in excess of 3.5 hours from the Levenmouth area to Kings Buildings and over 4 hours to the Royal Infirmary. The journey times are similar to those from Glenrothes but longer than from Kirkcaldy.

⁵ It is recognised that not all services are located in the centre of Edinburgh and there may be an onward journey from there, but the main purpose of the graphic is for comparison and Edinburgh is used as an example of a city region that the residents of Levenmouth may want/have to travel to for access to necessary services.

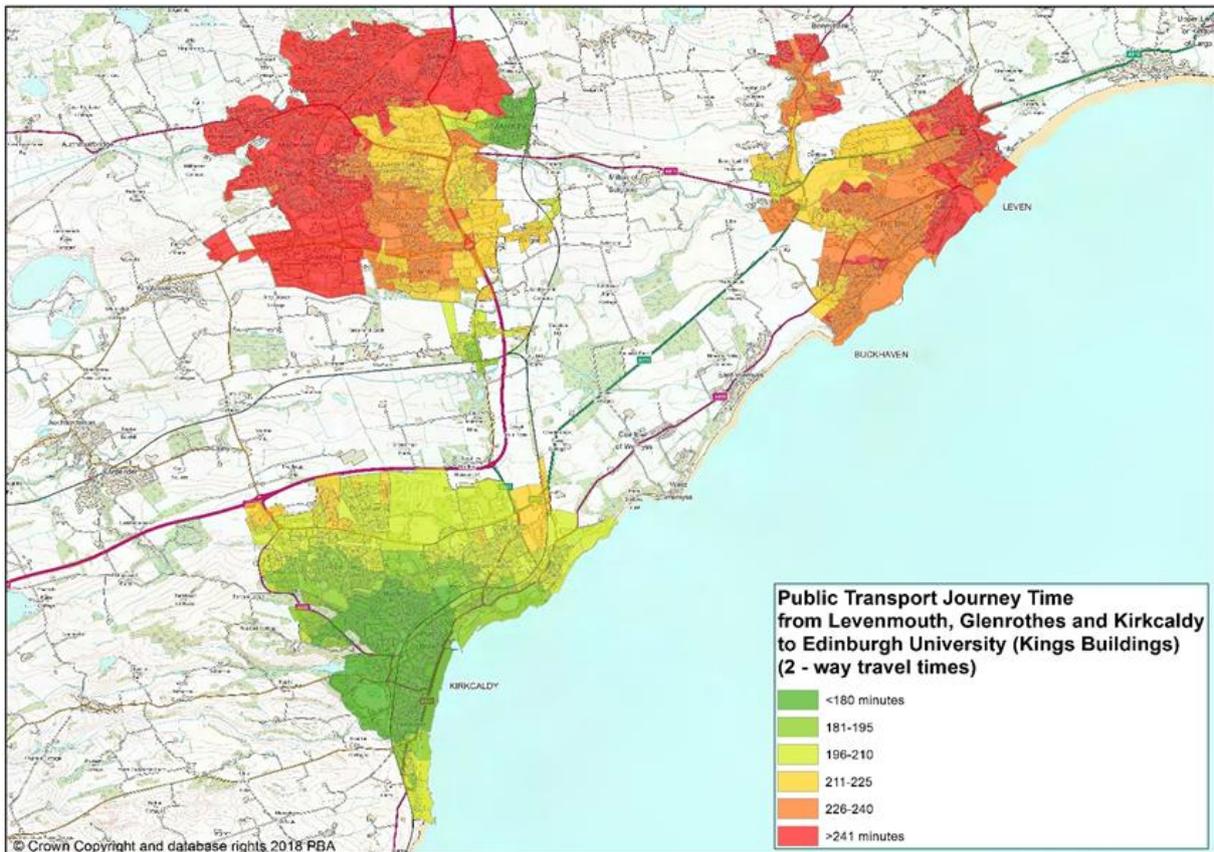


Figure 3: Public Transport Journey times to University of Edinburgh (Kings Buildings)

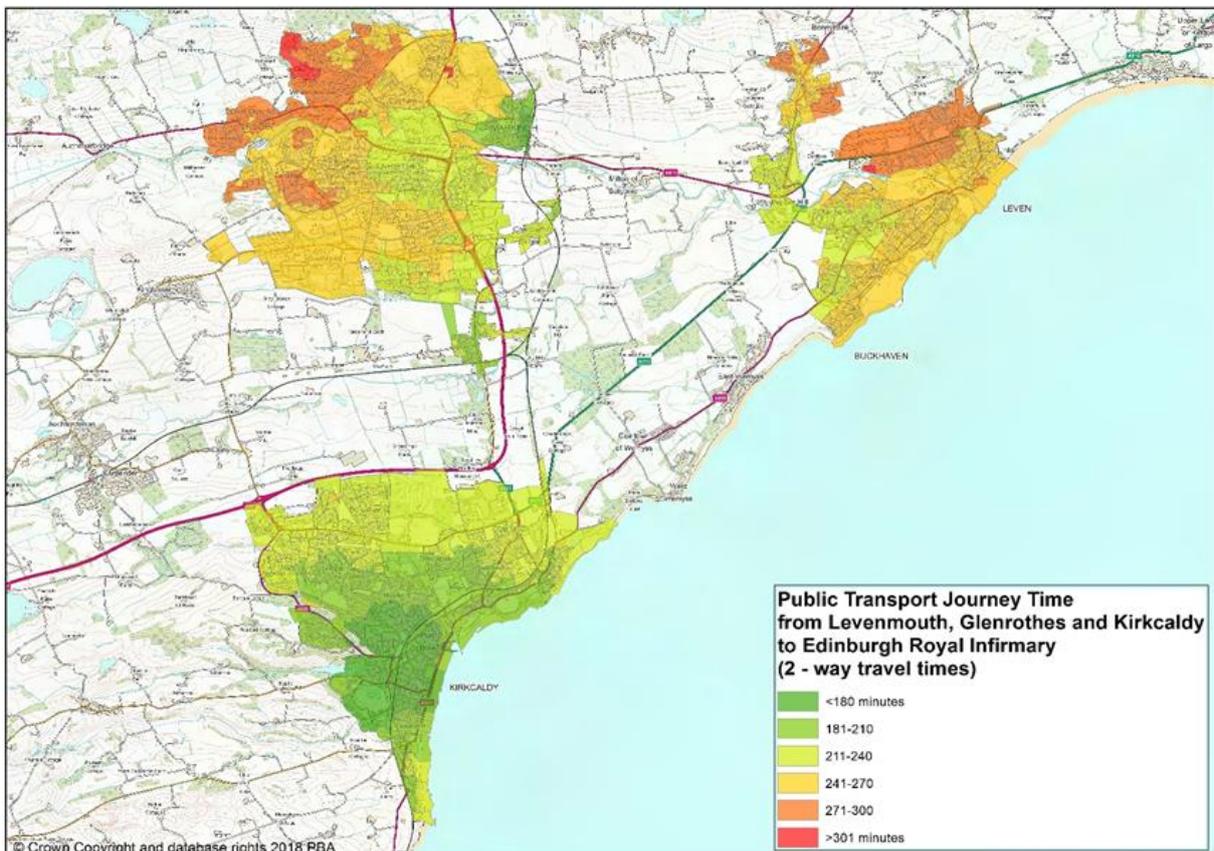


Figure 4: Public Transport Journey Times to Edinburgh Royal Infirmary

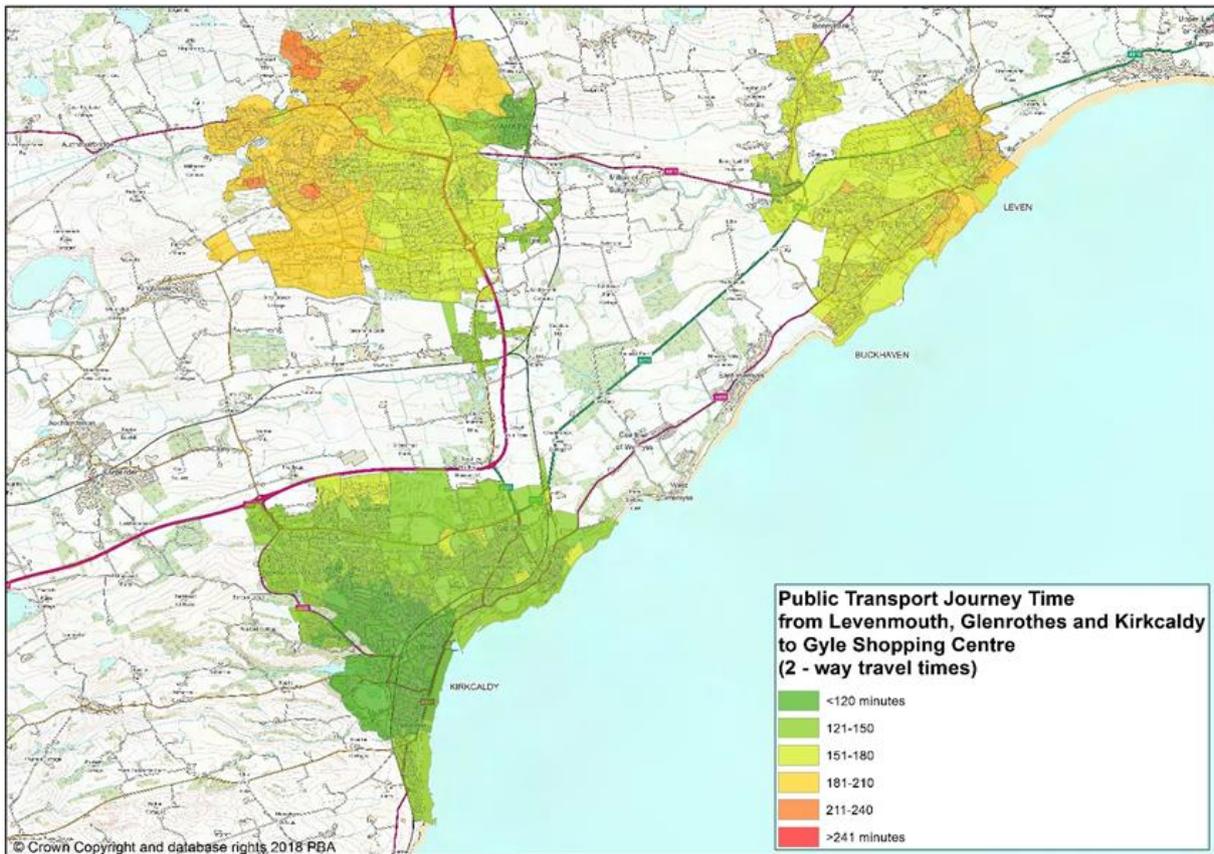


Figure 5: Public Transport Journey Times to Gyle Shopping Centre (west Edinburgh)

3.5.12 Table 3 below sets out a comparison of public transport service provision for people working in Edinburgh, again, for comparison, for the areas of Kirkcaldy, Glenrothes and Levenmouth. The table shows that the three areas are similar in terms of road miles to Edinburgh, with the distance from Levenmouth, Glenrothes and Kirkcaldy being 36, 31 and 29 miles respectively. The table reveals that the proportion of the total working population of Levenmouth who work in Edinburgh is similar to both Kirkcaldy and Glenrothes. The average morning bus journey times from Levenmouth to Edinburgh is higher at 109 minutes than 84 minutes and 81 minutes respectively from Kirkcaldy and Glenrothes. The average rail journey time is even lower than the bus journey times for Kirkcaldy and Glenrothes at 46 minutes and 63 minutes respectively.

Table 3: Settlement Comparison of Public Transport Service Provision for People Working in Edinburgh (2011 Census, Traveline)

Settlement	Approximate Road Mileage to Edinburgh	Total Working Population	Working in Edinburgh	% Working in Edinburgh	AM Bus Frequency	AM Bus Average Journey Time	AM Rail Frequency	AM Rail Average Journey Time
Levenmouth	36	15,400	410	3%	3	1hr 49m	-	-
Kirkcaldy	29	21,100	1,300	6%	6	1hr 24m	7	46 mins
Glenrothes	31	16,800	520	3%	6	1hr 21m	0/5 ⁶	63 mins

Values rounded to nearest hundred or nearest percentage (where relevant)

⁶ Value depends on whether or not Glenrothes-with-Thornton is considered to serve Glenrothes residents.

3.5.13 Traffic Volumes (DfT)

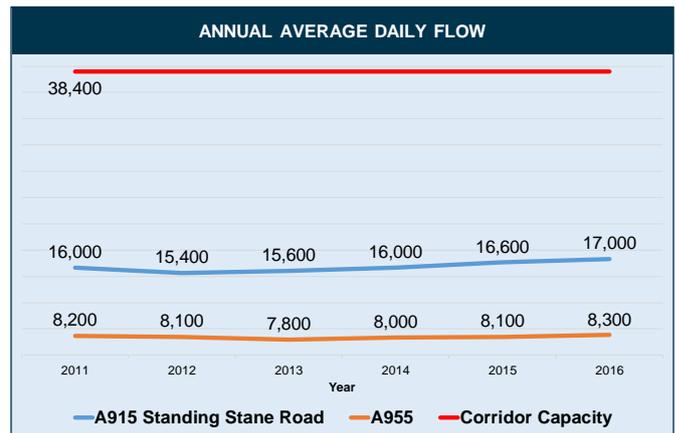
There are seven observed count sites along the A915 Standing Stane Road and four sites along the A955 listed on the Department for Transport (DfT) website.

The average estimated traffic volumes on the A915 Standing Stane Road and A955 between 2011 and 2016 are shown in the graphic opposite.

The A915 Standing Stane Road was estimated to be the busiest route, carrying approximately twice the volume of traffic than the parallel A955 between 2011 and 2016. Over this same period, both roads experienced a small increase (1%) in traffic levels.

Both roads are single lane carriageways, each with a capacity of approximately 1,600 passenger car units per hour, meaning traffic operates with minimal congestion related issues.

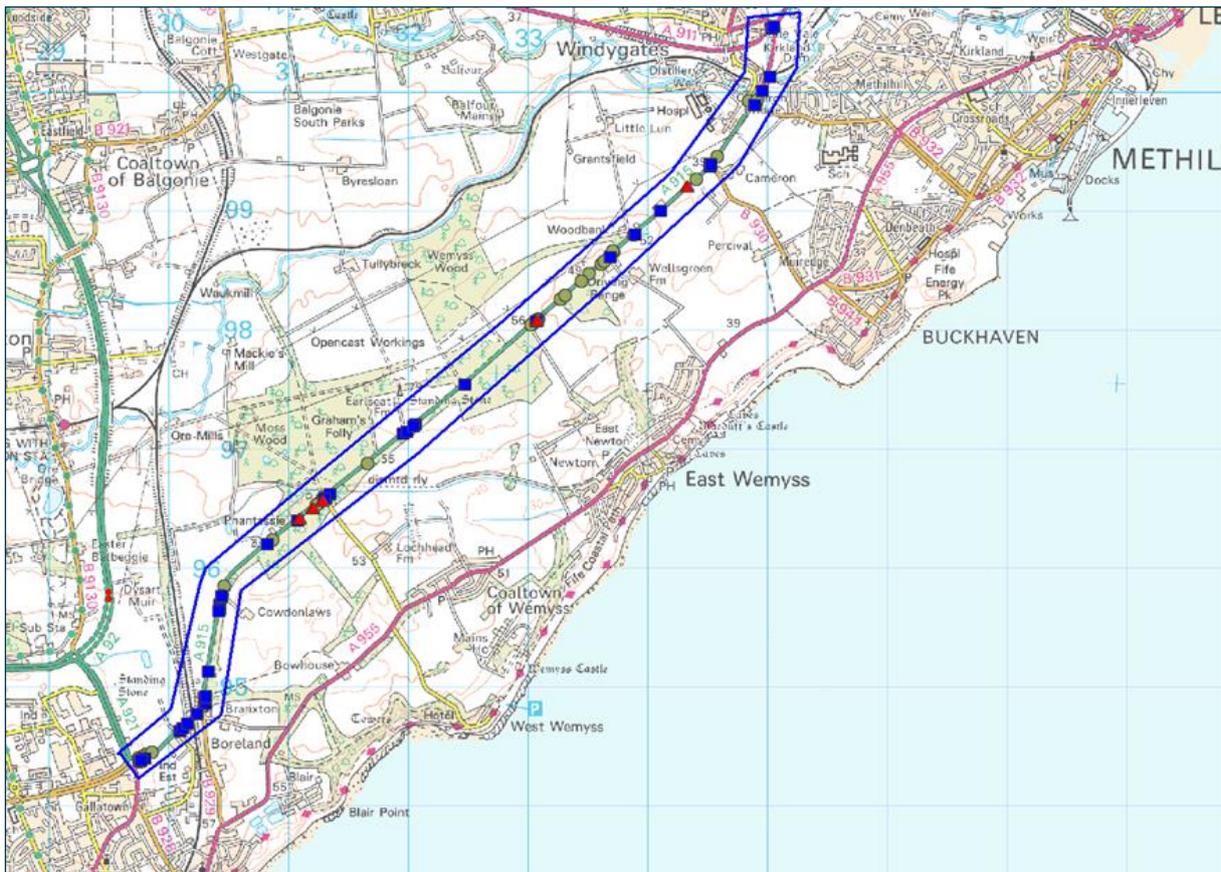
Without any further detailed analysis, it is not possible to determine where any congestion hotspots may be located at specific times of the day.



Key point – both the Standing Stane Road linking Leven with Kirkcaldy to the south west and St Andrews to the north east, and the A955 linking Leven with Lower Largo to the north east, operate within capacity and have experienced no real material change in traffic volumes between 2011 and 2016.

3.5.14 Road Traffic Accidents (Fife Council)

There has been a total of 97 reported accidents on the A915 Standing Stane Road between Kirkcaldy and Windygates between January 2013 and December 2017. The locations and severity of the accidents that have occurred are shown in the graphic below.



Injury/Damage Key: Red Triangle = Serious Injury, Blue Square = Slight Injury, Green Circle = Damage Only

3.5.15 Five collisions reported serious injury, 43 collisions reported slight injury and 49 collisions reported damage only with no injury. There have been no fatal injury collisions reported within the five-year period. This is shown in Table 4 below.

Table 4: Number of Reported Accidents by Severity Type

Accident Severity	2013	2014	2015	2016	2017	Total
Fatal	-	-	-	-	-	-
Serious	1	1	1	2	-	5
Slight	7	12	8	11	5	43
Damage	19	18	3	6	3	49
Total	27	31	12	19	8	97

3.5.16 The five most common factors contributing to approximately half of all reported accidents are listed below, with occurrence in brackets:

- Failed to look properly (18)
- Failed to judge other person's path or speed (14)
- Sudden braking (7)

- Following too close (5)
- Travelling too fast for conditions (5)

3.5.17 Overall, “failed to look properly” is the most common factor contributing to an accident. This is a term that reflects an error on the driver’s part and reflects poor spatial awareness before committing to a manoeuvre. “Failed to judge other person’s path or speed” is also a common contributory factor to an accident. Other contributory factors are far less common by comparison.

Key point – in general, the number of reported accidents on Standing Stone Road has decreased over time, from a total of 58 in the two-year period 2013/2014 to 27 in 2016/2017, a 53% reduction. The two most common factors contributing to an accident were “failed to look properly” and “failed to judge other person’s path or speed.”

3.5.18 Traffic and Transport, Summary of Key Points

In terms of current work locations, the vast majority of Levenmouth residents are dependent on access to jobs in Fife, particularly Levenmouth, Kirkcaldy and Glenrothes. The evidence shows that the car is the most dominant mode for travel to work, with only a small minority using public transport or active travel modes. However, a higher share uses public transport to work in locations beyond the Levenmouth area, including St Andrews, Kirkcaldy, Dunfermline and Edinburgh. The level of service for local and regional buses is mixed and, for Fife’s fourth largest populated area, there are no direct bus services to Glasgow, Dundee, Glenrothes-with-Thornton (railway station) or Halbeath Park & Ride, the latter for onward connections to Edinburgh and Glasgow. In terms of rail, Markinch, Glenrothes-with-Thornton and Kirkcaldy railway stations provide access to Edinburgh, but only Markinch and Kirkcaldy stations are practical because of the journey time accessibility issue [i.e. no direct bus service] with Glenrothes-with-Thornton. In general, the journey time from Markinch or Kirkcaldy to Edinburgh is broadly similar at around 90 minutes on average. The rail fare from Markinch (£20.70), however, is much higher than Kirkcaldy (£14.80). Travelling to Edinburgh by regional bus is slower but the cost of travel is cheaper.

The overall journey time accessibility to the centre of Edinburgh, acting as a proxy location of key services and facilities such as health, education, employment and culture, is poor in comparison to Kirkcaldy and to some areas around Glenrothes. The evidence shows that, on average, a return trip will take in excess of 3.0 hours, with some places in the Levenmouth area taking more than this, whereas from Kirkcaldy the same return trip can be made in under two hours. A similar pattern is evident to other locations in Edinburgh, including the Gyle shopping centre, Edinburgh University and the Royal Infirmary, with the return journey times to the latter two taking over 4 hours for the majority in Levenmouth. Key factors to the long journey times are accessing the stations at Kirkcaldy and Markinch by public transport and interchanges.

4 Stakeholder Engagement

4.1 Introduction

4.1.1 Consultation and engagement are essential elements in the development of any transport strategy, appraisal or future design. They ensure the knowledge, ideas and experiences of people who live and work in a town, city or region feed in to the transport appraisal process. In addition, engagement needs to be inclusive and assist in the resolution of tensions between different interest groups by including all views at an early stage. This chapter presents the findings of the stakeholder engagement. It sets out the approach undertaken before discussing the responses and findings.

4.2 Approach to Engagement

4.2.1 The engagement consisted of a number of steps. The first involved a series of workshops and interviews with various groups. The aim was to gather views to inform the Initial Appraisal: Case for Change Stage, including helping with the process of gathering information on the problems, issues, opportunities and constraints with the provision of transport services in the Levenmouth area, and how this is impacting on the wider community and performance of the area. In parallel, two online surveys were carried out. The first survey was targeted at the general public and the second was with selected businesses. The remainder of the chapter includes details of each approach and the findings.

4.3 Stakeholders Included in the Engagement Exercise

4.3.1 The following stakeholder organisations, who agreed to participate, were included within the evidence gathering phase:

Organisations			
Fife Council – various departments	Freight Transport Association	Elmwood College	Wellesley Parish Church, Methil
Stagecoach	SEStran	Levenmouth Rail Campaign (LMRC)	Methil Heritage Friends
Bus Users UK	Chamber of Commerce	CLEAR Buckhaven	Elected officials, including MPs, MSPs and Fife Councillors
Abellio ScotRail	Scottish Natural Heritage	East Wemyss and MacDuff Community Council	Members of the Public through an online public survey
Network Rail	Scottish Fire and Rescue	Colinsburgh and Kilconquhar Community Council	The business community through a bespoke business survey.

4.4 Public Survey

4.4.1 In addition to the stakeholder engagement, an online survey was undertaken to gather views from the general public. The survey focused on many of the points raised during the engagement exercise outlined above with the aim of understanding whether these were representative of the wider community and did they capture the experiences and views of the community / public / residents of the Levenmouth area.

4.4.2 830 people completed the public survey, a very good response rate given the adult population [i.e. those eligible to participate]. Of those who took part, 69% (no. 572) have full access to a

car, 11% (no. 92) have limited access to a car and 20% (no. 164) have no access to a car and rely on other forms of transport.

4.5 Business Survey

- 4.5.1 An online business survey was developed with the aim of capturing the views of local businesses on the problems faced and opportunities not being realised due to the transport system and how this impacts on businesses in the area. The survey also helped to gather information/views on how transport problems can affect the attractiveness of the area to do business and/or discourage inward investment, and equally how transport opportunities could facilitate inward investment. A total of 22 businesses completed the online survey. The timing of the survey was then extended and a further 22 responses were received.

4.6 Crosscutting Themes

- 4.6.1 From the consultation and engagement with the stakeholders and organisations noted above, together with the findings from the surveys, a number of key cross-cutting themes became apparent. These were distilled into the following:

- the importance of connectivity to and from the Levenmouth area;
- difficulties in accessing employment opportunities and other important services beyond the Levenmouth local area by public transport;
- lack of suitable local and regional public transport services;
- problems with the operation of the road network;
- poor transport infrastructure for attracting economic investment;
- opportunities to maximise tourism; and
- limited Opportunities to take advantage of rail freight.

- 4.6.2 Details of the responses to the surveys are reported below, together with the views of those who took part in the engagement. The findings are presented through reporting on each of the cross-cutting themes identified above.

The Importance of Connectivity

- 4.6.3 A number of stakeholders interviewed were keen to stress the current lack of connectivity in the region and that connectivity was an important catalyst for growth and successful sustainable economic performance. Stakeholders noted that poor local and regional bus services and 'less than ideal' connections to the strategic road network contributed to problems such as:

- the ability for an area to attract investment and jobs;
- the ability to travel outside the area to seek and obtain employment;
- the ability to access other key services beyond the local area such as health, cultural, education and leisure;
- the attractiveness of an area as a place to live and work; and
- the difficulties in retaining young people in the area if there are limited opportunities.

- 4.6.4 Fife Chamber of Commerce in particular noted that connectivity is of critical importance within Fife, perhaps more than other areas as there are no major cities or hubs. Instead there are a few mid-sized towns which means that jobs and opportunities are spread more thinly across the

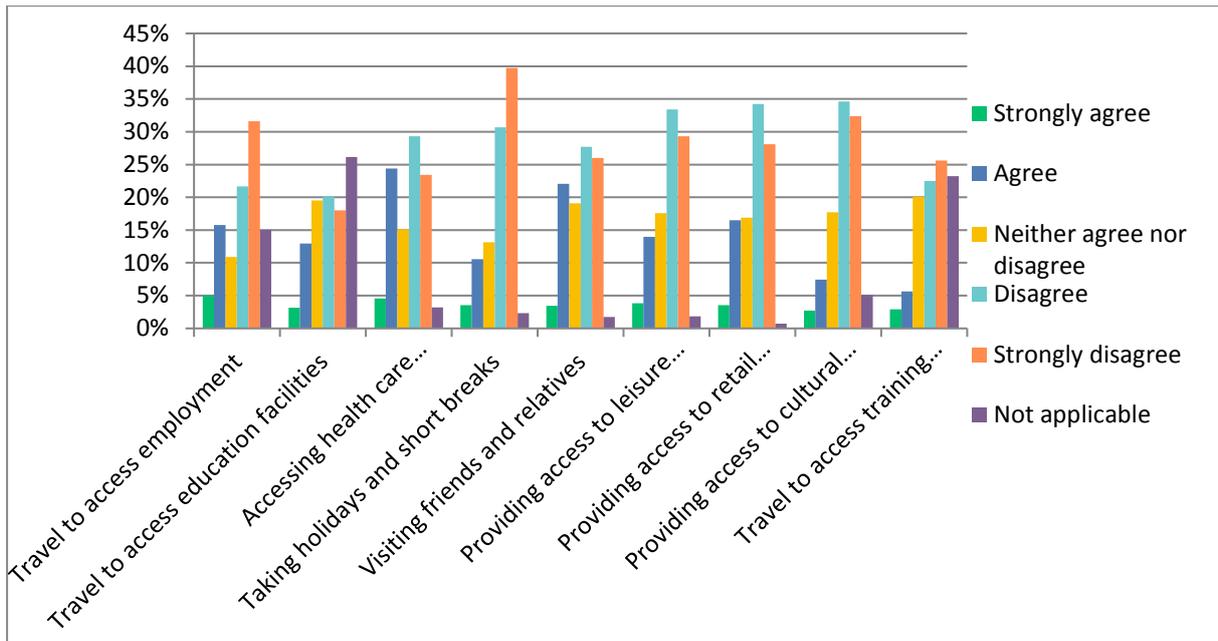
area and people needed transport services to access these opportunities. The Chamber explained that as well as providing access to jobs and services, providing interconnectivity would help to encourage increased investment within Fife itself.

- 4.6.5 Similarly, a number of stakeholders noted that businesses need access to a pool of labour with the necessary skills and whilst the appropriate people cannot always reside close to a business, there has to be a suitable transport network to allow people to travel to where jobs are located. Better matching of skills with the needs of businesses can increase productivity and growth. In the business survey just under 80% (no. 30) of respondents said that poor transport links were a weakness of their business and that improved transport connections would significantly benefit their business and the community of Levenmouth as a whole.

Difficulties in accessing jobs and other key services by public transport

- 4.6.6 A major theme which was raised frequently by stakeholders throughout the engagement period was the difficulties faced by a number of local people who need to access jobs and services by public transport, both in the local area and beyond. Whilst there were general views expressed about public transport services being poor, lacking in frequency or direct routes between certain areas, stakeholders felt the consequences of this is that local people find it difficult to travel to areas where they need to access jobs, education, health care, retail facilities or other services – chapter 3 revealed that under 40% of the working population in Levenmouth worked in the area. These issues are compounded by the high levels of deprivation in the area and relatively low levels of car ownership. Effectively, large proportions of local people have to rely upon the network of public transport services which, they noted during the engagement phase, does not allow them to access areas where they want/need to get to. It was claimed that public transport services were essentially dampening aspirations and ambitions leaving the community with limited employment and education opportunities. It was also claimed that it critically impacts upon older people as they often rely upon public transport to access healthcare or social opportunities.
- 4.6.7 In terms of employment, there were mixed views on areas where people need to be able to travel to for work e.g. local Levenmouth area, other Fife such as Dunfermline and Kirkcaldy, or outside Fife such as Edinburgh. There was an agreement that higher-value jobs are located within Edinburgh, but these are not always suitable for everyone and, as such, local people have to be able to access the jobs market in closer-to-home locations such as Glenrothes, Kirkcaldy, Dunfermline and Dundee. This is confirmed by the travel-to-work data presented in Chapter 3 which showed that over 60% of those in employment worked in either Levenmouth (39%), Glenrothes (11%) or Kirkcaldy (12%). Indeed, the Chamber of Commerce noted that with the redevelopment of Dundee Waterfront and the newly opened V&A museum, there will be a large number of service jobs likely to become available in the city. Connections to Dundee will therefore be important if local people are to have the opportunity to access them.
- 4.6.8 Local councillors reported that as traditional local employment opportunities have declined, people cannot physically access new employment opportunities that emerge and are available elsewhere e.g. Edinburgh. Councillors noted that this has transformed from a temporary problem to a generational one whereby there are examples of generations of families who have never worked. Councillors felt that this structural unemployment faced by families leads to an acceptance of reliance upon benefits and a cycle of poverty with local people feeling trapped and no way to access meaningful employment opportunities.
- 4.6.9 In terms of access to employment, in the public survey over 50% (no. 435) of respondents either disagreed (22%, no. 177) or strongly disagreed (32%, no. 258) that existing transport services fulfil their needs to travel to access employment. Just over 5% (no. 41) strongly agreed and 16% (no. 129) agreed with the statement.
- 4.6.10 In the responses to the business survey, just under 89% (no. 17) of those that answered the question said that transport links to get staff and customers to and from the premises were a key weakness of their location.

- 4.6.11 During discussions as part of the engagement, accessibility was not only related to employment however, but both education and health care were noted, with education in particular flagged as a major issue. Councillors and local residents noted that travel from the area to universities in Dundee and Edinburgh can be difficult due to long journey times and early starts required to get to campuses. Some explained that public transport would not allow a connection to get to education early enough in the morning, thus causing students to select a second choice further/higher education option or leave home and take on a much more expensive option. It was also noted that for many people who live within deprived areas of Levenmouth, moving to student accommodation at university campuses was not an option due to the large costs involved, which some families cannot afford. Anecdotal evidence was provided by councillors suggesting that young people in particular feel that these transport issues mean that access to further and higher education is not attainable. It was felt that these transport issues serve to dampen ambitions and expectations on what can be achieved in life, with elements of the young population accepting that they have no real access to further education and must look for locally based unskilled employment. It was also explained that because people don't live locally while going to university (because they are unable to travel on a daily basis) this impacts on the ambitions of other young people in the area i.e. not seeing others living locally and going to university affects their ambition/decision to also go to university.
- 4.6.12 Sixteen percent (no. 127) of respondents agreed (13%, no. 102) or strongly agreed (3%, no. 25) that current transport services fulfil local needs to travel to access education services, while 38% (no. 301) of respondents disagreed or strongly disagreed.
- 4.6.13 Similarly, access to healthcare was noted as an issue by a number of stakeholders, involving all levels of healthcare. In terms of basic healthcare, community groups reported that as local surgeries are consolidated, people have to travel further to access these. Stakeholders reported that public transport does not often allow direct access for all, and that bus and taxi services can be fully booked during school run periods, leaving no way to attend local appointments. Attending hospitals was also noted as a challenge when using public transport and, whilst smaller day units were accessible from Leven, if people are required to attend major hospitals in Edinburgh or Dundee there can be issues in terms of length of journey times and number of interchanges required. It was explained that long journey times with interchanges are not ideal for able bodied people but for those who require to attend a major hospital for treatment, this can represent a major challenge. Chapter 3 revealed that it can be a 4.5 hour return trip to access Edinburgh Royal Infirmary by public transport.
- 4.6.14 Twenty-nine percent (no. 235) of respondents agreed (24%, no. 198) or strongly agreed (5%, no. 37) that current transport services fulfil local needs to travel to access health services, while 53% (no. 428) of respondents disagreed or strongly disagreed with the statement.
- 4.6.15 Finally, a number of local councillors and the public explained that retail, cultural and leisure activities should form an important aspect in life, particularly for young people who live in more remote areas. They should have the same access and opportunity as those who live in the cities or other parts of Scotland to experience and learn from these activities. Presently, the public transport network does not provide sufficient access to larger cities for the people living in Levenmouth to allow them experience and enjoy these pursuits. Examples given include shopping, museums, theatre, night life, sporting events and concerts. As with the lack of access to education, this can lead to a dampening of expectations as local people learn to believe and accept that they cannot enjoy these services.
- 4.6.16 The figure below presents the results to the question asking Do you believe the existing transport network (road, bus, rail, walking and cycling routes) fulfils your needs for the following purposes? In all categories the disagreed and/or strongly disagreed answers significantly outweighed the agreed or strongly agreed responses.



Lack of suitable local and regional public transport services

4.6.17 Closely linked to the accessibility theme is the current public transport network. Stakeholders, businesses and the public highlighted that there are key issues with services on offer which include:

- lack of direct services;
- public transport integration;
- times of operation of the bus network;
- long journey times to get to destinations;
- high fares;
- unreliable public transport;
- poor information services; and
- lack of modal choice.

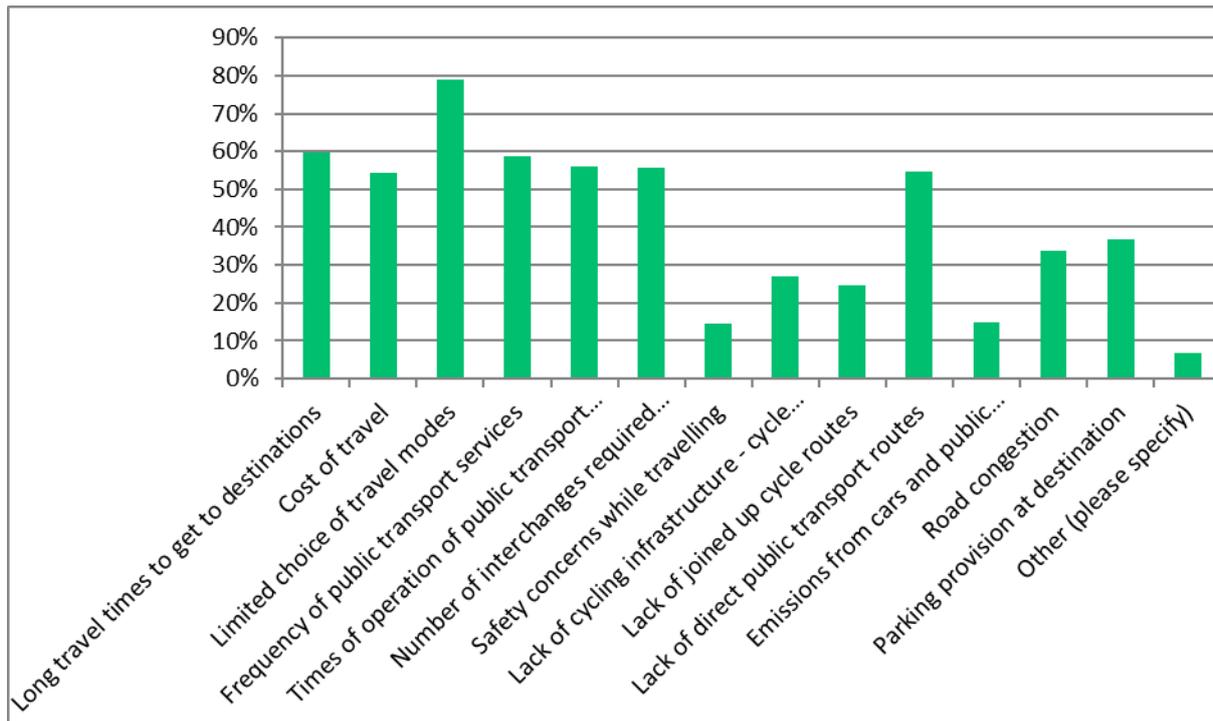
4.6.18 These issues were believed to render public transport wholly unattractive and again, act as a barrier to accessing services and opportunities, particularly in Edinburgh (see 4.6.34 below).

4.6.19 The Chamber of Commerce felt that local people viewed bus services as unreliable and therefore difficult to use for accessing employment. Local councillors were keen to note that bus services are in decline, with a number of local routes having been withdrawn in recent years, which means people have to interchange, which further affects the local community.

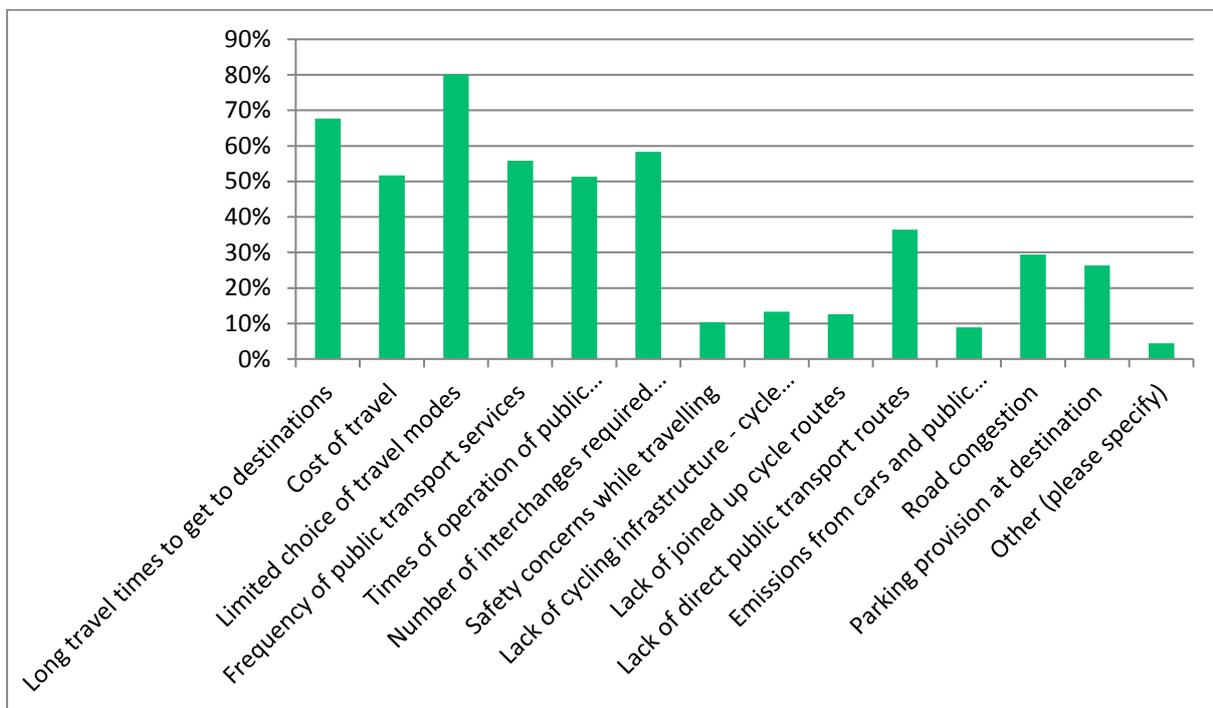
4.6.20 During engagements with Stagecoach, the operator acknowledged that in a commercial world, some services have to be withdrawn. However, it was explained that these decisions are not taken lightly and where possible, it looks to cover any shortfall by diverting or linking remaining services. Stagecoach evidenced this through the example of the recent withdrawal of the direct express service between Leven and Glasgow. While this service has been removed, it explained that Stagecoach has ensured Leven-based passengers can interchange at Glenrothes and continue to access Glasgow. Stagecoach has designed its network to allow efficient interchange but acknowledged that negative headlines of service cuts can affect its public perception. It said

it does, however, make efforts to engage with the public either through providing drop-in sessions if there are major network changes or providing online consultation facilities for smaller service modifications. Stagecoach explained that it is responsive to the public and often alters plans as a result of customer feedback.

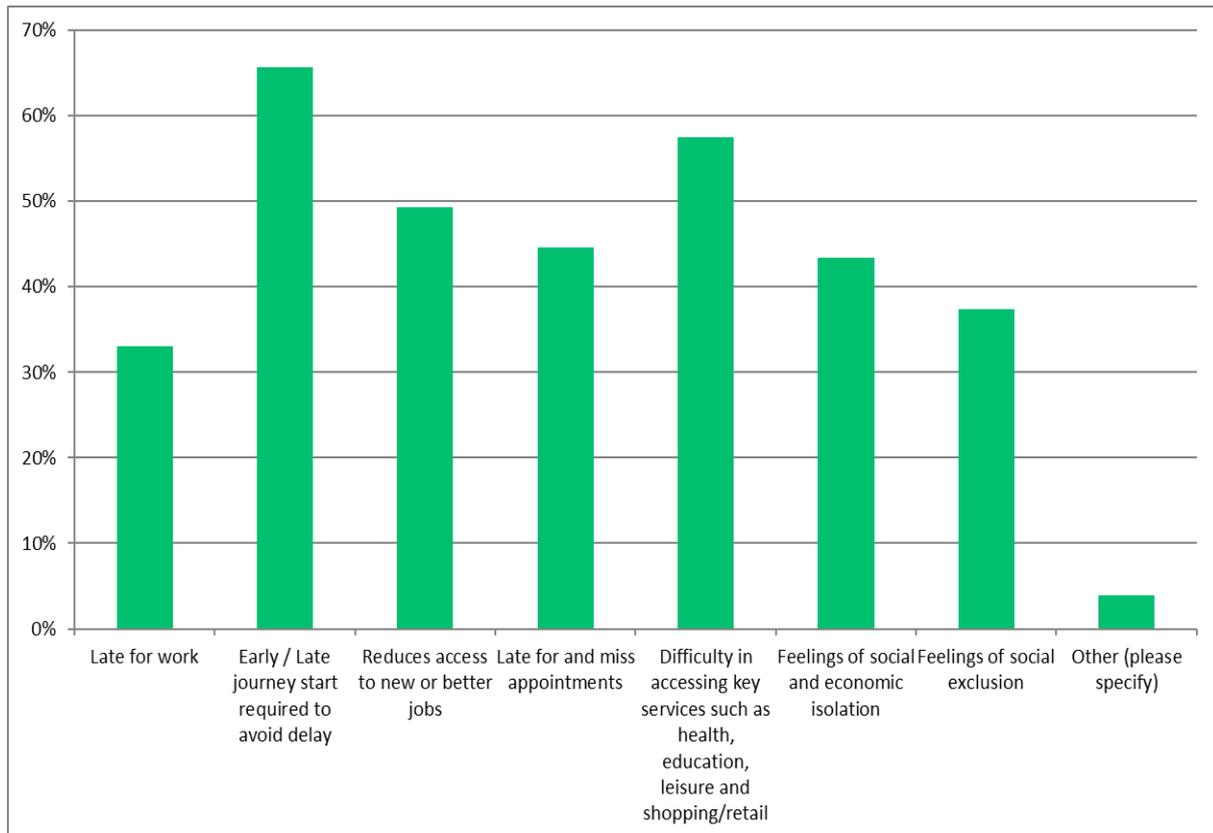
- 4.6.21 A recurring view was the lack of bus and rail integration and the difficulties in making journeys which required a multi-modal component. Many stakeholders and the public interviewed believe that local bus timetables are not developed to integrate with rail timetables and this can make already lengthy journey times significantly longer due to the requirement to wait to interchange.
- 4.6.22 During discussions with Stagecoach, it was noted that while some of these issues may be real, the bus company does suffer with an issue of perception. Stagecoach explained that it does not, generally, prepare its bus timetable around rail services. The bus network is, in the main, designed to allow integration across bus services rather than with rail services. Stagecoach also noted that it is currently working with ScotRail to provide an integrated solution between St Andrews and Leuchars. Stagecoach is able to sell ScotRail tickets directly from St Andrews bus station. It was explained that, due to the short distances involved, high passenger demand and frequent bus services, this is a route where bus and rail timetables can be integrated effectively.
- 4.6.23 Stagecoach noted that if all parties were willing, a similar arrangement could be investigated between Leven and a suitable rail halt. ScotRail was also open to the idea of working with bus operators and noted that the bus/rail ticket from St Andrews is one of its biggest selling integrated ticketing products.
- 4.6.24 Suggestions were also made that specific journeys which require this multi-modal element cannot be made at key times of the day. For example, there are limited bus services which operate early enough in the morning to integrate with rail and provide a connection to where people need to travel to before 9am. Similarly, stakeholders reported the same problem in the evening as bus operators reduce frequencies.
- 4.6.25 It was also explained that, because of the need to change services or modes together with timetables not being integrated, the journey could be very long, particularly for return journeys to Edinburgh. Examples were given of health appointments at Edinburgh Royal Infirmary.
- 4.6.26 Many stakeholders explained that not only was accessibility to services and public transport options/mode choice a problem, but when one could actually make the journey at a time that was suitable it was generally very expensive and therefore prohibitive on a daily basis or a few times a week. A common example given was rail fares from Markinch to Edinburgh. The question was asked many times why was this fare high relative to other rail fares for equivalent or similar distances.
- 4.6.27 While public transport services can be infrequent, it was explained that poor bus information services make them even less attractive because it is not possible to know whether it will actually turn up on time. Indeed, there were examples provided of people waiting for buses that did not turn up at all. While this may be more acceptable to local users if the frequency is every 10 or 15 minutes, it was explained that it is much less acceptable if the service is every one or two hours. There are live information screens in some places, [e.g. Leven Bus Station and Fife College], and there are other live screens in other parts of Fife, but they are not common across the Levenmouth area.
- 4.6.28 A number of the views expressed during the engagement exercise were confirmed in the responses to the survey. The figure below presents the responses to the question *Do you feel that any of the following have a negative impact on your ability to travel within the Levenmouth area?* More than half of respondents feel that long travel times, cost of travel, limited choice, frequency of public transport, times of operation of services, number of interchanges required and lack of direct routes impact on their ability to travel within the Levenmouth area. Factors that had a much lower negative impact include safety concerns, emissions and cycle infrastructure/cycle routes.



4.6.29 The responses were similar when asked about negative impacts on their ability to travel to destinations outside of Levenmouth. The figure below shows that the limited choice of travel modes and long travel times were the most popular answers, with the number of interchanges being another important factor.

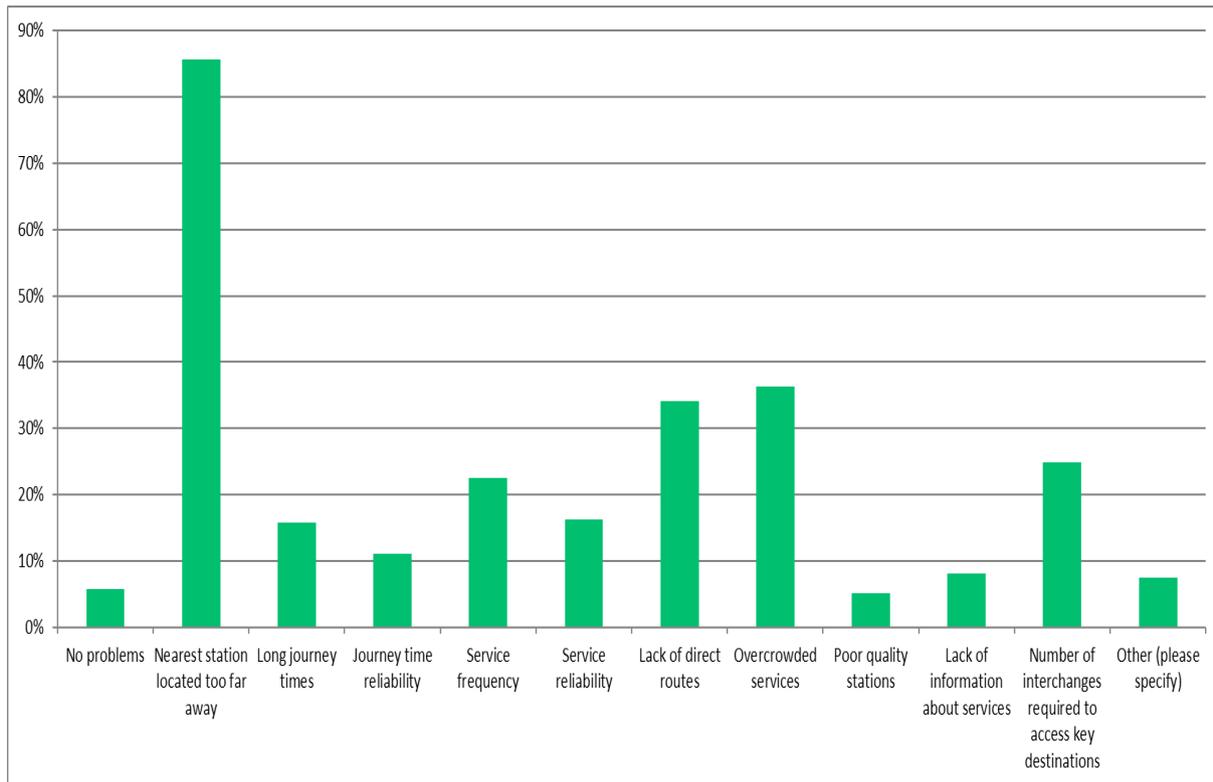


4.6.30 People were also asked how do the issues identified with using buses to travel outside of the Levenmouth area impact on them. The highest responses were they needed to change their time of travel, it caused them difficulty in accessing key services, it reduced access to new or better jobs, it impacted on them meeting appointments or they had feelings of social and/or economic exclusion. This suggests that the current provision of bus services is having a much wider impact than just transport.



4.6.31 In the business survey, 25 (56%) respondents answered that existing public transport services are a weakness to doing business in the area. Of those that answered the question, the key issues were: lack of direct public transport services (no. 18); limited choice of travel modes (no. 18); number of interchanges required when using public transport (no. 17); and frequency of public transport services (no. 15).

4.6.32 Turning to rail travel, the survey revealed that 53% (no. 407) of respondents to the public survey travel regularly by rail but 47% (no. 361) do not. Those that did not travel regularly by rail were asked *Do you feel that any of the following have a negative impact on your ability to travel by rail to areas outside Levenmouth?* The responses are shown in the figure below. The single largest response by some distance was that the nearest station was too far away. Eighty-six percent (no.347) respondents selected this option. This was followed by overcrowded services (36%, no.147) and a lack of direct routes (34%, no.138).



4.6.33 The survey asked how the issues identified with regard to rail affected them. Fifty-seven percent (no. 207) of respondents believed that the current provision of rail services was causing difficulty in accessing key services and meant journeys had to be re-timed.

4.6.34 The public survey asked which locations would you travel to more regularly that you don't do currently due to existing public transport provision. For those that answered the question, the largest response was Edinburgh (80%, no. 603), followed by Glasgow (69%, no. 519) and Dundee (64%, no. 486).

Problems with the Operation of the Road Network

4.6.35 In addition to issues with public transport in the area, stakeholders and the public voiced concerns over the operation of the road network. Issues included safety concerns, congestion and severance of the area due to its poor proximity to the strategic road network.

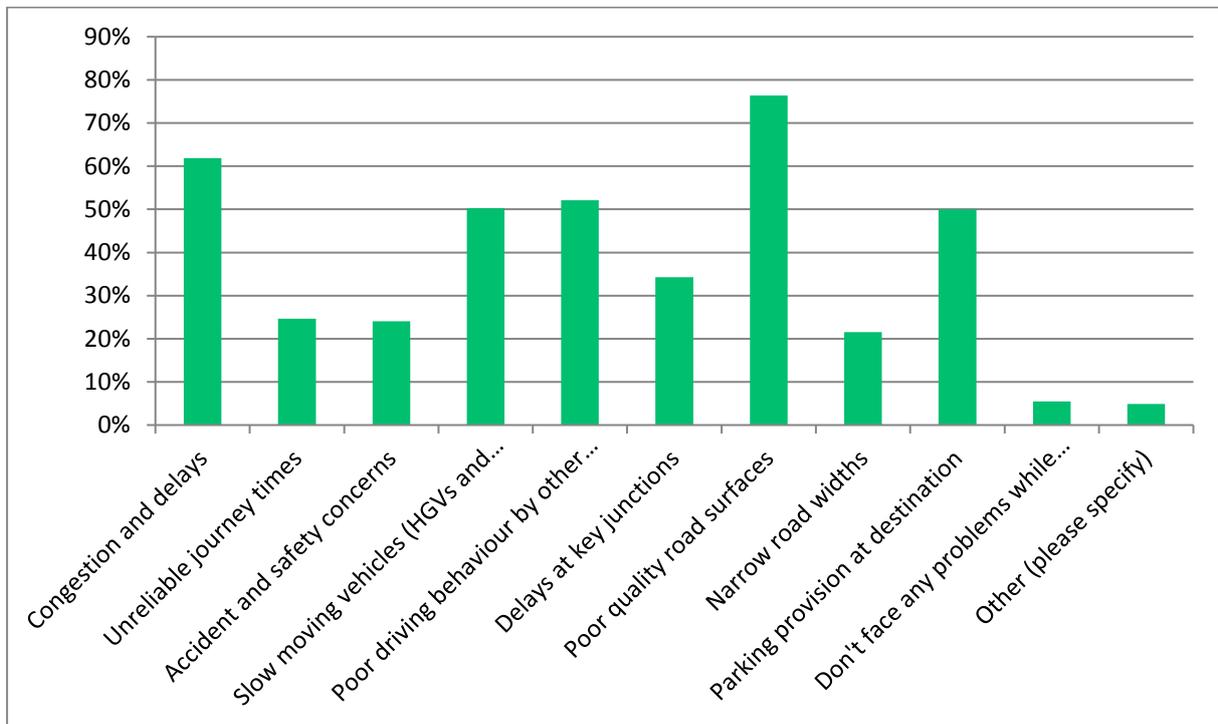
4.6.36 Journey times and congestion approaching junctions were viewed as key problems. Stagecoach noted that it has to add significant time to its peak-hour timetables to deal with the impact of congestion. Large numbers of HGVs were also viewed as causing issues with congestion and slow-moving traffic. There were also concerns around safety, which are not inherently the problem with HGVs but with driver behaviour as people become frustrated with slow moving HGVs and attempt risky overtaking manoeuvres. Both the Scottish Fire service and Stagecoach noted safety issues on the A915 Standing Stone Road which they felt are attributable to driver behaviour and frustrations with slow moving traffic.

4.6.37 In general, stakeholders recognise the large numbers of HGVs which pass through the region and whilst there is an acceptance that freight movements are necessary in a modern growing economy, they are viewed as a contributor to both congestion and pollution. SEStran, as the Regional Transport Partnership, explained it is keen to promote the movement of freight by rail and sea where possible to reduce vehicle numbers on the road.

4.6.38 Stakeholders also noted the general layout of the strategic road network in Fife and that the Levenmouth area is an outlier. This was viewed as a problem for the area and a cause of severance as traffic heading north would generally use the M90, A91 and A92 for their particular

journeys. This effectively means that the Levenmouth area does not benefit from any traffic passing through the area or gain from successful neighbouring locations. Effectively, there has to be a reason for people to go to / be in Levenmouth and at present stakeholders felt that whilst the area has a number of strategic assets, they do not make the most of these.

4.6.39 The figure below presents the responses to the question in the public survey 'do you feel that any of the following have a negative impact on your ability to travel on the road network?' The categories with the highest number of responses are poor quality road surfaces and congestion and delays.



4.6.40 In terms of the business survey, congestion on the road network appeared to be relatively less of a concern. However, 44%% (no. 11) of respondents who answered the question said that congestion on the road network causing delays was a weakness to their business location and over 55% (no. 24) of all businesses who responded said that congestion was impacting on customers when accessing their business.

Opportunities to attract economic investment

4.6.41 Stakeholders were generally of the opinion that transport can and does play an important role in the attractiveness of an area as a place to invest and do business. Generally, almost all interviewed were of the opinion that despite Levenmouth's natural assets, it is inhibited by the transport network which does not provide adequate connections to key locations, involves long journey times, limited modal choice and, importantly poor network resilience. Given the proximity of the area to mid-sized towns within Fife, in addition to the Edinburgh and Dundee conurbations, it was felt that the area should be more attractive to investors, businesses, developers and commuters than it currently is, and a major factor for this is the transport networks.

4.6.42 Fife Council leaders felt that rail investment and delivery of a new / reopened rail line would act as a catalyst for development and growth in the local economy. They believed that in other areas which have benefited from a new rail line recently, such as in the Scottish Borders, it has

seen an upturn in house building, employment and tourism⁷. They also felt that improvements to the transport network, in particular rail-based improvements, could help grow the local economy and make the area more attractive.

- 4.6.43 Whilst stakeholders generally concentrated on how an improved transport network could create opportunities for economic investment, the Freight Transport Association (FTA) cautioned on no action. It explained that just because there are already a number of large businesses in an area, decision makers should not underestimate the effect of confidence in transport infrastructure. The FTA stated that Infrastructure can stimulate investment and, similarly, poor and unreliable infrastructure can heavily impact on the decision of businesses to leave an area. The FTA felt it was important to continue to invest in the transport network to ensure re-locating away from the area does not become an issue.
- 4.6.44 While many views were expressed about how poor transport services were constraining inward investment in the area, there was limited evidence provided that businesses were not locating in the area due to this. It was also difficult to find hard evidence. This is not to say, however, that the issue isn't a real one i.e. businesses making decisions not to locate in a particular area, and the reasons for doing so, are not necessarily made public.

Opportunities to maximise tourism

- 4.6.45 It was felt that the Levenmouth area, and wider north east Fife, has key tourism and hospitality opportunities which are currently not fully realised. Historically the area was a hub of summer activity, but tourism is now essentially flat in the area despite the coastal offerings of the East Neuk and the proximity to major tourism destinations such as St Andrews. An MSP noted the key link between tourism and employment and felt it was critically important to support the development of the area's tourism potential and maximise its assets. It was emphasised that transport and connectivity were crucial factors in enabling potential visitors to access the area and for the tourism sector to flourish. It was explained that many in the tourism and hospitality sectors required early starts and late finishes and required transport services to meet that demand.
- 4.6.46 A long list of tourism opportunities was suggested by stakeholders which should be maximised to benefit the region, including:
- marketing the assets of the beaches and harbour villages in Levenmouth and the East Neuk;
 - tourism and Walking trails, including the Fife Coastal Path and Fife Pilgrim Way;
 - the Wemyss Caves as a nationally important heritage site; and
 - renowned golf courses within Levenmouth itself, including planning permission for the major development opportunity at Dumbarnie Links, as well as the world class golf courses nearby at St Andrews.
- 4.6.47 In addition to the above, SEStran believes there is a key opportunity to develop cycle tourism in the area, particularly taking advantage of the routes and trails which are already present.
- 4.6.48 Fife Chamber of Commerce also noted that the Levenmouth area and Fife in general needs to place itself in a position to maximise the tourism opportunities which the redevelopment of Dundee Waterfront and the newly opened V&A Museum will generate. The Chamber of Commerce explained that as the tourist offer increases in Dundee, there will be more business and employment opportunities available which the people of Fife will need to be able to access if they are to take advantage of these jobs. Similarly, as visitors to Dundee increase, current tourist destinations and facilities within Levenmouth should be raising their profile and

⁷ The evidence from the Borders is that there has been an increase in the number of tourists visiting the area, but it is too early to determine whether new businesses have located there. There is evidence of more people locating to the area but not as much in terms of businesses. This may, however, take more time to happen.

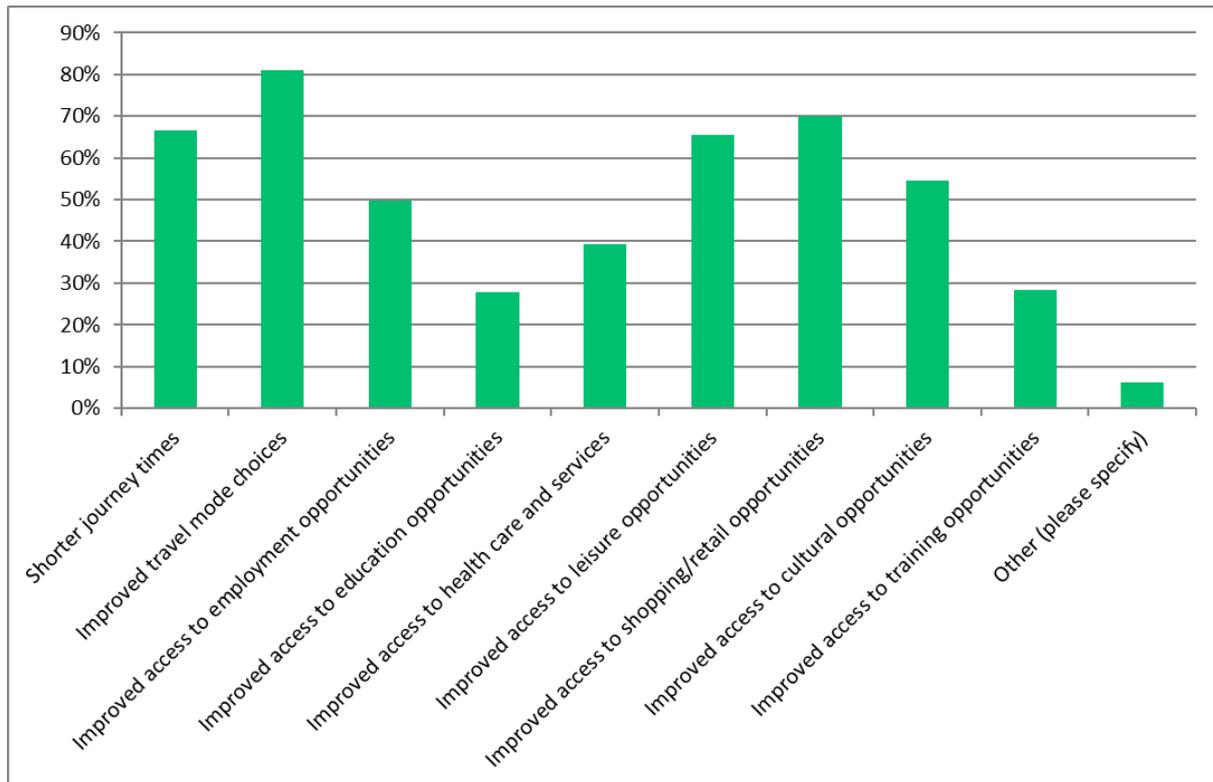
availability to benefit from the increased number of tourists, and advertise Fife as an additional visitor location when tourists are accessing Dundee.

Opportunities to take advantage of Rail freight

- 4.6.49 A number of stakeholders, including ScotRail, SEStran, Network Rail, FTA and a mix of elected officials, believe there is a real opportunity to provide rail freight connections in the area and make progress against the Government's objectives for moving a greater share of freight by rail. It was explained that the current line into the Levenmouth area was of a suitable standard to carry freight but as there are currently limited freight demands, the line is currently not in use. Network Rail advised that the line could be brought back into use without major investment, but would require approximately 12–18 months' lead-in time.
- 4.6.50 Stakeholders noted the significant volumes of freight which move from the Diageo plant by road every day and believe that there may be a role for whisky or by-products from Diageo to be moved by rail. Indeed, ScotRail suggested that there are opportunities for increased movement of freight by rail across Scotland and in particular within this area and that such potential should be explored.
- 4.6.51 As part of the engagement exercise, PBA and Fife Council met with Diageo and WH Malcolm. The companies have a long, successful partnership and have fine-tuned their operations to meet the requirements of the supply chain, just in time delivery, production lines and their wider network. The operation is flexible and respondent to demands and timetables.
- 4.6.52 Both Diageo and WHM are interested in exploring the opportunity for movement of freight by rail from the facility in Levenmouth. Both organisations recognise that this is a long term strategic proposal and in theory have no issue with the concept. In order to better understand any benefits or impacts to the business, Diageo and WH Malcolm would require to undertake a long term end to end logistics review to understand how the opportunity could work recognising that in this time period many relevant factors such as volume and other transport modes such as 'sea freight' could play an important part of any decision.
- 4.6.53 While not all businesses that responded to the survey were dependent on the movement of freight, and those that were tended to use cars or vans, there was a belief from some that a rail link would encourage investment in the area and businesses would use it, for example, travelling to meetings and/or business events in Edinburgh, as well as attract more customers to the area. No businesses responded by saying they would welcome it as an opportunity to use it for the movement of freight.

Opportunities from Improved Public Transport Services

- 4.6.54 A number of stakeholders explained that improved public transport services would present a number of opportunities for those living in the Levenmouth area. The opportunities stemmed from better access to key facilities such as employment, health and leisure, to also providing better career opportunities by allowing access to improved education options. As part of the public survey, respondents were asked how improvements to public transport services would benefit them. The graph below sets out the responses. Over 50% of respondents said that it would provide improved access to employment, leisure, shopping and cultural opportunities. The response to access to education is likely low due to the minimum age that respondents needed to be [i.e. 18]. However, the issue / opportunity around access to education was one that was raised during a large number of consultations with stakeholders and at engagement events.



4.6.55 A comprehensive public survey was undertaken which provided over 800 responses. This is a good response rate given the population of the Levenmouth area. This was supported by business survey and series of meetings with stakeholders. A number of common themes emerged. These were:

- the importance of connectivity to and from the Levenmouth area;
- difficulties in accessing employment opportunities and other important services beyond the Levenmouth local area by public transport;
- lack of suitable local and regional public transport services;
- problems with the operation of the road network;
- poor transport infrastructure for attracting economic investment;
- opportunities to maximise tourism; and
- limited opportunities to take advantage of rail freight.

5 Analysis of Problems and Opportunities

5.1 Introduction

5.1.1 This part of the STAG appraisal process is used to identify and evidence actual and perceived problems, opportunities, issues and constraints, and forms the basis for the development of Transport Planning Objectives, option generation and the appraisal of the options. It is important that problems and opportunities are considered in the wider context and, as such, relevant issues and constraints have also been considered.

5.1.2 STAG guidance broadly describes each of these terms as:

- **Problem:** existing and future problems within the transport and land use system [e.g. traffic congestion].
- **Opportunity:** chances to improve the transport and land use system [e.g. improve journey times and reliability] to realise opportunities.
- **Issue:** uncertainties that the study may not be in a position to resolve, but must work within the context of [e.g. uncertainty at the time of the study whether a major road link will be built that will affect the study area].
- **Constraint:** represents the bounds within which a study is being undertaken [e.g. the funding levels that can realistically be obtained, or Scottish, UK or EU legislation].

5.1.3 Three separate exercises have been undertaken to gather evidence to identify and analyse existing and future year problems and opportunities across the Levenmouth area. Much of this has been presented and discussed in previous chapters. These are:

- Review of previous studies;
- Data gathering and analysis; and
- Analysis of SEStran Regional Model 2012 (SRM12) outputs.

5.1.4 Combining the findings from the above, the remainder of this chapter sets out the analysis of the key problems, opportunities, issues and constraints that emerged.

5.2 Identifying Future Year Problems

5.2.1 In addition to current transport problems, it is important to consider changes that may impact in the future. The identification of future year problems has focussed on assessing the performance of the Levenmouth area transport network in the future, taking account of committed development and infrastructure measures and resulting forecasts of, for example, travel demand. It has also focussed on forecast population and employment trends.

5.2.2 The two principal analytical tools used in this process were the SEStran Regional Model (SRM12) and the Transport Economic and Land Use Model of Scotland (TELMoS). Two model scenarios were used:

- 2012 Base Year representing 2012 traffic conditions; and
- 2024 Do-Minimum scenario reflecting the delivery of committed development proposals and a range of transport infrastructure and policy assumptions.

5.2.3 The following indicators have been used to measure the operational performance of the Levenmouth area future year transport network:

- Unmet road demand – indicator of ‘suppressed’ demand [i.e. road trips that are prevented from being made due to network constraints].
- Volume / Capacity ratio – useful indicator of road traffic congestion. Three V/C ratios have been defined to determine the significance of congestion levels as follows:

- V/C ratio less than or equal to 0.8 means traffic would operate with minimal congestion related issues;
- V/C ratio greater than 0.8 and less than or equal to 1 means traffic levels are approaching or are at capacity and would begin to experience congestion related issues; and
- V/C ratio greater than 1 means traffic levels are above capacity and would experience significant levels of congestion.

5.2.4 Graphical plots of unmet demand and V/C ratios are provided in Appendix G to this report.

5.2.5 SRM12 Model Analysis Summary

5.2.6 The Levenmouth area future year transport network operates within capacity and no real problems have been identified from the model analysis. However, congestion problems are evident at the Redhouse Roundabout, north of Kirkcaldy on the A921 approach to the A92(T).

5.2.7 It should be noted that as part of the Detailed Options Appraisal, the SRM12 modelled network and public transport service provision will be reviewed in detail in order to determine its appropriateness in providing the quantitative basis in which to test the generated options outlined in Chapter 7.

5.3 Problems

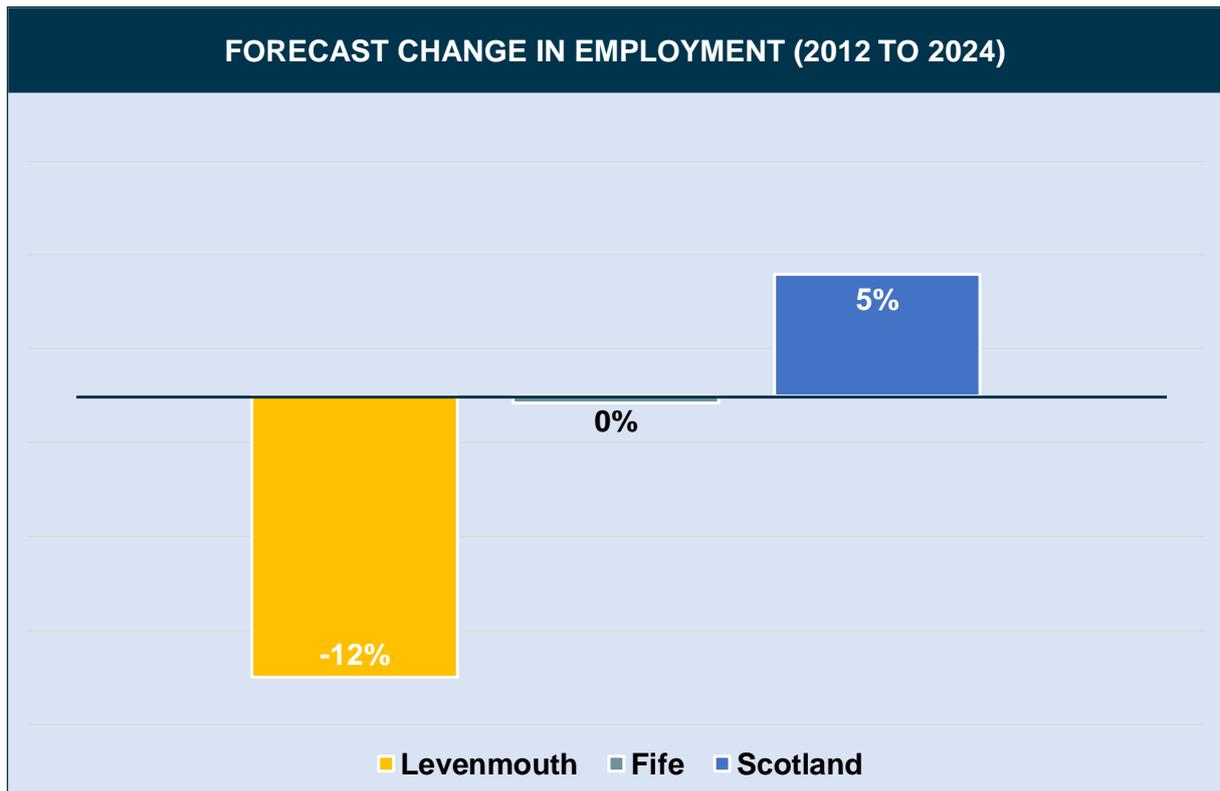
Problem Theme: Access to Local and Regional Services by Public Transport Leading to Unsustainable Travel Choices

Access to Employment and Services

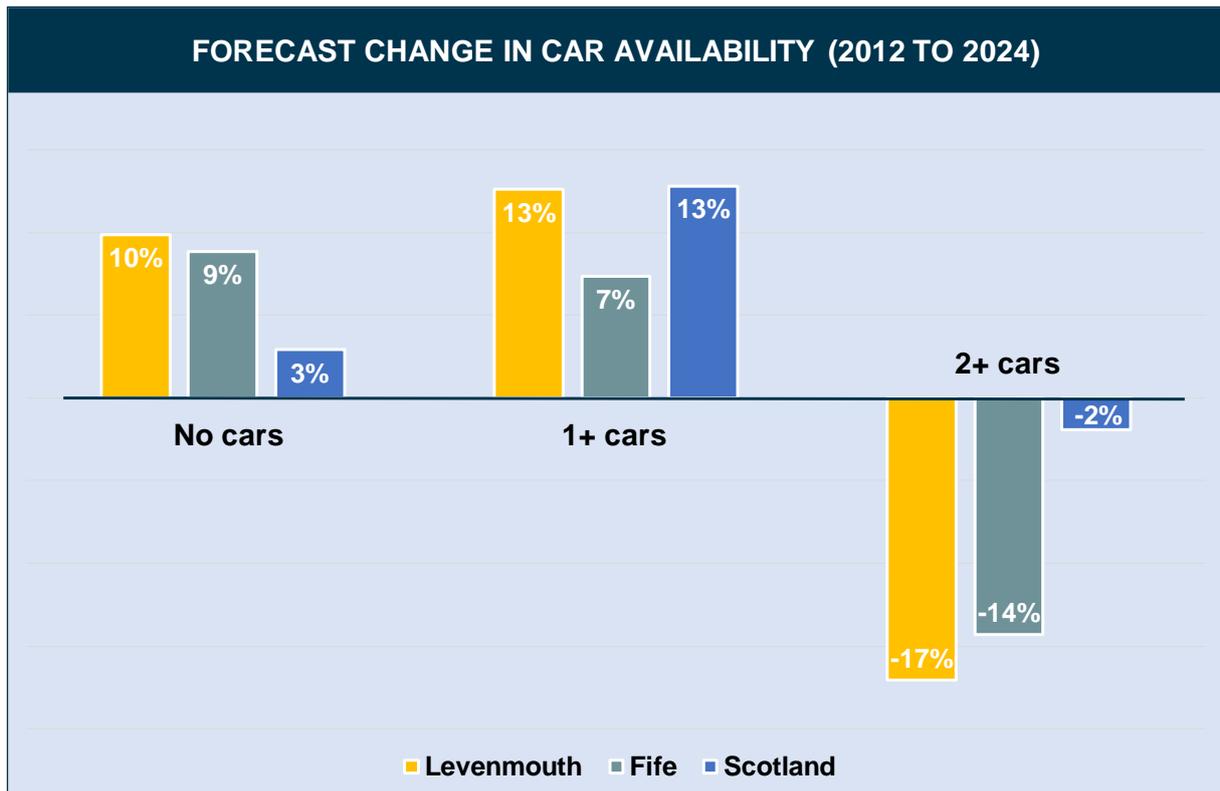
5.3.1 The previous chapters explained the need for access to various services by public transport. The analysis revealed that the Levenmouth area suffers from relatively high levels of social and economic deprivation across a number of categories. For example, it has:

- low levels of household income relative to other areas of Fife;
- a higher proportion of benefits claimants relative to Fife and Scotland as a whole; and
- low levels of people categorised as economically active.

5.3.2 The figure below also shows that employment is forecast to decline across the Levenmouth area. This suggests the area would benefit from improved access to employment opportunities to serve the local community.



- 5.3.3 It is also clear that the industrial make-up of the Levenmouth area is changing. The traditional heavy manufacturing sector on which Levenmouth was dependent has declined and the job losses have not been replaced in full by employment generated by new businesses entering the area. This has meant that people are now having to travel further for employment opportunities. The census travel to work data revealed that only 40% of the resident working population now work in the Levenmouth area, with many others now travelling to Glenrothes, Kirkcaldy and other areas of Fife and even beyond.
- 5.3.4 In addition to employment opportunities, the evidence revealed that Levenmouth has an ageing population, which will need greater access to health facilities that are not available in Levenmouth, e.g. the Victoria Hospital in Kirkcaldy and the Edinburgh Royal Infirmary.
- 5.3.5 The area also has very low levels of educational attainment and access to education facilities will be required to build a locally-based skilled workforce that would, in turn, provide an attractive offering for any potential future investors.
- 5.3.6 While the need to access various facilities beyond the local Levenmouth area is clear, the area has relatively low levels of car availability. As described in Chapter 3, 32% of households in Levenmouth don't have access to a car compared to 28% across Fife as a whole. Indeed, the graphic below reveals that car availability is forecast to decline further up to 2024, particularly relative to Scotland. The graphic shows that the Levenmouth area is expected to experience an increase in non-car owning households. This will have implications for the need for access to public transport to ensure that everyone has equal opportunities to access to employment, education and other facilities.



5.3.7 With above average levels of multiple deprivation and unemployment within the Levenmouth area, compounded by low levels of car availability it heightens the importance of access by public transport to various facilities and opportunities. Access by public transport is also pertinent in terms of encouraging sustainable travel choices for commuter trips into Levenmouth, as well as increasing the attractiveness of the area as a place to live and work.

Lengthy Public Transport Journeys

5.3.8 The previous study revealed analysis of accessibility by public transport from the study area to key destinations using TRACC (accessibility software which calculates the route options and journey times for a large number of origins to a particular destination). The analysis was undertaken to calculate the route options and journey times from the Levenmouth area to health, (hospitals including Victoria Hospital), education services (colleges and universities), town centres (including Leven), employment centres and (including Edinburgh Park, Central Edinburgh, Dundee, Kirkcaldy, Dunfermline). The following accessibility runs were undertaken for access via rail, bus, coach (or a combination of these modes) and the walking connections to reach these services in the following travel time periods:

- Education, 7am – 9am
- Health, 9am – 4pm
- Town centres, 9am – 4pm
- Employment, 7am – 9am

5.3.9 The results are reproduced in the table below. The table highlights the varying levels of accessibility from across different parts of Levenmouth. For example, access to Victoria Hospital from Levenmouth is 44 minutes compared to 29 minutes from Windygates.

Locality	Hospital	Nearest Town Centre	Education	Kirkcaldy	Dundee City Centre	Edinburgh Park	Dunfermline	Central Edinburgh
Time (in minutes)								
Methil	36	12	15	39	83	87	87	108
Windygates	29	19	21	39	73	80	81	102
Buckhaven	31	15	18	32	81	79	80	105
Kennoway	35	17	18	45	99	83	107	n/a
Leven	44	10	7	43	84	88	89	95

- 5.3.10 The findings above are supplemented by the results of the analysis in Chapter 3 which showed, also using TRACC analysis, the lengthy journey times to various services in Edinburgh from Levenmouth.
- 5.3.11 In summary, access to services varies across the study area and public transport journey times can be lengthy, particularly if one has to interchange. Therefore, while bus services are generally available the journey times are not attractive and those with an alternative will often opt to drive. This is supported by the public consultation which found that 60% (no. 550) of respondents felt that long journey times have a negative impact on their ability to travel by public transport within the Levenmouth area and 68% (no. 481) of respondents said the same about travelling outside of the Levenmouth area.

Limited Public Transport Options

- 5.3.12 In the public surveys, the biggest factor that had a negative impact on respondents' ability to travel by public transport within the Levenmouth area was the limited choice of travel modes with 79% (no. 635) of respondents selecting this option. The limited choice of options was also the highest single factor having a negative impact on their ability to travel outside of the Levenmouth area, with 80% (no. 651) of respondents picking this option.
- 5.3.13 In chapter 3, information was set out of the bus options for those travelling within Levenmouth. While there is, in the main, only one operator the bus service is relatively frequent at morning, inter and evening peak periods. However, interchanges are required to get to a number of local destinations, and many services don't start until 7am and stop at 7pm. For services to destinations outside of Levenmouth the frequency is similar. For bus services to Glenrothes, Markinch, Kirkcaldy and Dunfermline the frequency is at least twice hourly. To Edinburgh, St Andrews and Cupar the frequency can be one an hour or sometimes less.

Rail Fares

- 5.3.14 The level of rail fares was raised frequently during the engagement with stakeholders. Analysis by Fife Council that was included in the previous STAG report revealed that the price of a standard day return from Markinch to Edinburgh (£19.60 in 2016, now £20.70) was much higher than would be predicted by other £/mile fares to Edinburgh or Glasgow.
- 5.3.15 The analysis suggested that the £19.60 fare for the 33¼ mile round trip from Markinch to Edinburgh was £5.41 higher than predicted by analysing other standard day returns to/from Edinburgh or Glasgow from the 94 Scottish central-belt stations included in the analysis (£3.22 plus 0.33p/mile = £14.19). The £5.41 'excess' was higher for Markinch than any of the other 93 Scottish central belt stations included in this analysis.
- 5.3.16 The rail fare from Kirkcaldy is lower at £14.80 return. In addition to the rail fares, however, local residents accessing Kirkcaldy and Markinch stations by public transport have to pay an additional bus fare of £6.80 or £5.40 respectively, meaning a total cost of £21.60 or £26.10.

Public Transport Services to Edinburgh

- 5.3.17 The public survey also asked respondents whether there were any locations that they would like to travel to on a more regular basis but currently don't because of the current provision of public transport services. Thirty-five percent (no. 212) of respondents said they would like the opportunity to travel to Edinburgh for employment. This was the most popular answer for the employment category. The survey also revealed that 83% (no. 503) would like to travel more regularly to Edinburgh for shopping, 78% (no. 473) for leisure and 17% (no. 100) for education. Edinburgh was the most common selected answer (out of 19 options) for each of these categories.
- 5.3.18 Chapter 3 set out a comparison of public transport service provision for people working in Edinburgh, for the areas of Kirkcaldy, Glenrothes and Levenmouth. The table showed that the three areas are similar in terms of road miles, with the distance from Levenmouth, Glenrothes and Kirkcaldy being 36, 31 and 29 miles respectively. The table also showed that the proportion of the total working population of Levenmouth who work in Edinburgh is similar to Glenrothes at 3% but lower than Kirkcaldy at 6%. The average morning bus journey times from Levenmouth to Edinburgh is higher at 119 minutes than the 84 minutes and 81 minutes respectively for Kirkcaldy and Glenrothes.
- 5.3.19 The previous STAG Report presented similar evidence which included details for Galashiels and Dunbar [i.e. settlements of a similar road distance from Edinburgh]. The table is replicated below and sets out the road distance, bus and rail provision and percentage of workers travelling to Edinburgh.

Settlement	Approximate Road Mileage	Total Working Population	Working in Edinburgh	% Working in Edinburgh	AM Bus Frequency ⁸	AM Bus Average Journey Time (mins)	AM Rail Frequency	AM Rail Average Journey Time (mins)
Levenmouth	36	15,400	410	3%	4	119	-	-
Galashiels	33	5,100	260	5%	4	93	4	55
Glenrothes	31	16,800	520	3%	6	81	0/5 ⁹	63
Dunbar	30	4,100	870	21%	7	65	2	24
Kirkcaldy	29	21,100	1,300	6%	6	84	7	46

- 5.3.20 The table reveals a positive correlation between shorter public transport journey times and the proportion of workers commuting to Edinburgh. For example, Dunbar is located 30 miles from central Edinburgh yet benefits from a 24-minute rail journey time to central Edinburgh and 21% of workers commute to Edinburgh. By contrast, the relatively infrequent buses, no direct rail services and around 2-hour bus journey times from Levenmouth to Edinburgh is matched by only 3% of Levenmouth workers commuting to Edinburgh, despite the very similar distances involved. It is noted, however, that a rail service does not necessarily result in a higher percentage of commuters. Glenrothes and Kirkcaldy both have rail services to Edinburgh but have a similar percentage of commuters as Levenmouth.
- 5.3.21 It should also be noted that the Census 2011 data pre-dates the opening of Borders Rail Line in September 2015. The year 1 and year 2 evaluations undertaken for that scheme has revealed an increase in the number of commuters travelling from the Borders since scheme re-opening and the proportion of people in Galashiels working in Edinburgh is now likely to be higher than 5%.

⁸ Frequencies and average journey times are for direct journeys arriving in Edinburgh city centre between 7am and 9am sourced via Traveline Scotland

⁹ Value depends on whether or not Glenrothes-with-Thornton is considered to serve Glenrothes residents

Bus-Rail Interchange

- 5.3.22 The rail stations at Markinch and Kirkcaldy are directly connected by bus services from Leven bus station. Feedback from the engagement exercise with stakeholders suggested that integration between public transport bus and rail services is relatively poor, with some trains not being met by an appropriate bus and some bus arrival times at these stations followed by a long wait for the relevant southbound train.
- 5.3.23 In response to this suggestion, Stagecoach did explain that, ideally, bus services could be timed to integrate with all other public transport services, however its priority is to integrate bus timetables, rather than with train timetables, to ensure users switching from one bus to another have a limited wait time. Amending the timetable to accommodate train times would be difficult and require a complete reworking.
- 5.3.24 Bus services to the nearest station at Markinch currently route along the A915 and therefore do not serve the Methil, Methilhill and Buckhaven areas. Residents in these areas wishing to catch a train from Markinch are therefore required to interchange twice, first at Leven Bus Station and then on to the train at Markinch.

Perception of Car Park Capacity Issues at Markinch and Kirkcaldy Rail Stations

- 5.3.25 The availability of car parking at Markinch and Kirkcaldy rail stations was raised a number of times as part of the engagement exercise but did not appear from the public survey to be a general concern across the community. Parking at these stations was not raised as a problem in the responses to the surveys.
- 5.3.26 Both Markinch and Kirkcaldy rail stations offer free parking. The evidence does suggest the number of spaces at Markinch is generally sufficient to meet current demand. Availability of parking spaces at Kirkcaldy was identified during the stakeholder engagement as a factor resulting in the need to park on surrounding streets some of which operate limited stay parking restrictions. The previous STAG study revealed that parking survey information provided by Fife Council indicates that Kirkcaldy station car park (north side) has occupancy levels ranging from 70% to 98% (Fife Council 2016 monthly counts). It is possible that this variation is causing the perception of capacity problems among those searching for a space on the '98% utilisation' days.

Perception of Unreliable Bus Services

- 5.3.27 In the recent and previous engagement exercises, stakeholders highlighted a lack of real-time information regarding bus arrival times and lack of information and integration reducing the potential use of interchange opportunities. This 'information gap' will be partially addressed by further investment in the local public transport network including the forthcoming launch of a new Stagecoach app which will provide real time information, journey times, bus arrivals and the ability to buy tickets through the app. This is closely linked to concerns over journey time reliability, especially where journeys are dependent on connections, however Stagecoach suggested that there are currently few journey time reliability issues on its Levenmouth routes, suggesting that the public views on unreliability is more 'perceived' than actual.

Attracting Investment

- 5.3.28 As explained in the previous appraisal, and confirmed through the consultation with Fife Council and many other stakeholders, there is a perceived lack of investment and willingness to invest in the area, and viewed as 'out of the way' by residents and businesses despite being situated within 7 miles and 10 miles from Glenrothes and Kirkcaldy town centres respectively and 30 miles from the centre of Edinburgh.
- 5.3.29 Stakeholders were generally of the opinion that the provision of transport services plays a crucial role in the attractiveness of an area as a place to invest and do business. In addition, almost all

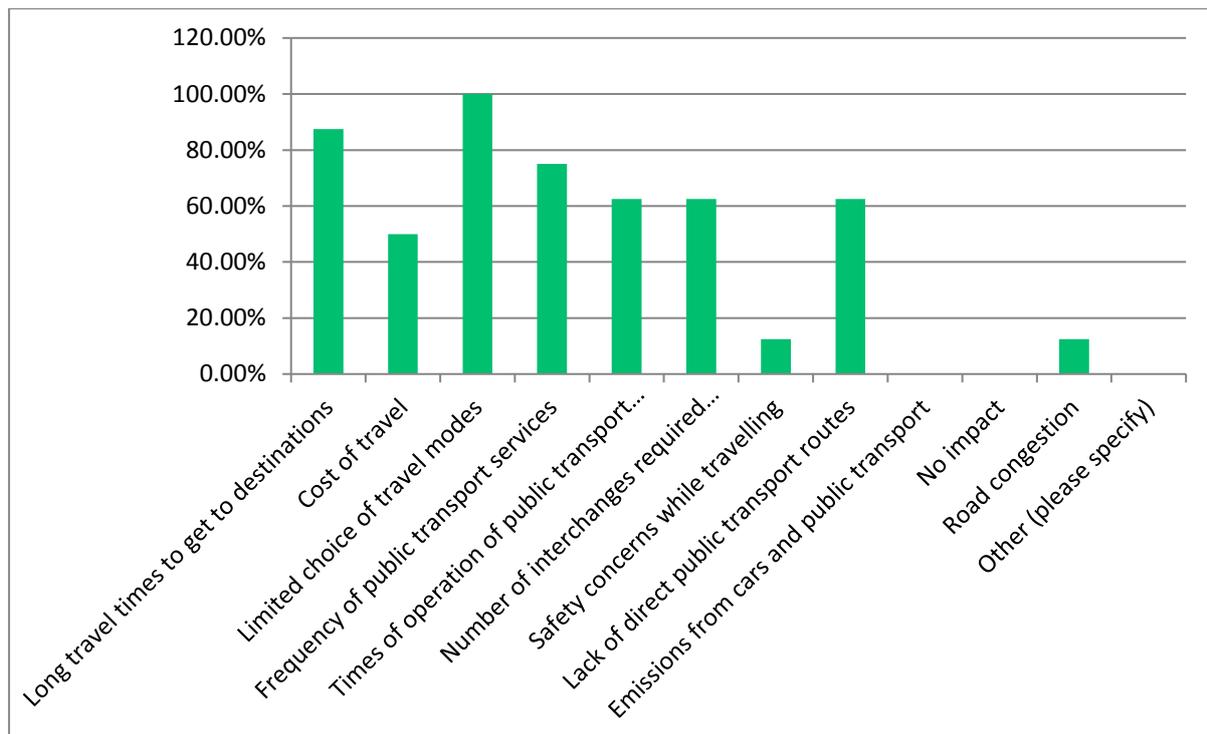
interviewed believed that despite Levenmouth’s assets, it is inhibited by the transport network, which does not provide adequate connections to key locations, involves long journey times and has limited modal choice.

5.3.30 As explained in the previous chapter, there was limited evidence provided of businesses not locating in the Levenmouth area due to transport factors, though this does not mean it does not exist.

Access to Skilled Workforce

5.3.31 As part of the consultation, it was explained that as well as giving local residents the ability to access opportunities outside of the Levenmouth area (such as employment and education), it was equally important that those from other areas have the ability to access Levenmouth. It was suggested during the engagement that the local workforce does not have sufficient skills to meet the needs and requirements of local businesses. While training people in the medium term will provide the opportunity to fill the skills gap, it was evident that many of the gaps needed to be filled in the short/immediate term.

5.3.32 As part of the business survey, almost 60% (no. 22) of respondents said that they had difficulty in attracting and retaining staff. Of those 60%, half said that it was because there were limited skills in the local workforce and all (100%) said that it was because transport issues make it difficult for staff to get to work at their location [i.e. in Levenmouth]. The respondents were then asked about the transport issues and what specific transport issues were having a negative impact on their business being able to attract and retain staff. The responses are presented in the graph below. The top three answers were limited choice of travel modes (100%), long travel times to get to destinations (88%) and frequency of public transport services (75%).



Bus Information Services

5.3.33 Bus services in Leven are not supported by real time information or apps. These facilities are available at Leven station, but with no further provision across the local network, this discourages use by residents, particularly if services are commonly late or unreliable.

Bawbee Bridge and Leven Railway Line

- 5.3.34 Bawbee Bridge and Leven Railway Bridge form part of the A955 crossing over the River Leven between Leven and Methil. The crossing comprises two elements. The Bawbee Bridge section crosses the River Leven and the Leven Railway section extends from the end of the river to cross over the out-of-use rail line. The Leven Railway Bridge is owned by Network Rail.
- 5.3.35 Both sections have maintenance needs and in recent years the structural integrity of the bridge has been subject to review. There is currently an 18 tonne weight restriction in place on the Leven Railway Bridge along with lane narrowing and edge protection bollards.
- 5.3.36 In July 2015 Fife Council's Structures and Assets Team undertook an assessment of the bridges for any further degradation in standard. The investigation found the condition of the bridge to be deteriorating and failure of the concrete repairs undertaken in the past year. The investigation concluded that the Leven Railway Bridge can, however, still carry up to 18t and this restriction could only be removed if the bridge is strengthened or replaced. Any redevelopment of the rail line would necessitate the bridge to be upgraded. Upgrade or replacement of the bridge, it is recognised, would bring significant cost considerations. Any works would require discussion and agreement with Network Rail.
- 5.3.37 The 18 tonne weight restriction on Leven Railway Bridge means that heavier vehicles, including HGVs and some express bus services, are currently unable to cross the Bawbee/Leven Railway Bridge, and have to route via the A915 between Leven and south Levenmouth. Future proposals by Stagecoach to upgrade express services to use heavier vehicles would result in further services having to be re-routed which would directly impact on the service offering to the communities of Methil, Buckhaven and Methilhill. The weight restriction therefore poses routing considerations with an impact on public transport and business operations. The weight restriction was raised in the consultation as an issue for some local businesses moving freight from Methil Docks in particular.

5.4 Opportunities

Opportunity Theme 1: Bus Service Enhancements

- 5.4.1 In discussions with Stagecoach, it explained it has committed to future investment in the bus network within Levenmouth. This includes the upgrade of vehicles and roll-out of measures to improve facilities and journey experience, including the introduction of journey planning/information apps and one-ticketing arrangements.
- 5.4.2 Further investment in the bus network will help improve the quality of service, however the lengthy journey times to destinations such as Dunfermline, Edinburgh and Dundee will remain. This can be expected to continue to preclude the level of attractiveness of services to users and competitiveness compared to other modes, in particular the car.

Opportunity Theme 2: Increasing Public Transport Choice

- 5.4.3 Opportunities exist to expand the public transport offering in the local area. This relates to an existing, but currently largely out-of-use, rail line between Thornton and Leven. Re-opening of the rail line has been highlighted as an area for further investigation in the Local Transport Strategy and the line has been safeguarded in the Mid-Fife Local Plan (2012) and FIFEplan (proposed, 2014). The line is operational at present between Thornton and Earlseat to support coal mining activity. The non-operational section includes track-bed as well as a station at Cameron Bridge and available land for a station at Leven. The line is currently designed and built to standard for freight traffic only.
- 5.4.4 The previous STAG report explained that Network Rail stated the line would need to be re-built to allow passenger traffic to run. Signalling is currently only provided at the connection to the main line at Thornton, and would require expansion towards Levenmouth along with a structural assessment of the integrity of existing assets, such as the Leven Railway Bridge, along the line.

- 5.4.5 Exploring the potential for re-opening the rail line was also raised frequently throughout initial consultation at the stakeholder workshop and in responses received to the public and business surveys. A Levenmouth Rail Campaign lobbying group exists, and a number of Fife Councillors have also publicly expressed support for the re-opening of the line. The subject came up frequently in discussions around future opportunities for the area, and how the rail line could help realise them by providing improved and faster public transport links that would serve those who want to access facilities outside the Levenmouth area while also allowing more people to visit the area and access the attractions that Levenmouth has to offer.
- 5.4.6 As well as the opportunity for a new rail line, there is also an opportunity to improve the number of bus services to offer more choice to residents and visitors. Improved bus services could also provide better links to rail services to Markinch and Kirkcaldy as well as destinations beyond Fife, particularly Edinburgh.

Opportunity Theme 3: Rail Freight

- 5.4.7 Linked to the above and the opportunity for expanding the public transport offering through rail passengers services, is the opportunity also afforded from a freight perspective. A rail freight line was reinstated in 2012 from Thornton to as far as the Earlseat Coal facility. No other rail freight provision exists in the study area, although as noted, the line has been safeguarded in the Mid-Fife Local Plan (2012) and FIFEplan (2014).
- 5.4.8 The largest identified opportunity for rail freight transport likely lies with Diageo operations in the area. The discontinued Thornton to Levenmouth line passes adjacent to Diageo land. There are historical disused sidings at the Cameron Bridge Distillery location. There exist significant Diageo warehousing facilities on the north side of the A915 in Leven, with all freight movement currently being carried out by road from this site. Operations at Diageo mean that there is the potential for two-way freight movement in terms of materials in, and product out. However, while having benefits for line utilisation potential, the load requirements for these movements may be different, making it likely that the same vehicle cannot be used.
- 5.4.9 As explained in Chapter 4, as part of the engagement exercise PBA and Fife Council met with Diageo and WH Malcolm. Both Diageo and WHM are interested in exploring the opportunity for movement of freight by rail from the facility in Levenmouth. Both organisations recognise that this is a long-term strategic project and in theory have no issue with the concept. In order to better understand any benefits or impacts to the business, however, Diageo and WH Malcolm would require to undertake a long term end-to-end logistics review to understand how the opportunity could work, recognising that in this time period many relevant factors such as volume and other transport modes such as 'sea freight' could play an important part of any decision.
- 5.4.10 Freight opportunities for other businesses in the area, such as Fife Energy Park, are also an important consideration to help maximise benefits.

Opportunity Theme 4: Proximity to Methil Docks

- 5.4.11 Methil Docks are operated by Forth Ports and can accommodate vessels up to 3,000 Deadweight Tonnage (DWT). The port acts as a timber, aggregate and general bulk commodity distribution centre and provides facilities to accommodate the repair, maintenance and supply of off-shore drilling rigs and tankers.
- 5.4.12 The Mid-Fife Local Plan, which was adopted in 2012, highlights Methil Docks as a Local Development Plan allocation. It notes the importance of this site to the development of the Energy Park and its supporting role in the development of the off-shore wind sector in Fife. This is of significance in terms of access provision and connectivity to attract new investment to diversify the economy of the area into strong growth sectors.

Opportunity Theme 5: Low Carbon Investment Park (now known as Levenmouth Business Park)

- 5.4.13 Investment proposals for a Low Carbon Investment Park, located in Buckhaven, form part of the Levenmouth Strategic Development Area and include allocations for industrial and commercial land. It is proposed the site will be funded under the Scottish Government's Tax Incremental Financing (TIF) initiative with funds from the European Regional Development Fund. Work started on the Park in 2015 and when complete it will offer 10ha of industrial and commercial land. The development will offer businesses with the energy sector the opportunity to locate beside one another and attract larger business investments.
- 5.4.14 This is of significance as proximity to complementary businesses within the park is a key driver and selling point, however, transport connections to Edinburgh Airport and other energy centres including Aberdeen are important for attracting investment to the area. Connections to the East Coast Mainline and Edinburgh Gateway station could further help to attract and boost investment in the park.

Opportunity Theme 6: Active Travel

- 5.4.15 Active travel was considered in the previous STAG and it was raised frequently as part of the engagement considering future opportunities for the area. Travel distances across the Levenmouth area are conducive to cycling given effective provision of active transport infrastructure and information. The core urban area of central Levenmouth stretches approximately 3 miles from the edge of Buckhaven to the edge of Leven, and from the centre of Leven to the extent of Kennoway. Based on a 10mph 'gentle' cycle speed, this makes the majority of the Levenmouth urban area accessible within 20 minutes by bike. For walking, this would equate to approximately 60 minutes at 3mph, with travel times for trips to Leven town centre much lower than for most urban areas.
- 5.4.16 In particular, opportunities for linking any potential scheme to complement the Fife Coastal Path were raised frequently. The Fife Coastal Path, which carries over half a million people each year, passes through the Levenmouth area. Consultation responses highlighted the potential to establish resources at Silverburn Park, on the edge of Leven, to provide a comfort stop on this route. The Fife Pilgrim Way, further discussed below, also presents an active travel opportunity. Other initiatives in the area that this could support include cycle routes to the new Levenmouth Campus, a range of school travel plans, 20mph residential areas in Levenmouth and Walk Once a Week (WOW).
- 5.4.17 This is of significance as opportunities exist to encourage cycling and walking locally, while also promoting the area as a destination for walkers and cyclists to visit. This requires support of the wider public transport network to provide visitors with access to destinations and routes within the area.
- 5.4.18 In the public survey, just under 25% (no. 176) of respondents said that the lack of joined up cycle routes has a negative impact on their ability to travel within the Levenmouth area.

Opportunity Theme 7: Leisure Tourism

- 5.4.19 The location of Levenmouth presents opportunities to harness the coastal setting of the area. In particular, the proximity of the area to the Fife Coastal Path, Fife Pilgrims Way and wider East Neuk, as well as local golf courses, creates opportunities for opening up tourism benefits which could be further capitalised in order to help raise the profile of the area in terms of attractiveness to visitors from wider Fife and further afield.
- 5.4.20 Many stakeholders who participated in the engagement exercise commented that, although Levenmouth benefits from large scale events in Fife, such as the golf Open at St Andrews, the local area itself does not yet have a big enough tourist attraction to directly attract tourists to the area. While there was no evidence provided of suppressed demand, it was suggested that opportunities do exist for capitalising on tourism within the Levenmouth area, including

improving links to the East Neuk, local golf courses, Edinburgh Airport and both the coast and inland routes of the core path network within the area. A new campaign has been launched to attract more tourists to the area – the *Heartland of Fife*.

- 5.4.21 As explained in the previous appraisal, a study on the Assessment of Golf Tourism’s Future Growth Potential to 2020 (SQW, 2011) identified Golf tourism to be a major contributor to Scotland’s economy and the overall forecast generated by visitors and events was estimated at £261 million in 2016, increasing to £300m by 2020. The report also noted the opportunity presented by the increasing number of low cost flights to Edinburgh and Inverness providing wider options for European golfers in particular. While St Andrews would continue as the prominent attraction, other quality courses in the area offer cheaper alternatives which may also be attractive to visitors.
- 5.4.22 National Cycle Network (NCN) routes 76 and 1 serve Markinch and offer the scope to provide a link from the Levenmouth area to the NCN, supporting initiatives to attract visitors. Also, the Fife Pilgrim Way is progressing with development after obtaining funding from the Heritage Lottery Fund in September 2015. The route will extend for 70 miles through the heart of Fife linking many of Fife’s medieval and pilgrim heritage, passing landmarks including the Inverkeithing Hospitium, Markinch Church, Ceres and the Waterless Way, and ending at St Andrews Cathedral. The intention is the route will use Fife’s existing network of rights of way, paths and tracks to offer varied opportunities for long distance, multi-day walking supplemented by shorter walks and circular routes. The route passes to the north of the study area and provides the opportunity to attract visitors, connecting to Levenmouth at Kennoway, and also to Ceres in the north.

5.5 Issues

Levenmouth Strategic Development Area

- 5.5.1 The Mid-Fife Local Plan includes a focus on growing the economy within Levenmouth placing an emphasis on attracting inward investment and supporting existing businesses. Recent and planned investment in the area is evidence of these ambitious plans for the area.
- 5.5.2 Central to the future development of the area is the Levenmouth Strategic Development Area (SDA). This includes proposals for 1,650 houses to be delivered over a period of 15 years, 15ha of business land as well as schools and local amenities.
- 5.5.3 Following on from the Energy Park development, there are further plans included in the Mid-Fife Local Plan to develop a Low Carbon Investment Park. This investment site would be located in Buckhaven, offering industrial and commercial land as part of the Levenmouth SDA funded under the Scottish Government’s Tax Incremental Financing initiative.
- 5.5.4 This development is of significance within the context of the study as the Levenmouth Strategic Framework report produced by Savills in 2012 Land Allocation anticipates the population of the development could reach 3,647 which would see Levenmouth’s population increasing by over 10%. This development could invigorate the local area and attract new residents and businesses to the area.

Leven to Thornton Rail Line

- 5.5.5 The presence of the existing alignment provides the basis for the potential re-opening of the line. Network Rail noted, however, during the consultation that for both passenger rail and freight uses, there are a number of structures on the route that would require to be assessed if the line was to be re-opened in full. Therefore, while the line presents an opportunity, potential issues regarding the integrity of structures as well as the track-bed would require further consideration.

5.6 Constraints

Environmental

5.6.1 The previous appraisal set out details of an environmental baseline report for the area. For convenience, the appraisal of environmental impacts is re-presented here.

- Noise and Vibration
 - Transport options for the study should consider the potential to affect Candidate Noise Management Areas identified in the Noise Action Plan within this part of Fife.
 - Future revisions to the noise mapping and analysis process to comply with the Environmental Noise Directive may need to be taken into account in the future development and appraisal of transport options.
- Global Air Quality
 - Public bodies are required under the Climate Change (Scotland) Act 2009 to reduce emissions by 42% by 2020, 50% by 2030 and 80% by 2050, based on 1990 levels.
- Local Air Quality
 - The future growth in business and industry at development sites in the Levenmouth area may present constraints on traffic related options for the study as a result of changes in local emissions depending on their effects on traffic distribution and emissions.
- Water Quality, Drainage and Flood Defence
 - The Water Framework Directive as implemented through Scottish legislation sets important standards and requirements relating to the water environment which future development will be required to comply with
 - There are sensitive watercourses, catchments and water bodies within the study area indicating that water quality will be an important issue for the environmental appraisal of options.
- Geology, Soils and Agriculture
 - Prime agricultural land is extensive in the corridor and agriculture is an important part of the land use economy which may constrain development proposals in some locations.
- Landscape and Visual Amenity
 - Retention of woodlands and green spaces have been identified as particularly important aspects of the landscape and as areas important for community wellbeing which need to be protected as far as possible.
 - Local landscape designations and other important sites such as Gardens and Designed Landscapes are important constraints to be taken into account in the development of new transport infrastructure.

- Biodiversity and Habitats
 - The designated SPA/Ramsar site and SSSIs could impose constraints on construction of new infrastructure depending on proximity and connectivity to these sensitive areas.
 - Declining natural and semi-natural habitats and species are a concern for local authorities and nature conservation agencies and it will be important to ensure options for the study avoid adverse effects on biodiversity wherever possible and takes opportunities for enhancement
- Cultural Heritage
 - There is an extensive distribution of important cultural heritage designations across the study area including scheduled monuments, listed buildings, GDLs and conservation areas which may act to constrain transport proposals in some areas.
- Physical Fitness
 - A key constraint will be crossings and other accommodation works for transport measures which affect core paths, long distance routes such as the Fife Coastal Path and other routes used for walking, cycling and horse riding.
 - An important aspect in the design stage will be to mitigate the effects of crossing such facilities for pedestrians, cyclists and equestrians or make other provision and take opportunities to improve access.

5.7 Summary

5.7.1 The key problems, opportunities, issues and constraints within the study area can be summarised as follows:

Problems

- **Problem Theme: Access to Local and Regional Services by Public Transport Leading to Unsustainable Travel Choices**
 - Car ownership is slightly lower than the Scottish average with 32% of households in Levenmouth not having access to a car. Forecasts suggest that all areas of Levenmouth are expected to experience an increase in non-car owning households, with the exception of Largo Bay, that will take it significantly below the Fife and Scottish averages. Inward and outward commuting is predominantly undertaken by private car, suggesting that those without access to a private car are being disadvantaged in the local job market.
 - The area of Levenmouth has an ageing population and likely to have a greater reliance on public transport, particularly for access to health services.
 - The industrial make up of Levenmouth has changed, with a decline in heavy manufacturing jobs not being replaced by numbers of employment opportunities in new industries. The working population needs to access employment opportunities outside of the area – only 40% of the resident working population work in the Levenmouth area.
 - Access to the rail network from the Levenmouth area currently involves interchange, primarily at Markinch or Kirkcaldy stations.

- Lengthy journey times, particularly due to need to interchange, and limited choice of public transport to access employment, health, education, shopping, cultural and leisure services, particularly in Edinburgh.
- Current rail fares between the area and Edinburgh are higher (£/mile) than other routes, particularly to/from Markinch station. Accessing Markinch and Kirkcaldy stations by public transport from Leven add to the cost.
- The lack of a direct service to key strategic locations, the poor level of integration between bus and rail services at the interchange stations and the higher cost of the separate bus + rail tickets is contributing to a high car mode share for these long-distance journeys.
- Poor levels of information for bus services is discouraging use for local residents.
- The long journey times to central Edinburgh by public transport and/or the need to interchange, limits the attractiveness of the area for new residents who need to make regular trips to the Central Belt.
- Almost all respondents to the business survey who answered the question said that rail fares to and from Levenmouth via Markinch (excluding the fare for the connecting bus) make it difficult to attract the workers necessary to deliver the skills required for many potential new businesses.
- The area has very low levels of educational attainment and access to education facilities will be required to build a locally-based skilled workforce.

Opportunities

■ Opportunity Theme 1: Bus Service Enhancements

- Stagecoach has provided investment in the bus network within Levenmouth. This includes the upgrade of vehicles and roll-out of measures to improve facilities and journey experience, including the introduction of journey planning/information apps and one-ticketing arrangements. Further investment is planned, such as in journey planning and information apps.

■ Opportunity Theme 2: Increasing Public Transport Choice

- There is an existing, but largely out-of-use, rail line between Thornton North Junction and Leven. The line is operational at present between Thornton North Junction and Earlseat to support coal extraction activity. The non-operational section includes track-bed as well as available land for a station at Leven and potentially Cameron Bridge. The line is safeguarded in the Mid-Fife Local Plan. Re-instating the full operation of the rail line would require consideration of the structural integrity of existing assets such, as the Leven Railway Bridge, along the line.
- There are opportunities to also increase bus services to and from the area, particularly direct services to Edinburgh or linking to rail stations in Markinch and Kirkcaldy

■ Opportunity Theme 3: Rail Freight

- Freight in the Levenmouth area is accounted for almost entirely by road, with some waterborne freight transportation taking place. Freight options are particularly important for the Levenmouth area as the economy is based predominantly on industry and manufacturing activities that, by their nature, involve long-distance import/export activities to/from the area. Diageo is a key

employer in the area, employing over 1,200 individuals. Discussions with Diageo and their haulier WH Malcolm noted previous interest and ongoing activity to investigate rail freight opportunities to support site operations at Cameron Bridge and Leven. However, there are other options also open to Diageo and WH Malcolm that are also being explored and there is no commitment been given to use rail to transport goods.

- **Opportunity Theme 4: Proximity to Methil Docks**
 - Methil Docks is a potential opportunity to attract new investment, to diversify the local economy and support the development of potential new sectors such as wind and support the development of the Energy Park and potential growth in the offshore wind sector.
- **Opportunity Theme 5: Low Carbon Investment Park (now known as Levenmouth Business Park)**
 - Investment proposals for a Low Carbon Investment Park, located in Buckhaven, form part of the Levenmouth Strategic Development Area and include allocations for industrial and commercial land.
- **Opportunity Themes 6 and 7: Active Travel and Leisure Tourism**
 - The location of Levenmouth presents the opportunity to harness the coastal setting and provide a gateway to the East Neuk. In particular, the proximity of the area to the Fife Coastal Path, as well as local golf courses, could be capitalised upon better in order to help raise the profile of the area in terms of attractiveness to visitors from wider Fife and further afield. National Cycle Network (NCN) routes 76 and 1 serve Markinch and offer the scope to provide a link from the Levenmouth area to the NCN, supporting initiatives to attract visitors. Proposals for a new long distance walking route, the Fife Pilgrim Way, are also under development and provide a further attraction in close proximity to the study area.

Issues

- **Levenmouth Strategic Development Area**
 - There are major future land-use proposals for the area. This includes the Levenmouth Strategic Development Area, which comprises proposals for 1,650 new houses, 15ha business land, a new link road between the A915 and Fife Energy Park, as well as community and educational facilities. An increase in population would place additional demand on the existing road and public transport networks in the Levenmouth area, the wider Fife area, and the city-region beyond.
- **Leven to Thornton Rail Line**
 - Before a potential rail line can be considered in detail, the integrity of the track bed and structures along the existing but-largely-out-of-use rail line between Thornton and Leven would need to be checked, before the costs of re-instating passenger rail services can be estimated accurately.

Constraints

- **Environmental**
 - The environmental component on the STAG Study undertaken for the previous study identified a number of minor constraints which would need to be taken into consideration when considering any additional transport infrastructure between

Leven and Kirkcaldy, but none of these are sufficient to influence the choice of option to the identified problems. These will be revisited as part of the environmental assessment of this appraisal.

6 Objective Setting

6.1 Introduction

6.1.1 The Scottish Transport Appraisal Guidance explains that the appraisal process should be objective led rather than solution led. To comply with the guidance a set of Transport Planning Objectives (TPOs) have been developed to reflect the evidence gathered and problems, constraints, issues and opportunities considered and analysed in the previous chapters. The TPOs essentially reflect the outputs and outcomes sought and will play an integral role in the appraisal process in terms of measuring the performance of the options developed to address the problems, issues and constraints, and realise the opportunities.

6.1.2 Further, in line with the appraisal guidance, the TPOs should be developed with SMART principles in mind. They should therefore be:

- Specific – setting out precisely what is being sought;
- Measurable – it is possible to measure the impact of the option;
- Achievable – is there general agreement that the option can be achieved;
- Relevant – it is a sensible indicator for the change that is being sought; and
- Timed – a future date can be agreed for the impact to be measured.

6.1.3 It is recognised in STAG that TPOs may not be fully SMART at the relatively early stages of the appraisal process. However, they could be subject to ongoing review and revision as the process develops and more information and detail around the objectives becomes available. This is important to ensure the study objectives provide a framework against which performance of interventions can be assessed as part of the monitoring and evaluation activities following the implementation of the selected / preferred solution.

6.2 Transport Planning Objectives

6.2.1 The evidence gathered on the social, economic and transport context, and informed by the stakeholder engagement and public and business surveys, informed the analysis of the problems, opportunities, issues and constraints. These highlighted:

- problems associated with accessibility / connectivity to destinations and services from the Levenmouth area, particularly for non-car owning households who rely on use of public transport;
- a significant majority of working residents in the Levenmouth area travel to work by car or van, and only a small minority use public transport or active travel;
- problems associated with unattractive regional public transport options (limited choice, low frequency, long journey times and high cost), leading to limited access to employment and other key services such as education and health;
- problems attracting residents or skilled workers to the area due to unattractive public transport options;
- opportunity to capitalise on the setting of the Levenmouth area from a leisure and tourism dimension, and particularly with reference to the East Neuk and Fife Coastal Path; and
- meet the increase in travel demand that will likely result from future developments in the area, notably the Levenmouth Strategic Development Area.

6.2.2 In response to these transport problems, opportunities, issues and constraints, the following TPOs were developed:

- TPO 1 – Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.
- TPO 2 – Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.
- TPO 3 – Increase the sustainable mode share for the residents and workforce in the Levenmouth area.

6.2.3 **It should be noted that no weighting is applied to any of the Transport Planning Objectives listed above. The numbering system is for presentational purposes only.**

6.2.4 **TPO 1** is focussed on alleviating the problems related to accessibility to destinations and services within the Levenmouth area, particularly for non-car owning / non-car available households who rely on public transport, as well as increasing the attractiveness of the area as a location for business investment and a place to live and work.

6.2.5 **TPO 2** is focussed on alleviating the problems associated with unattractive regional public transport options, including limited choice, low frequency, long journey times and high cost, leading to limited access to employment and other key services such as education and health. It is also focussed on realising the leisure and tourism opportunities by capitalising on the quality of the natural environment surrounding the Levenmouth area, in particular East Neuk and Fife Coastal Path.

6.2.6 **TPO 3** is focussed on changing travel behaviours, in particular reducing reliance on the private car for commuter trips and increasing the use of sustainable travel modes such as public transport, walking and cycling.

6.2.7 Figure 6 below shows the linkages between the problems and opportunities, and the TPOs. Mapping from left to right, the problems and opportunities have been linked into the appropriate objective(s). This has enabled the objective setting process to remain focussed on setting objectives that alleviate the identified problems and address the identified opportunities.

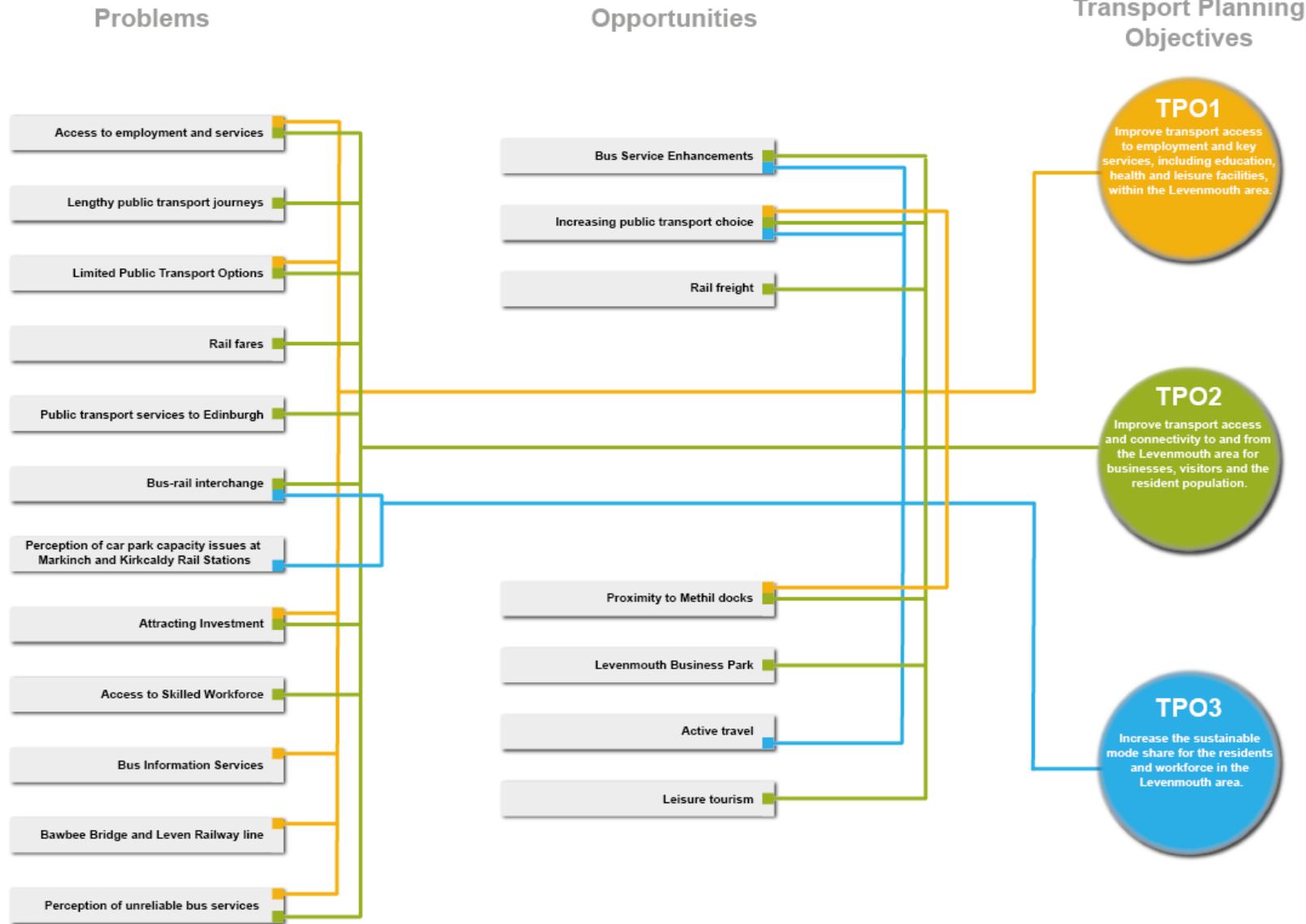


Figure 6: Mapping of Problems and Opportunities with Transport Planning Objectives

7 Option Generation, Sifting and Development

7.1 Introduction

- 7.1.1 Following the development of the TPOs, this chapter presents the option generation, sifting and development process to arrive at a set of options that can be taken forward for appraisal. The aim is to identify a set of options that could potentially deliver the TPOs and consequently address the problems, issues and constraints identified while also help realise the opportunities.

7.2 Do-Minimum Scenario

- 7.2.1 STAG requires the development of a Do-Minimum scenario and this forms a natural part of the option development process. This scenario includes no change to the provision of transport services other than those set out in existing commitments. It represents the scenario if no other options are taken forward and will form the benchmark against which the additional benefits and costs [i.e. value for money of the impacts associated with each option can be measured]. The Do-Minimum scenario, including transport interventions and land use planning inputs, will be confirmed and agreed during the next stage of the STAG process [i.e. Preliminary Options Appraisal].

7.3 Option Generation and Sifting

- 7.3.1 In line with the appraisal guidance, option generation was informed by the TPOs and what could be implemented to deliver them and ultimately address the problems, issues and constraints and help realise the opportunities.

7.4 Option Development

- 7.4.1 Informed by the TPOs, a list of multi-modal transport options was developed by the project team and recommended for Preliminary Options Appraisal. In summary, many of the options are the same as those in the previous STAG study, with four new options generated (highlighted in brackets):

- Option 1 – Maintain existing bus services while improving local public transport facilities and information services;
- Option 2 (new) – Improve local bus services connecting towns in the Levenmouth area to Leven;
- Option 3 – Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes;
- Option 4 (new) – Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow;
- Option 5 – Provision of a rail freight link to Cameron Bridge and Methil Docks along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks;
- Option 6 – Provision of a rail line along the alignment of the existing, but out of use, rail line between Thornton North Junction and Methil Docks;
- Option 7 – Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy;
- Option 8 – Provision of a new rail alignment from Leven and Methil Docks to Markinch;
- Option 9 – Provision of a new Bus Rapid Transit alignment from Leven to Markinch;

- Option 10 (new) – Provision of new and / or improved active travel routes linking the towns in Levenmouth as well as to the East Neuk;
- Option 11 – Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks; and
- Option 12 (new) – Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity).

7.4.2 **It should be noted that the STAG process does not prioritise between options and therefore no weighting is applied to any of the options listed above. The numbering system is for presentational purposes only.**

7.5 Recommended Multi-Modal Options for Preliminary Options Appraisal

7.5.1 The multi-modal transport options worthy of further consideration are discussed below, including rationale for selection at this stage.

Option 1 – Maintain existing bus services while improving local public transport facilities and information services

7.5.2 This option would focus on maintaining the existing level of local bus services connecting Leven to other towns in the Levenmouth area, while improving service information such as real time information at bus stops.

7.5.3 As discussed in previous studies, the degradation of Bawbee Bridge/Leven Railway Bridge could impact further on existing express services through the Levenmouth area, with the largest impact on services to the southern side of the River Leven. This option would depend on repairs to Bawbee Bridge/Leven Railway Bridge taking place.

7.5.4 The rationale for selection at this stage is the positive impact Option 1 could have on the objectives to improve transport access to employment, education, health and leisure facilities, both within and to and from the Levenmouth area for the resident population and to increase the sustainable mode share for the residents and workforce in the Levenmouth area.

Option 2 (new) – Improving local bus services connecting towns in the Levenmouth area to Leven

7.5.5 Option 2 would involve improving local services linking Leven with, Methil and Lower Methil. By considering timetable information, it was concluded that the frequency of services to and from these areas at certain times of the day could be increased to offer greater accessibility to Leven and, via connecting services, beyond. It was also concluded that services earlier in the day could be provided to allow access to employment opportunities in Levenmouth and further afield by 09:00. Option 2 would contribute to the objectives to improve transport access to employment, education, health and leisure facilities, both within and to and from the Levenmouth area for the resident population and to “increase the sustainable mode share for the residents and workforce in the Levenmouth area.

Option 3 – Improving bus services to rail stations at Markinch, Kirkcaldy and Glenrothes

7.5.6 Bus and rail integration from Levenmouth to Markinch has recently been improved to provide a link to the rail network, largely via the X4 service. This option would entail further improved provision of bus services from Methil, Methilhill and Buckhaven to Markinch station through the re-branding and timetable adjustments to service 44B to meet rail services at Markinch. The existing X4 service connecting Leven town centre, Markinch station and Glenrothes could also form part of this re-branding exercise.

- 7.5.7 Rail fare re-balancing across Fife would also be key to this option in terms of increasing the attractiveness of rail options at Markinch to address the higher fare for rail travel from Markinch to Edinburgh in comparison to services from Kirkcaldy. Re-balancing refers to an adjustment to the rail fare structure in relation to services accessed at Markinch Rail Station. With regard to this option, this assumes a reduction in fares to promote use of these services, determined by the relative benefits and costs of doing so. Given the regulated nature of rail fares, any re-balancing of fares would be a matter for Transport Scotland, in negotiation with the operator.
- 7.5.8 The rationale for selection at this stage is the impact Option 3 is anticipated to have on all three objectives.

Option 4 (new) – Improving regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow

- 7.5.9 Option 4 would be aimed at improving linkages to areas beyond the Levenmouth area, and particularly to enhance accessibility and connectivity with key employment areas such as Glenrothes, Kirkcaldy, Dundee and Edinburgh. The key focus would be on addressing the problem of lengthy public transport journey times and limited modal choice to key destinations.
- 7.5.10 While there are existing direct links to many of the towns, there are interchanges needed to access, for example, Dundee and Edinburgh. These cities can be important for accessing employment opportunities, health care and education. The frequency to existing services would be increased and the journey times would be shortened through more direct links between Leven and the destination. Option 4 would contribute to all three objectives.

Option 5 – Provision of a rail freight link to Cameron Bridge and Methil Docks along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks

- 7.5.11 This option would involve opening the existing out-of-use rail line at Methil Docks to Cameron Bridge and onwards to the mainline for freight only. The current rail alignment joins the Markinch to Kirkcaldy line halfway between Markinch and Kirkcaldy. Freight facilities would be provided at Methil Docks and Cameron Bridge and could facilitate the strategic movement of freight. Option 5 has been identified as a standalone freight only option due to the difference in costs associated with freight and passenger standard lines.
- 7.5.12 The rationale for selection at this stage is the positive impact Option 5 is anticipated to have on the objectives to improve transport access to employment, education, health and leisure facilities to and from the Levenmouth area for businesses.

Option 6 – Provision of a rail line along the alignment of the existing, but out of use, rail line between Thornton North Junction and Methil Docks

- 7.5.13 This option would involve opening the existing, but out-of-use, rail line to freight and passenger services between Methil and the existing mainline with stations provided at Cameron Bridge and Leven. The current rail alignment joins the mainline half-way between Markinch and Kirkcaldy and offers access to both sides of the Fife Circle. It is the intention that passenger services would be served by a new service or the extension/diversion of existing rail services. The feasibility of potential service arrangements would be considered further as part of the Detailed Appraisal if this option is taken forward.
- 7.5.14 Sub-options would include the development of a rail station at Leven and Cameron Bridge and the inclusion of rail freight facilities and can be summarised as follows:

- Sub-option 6a. Passenger rail only option, with a station provided at Leven only;

- Sub-option 6b. Passenger rail only option, with stations provided at Leven and Cameron Bridge;
- Sub-option 6c. Passenger and freight rail option, with a station provided at Leven only, and freight facilities provided at Cameron Bridge and Methil Docks; and
- Sub-option 6d. Passenger and freight rail option, with stations provided at Leven and Cameron Bridge, and freight facilities provided at Cameron Bridge and Methil Docks.

7.5.15 The rationale for selection at this stage is the positive impact Option 6 is anticipated to have on all three objectives.

Option 7 – Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy

7.5.16 This option would involve the reopening of the out-of-use rail line from Leven as far as Cameron Bridge and then construction of a new rail alignment to join the Markinch to Kirkcaldy line. This alignment would not provide access to the Dunfermline (west) branch of the Fife Circle, but could offer enhanced journey times to the East Coast Mainline when compared to the existing out-of-use alignment. Passenger services could be fulfilled by the provision of a new service or the extension/diversion of existing rail services. The feasibility of potential service arrangements would be considered further as part of the Detailed Appraisal if this option is taken forward.

7.5.17 This option has a number of sub-options as detailed below:

- Sub-option 7a. Passenger rail station, provided at Leven only; and
- Sub-option 7b. Passenger rail station, provided at Leven and Cameron Bridge.

7.5.18 The rationale for selection at this stage is the impact Option 7 could have on all three objectives.

Option 8 – Provision of a new rail alignment from Leven and Methil Docks to Markinch

7.5.19 This option would involve the re-opening of the out-of-use rail line from Leven towards Cameron Bridge. From the Cameron Bridge area, the rail link would follow a new rail alignment with new track built to join the Markinch to Kirkcaldy line at Markinch. This option would allow connection to both sides of the Fife Circle, but would see to straighten the alignment to deliver better journey times to the East Coast Mainline when compared to the existing out-of-use alignment. Passenger services could be fulfilled by the provision of a new service or the extension/diversion of existing rail services. The feasibility of potential service arrangements would be considered further as part of the Detailed Appraisal if this option is taken forward.

7.5.20 This option has a number of sub-options as detailed below:

- Sub-option 8a. Passenger rail only option, with a station provided at Leven only;
- Sub-option 8b. Passenger rail only option, with stations provided at Leven and Cameron Bridge;
- Sub-option 8c. Passenger and freight rail option, with a station provided at Leven only, and freight facilities provided at Cameron Bridge and Methil Docks; and
- Sub-option 8d. Passenger and freight rail option, with stations provided at Leven and Cameron Bridge, and freight facilities provided at Cameron Bridge and Methil Docks.

7.5.21 The rationale for selection at this stage is the positive impact Option 8 is anticipated to have on all three objectives.

Option 9 – Provision of a new Bus Rapid Transit alignment from Leven to Markinch

7.5.22 This option would include a segregated Bus Rapid Transit (BRT) route from Leven to Markinch Rail Station, providing a traffic free, high quality bus link to the station. BRT services can offer a quality of passenger ride, boarding, user friendliness and accessibility, safety, and reliability of journey time similar to that of rail services, but at a reduced cost.

7.5.23 This option has two sub-options as detailed below:

- Sub-option 9a. Station provided at Leven only; and
- Sub-option 9b. Stations provided at Leven and Cameron Bridge.

7.5.24 The rationale for selection at this stage is the positive impact Option 9 is anticipated to have on all three objectives.

Option 10 (new) – Provision of new and/or improved active travel routes linking the towns in Levenmouth as well as to the East Neuk

7.5.25 As explained in chapter 5, travel distances across the Levenmouth area are conducive to cycling given effective provision of active transport infrastructure and information. The core urban area of central Levenmouth stretches approximately three miles from the edge of Buckhaven to the edge of Leven, and from the centre of Leven to the extent of Kennoway. This option would involve an improved cycling and walking network connecting the towns in Levenmouth. It would also involve linking the network the Fife Coastal Path, which passes through the Levenmouth area, and potentially the Fife Pilgrim Way. Option 10 could contribute to the objectives to increase the sustainable mode share for the residents and workforce in the Levenmouth area.

Option 11 – Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks

7.5.26 This option would provide a hovercraft link between Methil Docks, Kirkcaldy, and Edinburgh, and would include a new passenger terminal at Methil Docks. Option 11 is anticipated to have a positive impact on access to employment, education, healthcare and leisure destinations in the area and encourage increased sustainable travel mode share through the provision of an additional mode choice and improved access to Kirkcaldy and Edinburgh via the hovercraft link. Option 11 is also anticipated to have a positive impact on attracting jobs, people and tourists to Levenmouth through the improved direct access to Edinburgh and Kirkcaldy. The nature of the mode is suited to marketing as a transport gateway to the East Neuk. This option was suggested in consultation with SEStran and builds upon the Kirkcaldy to Edinburgh link concept noted in the Proposed FIFEplan Local Development Plan (2014) adding an additional connection to the Levenmouth area.

7.5.27 The rationale for selection at this stage is the positive impact Option 11 could have on the objectives to improve transport access and connectivity to and from the Levenmouth area for visitors and the resident population and increase the sustainable mode share for the residents and workforce in the Levenmouth area.

Option 12 (new) – Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity)

7.5.28 Option 12 would involve reducing the fare between Markinch to Edinburgh to a level more in line with services of a similar length. This would make Edinburgh more accessible from Leven and vice versa. The reduction in fare could lead to an increase in demand for parking at the station, and additional capacity may be required. Option 12 would contribute to the objectives to improve transport access and connectivity to and from the Levenmouth area for visitors and

the resident population and increase the sustainable mode share for the residents and workforce in the Levenmouth area.

8 Recommendations and Next Steps

8.1 Introduction

8.1.1 This Initial Appraisal: Case for Change report has set the context for the appraisal of multi-modal transport options for the Levenmouth area. In line with STAG guidance, it has identified the key transport problems, opportunities, issues and constraints within the study area, which have formed the basis for objective setting and the generation of a wide range of options to be appraised. The options recommended for Preliminary Options Appraisal are listed in Table 5 below.

8.1.2 **It should be noted that the STAG process does not prioritise between options and therefore no weighting is applied to any of the options listed in Table 5. The numbering system is for presentational purposes only.**

Table 5: Recommended Multi-Modal Transport Options for Preliminary Options Appraisal

Option	Type	Description
1	Accessibility	Maintain existing bus services while improving local public transport facilities and information services
2	Accessibility	Improve local bus services connecting towns in the Levenmouth area to Leven
3	Accessibility	Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes
4	Accessibility	Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow
5	Freight	Provision of a rail freight link to Cameron Bridge and Methil Docks along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks
6	Public Transport	Provision of a rail line along the alignment of the existing, but out of use, rail line between Thornton North Junction and Methil Docks
7	Public Transport	Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy
8	Public Transport	Provision of a new rail alignment from Leven and Methil Docks to Markinch
9	Public Transport	Provision of a new Bus Rapid Transit alignment from Leven to Markinch
10	Active Travel	Provision of new and / or improved active travel routes linking the towns in Levenmouth as well as to the East Neuk
11	Public Transport	Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks
12	Public Transport	Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity)

8.2 Preliminary Options Appraisal

8.2.1 The purpose of the Preliminary Options Appraisal will be to undertake an initial qualitative appraisal of the recommended options taken forward from the Initial Appraisal: Case for Change process. This will include an assessment of:

- the likely impacts of the options against the TPOs;
- the likely impacts of the options against STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion];
- options against established policy directives; and
- feasibility, affordability and public acceptability of the options.

8.2.2 Following the Preliminary Options Appraisal, a more detailed, quantitative appraisal will be carried out for the options that perform well against the TPOs and STAG criteria.

Appendix A Review of Previous STAG

Levenmouth STAG - Overall Approach to Demand Forecasting

This paper has been produced in response to a Services Brief issued by Transport Scotland (TS) under Latis Lot 4 (TS/MTRIPS/SER/2016/02) to progress the transport appraisal work undertaken to date for the Levenmouth Sustainable Transport Study to completion in line with STAG. The Services Brief also sets out that an initial task will be to review the Levenmouth Sustainable Transport Study STAG Report and Appendices to therefore determine the scope of further transport appraisal work required to be undertaken to complete the Transport Appraisal in line with STAG. This note provides a summary of the findings of the review. In addition, TS provided its own comments on the Report, which have also been considered in the Review and, where relevant, reflected in the findings below.

Background

In May 2015 Fife Council commissioned an appraisal to determine measures to improve sustainable transport options for the Levenmouth area of Fife, with 'a view to improving its economic viability'. The brief for the study explained it was to be undertaken in accordance with the Scottish Transport Appraisal Guidance (STAG).

From the Review undertaken by PBA it is clear that, in terms of the structure, the STAG Report, dated December 2016, largely follows the recommended process set out in the guidance. While, in the main, the process has been followed, there are limitations and weaknesses however in parts of the appraisal that detract from the robustness of the analysis and conclusions.

Overview

The STAG Report concluded with a preferred option to re-open the existing rail line at Levenmouth. The scheme has an estimated benefit cost ratio (BCR) of 1.31.

The other option considered in detail during the Part 2 appraisal involved enhanced supported bus services to improve connectivity from the Buckhaven and Methil area to Markinch and Glenrothes. This option generated a BCR of 5.19 but was not the preferred option.

As explained above, despite the STAG process being followed, there are some weaknesses with the approach adopted which impacts on the robustness of the results. The key ones are:

- there is considerable disconnect between the evidence gathered to inform the problems, opportunities, issues and constraints and some of the Transport Planning Objectives (TPOs);
- this disconnect continues between the TPOs and option development, meaning that there is limited confidence that the options appraised fully capture all potential option scenarios and will address the appropriate problems, opportunities, issues and constraints;
- there is no convincing evidence presented that there is actually suppressed demand for the use of rail freight, which is an important component of the preferred option;
- there is minimal evidence that current transport is acting as an inhibitor of investment in the area, as claimed in the Report;
- the appraisal includes limited assessment of how the options developed perform against the TPOs and focuses much more on the STAG criteria;
- while a timing issue, the economic analysis used an earlier edition of the STAG guidance and is not consistent with the most up to date version and doesn't include analysis of the impacts of Wider Economic Benefits;

- the methodological approach used to inform the demand forecasting analysis has a number of limitations and consequently will have impacted on the robustness of the quantified/monetised impact of the transport economic benefits;
- ongoing work considering options for a new ScotRail express timetable, which will impact on Fife, may affect the rail options covered in the appraisal and these need to be revisited to fully understand whether they are still viable;
- the costs used as part of the value for money assessment are very dated (2008) and need to be revisited to determine if they are still accurate and robust; and
- key risks that are identified have not been quantified to understand their impact on the relative performance and results of the appraised options.

There are other, relatively minor, shortcomings with the appraisal but these represent the key areas and are the focus of the review.

Review of STAG

Problems, Issues, Opportunities and Constraints and Transport Planning Objectives

As the Guidance clearly explains, Transport Planning Objectives (TPOs) are integral to a successful and robust appraisal. They serve as a basis for directing and guiding the entire study process and provide clarity to stakeholders on what is to be achieved. However, crucially, they need to be based on clear evidence gathered on the problems, opportunities, issues and constraints. If the TPOs do not reflect the problems, opportunities etc, then the preferred options / solutions that fall out of the detailed appraisal will not be what is required [e.g. problems will not be solved and / or opportunities not realised]. The TPOs developed in the Levenmouth STAG are:

- TPO 1 – Improve access to employment, education, healthcare and leisure destinations, both within and outwith the area, for the population of the Levenmouth area;
- TPO 2 – Encourage increased sustainable travel mode share for the residents and workforce of the Levenmouth area;
- TPO 3 – Ensure that transport infrastructure and services encourage investment in, and attract jobs and people to, the Levenmouth area; and
- TPO 4 – Enhance the Levenmouth area’s role as a tourist destination and a gateway to East Neuk.

The evidence gathered and presented in the Problems, Opportunities, Issues and Constraints chapter does not provide a clear logic trail to the TPOs generated. In particular, there is little evidence presented from stakeholders that the current transport situation / provision in the area is directly leading to the problems and issues or is constraining opportunities being realised.

For TPO1, analysis has been undertaken and some evidence presented to support the claims that the area has poor access to employment, education, healthcare etc but this could have been boosted by providing examples from other areas, with similar geography, to demonstrate relative accessibility rather than absolute numbers associated with Levenmouth. For example, the figures presented in Table 6 could have included equivalent metrics from other towns not in Levenmouth. While Table 7 does have comparisons, this focuses on frequency and journey times to Edinburgh as opposed to access to specific key services, [e.g. further education establishments, hospitals/GPs etc.], as these will not necessarily all be located in Edinburgh.

For TPO 2, there is little evidence presented to show that the current mode share by sustainable modes is poor or relatively poor compared to national, regional or local similar areas. Indeed, there are committed plans already in place to enhance the quality of bus and supporting infrastructure that will

impact on demand and, possibly, mode share. At the moment, the narrative around this item seems to be deliberately aiming towards a public transport solution of a particular type rather than developing an evidence base to support a reason / rationale for it.

Similarly, on TPO 3, there is limited supporting evidence to show that current transport infrastructure and services act to discourage investment in the Levenmouth area. There is some evidence from the business survey that businesses believe parts of the current transport network are poor and impact on performance. However, the survey sample size is small and there doesn't appear to be any evidence that the situation in Levenmouth is greater than other, similar areas and, perhaps more importantly, that the current provision is actually discouraging new businesses from locating in the area or discouraging investment by current businesses [i.e. better transport infrastructure will lead to more investment and, consequently, attract and create more jobs]. This is particularly true of the freight service which is a key component of one of the two options considered in the Part 2 appraisal. With regard to demand for use of a freight line in the future, there are a number of references to 'if', 'maybe', 'possibly' and 'potentially'. However, there is nothing to show that the lack of a freight line at the moment is acting as a constraint or causing problems, or that it will actually create an opportunity and businesses will definitely, rather than possibly, use it.

Again, there seems to be a disconnect between the evidence presented in the chapter and TPO 4. There is little to suggest that the current transport network is a problem or acting as a constraint for tourist visits to Levenmouth and East Neuk, or that by investing in transport this would create an opportunity. In particular, there is limited hard evidence from tourism organisations, such as Visit Scotland, to back up the claims made, especially around the opportunities that improving the transport network would generate.

Overall there is a lack of a logic trail between the evidence presented and the TPOs generated. This is not to say that the TPOs are wrong, it is simply that, as it stands, what is presented doesn't lead one to see the linkages and connection.

Finally, on the TPOs, the objectives are not SMART. This could, to some degree, be a reflection of the evidence presented not being thorough and quantified, therefore making it difficult to then quantify what needs to be achieved to measure performance and success.

Options Tested

Given the limited evidence presented of the problems, issues, constraints and opportunities, there is a clear disconnect between these and the TPOs. Because the options are designed to achieve the TPOs there is a further disconnect between the options developed and the problems, opportunities etc and it is not clear that suitable and the most effective options have been identified to be taken forward to the appraisal.

However, if we take the problems identified as given, and the TPOs as sensible reflections of the problems etc., there still seems to be a disconnect between the TPOs and the options selected. For example, given the nature of some of the problems identified and the industrial nature of economic activity at Levenmouth, the absence of road-based options is notable. Access to the area from the west is via single carriageway routes, the A915 via the congested north eastern corner of Kirkcaldy, and the longer A911 via Glenrothes, also congested around Glenrothes. Arguably options providing improved road connectivity should have been included – or at least the rationale for not including road options needs to be more clearly set out.

Appraisal Against Transport Planning Objectives

While there is a clear disconnect between the evidence gathered around the problems, opportunities etc. and the links to the TPOs, the existing STAG Report has a very limited appraisal of the options against the TPOs, instead focussing on the STAG criteria. The appraisal will therefore benefit from additional analysis of the options and their contribution (quantified where possible) to meeting the objectives set.

Economy Appraisal

The appraisal undertaken to assess the economic impacts is not consistent with the current Guidance. This likely reflects timing as the current guidance on the STAG economy criterion was updated following the completion of the STAG Report.

To comply with the current guidance, analysis of Wider Economic Benefits will need to be undertaken. If the analysis is not to be updated to account for the revised guidance, then the current section on Economic Activity and Location Impacts (EALI) should be looked at again. Given that TPO 3 focuses on investment (economic activity) and jobs, this section should be used to provide an indication of the extent of the impact of the options in these areas. In addition, the analysis undertaken to date doesn't consider how much of the benefits claimed to be generated by the two options are simply displaced from other parts of Fife, Central Belt or wider across Scotland. At the moment the results suggest that the impacts will be 100% additional at the Scotland level and do not take account of any consequential downside activity elsewhere in response to an increase in the Levenmouth area. While this may be possible, it is unlikely and at the very least needs to be supported by an evidence base.

The BCR for the rail option (Option B) is 1.31, while the BCR for the bus option (Option B) equates to 5.19. This suggests that, in terms of monetised costs and benefits, the bus option offers significantly greater value for money. Yet the Report identifies the rail option as the preferred option. There is no convincing reason to support this decision.

Demand Forecasting

As part of a previous Lot 4 Task Order, PBA undertook a review of the demand forecasting methodology applied to inform the TEE. In summary, the review concluded with two areas of risk associated with the work undertaken: overall approach taken; and technical points with the patronage forecasts. The conclusions of the previous work are summarised below.

The overall approach taken has been to develop a spreadsheet-based model to generate a forecast of AM peak hour rail commuting demand to and from the new stations at Leven and Cameron Bridge, based on a combination of (i) Census travel to work data from 2011 and (ii) a mode-choice model populated with local generalised time data. This figure has then been factored up to an annual all-travel purpose patronage figure using factors derived from TMfS12 station demand data and ORR Station Entry and Exit Data.

Whilst this type of 'sketch-based' approach is suitable for a well-developed Part 1 Appraisal (for example to provide a broad order of magnitude indication of benefits), it cannot be considered appropriate for a Part 2 Appraisal. For a Part 2 Appraisal of a scheme of this scale (both in terms of capital cost and the scope of impacts (across modes and geographies)), it would be expected to see the proposal tested in an area-wide, fit-for-purpose, calibrated and validated multi-model transport model. Such a model would be based on recognised data and behavioural response parameters which would have been independently audited, providing a degree of confidence in the results which cannot be drawn from an un-audited spreadsheet model.

In addition, and importantly, there is very little commentary in the report regarding the nature of the forecast users of Levenmouth and Cameron Bridge stations. Confidence in the forecasts would increase if the reader was able to understand:

- the **nature of the journeys forecast to be undertaken through the new stations** in terms of (a) origins of 'inbound to Levenmouth' and destinations of 'outbound from Levenmouth' trips, (b) peak and off peak demand, (c) journey purpose, and (d) how these may change over time; and
- the **counterfactual** – i.e. what would the forecast users of the new stations have done in the event of the new service not being introduced – this helps to understand the derivation of the economic benefits.

Overall the approach employed in the STAG to demand forecasting is **highly sensitive to a range of assumptions** made in the spreadsheet model, and this impacts on the degree of confidence with which

the results can be treated. Further analysis would be required to reduce this level of uncertainty and increase confidence in the forecast.

The main areas of specific risk with respect to the patronage forecasts about which more clarity could be sought are:

- The **derivation of AM peak hour commute figures** from total 2011 Census figures. There is a risk that the forecast has been derived from a base daily commuting figure which is too high, having not fully accounted for the range of factors which determine what percentage of the workforce actually travel to work on any given day – this would have the effect of inflating the forecasts. This becomes an even greater issue when one considers that one of the key drivers of demand travelling to Levenmouth will be the Diageo factory where many employees work shifts [i.e. they will be travelling to and from work at times when no services are running].
- The treatment of P & R choice in the mode choice model, in particular **P & R at Kirkcaldy versus the new stations** and the representation of higher frequency services there. This would be a key choice facing Levenmouth residents in the event of a new service to Leven and the issues around this are not explored in the report. If this choice is not accounted for there is a risk that the forecast patronage is overestimated as Levenmouth residents may continue to drive to Kirkcaldy.
- The within-mode behavioural responses appear to include a large **switch from bus to bus-rail** - previous station access survey data suggests that bus-rail commuting is not common. The geographical distribution of the new rail trips and the apparent **reliance on intra-Fife rail-based commuting** which is not a major market at present. These points relate to the nature of the forecast users of the new service. If the forecasts are reliant on travel behaviours which are not commonly found, there is a risk that patronage is over-estimated.
- The potential sensitivity to **future development aspirations in Levenmouth**. If the quantum of development in the Levenmouth area is not reached, this would have a material impact on the 2032 patronage figures and hence the economic benefits and the BCR.
- The **annualisation factors** used to factor up AM peak hour commuting to annual station entries & exits. The annual patronage figures and hence economic benefits derived in the report are highly sensitive to these assumptions regarding annualisation and this is a significant risk.
- There is little clarity on the **potential negative impacts** at other Fife stations with the recasting of services to serve Levenmouth, particularly at Glenrothes with Thornton. It is also not clear if these impacts have been quantified in the analysis.

Given the potential risks and uncertainties associated with a 'sketch' approach of this nature, it was recommended that the Levenmouth scheme be tested in an appropriate multi-modal transport model to provide a consistent and comprehensive area-wide demand forecast and economic appraisal, before being progressed further.

A transport model will also be a useful tool in measuring the impact/performance of the scheme against any revised SMARTer TPOs.

Timetabling and Operational Feasibility

The STAG Report (11.7.7, page 180) explains that to reach a firm conclusion on an optimal service pattern, and therefore the rail option, would require additional detailed rail timetabling. It is added that this analysis is disproportionate for the STAG appraisal and would more likely be required as part of the GRIP design and implementation process. While this may be correct, we understand there is timetable development work ongoing towards the new ScotRail express timetable (which will impact on Fife) due for introduction in December 2018. Consequently, it will be important to revisit and update the Levenmouth timetable options as part of the STAG completion. This will need to be done in advance of, and feed into, the transport modelling exercise to inform the economic appraisal.

In addition, the opportunity for a Fife-based depot doesn't seem to be based on any supporting evidence. It was looked at before by ScotRail and deemed not to be economically viable and there is nothing presented in the document to suggest the reasons for arriving at that conclusion have changed.

Cost Assumptions

These are dated (derived in 2008) and need a thorough revisiting in consultation with Network Rail. While the 2008 figure has been updated to account for cost inflation, a more detailed review of each cost element is required to understand how realistic the figures are.

Risk Analysis

Given the considerable list of risks identified and the potential impact of these (together with a number of uncertainties and assumptions therefore made), it is surprising that there is limited monetised quantification of amending some of the important assumptions and how these impact on the results.

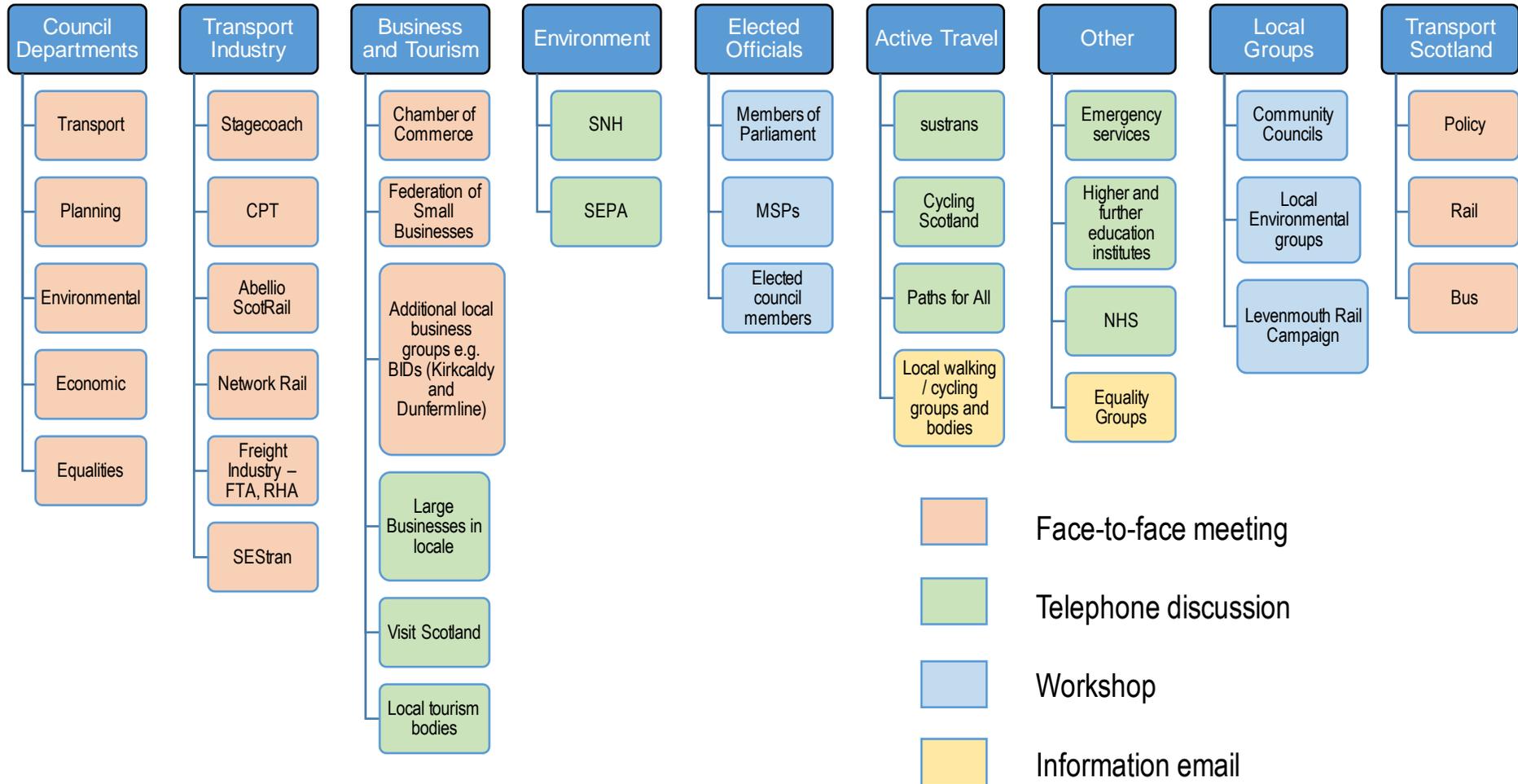
STAG Report Summary and Conclusions

Due to the limited evidence supporting the Problems, Issues, Opportunities and Constraints chapter, leading to questionable TPOs and options developed, together with the weaknesses in the approach to the demand forecasting, and therefore the transport economics analysis and results, a number of the conclusions need to be questioned. For example, the claim that 'a rail freight link for the area may open up the type and scale of industry that can operate in the Levenmouth area potentially impacting on inward investment levels', is hard to support based on the evidence and analysis and it could quite easily not open up any opportunities.

In addition, the opportunity for a Fife-based depot doesn't seem to be based on any supporting evidence. It was looked at before by ScotRail and deemed not to be economically viable and there is nothing presented in the document to suggest the reasons for arriving at that conclusion have changed.

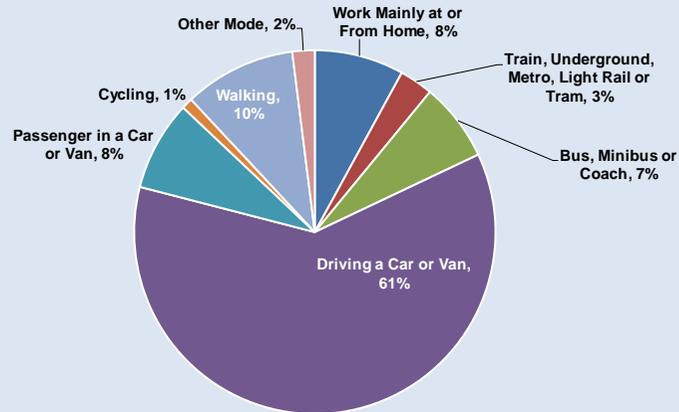
In addition to supporting inward investment, it is claimed that the transport options will help attract tourists to the area. There is no estimate of the likely impacts generated by the options (or evidence that transport is a constraint in attracting tourists or inward investment) or indeed if the tourism marketing initiatives referred to alone would have a sufficient positive impact on attracting tourists.

Appendix B Engagement Programme

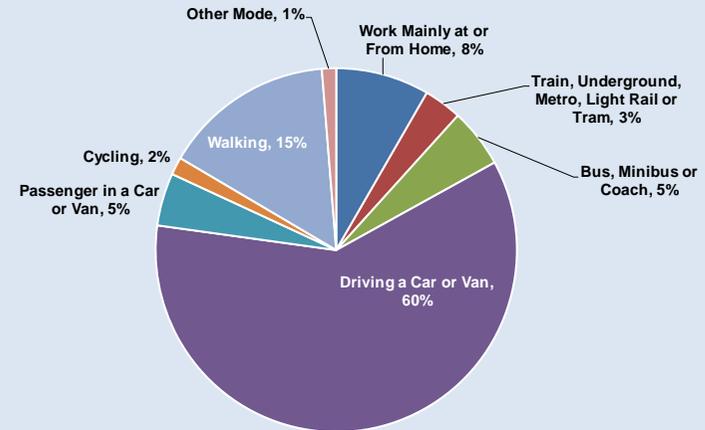


Appendix C Travel to Work Mode Share for Selected Comparator Locations

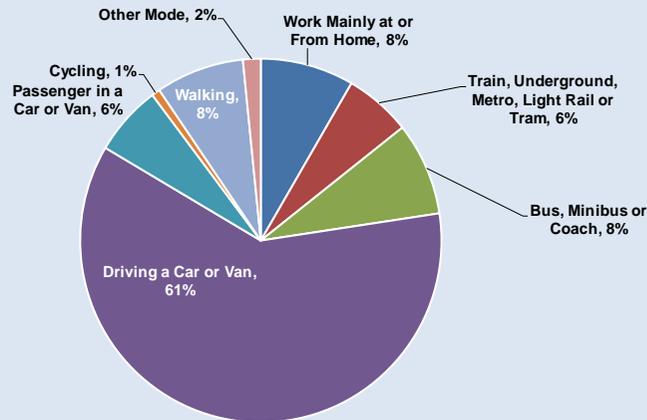
TRAVEL-TO-WORK MODE SHARE, KIRKCALDY RESIDENTS



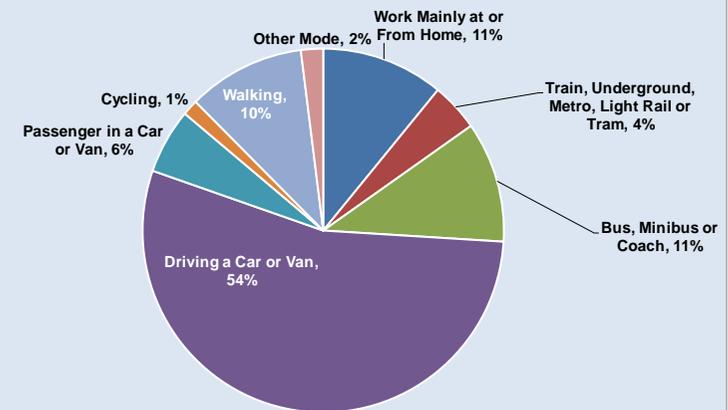
TRAVEL-TO-WORK MODE SHARE, CUPAR RESIDENTS



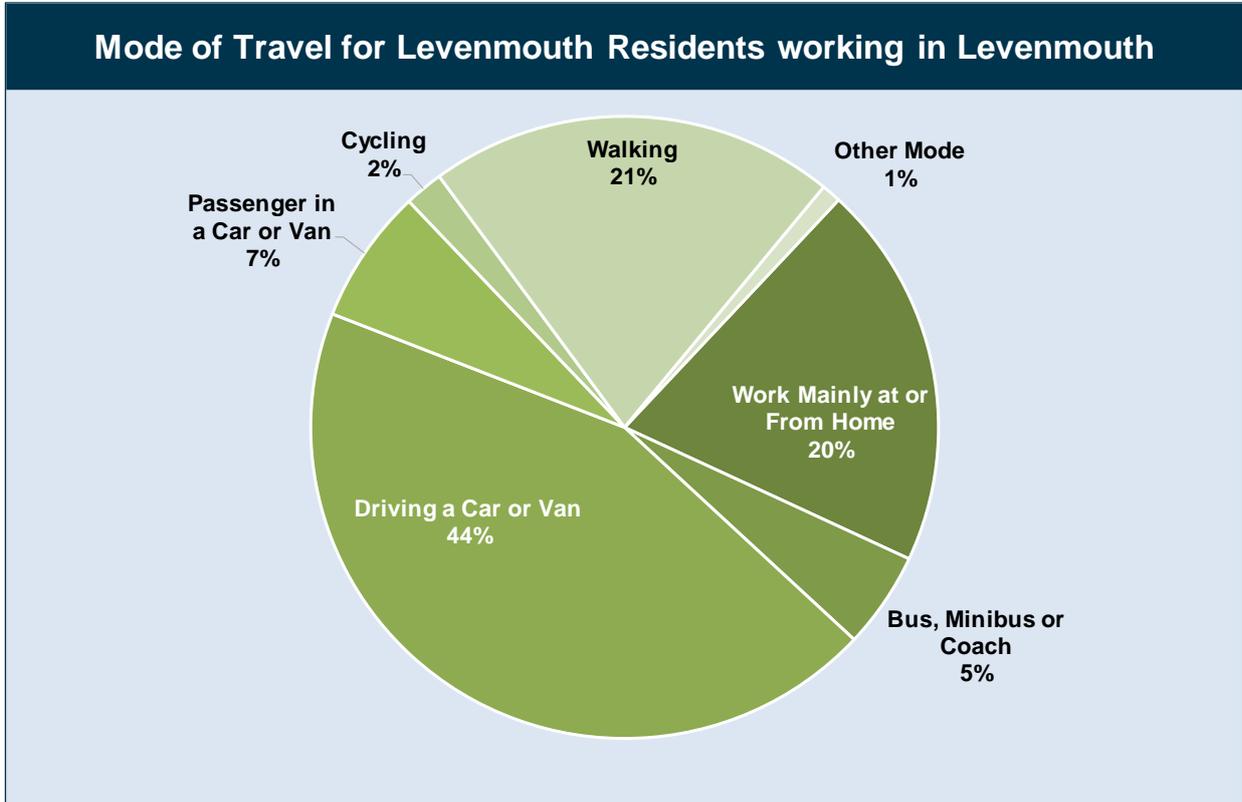
TRAVEL-TO-WORK MODE SHARE, DUNFERMLINE RESIDENTS



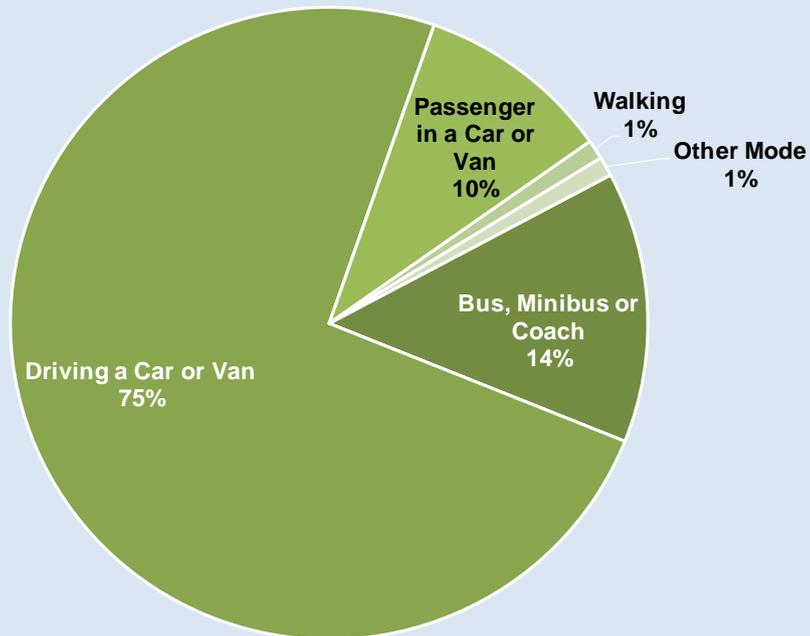
TRAVEL-TO-WORK MODE SHARE, ALL SCOTLAND RESIDENTS



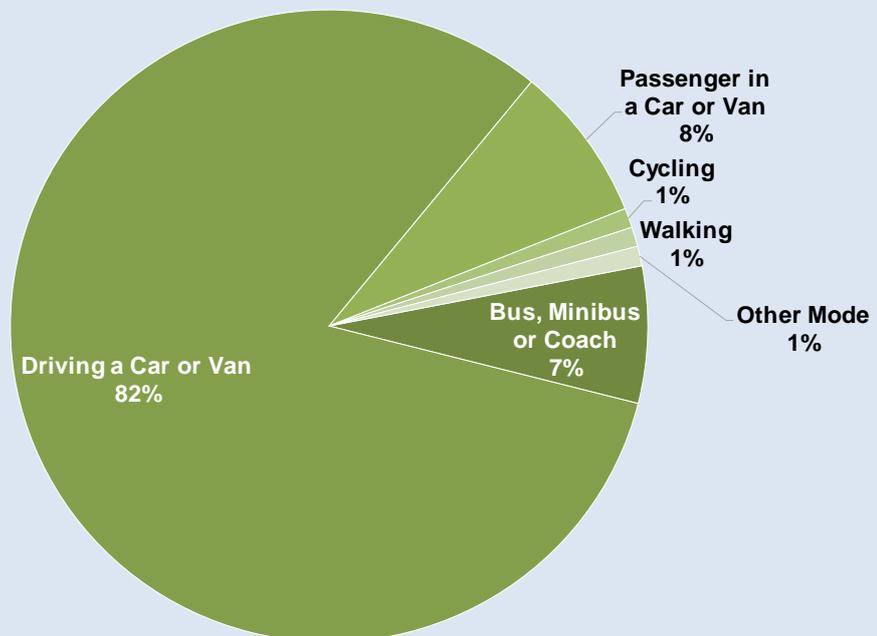
Appendix D Mode of Travel to Workplace Locations



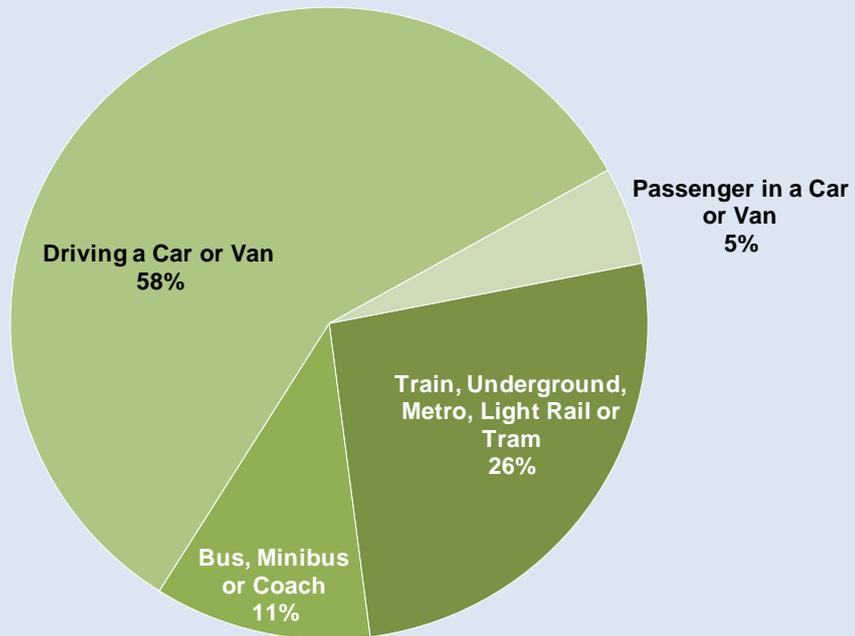
Mode of Travel for Levenmouth Residents working in Kirkcaldy



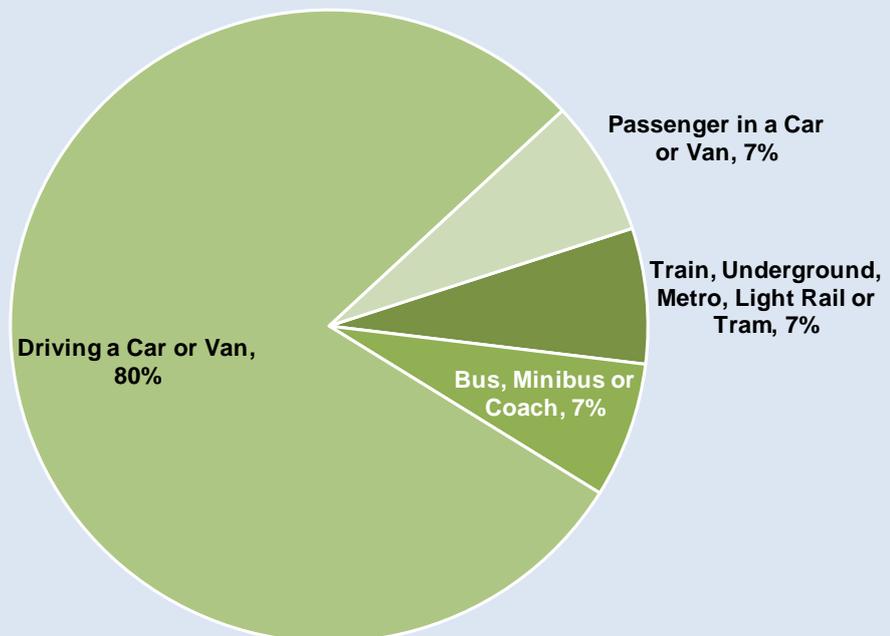
Mode of Travel for Levenmouth Residents working in Glenrothes



Mode of Travel for Levenmouth Residents working in Edinburgh



Mode of Travel for Levenmouth Residents working in Dundee



Appendix E Public Travel Survey

Levenmouth Sustainable Transport Study - Travel Survey



Background

This survey is primarily aimed at residents of the Levenmouth Area.

Transport Scotland, working collaboratively with Fife Council, has commissioned Peter Brett Associates (PBA) to undertake a Sustainable Transport Study for Levenmouth in line with its Scottish Transport Appraisal Guidance (STAG).

The initial process involves identification and assessment of problems and opportunities not being realised on the existing transport network which affect the community on a daily basis. PBA is currently analysing evidence of transport problems and opportunities across the area, but we would like to supplement the research with the opinions of the local community across Levenmouth and the surrounding area. Essentially, we would like to understand the transport problems faced and opportunities not being realised and how this impacts on the local people and communities in the area.

As such, we would appreciate you taking the time to complete this survey which should take no longer than 10 minutes. Please be assured that no personal details will be provided to our client or any third parties. Information collected will be done so in a manner fully compliant with new General Data Protection Regulation (GDPR).

Please note, you can return to the survey to complete it at any time by using the original link.

The deadline for participation is Monday 25th June 2018.

Thank you for participating.

Levenmouth Sustainable Transport Study - Travel Survey



General travel information

1. Where do you currently live?

- | | |
|---|--|
| <input type="radio"/> Leven | <input type="radio"/> St Andrews |
| <input type="radio"/> Buckhaven | <input type="radio"/> Glenrothes |
| <input type="radio"/> Methil | <input type="radio"/> Kirkcaldy |
| <input type="radio"/> Windygates | <input type="radio"/> Dunfermline |
| <input type="radio"/> Kennoway | <input type="radio"/> Edinburgh |
| <input type="radio"/> Lundin Links/Lower Largo/ Upper Largo | <input type="radio"/> Dundee |
| <input type="radio"/> East Wemyss/Coaltown of Wemyss | <input type="radio"/> Perth |
| <input type="radio"/> Towns and villages within the East Neuk | <input type="radio"/> Other (within Fife) |
| <input type="radio"/> Markinch | <input type="radio"/> Other (outwith Fife) |



General travel information

2. Do you currently have access to a car?

- Yes, I have full access to a car whenever I need
- I have limited access to a car when other people are not using it
- I have no access to a car and I am reliant on other modes of transport or lifts

Levenmouth Sustainable Transport Study - Travel Survey



General travel information

* 3. Which locations do you most regularly travel to and what is/are the main purpose(s) of these trips? (Select all that apply)

	Employment	Retail/Shopping	Leisure	Education	Visiting family and friends	Health appointments	Personal
Leven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Buckhaven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Methil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Windygates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Kennoway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Lundin Links/Lower Largo/ Upper Largo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
East Wemyss/Coaltown of Wemyss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Towns and villages within the East Neuk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
St Andrews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Markinch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Glenrothes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Kirkcaldy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Dunfermline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Edinburgh	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Dundee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Perth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Glasgow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Other - within Fife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Other - out-with Fife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



General travel information

4. What is your most frequent mode of travel? (Select one option only)

- | | |
|--|----------------------------------|
| <input type="radio"/> Car (as driver) | <input type="radio"/> Taxi |
| <input type="radio"/> Car (as passenger) | <input type="radio"/> Motorcycle |
| <input type="radio"/> Bus | <input type="radio"/> Walk |
| <input type="radio"/> Rail | <input type="radio"/> Cycle |

Levenmouth Sustainable Transport Study - Travel Survey



Suitability of the existing transport network

5. Do you believe the existing transport network (road, bus, rail, walking and cycling routes) fulfills your needs for the following purposes?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
Travel to access employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel to access education facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessing health care (hospitals/surgeries)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking holidays and short breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting friends and relatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing access to leisure opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing access to retail opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing access to cultural activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel to access training opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Levenmouth Sustainable Transport Study - Travel Survey



Suitability of the existing transport network

6. To what extent do you agree with each of the following statements:

The existing transport network (road, bus, rail, walking and cycling routes)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	N/A
Has positively influenced my decision to live in the Levenmouth area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has positively influenced my decision to work in the Levenmouth area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows me to access employment opportunities outside the Levenmouth area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows me to socialise and / or meet people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps me live an active and healthy lifestyle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is frequent enough for my requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	N/A
Is fast enough for my requirements (e.g. suitable journey times)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is affordable compared to car	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has enough seats available when I want to travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feels safe and secure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is close enough to my place of residence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows me to travel where I need without too many interchanges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Problems and Issues associated with travel within the local/Levenmouth area

7. Do you feel that any of the following have a negative impact on your ability to travel within the Levenmouth area? (Select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Long travel times to get to destinations | <input type="checkbox"/> Lack of cycling infrastructure - cycle storage, cycle lanes |
| <input type="checkbox"/> Cost of travel | <input type="checkbox"/> Lack of joined up cycle routes |
| <input type="checkbox"/> Limited choice of travel modes | <input type="checkbox"/> Lack of direct public transport routes |
| <input type="checkbox"/> Frequency of public transport services | <input type="checkbox"/> Emissions from cars and public transport |
| <input type="checkbox"/> Times of operation of public transport services | <input type="checkbox"/> Road congestion |
| <input type="checkbox"/> Number of interchanges required when using public transport | <input type="checkbox"/> Parking provision at destination |
| <input type="checkbox"/> Safety concerns while travelling | |
| <input type="checkbox"/> Other (please specify) | |



Problems and Issues associated with travel within the local/Levenmouth area

8. Considering your answers, what do you believe is the single biggest problem identified when travelling within the Levenmouth area? (Select one option only)

- Long travel times to get to destinations
- Cost of travel
- Limited choice of travel modes
- Frequency of public transport services
- Times of operation of public transport services
- Number of interchanges required when using public transport
- Safety concerns while travelling
- Lack of direct public transport routes
- Lack of cycling infrastructure - cycle storage, cycle lanes
- Emissions from cars and public transport
- Road congestion
- Lack of joined up cycle routes
- [Insert text from Other]
- Parking provision at destination



Problems and Issues associated with travel from the Levenmouth area

9. Do you feel that any of the following have a negative impact on your ability to travel from the Levenmouth area to the rest of Fife and beyond? (Select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Long travel times to get to destinations | <input type="checkbox"/> Lack of cycling infrastructure - cycle storage, cycle lanes |
| <input type="checkbox"/> Cost of travel | <input type="checkbox"/> Lack of joined up cycle routes |
| <input type="checkbox"/> Limited choice of travel modes | <input type="checkbox"/> Lack of direct public transport routes |
| <input type="checkbox"/> Frequency of public transport services | <input type="checkbox"/> Emissions from cars and public transport |
| <input type="checkbox"/> Times of operation of public transport services | <input type="checkbox"/> Road congestion |
| <input type="checkbox"/> Number of interchanges required when using public transport | <input type="checkbox"/> Parking provision at destination |
| <input type="checkbox"/> Safety concerns while travelling | |
| <input type="checkbox"/> Other (please specify) | |



Problems and Issues associated with travel from the Levenmouth area

10. Considering your answers, what do you believe is the single biggest problem identified when travelling from the Levenmouth area to the rest of Fife and beyond? (Select one option only)

- Long travel times to get to destinations
- Cost of travel
- Limited choice of travel modes
- Frequency of public transport services
- Times of operation of public transport services
- Number of interchanges required when using public transport
- Safety concerns while travelling
- Lack of direct public transport routes
- Lack of cycling infrastructure - cycle storage, cycle lanes
- Emissions from cars and public transport
- Road congestion
- Lack of joined up cycle routes
- [Insert text from Other]
- Parking provision at destination

Levenmouth Sustainable Transport Study - Travel Survey



Current travel difficulties

11. Which, if any, of the following locations would you like to travel to on a regular basis (that you currently cannot due to transport provision) and what do you believe would be the main purpose(s) of these trips? (Select all that apply)

	Employment	Retail/Shopping	Leisure	Education	Visiting family and friends	Health appointments	Personal
Leven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Buckhaven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Methil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Windygates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Kennoway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Lundin Links/Lower Largo/ Upper Largo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
East Wemyss/Coaltown of Wemyss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Towns and villages within the East Neuk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
St Andrews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Markinch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Glenrothes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Kirkcaldy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Dunfermline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

	Employment	Retail/Shopping	Leisure	Education	Visiting family and friends	Health appointments	Personal
Edinburgh	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Dundee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Perth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Glasgow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Other - within Fife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Other - out-with Fife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



Car Travel /Road Network

12. Do you travel regularly by car? (either as driver or passenger)

- Yes
- No



Car / road network

13. Do you feel that any of the following have a negative impact on your ability to travel on the road network? (Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Congestion and delays | <input type="checkbox"/> Delays at key junctions |
| <input type="checkbox"/> Unreliable journey times | <input type="checkbox"/> Poor quality road surfaces |
| <input type="checkbox"/> Accident and safety concerns | <input type="checkbox"/> Narrow road widths |
| <input type="checkbox"/> Slow moving vehicles (HGVs and agricultural vehicles) | <input type="checkbox"/> Parking provision at destination |
| <input type="checkbox"/> Poor driving behaviour by other drivers, e.g. speeding | <input type="checkbox"/> Don't face any problems while travelling by car |
| <input type="checkbox"/> Other (please specify) | |



Car / road network

14. How do the problems identified impact upon and affect you? (Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Late for work | <input type="checkbox"/> Difficulty in accessing key services such as health, education, leisure and shopping/retail |
| <input type="checkbox"/> Early/Late journey start required to avoid delay | <input type="checkbox"/> Feelings of social and economic isolation |
| <input type="checkbox"/> Reduces access to new or better jobs | <input type="checkbox"/> Feelings of social exclusion |
| <input type="checkbox"/> Late for and miss appointments | |
| <input type="checkbox"/> Other (please specify) | |



Car / road network

15. Are there any problems that prevent you from using public transport at all or more regularly?

- Yes
- No



Car / road network

16. What are the problems that prevent you from using public transport at all or more regularly? (Select all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Lack of direct services | <input type="checkbox"/> Service reliability |
| <input type="checkbox"/> Poor service frequencies | <input type="checkbox"/> Too many interchanges required to access key destinations |
| <input type="checkbox"/> Cost of public transport | <input type="checkbox"/> Accessibility (physical limitations getting onto/off of public transport services) |
| <input type="checkbox"/> Lack of active modes infrastructure (cycle parking etc) | <input type="checkbox"/> Quality of vehicle |
| <input type="checkbox"/> Long journey times | <input type="checkbox"/> Long walk to bus stop |
| <input type="checkbox"/> Other (please specify) | |

Levenmouth Sustainable Transport Study - Travel Survey



Bus

17. Do you travel regularly by bus within the local Levenmouth area?

Yes

No



Bus

18. Do you feel that any of the following have a negative impact on your ability to travel by bus within the local Levenmouth area? (Select all that apply)

- | | |
|---|---|
| <input type="checkbox"/> No problems | <input type="checkbox"/> Overcrowded services |
| <input type="checkbox"/> Long journey times | <input type="checkbox"/> Poor quality bus stops |
| <input type="checkbox"/> Journey time reliability | <input type="checkbox"/> Poor quality vehicles |
| <input type="checkbox"/> Service frequency | <input type="checkbox"/> Lack of information about services |
| <input type="checkbox"/> Service reliability | <input type="checkbox"/> Number of interchanges required to access key destinations |
| <input type="checkbox"/> Lack of direct routes | |
| <input type="checkbox"/> Other (please specify) | |



Bus

19. How do the problems identified impact upon and affect you? (Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Late for work | <input type="checkbox"/> Difficulty in accessing key services such as health, education, leisure and shopping/retail |
| <input type="checkbox"/> Early / Late journey start required to avoid delay | <input type="checkbox"/> Feelings of social and economic isolation |
| <input type="checkbox"/> Reduces access to new or better jobs | <input type="checkbox"/> Feelings of social exclusion |
| <input type="checkbox"/> Late for and miss appointments | |
| <input type="checkbox"/> Other (please specify) | |

Levenmouth Sustainable Transport Study - Travel Survey



Bus

20. Why do you not travel regularly by bus within the local Levenmouth area?
(Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Prefer the car | <input type="checkbox"/> Overcrowded services |
| <input type="checkbox"/> Long journey times | <input type="checkbox"/> Timetable issues - no service early enough in the morning or late enough in the day |
| <input type="checkbox"/> Buses are unreliable | <input type="checkbox"/> Bus travel makes me unwell |
| <input type="checkbox"/> High bus fares | <input type="checkbox"/> Poor quality bus stops and infrastructure |
| <input type="checkbox"/> Low frequency | <input type="checkbox"/> Poor quality buses |
| <input type="checkbox"/> No direct routes to where I need to go | <input type="checkbox"/> Lack of information about services |
| <input type="checkbox"/> Other (please specify) | |



Bus

21. Do you travel regularly by bus from the local Levenmouth area to other areas?

Yes

No

Levenmouth Sustainable Transport Study - Travel Survey



Bus

22. Do you feel that any of the following have a negative impact on your ability to travel by bus from the local Levenmouth area to other areas? (Select all that apply)

- | | |
|---|---|
| <input type="checkbox"/> No problems | <input type="checkbox"/> Overcrowded services |
| <input type="checkbox"/> Long journey times | <input type="checkbox"/> Poor quality bus stops |
| <input type="checkbox"/> Journey time reliability | <input type="checkbox"/> Poor quality vehicles |
| <input type="checkbox"/> Service frequency | <input type="checkbox"/> Lack of information about services |
| <input type="checkbox"/> Service reliability | <input type="checkbox"/> Number of interchanges required to access key destinations |
| <input type="checkbox"/> Lack of direct routes | |
| <input type="checkbox"/> Other (please specify) | |



Bus

23. How do the problems identified impact upon and affect you? (Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Late for work | <input type="checkbox"/> Difficulty in accessing key services such as health, education, leisure and shopping/retail |
| <input type="checkbox"/> Early / Late journey start required to avoid delay | <input type="checkbox"/> Feelings of social and economic isolation |
| <input type="checkbox"/> Reduces access to new or better jobs | <input type="checkbox"/> Feelings of social exclusion |
| <input type="checkbox"/> Late for and miss appointments | |
| <input type="checkbox"/> Other (please specify) | |

Levenmouth Sustainable Transport Study - Travel Survey



Bus

24. Why do you not travel regularly by bus from the local Levenmouth area to other areas? (Select all that apply)

- Prefer the car
- Long journey times
- Buses are unreliable
- High bus fares
- Low frequency
- No direct routes to where I need to go
- Other (please specify)
- Overcrowded services
- Timetable issues - no service early enough in the morning or late enough in the day
- Bus travel makes me unwell
- Poor quality bus stops and infrastructure
- Poor quality buses
- Lack of information about services



Rail

25. Do you travel regularly by rail?

Yes

No



Rail

26. Do you feel that any of the following have a negative impact on your ability to travel by rail to areas outside Levenmouth? (Select all that apply)

- | | |
|---|---|
| <input type="checkbox"/> No problems | <input type="checkbox"/> Lack of direct routes |
| <input type="checkbox"/> Nearest station located too far away | <input type="checkbox"/> Overcrowded services |
| <input type="checkbox"/> Long journey times | <input type="checkbox"/> Poor quality stations |
| <input type="checkbox"/> Journey time reliability | <input type="checkbox"/> Lack of information about services |
| <input type="checkbox"/> Service frequency | <input type="checkbox"/> Number of interchanges required to access key destinations |
| <input type="checkbox"/> Service reliability | |
| <input type="checkbox"/> Other (please specify) | |



Rail

27. How do the problems identified impact upon and affect you? (Select all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Late for work | <input type="checkbox"/> Difficulty in accessing key services such as health, education, leisure and shopping/retail |
| <input type="checkbox"/> Early / Late journey start required to avoid delay | <input type="checkbox"/> Feelings of social and economic isolation |
| <input type="checkbox"/> Reduces access to new or better jobs | <input type="checkbox"/> Feelings of social exclusion |
| <input type="checkbox"/> Late for and miss appointments | |
| <input type="checkbox"/> Other (please specify) | |



Rail

28. Why do you not travel regularly by rail to areas outside Levenmouth?

(Select all that apply)

- Nearest station is located too far away
- No routes where I need to go
- Faster options than to travel to a rail station and then get rail to my destination
- Cost of rail travel
- Other (please specify)
- Timetable issues - no services early enough in the morning or late enough in the evening
- Poor service frequency from nearest train station
- No/Limited parking available at the rail station which I would like to use
- Lack of information about services



Walking and Cycling

29. Do you travel regularly by active travel modes (walking and cycling)?

Yes

No



Walking and Cycling

30. What are the main barriers to you in making more journeys by active travel modes? (Select all that apply)

- | | |
|---|---|
| <input type="checkbox"/> No barriers | <input type="checkbox"/> Lack of other facilities (e.g. showers at destination) |
| <input type="checkbox"/> I don't want to walk or cycle | <input type="checkbox"/> Lack of covered facilities at transport interchanges |
| <input type="checkbox"/> Distances are too far to where I need to go | <input type="checkbox"/> No access to a bike |
| <input type="checkbox"/> Concerns over safety | <input type="checkbox"/> Physical limitations |
| <input type="checkbox"/> Lack of available walking and cycling routes | <input type="checkbox"/> Weather |
| <input type="checkbox"/> Lack of cycle parking facilities | |
| <input type="checkbox"/> Other (please specify) | |



Transport Improvements

31. Generally, what type of transport improvements would be useful to you as you travel within or from the Levenmouth area? (Select all that apply)

- Improved public transport service provision between key destinations, e.g. additional direct bus services
- Extended public transport timetables, e.g. bus services which begin earlier in the morning and run later in the evening
- Improved public transport journey times to key destinations
- Better integration between public transport services, i.e. timetables integrated between modes and services
- Increased park and ride opportunities
- Higher quality public transport vehicles
- Integrated and smart ticketing options
- Improved public transport information provision
- Safe, high quality walking and cycling routes



Transport Improvements

32. From the transport improvements above, what would be the key benefits to you? (Select all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Shorter journey times | <input type="checkbox"/> Improved access to leisure opportunities |
| <input type="checkbox"/> Improved travel mode choices | <input type="checkbox"/> Improved access to shopping/retail opportunities |
| <input type="checkbox"/> Improved access to employment opportunities | <input type="checkbox"/> Improved access to cultural opportunities |
| <input type="checkbox"/> Improved access to education opportunities | <input type="checkbox"/> Improved access to training opportunities |
| <input type="checkbox"/> Improved access to health care and services | |
| <input type="checkbox"/> Other (please specify) | |

Levenmouth Sustainable Transport Study - Travel Survey



Other comments

33. If you have any other comments about the transport network, which you have not had a chance to comment upon, please note here



About you

* 34. Please provide your home postcode. If you do not wish to provide this, please provide the first section, e.g. KY7 2

We only ask this for analysis purposes to allow us to correlate our responses with distances from the study area

Levenmouth Sustainable Transport Study - Travel Survey



About you

* 35. Are you

Male

Female

Prefer not to say

Levenmouth Sustainable Transport Study - Travel Survey



About you

* 36. Please indicate your age range

- | | |
|--|---|
| <input type="radio"/> Under 16 (full time education) | <input type="radio"/> 60-64 |
| <input type="radio"/> 16-24 | <input type="radio"/> 65-69 |
| <input type="radio"/> 25-34 | <input type="radio"/> 70-79 |
| <input type="radio"/> 35-44 | <input type="radio"/> 80 and over |
| <input type="radio"/> 45-54 | <input type="radio"/> Prefer not to say |
| <input type="radio"/> 55-59 | |



About you

* 37. What is your current employment status?

- | | |
|--|---|
| <input type="radio"/> Employed full time | <input type="radio"/> Homemaker |
| <input type="radio"/> Employed part time | <input type="radio"/> Retired |
| <input type="radio"/> Self employed | <input type="radio"/> Carer |
| <input type="radio"/> Unemployed | <input type="radio"/> Unable to work |
| <input type="radio"/> Student | <input type="radio"/> Prefer not to say |

Levenmouth Sustainable Transport Study - Travel Survey



End of survey

On behalf of Peter Brett Associates, Transport Scotland and Fife Council we would like to thank you for participating in this survey.

Please click the button below to exit the survey.

Appendix F Business Survey

Levenmouth Sustainable Transport Study - Business Survey



Introduction

This survey is aimed at businesses primarily within the Levenmouth area and those in surrounding parts of Fife.

Transport Scotland, working collaboratively with Fife Council, has commissioned Peter Brett Associates (PBA) to undertake a Sustainable Transport Study for Levenmouth in line with its Scottish Transport Appraisal Guidance (STAG).

We would like to understand the problems faced and opportunities not being realised on the transport system and how this impacts on businesses in the area. We would also like to understand how transport problems can affect the attractiveness of the area to do business and/or discourage inward investment, and equally how transport opportunities could facilitate inward investment.

As such, we would appreciate you taking the time to complete this survey on behalf of your business. The survey should take no longer than 10 minutes to complete and you can return to complete it at any time by using the original link.

The deadline for participation is **Friday 27th July 2018**.

Finally, please be assured that information collected will be done so in a manner fully compliant with new General Data Protection Regulation (GDPR).

Thank you for participating.



About your business

1.A What is the name of your business?



About your Business

1.B Please briefly outline the nature of your business



About your Business

2. What is the principal sector in which you operate?

- Agriculture, forestry and fishing?
- Mining, quarrying and utilities
- Manufacturing
- Construction
- Motor Trades
- Wholesale
- Retail
- Transport and Storage
- Accommodation and Food Services (including tourism)
- Other (please specify)
- Information and Communication
- Finance and Insurance
- Property
- Professional, Scientific and Technical
- Business Administration and Support Services
- Education
- Health
- Public Administration



About your Business

3. Is your business based in Leven?

Yes

No



About your Business

3.A Please select location. If you are located in multiple areas, please select your base which is closest to Leven.

- | | |
|---|--|
| <input type="radio"/> Buckhaven | <input type="radio"/> Glenrothes |
| <input type="radio"/> Methil | <input type="radio"/> Kirkcaldy |
| <input type="radio"/> Windygates | <input type="radio"/> Dunfermline |
| <input type="radio"/> Kennoway | <input type="radio"/> Edinburgh |
| <input type="radio"/> Lundin Links/ Lower Largo/ Upper Largo | <input type="radio"/> Dundee |
| <input type="radio"/> East Wemyss/ Coaltown of Wemyss | <input type="radio"/> Perth |
| <input type="radio"/> Towns and villages within the East Neuk | <input type="radio"/> Other (within Fife) |
| <input type="radio"/> Markinch | <input type="radio"/> Other (outwith Fife) |
| <input type="radio"/> St Andrews | |



About your Business

4. Is the location which you noted in the previous question, your business's.....

- Main premises
- a local office/premises but not the main premises



About your Business

5. How long have you operated from this location?

- Less than 1 year
- 1 - 3 years
- 3 - 5 years
- 6 - 10 years
- More than 10 years



About your Business

6. Approximately how many people do you currently employ at this location?

Full time

Part time

Seasonal

Apprentices



About your Business

7. Approximately how many people do you employ at other locations within the UK?



About your People

Your Workforce

*** 8. Can you tell us where your employees live? Please select as many as apply and include any contractors based at your site.**

- | | |
|--|---|
| <input type="checkbox"/> Leven | <input type="checkbox"/> St Andrews |
| <input type="checkbox"/> Buckhaven | <input type="checkbox"/> Glenrothes |
| <input type="checkbox"/> Methil | <input type="checkbox"/> Kirkcaldy |
| <input type="checkbox"/> Windygates | <input type="checkbox"/> Dunfermline |
| <input type="checkbox"/> Kennoway | <input type="checkbox"/> Edinburgh |
| <input type="checkbox"/> Lundin Links/ Lower Largo/ Upper Largo | <input type="checkbox"/> Dundee |
| <input type="checkbox"/> East Wemyss / Coaltown of Wemyss | <input type="checkbox"/> Perth |
| <input type="checkbox"/> Towns and villages within the East Neuk | <input type="checkbox"/> Other (within Fife) |
| <input type="checkbox"/> Markinch | <input type="checkbox"/> Other (outwith Fife) |



About your People

9. What do you consider to be the main mode of travel used by employees to get to work. (Please provide an estimated % by mode with answers summing to 100)

Car	<input type="text"/>
Car-share	<input type="text"/>
Train	<input type="text"/>
Bus	<input type="text"/>
Walk	<input type="text"/>
Motorcycle	<input type="text"/>
Cycle	<input type="text"/>



About your People

10. Do you have any difficulties in attracting and retaining staff?

Yes

No



About your People

11. Why do you think these difficulties arise? (select all that apply)

- Transport issues make it difficult for staff to get to work at this location
- Limited skills in the workforce
- No capacity in the local workforce
- Other (please specify)
- Competition for jobs within my industry
- Competition for jobs with other industries
- Perception of Levenmouth as an area to work



About your People

12. Do you feel that any of the following have a negative impact on your ability to attract and retain staff? (select all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Long travel times to get to destinations | <input type="checkbox"/> Safety concerns while travelling |
| <input type="checkbox"/> Cost of travel | <input type="checkbox"/> Lack of direct public transport routes |
| <input type="checkbox"/> Limited choice of travel modes | <input type="checkbox"/> Emissions from cars and public transport |
| <input type="checkbox"/> Frequency of public transport services | <input type="checkbox"/> No impact |
| <input type="checkbox"/> Times of operation of public transport services | <input type="checkbox"/> Road congestion |
| <input type="checkbox"/> Number of interchanges required when using public transport | |
| <input type="checkbox"/> Other (please specify) | |



About your Location

13. What do you feel are the key strengths of your current business location? (select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Transport links to get goods in / out | <input type="checkbox"/> Natural resources nearby |
| <input type="checkbox"/> Transport links to get staff and customers in and out | <input type="checkbox"/> Business rates |
| <input type="checkbox"/> Access / proximity to customers | <input type="checkbox"/> Facilities |
| <input type="checkbox"/> Access / proximity to suppliers | <input type="checkbox"/> Affordability of premises |
| <input type="checkbox"/> Large pool of local labour market | <input type="checkbox"/> Availability of suitable premises |
| <input type="checkbox"/> Other (please specify) | |



About your Location

14. What do you feel are the key weaknesses of your current business location? (select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Transport links to get goods in/out | <input type="checkbox"/> Lack of natural resources nearby |
| <input type="checkbox"/> Transport links to get staff and customers in and out | <input type="checkbox"/> High Business rates |
| <input type="checkbox"/> Access / proximity to customers | <input type="checkbox"/> Poor Facilities |
| <input type="checkbox"/> Access / proximity to suppliers | <input type="checkbox"/> Affordability of premises |
| <input type="checkbox"/> Limited pool of local labour market | <input type="checkbox"/> Availability of suitable premises |
| <input type="checkbox"/> Skills and qualifications of the local labour market | <input type="checkbox"/> No weaknesses |
| <input type="checkbox"/> Other (please specify) | |



About your Location

15. You answered above that available transport links are a weakness to your business location. Which of the following, if any, are the transport issues that cause these weaknesses? (select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Congestion on the road network causing delays | <input type="checkbox"/> Number of interchanges required when using public transport |
| <input type="checkbox"/> Long travel times to get to destinations | <input type="checkbox"/> Times of operation of public transport services |
| <input type="checkbox"/> Safety concerns on the road network | <input type="checkbox"/> Limited choice of travel modes |
| <input type="checkbox"/> Cost of travel | <input type="checkbox"/> Emissions from cars and public transport |
| <input type="checkbox"/> Lack of direct public transport services | <input type="checkbox"/> Poor walking and cycling links |
| <input type="checkbox"/> Frequency of public transport services | |
| <input type="checkbox"/> Other (please specify) | |



Freight and Goods

16. How significant to your business is the physical movement of goods?

- Very significant
- Significant
- Neither Significant nor Insignificant
- Insignificant
- Very Insignificant



Freight and Goods

17. What is your principal means of moving freight/goods/supplies or products as part of your business?

- LGVs / vans
- HGVs / Lorries
- Rail (container)
- Rail (other)
- Other (please specify)
- Shipping (bulk)
- Shipping (other)
- Specialist equipment / plant
- Tankers



Freight and Goods

18. Do you move goods in your own vehicles or use a freight haulage firm?

Own vehicles

Use haulage firm
(please indicate
name of firm)

Mix

Quantity of freight
in and out

When, ie, every day,
once a week....

Times, i.e.
overnight
deliveries, or, e.g.
need to make the
ferries at
Stranraer....

Where do your
goods go? E.g.
direct to customer;
to another mode of
transport (e.g.
container facility);
to a logistics/
consolidation hub
etc....



About your Customers

* 19. How do you primarily engage with your customers?

- At my business premises
- At another location (please state location in Other box)
- Online
- Other (please specify)
- Via telephone
- Via social media



About your Customers

20. How important is it for customers to be able to access your premises?

- Very important
- Important
- Neither important or not important
- Not so important
- Not at all important



About your Customers

21. Are there any transport issues which affect customers when accessing your business premises?

- Yes
- No



About your Customers

22. Which of the following transport issues, if any, do you feel affect your customers when accessing your business? (select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Congestion on the road network causing delays | <input type="checkbox"/> Number of interchanges required when using public transport |
| <input type="checkbox"/> Long travel times to get to destinations | <input type="checkbox"/> Times of operation of public transport services |
| <input type="checkbox"/> Safety concerns on the road network | <input type="checkbox"/> Limited choice of travel modes |
| <input type="checkbox"/> Cost of travel | <input type="checkbox"/> Emissions from cars and public transport |
| <input type="checkbox"/> Lack of direct public transport services | <input type="checkbox"/> Poor walking and cycling links |
| <input type="checkbox"/> Frequency of public transport services | <input type="checkbox"/> Ability to park at or near my premises |
| <input type="checkbox"/> Other (please specify) | |



Your ideas for improvements

23. Are there any transport improvements you think would make a difference to your business? If yes, please describe below.

1.

2.

3.

4.

5.



Further comments

24. Do you have any further comments?

Levenmouth Sustainable Transport Study - Business Survey



Contact

Are you happy to be contacted by Transport Scotland , Fife Council or Peter Brett Associates to follow up on the information provided? If so, please complete the contact details below.

Name

Company

Website

Postal Code

Email Address

Phone Number

Levenmouth Sustainable Transport Study - Business Survey



End of Survey

Next steps:

The information you have provided on behalf of your business will inform the evidence base of transport problems and opportunities required as part of the wider transport appraisal process. Your information will also help us develop transport planning objectives for the study as well as a wide range of multi-modal transport options that could help address the problems and realise the opportunities across the Levenmouth area transport network.

On behalf of Peter Brett Associates, Transport Scotland and Fife Council we would like to thank you for participating in this survey.

Please click the button below to exit the survey.

Appendix G SRM12 Plots of Unmet Demand & V/C

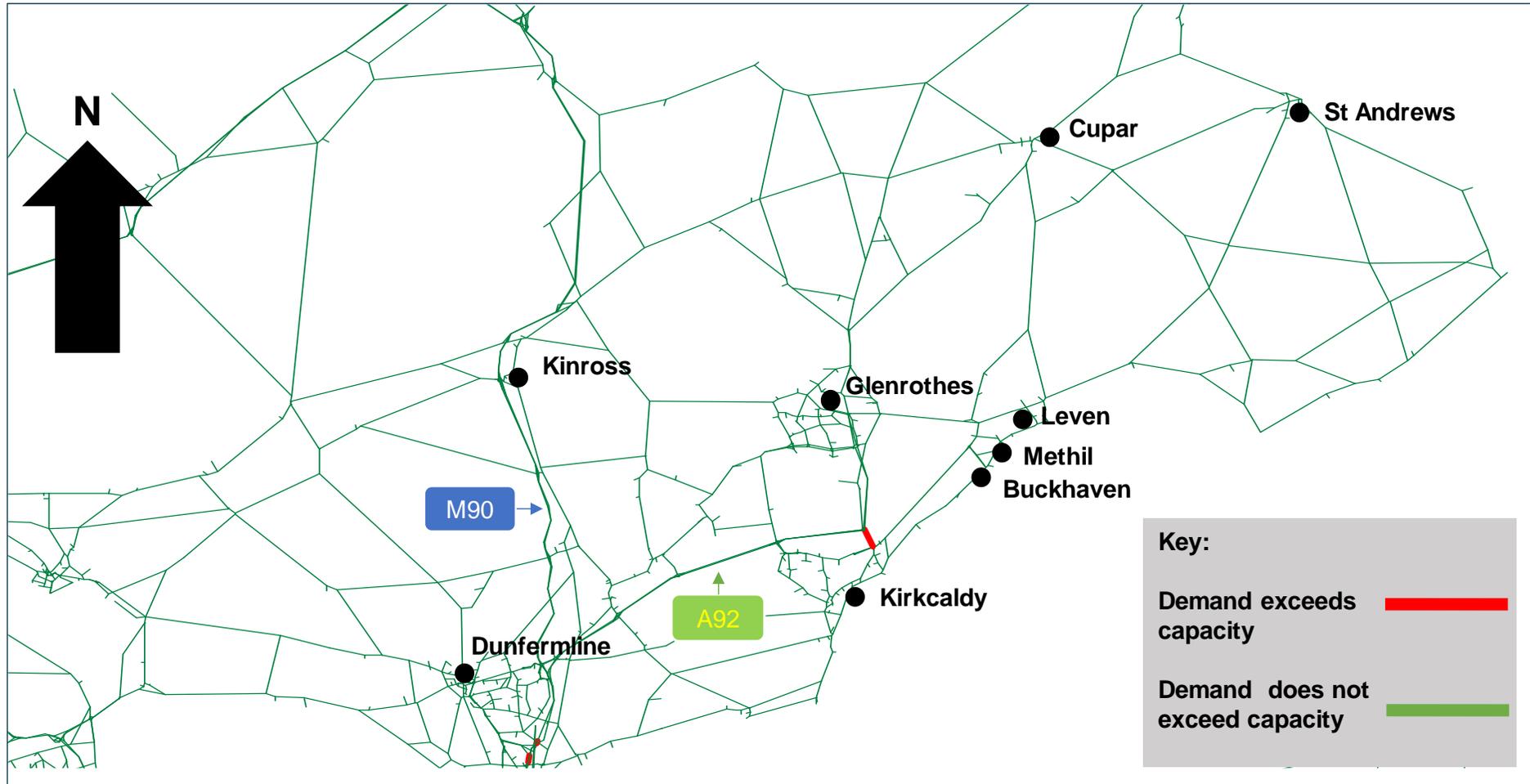


Figure 7: Unmet demand, 2024 Do-Minimum, PM Peak Hour

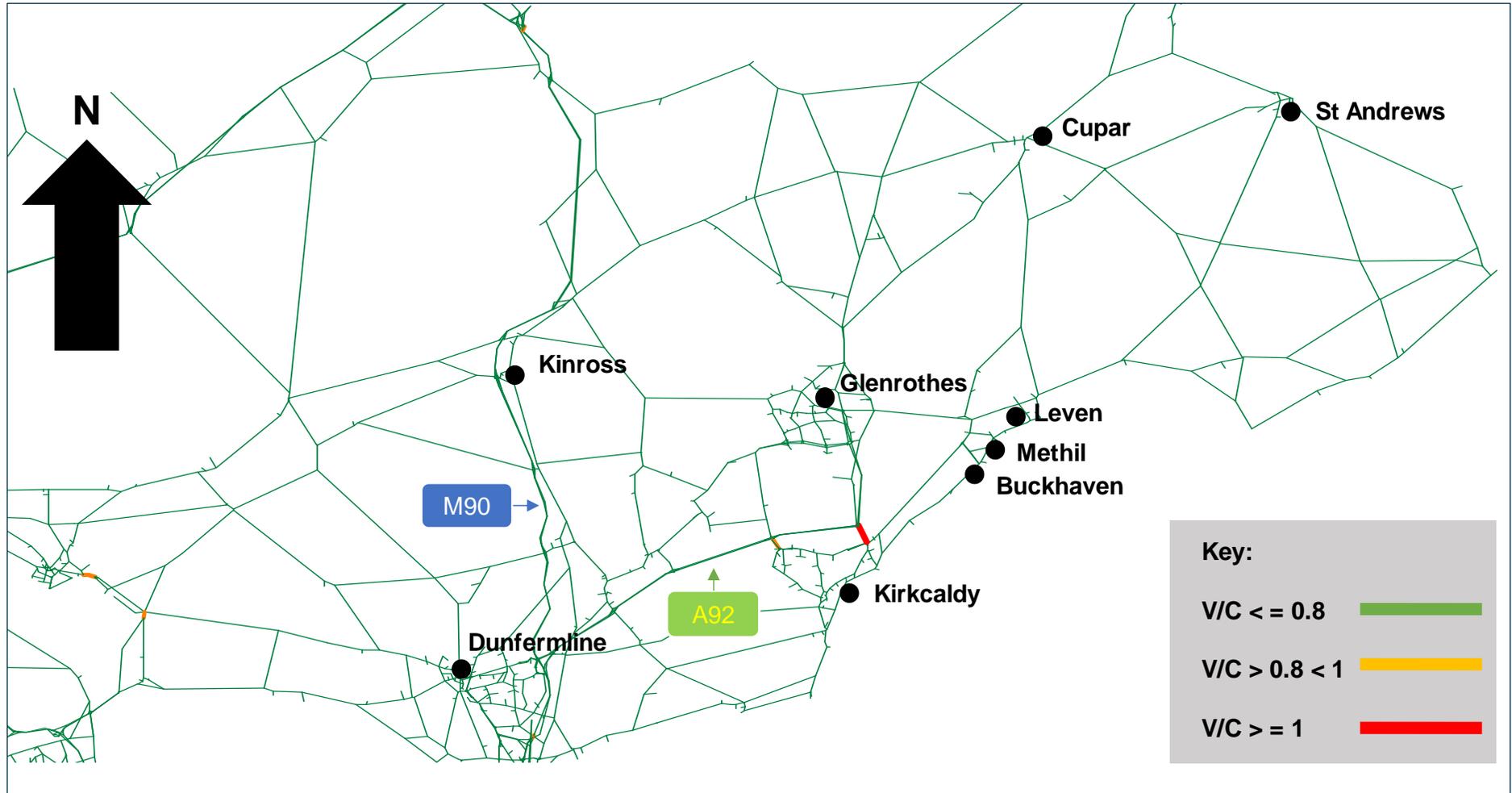


Figure 8: Volume over Capacity ratio (V/C), 2024 Do-Minimum, PM Peak Hour

Peter Brett Associates LLP is a leading development and infrastructure consultancy. As an independent consulting practice of planners, economists, engineers and scientists, we provide trusted advice to create value from land and buildings owned or operated by our clients.

All of our work, from the engineering of landmark buildings and critical infrastructure to the spatial planning and economic evidence in support of development, is evidence based and informed by a deep understanding of what it takes to deliver construction.

UK

Ashford
Birmingham
Bristol
Cambridge
Edinburgh
Glasgow
Leeds
London
Manchester
Newcastle
Northampton
Oxford
Plymouth
Reading
Southampton
Taunton

International

Czech Republic
Germany
Slovakia

Services

Transport Planning
Energy and Buildings
Civil Engineering
Water, Environment and
Geotechnical
Planning, Development
and Economics