South East Scotland Transport Partnership (SEStran) & Fife Council

Levenmouth Sustainable Transport Study

STAG Part 1 Appraisal Report

Draft for Consultation
May 2008

Executive Summary

E.1 Introduction

E.1.1 SEStran has developed a Regional Transport Strategy (RTS), which has identified several projects for taking forward for potential development, categorised within identified strategic corridors for prioritising investment. The Queensferry and the Central Fife were two such corridors identified, both of which involve heavy commuter flows to Edinburgh. Part of the solution for these corridors would be to increase public transport provision between Fife and Edinburgh, and an important scheme in this respect would be the introduction of passenger services to Levenmouth, whilst also increasing the prospect of raising the share of rail freight in the freight transport market by moving non-road modes.

E.1.2 Consequently, South East Scotland Transport Partnership (SEStran) appointed Scott Wilson to carry out a STAG–based study to appraise proposals for improving services to the Levenmouth area. This report sets out the results of a STAG Part 1 Appraisal of potential opportunities for increasing public transport provision in the Levenmouth area.

E.2 Summary of Problems and Issues

E.2.1 The analysis of problems and constraints has raised the following issues:

- major routes in the area suffer from congestion, particularly at peak times, with the levels of congestion currently seen are expected to get worse;
- rising demand for longer distance travel within Fife and beyond means that there will be increasing demand for public transport facilities in the Levenmouth area;
- accessibility to public transport in the Levenmouth area is regarded as suitable for local services but somewhat lagging for medium to long-distance trips when compared with the nearby towns of Kirkcaldy and Glenrothes;
- there are significant new land-use developments proposed in the area, particular in terms of residential expansion, placing additional strain on both the road network and on existing public transport facilities; and
- freight in the Levenmouth area is restricted by modes and is virtually entirely catered for by the local road network.

E.2.2 These have been taken forward into the STAG Part 1 Appraisal.

E.3 Consultation

E.3.1 A major aspect of the appraisal was to involve key stakeholders in the “Pre-Appraisal” element of the STAG appraisal. This included reviewing previous consultation feedback from other local studies. A STAG Workshop was held with representatives of Fife Council. In addition a public consultation exercise was also carried out which included comments from various members of the public and other local stakeholders.

E.3.2 The public were consulted on accessibility to the Levenmouth area through the websites of SEStran and Fife Council, with awareness of both consultation processes advertised through a prior press release. Questionnaires were issued on the website which asked for views on issues relating to transport infrastructure and services to and from the Levenmouth area, and for comments on the extent to which transport needs of the local population were met. At the time of writing this report, we had received 142 responses. In addition, a local MSP (Tricia Marwick) called for a debate in the Scottish Parliament in April 2008 and a petition containing a total of over 4,500 signatures was also handed into SEStran.

E.4 Outline Planning Objectives

E.4.1 Improving public transport and freight transport to Levenmouth meets objectives detailed in Fife Council's Local transport Strategy (LTS)[1], hence it was considered appropriate that these LTS policy objectives should be the basis to develop the outline planning objectives:

- Objective 1: Improve access to key areas and services in the local, regional and wider area for all residents in Levenmouth;
- Objective 2: Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of goods from road to more sustainable distribution; and
- Objective 3: Encourage more sustainable travel for new and existing development.

E.5 Options Examined

E.5.1 Options that were likely to meet the *Planning Objectives* were identified and discussed with SEStran and Fife Council. Options were identified from the STAG workshop, discussions with operators and feedback from the public consultation. Options identified were:

- New rail alignment to Leven;
- Re-open existing line;
- New rail line to Markinch;
- Bus Rapid Transit (BRT) on segregated line from Leven to Markinch Station;
- On-street bus facilities; and
- Extension of hovercraft services to Methil Docks.

E.5.2 Some of the above options have variations depending on the number of stations and with/without rail freight services.

E.6 Findings from the STAG Part 1 Appraisal

E.6.1 From the STAG Part 1 Appraisal it was clear that some of the rail-based and some of the bus-based options are worthy of further consideration. Examination of the options has indicated that there are inter-relationships between them. Consideration should be given to combining the rail and on-street bus options into one "multi-modal" strategy in STAG Part 2:

- A new heavy rail service based on re-opening the previous railway line. This would have a new station with park-and-ride facilities at both Leven and Muiredge/Cameron Bridge, to cater for the extensive new land-use developments planned. In addition to passenger services, the railway line should accommodate rail freight serving the local Diageo Site and Methil Docks, where demand has been identified; and
- Since the rail line is unlikely to be delivered before 2015, bus priority measures could be a suitable short-term improvement until the full heavy rail option (with freight facilities) is introduced. The increased on-street priority for bus services linking Leven to Markinch railway station and Kirkcaldy appears to provide a number of benefits such as accessibility and connectivity to local areas and the railway network. Even though the bus priority measures do not meet all the planning objectives and do not return as much NPV as the rail re-opening option, it may be that, given they perform relatively well in other objectives for reasonable levels of expenditure, they be considered as part of the Do-Minimum scenario and included in the transport programmes for the local area. This may also require further cost analysis in STAG Part 2.

E.6.2 On a final point, it is worth noting that the capital cost estimates and demand/benefit forecast in this appraisal are somewhat conservative. More detailed cost analysis and economic appraisals should be undertaken in STAG Part 2.

[1] Fife Local Transport Strategy, Section 5.0, page 41

Revision Schedule

Levenmouth Sustainable Transport Study
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Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	May 2008	**Draft Report**	**Jonathan Campbell** Transport Planner	**Marwan AL-Azzaw** Project Manager	**Marwan AL-Azzaw** Project Manager
02	June 2008	**Final Draft Report**	**Jonathan Campbell** Transport Planner	**Marwan AL-Azzaw** Project Manager	**Marwan AL-Azzaw** Project Manager

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1 Introduction

1.1 Background

1.1.1 South East Scotland Transport Partnership (SEStran) appointed Scott Wilson to carry out a STAG – based study to appraise proposals for improving rail services and other travel options to the Levenmouth area.

1.1.2 SEStran has developed a Regional Transport Strategy (RTS), which has identified several projects for taking forward for potential development. A number of these schemes are categorised within the network-based measures identified in the RTS, one of which is the identification of strategic corridors for prioritising investment where public transport modal share is low when compared with relatively similar corridors, and to set a target for modal shift to public transport use for these corridors.

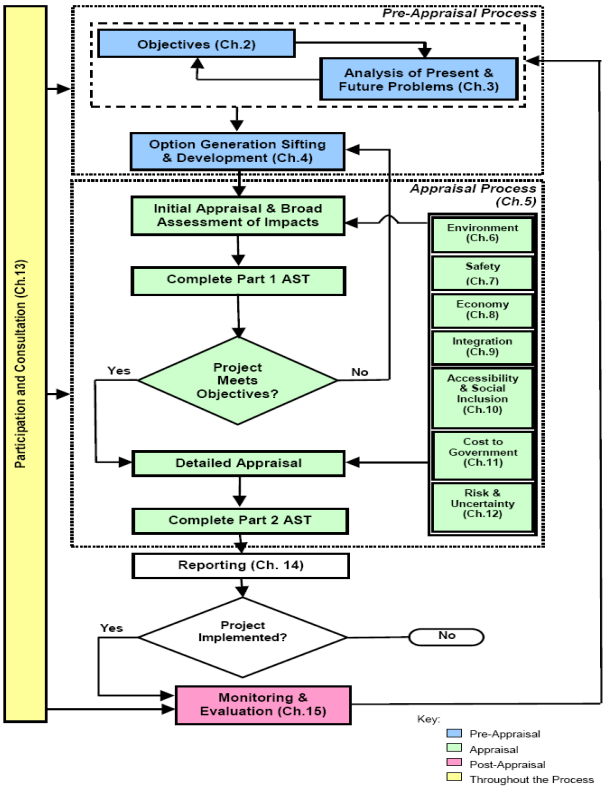
1.1.3 The Queensferry and the Central Fife were corridors identified where high volumes of modal shift are required in order to meet the targets set, and which both involve heavy commuter flows to Edinburgh. Part of the solution for these corridors would be to increase public transport provision between Fife and Edinburgh, and an important scheme in this respect would be the introduction of passenger services to Levenmouth, whilst also increasing the prospect of raising the share of rail freight in the freight transport market by moving non-road modes.

1.1.4 This report sets out the results of the evaluation of the opportunities identified following a STAG – based Part 1 Appraisal on the relative merits of increasing public transport provision in the Levenmouth area, and to address the issues such investment may bring. These are summarised when progressing to the STAG Part 2 Appraisal.

1.2 Scottish Transport Appraisal Guidance (STAG)

1.2.1 STAG is objective-led, and options should be based on the widest possible set of potential proposals, leading visibly from the planning objectives[1]. Before appraisal takes place, objectives should be agreed and options defined. The Figure (right, extracted from STAG) summarises the STAG process.

1.2.2 Option definition is outlined to a level of detail which is intended to allow a broad-brush appraisal of each Option in STAG Part 1, with all options that successfully



[1] Scottish Transport Appraisal Guidance: Executive Summary, paragraph 27, Scottish Government, September 2003

meet the objectives being appraised more rigorously in STAG Part 2.

1.2.3 This report will follow Part 1 of that process, although clearly reference to previously undertaken studies will form a key element of the work.

1.2.4 Wherever possible, we have followed the reporting structure advised in Chapter 14 of STAG. However, some re-arrangement of the order of chapters has been carried out to help with the flow of information. Detailed analysis for certain aspects (e.g. environment, etc) has been contained in appendices attached with this report.

1.3 Overview of the Study Area

1.3.1 The study area for this appraisal is shown in Figure 1.1. However, while the STAG Part 1 Appraisal has focussed on localised benefits and impacts in this study area, it is acknowledged that a proportion of journeys will extend outwith the study boundary and these implications have, wherever possible, been identified and incorporated into the assessment. This has been carried out qualitatively, in keeping with the nature of STAG Part 1.

Figure 1.1: The Study Area

1.3.2 The large growth in Queensferry and central Fife corridor commuter traffic has necessitated an increase for additional rail capacity between Fife and Edinburgh, including changes to local services as well as long distance services through Fife. It is therefore considered realistic at this time to consider developing options to improve access to the Levenmouth area, for both passengers and freight, so that if public transport improvements are shown to be beneficial, these may be integrated with the broader strategy of enhancing rail provision between Fife and Edinburgh.

1.4 Structure of this Report

1.4.1 The overall structure of this report follows that set out for STAG Part 1 appraisal.

Chapter 2 A short analysis of existing and future transport problems in the area.

Chapter 3 Summarises the consultation carried out for the study.

Chapter 4 Identifies the objectives for initial (Part 1) appraisal.

Chapter 5 Sets out the optioneering to generate options.

Chapter 6 Outlines the STAG Part 1 Appraisal.

Chapter 7 Provides a summary of the work and its recommendations.

2 Analysis of Present and Future Problems

2.1 Introduction

2.2.1 This Chapter reviews the transport network and patterns in the Levenmouth area and examines the flows on the main strategic network into and out of Leven, particularly the town's connections with the neighbouring settlements. Road traffic performance is then examined in terms of the traffic flows in the region, and the specific areas that are susceptible to congestion. The Chapter gives a brief overview of the rail network in the Levenmouth region, examining the local infrastructure and rail patronage during the peak period.

2.2.2 The Chapter then provides an assessment of accessibility in the Levenmouth area, detailing transport characteristics of the area in terms of car ownership, modal split, purpose of travel and travel to work patterns and comparing these with those found in other towns in the region and with Fife as a whole.

2.2 Transport Network Performance

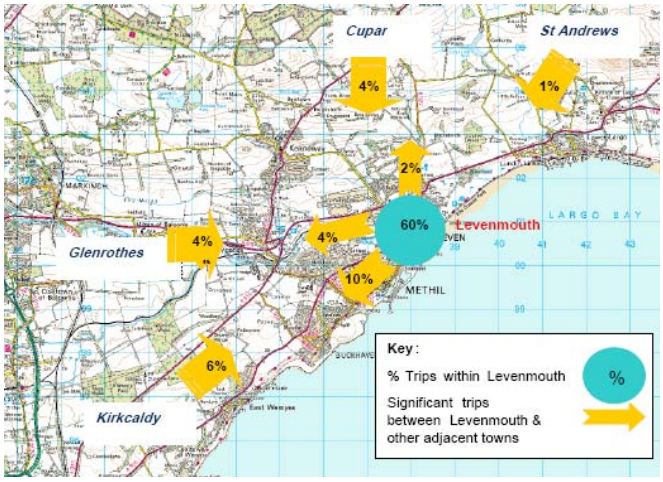
Overview

2.2.1 The transport network in Fife is key in contributing to the economic development of both Fife itself and also the economic development of the wider region, particularly along the east coast of Scotland. The importance is illustrated where some 37% of the inter-regional trips undertaken between the areas highlighted in the Figure (right below), cross the Forth at Queensferry.

2.2.2 The road network in Fife therefore reflects many of the key issues for Scotland. One of these is the rapid increase in dependence on private transport over the past 40 years, and in particular the use of private cars for single occupancy trips.

2.2.3 Concerns are increasing over the public costs associated with this trend, such as congestion and in terms of the environment. These costs are largely paid for by the local communities, and are seen as unsustainable in the long term.

2.2.4 The road network in the Levenmouth area is characterized by a number of major routes linking the principal towns in the region. These are the A915 and A955 linking Levenmouth with Kirkcaldy to the west and Lower Largo and St Andrews to the east and north-east, (and via the A915 the east coast), the A911 linking Levenmouth to Glenrothes and the A916 linking Levenmouth to Cupar and beyond to the north.

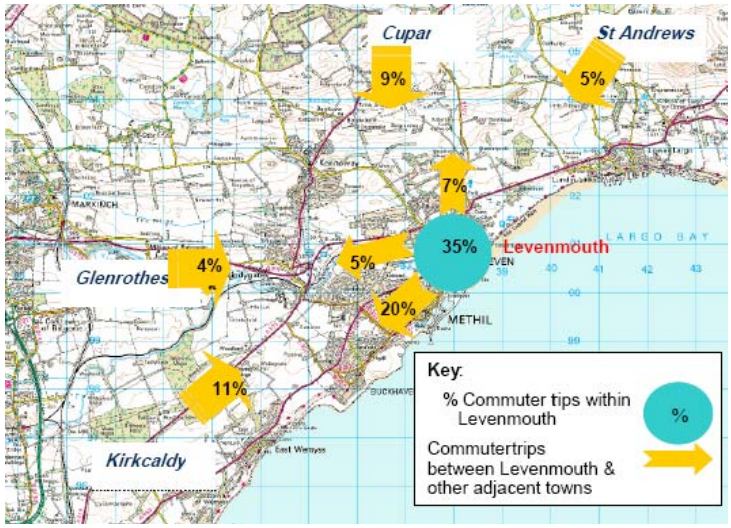


2.2.5 The A915 is known as the 'Kirkcaldy Corridor' and is heavily congested at peak times. Although average speeds are reasonably good on the A915, it does have a number of major

junctions and suffers from a perceived accident problem. The A911, the Windygates bypass, is the 'Glenrothes Corridor' and is similar to the A915 in terms of performance.

2.2.6 80% of trips which start in Fife also end in Fife. The majority of these movements are within and between the major towns (Figure right below). In terms of the Levenmouth area, approximately 60% of trips remain within Levenmouth, with the bulk of the remaining trips shared between a number of nearby settlements, such as Kirkcaldy, Glenrothes, Cupar and St Andrews.

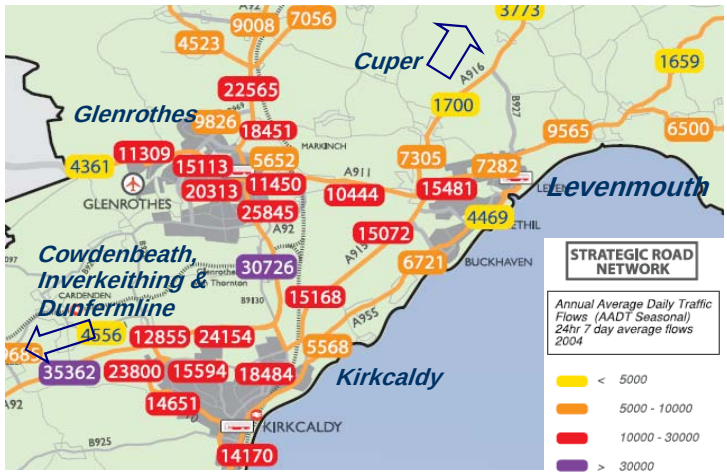
2.2.7 It is notable that a significant proportion of trips between Levenmouth and the surrounding area is actually between Levenmouth and locations to the south-west. This includes towns such as Glenrothes and Kirkcaldy, which by virtue of their relative size, would be expected to dominate local trip patterns.



2.2.8 These towns would also be expected to dominate local commuting patterns. Of local commuting trips, just over a third of commuting trips (35%) from Levenmouth remain within Levenmouth, as illustrated in the Figure (inset right). A significant proportion of the remaining commuting trips that originate in Levenmouth are to Kirkcaldy (20%), and a further 5% to Glenrothes. 7% of commuting trips from Levenmouth are to Cupar.

Road Transport

2.2.9 The dominance of the large towns to the west and south-west of Levenmouth are seen in the daily traffic flows on the regional strategic road network. It is clear from the Figure[2] (right) that the daily flows in terms of the annual average daily traffic flows (AADTs) in the Levenmouth area on the A911 between Leven and Glenrothes had, in 2004, an AADT value of nearly 10,500 per day. However, traffic flows on the A911 in Leven and on A915 between Leven and Kirkcaldy, are even heavier, with an AADT value of over 15,000 vehicles per day.



2.2.10 These AADTs are significantly greater than those from the Levenmouth area towards the east and north-east. For example the AADT flows on the A916 towards Cupar north of Leven are

[2] Sourced from Fife Council's Local Transport Strategy

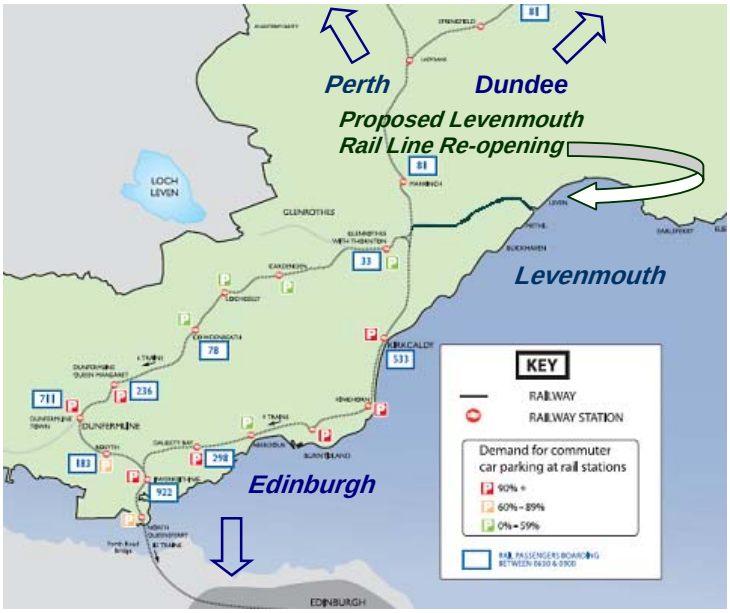
in the order of 7,500, quickly dropping to 1700 further out from Leven, before increasing again to approximately 3770 towards Cupar. Likewise the AADTs east of Leven on the A917 towards Lower Largo, Pittenweem and Anstruther are approximately 7,500, dropping below 7,000 east of the junction with the A915.

2.2.11 As might be expected, problems of congestion on the road network surrounding Leven mirror these traffic flows. The road, which sees the worse congestion in Leven itself, is on the A915 at Cameron Bridge, approximately 650 meters west of the junction with the A911 and the A916.

2.2.12 Other parts of the trunk road network that see most congestion are in Kirkcaldy and Glenrothes (red routes, Figure right). A stretch of the A915, 2.85km long in Gallatown in Kirkcaldy towards Levenmouth is prone to congestion at peak times, as are the A921 and A92 linking Kirkcaldy with Glenrothes. In Glenrothes itself, the A92 is also congested as is the main route connecting Glenrothes with Levenmouth, the A911 at Queensway in the centre of Glenrothes. Increasing fuel prices could encourage modal shift if there are adequate alternatives.

Rail Transport

2.2.13 The rising demand for longer distance travel within and beyond Fife means that the share taken by rail is increasingly important. There has been substantial investment in access to the rail network, including the provision of bus/rail interchanges at Inverkeithing and Leuchars Rail Stations, and additional car parking provision at a number of other stations. Further efforts are being made in the short term to integrate rail with other modes of transport such as buses to support access requirements to the rail network.



2.2.14 Central to this effort is the possibility of re-opening of the rail link to Levenmouth and a possible new station in Leven. With a completion date of 2015,

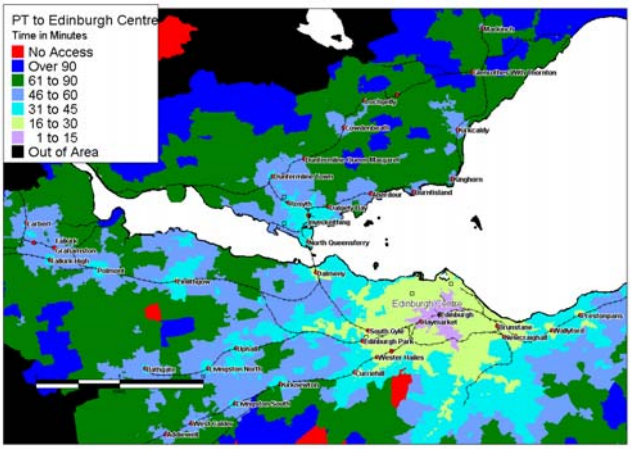
this investment has been detailed in ITP9 as a longer-term objective in the 3-5 year plan priority in the LTS. This is supported in Priority Transport Plan 8 (PTP8) with the commitment to pursue the provision of a passenger rail service to Levenmouth, probably in conjunction with the reconfiguration of Fife local services and services through Fife, and the general increase in capacity of express and Fife local rail services.

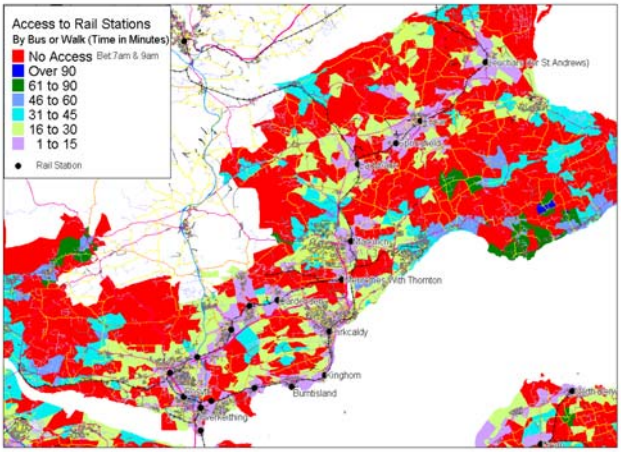
2.2.15 There is an existing line, approximately 11.2km long linking Levenmouth at the power station at Innerleven with the Glenrothes with Thornton Station. However this is a dormant facility, which has not seen passenger nor freight services for a number of years. The rail network is shown in the Figure above right. By way of a comparison, annual passenger flows at Markinch Station were 110,000 (at 2003/4)[3], but these increased dramatically at Kirkcaldy to 890,000 trips between 2003/4.

Accessibility in the Levenmouth Area

2.2.16 Access between the major towns in the south Fife area is critically dependent on quality public transport and road networks. Significant investment in both the rail and road transport infrastructure is required to maintain accessibility in the face of Increasing traffic growth and congestion.

2.2.17 As an example, accessibility to Edinburgh by public transport in the Levenmouth area compared with the nearby area is seen in the Figure (below, right). The lighter colours denote better accessibility in the area, and conversely the darker the colour the worse the area is in terms of accessibility. As can be seen, travel times by public transport from Leven to Edinburgh take over 90 minutes whereas those areas which are nearby but have a rail station (e.g. Markinch, Kirkcaldy, etc) take between 31 to 45 minutes. This is very important for medium to long-distance journeys in the region.





2.2.18 The above is not surprising and is further amplified by the figure (inset) right which shows the levels of accessibility to rail stations within the area. Those with a rail station have, on average, up to 15 minutes bur/walk time to the rail network whereas Leven takes up to 45 minutes (3 times as long).

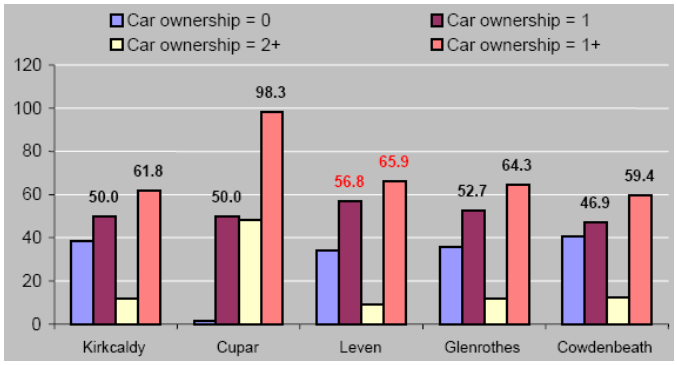
2.2.19 No doubt the relatively poor accessibility of the Levenmouth area is a function of distance from rail services. But at present, only 1.5% of the passengers using bus services to cross the Forth Bridge in the morning peak (0630 – 0915) originate from Leven[4]. However, there has been a

[3] Sourced from historic CAPRI data
[4] Sourced from Fife Council's Local Transport Strategy

significant political commitment to increase improvements in the delivery of new and improved bus services and infrastructure on key routes. For example the Fife LTS described a number of bus related improvements that have been appraised for future funding, including £0.4m for the development of the Dunfermline – Levenmouth bus route and another £1million for the upgrade of Leven bus station. This has been completed, and has resulted in some extension of existing bus services but not their frequency.

Car ownership

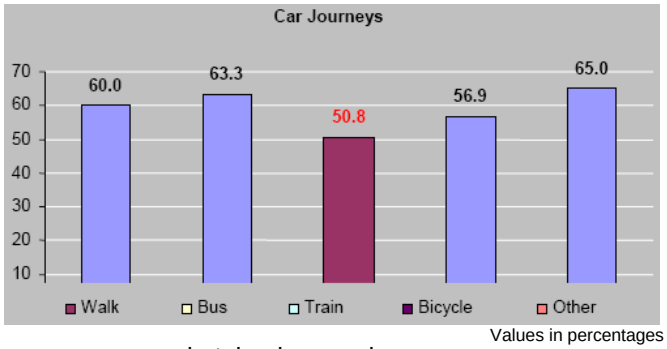
2.2.20 Car ownership rates in the Levenmouth area are generally slightly higher than those in the surrounding towns (Figure, right). Car ownership rates are a function of a number of aspects, including economic factors such as employment rates and average disposable incomes, geographical factors such as distances between residential areas and key facilities, which tend to be concentrated in urban areas such as shops, schools, hospitals and places of work, and the degree to which the communities are served by local public transport. Disentangling the relative importance of these to prevailing car ownership is complex, but there is no doubt that the higher rates seen in Levenmouth than say in Glenrothes, Kirkcaldy and Cowdenbeath is partly a result of poorer public transport links to the area.



Values in percentages

Journey Modal Split

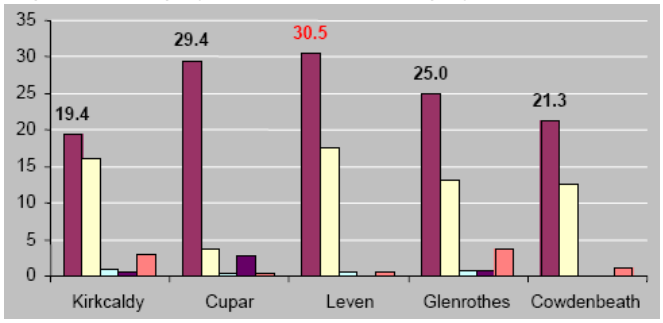
2.2.21 The Figure on the right shows the proportion of all journeys that are undertaken by car in Levenmouth compared with the nearby towns. Despite car ownership levels being slightly higher than for the other towns, other than Cupar, and depsite sub-regional problems of accessibility to public transport, significantly few journeys are undertakn by car in Leven, just 50.8% than in any of these other towns.



Values in percentages

2.2.22 This might be because rather fewer people are employed, or at least employed some distance away in other towns than may be the case for those living in Cupar, Kirkcaldy, Glenrothes or Cowdenbeath.

2.2.23 More people walk and use bus services in Levenmouth than is the case for these other towns. Use of bus services is higher in Leven (Figure, right) most probably, at least in part, because of the absence of a rail connection to Leven. For local internal

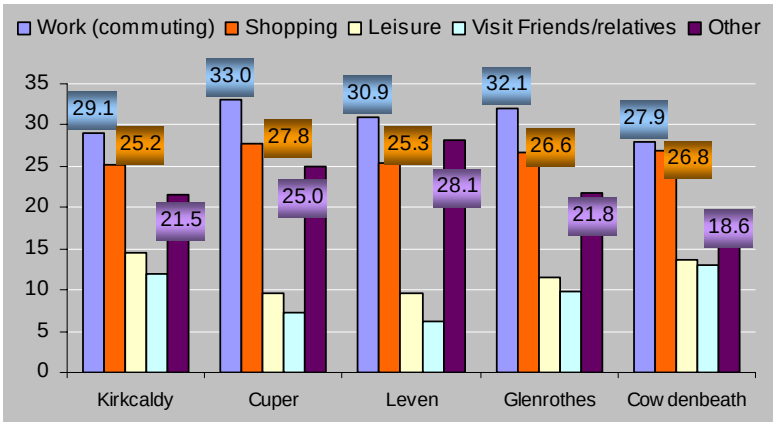


Values in percentages

trips, it appears that the level of public transport service is suitable for the small, compact, town. However, for medium to long-distance trips there appears to be a need for much better improvement in services. This could also be related to the accessibility issues raised in paragrapgh 2.2.17 above.

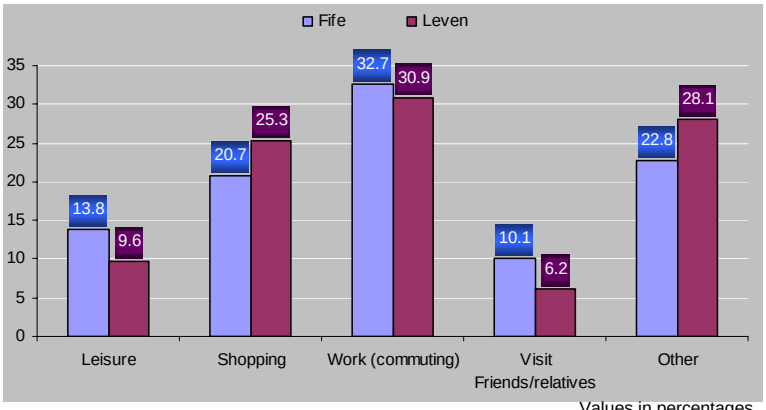
Purpose of Travel

2.2.24 The pattern seen when examining the main purposes for travelling in Leven does not differ significantly when compared with that seen for the neighbouring settlements (Figure, inset right).



Values in percentages

2.2.25 A greater proportion of trips are undertaken in Leven for trips classed as 'other' than occurs in the neighbouring settlements. These other trips encompass a range of activities including education, medical reasons or personal business. This is possibly as a result of many important facilities such as colleges and hospitals are located in larger towns such as Dunfermline, Kirkcaldy and Glenrothes.

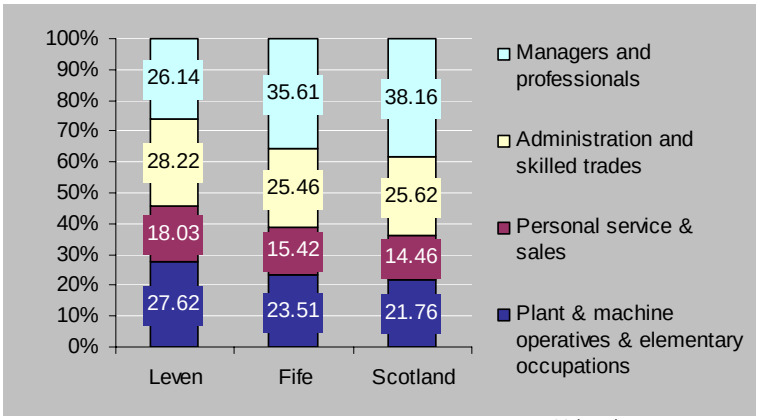


Values in percentages

2.2.26 Significantly more trips are made for shopping purposes in Leven than is the case for Fife as a whole (Figure, upper right). This suggests that in Levenmouth there is a reduced range of shopping facilities close to residential areas necessitating a greater proportion of trips for this purpose than is typical for the rest of the Fife region. In the rest of Fife, a greater proportion of trips are devoted to visiting friends and family and to leisure activities in general. Ease of access to public transport may well be a factor for this trend.

Travel to Work

2.2.27 The structure of employment in Leven will heavily influence the pattern of the travel to work for the residential population. The Figure right shows, in percentage terms, how jobs are allocated across the employed share of those resident in Leven, and also compares this structure with that of Fife and of Scotland as a whole.

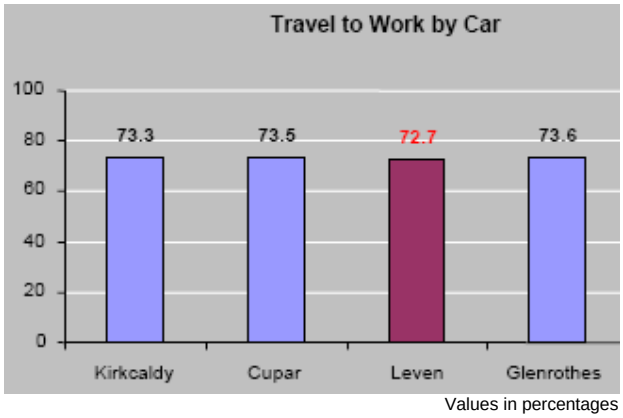


Values in percentages

2.2.28 A significantly higher proportion of the working population in Leven falls in the lower two employment categories, with approximately 45% of the total. This compares with about 39% for Fife and 35% for Scotland. This is significant in that these categories are:

- More likely to work locally in the Levenmouth area; and
- More likely to depend on public transport, walk or cycle to commute to and from work.

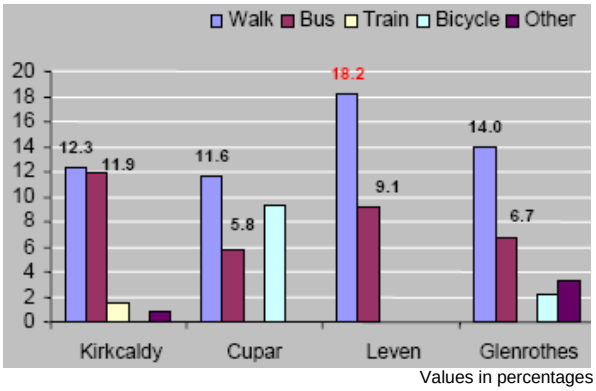
2.2.29 The Figure on the right (lower) shows that rather fewer trips to work are by car in Leven than is true for the neighbouring towns. Specifically, 72.7% of trips to work in Leven are undertaken by car, whereas for Kirkcaldy and Glenrothes, the closest settlements, the proportions are 73.3% and 73.6% respectively.



Values in percentages

2.2.30 Although there is not a huge difference in these proportions, this pattern does correspond to the wider one where, for journeys undertaken for all purposes, those by car are less frequent for Leven than for other towns in the region.

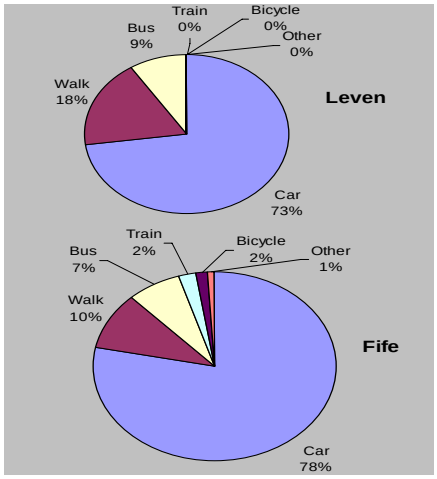
2.2.31 For those who do not drive to work or who are not a car passenger, by far the biggest proportion, over 18% or nearly one in five workers walk to work (Figure, right). This is a significantly higher proportion than those who take the bus (9%) and higher than seen elsewhere in the region.



Values in percentages

2.2.32 This suggests that for Leven, and possibly for Levenmouth as a whole, places of work are likely to be close or very close to residential areas, encouraging commuters to walk and take public transport. It seems unlikely that people choose to walk because of a lack of an alternatvive, because, as we have seen, bus services are also a relatively popular mode of travel in Leven when looking at all purposes for travel.

2.2.33 The same holds true when comparing Leven with the rest of Fife. Car use for travelling to work is lower in Leven than for the rest of Fife, and walking is significantly higher as illustrated in the pie charts (right). The proportion using buses to get to and from work are approximately the same. However whereas a very small proportion use the train and cycle to work in Fife at large, perhaps unsurprisingly, an insignificant number use either mode in Leven.



2.3 Land-Use Development Issues

2.3.1 New land-use development will have a particular effect on the transport network and improvements will be necessary to maintain the quality of transport infrastructure and services in the face of the increasing demand for these.

2.3.2 The Figure below right shows where development is likely to occur in the near future (from the Fife LTS). One of these areas is in Levenmouth.

2.3.3 There are a number of important new developments in the area including, but not necessarily limited to:

- East Neuk – 500 houses, fairly dispersed, and with the potential for long-distance commuting distances, of these, 30% are affordable housing;
- Sea Road / Muir Edge – 1000 houses, with a good mix of high & low-density dwellings (50:50 split), of which 5% are affordable housing. In addition to these, there are plans for 15ha business areas, primary school, doctors surgery and retail to serve the local market;
- Aberhill / Lower Leven – 400 houses (50:50 split for high:low density) and by up to 20 years there would be another 500 houses (albeit not committed);
- There is also a further 100 houses in the Local Plan and a planning application for a 1125sqm Aldi supermarket;
- Others – there are pockets of houses planned around the area. These equate to 300 dwellings plus a further 200 private homes;
- There is also the Hawkshaw Retail Park (e.g. Argos, Focus) and the extension to Sainsbury's; and
- The Renewable Energy Park.

2.4 Freight Transport

2.4.1 Freight in the Levenmouth area is restricted by modes and somewhat cumbersome in areas because of these restrictions. Traffic count data supplied from Fife Council suggests that the percentages of HGVs on the main roads in the area – the A955, A915 and A911 – ranges from 19% to 27%. Freight is virtually entirely catered for by road-based transport, and given the area is not connected by rail and is somewhat isolated from the Trunk Road and Motorway network, these high percentages of HGVs on the local road network are not entirely surprising.

2.4.2 This is further compounded by the fact that the Leven economy is more based on industry and manufacturing than the service sectors. This, by necessity, means it is heavily reliant on freight and given the restricted modes available, is likely to focus on local roads.

2.4.3 Furthermore, by its very nature, freight transport to/from Leven is long-distance. One of the largest freight users in the area is DIAGEO. Data supplied by them suggests the ship goods and import raw materials from as far a field as Manchester which is over 420 kms from their site at Cameron Bridge.

2.5 Summary of Problems and Issues

2.5.1 The previous analysis has raised the following issues:

- A number of major routes in the area, including the A915 and the A911, suffer considerable congestion, particularly at peak times; with general rising traffic trends, the levels of congestion currently seen are expected to get worse;
- The rising demand for longer distance travel within Fife and beyond means that there will be increasing demand for public transport facilities in the Levenmouth area. This has been explicitly recognised in the 3 – 5 year plan of the RTS with discussion on re-opening the Levenmouth link to the Fife Circle, and investment in a new rail station in Leven itself;
- Accessibility to public transport in the Levenmouth area is regarded as suitable for local services but somewhat lagging for medium to long-distance trips when compared with the nearby towns of Kirkcaldy and Glenrothes. This too has been explicitly acknowledged with the relatively recent upgrading of the Leven bus station enabling an extension of existing bus services, but has not facilitated an increase in their frequency although it would appear that passenger levels have increased;
- Even with relatively high regional car ownership rates, residents in the Levenmouth area seem to be more reluctant to commute to work by car than residents in some of the neighbouring towns. In fact a comparatively large proportion walk to work, which may be a reflection of the structure of local employment in Levenmouth as much as a reflection on the paucity of alternative modes of transport;
- There are significant new land-use developments on the horizon, particular in terms of residential expansion. An increasing population will place additional strain on both the road network and on existing public transport in order to access key facilities such as colleges, hospitals and shopping areas, both in and around Levenmouth. Moreover, this anticipated rise in population would increase the demand for transport facilities and infrastructure in order to meet the increasing requirements for longer distance commuting to other towns in Fife, and potentially over the Forth Bridge; and
- Freight in the Levenmouth area is restricted by modes and is virtually entirely catered for by the local road network. This is further compounded by the fact that the Leven economy is more based on industry and manufacturing and, by its very nature, freight transport to/from Leven is long-distance.

3 CONSULTATION

3.1 Introduction

3.1.1 A major aspect of the appraisal was to involve key stakeholders in the "Pre-Appraisal" element of the STAG appraisal. This included reviewing previous consultation feedback from other local studies. A STAG Workshop was held with representatives of Fife Council. In addition a public consultation exercise was also carried out which included comments from various members of the public and other local stakeholders.

3.1.2 This chapter provides an overview of the consultation carried out and the comments obtained from this consultation.

3.2 STAG Workshop

3.2.1 A ½ day STAG Workshop was held on Monday 17 March 2008 at the Fife Council offices in Kirkcaldy. The workshop was held with a number of stakeholders to review the key issues in the study area, discuss planning objectives and identify options which could be taken forward for onward development through the STAG Part 1 process.

3.2.2 The workshop was facilitated by Scott Wilson and representatives from the following organisations attended:

- Scott Wilson;
- Fife Council; and
- SEStran.

3.2.3 Detailed minutes of the workshop are included in Appendix A.

Key Issues

Current Transport Infrastructure and Services

3.2.4 The discussion and feedback at the workshop raised the following issues:

- The new bus station in Leven has given a positive feeling and has seen an increase in passenger throughput. This has resulted in some extension of existing services but not an increase in frequency;
- In terms of the bus services themselves, most are commercially operated now, but the link to Cupar could be better served;
- In terms of cycling, there are some cycle lanes (e.g. Fife Coastal path) but the area is considered to be too far to cycle from Kirkcaldy/Glenrothes;
- At present modal choice is viewed as been relatively restrictive, and realistically these are considered to be (at present) bus or car. A new rail service would increase modal choice;
- In terms of other modes of transport in Leven, there is a demand responsive transport (DRT) service in Leven but this is primarily local. There is also dial-a-ride but this is also designed to service local areas. The catchment area for the issues relating to this area extends out much further than the Leven environment, and includes areas east of Leven;

- The new Markinch interchange has resulted in a change of travel patterns in the area. This should be considered as important to the study, as a potential new station in Levenmouth which takes a similar form as the one in Markinch may have a comparable impact;
- Car ownership is traditionally fairly low in the study area, which suggests that there is a captive market in terms of the public transport sector;
- The main roads in the Levenmouth area are the A915 and A911. In detail;
  - The A915 is the "Kirkcaldy Corridor" and is heavily congested in peak periods and has a bad accident record. Speed is relatively good but there are a series of junctions [Checkbar Junction, Percival Road Junction, Gallatown Roundabout & Redhouse Roundabout (on trunk road)], which are pinch-points and safety problems. The annual average daily traffic (AADT) flows, as detailed in the LTS, are circa 15,000;
  - The A911 (the Windygates bypass) is the "Glenrothes Corridor" and is similar to the A915. The AADT flows as indicated in the LTS are circa 10,000;
  - A STAG Parts 1 & 2 study was carried out for Redhouse Roundabout; and
- There are four potential freight users:
  a. Diageo have plans for dry bulk cargoes for distilling;
  b. Earl's Seat coal company is an Open cast site. Part of their planning application agreed was for a 100% transfer of coal to go by rail;
  c. Donaldsons have plans for timber distribution; and
  d. There is a Waste Recycling centre at Methil Brae.

Social Issues and Land-use

3.2.5 A number of further issues were raised with respect to social issues and land-use. These were:

- The Levenmouth area is perceived to be "off the beaten track", and this image of the area is causing some concern;
- There are significant plans for new land-use developments in the area. There is pressure for more developments which will further lead to increased traffic using unsuitable roads with knock-on effects of rising accidents, congestion and other impacts;
- Three potential development areas in particular have been identified: the Sea Road / Muiredge area, the Aberhill / Lower Leven Valley area and the North Leven East area;
- There have been changes in social patterns; and
- Given the land-use plans, it was suggested that the assumed opening year in the STAG study of any new service / option should be 2015, with a design year of 2025.

STAG Reference Case

3.2.6 The following were noted for inclusion in the STAG reference case:

- The new road linking A915 (through Percival Rd) to the Dock area and Fife Energy Park;
- The Second Forth Crossing (assumed at 2016);

- The projects in the SEStran's Integrated Transport Corridors Study (SITCoS) reference case;
- A new hovercraft to Ocean terminal from Kirkcaldy. This is for passengers only; and
- A ferry from Burntisland to Granton (passengers only).

SWOT Discussion

3.2.7 Stakeholders at the workshop specifically mentioned aspirations for a rail-based option to be considered in this STAG study. This appraisal will consider a wide range of options, however it is possible to draw some initial thoughts from some stakeholders on a potential new rail service to the area. This has been carried out in terms of the Strengths, Weaknesses, Opportunities and Threats (SWOT) assessment framework.

3.2.8 The strengths identified in providing rail transport investment in the Levenmouth area were as follows:

Strengths

- Provides more travel choice;
- Provides direct links to wider area and rest of the country;
- Boost image of area and changes the relative perceived isolation of the area from the national transport network;
- Area becomes more accessible and attractive to affordable housing;
- Widens the economic profile and catchment of the area;
- Modal shift from cars & HGVS leading to environmental and other benefits; and
- Encourages employment and inward investment.

3.2.9 Balanced against these perceived strengths there were a number of weaknesses with investment in rail transport in the Levenmouth area noted, which were:

Weaknesses

- Could abstract from other PT modes;
- Could be more attractive to work elsewhere impacting on local workforce availability; and
- Potentially encouraging non-sustainable travel patterns (e.g. very long distance commuting).

3.2.10 The proposed investment in rail transport in the Levenmouth area was seen as opening up the following potential opportunities for the region:

Opportunities

- Helps regenerate area; and
- Political and local support.

3.2.11 However, there were a number of threats identified that might compromise the ability of new investment in rail in the Levenmouth area to realise these potential opportunities, and these were:

Threats

- New road schemes (e.g. Redhouse) could reduce congestion and make road travel more attractive;
- Other PT scheme/services could compete; and
- Lack of capacity across the Forth.

Potential Options

3.2.12 There was a general agreement at the workshop that the following potential options are worth considering:

- Rail link with a (new) station at Leven and Cameron Bridge (to serve developments & existing settlements). This needs to be a reasonably fast service and could accommodate rail freight. The study should also check if a link from Leven Town Centre to the Docks is also possible;
- Bus-based option should include bus priority (e.g. Redhouse to Gallatown). Variations include on-street with bus priority and segregated busway;
- Extension of Kirkcaldy hovercraft (a ferry service was not considered feasible due to the terrain);
- P&R linked to bus and rail options; and
- Walking & cycling was seen too far and hence discounted.

3.3 Public Consultation

3.3.1 The public were consulted on accessibility to the Levenmouth area through a local people's panel and via the websites of SEStran and Fife Council, with awareness of both consultation processes advertised through a prior press release. Questionnaires were issued on the website which asked for views on issues relating to transport infrastructure and services to and from the Levenmouth area, and for comments on the extent to which transport needs of the local population were met. In addition, a local MSP (Tricia Marwick) called for a debate in the Scottish Parliament in April 2008 and a petition containing a total of over 4,500 signatures was also handed into SEStran. At the time of writing this report, we had received 142 responses, the results of which are reported as follows:

Transport Infrastructure

- Main road links are poor and dangerous between Levenmouth and adjoining areas, particularly the A92 and A915 to Kirkcaldy;
- Investment is needed in improving the local road network;
- No rail connection to and from the Levenmouth area which restricts choices especially for medium to long distance commuting;
- Transport infrastructure in Levenmouth is poorer than for any comparable town in size in Central Scotland;
- The large amount of road freight in the Levenmouth area is directly contributing to the rapid deterioration of the local road network;
- There is no real modal choice for journeys from Levenmouth to destinations outside Fife other than the car, and even the performance of this mode is compromised by poor roads and congestion;
- The speed of new private sector housing development in the Levenmouth area, and the areas of Brownfield sites targeted for development of low cost housing in Fife Council's Local Regeneration Plan means that a rail link to cope with additional travel demand should be implemented as soon as possible;

- Access into Levenmouth from the Kirkcaldy area and further south is along the congested and notoriously dangerous "Standing Stane" road (A915). As the road is not a dual carriageway and there is a lack of safe opportunities to overtake, travel on this road is slow, especially given the amount of goods lorries and farm traffic that use this route; and
- Given the poor transport links to and from the Levenmouth area, it cannot compete with Kirkcaldy/Glenrothes/Dunfermline for retail or employment opportunities which in turn forces Levenmouth people onto the overcrowded transport network for work/leisure, thus exacerbating the underlying problem (of high deprivation).

Transport Services

- Train services are non-existent from the Levenmouth area, and using nearby stations is not a practical solution for a significant number of people;
- A rail connection to and from Levenmouth would be important in linking commuters up with the national rail network;
- There is a need to re-open the passenger station at Cameron Bridge;
- Rail travel is quicker than travelling by road for destinations beyond Kirkcaldy (due to hold-ups on the main road network);
- Although the regeneration of Levenmouth is vital, in order to achieve this investment in a number of options in improving bus services should be considered. In particular –
  - Identify existing or likely pinch points on the bus network (to any of Markinch, Thornton and Kirkcaldy railway stations);
  - Identify mitigation measures to avoid buses being delayed at such points;
  - Develop a through ticketing scheme (as is in place via Leuchars for St Andrews or via Inverkeithing for Edinburgh Airport);
  - Install a rail ticket sales point at Leven Bus Station;
  - Identify any perceived gaps in the existing bus service provision. Note that it is believed that Kirkcaldy is a more attractive interchange point for the bulk of the Levenmouth catchment population, and frequent services are currently provided on a predominantly commercial basis, so there is a solid foundation on which to build; and
  - Develop any bus service enhancements through a Statutory Quality Partnership.
- Bus services, both local and trunk, are good with plenty of bus stops and the new bus station at Leven is a definite improvement, but there are limited Sunday services;
- Bus services are uncomfortable, and only suitable for short trips, luggage free;
- There is a need for more bus services to and from the Levenmouth area;
- Although bus services are good, they are let down by the number of direct destinations – especially further a field and frequencies;
- Bus services to the nearest rail stations are not very good;
- Bus reliability to Edinburgh is very poor and bus services to the city cannot be depended upon for meetings etc;

- Many residents live very close to the town center, i.e. less than 15 minutes walking time, and would not be prepared to wait for the hourly bus service to the same destination;
- Although Levenmouth is well served by bus services, these services are comparatively expensive, especially when compared with large urban centres like Edinburgh. This may be because there is an incumbent monopoly operator. However the result is that bus use is more expensive than travelling by car, which encourages greater car use;
- Those buses that are not "express" buses have extremely long journey times (approx 1 hour to get to Kirkcaldy for example);
- Bus service frequencies are poor, such as the express service to Markinch running just once an hour, and as there is no direct service to Dundee, the service requires a change in St Andrews, and because of this, these should be more frequent;
- Bus services within the Levenmouth area are reasonable, but for journeys to destinations outside Levenmouth, public transport is wholly inadequate requiring numerous changes *en route*;
- Only 40% of requirements are met, because of poor road connections and lack of a rail link;
- Taxi services are adequate but very expensive for any trips other than very local;
- Choice of transport services in Levenmouth relates only to private car and bus services, taxi services do not represent a valid or sustainable transport option; and
- Lack of rail services from Levenmouth and the inadvisability of leaving the car at Kirkcaldy station overnight means having to use the car as the only option for long distance journeys to Glasgow, Edinburgh, Dundee, Inverness and Aberdeen. With an increasing number of residents in the Levenmouth area working in Edinburgh, this can only lead to heavier traffic flows with increasing congestion and pollution.

Problems over Time

Current:

- Main problems relate to lack of good road connections and a rail link. Poor public transport links discriminate against those without access to a car helping to entrench the level of local deprivation;
- Lack of connectivity – more investment required in quick public transport links;
- Congestion – there are too many cars and lorries on the roads;
- Poor access to hospitals and airports by public transport;
- It is difficult to get a bus during school times;

Future short term:

- Severe constraints (on transport infrastructure and services) will arise from increased housing and population (in the area) and from industrial development;
  - In terms of residential expansion, there significant levels of new houses allocated under the revised Local Authority Structure Plan;
  - Considering industrial expansion, there are plans for mixed use development at the Diageo facilities at their Sea Road site in Methil;
- Car use will increase dramatically both short and long-term;

- Restrictions or closure of the Forth Bridge will impact heavily on the region, restricting commuter traffic and encouraging major employers like Diageo to leave the area;
- Bus services will degenerate owing to lack of investment;

Future long term:

- Whole area at risk from becoming log-jammed and in future also risks being circumvented altogether in the absence of any significant investment in rail and road infrastructure in the area;
- Bus services will be dramatically cut back owing to greater deregulation and higher fares; and
- Environmental concerns brought into play; and there is a need to make greater use of public transport (to combat these).

Other Related Issues

- Retail development in Levenmouth, with significant investment in the northern end of the town (Leven) precipitates traffic movements and congestion in the town centre;
- There are a number of new housing schemes in Windygates and on the Windygates Road in Leven, and this likely to put additional pressure on the local transport system – both infrastructure and services;
- Transport services suffer owing to lack of competition on the routes. The incumbent operator, which operates bus services to Edinburgh, makes no attempt to match the services of potential rivals in offering neither sufficient stops nor connection points en-route. An example of poor service concerns the “fast” buses from Levenmouth, which can only be caught at Kirkcaldy Bus Station, which in turn is quite a distance from the railway station and necessitates a walk that may be difficult for those with impaired mobility;
- Improved transport links are essential to allow local young apprentices to attend colleges in the region (e.g. Carnegie College at Rosyth Docks) to attain the skills they require to be able to find employment in the future;
- A lot of people work at the hospital at Windygates and also at the two local distilleries, and if these are accessible by rail this would help both workers and visitors to the hospital and commuters to the distilleries;
- The public are ‘forced’ to use the car in the Levenmouth area because of the poor public transport links which have become a barrier to investment and encourage Levenmouth residents to make journeys outside Levenmouth for both work and leisure;
- With a rail link to and from Levenmouth fewer residents would be reliant on private car for their everyday transport requirements which would result in considerable environmental benefits;
- A rail link to the Levenmouth area shows political commitment, which is sorely needed to support the hoped-for immigration to the area, required not least to take up the amount recently invested in new housing;
- With improved public transport links, especially rail, Levenmouth has the opportunity of establishing itself as part of the ‘commuter belt’ (for Edinburgh) and this label

encourages both young and money into the area and a boost to both local housing and economy;

- With further housing being built, a rail line will attract light industry and jobs;
- The current rail link between Levenmouth and Markinch runs close or adjacent to a number of biologically valuable watercourses. As this is the case SEPA pollution prevention guidance note PPG5 is applicable to all works in or in close proximity to all watercourses;
- The Firth of Forth is a Special Protected Area (SPA) and SNH will need to be consulted with any proposed development, such as hovercraft/ferry terminal, adjacent to the Forth.
- A new nursery has recently been built, and with better local job prospects this nursery has a fighting chance of being used at full capacity, where improved transport links would assist in this;
- The development of the Fife Energy Park at Methil will encourage the leverage of further investment by industry in the area – better links are required to assist the Energy Park to maximise its potential;
- Transport requirements of the area will be potentially affected by new housing and the development of the Methil Dock Business Development Park (now known as the Methil Energy Centre);
- Methil Docks could and should be developed. To do this will require rail investment, which in turn will assist in regenerating the area;
- Diageo, one of Europe's largest distilleries, provides an example of the extent of mismatch between transport facilities and requirements in the Levenmouth area. The distillery and bottling plants are located in Levenmouth, yet the only way the company can transport supplies and finished produce to retailers is by HGV, which is particularly perverse where there is an intact but unused railway line right next to the distillery;
- Diageo have committed to increasing the size of their operations, which in the light of absent local rail facilities means more heavy goods traffic in the Levenmouth area, with all the concomitant problems associated with this;
- A rail freight line could be regarded as a lifeline to the Methil Docklands area – especially given that the old power station will be re-developed and with the presence of a huge bottling plant (Diageo) and a huge distillery (Cameron Brig), both of which would benefit from a rail line to the area.
- East Fife Football Club are going through a period of improvement and have realistic aims for promotion to the 1st division of the Scottish Football League. If that transpires, then Levenmouth would see significant numbers of visiting football fans every two weeks;
- Levenmouth has the potential to be the gateway to the "East Neuk" of Fife and a tourist destination in its own right;
- At one time Leven was once a thriving holiday resort and while it will never go back to that, the provision of a direct train link to the rest of Scotland will encourage day trips from people who would otherwise not consider going to Leven for the day;

- Access to Leven by ferry and rail will encourage more tourists, and perhaps encourage visitors from abroad;
- The 'East Neuk' of Fife is an outstanding tourist area with poor transport access. Levenmouth's position is very much as a gateway to the 'East Neuk'. At present, it is estimated that over 90% of tourists visit the "East Neuk" by car. The re-introduction of a rail link between Levenmouth and other parts of Scotland would re-establish Levenmouth as this gateway, as well as benefiting Levenmouth as a tourist destination in it's own right;
- The tourism potential of East Neuk would be enhanced with improvements in access to the area;
- Fife is looking to build 30 thousand new homes over the next 17 years with the population projected to increase substantially over the same period. In order for Levenmouth to secure the benefits of this expansion, better transport links with the rest of Fife are required;
- There may be future potential for development of Glenrothes airport, and quick public transport links to the area would greatly facilitate the case for this;
- Issues surrounding Levenmouth transport should not only be considered as a problem but as an opportunity. The area feels neglected and suffers from high deprivation and low expectations. Although a rail link would not resolve this on its own it would play a key part in helping to improve the area and the lives of Levenmouth's residents.

3.4 Public Sector Consultation

3.4.1 The following consultees where contacted:

- Fife Council – Development Services, Business & Strategy, Local and Community Policy;
- Fife Council – TAPIF Environmental Information Centre;
- Fife Council – Business & Strategy, Economic Development;
- Fife Council – Development, Promotion and Design;
- Fife Council – Locality Manager, Buckhaven & Methil Localities;
- Fife Council – Environmental Services;
- NHS Travel Co-ordinator;
- Scottish Enterprise Fife;
- City of Edinburgh Council – Planning and Strategy;
- Scottish Natural Heritage (SNH);
- Scottish Environmental Protection Agency (SEPA);
- The Scottish Government – Director General Environment;
- The Scottish Government – General Economy;
- Health and Safety Executive (HSE);
- Scottish Water;
- Historic Scotland;
- Stagecoach in Fife;
- Moffat and Williamson (local bus company); and

- Fife Chamber of Commerce and Enterprise Ltd.

3.4.2 At the time of writing this report, responses have been received either in writing or verbally from SNH, SEPA, HSE, and Fife Council Environmental Services. The responses are summarised below:

- Key issues to be addressed will be the ecological impacts upon designated sites, protected species and habitats. Other issues include Landscape and visual impacts; recreational impacts; siting, design and layout of planting and any built aspects; and proposed green network provision;
- "Suitable consideration of relevant transport option potential impacts on air quality and contaminated land issues should be undertaken in order to demonstrate compliance with both PAN 33 "Development of Contaminated Land" and the appropriate statutory air quality objectives/standards";
- Suggest that the study identifies the likely pitch points on the bus network; identify mitigation measures to avoid bus delays at pinch points; develop a through ticketing scheme; install a rail ticket sales point at Leven Bus Station; identify gaps in existing bus provision; and develop any bus services enhancements through a statutory quality partnership. Welcome waterborne options;
- Some improvements could have adverse impacts on properties in built up area in Kennoway-Windygates, or could affect local plan designations; and. The Sea Road/Muiredge Development shown in Figure 1 is in wrong location; and
- Controlled Activities Regulations (CAR) license required for any ferry or hovercraft option.

3.5 Meeting with Transport Scotland & Network Rail

3.5.1 A meeting was held with Network Rail on 6 May 2008 to discuss the options and any potential issues. In addition, a further meeting was held with Transport Scotland on 4 June 2008 to discuss the options and proposals.

3.6 Fife Council Response to the Public Consultation

3.6.1 Fife Council's EE&T Committee approved a response to the public consultation on 29 may 2008 which concluded:

"In recognising that the STAG appraisal is required to assess all means of improving access to/from Levenmouth, the Council is of the firm view that the re-opening of the rail link to passengers and freight would:-

- *Improve travel choice and help achieve Scotland's target of an 80% reduction in carbon emissions by 2050;*
- *Provide direct connections to employment opportunities in West Fife and Edinburgh;*
- *Support the sustainable expansion of the city's labour market;*
- *Improve the image of the Levenmouth area and tackle its isolation;*

- *Widen the economic profile and catchment of the area, and significantly assist its regeneration;*
- *Ease the growing pressure on the roads network; and*
- *Protect the Levenmouth economy should the Forth Road Bridge have to be closed to heavy goods vehicles before the new crossing is commissioned.*

The re-opening of this line to passengers and freight is vital to the regeneration of Levenmouth and Central Fife and, given the Scottish Government's commitment to the new Forth crossing, the rail link is the Council's top priority for transportation infrastructure."

3.6.2 A full copy of the Council's response is included in Appendix E.

3.7 Summary of Consultation

3.7.1 The consultation exercise was carried out using a number of different methods. A workshop was held with the key stakeholders of the study. This was followed by public consultation using the websites of Fife Council and SEStran, both of which were advertised with a press release before hand.

3.7.2 A key issue that emerged from the workshop was that currently modal choice for travel was restrictive, although bus services were reasonably good. Car ownership is relatively low in the area, therefore dependency on public transport is possibly higher than elsewhere in Fife.

3.7.3 Both the use of private car and the local bus services were constrained by heavy congestion, including significant HGV traffic, which is particularly bad along both the Kirkcaldy and Glenrothes Corridors, and especially so at peak times of travel.

3.7.4 There are significant plans for new land-use developments in the area, particularly for housing in the East Neuk, Muiredge and Lower Leven parts of the Levenmouth area. This is going to put additional pressure on the road network, exacerbating the existing 'pinch points' on the main roads leading out of Levenmouth, and will further contribute to the problems currently faced by car and public transport users.

3.7.5 The SWOT exercise at the STAG workshop identified a number of strengths and opportunities in providing rail transport investment in the Levenmouth area. The most important of these centres on improvements in accessibility to and from Levenmouth, with the benefits this brings in terms of widening the economic 'footprint' of Levenmouth. Greater accessibility means greater potential for local and inward investment and job creation in the area, and access to jobs further afield.

3.7.6 Additional benefits with rail investment relate to the potential removal of both some car but mainly HGV traffic from Levenmouth's roads, reducing congestion and pollution, and ensuring a more efficient use of the existing road network. Against this there are comparatively few drawbacks to investment in rail.

3.7.7 Public consultation flagged up much of the same constraints to Levenmouth's transport network as put forward by the key stakeholders at the workshop. Safety on the main road links to and from Levenmouth emerged as a serious concern as was the poor links both by road and with public transport between Levenmouth and other areas of Fife and beyond. This is impeding Levenmouth's economic competitiveness, constraining employment and reducing opportunities for attracting young skilled employment to the conurbation; all of which re-enforces the perception of Levenmouth as an area characterised by chronic and high deprivation, the image of Levenmouth which the stakeholders at the workshop were also acutely aware and keen to dispel.

4 OBJECTIVES

4.1 Introduction

4.1.1 STAG differentiates between *Planning Objectives* and *Government Objectives*. Planning Objectives are specific to the study, whilst Government Objectives are over-arching criteria against which competing schemes for public funding may be measured. More details on Government Objectives are set out in section 4.3.

4.1.2 STAG sections 2.6.19 to 2.6.21 (Best Use of Existing Resources) recommend that where appropriate objectives already exist they should be re-used. The STAG Workshop held on Monday 17 March 2008 and attended by various key representatives from Fife Council and SEStran identified a number of outline objectives worthy of inclusion in the STAG Appraisal. Appendix A includes the minutes of the workshop, and details of the workshop are also covered in Chapter 3 as part of the consultation exercise.

4.2 Outline Planning Objectives

4.2.1 STAG allows for a scheme's local planning objectives to be considered in addition to the Government's five main objectives of environment, safety, economy, integration and accessibility/social inclusion. The workshop provided an opportunity to enhance the STAG appraisal by allowing the key stakeholders to identify local planning objectives.

4.2.2 Improving public transport in the Levenmouth area will have significant impacts on the regional context and fall within the SEStran area. Increasing the level of accessibility that such a link represents meets the overarching goal of Fife Council in their Local Transport Strategy (LTS) regarding accessibility, which is to allow people the opportunity to access the key needs and services they require; be that of Employment, Health Care, Education or Leisure[5]. This vision has been emphasized as a specific objective: '*Access for all - To improve access to all key needs and services for all (Including employment, education, health and leisure opportunities).*

4.2.3 Investment in improving public transport to Levenmouth targeting accessibility and improvements to local freight transport movements also meets other objectives detailed in the LTS. These are split in the LTS between Transport Themes and Transport Choices[6], and have been similarly aligned below.

Transport Themes

- To improve access to all key needs and services for all (including employment, education, health and leisure opportunities);
- To encourage more sustainable travel for new and existing developments;
- To widen travel choice through the provision of integrated transport networks; and
- To improve safety for all forms of transport.

Transport Choices

- To promote efficient movement of freight and encourage transfer of goods from road to rail, sea and pipeline; and

[5] Fife Local Transport Strategy, Section 4.6, page 28, paragraph 1
[6] Fife Local Transport Strategy, Section 5.0, page 41

- To work with passenger transport operators to develop an integrated public transport system.

4.2.4 Given this remit it was therefore considered appropriate that the LTS policy objectives set out above relating to transport themes and choices should also be included with the outline planning objectives given consideration in the STAG workshop as an important component for defining the planning objectives.

4.2.5 The outline planning objectives identified are:

- ***Objective 1:*** Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth;
- ***Objective 2:*** Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution; and
- ***Objective 3:*** Encourage more sustainable travel for new and existing development.

4.2.6 These outline planning objectives will need to be further refined, including making them SMART (specific, measurable, achievable, realistic and time-bound) in order to conform with STAG. This is described in Section 4.5.

4.3 Role of the Government Objectives

4.3.1 Government Objectives are over-arching ways of assessing capital expenditure proposals competing for central government funding on a consistent basis. Furthermore these objectives are reflected in government policy, through such documents as the recent Scottish Transport White Paper[7] and the recently published National Transport Strategy (NTS)[8] which has a vision of:

> *"an accessible Scotland with safe, integrated and reliable transport that supports economic growth, provides opportunities for all and is easy to use; a transport system that meets everyone's needs, respects our environment and contributes to health; services recognised internationally for quality, technology and innovation, and for effective and well-maintained networks; a culture where fewer short journeys are made by car, where we favour public transport, walking and cycling because they are safe and sustainable, where transport providers and planners respond to the changing needs of businesses, communities and users, and where one ticket will get you anywhere".*[9]

4.3.2 To help achieve the above, the NTS has set five high-level objectives for transport. The *Planning Objectives* for the investment in sustainable transport in Levenmouth have been nested within the NTS high-level objectives. This is shown in the following section.

[7] Scotland's Transport Future, Scottish Government, June 2004
[8] Scotland's National Transport Strategy, Scottish Government, December 2006
[9] Para 5 of the National Transport Strategy

4.4 Nesting of Planning Objectives and Government Objectives

4.4.1 STAG Part 1 appraisal requires an "*initial view of the proposal against the Government's five objectives set out in the Part 2 appraisal…*"[10], which in summary are:

- Environment;
- Safety;
- Economy;
- Integration; and
- Accessibility and Social Inclusion.

4.4.2 STAG recommends that, where possible, the Planning Objectives are "nested" with the Government Objectives[11]. This is intended to highlight synergies between objectives as well as simplifying the reporting process. The four local Planning Objectives identified in Section 4.2 closely fit within the Government's five over-arching objectives, with some of these objectives covering more than one of the Government's objectives. For this study they have been nested as shown in Table 4.2.

Table 4.2: Relationship of Planning Objectives to Government Objectives

STAG Criteria	NTS Objectives	Outline Planning Objectives
Environment	Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy	***Objective 3:*** Encourage more sustainable travel for new and existing development
Safety	Improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff	*No specific Planning Objective identified – appraisal will be against Government Objective*
Economy	Promote economic growth by building, enhancing managing and maintaining transport services, infrastructure and networks to maximise their efficiency	***Objective 2:*** Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution

[10] Scottish Transport Appraisal Guidance: Executive Summary, paragraph 33, Scottish Government, September 2003
[11] Scottish Transport Appraisal Guidance: Executive Summary, paragraph 33, Scottish Government, September 2003

STAG Criteria	NTS Objectives	Outline Planning Objectives
Integration	Improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport	*No specific Planning Objective identified – appraisal will be against Government Objective*
Accessibility & Social Inclusion	Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network	***Objective 1:*** Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth

4.4.3 During the STAG Part 1 appraisal discussed later, each option was appraised against each of the *Government Objectives* and *Planning Objectives*.

4.5 Development of SMART Planning Objectives

4.5.1 At this stage of the appraisal, the key stakeholders considered that improvements to public transport in Levenmouth should be measured against the planning objectives within three years of the start of operations, and again at a future date within 10 years of opening. Hence, based on the nested objectives described above and the analysis of the key issues in Chapter 2, the following SMART planning objectives have been identified for appraising each potential option:

- ***Objective 1:*** Increase medium/long-distance public transport patronage in the Levenmouth area by A% by year B;
- ***Objective 2:*** Reduce impacts of HGV freight movements in vehicle-kilometres by Q% by year R; and
- ***Objective 3:*** Encourage by X% modal shift of medium/long-distance passengers and freight in the Levenmouth area to more sustainable modes by year Y.

4.5.2 {Note: the targets in the SMART planning objectives will be finalised after the modelling and analysis is completed, since under STAG rules they can not be changed after they have been set, and also after further stakeholder consultations.}

4.5.3 The above SMART planning objectives have been taken forward into the STAG Part 1 Appraisal of potential options.

5 GENERATION OF OPTIONS

5.1 Levenmouth Public Transport Alignment Options to Appraise

5.1.1 The next stage of the process was to undertake Optioneering in order to identify options that were likely to meet the *Planning Objectives* set out in Table 4.2. This was facilitated by feedback from the stakeholder workshop and discussions with operators and feedback from the public consultation.

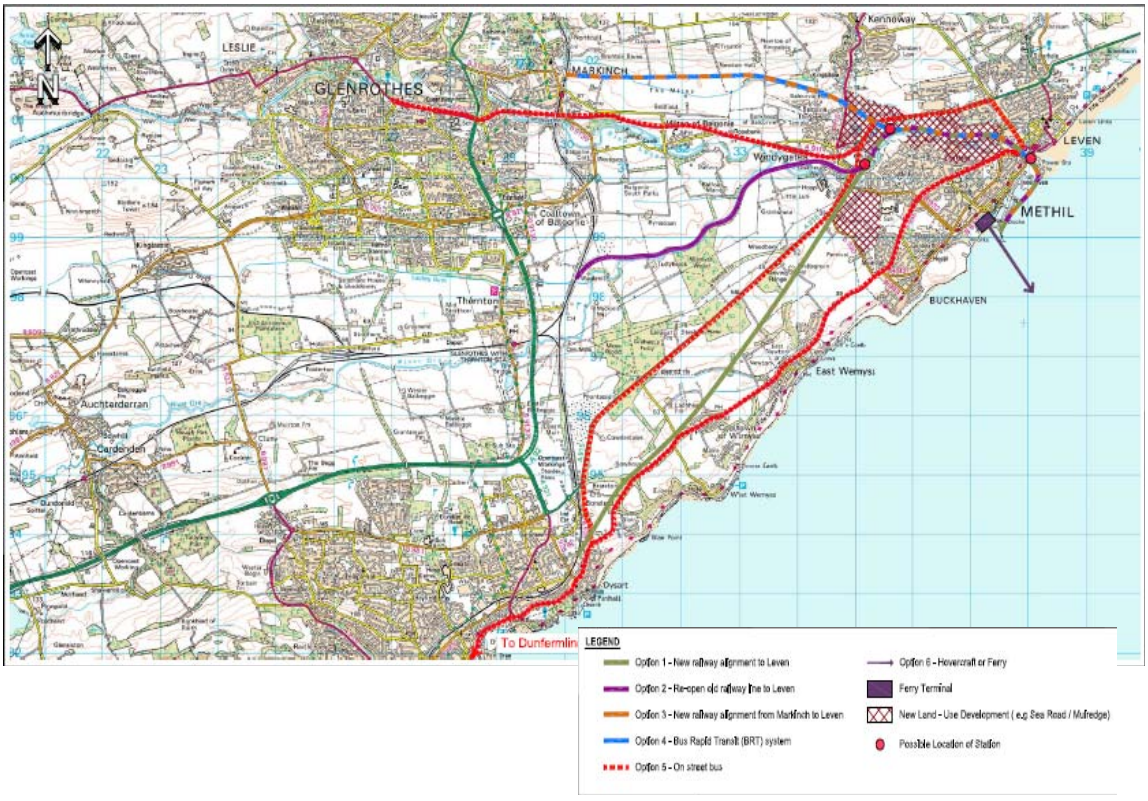
Options Identified for Appraisal

5.1.2 From the review and consultations, the following options were identified and agreed:

- New rail alignment to Leven;
- Re-open existing line;
- New rail line to Markinch;
- Bus Rapid Transit (BRT) on segregated line from Leven to Markinch Station;
- On-street bus facilities and services; and
- Extension of hovercraft services to Methil Docks.

5.1.3 Some of the above options have variations depending on the number of stations and with/without rail freight services. These are described individually below along with the Reference Case against which they are compared. Figure 5.1 shows the Levenmouth area with the six options identified.

Figure 5.1: Map of the Levenmouth Area with the Six Options for Transport Improvements Identified



Reference Case Scenario

5.1.4 In order to test any proposed improvement, it is first necessary to define a *Reference Case Scenario* against which all new plans can be appraised. The Reference Case Scenario is effectively a view of how the transport and other important aspects of the area are likely to develop in the future without any new improvements arising from this study.

5.1.5 This acts as the baseline against which all new options are compared. It is usually either a "Do-Nothing" Scenario (i.e. no changes from the current situation) or a "Do-Minimum" Scenario (i.e. only planned or committed developments).

5.1.6 The feedback from the key stakeholders at the workshop confirmed there would be some changes in the study area in terms of transport provision, land-use and construction developments. After some discussion the following Do-Minimum Scenario was identified:

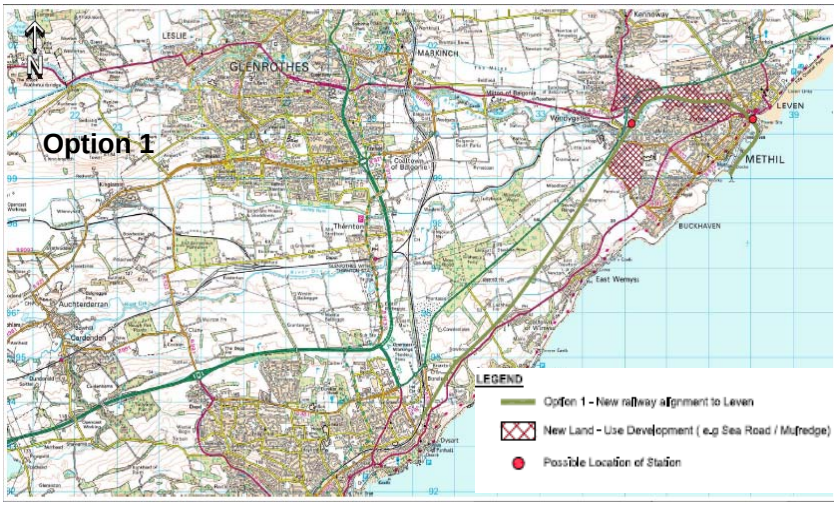
- The new road linking A915 (through Percival Road) to the Dock area and Fife Energy Park;
- The Second Forth Crossing (assumed at 2016);
- The projects in the SITCoS reference case;
- A new hovercraft to Ocean terminal from Kirkcaldy. This is for passengers only;
- A ferry from Burntisland to Granton (passenger only);

5.1.7 The majority of options involve rail improvements; either new or existing rail alignments and each option has a number of sub-options. Each option is described in turn below.

5.2 Overview of Options

Option 1(a): New Rail Alignment with a (new) Station at Leven

5.2.1 This option (Figure right) involves opening the rail-line at the docks in Methil, which continues pass the power station, and involves building a new rail station at Leven, situated close to where the A955 crosses the river Leven.



5.2.2 The option incorporates a new rail link and new alignment starting from the existing line at Cameron Bridge and running in a more or less straight line in a south-west direction for approximately 8km before finally linking up with Markinch to Kirkcaldy line at or close to Boreland on the eastern outskirts of Kirkcaldy.

5.2.3 This proposals sub-options are as follows:

- 1a. New Rail Alignment with Station at Leven; and
- 1b. New Rail Alignment with Stations at Leven and Muiredge Development/Cameron Bridge.

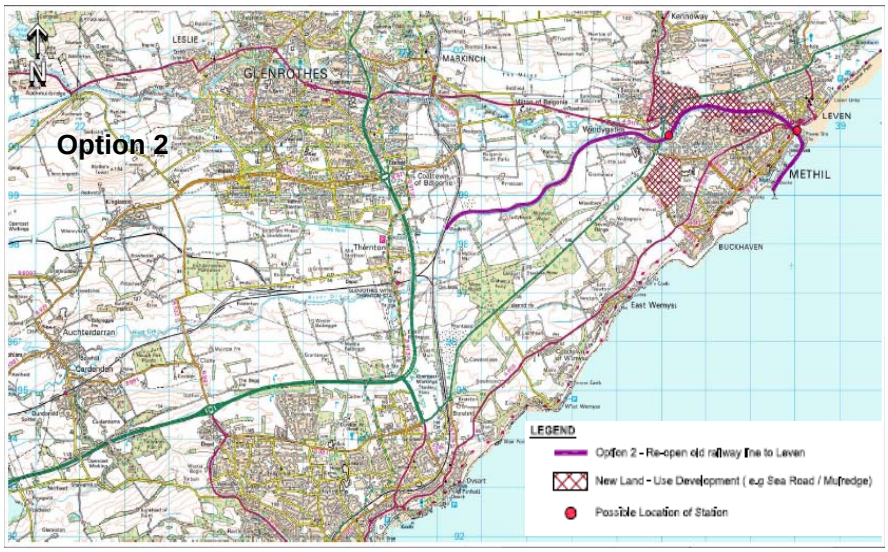
5.2.4 The second sub-option has an additional interchange/station at Cameron Bridge to accommodate the potential transport requirements of a proposed largely residential development of about 1000 houses, but which also includes a number of amenities such as schools and retail units, and is situated between Methil and Leven in the Kirkland area, which bridges the current alignment of the railway line. However the location of this second station under sub-option 1b may be better placed in Cameron Bridge, particularly with new substantial housing development in the Methil/Buckhaven/A915 area.

5.2.5 Rail freight services can not be accommodated in this option as the freight services go through the Dunfermline – Cardenden route due to the lack of insufficient freight paths from Inverkeithing to Kirkcaldy, although if the Charlston Chord (which is a separate project) was implemented then this could be reviewed.

5.2.6 Option 1 does not allow passenger services on the northern part of the circle to operate to Leven.

Option 2(a): Re-commissioning Existing Railway Line with a (new) Station at Leven

5.2.7 This option (Figure right) involves opening the existing de-commissioned rail-line at the docks in Methil, and includes building a new rail station at Leven close to where the A955 crosses the river Leven.



5.2.8 This current rail alignment joins the Markinch to Kirkcaldy line halfway between Markinch and Kirkcaldy, approximately 1.4km south of Coaltown of Balgonie, a suburb on the south-east corner of Glenrothes.

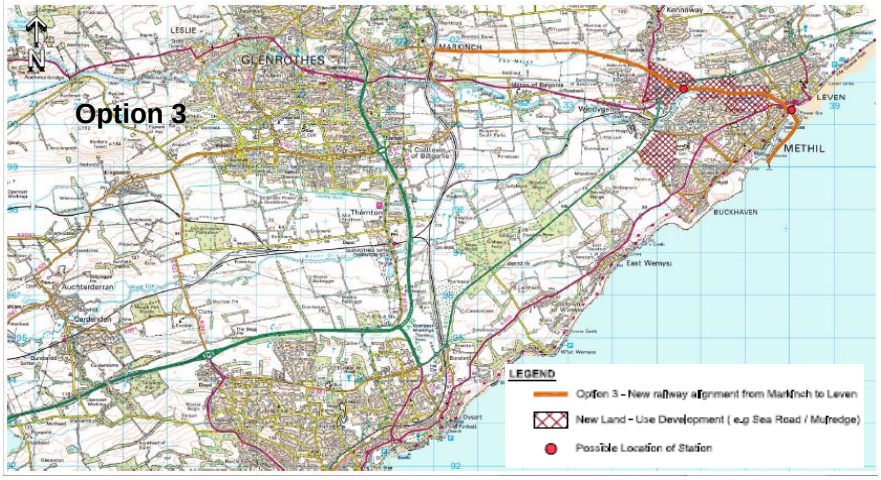
5.2.9 As with option 1, this proposal has a number of sub-options, which are as follows:

- 2a. Re-open previous rail line with a Station at Leven;
- 2b. As 2a but with an additional Station at Cameron Bridge;
- 2c. As 2a plus Rail Freight Facilities; and
- 2d. As 2b plus Rail Freight Facilities.

5.2.10 There was consideration for a northern spur joining the rehabilitated rail link with the Markinch – Glenrothes line, but this has since been dropped from this option due to insufficient demand for services travelling north. Otherwise these sub-options replicate those for option 1, including the possibility of the second station/interchange being located at Cameron Bridge.

Option 3(a): New Alignment to Markinch Station Using Part of Existing (De-commissioned) Railway and with a (new) Station at Leven

5.2.11 This option (Figure right) involves using part of the existing de-commissioned rail-line for approximately 4km starting at the docks in Methil and continuing to the buildings at Duniface, with new track built from roughly at a point where the current rail alignment swings south, with the section of new alignment approximately 1.8km long linking to Markinch Station.



5.2.12 As with the other options, this option includes building a new rail station at Leven close to where the A955 crosses the river Leven.

5.2.13 The sub-options associated with this main option are familiar to the other options reviewed, and are as follows:

- 3a. New Rail Alignment to Markinch Station using part of Existing (De-commissioned) Railway with Station at Leven;
- 3b. As 3a plus Station at Muiredge Development/Cameron Bridge;
- 3c. As 3a plus Rail Freight Facilities; and
- 3d. As 3b plus Rail Freight Facilities.

5.2.14 The original proposed site for the second railway station/interchange was in the Muiredge Development area, but as with the previous options this is still under consideration, and a better location for this option may be where the railway line crosses the A915 at Cameron Bridge.

Option 4(a): New BRT System to Markinch Rail Station with BRT Station at Leven

5.2.15 Option 4 proposes a new segregated Bus Rapid Transit (BRT) system linking Leven with Markinch rail station (Figure, right). The alignment would take the BRT north of and parallel to the existing A911 with a starting point at a new BRT interchange in the centre of Leven, at the existing bus station. From the new

bus station in Leven the busway proceeds to the north of and bordering on the Muiredge Development, then passing over the A916 south of the village of Kennoway before heading almost due west for a distance of about 7.7km before joining up with the B9130 just north of Markinch railway station.

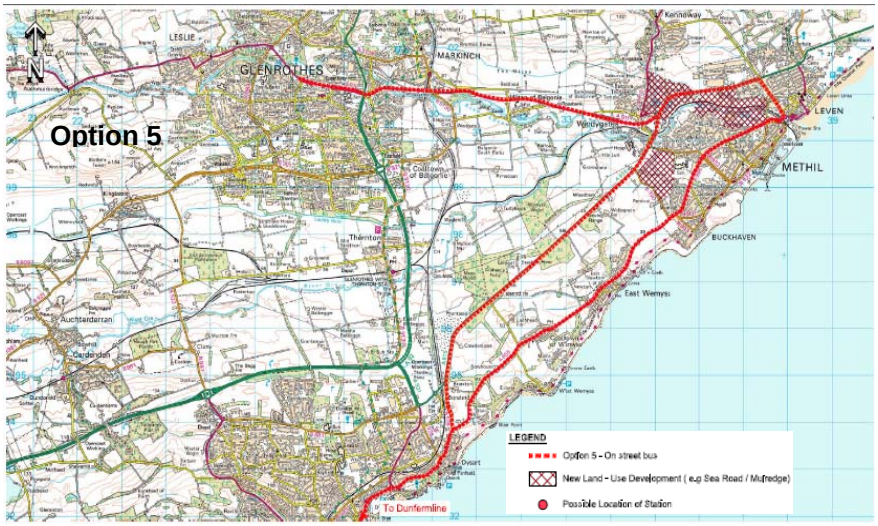
5.2.16 There is one sub-option, which is:

- 4a. New BRT System to Markinch with Station at Leven Station; and
- 4b. As 4a plus a second interchange at Muiredge/Cameron Bridge. As with the options above, with new substantial housing development in the Methil/Buckhaven/A915 area necessitates the consideration of a second guided bus station in the Cameron Bridge area.

5.2.17 BRT was also considered along the same alignment as Option 1 (the new railway line) but was considered unfeasible since it would require a new station on the Fife line with additional costs and disruption to existing ScotRail services.

Option 5(a): Bus Priority Along A955

5.2.18 This option (Figure right) involves introducing bus priority measures such as priority bus lanes and signalised bus priority junctions on the A955 'coastal route' starting at the new bus station in the centre of Leven and through to Kirkcaldy. The measures continue on the A921, pass Dysart, and onto the bus station in the centre of Kirkcaldy, a total distance of some 15km.

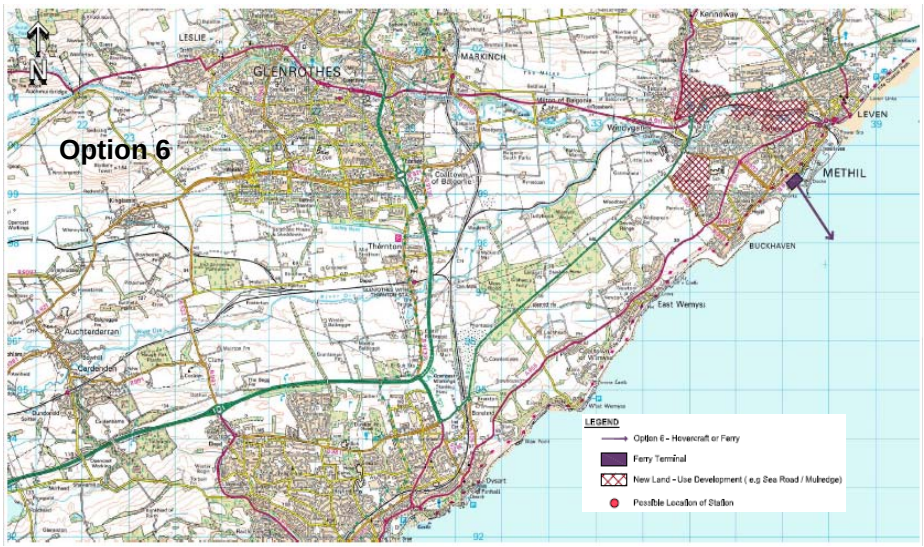


5.2.19 There are three further sub-options associated with this option. These are:

- 5a. As described above;
- 5b. Bus priority on the A915 instead of the A955. This would involve placing the bus priority measures mentioned above on the A915 between Leven bus station and Kirkcaldy bus station. As with the previous option, bus priority measures would continue on the A921 for the short distance after the two roads close to Dysart and towards the bus station;
- 5c.This sub-option introduces bus priority measures on a circular route between Leven and Kirkcaldy stations, using both the A955 and A915; and
- 5d. Bus priority service to Markinch/Glenrothes along the A911.

Option 6(a): Hovercraft Service with New Terminal at Methil Docks

5.2.20 This option envisages a new hovercraft service (Figure, right) from Methil Docks and represents an extension of the Firth of Forth Hovercraft service planned for running between Kirkcaldy and Portobello / Leith in Edinburgh. There will also be a new purpose-built terminal at the docks. There is one sub-option for consideration:



- 6a. As described above; and
- 6b.This substitutes the new hovercraft service for a new ferry service between Methil Docks and Portobello.

6 STAG PART 1 APPRAISAL

6.1 Introduction

6.1.1 This Chapter summarises the STAG Part 1 Appraisal of the proposals. The analysis has been undertaken using a combination of evidence from case studies and research from similar proposals elsewhere, professional judgement and using an analysis of information (where data has been available). In analysing travel data, various transport analysis was applied in this study to estimate changes in travel conditions (e.g. travel times, accident levels, etc). These were then used to help indicate the likely level of assessment for the STAG Part 1 Appraisal. For this, the difference in average travel conditions before and after the proposals are implemented is ascertained to determine how people are potentially affected by the changes.

6.2 Appraisal of Impacts

6.2.1 The appraisal of impacts is based on a standard seven-point scale as outlined below:

✓✓✓	major beneficial impact	✗✗✗	major adverse impact
✓✓	moderate beneficial impact	✗✗	moderate adverse impact
✓	minor beneficial impact	✗	minor adverse impact
		O	neutral impact

6.2.2 Each score is assigned to each STAG sub-criteria to indicate the likely impact.

6.3 Environmental Appraisal

Planning Context

6.3.1 The following local *Planning Objectives* have been identified as nesting within the overall environmental heading.

Government Objective[12]*:*	To protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimises emissions and consumption of resources and energy.
Planning Objective:	To encourage more sustainable travel for new and existing development.

6.3.2 As a mechanism for promoting sustainable development, the proposals offer a major opportunity to implement local and strategic policies to this end. The proposals could encourage a more efficient use of the private car, improve the quality of the environment, and would increase access to a public transport system serving areas of employment, residence and recreation, and therefore promoting and implementing social inclusion.

[12] Government Objectives are quoted from Scotland's Transport Future, White Paper, 2004

Overview of Environmental Appraisal

6.3.3 STAG states the assessment of environmental impacts should follow the process outlined below:

- Baseline information;
- Assessment of effects; and
- Appraisal of impacts.

6.3.4 The 3-stage process is described below.

Baseline Information

6.3.5 Environmental baseline data is needed principally to assess the vulnerability of the study area to likely changes associated with transport or other proposals. Impact assessment carried out on a range of scenarios relies on reliable and readily available baseline information to give an indication of the significance of impacts.

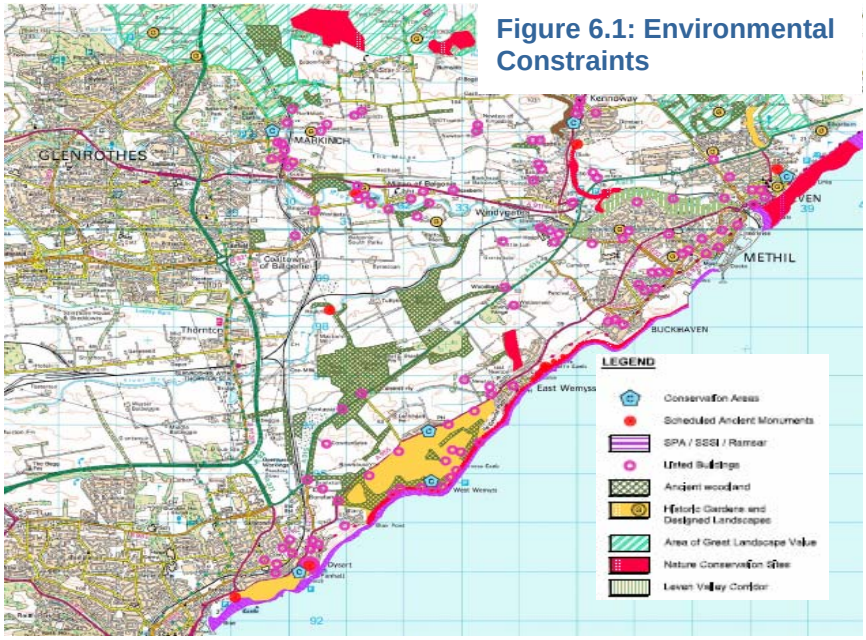
Assessment of Effects

6.3.6 STAG emphasises the baseline *"will not necessarily relate to the existing situation - in fact, when dealing with strategic proposals, a long lead time to implementation will be usual and the baseline might therefore relate to a situation several years hence. There will therefore be a requirement to project the existing situation, against which impacts can then be assessed"*[13]. This has been carried out by a desktop assessment of the likely environmental effects and their magnitude.

Summary of Environmental Constraints and Appraisal Results

6.3.7 The Figure (inset, right) summarises the environmental constraints in the Levenmouth area.

Figure 6.1: Environmental Constraints



6.3.8 Much of the coastal area from the centre of Leven northwards is designated as a nature conservation area and the same is true for the coastal strip from Buckhaven south-west as far as Blair point, and much of the same coastline is covered by SPA/SSSI/RAMSAR designation.

6.3.9 Much of the area bordering the A955, between Kirkcaldy and East Wemyss, and sandwiched between the road and the designated coastal nature conservation area, is characterized by historic gardens and designed

[13] STAG Chapter 6, Scottish Executive, September 2003

landscapes. Moreover, the Levenmouth urban area is also well represented by listed buildings, and to the north of Levenmouth is a substantial area of Great Landscape Value.

6.3.10 Table 6.1 overleaf summarises the results of the environmental appraisals for each of the options identified in Chapter 5 (Figure 5.1). A full description of each STAG environmental sub-criteria assessment is provided in Appendix B. In conclusion, the following issues have been raised:

- There are likely to be significant environmental issues associated with the development of transport options through existing rural areas. Any of the new rail alignment or BRT options is likely to have significant landscape and visual effects. There are also likely to be significant effects on biodiversity, with respect to both species and habitats, such as the local wildlife site at Kennoway-Windygates;
- Construction disruption is likely to affect residential, commercial, and industrial properties, though this will be temporary and will not result in any permanent effects;
- There may a number of direct and indirect impacts on cultural heritage and landscape features in the area. Options 3a-d and 4a and 4b would have a major adverse impact upon residential receptors in the Kennoway-Windygates area resulting in the demolition of some properties;
- Other impacts, during both construction and operation, are likely to be experienced with respect to air quality, noise and vibration, water quality, and geology and soils. However, some of these impacts could be suitably mitigated; and
- Any building work may affect the Firth of Forth SPA/SSSI/ Ramsar site with potential for significant impacts upon wildlife. The operation of a Ferry or Hovercraft service also has the potential to affect wildlife in the Firth of Forth. However, some of these impacts could be suitably mitigated and would be examined in an Environmental Impact Assessment.

Table 6.1: Summary of Environmental Appraisal Results

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 1a: New railway alignment with station in Leven	Construction and operational activities will lead to increase in local levels	Construction activities will lead to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate River Leven and Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar, Wemyss Den Provisional Wildlife Site and Windygates-Kennoway Wildlife Site	Potential landscape impacts associated with development in the countryside and near to the shore	Visual impacts on specific receptors.	Loss of agricultural land and woodland	Potential to affect setting of conservation areas in Dysart, West Wemyss, and Coaltown of Wemyss, listed buildings, and NMRS sites
Option 1b: New railway alignment with stations at Leven and Muiredge/Cameron Bridge	As 1a	As 1a	As 1a	Slightly greater than 1a due to additional station	As 1a	Slightly greater than 1a due to additional station	Slightly greater than 1a due to additional station	Slightly greater than 1a due to additional station	As 1a

Table 6.1: Summary of Environmental Appraisal Results, continued

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 2a: Use existing railway with station at Leven	Construction and operational activities will lead to increase in local levels	Construction activities will lead to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate River Leven, River Ore and Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar, and Windygates - Kennoway Wildlife Site	No significant change	No significant change	Loss of land for development of station	Potential to affect setting of listed buildings, a SAM and NMRS sites
Option 2b: Use existing railway with stations at Leven and Muiredge/Cameron Bridge	As 2a	As 2a	As 2a	Slightly greater than 2a due to additional station	As 2a	Slightly greater than 2a due to additional station	Visual impacts on specific receptors.	Loss of land for development of station	Potential to affect setting of listed buildings, a SAM site and NMRS sites
Option 2c: Use existing railway with station at Leven with freight services	Slightly greater than 2a due to rail freight facilities	Slightly greater than 2a due to rail freight facilities	As 2a	As 2a	As 2a	As 2a	As 2a	As 2a	As 2a
Option 2d: Use existing railway with stations at Leven and Muiredge with freight services	Slightly greater than 2bdue to rail freight facilities	Slightly greater than 2bdue to rail freight facilities	As 2b	As 2b	As 2b	As 2b	As 2b	As 2b	As 2b

Table 6.1: Summary of Environmental Appraisal Results, continued

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 3a: New railway alignment Markinch to Leven with station at Leven	Construction and operational activities will lead to increase in local levels	Construction activities will lead to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate River Leven and Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar, and Windygates - Kennoway Wildlife Site	Potential landscape impacts associated with development in the countryside and near to the shore	Visual impacts on specific receptors.	Loss of agricultural land	Potential to affect setting of listed buildings, two SAMs and NMRS sites
Option 3b New railway alignment Markinch to Leven with station at Leven and Muiredge/Cameron Bridge	As 3a	As 3a	As 3a	Slightly greater than 3a due to additional station	As 3a	Slightly greater than 3a due to additional station	Slightly greater than 3a due to additional station	Slightly greater than 3a due to additional station	As 3a
Option 3c: New railway alignment to Markinch to Leven with station at Leven and freight services	Slightly greater than 3a due to rail freight facilities	Slightly greater than 3a due to rail freight facilities	As 3a	As 3a	As 3a	As 3a	As 3a	As 3a	As 3a
Option 3d: New railway alignment to Markinch to Leven with station at Leven and Muiredge/Cameron Bridge and freight services	Slightly greater than 3b due to rail freight facilities	Slightly greater than 3b due to rail freight facilities	As 3b	As 3b	As 3b	As 3b	As 3b	As 3b	As 3b

Table 6.1: Summary of Environmental Appraisal Results, continued

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 4a: New segregated BRT system to Markinch rail station with station at Leven	Construction and operational activities will lead to increase in local levels	Construction activities will lead to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate River Leven and Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar, and Windygates - Kennoway Wildlife Site	Potential landscape impacts associated with development in the countryside and near to the shore	Visual impacts on specific receptors.	Loss of agricultural land	Potential to affect setting of listed buildings, SAMs and NMRS sites
Option 4b: New guided bus/BRT system to Markinch with station at Leven and Muiredge	As 4a	As 4a	As 4a	Slightly greater than 4a due to additional BRT interchange	As 4a	Slightly greater than 4a due to additional BRT interchange	Slightly greater than 4a due to additional BRT interchange	Slightly greater than 4a due to additional BRT interchange	As 4a

Table 6.1: Summary of Environmental Appraisal Results, continued

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 5a: Bus priority along A955	No significant change	No significant change	No significant change	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	No significant change	No significant change	No significant change	No significant change	No significant change
Option 5b: Bus priority along A915	No significant change	No significant change	No significant change	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	No significant change	No significant change	No significant change	No significant change	No significant change
Option 5c: Circular services using both A955 and A915	No significant change	No significant change	No significant change	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	No significant change	No significant change	No significant change	No significant change	No significant change
Option 5d: Bus priority along A911	No significant change	No significant change	Construction activity could potentially contaminate Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	No significant change	No significant change	No significant change	No significant change	No significant change

Table 6.1: Summary of Environmental Appraisal Results, continued

Proposals	Noise and Vibration	Air Quality	Water Quality, Drainage and Flood Defence	Geology and Soils	Biodiversity	Landscape	Visual Amenity	Land Use	Cultural Heritage
Option 6a: Hovercraft Service	Construction and operational activities will lead to increase in local levels	Construction activities will led to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate Firth of Forth	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar	No significant change	Visual impacts on specific receptors.	Loss of land for development of terminal	Potential for impacts severance and/or setting of NMRS sites
Option 6b: Ferry Service	Construction and operational activities will lead to increase in local levels	Construction activities will lead to a slight decrease in local air quality. Operational activities will led to slight increase in air quality.	Construction activity could potentially contaminate Firth of Forth. Dredging required for Leven Harbour and Firth of Forth for Ferry Route	During construction groundbreaking works and removal of spoil will be required. Potential risk of adverse impacts from disturbing contaminated land	Potential impacts on wildlife and Firth of Forth SPA/SSSI/Ramsar	No significant change	Visual impacts on specific receptors.	Loss of land for development of terminal	Potential for impacts severance and/or setting of NMRS sites

6.4 Safety Appraisal

Planning Objectives

6.4.1 The following local *Planning Objectives* have been identified as nesting within the overall safety heading.

Government Objective[14]*:*	To improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff.
Planning Objective:	By removing traffic from Levenmouth's roads, improving safety for all road users.

Overview of Safety Appraisal

6.4.2 The Safety objective identified within STAG is concerned with reducing the loss of life, injuries and damage to property resulting from transport accidents and crime. Two sub-objectives are considered, namely accidents and security. These are described below.

Accidents

6.4.3 STAG emphasises the need to *"consider the impact of the proposal under consideration on accidents"*[15]. For proposals which change road traffic accident numbers, or their severity, standard methodologies exist for calculating the projected number of accidents, the types of accidents and associated casualties in the before and after scenarios. The methods relate the traffic on a road (measured by vehicle-kilometres) to the number of accidents via the application of an accident rate. Accident rates and costs for different road types are set out in Government appraisal guidance[16] and which STAG suggests *"these should be adopted"*.

6.4.4 STAG emphasises the need to *"consider the impact of the proposal under consideration on accidents"*[17] for proposals which change road traffic accident numbers, or their severity. By removing traffic from the main trunk routes leading into and out of Levenmouth with the options will undoubtedly have an impact on both the number and severity of accidents on these roads. And, as we have seen, safety is an important issue raised during the consultation exercise, with the A915 having a particularly nasty reputation for accidents.

6.4.5 Accident rates and severity between Levenmouth and Kirkcaldy, Glenrothes and Upper Largo are shown in Table 6.2 overleaf. These cover the following major roads connecting Levenmouth with nearby settlements:

- A911 Glenrothes to Windygates;
- A915 Kirkcaldy to Windygates;
- A955 Dysart to Buckhaven;
- A915 Windygates to Leven East;
- A955 Buckhaven to Leven East; and
- A915 Leven East to Upper Largo.

[14] Government Objectives are quoted from Scotland's Transport Future, White Paper, 2004
[15] Section 7.2 in Chapter 7 of STAG
[16] Sensitive Lorry Miles, SRA/DfT, May 2003 and also the NESA Manual, DMRB (Volume 15), April 2002
[17] Section 7.2 in Chapter 7 of STAG

Table 6.2: Summary of Accidents, 2005 to 2007

Severity of Crash	2005	2006	2007	Total
Fatal	2	0	1	3
Serious	6	8	3	17
Slight	37	18	13	68
Injury Crash Total	45	26	17	88
Damage Only	108	110	60	278
All Crashes Total	153	136	77	366

6.4.6 In the longer term, all the options, including the extended hovercraft or ferry service across the Firth of Forth will impact on accident rates on these roads by virtue of removing vehicular traffic, particularly at peak times.

6.4.7 A high-level analysis of the potential demands for using each of the options identified in this study has been carried out using transport analysis procedures, data from the Fife Local Transport Strategy (LTS) and accident information from the NESA Manual. This is outlined in a separate Technical Note shown in Appendix C. The analysis includes an estimate of the annual veh-kms saved for each option, and also the sensitive lorry miles (SLM) benefits to be gained for those sub-options involving freight. This has allowed for an estimation of the potential monetised accident benefits, and therefore this has been used as the basis for appraising the impact scores in this test. These scores are shown in Table 6.3 later in this Section.

Security

6.4.8 STAG Section 7.3 states that *"when undertaking a Part 1 appraisal [for Security], planners should consider whether the proposal under consideration has any material impact on security for the users."*[18] Detailed assessment, for example using GOMMMS[19], is not required until a Part 2 appraisal. Nevertheless the GOMMMS security indicators provide a useful checklist for STAG Part 1 appraisal, namely:

- site perimeters, entrances and exits;
- formal and informal surveillance;
- landscaping;
- lighting and visibility; and
- emergency call facilities.

[18] STAG, September 2003, section 7.3.1
[19] Guidance on the Methodology for Multi-Modal Studies, DETR, March 2000

6.4.9 Reference to the security indicators set out above show that the emphasis is on physical infrastructure and its impact on security. The essence of the assessment could be paraphrased:

"Will travellers be (or feel) any safer as a result of the measure proposed?"

6.4.10 With the exception of priority bus measures, each of the options being considered for improvements to the local transport system involves substantial amounts of construction, whether it is the rail, BRT or hovercraft/ferry options. This will involve the construction of new rail, new bus-ways and/or new stations, halts or termini. In terms of these new facilities, it is expected that minimum safety requirements would be met with regard to personal security concerning their design and construction with respect to site perimeters, site surveillance, both formal and informal, lighting, visibility and emergency call facilities.

6.4.11 Therefore in terms of personal security, it is reasonable to assume that for each of the options considered other than the on-street bus options, these will have a *minor to moderate impact* for the Security sub-heading in terms of this study. On-street bus, however, is considered *neutral*.

Summary of Safety Appraisal Results

6.4.11 Table 6.3 summarises the results of the safety appraisals for each of the options. In conclusion, by removing some of the vehicle traffic, and in particular some of the HGV traffic, there are modest accidents benefits from the public transport options, and they perform well in terms of security.

Table 6.3: Summary of Safety Appraisal Results

Option		Accidents	Security	Overall Average Appraisal for Safety
1a, 1b, 1c &1d 2a, 2b, 2c & 2d, 3a, 3b, 3c & 3d	Rail-based options	✓✓	✓✓	✓✓
4a, 4b	BRT options	✓✓	✓	✓
5a, 5b, 5c & 5d	On-street Bus options	✓✓	O	✓
6a & 6b	Hovercraft/Ferry options	✓	✓	✓

6.5 Economy Appraisal

Planning Objectives

6.5.1 The following local *Planning Objectives* have been identified as nesting within the overall economy heading.

Government Objective:	To promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency.
Planning Objectives:	Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.

Overview of the Economy Appraisal

6.5.2 The Economy objective identified within STAG is concerned with improving the economic efficiency of transport and the efficiency of economic activities, with the key aim of supporting sustainable economic activity and returning good value for money. Two sub-objectives are considered, namely:

- Transport Economic Efficiency (TEE); and
- Economic Activity and Location Impact (EALI).

Transport Economic Efficiency

6.5.3 The analysis of the Transport Economic Efficiency (TEE) element is based on the results obtained from a high-level Restricted Cost/Benefit Analysis (RCBA). Exact details of each option were not identified at the STAG Workshop, and therefore it was considered appropriate to use a high-level RCBA based on traditional processes and economic appraisal parameters since this allows for a degree of flexibility in inferring the results.

6.5.4 It should be noted that the emphasis on this appraisal is not to provide an exact, detailed, estimate but to allow for a comparison of the differences between the different options, thereby helping to understand which options are likely to perform better than others and hence are potentially worthy of taking forward into a STAG Part 2 Appraisal.

6.5.5 Although it is not a requirement of a STAG Part 1 Appraisal, the RCBA allows for some of the monetary values to be assessed together, giving a more holistic indication of the benefits of the options than would be obtained from a purely qualitative appraisal.

6.5.6 Table 6.4 shows the estimated outline capital costs and maintenance (OMR) costs in current prices for the rail, BRT/bus priority and hovercraft options, including sub-options. Appendix D summarises the outline capital cost estimates. Maintenance costs are assumed to be 5% of the capital costs of the investment. These are as follows:

Table 6.4: Summary of Capital and OMR Costs (2008 Prices)

Options		Capital Costs	OMR Costs
Option 1a	New rail alignment – one station	£27.9m	£1.4m
Option 1b	New rail alignment – two stations	£31.3m	£1.6m
Option 2a	Existing rail alignment – one station	£19.3m	£1.0m
Option 2b	Existing rail alignment – two stations	£22.9m	£1.2m
Option 2c	Existing rail alignment – one station plus freight facilities	£20.9m	£1.1m
Option 2d	Existing rail alignment – two stations plus freight facilities	£24.5m	£1.2m
Option 3a	New line to Markinch Station – one station	£23.0m	£1.2m
Option 3b	New line to Markinch Station – two stations	£26.4m	£1.3m
Option 3c	New line to Markinch Station – one station plus freight facilities	£24.5m	£1.2m

Option 3d	New line to Markinch Station – two station plus freight facilities	£27.9m	£1.4m
Option 4a	BRT system – one station	£11.2m	£0.6m
Option 4b	BRT system – two stations	£13.2m	£0.7m
Option 5a	Priority On-street Bus – A955	£3.5m	£0.2m
Option 5b	Priority On-street Bus – A915	£3.3m	£0.2m
Option 5c	Priority On-street Bus – Circular route A955-A915	£5.2m	£0.3m
Option 5d	Priority On-street Bus – A911	£2.7m	£0.2m
Option 6	Hovercraft / Ferry (excluding purchase of vessel)	£10.6m	£0.5m

Note: all costs are in 2008 prices

6.5.7 It should be noted that the above costs are not intended to be precise estimates. They are solely to enable a RCBA to be carried out which would then allow for a comparison of one option against another. This is considered to be sufficient for the purposes of a STAG Part 1 Appraisal.

6.5.8 For appraisal purposes, the capital costs above include an allowance for physical contingencies (15%), but not for systemic bias in pricing – known as optimism bias (OB). Nor is there any account of risk, which may impact on a project's viability and the more so the longer the construction period. The construction period is assumed to be over 2 years, 2013 and 2014.

6.5.9 The RCBA appraisal included the following benefits:

- Vehicle operating costs (VOC) savings – this was estimated using the predicted changes in kilometres-travelled along the principal routes Using values from WebTAG[20] and average (default) data, a monetised value of 8.2 pence per km was used to derive VOC benefits;
- De-congestion benefits – benefits from the higher speeds experienced by the remaining road users of the trunk route network linking Levenmouth with the adjacent areas after the removal of a significant number of trips resulting from the investment in public transport. Using values from WebTAG[21] and average (default) data, a monetised value of 12.7 pence per km was used to derive de-congestion benefits;
- Public transport revenues – this was estimated from the estimates of demand and with average fares for bus, BRT, rail and ferry for the equivalent options;
- Travel time savings – this was based on a national default value-of-time of £11.28 obtained from WebTAG; and
- Sensitive Lorry Mile (SLM) benefits for the rail freight options – monetised environmental benefits that result from the removal of significant volumes of HGV freight traffic from the regional road network, using a value of £0.58 per kilometre, derived from Department for Transport (DfT), and weighted by regional road category.

[20] WebTAG Unit 3.5, Department for Transport, April 2004
[21] WebTAG Unit 3.5, Department for Transport, April 2004

6.5.10 The above calculations were incorporated into a spreadsheet-based RCBA which was based on the following TEE processes:

- A 60-year appraisal period;
- Annual discount rate of 3.5% over the first 30 years falling to 3% for the remainder; and
- An assumed opening year of 2015.

6.5.11 Clearly, as a project moves towards STAG Part 2 Appraisal more information will become available and a Full TEE Appraisal for each option would need to be carried out. However, for the purposes of this appraisal the above assumptions are considered to be suitable 'order-of-magnitude' estimates.

6.5.12 The estimates of the Net Present Value (NPV) and the Benefit-to-Cost Ratio (BCR) for each option and sub-option are summarised in Table 6.5 below.

Table 6.5: Summary of Economic Appraisal Results

Scenario		NPV	BCR	Score
Option 1: New railway alignment	1a: with station at Leven	-£7.9m	0.81	✗
	1b: with stations at Leven & Muiredge/Cameron Bridge	-£11.8m	0.75	✗
Option 2: re-open existing railway alignment	2a: with station at Leven	£1.8m	1.06	O
	2b: with stations at Leven & Muiredge/Cameron Bridge	-£2.9m	0.92	✗
	2c: with station at Leven with freight facilities	£22.9m	1.80	✓✓
	2d: with stations at Leven & Muiredge/Cameron Bridge with freight facilities	£17.4m	1.51	✓✓
Option 3: New railway alignment to Markinch	3a: with station at Leven	-£7.7m	0.78	✗
	3b: with stations at Leven & Muiredge/Cameron Bridge	-£12.1m	0.69	✗
	3c: with station at Leven with freight facilities	£11.2m	1.31	✓
	3d: with stations at Leven & Muiredge/Cameron Bridge with freight facilities	£6.1m	1.15	O
Option 4: New BRT system to Markinch	4a: with station at Leven	£7.4m	1.44	✓
	4b: with stations at Leven & Muiredge/Cameron Bridge	£4.7m	1.24	✓
Option 5: On Street Bus priority	5a: A955 Route	£6.5m	2.26	✓✓✓
	5b: A915 Route	£6.5m	2.32	✓✓✓
	5c: Circular – A955 & A915 Routes	£4.1m	1.53	✓✓
	5d: A911 Route to Markinch Stn	£6.8m	2.39	✓✓✓
Option 6: Hovercraft / Ferry service	Same for both sub-options	-£8.2m	0.48	✗✗

Summary of the TEE Results

6.5.13 For the purposes of this appraisal both options in Option 6 are assumed to generate the same general level of benefits.

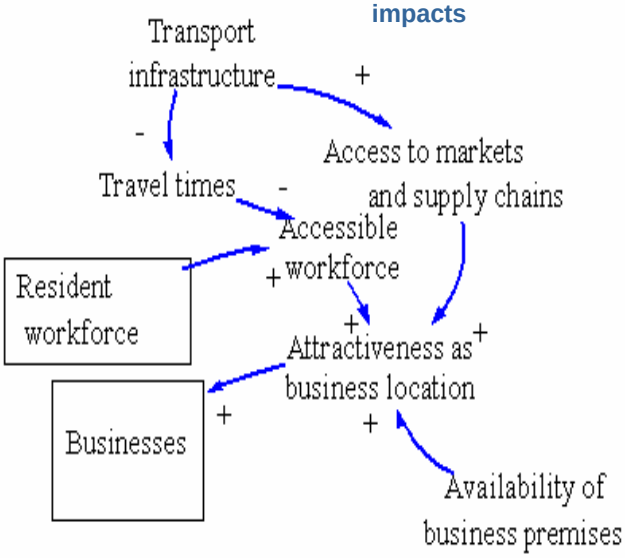
6.5.14 From the Table, it is evident that for the rail options to return a reasonable NPV and demonstrate a BCR well over 1.0, then the freight facilities must be included in the investment proposal. The BRT option 1a, returns better values of project worth than the equivalent rail options, largely because the capital costs are very much lower than for the rail options. However, the on-street bus options, with the exception of the circular route (A955-A915) have reasonably high NPV values, but because the costs associated with these options are so low, the BCR values are relatively very high, 2.0 or over, higher than for any of the other options.

Economic Activity and Location Impacts (EALIs)

6.5.13 This Section provides a summary of the Economic Activity and Location Impact (EALI) analysis. The aim of EALI analysis is to describe the impacts on the economy, in terms of the 'measuring rods' of income and / or employment of the different options. EALI analysis is intended to identify how and under what circumstances the proposal might have impacts on the economic performance of the Levenmouth area in different sectors, and to capture those economic impacts that Transport Economic Efficiency (TEE) appraisals do not capture.

6.5.15 In STAG, *"EALIs will be scoped qualitatively in the Part 1 [appraisal] in order to establish whether there is a need to undertake a detailed Part 2 appraisal."*[22] The potential for EALI impacts needs to be assessed in order to inform any subsequent Part 2 appraisal. These impacts may be gross (e.g. the economic impact on the study area) and net (e.g. the overall economic impact on Scotland as a whole).

Assessing the wider impacts



6.5.14 EALIs are of particular importance where the case for investment rests on economic development arguments. Investment in the local transport infrastructure and network increases access to employment, markets and supply chains, and reduces travel times and other costs, and so increases the attractiveness of the Levenmouth area for businesses and employment (Figure, right).

6.5.15 The economic aims of the scheme are several. By improving links to and from Levenmouth, opportunities exist to:

- Facilitate business access to markets and inputs (forward and backward linkages) by reducing the costs of transportation for those industries that would make use of the rail freight options;

[22] STAG, September 2003, section 8.7.16

- Reduce unemployment in the Levenmouth area by facilitating access to job opportunities elsewhere in the Fife region and in other parts of SEStran;
- Assist local businesses and services industries by securing the commitment by the local workforce to remain in the Levenmouth area, preserving the level of local expenditure of those who may otherwise consider moving away to be closer to their place of employment;
- Reduce business (and private) costs of travel by reducing congestion on the main roads in the Levenmouth area, availing a larger share of business expenditure on expansion in both (local) investment and employment; and
- Encourage inward investment.

6.5.16 In order to evaluate the impacts identified above, it is necessary to evaluate how transport relates to the main sectors, including industrial/manufacturing, retail, construction and public sectors. In particular, it is important to understand:

- What arrangements are in place with the current transport of goods and materials;
- How businesses access markets, customers and suppliers;
- The relationship between businesses' transport requirements and their productivity;
- Commuting patterns; and
- The land-use constraints businesses face.

6.5.17 It is key to identify whom the likely gainers and losers might be from improvements to the local transport network, where they are based and what their likely response is in terms of economic behaviour.

6.5.18 In the Levenmouth area, some of the stakeholders that are likely to directly benefit from investment in new transport infrastructure are, in the short term, the builders, materials suppliers and engineering firms contracted to construct or re-habilitate the infrastructure requirements of each of the options. In the longer term, however, they include:

- Local businesses that depend on freight movements such as Diageo, Donaldsons Timber merchants and Cameron Brig,
- Local businesses that depend on customers or employees for access from outside the area;
- Transport operators that would use or operate the new transport services;
- Local commuters and regional commuters; and
- Business based outside to region and who invest in the Levenmouth area.

6.5.19 There may be some displacement activity at the local level but this is unlikely to make a large impact on local business. Most of the displacement activity would be expected to occur on commuting patterns, and in the case of the rail options, the losers are likely to be bus companies haemorrhaging customers to the new rail services on the longer routes, and possibly to the hovercraft/ferry option across the Forth.

6.5.20 Some local transport hauliers under contract, to say, Diageo or the Distillery at Cameron Brig, may also disbenefit with the rail options if they start to lose contracts as a result of greater quantities of freight switching to rail. However, this impact is anticipated to be small, as it is understood at this point of time that these companies move the vast majority of

materiel, both supplies and finished products, under 'own account' arrangements (in-house transport fleet).

6.5.21 By removing existing local transport constraints, the potential overall net effect of improving the transport infrastructure and implementing new services is to permit expansion in the *production function* envelope of businesses in the Levenmouth area, allowing growth in the factor mix of employment and investment in Levenmouth itself. The challenge is to achieve this impact at least cost to public resources. It is expected that the rail options, with benefits that embrace reduced business costs to the largest players in the area, their scale of employment and assets, as well as broader commuting and business accessibility benefits would be expected to have a *moderate impact* with the EALI issues identified above. The bus options and hovercraft/ferry option with a greater proportion of benefits associated with business accessibility, and fewer with reduced business costs would be expected to have a *minor impact* in these terms.

6.6 Integration Appraisal

Planning Objectives

6.6.1 The following local *Planning Objectives* have been identified as nesting within the overall integration heading.

Government Objective:	To improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport.
Planning Objectives:	*No specific Planning Objective identified – appraisal will be against Government Objective*

Overview of the Integration Appraisal

6.6.2 In appraising the Government Objective STAG requires the consideration of:

- Transport integration;
- Transport land-use integration; and
- Policy integration.

Transport Integration

6.6.3 STAG makes clear that the TEE will capture most assessment of this sub-objective. Transport Integration needs only to be appraised if **both** of the following justifications apply:

- there is an identifiable impact on transport interchange; **and**
- aspects of this impact are not captured elsewhere in the appraisal (e.g. TEE).[23]

6.6.4 Transport Interchange as it affects people is subdivided by STAG into:

- services and ticketing; and
- infrastructure and information.

[23] STAG, section 9.2.1

Services and ticketing

6.6.5 The only concepts that STAG accepts may have an impact under this heading relate to "seamlessness" of movement or of ticketing. This must confer benefits additional to those of simple savings of time or money, such as greater convenience. STAG emphasises that the extent of this integration must be considerable and supported by shared-branding and whole-journey information.

6.6.6 The rail options being appraised will have an impact in terms of integration of services with the existing bus service network. Opportunities will arise within the Levenmouth area to share brand names, ticketing arrangements and to 'dove-tail' bus timetables with the rail timetables, and this is true for all the rail options being considered. The scale of integration suggested above is also true of the hovercraft/ferry option. This option would also provide a good opportunity to mesh together bus and hovercraft/ferry service timetables and ticketing, and also an opportunity for the new terminal to incorporate bus interchange facilities.

6.6.7 The BRT option will have a number of halts where services have the opportunity to synchronise timetables and ticketing with traditional local bus services in the Levenmouth area. However, synchronising with rail services would be with the existing rail network and occur outwith the area, so although there are benefits, these are more regional than specifically local. The priority bus option builds on improvements to the existing bus service network, so it is questionable whether this option presents any new identifiable service and ticketing opportunities that could not have been introduced independently of these improvements.

Infrastructure and Information

6.6.8 This relates to the physical attributes of an interchange site, and must be additional to those reflected in other parts of the appraisal. Again STAG emphasises the need for considerable integration before an appraisal can be considered under this sub-heading.

6.6.9 The rail options involving a new rail station will also have the opportunity for providing bus-rail interchange infrastructure to facilitate modal switch at the rail stations themselves. The hovercraft/ferry option would also provide an opportunity for the new terminal to incorporate bus interchange facilities.

6.6.10 The same is potentially true of the BRT option, although the scale of infrastructure required for interchange facilities are probably very limited to synchronise guided buses into the current traditional bus network. Any changes are more likely to be with services. No new infrastructure is required for the priority bus option to facilitate interchange, as the improvements are to services rather than infrastructure at points where passengers board and alight the services.

Appraisal of Transport Integration

6.6.11 The appraisal must be as objective as possible, with quantification of benefits if available. The methodology adopted here is that set out in GOMMMS[24], with the analysis based on an extension of GOMMMS Worksheet 8.1 to incorporate services and ticketing.

6.6.12 Table 6.6 overleaf shows the appraisal.

[24] GOMMMS Volume 2, section 8.2

Table 6.6: Transport Integration Appraisal

Transport Interchange Indicator	1a – 3d Rail options	4a – 5d BRT/On-Street Bus options	6a – 6b Hovercraft/Ferry options
Services & Ticketing			
Seamless Public Transport Network	Moderate	Minor	Minor
Seamless Ticketing	Moderate	Minor	Minor
Infrastructure & Information			
Waiting Environment	Moderate	Minor	Moderate
Level of Facilities	Moderate	Minor	Moderate
Level of Information	Moderate	Moderate	Moderate
Visible Staff Presence	Neutral	Neutral	Neutral
Physical Linkage for Next Journey	High	Minor	Minor
Assessment			
Overall Assessment of Impact	✓✓	✓	✓✓

✓✓✓	Major Beneficial Impact	O	Neutral Impact	✘	Minor Adverse Impact
✓✓	Moderate Beneficial Impact			✘ ✘	Moderate Adverse Impact
✓	Minor Beneficial Impact			✘ ✘ ✘	Major Adverse Impact

Appraisal of Transport Land Use Integration

6.6.13 For STAG Part 1 Appraisal, STAG requires *"a preliminary appraisal of the proposal's fit with established land use policy and environmental designations at a local, and where appropriate, national level … [to] allow any serious conflicts to be identified early and so avoid any wasted effort in working up a proposal which is not viable."*[25]

6.6.14 It is specifically aimed at determining whether land required is preserved for uses that are entirely incompatible with transport, although there is also a need to ensure that proposals fit with transport land-use policies of local authorities and the Scottish Government.

6.6.15 This section identifies potential land use impacts of the proposed Scheme. It includes baseline information and an assessment of the potential to promote connections between different land uses whilst promoting sustainable development principles.

6.6.16 There is a variety of different land use across the area within which the proposed transport schemes are situated. Much of the Levenmouth area to the north, surrounding Kennoway is hilly and dominated by arable and pastoral agricultural land. The coastal strip to the south-west, outside the nature reserves, is a relatively heavily built up residential area comprising the settlements of Buckhaven, East Wemyss, the Coal Town of Wemyss and West Wemyss. North-east of Levenmouth, past Lower Largs is also predominately agricultural land. There are also areas of land used for recreation such as golf courses and caravan parks, and the Fife Coastal Path passes through Buckhaven, Methil and Leven.

[25] STAG, sections 9.3.1 & 9.3.2

Scoping

6.6.17 A preliminary appraisal is usually carried out but the scope of this may be reduced where a transport proposal has been identified in the Development Plan. STAG recommends that in order to prevent unnecessary work within the assessment process the degree of detail required should be gauged[26].

6.6.18 The study area includes the land uses that will accommodate the proposed alignments of the rail, bus and hovercraft/ferry options. The assessment looks at residential, commercial, industrial and mixed uses, areas of open space, transport provision and other uses. It focuses on the interdependency between land use and transport proposals and assesses the combined effects of land use and transport against local land use and transport objectives[27]. The principal new land use developments are as follows:

Residential

- East Neuk – 500 houses, fairly dispersed;
- Sea Rd / Muir Edge – 1000 houses, a mix of high & low density dwellings;
- Aberhill / Lower Leven – 400 houses;
- A further 100 houses have been identified in the Local plan; and
- Other pockets of housing, possibly as much as 500 houses scattered throughout the area – although these are not as yet committed developments.

Commercial

- Construction of new 1125 square metre Aldi supermarket;
- Hawkshaw Retail Park (e.g. Argos, Focus);
- Extension to Sainsbury supermarket; and
- Renewable Energy Park.

6.6.19 There are also a number of other proposed developments, including 15 hectares devoted to business development, a primary school and a doctor's surgery.

6.6.20 Although the proposed transport improvements address the requirements of the planned new land-uses predicted in the Levenmouth area, each option would expect to have a different scale of impact with respect to these planned and committed developments.

6.6.21 The rail options involving new rail lines will undoubtedly require the greatest amount of land for implementation, but most of this requirement will be outside the immediate Levenmouth environment. The rail options involve the construction of at least one new station, which requires a considerable amount of land. However, the proposed rail station sites, such as those at Leven and Muiredge Development/Cameron Bridge, do not impact on the projected residential and commercial land-use requirements for these areas.

6.6.22 There is no discernable conflict between any of the rail and rail station development options and other identified land uses. However proximity of the rail facilities to new residential and retail land-use would be expected to add to the value of these properties and can be viewed as a proxy to successful land-use integration between complementary land-uses. Therefore the rail options would be expected to have a *moderate beneficial impact*.

6.6.23 There is no anticipated conflict between the two major bus options and existing projected land-use development, nor between these and the establishment of a terminal required for the hovercraft/ferry option. The proximity of new on-street bus facilities is not likely to influence the value of new housing or retail units, although the new BRT system could, and

[26] STAG, para 9.3.15
[27] STAG, para 9.3.18

the location of the hovercraft/ferry is too far from these projected land-use developments to influence the values of these. Therefore the on-street bus options and hovercraft/ferry options would be expected to have a *neutral beneficial impact,* whereas the BRT system could reasonably be expected to have a *minor beneficial impact*.

Policy Integration

6.6.24 This has been approached in two parts, including a *"simple check to see if the proposal is in harmony with the aims of wider government policies and national transport targets*."[28] The opportunity is also taken to briefly assess options against transport policies, such as the appropriate Local Transport Strategy and central government policies, before then turning to non-transport policies including:

- Health;
- Rural Affairs; and
- Transport Targets.

6.6.25 The Disability and Social Exclusion issues will be dealt with in the Accessibility and Social Inclusion section of this Chapter. It is also worthwhile to consider at this stage the relationship between such documentation as Structure Plans, Local Plans and Scottish Planning Policy statements on the one hand, and the options under initial appraisal, to avoid wasted work with proposals that are incompatible with land-use.

Transport Policies

6.6.26 Reference was made to the following statutory documents:

- Fife Local Transport Strategy[29];
- Fife Structure Plan (vs. 2);
- SEStran Regional Transport Strategy;
- Scottish Planning Policy statement (SPP) 17; and
- SPP1.

6.6.27 Transport improvements in the study area offer a major opportunity to implement local and strategic planning and transport policies, as a mechanism for promoting sustainable development. The proposals examined in this STAG Part 1 Appraisal would generally encourage a modal shift away from private car use, improve the quality of the environment, increase access for all to a public transport system serving areas of employment, housing and recreation and would encourage social inclusion.

6.6.28 In addition, the freight transport improvements offered by the proposed investment in the rail options in the study area offer a major opportunity to implement local and strategic planning and transport policies as a mechanism for promoting development on a more sustainable footing.

National, Regional and Local Level

6.6.29 The stakeholder feedback identified following the STAG workshop (including public authorities responsible for setting policies), highlighted a number of indicators relating to transport investment in the Levenmouth area. These are:

[28] STAG, section 9.4.2
[29] Local Transport Strategy, Fife Council, 2006

- Improve access to key services in terms of employment, education, health leisure and other transport modes in the local, regional and wider area for all residents in the Levenmouth;
- Improve the relative isolation (perceived and actual) in terms of accessibility criteria and the 20 year framework in the Structure Plan;
- Improve the relative (perceived and actual) level of connections to Fife and wider area;
- Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to rail;
- Encourage more sustainable travel for new and existing development;
- Provide a wider choice of travel mode, through the provision of and local integrated transport network;
- Make Levenmouth better integrated with the rest of Fife and wider area;
- By removing traffic from Levenmouth's roads, improving safety for all road users.

6.6.30 A number of these objectives are directly referred to both in the Fife Local Transport Strategy (LTS) and in the Structure Plan. For example reference is made in the LTS to:

- Promote efficient movement of freight and encourage transfer of goods from road to rail…...;
- To widen travel choice through the provision of integrated transport networks;
- Encourage more sustainable travel for new and existing developments;
- To work with passenger transport operators to develop an integrated public transport system; and
- To limit the growth in the use of driver only car trips, especially for commuting, by encouraging more use of public transport.

6.6.31 Clearly, there is a high degree of integration between the objectives as set out for this study and those determined in the LTS. However, in addition to these, they also reflect a number of policies expressed in the Fife Structure Plan (vs 2). The relevant ones are to:

- Develop a Coastal Development Zone along the North Forth Coastline from Rosyth to Leven – linking significant brownfield regeneration opportunities at Inverkeithing Bay and Methil with new proposed Strategic Development Areas at Levenmouth and Kirkcaldy East and West;
- Guide inward migration to Mid Fife in particular, to halt and reverse net out-migration and to assist in regenerating Mid Fife in accordance with the National Planning Framework;
- Focus major development on public transport interchanges and town centres well served by public transport, and to increase development densities in these areas; and
- Grow the energy sector with a focus on the Renewable Energy Park at Methil and the Green Energy Park at Westfield.

6.6.32 Scottish Planning Policy 17 Planning for Transport states in paragraph 7 that the planning system is a key mechanism for integration through supporting a pattern of development and re-development that:

- Supports economic growth and regeneration;
- Takes account of identified population and land use changes in improving accessibility to public services, including health services jointly planned with Health Boards;
- Promotes road safety and safety on public transport;
- Facilitates movement by public transport including provision of interchange facilities between modes;
- Encourages and facilitates freight servicing by rail or water;
- Provision of high quality public transport access, in order to encourage modal shift away from car use to more sustainable forms of transport, and to fully support those without access to a car;
- Effective management of motorised travel, within a context of sustainable transport objectives; and
- The infrastructure for modern electronic communication networks which support home-working, real time information on public transport and in-car information systems to reduce car commuting and congestion.

6.6.33 In addition, transport improvements in the study area are in accordance with 'Scottish Planning Policy 1: The Planning System' which has a principle of Sustainable Development which includes:

- Promoting regeneration and the full and appropriate use of land, buildings and infrastructure;
- Promoting the use of previously developed land and minimising greenfield development;
- Conserving important historic and cultural assets;
- Protecting and enhancing areas for recreation and natural heritage;
- Supporting better access by foot, cycle and public transport, as well as by car;
- Encouraging energy efficiency through the layout and design of development;
- Considering the lifecycle of development from the outset; and
- Encouraging prudent use of natural resources.

Summary of Appraisal

6.6.34 From the above policy review, it is clear that all options identified can be reasonably expected to compliment local and national policies. However, those options which provide opportunities for freight transport as well as public transport services, will naturally satisfy additional policy objectives identified in the policy review in this Section. Such options are the rail-based options, which have the ability to accommodate rail freight services. Hence, it is reasonable to assume that the rail-based options will have *major beneficial* impacts, whereas the other options would have *moderate beneficial* impacts.

Overall Appraisal against Government Objective for Integration

6.6.35 Taking account of the discussions set out so far in this Chapter, Table 6.7 summarises the results of the integration appraisals to present a matrix of conclusions for the Government Objective.

Table 6.7: Transport Integration Appraisal

Option	Transport Integration	Land-Use Transport Integration	Policy Integration	Overall Average Appraisal for Integration
Rail options	✓✓	✓✓	✓✓✓	✓✓
BRT options	✓	✓	✓✓	✓
On-Street Bus options	✓	O	✓✓	✓
Hovercraft/ferry	✓✓	O	✓✓	✓

6.7 Accessibility and Social Inclusion Appraisal

Planning Objectives

6.7.1 The following local *Planning Objectives* have been identified as nesting within the overall accessibility/social inclusion heading.

Government Objective:	To promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network.
Planning Objectives	Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.

Overview of the Accessibility/Social Inclusion Appraisal

6.7.2 STAG requires the consideration of two aspects as part of the Accessibility and Social Integration Government Objective, namely:

- Community accessibility; and
- Comparative accessibility.

6.7.3 STAG advises "*the scope and detail required in the accessibility analysis needs to be commensurate with the planning objectives*"[30]. STAG also states that *"quite simple measurement approaches should be adequate"* for appraising accessibility and identifying changes (improvements) as a result of new proposals. Hence, given the scale of the study and the STAG advice regarding scope, a qualitative approach has been undertaken.

Community Accessibility

6.7.4 This element of appraisal allows a focus on minority groups in society, and allows "*Social Inclusion policy [to] be informed by accessibility measures to ensure that all relevant people groups and trip purposes are considered*"[31]. For STAG Part 1 purposes a qualitative approach is adopted, looking at the potential benefits (or disbenefits) for public transport network coverage resulting from the provision of the various options. The appraisal for each option is set out below:

[30] STAG, paragraph 10.1.4
[31] STAG, paragraph 10.5.1

- ***Rail options*** – in terms of passenger transport improvements this option will open up alternative commuter and tourism access to the Levenmouth area from both the surrounding towns, Dunfermline and Edinburgh. Moreover, a number of the rail options also provide direct connections to the national rail network which significantly increases connectivity especially those sub-options which are direct rail services and do not involve an interchange at a nearby station. In addition, some of the rail sub-options also provide an opportunity to switch substantial volumes of road fright onto rail. By doing these rail options may generate substantial benefits and are therefore considered to have a ***major beneficial impact***;
- ***Bus/BRT options*** – the bus-based options would provide quicker, more direct, more frequent and more comfortable services between Levenmouth and the other major towns in Fife plus Edinburgh, and in doing so encourage shopping, commuting and other activities undertaken by bus. This encourages modal shift – and the reduction in traffic congestion in the area. In addition, some of the bus-based options involve additional services. However, the bus/BRT options do not facilitate freight movements as readily as some of the rail options and in this respect they can be reasonably expected to perform to a lesser extent than rail. Hence these options are considered to have a ***moderate beneficial impact***; and
- ***Hovercraft/ferry options*** – these options provide a direct and fast link between Levenmouth and Edinburgh, for commuters, shoppers, tourists and other visitors, although the transport analysis suggests that, due to the need for additional interchange and the somewhat lower demand for travel between the respective origins-destinations, this options is likely to have a smaller impact to the bus options in encouraging modal shift, helping to reduce current levels of congestion. However, the hovercraft option in particular may stimulate additional demand, particularly in its service inauguration and for a short time afterwards, owing to the relative novelty of this mode of transport. Hence given these points, this option is considered to have a ***minor beneficial impact***.

Comparative Accessibility

6.7.5 For STAG purposes this is divided into two further sub-headings:

- Impacts by People Group; and
- Impacts by Location.

6.7.6 For STAG Part 2 purposes a detailed examination of the impacts at very local levels (e.g. council wards) would be beneficial, but for the scoping purposes of Part 1 a wider and more qualitative approach has been adopted. The appraisal for the above criteria is set out below:

- Impacts by People Group – This looks at *the impact of the transport options on various groupings of individuals in society* (e.g. age group, socio-economic status, gender, ethnicity, and mobility status, as well as impacts split between car-owners and non car-owners). Enhancing the modal choice available to all Levenmouth residents provided by an expanded local public transport network will be beneficial to all people groups, without exception. Even car users will benefit. The only possible caveat is the fares terms arranged and whether there is a cost recovery component included in these to the extent that the fare rates penalise those unable to afford them such as the unemployed, the elderly and the lower socio-economic groups; and

- Impacts by Location – STAG states *"it is important to understand the locus of impact of transport investment. This is particularly when assessing … major network changes … [and] as a minimum the analysis should compare the impacts on designated areas of deprivation such as social inclusion partnership (SIP) areas or priority partnership areas."*[32]. There is little doubt that the scale and type of public transport investment proposed for the Levenmouth area will assist a broad range of beneficiaries. The rail options will assist commuters and those seeking work, those visiting further afield, tourists and for business, and will also assist bulk freight movements into and out of the area. The bus options will help the same broad categories of people as above with the notable exception of freight movements. The bus options would also help those making short trips within the Levenmouth area, either commuting, shopping or for other reasons. The hovercraft/ferry option will benefit commuter and business tidal flows between Edinburgh and the Levenmouth, and also visitors and tourists between the two areas.

6.7.7 Given the above arguments, it is reasonable to assume the appraisal results described in Table 6.8 below.

Table 6.8: Summary of Accessibility Appraisal

Option	Community Accessibility	Comparative Accessibility	Overall Appraisal
Rail options	✓✓✓	✓✓	✓✓✓
Bus/BRT options	✓✓	✓✓	✓✓
Hovercraft/Ferry options	✓	✓✓	✓

6.8 Implementability Appraisal

6.8.1 In addition to the 5 main Government objectives, STAG also recommends that the capability of delivering an option should also be considered. This can highlight any potential "implementabilty" problems with any proposal. The appraisal is summarised as follows:

- Technical Issues – all the options considered in this study are relatively straight forward since they are all based on standard civil engineering practices and have been successfully implemented elsewhere. However, the new rail alignment in options 1 and 3 will involve passing through some known mining grounds which could require special attention more so than the plans in option 2 which involve re-opening of the existing railway line which is not affected by mining works. In addition, the feedback from the stakeholder consultations including Government agencies, suggest that the new hovercraft/ferry options will require special attention due to difficult terrain in the dock area. Therefore, the new rail alignments and the hovercraft/ferry options are considered to be the most complicated to implement. The easiest options are considered to be the on-street bus options as they involve relatively modest new infrastructure;

[32] STAG, sections 10.8.1 to 10.8.3

- Operational Aspects – Leven is off the mainline therefore the issue of the train operation will be relatively straightforward to accommodate. In addition, if the Kirkcaldy services were extended to leven, this would remove the need for trains to terminate or wait at Kirkcaldy station which is on the East Coast Main Line (ECML). Furthermore, if the Edinburgh to Cowdenbeath services were also extended to Leven, only a very short section of this additional running mileage would involve using the ECML. It is envisaged that in either option only one additional unit will be required, because the turnaround time for both should be less than 1 hour and can be accommodated within current timetable requirements. It may be possible, under favourable scheduling conditions, that both options might be taken forward (providing a more attractive half-hour frequency to/from Leven) but with only one rather than two additional units being required. The latter, however, is subject to further timetabling analysis. Given these points, it is reasonable to assume the following impacts would apply to the options:
    - New Rail Alignment options : these would have a neutral impact since they have taken off the ECML the Kirkcaldy service but have introduced another junction. Overall, there is no benefit in terms of scheduling;
    - Re-open Rail Line options : this has the flexibility of more service scheduling options to implement as well as taking off waiting trains at Kirkcaldy from the ECML. Hence, these would have a slight positive impact;
    - BRT options : there are no operational issues with BRT and in fact there could arguably be greater running of services. Hence, these would have a slight positive impact;
    - On-Street Bus options : these are the same as BRT;
    - Hovercraft/Ferry options : the additional distance and unit impacts of these options are already considered in the economic appraisal. Overall, these would have a neutral impact; and

- Public Accessibility – the public consultation has shown there is significant public interest in re-instating the railway to Levenmouth. The vast majority of questionnaires received have called for a new railway-based solution to the accessibility issues of the area. However, a small minority of respondents have called for bus-based solutions, especially for more permanent bus systems such as bus rapid transit (BRT). There was little feedback on the hovercraft/ferry option. Hence, it is reasonable to assume that the railway options would score the highest, in terms of public acceptability, compared to the other options followed by the BRT option. The on-street bus options could reasonably be expected to score modestly but still positive, and since there have been no negative comments with the hovercraft/ferry option it is considered suitable to assume a neutral score for this option.

6.8.2 The above appraisal results are summarised in Table 6.9 overleaf.

Table 6.9: Summary of Implementability Appraisal

Option	Technical Issues	Operational Aspects	Public Accessibility
New Rail Alignment options	✘	O	✓✓✓
Re-open Rail Line options	✓	✓	✓✓✓
BRT options	✓	✓	✓✓
On-Street Bus options	✓✓	✓	✓
Hovercraft/Ferry options	✘	O	O

6.9 Appraisal against the Local Planning Objectives

6.9.1 The STAG Part 1 Appraisal includes an assessment of the options against the four local *Planning Objectives* identified in Chapter 4. This has been based on the estimates derived from the demand analysis as follows:

- Objective 1 (Connectivity) – estimated increases in public transport patronage;
- Objective 2 (Freight) – savings in HGV veh-kms from the road network; and
- Objective 3 (Sustainable Development) – public transport trips from new land-uses.

6.9.2 The appraisal results are summarised in Table 6.10 below.

Table 6.10: Summary of Local Planning Objectives Appraisal

Criteria	Rail options – New line	Rail options – re-opening	BRT options	On-Street Bus options	Hovercraft/ Ferry options
Objective 1 – Connectivity	✓✓✓	✓✓✓	✓✓	✓✓	✓
Objective 2 – Freight	✓	✓✓✓	O	O	O
Objective 3 – Sustainable Development	✓✓	✓✓	✓✓	✓	✓

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions of STAG Part 1 Appraisal

7.1.1 In accordance with normal STAG practice Appraisal Summary Tables have been prepared and are presented in Appendix F. The results are summarised in Table 7.1, using the following key.

Table 7.1: Summary of STAG Assessment

Criteria	Rail options – New line	Rail options – re-opening	BRT options	On-Street Bus options	Hovercraft/ Ferry options
Local Planning Objectives					
Objective 1 – Connectivity	✓✓✓	✓✓✓	✓✓	✓✓	✓
Objective 2 – Freight	✓	✓✓✓	O	O	O
Objective 3 – Sustainable Development	✓✓	✓✓	✓✓	✓	✓
Government Objectives					
Environment – Air Quality & noise	✓✓	✓✓✓	✓✓	✓	✓
Environment – Other	✘ ✘ ✘	✘ ✘	✘ ✘	O	✘ ✘
Safety	✓✓	✓✓	✓	✓	✓
Economy	✘	✓✓	✓	✓✓✓	✘ ✘
Integration	✓✓	✓✓	✓	✓	✓
Accessibility/Social Inclusion	✓✓✓	✓✓✓	✓✓	✓✓	✓
Implementability					
Technical Issues	✘	✓	✓	✓✓	✘
Operational Aspects	O	✓	✓	✓	O
Public Accessibility	✓✓✓	✓✓✓	✓✓	✓	O

Key:

✓✓✓ ✓✓ ✓	Major Beneficial Impact Moderate Beneficial Impact Minor Beneficial Impact	O ✘ ✘ ✘ ✘ ✘ ✘	Neutral Impact Minor Adverse Impact Moderate Adverse Impact Major Adverse Impact

7.2 Recommendations for the STAG Part 2 Appraisal

Preferred Options

7.2.1 Reviewing the summary results in Table 7.1 suggests the following:

Rail Based Options

7.2.2 In terms of the local *Planning Objectives*, the rail-based solutions would appear to perform very well, especially in terms of meeting the objectives for both passenger and freight transport. Similarly, in relation to the *Government Objectives* and the Implementability Analysis, the rail-based solutions perform well.

7.2.3 In terms of their return, the best performing options were those which involved re-opening the previously closed railway line rather than building a new alignment. This also has the minimal environmental impacts. Overall, therefore the rail-based options satisfy the objectives sufficiently to permit onward progression to STAG Part 2 Appraisal.

BRT/On-Street Bus Options

7.2.4 The bus-based solutions also appear to perform well in terms of the local *Planning Objectives*. However, these do not assist in taking forward the aspirations for more sustainable freight distribution. Notwithstanding this drawback, the on-street bus option appears to provide a range of worthwhile benefits to the local community, and in terms of economic return some of the on-street options performed the best (mainly due to the relatively low implementation costs). Similarly, in relation to the *Government Objectives* and the Implementability Analysis, the bus-based solutions perform well.

7.2.5 Hence it would appear worthwhile to consider some of the bus options in the next STAG Part 2 Appraisal phase of the study.

Hovercraft/Ferry Options

7.2.6 For both the local *Planning Objectives* and the *Government Objectives* the hovercraft/ferry options did not perform well and should not be considered further.

The Way Forward

7.2.7 It is clear from the foregoing that some of the rail-based and some of the bus-based options are worthy of further consideration.

7.2.8 Examination of the options has indicated that there are inter-relationships between these options. For example, the provision of additional local bus services essentially compliment the heavy rail system with its faster (limited stop) services, can facilitate improvements to the efficiency of the existing bus-based public transport provision along the A911, the A915 and the A955, and offer good opportunities for additional public transport penetration.

7.2.9 It is therefore recommended that consideration be given to combining the rail and on-street bus options into one “multi-modal” strategy to the transport issues in the area. The multi-modal solution could consist of the following elements:

- A new heavy rail service based on re-opening the previous railway line. This would have a new station with park-and-ride facilities at both Leven and Muiredge/Cameron Bridge, to cater for the extensive new land-use developments planned. In addition to passenger services, the railway line would be designed to accommodate rail freight services serving key organisations such as the Diageo Site and Methil Docks, where demand has been identified; and
- Since the rail line is unlikely to be delivered before 2015, on-street bus options could be a suitable short-term measure until the full heavy rail option (with freight facilities) is introduced. The on-street bus services linking Leven to Markinch railway station and Kirkcaldy appear to provide a number of benefits such as accessibility and connectivity to local areas and the railway network. Even though the on-street bus options do not meet all the planning objectives and do not return as much NPV as the rail re-opening option, it may be that, given they perform relatively well in other objectives for reasonable levels of expenditure, they be considered as part of the Do-Minimum scenario and included in the transport programmes for the local area. This may also require further cost analysis.

7.2.10 The multi-modal solution could fit in with other modes of travel which could be potentially enhanced in the future, although these might have to be the subject of further transport studies and STAG appraisals if required.

7.2.11 On a final point, it is worth noting that the capital cost estimates and demand/benefit forecast in this appraisal are somewhat conservative. This would suggest there could be an argument for further, more detailed, cost analysis and economic appraisals.

Appendix A

Workshop Minutes

Meeting Notes

*Job Title / Ref.:	Levenmouth Sustainable Transport Study	**Job No. S 100010** Project No.	
Subject of Meeting	STAG Workshop	Meeting No.: 1	Date & Time: 17-Mar-08 10:00
Attendees:	Marwan AL-Azzawi MA Scott Wilson Trond Haugen TH SEStran Alistair Clyne AC Fife Council Jane Findlay JF Fife Council Martin McGroarty MM Fife Council Alison Wood AW Fife Council Robin Edgar RE Fife Council	Venue: Fife Council offices	Notes By: Marwan AL-Azzawi
		Distribution: Attendees plus select members of the study team	

Item No.	NOTES	ACTION
1	**Introductions** TH gave introductions. The purpose of this workshop was to discuss the key issues for the STAG appraisal of travel options for Levenmouth. A STAG presentation was made by MA which was followed as the basis for discussions. These minutes reflect the items raised in the presentation	
2	**Current Transport Infrastructure & Services** After some discussion, the following was raised: • New bus station in Leven has given a positive feeling and increased passengers. This has resulted in some extensions of existing services but not an increase in frwequency. Tony McGray or Gary Moyes can supply data on bus statistics and operations information (JF to supply contacts); • Bus services – link to Coupar could be better served. Most services are commercially operated; • Cycling – there are some cycle lanes (e.g. Fife Coastal path) but the area is considered to be too far to cycle; • Mode choices – realistically these are considered to be (at present) bus or car. A new rail service would increase choices; • Other modes – there is DRT in Leven but this is primarily local. There is also dial-a-ride but this is also service local areas. The catchment area for the issues is much further, including extending eastwards; • new Markinch interchange has resulted in a change of travel patterns in the area which should be considered as a potential new station in Levenmouth could take a similar form as in Markinch; • car ownership is traditionally fairly low in the study area. There are many PT captured people; • the main roads are the A915 and A911: a) The A915 is the "Kirkcaldy Corridor" and is heavily congested in peak periods and has a bad accident problem. Speed is relatively good but there are a series of junctions [Checkbar Jnc, Percival Rd Jnc, Gallatown Rndbt & Redhouse Rndbt (on trunk road)] which are pinch-points and safety problems. AADT flows in the LTS are circa 15,000. JF to supply accident records, traffic data, LTS and 2004 Travel Diary data b) The A911 (Windygate bypass) is the "Glenrothes Corridor" and is similar to the A915. AADT flows in the LTS are circa 10,000. JF to supply accident records, traffic data, LTS and 2004 Travel Diary data • a STAG Part 1 & 2 was carried out for Redhouse Rndbt. JF to supply • access to Levenmouth – a roads-based STAG study was carried out. JF to supply a copy; • there are 4 potential freight users: a) Diageo have plans for dry bulk cargoes for distilling; b) Earl's Seat coal company is an Open cast site and also have plans. Part of their planning application agreed was for a 100% transfer of coal to go by rail. JF to supply a copy of the planning application; c) Donaldsons have plans for timber distribution; d) there is a Waste Recycling centre at Methil Bray	JF JF JF JF JF JF JF

Item No.	NOTES	ACTION
3	**Social Issues & Land-Use** After some discussion, the following was raised: • the Levenmouth area is perceived to be "off the beaten track". The image of the area is of concern; • there are significant plans for new land-use developments in the area. There is pressure for more developments which will further lead to increased traffic using unsuitable roads with knock-on effects of rising accidents, congestion and other impacts; • three developments have been identified (Sea Rd / Muir Edge), Abberhill / Lower Leven Valley & North Leven East); • there have been changes in social patterns. Ken Halley (Locality Manager) can supply details. JF to send contact details; and • given the land-use plans, it was agreed the assumed opening year in the STAG study of any new service/option would be 2013 and a design year of 2023	JF
4	**STAG Reference Case** After some discussion, the following were noted for inclusion in the reference case: • new road linking A915 (through Percival Rd) to the Dock area and Fife Energy Park; • Second Forth Crossing (assumed at 2016); • the projects in the SITCoS reference case; • a new hovercraft to Ocean terminal from Kirkcaldy. This is for passengers only; • a ferry from Burntisland to Granton (pax only); **New Land-Use Developments** After some discussion, the following were noted for inclusion in the appraisal: • East Neuk – 500 houses, fairly dispersed, potential for long-distance commuting distances, 30% affordable housing; • Sea Rd / Muir Edge – 1000 houses, a good mix of high & low density dwellings (50:50 split), 5% affordable housing, 15ha business areas, primary school, doctors surgery, retail for local market • Abberhill / Lower Leven – 400 houses (50:50 split for high:low density) and by up to 20 years there would be another 500 houses (albeit not committed). There is also a further 100 houses in the Local Plan and a 1125sqm Aldi supermarket. JF to supply copies of TA Reports and Travel Plans; and • Others – there are pockets of houses scattered around the area. These equate to 300 dwellings plus a further 200 private homes. There is also the Hawkshaw Retail Park (e.g. Argos, Focus) and the extension to Sainsbury's. AW to supply details and floor areas from Stuart Wilson	JF AW

Meeting Notes

Item No.	NOTES	ACTION
5	**SWOT Analysis** A general discussion was held about the potential SWOTs of a new service to/from and with the Levenmouth area ***Strengths*** • Provides more travel choice; • Provides direct links to wider area and rest of the country; • Boost image of area and changes the relative perceived isolation of the area from the national transport network; • Area becomes more accessible and attractive to affordable housing; • Widens the economic profile and catchment of the area; • Modal shift from cars & HGVS leading to environmental and other benefits; and • Encourage employment and inward investment ***Weaknesses*** • Could abstract from other PT modes; • Could be more attractive to work elsewhere impacting on local workforce availability; and • Potentially encouraging non-sustainable travel patterns (e.g. very long distance commuting) ***Opportunities*** • Helps regenerate area; and • Political and local support ***Threats*** • New road schemes (e.g. Redhouse) could reduce congestion and make road travel more attractive; • Other PT scheme/services could compete; and • Lack of capacity across Forth	
6	**Outline Planning Objectives** There was a general discussion on the form the planning objectives could take. These are only outline and not SMART as yet. They are intended for initial consideration and further refinement: ***Integration*** • making Levenmouth better integrated with the rest of Fife and wider area; ***Image*** • improve the relative (perceived and actual) level of connections to Fife and wider area; • improve the relative isolation (perceived and actual) in terms of accessibility criteria and the 20yr framework in the Structure Plan	
7	**Potential Options** There was a general discussion about potential options to appraise: • Rail link with a station at Leven and Cameron bridge (to serve developments & existing settlements). This needs to be a faster service and could accommodate rail freight. The study should also check if a link from Leven Town Centre to the Docks is also possible; • Bus-based should focus on bus priority (e.g. Redhouse to Gallatown). Variations include on-street with bus priority and segregated busway; • Travel Plan options with existing retail and Energy Park which could be used by local residents; • Extension of Kirkcaldy hovercraft (Ferry was not considered feasible due to terrain); • P&R linked to bus and rail options; and • Walking & cycling was seen too far and hence discounted	

Copy to:

Appendix B

Environmental Appraisal

LEGEND

- Option 1 - New railway alignment to Leven
- Option 2 - Re-open old railway line to Leven
- Option 3 - New railway alignment from Markinch to Leven
- Option 4 - Bus Rapid Transit (BRT) system
- Option 5 - On street bus
- Option 6 - Hovercraft or Ferry
- Ferry Terminal
- New Land - Use Development (e.g Sea Road / Muiredge)
- Possible Location of Station

Scott Wilson Scotland Ltd
23 Chester Street
Edinburgh
EH7 7EN
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FIGURE 4.1

Route Options

Scale: 1:30000

1. INTRODUCTION

This appraisal outlines the potential environmental impacts of the twenty packages that have been identified for the Levenmouth Transport Study. A number of initial consultations have been carried out and are reported below:

2. CONSULTATIONS

The following consultees where contacted:

- Fife Council – Development Services, Business & Strategy, Local and Community Policy;
- Fife Council – TAPIF Environmental Information Centre;
- Fife Council – Business & Strategy, Economic Development;
- Fife Council – Development, Promotion and Design;
- Fife Council – Locality Manager Buckhaven & Methil Localities;
- Fife Council – Environmental Services;
- NHS Travel Co-ordinator;
- Scottish Enterprise Fife;
- City of Edinburgh Council – Planning and Strategy;
- Scottish Natural Heritage (SNH);
- Scottish Environmental Protection Agency (SEPA);
- The Scottish Government – Director General Environment;
- The Scottish Government – General Economy;
- Health and Safety Executive (HSE);
- Scottish Water;
- Historic Scotland;
- Stagecoach in Fife;
- Moffat and Williamson; and
- Fife Chamber of Commerce and Enterprise Ltd.

To date responses have been received either in writing or verbally from SNH, SEPA, HSE, Stagecoach, Fife Council Development Services, Business & Strategy, Local and Community Policy and Fife Council Environmental Services. The responses are summarised in the table below:

Consultee	**Comments**
SNH	Key issues to be addressed will be the ecological impacts upon designated sites, protected species and habitats and provides details or the Site Link facility on their website. Other issues include Landscape and visual impacts; recreational impacts; siting, design and layout of planting and any built aspects; and proposed green network provision.
SEPA	Controlled Activities Regulations (CAR) license required for Ferry and Hovercraft Option.
Stagecoach	Cannot foresee how a Rail or BRT is affordable or best value. Suggest that identify likely pitch points on bus network; identify mitigation measures to avoid bus delays at pinch points; develop a through ticketing scheme; install a rail ticket sales point at Leven Bus Station;

	identify gaps in existing bus provision; and develop any bus services enhancements through a statutory quality partnership. Welcome waterborne options
Fife Councils Environmental Services	'suitable consideration of relevant transport option potential impacts on air quality and contaminated land issues should be undertaken in order to demonstrate compliance with both PAN 33 "*Development of Contaminated Land" and the appropriate statutory air quality objectives/standards*."'
Fife Council Development Services, Business & Strategy, Local and Community Policy	Options 3 and 4 would have adverse impacts on properties in built up area in Kennoway-Windygates. Option 1 would affect local plan designations. The Sea Road/Muiredge Development shown in Figure 1 is in wrong location.
HSE	No comments to make.

3. OPTIONS EXAMINED

The various options have been categorised into rail based options, bus based options and waterborne options and are nested below for presentation purposes, and are shown in Figure 4.1:

Rail Based options:

- Option 1a: New railway alignment with Station in Leven;
- Option 1b: New railway alignment with Station at Leven and Muiredge;
- Option 2a: Use existing railway with station at Leven;
- Option 2b: Use existing railway with station at Leven and Muiredge;
- Option 2c: Use existing railway with station at Leven with freight services;
- Option 2d: Use existing railway with station at Leven and Muiredge with freight services;
- Option 3a: New railway alignment Markinch to Leven with station at Leven;
- Option 3b: New railway alignment Markinch to Leven with station at Leven and Muiredge;
- Option 3c: New railway alignment to Markinch to Leven with station at Leven and freight services;
- Option 3d: New railway alignment to Markinch to Leven with station at Leven and Muiredge and freight services;

Bus Based Solutions:

- Option 4a: New guided bus/BRT system to Markinch with station at Leven;
- Option 4b: New guided bus/BRT system to Markinch with station at Leven and Muiredge;
- Option 5a: Bus priority along A955;
- Option 5b: Bus priority along A915;
- Option 5c: Circular services using both A955 and A915;
- Option 5d: Bus priority along A911;

Waterborne options:

- Option 6a: Hovercraft Service; and
- Option 6b: Ferry Service.

LEGEND

- Option 1 - New railway alignment to Leven
- Option 2 - Re-open old railway line to Leven
- Option 3 - New railway alignment from Markinch to Leven
- Option 4 - Bus Rapid Transit (BRT) system
- Option 5 - On street bus
- Option 6 - Hovercraft or Ferry
- Ferry Terminal
- New Land - Use Development (e.g Sea Road / Muiredge)
- Possible Location of Station

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Levenmouth STAG Study | Apr 08

FIGURE 4.1

Route Options

Scale: 1:30000

4. PLANNING CONTEXT AND APPRAISAL

4.1 Planning Context

The proposal offers a major opportunity to implement local and strategic policies, as a mechanism for promoting sustainable development. The proposal would encourage a more efficient use of the private car, improve the quality of the environment, and would increase access to a public transport system serving areas of employment, residence and recreation, therefore promoting and implementing social inclusion.

4.2 Environmental Constraints

There are a number of environmental constraints in the general study area including Conservations Areas in Dysart, Leven, West Wemyss, Coaltown of Wemyss, Kennoway and Markinch. There are a significant number of Listed Building located mainly in urban areas, as well as a small number of Scheduled Ancient Monuments. There are also several areas of Historic Gardens and Designed Gardens as well as Ancient Woodland in the study area. The most notably environmental receptor in the study area is the Firth of Forth SPA/SSSI/Ramsar site. These receptors are shown on the Environmental Constraints Plan – Figure 4.2.

4.3 Route Appraisal

The following appraisal addresses the twenty option packages identified above. The appraisal describes the likely environmental impacts for each option package, within the study area. The environmental appraisal is outlined within the Appraisal Summary Tables (AST).

A seven-point scale is used for an overall appraisal score within each AST. This is outlined below:

+++ major beneficial impact		−−− major adverse impact
++ moderate beneficial impact	**O** no impact	−− moderate adverse impact
+ minor beneficial impact		− minor adverse impact

5. ENVIRONMENTAL APPRAISAL

5.1 Rail Based Options

5.1.1 Option 1a: New Railway Alignment to Station at Leven.

Noise and Vibration

Noise and Vibration effects will be experienced during construction, and are likely to be major adverse for receptors next to the line. During operation the introduction of train movements into an area previously without a railway line will result in increased noise and vibration impacts. There will also be increased train movements on the existing section of the line which will cause some noise and vibration effects.

Air Quality

There are likely to be moderate adverse impacts associated with construction on local air quality, though these will be temporary. There will also be permanent adverse effects due to the introduction of train movements into an area previously without a railway line. There may be minor or negligible beneficial effects on the local roads due to a potential reduction in congestion at major pinch points.

The proposal will help facilitate a modest modal shift from road to rail, resulting in beneficial effects on greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. Pollution of watercourses may result from construction activities (sediment, oil spills) in addition to pollution during operation. Taking appropriate mitigation measures will minimise the risk. The potential for industrial contamination should be further investigated, as the option is located in a former mining area.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil. There is a risk of adverse impacts resulting from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

The Firth of Forth is located adjacent to the option at Levenmouth and is designated as a Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for disturbance to both the bird populations and habitats during the construction period associated with railway alignment, specifically in Leven and Methil. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required[1].

There would be direct impacts and landtake upon an area of ancient woodland in close proximity to Boreland. The proposal runs close to the Provisional Wildlife Site (PWS) at Wemyss Den, and would dissect the Windygates-Kennoway Wildlife site.

There is potential for impacts on the River Leven, and other smaller watercourses during construction of the railway improvements. Otters may be present along the River Leven, and possibly on some of the smaller watercourses, and construction activity has the potential to cause disturbance.

The removal of trees, scrub or woodland habitat to accommodate this proposal will result in the loss of breeding bird habitat. Red squirrels could also be present in any woodland habitat, as shown in existing records for the local area.

[1] S48 of the Conservation (Natural Heritage &c) Regulations 1994 requires the competent authority to undertake an Appropriate Assessment where it is considered that a development or project unrelated to the conservation management of that site is likely to have significant effects upon the features of the site for which the area has been designated. For the purposes of an Appropriate Assessment, the competent authority is defined as the organisation that grants consent for the scheme to proceed

Mature trees or buildings along the proposed route may provide suitable roost sites for bats. Therefore any proposals requiring removal or disturbance of mature trees or buildings may have negative impacts on any resident bat populations.

Badger setts and foraging habitat are likely to be present along the alignment, as the mix of woodland and agricultural habitats represent favourable conditions and there are existing records for the area.

Landscape

The option is located in the Coastal Hills and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with a number of small woodland copse areas some of which are designated as Ancient Woodland. The route also runs adjacent to a Historic Garden and Designed Landscape (HGDL) at Coaltown of Wemyss. The introduction of a new railway into the countryside will have major adverse landscape effects.

Visual Amenity

The zone of visual influence of the proposed scheme is relatively wide given the topography and that the majority of the proposed route is located in an area of open farmland.

Much of the route is located in countryside where there are few receptors but there are a number of sensitive residential receptors near to the sections of the scheme within the urban areas. These receptors will view the route from nearby and may experience major or moderate adverse impacts depending on their proximity to the line. There may be some loss of vegetation. The temporary effects during construction are likely to be major adverse for the nearby receptors.

Those residential receptors, people who work in the area and visitors who do not directly overlook the scheme will experience minor adverse impacts resulting from the introduction of a new railway line into the countryside and an increase in the hard area.

Land Use

Due to the predominately rural nature of the study area, the option would pass through existing areas of farmland and woodland. In the urban area of Levenmouth the option passes through a high density, mixed use area, consisting of residential, commercial, and industrial users. It is likely that vacant areas will be required during construction for work compounds, though these will be temporary, and may cause minor adverse effects at worst. It is likely that a number of buildings will require demolition, though the exact properties are not known at this point. Depending on the number and the status of these buildings (i.e. whether they are listed buildings or not), the effects are likely to be moderate-major adverse.

It is likely that land take will be required on a temporary basis for the location of construction compounds at the new station site, though this will result in minor adverse effects. Permanent land take will be required for the station itself, which will result in minor-moderate adverse effects, depending on the size and location of the station. The land take required for the construction and operation of the new railway line would cause a major adverse effect on the existing farmland as a result of the land take and severance.

Cultural Heritage

The proposed route option would run in close proximity to three listed buildings in the rural section of the route between Dysart and Cameron Bridge. The route would also run close or even through a number of National Monuments Records of Scotland (NMRS) sites. There are conservation areas at Dysart, West Wemyss, Coaltown of Wemyss and Leven. There would moderate-major adverse impacts upon these receptors both during construction and operation stages. There are a small number of Scheduled Ancient Monuments (SAMs) in the study area although they are relatively remote from the route option therefore impacts upon these receptors would be negligible.

If opportunities for a new station at Leven are explored, there are likely to be environmental impacts associated with the development, though this would depend on the exact station location. Once the detailed designs are known, it will be possible to determine the potential scale of impact and mitigation measures required. There is the possibility of impacts upon NMRS sites.

5.1.2 Option 1b: New Railway Alignment to Station at Leven and Muiredge Development.

This option is the same as Option 1a, but with an additional station at Muiredge. Therefore the environmental impacts are the same as Option 1a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during the construction of the station and are likely to be major adverse for any receptors next to the station site.

Air Quality

The construction of the station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.3 Option 2a: Use existing Railway line to Station in Leven.

Noise and Vibration

Noise and Vibration effects will be experienced during construction, though these are likely to be moderate adverse. During operation there is likely to be increased train movements, which may result in increased noise and vibration impacts, and noise impacts associated with the new

station. The re-introduction of trains to this currently redundant section of railway line could have a major adverse impact on adjacent residential receptors.

Air Quality

There are likely to be minor impacts associated with construction on local air quality, as construction would be minimal given that most of the existing rail infrastructure in place except for the railway station at Leven. Permanent effects are unlikely to be significant.

The proposal will help facilitate a modest modal shift from road to rail, resulting in beneficial effects on greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven, River Ore and other watercourses in relation to this proposed option. Pollution of watercourses may result from construction activities (sediment, oil spills), remobilised industrial contamination in addition to pollution during operation. Taking appropriate mitigation measures will minimise the risk. The potential for industrial contamination should be further investigated, as the option is located in a former mining area.

Geology and Soils

There are likely to be negligible adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil. This issue would be temporary.

Biodiversity

The Firth of Forth is located adjacent to the option at Levenmouth and is designated as a SPA, SSSI and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for disturbance to both the bird populations and habitats during the construction period associated with railway alignment, specifically in close proximity to the site in Leven and Methil. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required.

There is potential for impacts on the River Leven, River Ore, and potentially other watercourses during construction of the railway.

The proposal would dissect the Windygates-Kennoway Wildlife site, but uses an existing operational line, and no direct impacts would be expected. The line is in close proximity to the ancient woodland at Wemyss wood, but no direct impacts would be expected.

No direct impacts are expected upon protected species due to the use of the existing line.

Landscape

The option is located in the Lowland River Basin and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with some woodland areas.

There may be some loss of vegetation as the line has not been used for some time. The reintroduction of trains to this branch line would result in minor adverse effects.

Visual Amenity

The zone of visual influence of the proposed scheme is relatively wide given the topography and that the majority of the proposed route is located in an area of open farmland.

Much of the route is located in countryside where there are few receptors but there are a number of sensitive residential receptors near to the sections of the scheme within the urban areas who will view the route from nearby and may experience moderate adverse impacts. There may be some loss of vegetation.

There are residential receptors who do not directly overlook the scheme, local workers and visitors travelling through who will experience negligible effects.

Land Use

The existing land use of this option is as an existing railway corridor, although no freight trains have run in recent years the infrastructure of the line is completely intact. Surrounding land uses are primarily farmland and urban. No demolitions would be required therefore the impact of this option is negligible.

It is likely that land take will be required on a temporary basis for the location of construction compounds at the new station site, though this will result in minor adverse effects. Permanent land take will be required for the station itself, which will result in minor-moderate adverse effects, depending on the size and location of the station.

Cultural Heritage

There are a number of NMRS sites alongside the existing route. There is a SAM at Coal Town of Balgonie, Bridge over River Ore. There are also a number of listed buildings within Windygates. The construction of a railway station at Leven could have an impact upon cultural heritage features depending on the station location. Once the detailed designs are known, it will be possible to determine the potential scale of impact and mitigation measures required. There would be negligible impacts to these features during operation.

5.1.4 Option 2b: Use existing Railway line to Station in Leven and Muiredge.

This option is the same as Option 2a, but with an additional station at Muiredge. Therefore the environmental impacts are the same as Option 2a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during the construction of the station and are likely to be major adverse for any receptors next to the station site.

Air Quality

The construction of the station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.5 Option 2c: Use existing Railway line to Station in Leven with freight services.

This option is the same as Option 2a, but with an additional freight services running on the line. Therefore the environmental impacts are the same as Option 2a except for the following;

Noise and Vibration

There will be an increase in train movements on the existing section of the line which will increase the frequency of noise and vibration effects.

5.1.6 Option 2d: Use existing Railway line to Station in Leven and Muiredge with freight services.

This option is the same as Option 2a, but with an additional station at Muiredge and additional freight services running on the line. Therefore the environmental impacts are the same as Option 2a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during the construction of the station and are likely to be major adverse for any receptors next to the station site. There will be an increase in train movements on the existing section of the line which will increase the frequency of noise and vibration effects.

Air Quality

The construction of the station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.7 Option 3a: New Railway Alignment Markinch to Station at Leven.

Noise and Vibration

Noise and Vibration effects will be experienced during construction, and are likely to be major adverse for receptors next to the line. During operation the introduction of train movements into an area previously without a railway line will result in increased noise and vibration impacts. There will also be increased train movements on the existing section of the line which will cause some noise and vibration effects.

Air Quality

There are likely to be moderate adverse impacts associated with construction on local air quality, though these will be temporary. There may be permanent adverse effects due to the introduction of new train movements into an area of open countryside and also beneficial effects in the wider area due to a potential reduction in congestion at major pinch points.

The proposal will help facilitate a modest modal shift from road to rail, resulting in beneficial effects on greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. Pollution of watercourses may result from construction activities (sediment, oil spills) in addition to pollution during operation. Taking appropriate mitigation measures will minimise the risk. The potential for industrial contamination should be further investigated, as the option is located in a former mining area.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

The Firth of Forth is located adjacent to the option at Levenmouth and is designated as SPA, SSSI and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for disturbance to both the bird populations and habitats during the construction activity associated with railway alignment, specifically in close proximity to the site in Leven and Methil. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required.

The proposal would dissect the Windygates-Kennoway Wildlife site, resulting in a direct impact and loss of land and habitat.

There is potential for impacts on the River Leven, and other smaller watercourses during construction of the railway. Otters may be present along the River Leven, and possibly on some of the smaller watercourses, and construction activity has the potential to cause disturbance.

The removal of trees, scrub or woodland habitat to accommodate this proposal will result in the loss of breeding bird habitat. Red squirrels could also be present in any woodland habitat, as shown in existing records for the local area.

Mature trees or buildings along the proposed route may provide suitable roost sites for bats. Therefore any proposals requiring removal or disturbance of mature trees or buildings may have negative impacts on any resident bat populations.

Badger setts and foraging habitat are likely to be present along the alignment, as the mix of woodland and agricultural habitats represent favourable conditions and there are existing records for the area.

Landscape

The option is located in the Lowland River Basin, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and low lying. The area is predominately used for arable farming with some shelter belts. The Proposal would have a major adverse impact on the HGDL at Brunton House and could potentially have an impact upon the setting of Balgonie Castle SAM and HGDL. There would be major adverse impacts on the landscape associated with the introduction of a new railway into the countryside.

Visual Amenity

The zone of visual influence of the proposed scheme is relatively wide given the topography and that the majority of the proposed route is located in an area of open farmland.

Much of the route is located in countryside where there are few receptors but there are a number of sensitive residential receptors near to the sections of the scheme within the urban areas. These receptors will view the route from nearby and may experience major or moderate adverse impacts depending on their proximity to the line or the new station. There may be some loss of vegetation. The temporary effects during construction are likely to be major adverse for the nearby receptors.

Those residential receptors, people who work in the area and visitors who do not directly overlook the scheme will experience minor adverse impacts resulting from the introduction of a new railway line into the countryside and an increase in the hard area.

Land Use

Due to the predominately rural nature of the study area, the option would pass through existing areas of arable farmland and woodland. In the urban area of Levenmouth the option passes through a high density, mixed use area, consisting of residential, commercial, and industrial users. It is likely that vacant areas will be required during construction for work compounds, though these will be temporary, and may cause minor adverse effects. It is likely that a number of buildings will require demolition, though the exact properties are not known at this point. Depending on the number and the status of these buildings (i.e. whether they are listed buildings or not), the effects are likely to be moderate-major adverse.

It is likely that land take will be required on a temporary basis for the location of construction compounds at the new station site, though this will result in minor adverse effects. Permanent land take will be required for the station itself, which will result in minor-moderate adverse effects, depending on the size and location of the station. The land take required for the construction and

operation of the new railway line would cause a major adverse effect on the existing farmland as a result from the land take and severance.

Cultural Heritage

The proposed route option would run in close proximity to a number of listed buildings in the rural section of the route between Markinch and Windygates. There would moderate-major adverse impacts upon these receptors both during construction and operation. The route would also run close or even through a number of NMRS sites. There are conservation areas at Leven and Markinch, although these may be screened from the proposed option by other buildings. There are two SAMs in the study area for this option which may experience adverse effects depending on the detailed design of the scheme.

5.1.8 Option 3b: New Railway Alignment Markinch to Station at Leven and Muiredge.

This option is the same as Option 3a, but with an additional station at Muiredge. Therefore the environmental impacts are the same as Option 3a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during construction of the additional station. There will be noise impacts associated with the new station. This impact is likely to be minor adverse.

Air Quality

The construction of the station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.9 Option 3c: New Railway Alignment Markinch to Station at Leven with freights services.

This option is the same as Option 3a, but with an additional freight services running on the line. Therefore the environmental impacts are the same as Option 3a except for the following;

Noise and Vibration

There will be an increase in train movements on the existing section of the line which will increase the frequency of noise and vibration effects.

5.1.10 Option 3d: New Railway Alignment Markinch to Station at Leven and Muiredge with freight services.

This option is the same as Option 3a, but with an additional station at Muiredge and additional freight services running on the line. Therefore the environmental impacts are the same as Option 3a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during the construction of the station and are likely to be major adverse for any receptors next to the station site. There will be an increase in train movements on the existing section of the line which will increase the frequency of noise and vibration effects.

Air Quality

The construction of the station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.11 Option 4a: Guided Bus/ BRT System Markinch to Leven.

Noise and Vibration

Noise and Vibration effects will be experienced during construction which may be major adverse. During operation there will be new bus movements into an area of open countryside which will result in increased noise and vibration impacts. There will be noise impacts associated with the new station/terminus. Both these impacts are likely to be minor adverse.

Air Quality

There are likely to be moderate adverse impacts associated with construction on local air quality, though these will be temporary. There may be permanent adverse effects due to new bus movements. There may be may be minor or negligible beneficial effects in the wider area due to a potential reduction in congestion at major pinch points.

The proposal will help facilitate a modest modal shift from road to rail, resulting in beneficial effects on greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. Pollution of watercourses may result from construction activities (sediment, oil spills), in addition to pollution during operation. Taking appropriate mitigation measures will minimise the risk. The potential for industrial contamination should be further investigated, as the option is located in a former mining area.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work required for the guided bus route and other bus related infrastructure, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

The Firth of Forth is located adjacent to the option at Levenmouth and is designated as a SPA, SSSI and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for disturbance to both the bird populations and habitats during the construction activity associated with the scheme, specifically in Leven and Methil. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required.

The proposal would dissect the Windygates-Kennoway Wildlife site, resulting in a direct impact and loss of land and habitat.

There is potential for impacts on the River Leven, and other smaller watercourses during construction of the route. Otters are likely to be present along the River Leven, and possibly on some of the smaller watercourses, and construction activity has the potential to cause disturbance.

The removal of trees, scrub or woodland habitat to accommodate this proposal will result in the loss of breeding bird habitat. Red squirrels could also be present in any woodland habitat, as shown in existing records for the local area.

Mature trees or buildings along the proposed route may provide suitable roost sites for bats. Therefore any proposals requiring removal or disturbance of mature trees or buildings may have negative impacts on any resident bat populations.

Badger setts and foraging habitat are likely to be present along the alignment, as the mix of woodland and agricultural habitats represent favourable conditions and there are existing records for the area.

Landscape

The option is located in the Lowland River Basin, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and low lying. The area is predominately used for arable farming with some shelter belts. The Proposal may have an adverse impact on the HGDL at Brunton House and could potentially have an impact upon the setting of Balgonie Castle SAM and HGDL. There would be adverse impacts on the landscape associated with the introduction of a guided bus route into the countryside, the station/terminal and related infrastructure (bus stops/shelters).

Visual Amenity

The zone of visual influence of the proposed scheme is relatively wide given that the majority of the proposed route is located in an area of open farmland.

There are a significant number of sensitive residential receptors adjacent to the scheme that overlook the route from close range and will experience moderate adverse impacts including the introduction of a new road to the rear of their properties in addition to the existing one at the front, intensification of use, overlooking and loss of vegetation. However the negative effects should be balanced by taking account of the former use of this feature as a railway. The temporary effects during construction are likely to be major adverse.

The majority of residential receptors who do not directly overlook the scheme will experience minor adverse and positive impacts. There will be local minor beneficial effects of tidying up specific sites but minor adverse impacts resulting from the introduction of a new railway line and an increase in the hard area.

There are a large number of receptors who work in the area with low sensitivity who will experience minor adverse and beneficial impacts.

Visitors and tourists, and people travelling through the area will perceive the scheme as part of a general upgrade of the image of the area.

There may be minor local changes as a result of the introduction of any bus-related infrastructure (bus stops/shelters) but the effects on specific receptors cannot be assessed at this stage.
The zone of visual influence of the proposed scheme is relatively wide given the topography and that the majority of the proposed route is located in an area of open farmland.

Much of the route is located in countryside where there are few receptors but there are a number of sensitive residential receptors near to the sections of the scheme within the urban areas. These receptors will view the route from nearby and may experience adverse effects depending on their proximity to the guided bus route or the new terminus/station. There may be some loss of vegetation. The temporary effects during construction are likely to be moderate adverse for the nearby receptors.

Those residential receptors, people who work in the area and visitors who do not directly overlook the scheme will experience minor adverse impacts resulting from the introduction of a new guided bus route into the countryside and an increase in the hard area.

Land Use

Due to the predominately rural nature of the study area, the option would pass through existing areas of arable farmland and woodland. In the urban area of Levenmouth the option passes through a high density, mixed use area, consisting of residential, commercial, and industrial users. It is likely that vacant areas will be required during construction for work compounds, though these will be temporary, and may cause minor adverse effects. It is likely that a number of buildings will require demolition, though the exact properties are not known at this point. Depending on the number and the status of these buildings (i.e. whether they are listed buildings or not), the effects are likely to be moderate-major adverse.

It is likely that land take will be required on a temporary basis for the location of construction compounds at the new bus station site, though this will result in minor adverse effects. Permanent land take will be required for the bus station/terminal itself, which will result in minor-moderate

adverse effects, depending on the size and location of the bus station. The land take required for the construction and operation of the new guided bus alignment would cause a major adverse effect on the existing farmland as a result from the land take and severance. The construction of the route at Windygates next to the A916 could result in the demolition of residential properties thereby causing a moderate-major adverse impact.

Cultural Heritage

The proposed route option would run in close proximity to a number of listed buildings in the rural section of the route between Markinch and Windygates. The route would also run close or even through a number of NMRS sites. There are conservation area at Leven and Markinch. There would moderate-major adverse impacts upon these receptors both during construction and operation. There are two SAMs in the study area option and impacts upon these receptors are expected to be moderate.

5.1.12 Option 4b: Guided Bus/ BRT System Markinch to Leven and Muiredge.

This option is the same as option 4a, but with an additional bus station at Muiredge. Therefore the environmental impacts are the same as option 4a except for the following;

Noise and Vibration

Noise and Vibration effects will be experienced during the construction of the bus station and are likely to be moderate adverse for any receptors next to the station site.

Air Quality

The construction of the bus station is likely to have adverse effects during construction.

Geology and Soils

There are likely to be minor-moderate adverse impacts during the construction of the bus station site associated with groundbreaking work, and the potential removal of spoil.

Land Use

It is likely that land take will be required on a temporary basis for the location of construction compounds at the additional station site, though this will result in minor adverse effects Permanent land take will be required for the additional station, which will result in minor-moderate adverse effects, depending on the size and location of the station.

5.1.13 Option 5a: Bus Priority along A955

Noise and Vibration

There are likely to be negligible impacts associated with this option as little construction would be required and the A955 is already used by traffic. Construction would be required for a signal control system which gives buses priority at junctions. This would lead to temporary moderate adverse impacts. During operation there would be minor-moderate adverse impacts resulting from traffic stop starting.

Air Quality

There are likely to negligible impacts to local air quality during construction, though these will be temporary. Permanent effects are unlikely to be significant, though may be minor adverse due to an increase in slow moving traffic at junctions.

It is unlikely that there will be any significant effects as a result of this option, though there may be negligible beneficial effects on local air quality and greenhouse gas emissions as a result of a minor modal shift from private car to public transport.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. There is likely to be negligible-minor impacts as minimal construction would be required, although the construction of signal priority systems may have the potential to effect groundwater and any nearby watercourses through pollution and sediment discharges.

It is unlikely that there will be any impacts upon water resources in relation to this option. However there is potential for minimal increases in pollution associated with the operation of the new bus service and pollution to watercourses in association with the construction of bus-related infrastructure (bus stops/shelters). Taking appropriate mitigation measures will minimise the risk.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work required for the signal control systems and other bus related infrastructure, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

There are no direct or indirect impacts expected upon any biodiversity receptors as a result of the implementation of this scheme.

Landscape

The option is located in the Coastal Hills, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with a number of small woodland copse areas some of which are designated as Ancient Woodland. The A955 also runs adjacent to a HGDL at Coaltown of Wemyss. The Wemyss Coast AGLV is nearby but would not be affected by this scheme.

There would be negligible impacts on the landscape as the bus would be utilising an existing transport route.

Visual Amenity

There would be negligible impacts on the visual amenity of the area as the bus would be utilising an existing transport route.

Land Use

The A955 is already in use as a public highway for private and public vehicles, therefore the introduction of an additional bus service would have a negligible impact. The surrounding land uses are predominately rural and residential.

Cultural Heritage

There are SAMs at Ravencraigs and Macduff Castle near to the A955. There are a number of listed buildings in the study area some directly adjacent to the A955 and conservation areas in Dysart, West Wemyss and Coaltown of Wemyss. The A955 is already used as a public highway for private and public vehicles therefore the introduction of an additional bus service is likely to have a negligible impact on nearby cultural heritage receptors, although the potential remains to adversely impact on unknown archaeological artefacts during construction of the signal control system.

5.1.14 Option 5b: Bus Priority along A915

Noise and Vibration

There are likely to be negligible impacts associated with this option as little construction would be required and the A915 is already used by traffic. Construction would be required for a signal control system which gives buses priority at junctions. This would lead to temporary moderate adverse impacts. During operation there would be minor-moderate adverse impacts resulting from traffic stop starting.

Air Quality

There are likely to negligible impacts to local air quality, though these will be temporary. Permanent effects are unlikely to be significant, though may be minor adverse due to an increase in slow moving traffic at junctions.

It is unlikely that there will be any significant effects as a result of this option, though there may be negligible beneficial effects on local air quality and greenhouse gas emissions as a result of a minor modal shift from private car to public transport.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. There is likely to be negligible-minor impacts as minimal construction would be required, although the construction of signal priority systems may have the potential to effect groundwater and any nearby watercourses through pollution and sediment discharges.

It is unlikely that there will be any impacts upon water resources in relation to this option. However there is potential for minimal increases in pollution associated with the operation of the new bus service and pollution to watercourses from the construction of bus-related infrastructure (bus stops/shelters). Taking appropriate mitigation measures will minimise the risk.

Geology and Soils

There are likely to be minor adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

There are no direct or indirect impacts expected upon any biodiversity receptors as a result of the implementation of this scheme.

Landscape

The option is located in the Coastal Hills, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with a number of small woodland copse areas some of which are designated as Ancient Woodland.

There would be negligible impacts on the landscape as the bus would be utilising an existing transport route.

Visual Amenity

There would be negligible impacts on the visual amenity of the area as the bus would be utilising an existing transport route.

Land Use

The A915 is already in use as a public highway for private and public vehicles, therefore the introduction of an additional bus service would have a negligible impact. The surrounding land uses are predominately rural and residential.

Cultural Heritage

There are a number of listed buildings in the study area some directly adjacent to the A915 and conservation areas in Dysart, West Wemyss and Coaltown of Wemyss. The A915 and A955 are used as a public highway for private and public vehicles therefore the introduction of an additional bus service is likely to have a negligible impact on nearby cultural heritage receptors, although the potential remains to adversely impact on unknown archaeological artefacts during construction of the signal control system.

5.1.15 Option 5c: Circular service using both the A955 and A915

Noise and Vibration

There are likely to be negligible impacts associated with this option as little construction would be required and the A915 and A955 are already used by traffic. Construction would be required for a signal control system which gives buses priority at junctions. This would lead to temporary moderate adverse impacts. During operation there would be minor-moderate adverse impacts resulting from traffic stop starting.

Air Quality

There are likely to negligible impacts to local air quality, though these will be temporary. Permanent effects are unlikely to be significant, though may be minor adverse due to an increase in slow moving traffic at junctions.

It is unlikely that there will be any significant effects as a result of this option, though there may be negligible beneficial effects on local air quality and greenhouse gas emissions as a result of a minor modal shift from private car to public transport.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. There is likely to be negligible-minor impacts as minimal construction would be required, although the construction of signal priority systems may have the potential to effect groundwater and any nearby watercourses through pollution and sediment discharges.

It is unlikely that there will be any impacts upon water resources in relation to this option. However there is potential for minimal increases in pollution associated with the operation of the new bus service and pollution to watercourses in association with the construction of bus-related infrastructure (bus stops/shelters). Taking appropriate mitigation measures will minimise the risk.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work required for the signal control systems and other bus related infrastructure, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

There are no direct or indirect impacts expected upon any biodiversity receptors as a result of the implementation of this scheme.

Landscape

The option is located in the Coastal Hills, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with a number of small woodland copse areas some of which are designated as Ancient Woodland. The A955 also runs adjacent to a HGDL at Coaltown of Wemyss. The Wemyss Coast AGLV is close to this option but would not be affected by the scheme.

There would be negligible impacts on the landscape as the bus would be utilising an existing transport route.

Visual Amenity

There would be negligible impacts on the visual amenity of the area as the bus would be utilising an existing transport route.

Land Use

The A915 and A955 are already is use as a public highway for private and public vehicles, therefore the introduction of an additional bus service would have a negligible impact. The surrounding land uses are predominately rural and residential.

Cultural Heritage

There are SAMs at Ravencraigs and Macduff Castle near to the A955. There are a number of listed buildings in the study area some directly adjacent to the A915 and A955 and conservation areas in Dysart, West Wemyss and Coaltown of Wemyss. The A915 and A955 are used as a public highway for private and public vehicles therefore the introduction of an additional bus service is likely to have a negligible impact on nearby cultural heritage receptors, although the potential remains to adversely impact on unknown archaeological artefacts during construction of the signal control system.

5.1.16 Option 5d: Bus Priority along A911 to Markinch/Glenrothes

Noise and Vibration

There are likely to be negligible impacts associated with this option as little construction would be required and the A911 is already used by traffic. Construction would be required for a signal control system which gives buses priority at junctions this would led to temporary moderate adverse impacts. During operation there would be minor-moderate adverse impacts resulting from traffic stop starting.

Air Quality

There are likely to negligible impacts to local air quality, though these will be temporary. Permanent effects are unlikely to be significant, though may be minor adverse due to an increase in slow moving traffic at junctions.

It is unlikely that there will be any significant effects as a result of this option, though there may be negligible beneficial effects on local air quality and greenhouse gas emissions as a result of a minor modal shift from private car to public transport.

Water Quality, Drainage and Flood Defence

There is potential for pollution to the Firth of Forth, the River Leven and other watercourses in relation to this proposed option. There is likely to be negligible-minor impacts as minimal construction would be required, although the construction of signal priority systems may have the potential to affect groundwater and any nearby watercourses through pollution and sediment discharges.

It is unlikely that there will be any impacts upon water resources in relation to this option. However there is potential for minimal increases in pollution associated with the operation of the new bus service and pollution to watercourses in association with the construction of bus-related infrastructure (bus stops/shelters). Taking appropriate mitigation measures will minimise the risk.

Geology and Soils

There are likely to be minor adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

There are no direct or indirect impacts expected upon any biodiversity receptors as a result of the implementation of this scheme.

Landscape

The option is located in the Coastal Hills, Lowland Dens and Urban Landscape Character Types of the Fife Landscape Character Assessment. The landscape is relatively flat and slopes gradually towards the Firth of Forth. The area is predominately used for arable farming with a number of small woodland copse areas some of which are designated as Ancient Woodland. The option is close to Balgonie Castle SAM and HGDL.

There would be negligible impacts on the landscape as the bus would be utilising an existing transport route.

Visual Amenity

There would be negligible impacts on the visual amenity of the area as the bus would be utilising an existing transport route.

Land Use

The A911 is already in use as a public highway for private and public vehicles, therefore the introduction of an additional bus service would have a negligible impact. The surrounding land uses are predominately rural and residential.

Cultural Heritage

There are a number of listed buildings in the study area some directly adjacent to the A911 and conservation areas in Leven and Markinch. The A911 is used as a public highway for private and public vehicles therefore the introduction of an additional bus service is likely to have a negligible impact on nearby cultural heritage receptors, although the potential remains to adversely impact on unknown archaeological artefacts during construction of the signal control system.

5.1.17 Option 6a: Hovercraft

Noise and Vibration

There are likely to be adverse impacts associated with this option as the construction of a Hovercraft terminal would be required.

The operation of a hovercraft would result in the moderate adverse noise and vibration impacts to nearby receptors.

Air Quality

There are likely to be impacts to local air quality during construction, though these will be temporary. Permanent adverse effects are unlikely to be significant, though there may be beneficial effects in the wider area due to a potential reduction in congestion at major pinch points.

Global air quality will not be significantly affected, though there is likely to be negligible beneficial impacts as a result of a decrease in congestion, which will result in a reduction of greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There would be impacts owing to the construction of a hovercraft terminal /car park. This is likely to lead to temporary impacts on the Firth of Forth SPA/SSSI/Ramsar.

In terms of operation there could be adverse impacts resulting from pollution discharges into the Firth of Forth from the Hovercraft.

Geology and Soils

There are likely to be minor-moderate adverse impacts during construction associated with groundbreaking work, and the potential removal of spoil at the site of the Hovercraft terminus. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

The Firth of Forth is designated as a SPA, SSSI and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for significant direct disturbance to both the bird populations and habitats during the construction activity associated with railway alignment, and during the operation of the ferry or hovercraft. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required.

Landscape

The landscape at Levenmouth is urban and coastal. This option will not change the character of the landscape. The introduction of any Hovercraft related infrastructure (terminal) will not have significant effects. There would be negligible impacts on the landscape.

Visual Amenity

The construction of the terminal may cause temporary adverse effects to nearby receptors. It is unlikely that there would be major operational effects and the scheme would introduce an interesting new feature.

Land Use

The existing use at Levenmouth harbour is predominantly industrial/commercial with activity linked to the dockside location. The Hovercraft option would require the use of the beach area at Levenmouth. This would result in land take from part of the coast for the construction of a

hovercraft terminal, and subsequently would lead to a moderate adverse impact as the result of land take.

Cultural Heritage

Impacts upon cultural heritage as a result of waterborne options will depend on detailed designs and exact locations of the docking locations and construction site compounds. There are a significant number of NMRS sites, which may experience negative impacts such as severance or impacts upon setting during construction and operation.

5.1.18 Option 6b: Ferry.

Noise and Vibration

There are likely to be adverse impacts associated with this option as the construction of a Ferry terminal would be required.

The operation of a Ferry would result in negligible impacts to nearby receptors.

Air Quality

There are likely to be impacts to local air quality during construction, though these will be temporary. Permanent adverse effects are unlikely to be significant, though there may be beneficial effects in the wider area due to a potential reduction in congestion at major pinch points.

Global air quality will not be significantly affected, though there is likely to be negligible beneficial impacts as a result of a decrease in congestion, which will result in a reduction of greenhouse gas emissions.

Water Quality, Drainage and Flood Defence

There is likely to be negligible impacts for the Ferry option is likely to be built on an area of existing hardstanding. Dredging operations at Levenmouth Harbour and the approach would be required in order to accommodate a ferry service. This is likely to lead to temporary moderate-major impacts on the Firth of Forth SPA/SSSI/Ramsar.

In terms of operation there could be minor adverse impacts resulting from pollution discharges into the Firth of Forth from the Ferry.

Geology and Soils

With regard to the development of a Ferry service there are likely to be minor dverse impacts during construction associated with groundbreaking work, and the potential removal of spoil at the site of the Ferry terminus. Additional adverse impacts may result from the disturbance of contaminated land. Both these issues will be temporary.

Biodiversity

The Firth of Forth is designated as a SPA, SSSI and Ramsar site. The Firth of Forth SPA supports wintering and post-breeding (passage) bird populations of international importance and the coastal habitats are of national importance. There is the potential for significant direct

disturbance to both the bird populations and habitats during the construction activity associated with railway alignment, and during the operation of the ferry or hovercraft. Where there is potential for the integrity of European designated sites (e.g. the Firth of Forth SPA) to be adversely affected, an Appropriate Assessment (AA) may be required.

Landscape

The landscape at Levenmouth is urban and coastal. This option will not change the character of the landscape. The introduction of any Ferry-related infrastructure (terminal) will not have significant effects. There would be negligible impacts on the landscape.

Visual Amenity

The construction of the terminal may cause temporary adverse effects to nearby receptors. It is unlikely that there would be major operational effects and the scheme would introduce an interesting new feature.

Land Use

The existing use at Levenmouth harbour is predominantly industrial/commercial with activity linked to the dockside location. The Ferry option would require the use of the docks area at Levenmouth. Land take from part of the docks for the construction of a ferry terminal would have a negligible impact.

Cultural Heritage

Impacts upon cultural heritage as a result of waterborne options will depend on detailed designs and exact locations of Ferry docking locations and construction site compounds. There are a significant number of NMRS sites, which may experience negative impacts such as severance or impacts upon setting during construction and operation.

Appendix C

Transport Analysis Technical Note

SESTRAN & FIFE COUNCIL

LEVENMOUTH SUSTAINABLE TRANSPORT STUDY

TECHNICAL NOTE ON THE TRANSPORT ANALYSIS

SESTRAN & FIFE COUNCIL

LEVENMOUTH SUSTAINABLE TRANSPORT STUDY

TECHNICAL NOTE ON THE TRANSPORT ANALYSIS

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1 INTRODUCTION

This report summarises the transport analysis and outline demand modelling for the proposals for improving transport services in the Levenmouth area. Six core options to improve public transport have been identified in a STAG Part 1 Appraisal, some of which have a number of variations. This brief Technical Note summarises the estimates of passenger demands, revenues and network benefits and associated restricted cost/benefit analysis of the proposals.

2 OPTIONS EXAMINED

The STAG Part 1 Appraisal[1] identified the following transport options:

- Option 1 (New Railway Alignment) – this includes 2 variations (sub-options), one with a station at Leven and a second with 2 stations (one at Leven and another at Muiredge/Cameron Bridge to serve a major new land-use development). This option only has passenger rail services;
- Option 2 (Re-open the Previous Rail Line) – this has 4 variations (sub-options). The first has a station at Leven and the second has 2 stations (at Leven and at Muiredge/Cameron Bridge as per Option 1). Both these sub-options were tested with passenger rail services only, however two more variations of these sub-options were tested with the introduction of rail freight services (as well as the passenger rail service);
- Option 3 (New Railway Line to Markinch Station) – this has the same number of variations (sub-options) as Option2, however the railway links to Markinch Station rather than linking directly to the rail network;
- Option 4 (Bus Rapid Transit) – as with Option 1 this includes 2 variations/sub-options (a station at Leven only and a station at both Leven and Muiredge/Cameron Bridge to serve a new land-use developments. This option only has passenger rail services;
- Option 5 (On-Street Bus Priority) – this includes 4 variations (sub-options). The first includes on-street bus priority along the A955 'coastal route' starting at the new bus station in the centre of Leven and through to Kirkcaldy, continuing on the A921, passed Dysart, and onto the bus station in the centre of Kirkcaldy, a total distance of some 15km. The second sub-option includes bus priority on the A915 instead of the A955, between Leven bus station and Kirkcaldy bus station. The third sub-option introduces bus priority measures on a circular route between Leven and Kirkcaldy stations, using both the A955 and A915. The fourth sub-option involves bus priority services to Markinch/Glenrothes along the A911; and
- Option 6 (Hovercraft/Ferry) – this option envisages a new hovercraft service from Methil Docks and represents an extension of the Firth of Forth Hovercraft service currently operating between Kirkcaldy and Portabello in Edinburgh. There will also be a new purpose-built terminal at the docks. There is another sub-option which substitutes the hovercraft vessel for a ferry, and hence in terms of demand modelling both were assumed to be the same and generate similar levels of demand and network impacts.

[1] Levenmouth Sustainable Transport Study – STAG Part 1 Appraisal, Scott Wilson, May 2008

3 PASSENGER DEMAND ESTIMATES

3.1 Overview

The estimates of potential demands for the new services were made up of the following:

- Trips generated by the new public transport services;
- Trips generated from proposed new land-use developments; and
- Demand for Park-and-Ride (including modal shift from car).

With each option, there will also be area-wide benefits. These have been estimated using the calculated changes in vehicle-kilometres (veh-kms) of travel removed from the road network.

3.2 Trips and Revenue from the New Services

To estimate the annual demand we used the multi-variable regression trip rate model from the Scottish Strategic Rail Study (SSRS) as the basis of our estimation[2]. The SSRS model was derived from observed trip rates for a number of locations throughout Scotland, using observed passenger data which was applied to the local demographics and public transport service characteristics. The trip rate model developed is a generic method of assessing potential demand from a wide range of new services across the country. It is not specifically focused on any given area, but provides a useful high-level demand forecast. The demand equation is:

$$\text{Demand} = a + (b \times S) + (c \times P1) + (d \times P2)$$

where - a, b, c and d are co-efficients estimated from observed data;

- S is the average service level, assumed to be the average generalised speed for each service as a proxy for average service level;

- P1 is the population level within 1 km of the line or station; and

- P2 is the population level within 1 to 3 km of the line or station.

Table 3.1 below shows the variables used for semi-urban services derived from SSRS.

Table 3.1: Model Parameters

Variable	Parameter	T-stat
Constant	150.2	1.26
Average Generalised Speed	140.4	1.96
Population <1km	3.2	4.71
Population 1 – 3km	1.1	1.88
Adjusted R-squared Value	0.82	

As can be seen from the t-stat values and the adjusted R-squared value in table, the model shows a good statistical goodness-of-fit to the base data used in SSRS to develop the model.

The results from the above analysis are shown in Section 5 of this note.

[2] Scottish Strategic Rail Study (SSRS), Scottish Executive, 2003

3.3 Trips Generated from Proposed New Land-Use Developments

The SSRS demand model was also used to estimate the additional patronage levels due to the planned or committed new land-use developments in the area. Details of these new developments were supplied by Fife Council[3], and are summarised as:

- East Neuk – 500 houses, fairly dispersed, and with the potential for long-distance commuting distances. Of these, 30% are affordable housing;
- Sea Road / Muiredge – 1000 houses, with a good mix of high & low-density dwellings (50:50 split), of which 5% are affordable housing. In addition to these, there are plans for 15ha business areas, primary school, doctors surgery and retail to serve the local market;
- Abberhill / Lower Leven – 400 houses (50:50 split for high:low density) and by up to 20 years there would be another 500 houses (albeit not committed);
- There is also a further 100 houses in the Local Plan and a planning application for a 1125sqm Aldi supermarket; and
- Others – there are pockets of houses planned around the area. These equate to 300 dwellings plus a further 200 private homes. There is also the Hawkshaw Retail Park (e.g. Argos, Focus) and the extension to Sainsbury's.

Population numbers for each planned housing development area was derived using an average number of people occupying dwellings sourced from existing data from the TEMPRO database[4]. The resultant population increases were input into the SSRS demand model to estimate the additional trips generated due to the new developments.

The results from the above analysis were added to the estimates from Section 3.2 to give the total trips, and are shown in Section 5 of this note.

3.4 Demand for Park-and-Ride (including modal shift from car)

In addition to the planned new land-use developments, the new stations at Leven and Muiredge/Cameron Bridge could potentially transfer trips from cars through proposed park-and-ride facilities. The analysis has used the Park-and-Ride Analysis Model (PRAM) which is part of the Visual Transport Model (VTM) suite of commercial modelling software[5].

PRAM takes into account the various characteristics of P&R services and includes the following parameters:

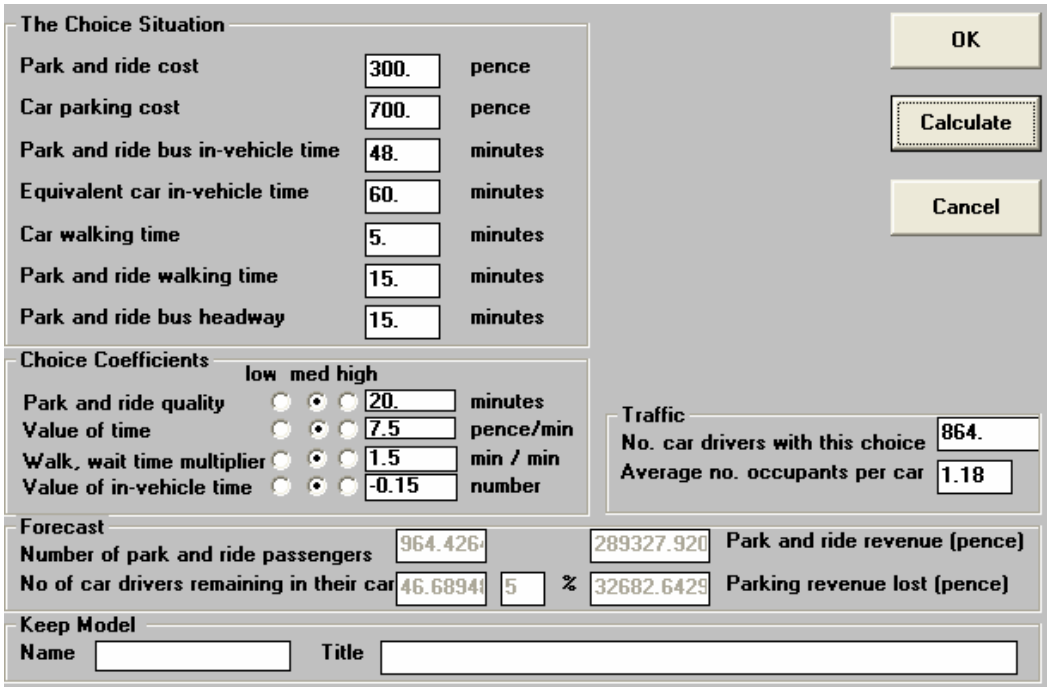
- Car walking time (mins);
- Park-and-Ride headway (service frequency);
- Park-and-Ride service quality;
- Value-of-time (Average);
- Walk/wait time multipliers (Average); and
- Value of in-vehicle time multiplier (Average).

The co-efficients used in this analysis were based on national averages obtained from the National Travel Surveys database.

[3] A STAG Workshop was held on Monday 17 March 2008 at the Fife Council offices in Glenrothes
[4] TEMPRO version 4.2a
[5] Visual Transport Model, Peter Davidson Consultancy, March 2008

Figure 3.1 below is a screenshot of the model showing the operation of the software.

Figure 3.1: Park-and-Ride Model Screenshot



Different models were run for each of the options reflecting the varying characteristics of the modes included in each option. Table 3.2 below summarises the input values.

Table 3.2: Park-and-Ride Input Assumptions

Option	P&R cost	Car Park Cost	P&R in-vehicle time	Car in-vehicle time	Car walk time	P&R walk time	P&R headway
New Railway Alignment	£3	£7	48	60mins	5mins	15mins	15mins
Re-open Rail Link	£3	£7	48	60mins	5mins	15mins	15mins
New line to Markinch Stn	£4	£7	82	60mins	5mins	15mins	15mins
BRT System	£3	£7	60	60mins	5mins	15mins	15mins
On Street Bus	£1.25	£7	82	60mins	5mins	15mins	10mins
Hovercraft/Ferry	£2.75	£7	40	60mins	5mins	20mins	30mins

The results from the above analysis were added to the estimates from Sections 3.2 and 3.3 to give the total trips, and are shown in Section 5 of this note.

3.5 Revenues

Having estimated the demand for each option, we estimated the revenues using average fares derived from existing published information. The following, one-way, fares were used:

- Rail = £3.00;
- BRT = £2.00;
- Bus = £1.25; and
- Ferry = £2.25.

3.6 Abstraction from other public transport services

The previous economic appraisal[6] carried out modelling using the CEC Land-Use/Transport Interaction (LUTI) model. This estimated the trips also abstracted from other stations. A comparison of the total abstracted trips against the total level of demand suggested a percentage of abstraction in the order of 24%. We have used this estimate as the basis for the abstraction of trips from other public transport services to the various options assessed in this study.

3.7 Time Savings

Time savings were estimated using time skims derived from the Transport Model for Scotland (TMfS) for future year forecasts. Key routes were identified in the model and time delays due to changes in traffic flows and growths were extracted from the model. These time delays are shown below and are assumed to apply to all trip types:

- Levenmouth – Kirkcaldy = 2.4 mins;
- Levenmouth – Dunfermline = 4.8 mins;
- Levenmouth – Markinch/Glenrothes = 0.0 mins;
- Levenmouth – Cuper = 0.0 mins; and
- Levenmouth – Edinburgh = 9.8 mins.

Forecast trips to and from the above origins/destinations (ODs) were multiplied by the above savings and added together to give the total time savings. An average value-of-time of £11.28 per hour (at 2002 prices), obtained from webTAG[7], was used to estimate the value of the savings.

3.8 Vehicle Operating Costs (VOC)

Vehicle operating costs (VOC) savings were estimated using the predicted changes in kilometres-travelled along the principal routes Using values from WebTAG[8] and average default data, a monetised value of 8.2 pence per km was used to derive VOC benefits.

3.9 De-Congestion Benefits

This includes benefits from the higher speeds experienced by the remaining road users of the road network linking Levenmouth with the adjacent areas after the removal of a significant number of trips resulting from the investment in public transport. Using values from WebTAG[9] and average default data, a monetised value of 12.7 pence per km was used to derive de-congestion benefits.

[6] Levenmouth Rail Study, MVA, June 2006
[7] WebTAG Unit 3, Department for Transport, April 2004
[8] Ibid
[9] Ibid

3.10 Sensitive Lorry Mile (SLM) Freight Benefits

Some of the options provide freight facilities which would remove HGV traffic from the road network. These are for the rail freight options and would bring in additional benefits in terms of Sensitive Lorry Mile (SLM) savings – monetised environmental benefits that result from the removal of significant volumes of HGV freight traffic from the regional road network.

We have obtained information from DIAGEO who have plans to use rail freight to ship cargoes to/from their site in the area. This includes the origins/destinations of various movements and the road length savings, as shown in Table 3.3 below:

Table 3.3: Lorry Miles Data

Origin/Destination	Cargo	Annual Loads	Rd Kms	Total Rd Kms (per annum)
Leven – Grangemouth	RTD cased goods	5,000	126	627,510
Leven – Grangemouth	Other cased goods	7,000	126	878,514
Cameronbridge – Cambus	Whisky	2,500	58	144,810
Elgin – Cameronbridge	Malt	1,000	253	252,613
Grangemouth – Cameronbridge	GNS	1,300	63	81,576
Manchester – Cameronbridge	GNS	300	422	126,467
Leven – Cambus	Empty casks	900	116	104,263
Totals		***18,000***	***1,162***	***2,215,754***

Applied to the above lorry road-kms saved per annum is an SLM value of £0.58 per kilometre, derived from Department for Transport (DfT) guidance[10] and weighted by regional road category. This gave the annual SLM benefits.

4 COST / BENEFIT ANALYSIS

4.1 Transport Economic Efficiency

The analysis of the Transport Economic Efficiency (TEE) element is based on the results obtained from a high-level Restricted Cost/Benefit Analysis (RCBA). The emphasis on this appraisal was not to provide an exact, detailed, estimate but to allow for a comparison of the differences between the different options, thereby helping to understand which options are likely to perform better than others and hence are potentially worthy of taking forward into a STAG Part 2 Appraisal. Although it is not a requirement of a STAG Part 1 Appraisal, the RCBA allows for some of the monetary values to be assessed together, giving a more holistic indication of the benefits of the options than would be obtained from a purely qualitative appraisal. A spreadsheet-based RCBA model was developed based on the following TEE processes:

- A 60-year appraisal period;
- An annual discount rate of 3.5% over the first 30 years falling to 3% for the remainder; and
- An assumed opening year of 2015.

As a project moves towards STAG Part 2 Appraisal more information will become available and a Full TEE Appraisal for each option would need to be carried out.

[10] Guidance on Freight Facilities Grants (FFG), DfT, 2007

5 DEMAND ANALYSIS RESULTS

The analysis of each option is summarised in Table 5.1 below. This includes the various variations (sub-options) of each option.

Table 5.1: Summary of Results

Option 1 - New Rail Line	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
One Station @ Leven	114,343	£342,506	7,716,511	£632,754	£979,997	£195,565	£0	£2,150,822	-27,442	-£82,327
Station @ Leven & Muiredge	144,362	£432,236	7,716,511	£632,754	£979,997	£195,565	£0	£2,240,552	-34,647	-£103,941

Option 2 - Re-open Old Rail Line	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
One Station @ Leven	105,307	£315,502	6,852,005	£561,864	£870,205	£195,565	£0	£1,943,136	-25,274	-£75,821
Station @ Leven & Muiredge	126,290	£378,228	6,852,005	£561,864	£870,205	£195,565	£0	£2,005,862	-30,310	-£90,929
Station @ Leven plus Freight	105,307	£315,502	6,852,005	£561,864	£870,205	£195,565	£1,285,137	£3,228,274	-25,274	-£75,821
Station @ Leven & Muiredge plus Freight	126,290	£378,228	6,852,005	£561,864	£870,205	£195,565	£1,285,137	£3,290,999	-30,310	-£90,929

Option 3 - New Line to Markinch	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
One Station @ Leven	100,789	£302,000	5,987,500	£490,975	£760,412	£151,746	£0	£1,705,133	-24,189	-£72,568
Station @ Leven & Muiredge	117,254	£351,224	5,987,500	£490,975	£760,412	£151,746	£0	£1,754,357	-28,141	-£84,423
Station @ Leven plus Freight	100,789	£302,000	5,987,500	£490,975	£760,412	£151,746	£1,285,137	£2,990,270	-24,189	-£72,568
Station @ Leven & Muiredge plus Freight	117,254	£351,224	5,987,500	£490,975	£760,412	£151,746	£1,285,137	£3,039,494	-28,141	-£84,423

Option 4 - BRT System	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
One Station @ Leven	49,519	£99,037	5,963,486	£489,006	£757,363	£151,137	£0	£1,496,543	-11,884	-£23,769
Station @ Leven & Muiredge	58,876	£117,751	5,963,486	£489,006	£757,363	£151,137	£0	£1,515,257	-14,130	-£28,260

Option 5 - On-street Bus	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
Along A915	45,089	£56,362	2,801,638	£229,734	£355,808	£71,004	£0	£712,908	-10,821	-£13,527
Along A955	57,895	£72,368	2,801,638	£229,734	£355,808	£71,004	£0	£728,915	-13,895	-£17,368
Circle on A915 & A955	73,445	£91,806	2,801,638	£229,734	£355,808	£71,004	£0	£748,352	-17,627	-£22,033
VBL to Markinch Station	65,318	£81,648	2,801,638	£229,734	£355,808	£71,004	£0	£738,194	-15,676	-£19,595

Option 6 - Ferry/Hovercraft	Trips	Revenues	Pax Veh-Kms Saved	VOCs	De-Congestion	Time savings	SLM benefits	Total Benefits	Abstraction Demand	Abstraction Revenue
One Station @ Leven	23,142	£52,069	1,905,114	£156,219	£241,949	£28,586	£0	£478,823	-5,554	-£12,497

The above estimates have been carried through to the high-level Restricted Cost/Benefit Analysis (RCBA) described earlier.

Appendix D

Capital Costs Technical Note

Cost Estimates

New Rail Alignment Options		Option 1a New Railway Alignment with One New Station	Option 1b New Railway Alignment with Two New Stations
Preliminaries, site clearance & fencing		£561,700	£561,700
Full signalling with crossing loops		£760,000	£760,000
Track renewal		£0	£0
New permanent way		£8,082,939	£8,082,939
Land costs		£1,048,050	£1,048,050
Structures		£6,985,612	£6,985,612
New Muiredge station (including P&R)		£0	£2,500,000
New Leven station (including P&R)		£2,500,000	£2,500,000
Freight line reinstatement		£0	£0
Fencing		£607,485	£607,485
Sub-total costs		**£20,545,785**	**£23,045,785**
Management	4%	£821,831	£921,831
Design	4%	£821,831	£921,831
Possessions & Compensation - Rebuild	20%	£0	£0
Possessions & Compensation - New Line	10%	£2,054,579	£2,304,579
Statutory process	3%	£616,374	£691,374
Contigencies	15%	£3,081,868	£3,456,868
Total costs excluding optimism bias		**£27,942,268**	**£31,342,268**
Total costs including OB @	57%	£43,869,360	£49,207,360

Re-Open Existing Railline Options		Option 2a Existing Railway Alignment with One New Station	Option 2b Existing Railway Alignment with Two New Stations	Option 2c Existing Railway Alignment with One New Station + Freight Facilities	Option 2d Existing Railway Alignment with Two New Stations + Freight Facilities
Preliminaries, site clearance & fencing		£458,141	£458,141	£458,141	£458,141
Full signalling with crossing loops		£0	£0	£0	£0
Track renewal		£5,075,395	£5,075,395	£5,075,395	£5,075,395
New permanent way		£0	£0	£0	£0
Land costs		£0	£0	£0	£0
Structures		£4,657,074	£4,657,074	£4,657,074	£4,657,074
New Muiredge station (including P&R)		£0	£2,500,000	£0	£2,500,000
New Leven station (including P&R)		£2,500,000	£2,500,000	£2,500,000	£2,500,000
Freight line reinstatement		£0	£0	£1,095,395	£1,095,395
Fencing		£495,485	£495,485	£495,485	£495,485
Sub-total costs		**£13,186,095**	**£15,686,095**	**£14,281,490**	**£16,781,490**
Management	4%	£527,444	£627,444	£571,260	£671,260
Design	4%	£527,444	£627,444	£571,260	£671,260
Possessions & Compensation - Rebuild	20%	£2,637,219	£3,137,219	£2,856,298	£3,356,298
Possessions & Compensation - New Line	10%	£0	£0	£0	£0
Statutory process	3%	£395,583	£470,583	£428,445	£503,445
Contigencies	15%	£1,977,914	£2,352,914	£2,142,223	£2,517,223
Total costs excluding optimism bias		**£19,251,699**	**£22,901,699**	**£20,850,975**	**£24,500,975**
Total costs including OB @	57%	£30,225,167	£35,955,667	£32,736,031	£38,466,531

New Rail Link to Markinch Options		Option 3a New Line to Markinch Station with One New Station	Option 3b New Line to Markinch Station with Two New Stations	Option 3c New Line to Markinch Station with One New Station + Freight Facilities	Option 3d New Line to Markinch Station with Two New Stations + Freight Facilities
Preliminaries, site clearance & fencing		£408,986	£408,986	£408,986	£408,986
Full signalling with crossing loops		£0	£0	£0	£0
Track renewal		£0	£0	£0	£0
New permanent way		£5,832,147	£5,832,147	£5,832,147	£5,832,147
Land costs		£733,125	£733,125	£733,125	£733,125
Structures		£6,985,612	£6,985,612	£6,985,612	£6,985,612
New Muiredge station (including P&R)		£0	£2,500,000	£0	£2,500,000
New Leven station (including P&R)		£2,500,000	£2,500,000	£2,500,000	£2,500,000
Freight line reinstatement		£0	£0	£1,095,395	£1,095,395
Fencing		£442,323	£442,323	£442,323	£442,323
Sub-total costs		**£16,902,193**	**£19,402,193**	**£17,997,588**	**£20,497,588**
Management	4%	£676,088	£776,088	£719,904	£819,904
Design	4%	£676,088	£776,088	£719,904	£819,904
Possessions & Compensation - Rebuild	20%	£0	£0	£0	£0
Possessions & Compensation - New Line	10%	£1,690,219	£1,940,219	£1,799,759	£2,049,759
Statutory process	3%	£507,066	£582,066	£539,928	£614,928
Contigencies	15%	£2,535,329	£2,910,329	£2,699,638	£3,074,638
Total costs excluding optimism bias		**£22,986,983**	**£26,386,983**	**£24,476,720**	**£27,876,720**
Total costs including OB @	57%	£36,089,563	£41,427,563	£38,428,451	£43,766,451

BRT Options		Option 4a BRT System with One New Station	Option 4b BRT System with Two New Stations
Preliminaries plus site clearance		£453,369	£453,369
Works & Infrastructure		£7,215,944	£7,215,944
Road restraint & signalling		£868,766	£868,766
Interchange at Leven bus station		£350,000	£350,000
New Muiredge station (including P&R)		£0	£1,550,000
Sub-total costs		**£8,888,078**	**£10,438,078**
Management	4%	£355,523	£417,523
Design	4%	£355,523	£417,523
Statutory process	3%	£266,642	£313,142
Contigencies	15%	£1,333,212	£1,565,712
Total costs excluding optimism bias		**£11,198,978**	**£13,151,978**
Total costs including OB @	44%	£16,126,528	£18,938,848

On-Street Bus Options		5a Priority Bus System along A955	5b Priority Bus System along A915	5c Priority Bus System Circular Route - A955-A915	5d Priority Bus System along A911
Preliminaries plus site clearance		£169,964	£169,964	£226,618	£56,655
Works & Infrastructure		£733,461	£733,461	£1,021,207	£222,857
Road restraint & signalling		£1,239,620	£1,239,620	£2,239,493	£999,873
Interchange at Leven bus station		£350,000	£350,000	£350,000	£350,000
New Muiredge station (including P&R)		£250,000	£250,000	£250,000	£250,000
Sub-total costs		**£2,743,044**	**£2,620,966**	**£4,138,966**	**£2,114,966**
Management	4%	£109,722	£104,839	£165,559	£84,599
Design	4%	£109,722	£104,839	£165,559	£84,599
Statutory process	3%	£82,291	£78,629	£124,169	£63,449
Contigencies	15%	£411,457	£393,145	£620,845	£317,245
Total costs excluding optimism bias		**£3,456,236**	**£3,302,417**	**£5,215,097**	**£2,664,857**
Total costs including OB @	44%	£4,976,980	£4,755,480	£7,509,739	£3,837,393

On-Street Bus Options		6a & 6b Hovercraft or Ferry
Preliminaries & Site Clearance		£429,507
Pier Infrastructure		£6,792,624
Road Access		£1,345,785
Interchange Building		£1,307,900
Sub-total costs		**£9,875,816**
Management	4%	£109,722
Design	4%	£109,722
Statutory process	3%	£82,291
Contigencies	15%	£411,457
Total costs excluding optimism bias		**£10,589,007**
Total costs including OB @	44%	£15,248,171

SESTRAN & FIFE COUNCIL

LEVENMOUTH SUSTAINABLE TRANSPORT STUDY

TECHNICAL NOTE ON THE CAPITAL COSTS

SESTRAN & FIFE COUNCIL

LEVENMOUTH SUSTAINABLE TRANSPORT STUDY

TECHNICAL NOTE ON THE CAPITAL COSTS

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1 INTRODUCTION

This note summarises the capital cost estimates for the proposals for improving transport services in the Levenmouth area. Six core options to improve public transport have been identified in a STAG Part 1 Appraisal, some of which have a number of variations. This brief Technical Note summarises the estimates of construction costs and other associated costs of the proposals.

2 OPTIONS EXAMINED

The STAG Part 1 Appraisal[1] identified the following transport options:

- Option 1 (New Railway Alignment) – this includes 2 variations (sub-options), one with a station at Leven and a second with 2 stations (one at Leven and another at Muiredge/Cameron Bridge to serve a major new land-use development). This option only has passenger rail services;
- Option 2 (Re-open the Previous Rail Line) – this has 4 variations (sub-options). The first has a station at Leven and the second has 2 stations (at Leven and at Muiredge/Cameron Bridge as per Option 1). Both these sub-options were tested with passenger rail services only, however two more variations of these sub-options were tested with the introduction of rail freight services (as well as the passenger rail service);
- Option 3 (New Railway Line to Markinch Station) – this has the same number of variations (sub-options) as Option2, however the railway links to Markinch Station rather than linking directly to the rail network;
- Option 4 (Bus Rapid Transit) – as with Option 1 this includes 2 variations/sub-options (a station at Leven only and a station at both Leven and Muiredge/Cameron Bridge to serve a new land-use developments. This option only has passenger rail services;
- Option 5 (On-Street Bus Priority) – this includes 4 variations (sub-options). The first includes on-street bus priority along the A955 'coastal route' starting at the new bus station in the centre of Leven and through to Kirkcaldy, continuing on the A921, passed Dysart, and onto the bus station in the centre of Kirkcaldy, a total distance of some 15km. The second sub-option includes bus priority on the A915 instead of the A955, between Leven bus station and Kirkcaldy bus station. The third sub-option introduces bus priority measures on a circular route between Leven and Kirkcaldy stations, using both the A955 and A915. The fourth sub-option involves bus priority services to Markinch/Glenrothes along the A911; and
- Option 6 (Hovercraft/Ferry) – this option envisages a new hovercraft service from Methil Docks and represents an extension of the Firth of Forth Hovercraft service currently operating between Kirkcaldy and Portabello in Edinburgh. There will also be a new purpose-built terminal at the docks. There is another sub-option which substitutes the hovercraft vessel for a ferry, and hence in terms of demand modelling both were assumed to be the same and generate similar levels of demand and network impacts.

[1] Levenmouth Sustainable Transport Study – STAG Part 1 Appraisal, Scott Wilson, May 2008

3 COSTS ESTIMATES

3.1 Overview

The estimation of preliminary cost estimates as relevant for a STAG Part 1 Appraisal for possible options is required. However, we believe that the cost analysis should take into account recent lessons learned from schemes in Scotland, especially other rail projects and BRT systems implemented elsewhere.

Scott Wilson have been involved in various schemes and have built up a series of cost rates used to derive the outturn costs of these schemes. Hence, we have used data from the following projects to derive the cost estimates for the proposals set out in the STAG Part 1 Report.

- Railway options – Edinburgh Airport Rail Link (EARL);
- BRT options – Glasgow Fastlink System;
- On-Street Bus options – Glasgow Quality Bus Corridors; and
- Ferry/Hovercraft options – Inverness Harbour Expansion.

The scope of the preliminary costings work includes all construction elements and those elements of specialist 'fit-out' and equipment installations (e.g. BRT halts, bus shelters, information systems, etc).

In addition, we have also allowed for other non-construction costs such as project management, design, possessions, statutory processes, etc.

Furthermore, we also estimated the costs of land-purchase based on rates collated during our work on Edinburgh Tram.

The estimates are not intended to be a definitive cost proposals but rather the costs contain high-level details to enable a comparison between the options. Further, more detailed work, would be required for future costs estimates of any emerging preferred option as any scheme moves towards a more detailed study and appraisal in a pro-active manner.

3.2 Estimates of Capital & OMR Costs

Annex A sets out the estimates of the individual elements which make up the capital infrastructure costs for the options identified in Section 2.

Table 3.1 (overleaf) summarises the costs of each option at 2008 prices.

Table 3.1: Cost Estimates

Options		Capital Costs	OMR Costs
Option 1a	New rail alignment – one station	£27.9m	£1.4m
Option 1b	New rail alignment – two stations	£31.3m	£1.6m
Option 2a	Existing rail alignment – one station	£19.3m	£1.0m
Option 2b	Existing rail alignment – two stations	£22.9m	£1.2m
Option 2c	Existing rail alignment – one station plus freight facilities	£20.9m	£1.1m
Option 2d	Existing rail alignment – two stations plus freight facilities	£24.5m	£1.2m
Option 3a	New line to Markinch Station – one station	£23.0m	£1.2m
Option 3b	New line to Markinch Station – two stations	£26.4m	£1.3m
Option 3c	New line to Markinch Station – one station plus freight facilities	£24.5m	£1.2m
Option 3d	New line to Markinch Station – two station plus freight facilities	£27.9m	£1.4m
Option 4a	BRT system – one station	£11.2m	£0.6m
Option 4b	BRT system – two stations	£13.2m	£0.7m
Option 5a	Priority On-street Bus – A955	£3.5m	£0.2m
Option 5b	Priority On-street Bus – A915	£3.3m	£0.2m
Option 5c	Priority On-street Bus – Circular route A955-A915	£5.2m	£0.3m
Option 5d	Priority On-street Bus – A911	£2.7m	£0.2m
Option 6	Hovercraft / Ferry (excluding purchase of vessel)	£10.6m	£0.5m

Note: all costs are in 2008 prices

Operations, Maintenance & Renewals (OMR) of each project have been estimated based on an allowance of 5% of the capital costs of the investment.

It should be noted that the above costs are not intended to be precise estimates. They are solely to enable a Restricted Cost/Benefit Analysis to be carried out which would then allow for a comparison of one option against another. This is considered to be sufficient for the purposes of a STAG Part 1 Appraisal.

For appraisal purposes, the capital costs above include an allowance for physical contingencies (15%), but not for systemic bias in pricing – known as optimism bias (OB). Nor is there any account of risk, which may impact on a project's viability and the more so the longer the construction period. The construction period is assumed to be over 2 years, 2013 and 2014.

Appendix E

Fife Council Response to Public Consultation

FIFE COUNCIL

Levenmouth Sustainable Transport Study
Response to SEStran Public Consultation

Introduction

Fife Council welcomes SEStran's decision to carry out a STAG appraisal on sustainable transport to Levenmouth, and looks forward to its completion in June 2008.

The Council recognises that the appraisal will consider all means of accessing Levenmouth and is firmly of the view that reinstating the rail link will support the national transport strategies including in particular, increasing access to public transport with all of the consequential benefits. Moreover, it would provide a sound basis for economic regeneration as, inter-alia, it offers the best potential to connect the people in the area to employment opportunities in West Fife and Edinburgh. It would also address the perception of 'remoteness' from the national transport networks.

Local Policy Context & Previous Studies

The work of Fife Council is focussed on 8 key aims (referred to as the Big 8). Five of the aims, which are particularly relevant to the Levenmouth Rail Link, are:-

- Becoming the leading Green Council in Scotland (for example by reducing carbon emissions associated with travel)
- Improving local conditions for economic development (for example by improved strategic transportation links especially to deprived areas)
- Increasing access to housing (for example by more sustainable access to the Levenmouth strategic land allocation)
- Improving community safety (for example by increased use of public transport)
- Targeting support to vulnerable people (for example by improved strategic transportation links especially to deprived areas)

Levenmouth was served by passenger rail services until the late 1960's. Since then the line between Thornton and Leven has been used for rail freight, however this ceased relatively recently.

Reopening the rail link has been a continuing strategic transport priority for Fife. It was highlighted in 2000 in the first Local Transport Strategy for Fife and in the subsequent strategy in 2006, in the Council's Finalised Structure Plan in 2007 and in the SEStran Regional Transport Strategy. Given that the Scottish Government is committed to a new Forth crossing, the rail link is the Council's top priority for transport infrastructure, as it is fundamental to the successful development and regeneration of Levenmouth and Central Fife.

The Local Transport Strategy of 2000 proposed that the reinstatement of the rail link should be reviewed within 5 years. Consequently, in 2005/06 the Council commissioned

a review, which concluded that the alignment should be safeguarded to ensure the option of re-opening the line in the future.

Subsequent to that review, the Scotland Rail Utilisation Strategy was published. That Strategy identified the need for additional rail capacity between Fife and Edinburgh, including changes to existing local services as well as long distance services through Fife. Reinstating the Levenmouth rail link would immeasurably improve access to the Levenmouth area, thereby fulfilling that Strategy locally. Further, the integration of the link with the national network would enhance the rail provision between Edinburgh, Dundee and Aberdeen. Most importantly the rail link would increase the public transport capacity and frequency between Fife and Edinburgh, increase the proportion of journeys to work made by public transport, improve people's perceptions of the quality of public services delivered and help to reduce Scotland's overall ecological footprint.

Moreover, the review of the Local Transport Strategy in 2006 and the new Structure Plan for Fife both included the scheme as a proposal for the medium term; and in 2007/08 SEStran included the proposal in its final Regional Transport Strategy as a scheme of both regional and national importance. Following the SEStran Board Meeting on 18 April 2008, the Regional Transport Strategy was submitted to Scottish Ministers for approval.

The importance of the rail link was also highlighted in the Council's response to the National Planning Framework 2 consultation.

National Policy Context

The three key strategic outcomes of the National Transport Strategy (NTS), which was published in 2006, were subsequently endorsed by the new Scottish Government and are aligned to the Government's Overall Purpose of encouraging sustainable economic growth. The four key strategic outcomes for transport, which all apply in the case of the Levenmouth Rail Link, are:

- to improve journey times and connections;
- to tackle congestion and the lack of integration and connections in transport;
- to reduce emissions, to tackle the issues of climate change, air quality and health improvement; and
- to improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

It is absolutely clear that the rail link would make a significant contribution to the Scottish Government's Overall Purpose of achieving sustainable economic growth.

Socio-Economic Issues

Levenmouth has socio-economic issues that are in broad terms worse than the Fife average, with particular concentrations of unemployment and economic inactivity.

Unemployment is significantly higher in Levenmouth with 4.8% of the population of 33,225 (2006) claiming job seekers allowance against a Fife count of 2.9%. In addition, rates of claiming other benefits are also higher, with a total of 6,000 benefit claims in Levenmouth including 3,200 on incapacity benefits.

Levenmouth has a lower share of pupils taking up higher education than compared with the national average and a higher proportion of school leavers are unemployed (23%).

Between 2004 and 2006, Fife has seen a large increase in the number of areas identified in the 15% most deprived areas in Scotland, as published in the Scottish Index of Multiple Deprivation. Of the seven area committees in Fife, Levenmouth has the highest proportion of the 20% most deprived areas in Fife.

Levenmouth performed worst on the income, employment and crime indicators. In that regard, the Scottish Index of Multiple Deprivation (2006) stated that 4,327 people in Levenmouth were income deprived (1), whilst 2,348 people were employment deprived (2). The total population in Levenmouth is estimated to be 33,225 (2006).

At 40.9% Levenmouth has a higher share of economically inactive people when compared with Fife at 34.3% and Scotland at 35%. (2001 Census)

Fife Council has prioritised economic development investment in the area through joint projects such as the Fife Energy Park, Methil No. 3 Business Park, and supporting re-investment by major employers such as Diageo. It is clearly evident, however, that these important economic developments and company initiatives are only part of the socio-economic solution for Levenmouth. The perceived remoteness of the community and poor quality transportation infrastructure is also a fundamental challenge which must be addressed if improved economic outcomes are to be delivered for the local community.

The Council is working very hard to improve opportunities for the local community with initiatives such as the Tourism Strategy, the Promote Levenmouth Alliance as well as making significant improvements to both secondary schools in the area.

Levenmouth is also the location for one of 7 Strategic Land Allocations for the Finalised Fife Structure Plan (2006 – 2026). The expansion is planned to assist in the regeneration of the area with 1,200 new houses, additional primary and secondary schools, more community facilities and 15 ha of employment land for business and general employment use to be provided by 2026.

The contribution from brown field sites will be assessed and maximised in order to minimise green field development and underpin regeneration. Development has already started with housing continuing to be built in the area and with the growth of

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1 The income deprived indicator measures the proportion of people on low incomes.

2 The employment indicator is a measure of ‘exclusion from the world of work’.

development in the energy sector at the Fife Energy Park at Methil (formerly the Kvaerner Yard) to encourage new modern industry. It will be essential to improve access between this area of high unemployment and employment opportunities in West Fife and Edinburgh in a manner that improves public transport access to the City. The Energy Park is specifically referred to in the 'Draft National Planning Framework 2' for Scotland.

Should it be the case that the Forth Road Bridge has to be closed to heavy goods vehicles before the new Forth crossing is commissioned, the Levenmouth rail link will be the means whereby that part of the Levenmouth economy which is dependant on freight transport, will be protected.

The Case for Re-opening the Rail Link

The Council is of the view that the socio-economic case in favour of re-establishing a rail link to the Levenmouth area cannot be overstated.

The re-introduction of passenger rail services to Levenmouth would have a substantial economic benefit since it would open new employment opportunities to residents of Levenmouth, connect the community more strongly to the rapidly growing Edinburgh City Region, and thereby expand the City labour market in a sustainable manner.

In particular, the Fife Energy Park, which is leading the way in Scotland in the development of renewable energy sources, will become more and more dependant on a broad range of skills not normally found within one place. Ease of travel in and out of Levenmouth will do much to ensure the availability of those necessary skills.

Notwithstanding all of the foregoing, Levenmouth is not linked to the national rail network and is the largest conurbation in Scotland to be so disadvantaged.

The case for the rail link is further strengthened by the fact that Diageo has been in discussion with Transport Scotland, Network Rail and freight operators to explore the possibility of re-opening the line for freight. It is developing its Cameron Bridge Distillery and has aspirations to use rail freight to remove a significant volume of lorry miles from the road network. Those proposals are ambitious, and the ability to move goods into and out of the plant by rail would go a long way to reducing its carbon footprint.

Moreover, the National Transport Corridors (as defined in the Draft National Planning Framework 2 and the Strategic Transport Corridors Review) which connect the cities in the North of Scotland to the Capital City, all pass through Fife. Levenmouth is situated immediately adjacent to the East Coast Main Line, which connects Dundee and Aberdeen to Edinburgh. These cities are within commuting distance of Levenmouth, but the area is not connected to the national rail network.

With reference to the national road network, the main north/south arteries are the M90 and the A92. Levenmouth and the East Neuk of Fife beyond are by-passed by both these arteries. Re-establishing the rail link will do much to compensate for that disadvantage.

In common with most other areas of Scotland, the number of cars on Fife's roads continues to grow with consequential increasing pressure on the roads network. Also in

common with most other areas, with a view to relieving that unrelenting pressure, getting travellers out of their cars and into public transport is a priority within Fife. Achieving that goal in and out of Levenmouth (and the communities in the East Neuk of Fife) will be much easier with the provision of a link to the national rail network.

Conclusions

In recognising that the STAG appraisal is required to assess all means of improving access to/from Levenmouth, the Council is of the firm view that the re-opening of the rail link to passengers and freight would:-

- Improve travel choice and help achieve Scotland's target of an 80% reduction in carbon emissions by 2050
- Provide direct connections to employment opportunities in West Fife and Edinburgh
- Support the sustainable expansion of the city's labour market
- Improve the image of the Levenmouth area and tackle its isolation
- Widen the economic profile and catchment of the area, and significantly assist its regeneration
- Ease the growing pressure on the roads network
- Protect the Levenmouth economy should the Forth Road Bridge have to be closed to heavy goods vehicles before the new crossing is commissioned

The re-opening of this line to passengers and freight is vital to the regeneration of Levenmouth and Central Fife and, given the Scottish Government's commitment to the new Forth crossing, the rail link is the Council's top priority for transportation infrastructure.

The Council asks that SEStran endorses this response and requests that SEStran ensures that this study is completed in sufficient time to provide meaningful input to Transport Scotland's Strategic Transport Projects Review, which is due to be completed in the summer of 2008.

Appendix F

Appraisal Summary Tables

Table F.1 - STAG Part 1 Appraisal Summary Table of Option 1a

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New rail alignment with new station at Leven	Name of Planner:	Scott Wilson
Proposal Description:	New rail link and alignment and new station at Leven	Estimated Capital Cost:	£27.9 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	New rail alignment passes to the south of existing alignment linking at the Levenmouth end with the existing line at Cameron Bridge and the existing line close to Dysart. The new station at Leven will be located close to the Methil dockside.		
Social Context:	This option is likely to be welcomed by the public, especially commuters to Kirkcaldy, south-west Fife and the Edinburgh area.		
Economic Context:	Rail options are costly and this option focussing on passenger traffic alone will not generate the high revenues required to offset the large capital costs associated with a completely new rail line. The overall scheme is unlikely to represent value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is not encouraging the shift of goods, produce and materials from road to rail, but it does promote modal shift for passenger traffic from road to rail, and this should increase the efficiency of freight movements and business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion.

Implementability Appraisal	
Technical:	This option based on a new rail alignment will require major development that will include the construction of the rail line itself, associated rail infrastructure, a new railway station and significant structures en-route between Leven and the existing Fife circle line. Owing to the nature of the work required, and potential for land-use conflict, this option may incur large costs and time delays.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	The rail options that require entirely new track alignment are costly, and the potential passenger related benefits alone are unlikely to offset these costs. Therefore the overall scheme is unlikely to present good value for money investment.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Impacts relating to noise and vibration during construction (--) Impacts related to air quality due to construction (--) Impacts on air quality as a result of reducing congestion (O) Potential pollution and disturbance impacts on water resources construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on bat populations through loss or disturbance of roost sites (buildings/trees) (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on breeding birds as a result of the removal of trees if required as part of the construction (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential for environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on National Cycle Route users (---) Potential visual beneficial impacts associated with environmental improvements (+) Potential impacts associated with temporary land take (-) Potential impacts relating to demolition of properties (--/---) Potential Impacts on locally important cultural heritage features (-) Potential Impacts on statutory cultural heritage features (-)
Safety:	In terms of road safety and personal security there is estimated to be a major positive & neutral impacts respectively. The overall score has been estimated as moderately positive (++)
Economy:	There are estimated to be major positive results regarding accidents, de-congestion, vehicle operating costs and travel times. There are likely to be no impacts in terms of revenues generated. Moderate losses are likely to be generated from capital and O & M costs. This evidently results in a major positive overall value for money score of (+++)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall slightly positive score (+)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate neutral & slightly positive scores respectively (+)

Table F.2 - STAG Part 1 Appraisal Summary Table of Option 1b

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New rail alignment with new stations at Leven & Muiredge development/Cameron Bridge	Name of Planner:	Scott Wilson
Proposal Description:	New rail link and alignment and new stations at Leven & Muiredge development/Cameron Bridge	Estimated Capital Cost:	£31.3 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	New rail alignment passes to the south of existing alignment linking at the Levenmouth end with the existing line at Cameron Bridge and the existing line close to Dysart. Of the two new stations, one will be located close to the Methil dockside (Leven) and the other near the new settlement at Muiredge (Cameron Bridge).		
Social Context:	This option is likely to be welcomed by the public over a relatively wide area of Leven, especially commuters to Kirkcaldy, south-west Fife and the Edinburgh area.		
Economic Context:	Rail options are costly and this option focussing on passenger traffic alone will not generate the high revenues required to offset the large capital costs associated with a completely new rail line. The overall scheme does represent value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is not encouraging the shift of goods, produce and materials from road to rail, but it does promote modal shift for passenger traffic from road to rail, and this should increase the efficiency of freight movements and business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion. This option presents additional accessibility to a larger proportion of the Levenmouth population with a second rail station in the Muiredge Development/Cameron Bridge area.

Implementability Appraisal	
Technical:	This option based on a new rail alignment will require major development that will include the construction of the rail line itself, associated rail infrastructure, two new railway stations and significant structures en-route between Leven and the existing Fife circle line. Owing to the nature of the work required, and potential for land-use conflict, this option may incur large costs and time delays.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	The rail options that require entirely new track alignment are costly, and the potential passenger related benefits alone are unlikely to offset these costs. Therefore the overall scheme is unlikely to present good value for money investment.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Impacts relating to noise and vibration during construction (--) Impacts related to air quality due to construction (--) Impacts on air quality as a result of reducing congestion (O) Potential pollution and disturbance impacts on water resources construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on bat populations through loss or disturbance of roost sites (buildings/trees) (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on breeding birds as a result of the removal of trees if required as part of the construction (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential for environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on National Cycle Route users (---) Potential visual beneficial impacts associated with environmental improvements (+) Potential impacts associated with temporary land take (-) Potential impacts relating to demolition of properties (--/---) Potential Impacts on locally important cultural heritage features (-) Potential Impacts on statutory cultural heritage features (-)
Safety:	In terms of road safety and personal security there is estimated to be a major positive & neutral impacts respectively. The overall score has been estimated as moderately positive (++)
Economy:	There are estimated to be major positive results regarding accidents, de-congestion, vehicle operating costs and travel times. There are likely to be no impacts in terms of revenues generated. Moderate losses are likely to be generated from capital and O & M costs. This evidently results in a major positive overall value for money score (+++)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall slightly positive score (+)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate neutral & slightly positive scores respectively (+)

Table F.3 - STAG Part 1 Appraisal Summary Table of – Option 2a

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Re-open previous rail line with a station at Leven	Name of Planner:	Scott Wilson
Proposal Description:	Re-open previous rail line & build a new station at Leven	Estimated Capital Cost:	£19.3 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	Re-opening the previous rail line links Leven at Cameron Bridge with the Markinch – Kirkcaldy line (southbound) 1.6km north-west of Thornton/Glenrothes railway station, with a new station built at Methil docks.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to the south and west of Leven, but does not serve north Fife and beyond so well, where this option involves change penalties en-route.		
Economic Context:	Rail options are costly, but re-using established infrastructure reduces these. Although focussing on passenger traffic does not generate high revenues, the lower capital costs means that the overall scheme is borderline in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is not encouraging the shift of goods, produce and materials from road to rail, but it does promote modal shift for passenger traffic from road to rail, and this should increase the efficiency of freight movements and business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion.

Implementability Appraisal	
Technical:	This option is based on re-commissioning the existing rail alignment which will require significantly less work than that required for a new rail line. Given that this option re-commissions an existing railway line, there is little in the way of potential land-use conflict, so for these reasons should not incur the scale of costs and time delays that would be expected with a new rail line. Nevertheless this option will require re-habilitating the existing rail line, re-commissioning the associated rail infrastructure, and the construction of a new railway station, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	As the rail options involving the re-commissioning of existing rail infrastructure have less costs than those requiring new infrastructure, the potential passenger related benefits do to some extent offset these, therefore the overall scheme is marginal in terms of presenting value for money.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Local air quality will improve as a result of the modal shift from car to bus, which will result in less pollutants being released into the atmosphere. (0/+) Negligible visual benefits as a result of reduction in traffic (0/+)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a neutral impact. The overall score for this option has been estimated as slightly positive (+)
Economy:	There is estimated to be minor positive effects regarding accidents, de-congestion, vehicle operating costs and revenues with moderate benefits as a result of good travel times. There are likely to be additional running costs, but the overall option in terms of value for money is likely to produce moderately positive benefits (++)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.4 - STAG Part 1 Appraisal Summary Table of Option 2b

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Re-open previous rail line with stations at Leven & Cameron Bridge	Name of Planner:	Scott Wilson
Proposal Description:	Re-open previous rail line with stations at Leven & Cameron Bridge	Estimated Capital Cost:	£22.9 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	Involves re-opening the previous rail line links Leven at Cameron Bridge with the Markinch – Kirkcaldy line (southbound) 1.6km north-west of Thornton/Glenrothes railway station, with a new station built at Methil docks and another built close to new housing development at Cameron Bridge.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to the south and west of Leven, but does not serve north Fife and beyond so well, where this option involves change penalties en-route.		
Economic Context:	Rail options are costly, but re-using established infrastructure reduces these. Although focussing on passenger traffic does not generate high revenues, the additional capital costs associated with a station at Cameron Bridge means that the overall scheme fails in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is not encouraging the shift of goods, produce and materials from road to rail, but it does promote modal shift for passenger traffic from road to rail, and this should increase the efficiency of freight movements and business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion. This option presents additional accessibility to a larger proportion of the Levenmouth population with a second rail station in the Muiredge Development/Cameron Bridge area.

Implementability Appraisal	
Technical:	This option is based on re-commissioning the existing rail alignment which will require significantly less work than that required for a new rail line. Given that this option re-commissions an existing railway line, there is little in the way of potential land-use conflict, so for these reasons should not incur the scale of costs and time delays that would be expected with a new rail line. Nevertheless this option will require re-habilitating the existing rail line, re-commissioning the associated rail infrastructure, and the construction of two new railway stations, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	As the rail options involving the re-commissioning of existing rail infrastructure have less costs than those requiring new infrastructure, the potential passenger related benefits do to some extent offset these, even where a second rail station is proposed, therefore the overall scheme is marginal in terms of presenting value for money.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Local air quality will improve as a result of the modal shift from car to bus, which will result in less pollutants being released into the atmosphere. (0/+) Potential impacts upon biodiversity features during construction of bus route infrastructure along South Street (-) Negligible beneficial visual impacts associated with a reduction in traffic (0/+)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a neutral impact. The overall score for this option has been estimated as slightly positive (+)
Economy:	There is estimated to be minor positive effects regarding accidents, de-congestion, vehicle operating costs and revenues with moderate benefits as a result of good travel times. There are likely to be additional running costs, but the overall option in terms of value for money is likely to produce moderately positive benefits (++)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.5 - STAG Part 1 Appraisal Summary Table of – Option 2c

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Re-open previous rail line with a station at Leven & freight facilities	Name of Planner:	Scott Wilson
Proposal Description:	Re-open previous rail line with a stations at Leven & freight facilities	Estimated Capital Cost:	£20.9 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	Involves re-opening the previous rail line links Leven at Cameron Bridge with the Markinch – Kirkcaldy line (southbound) 1.6km north-west of Thornton/Glenrothes railway station, with a new station built at Methil docks and the refurbishment of freight facilities at this site.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to the south and west of Leven, but does not serve north Fife and beyond so well, where this option involves change penalties en-route.		
Economic Context:	Rail options are costly, but re-using established infrastructure and refurbishing the freight facilities improves the performance of this option to the point that the overall scheme meets the value for money criterion.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car and HGV to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially HGV traffic with this option, and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is encouraging the shift of goods, produce and materials from road to rail, and in doing so should reduce the costs of freight deliveries for the type of freight anticipated. It also promotes modal shift for passenger traffic from road to rail, and the combined effect should be the increase in the efficiency of freight movements and business trips by road, with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion, especially that of freight traffic.

Implementability Appraisal	
Technical:	This option is based on re-commissioning the existing rail alignment which will require significantly less work than that required for a new rail line, and the re-establishment of freight facilities in the Methil Docks area. Given that this option re-commissions an existing railway line, there is little in the way of potential land-use conflict, so for these reasons should not incur the scale of costs and time delays that would be expected with a new rail line. Nevertheless this option will require re-habilitating the existing rail line and freight yards, re-commissioning the associated rail infrastructure, and the construction of a new railway station, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services and operating the freight facilities should be relatively trouble free.
Financial:	The rail options that require re-commissioning existing rail infrastructure are still relatively costly, and the potential passenger related benefits alone only marginally offset these costs. However, this option re-introduces freight options, the benefits of which, together with passenger related benefits, means that the overall scheme performs reasonably well in value for money terms.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Local air quality will improve as a result of the modal shift from car to bus, which will result in less pollutants being released into the atmosphere. (0/+) Negligible beneficial visual impacts associated with the reduction in traffic (0/+)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a neutral impact. The overall score for this option has been estimated as slightly positive (+)
Economy:	There is estimated to be minor positive effects regarding accidents, de-congestion, vehicle operating costs and revenues with moderate benefits as a result of good travel times. There are likely to be additional running costs, but the overall option in terms of value for money is likely to produce moderately positive benefits (++)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.6 - STAG Part 1 Appraisal Summary Table of Option 2d

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Re-open previous rail line with stations at Leven & Cameron Bridge & with freight facilities	Name of Planner:	Scott Wilson
Proposal Description:	Re-open previous rail line with stations at Leven & Cameron Bridge & with freight facilities	Estimated Capital Cost:	£24.5 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	Involves re-opening the previous rail line links Leven at Cameron Bridge with the Markinch – Kirkcaldy line (southbound) 1.6km north-west of Thornton/Glenrothes railway station, with a new station built at Methil docks and another built close to new housing development at Cameron Bridge and the refurbishment of freight facilities at this site.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to the south and west of Leven, but does not serve north Fife and beyond so well, where this option involves change penalties en-route.		
Economic Context:	Rail options are costly, particular where this involves a second railway station at Cameron Bridge, but re-using established infrastructure and refurbishing the freight facilities improves the performance of this option to the point that the overall scheme meets the value for money criterion.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car and HGV to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially HGV traffic with this option, and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is encouraging the shift of goods, produce and materials from road to rail, and in doing so should reduce the costs of freight deliveries for the type of freight anticipated. It also promotes modal shift for passenger traffic from road to rail, and the combined effect should be the increase in the efficiency of freight movements and business trips by road, with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion, especially that of freight traffic. This option presents additional accessibility to a larger proportion of the Levenmouth population with a second rail station in the Muiredge Development/Cameron Bridge area.

Implementability Appraisal	
Technical:	This option is based on re-commissioning the existing rail alignment which will require significantly less work than that required for a new rail line, and the re-establishment of freight facilities in the Methil Docks area. Given that this option re-commissions an existing railway line, there is little in the way of potential land-use conflict, so for these reasons should not incur the scale of costs and time delays that would be expected with a new rail line. Nevertheless this option will require re-habilitating the existing rail line and freight yards, re-commissioning the associated rail infrastructure, and the construction of two new railway stations, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services and operating the freight facilities should be relatively trouble free.
Financial:	The rail options that require re-commissioning existing rail infrastructure are still relatively costly, and the potential passenger related benefits alone only marginally offset these costs. However, this option re-introduces freight options, the benefits of which, together with passenger related benefits, means that the overall scheme performs reasonably well in value for money terms.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (-/--) Local air quality may experience minor adverse effects during the construction phase (-) Local air quality will improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (0/+) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impacts upon biodiversity features during construction of improved access arrangements to stations (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors (-) Potential impacts on locally important cultural heritage features during construction and operation (-) Potential impacts on statutory cultural heritage features during construction and operation (-)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a good impact. The overall score for this option has been estimated as moderately positive (++)
Economy:	There is estimated to be good impacts regarding accidents, revenues and travelling times, with little or no impact upon de-congestion and vehicle operating costs along the route. Capital and O & M costs are expected to be high producing moderately negative results, but the overall option in terms of value for money is likely to produce moderately negative impacts (--)
Integration:	Very positive transport integration can be expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.7 - STAG Part 1 Appraisal Summary Table of Option 3a

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New Rail Alignment to Markinch Station using part of existing railway with station at Leven	Name of Planner:	Scott Wilson
Proposal Description:	New Rail Alignment to Markinch Station using part of existing (de-commissioned) railway with station at Leven	Estimated Capital Cost:	£23.0 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The rail alignment partly uses the existing rail line at Leven but diverges in the Cameron Bridge area and passes parallel and to the north of the A911, joining the existing Fife circle line north of and close to Markinch station. The new station will be built in Leven in the Methil docks area.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to all parts of Fife and beyond, and owing to the position and nature of its link with the existing line, will not involve any time penalties for trips to and from the Levenmouth area.		
Economic Context:	Even with re-using part of the existing line and the comparatively short distance of new rail required, the capital costs of the scheme means that it fails to meet a satisfactory outcome in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option will reduce congestion on Dumbarton Road but will potentially generate more traffic on the proposed new alignment with overall negligible air quality benefits
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	The construction of the new road sections is unlikely to have any impact upon security. However, this option will ensure a major percentage reduction in the number of accidents along the Dumbarton Road, which is significant enough to merit a high positive rating.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is likely to enable the production of some major positive benefits including a reduction in the number of accidents, de-congestion, vehicle operating costs and travel times, helping reduce congestion and capacity constraints of the network. Major negative impacts are expected in terms of Capital and O & M costs, while revenues are expected to remain neutral, but generally the scheme would be value for money.
Accessibility & Social Inclusion	This option is likely to provide the best travel time savings but at the expense of large impact Capital and O & M costs.
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	By re-developing the road sections in the area it is likely to produce a positive impact that will cut the number of accidents dramatically and be the most successful regarding this issue out of all the proposed options. Revenues for this option tend to have no positive impacts whereas analysis suggests that rail, tram and Fast-link provide the best impacts to modal shares and produce the highest level of revenues.

Implementability Appraisal	
Technical:	This option based on a new rail alignment will require major development that will include the construction of the rail line itself, associated rail infrastructure, a new railway station and significant structures en-route between Leven and the existing Fife circle line. Owing to the nature of the work required, and potential for land-use conflict, this option may incur large costs and time delays.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	The rail options that require entirely new track alignment are costly, and the potential passenger related benefits alone are unlikely to offset these costs. Therefore the overall scheme is unlikely to present good value for money investment.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (-/--) Potential construction impacts on local air quality (-) Local air quality will improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (+) Potential impacts upon biodiversity features during construction of park and ride and improved facilities at stations (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors (-) Potential impacts associated with temporary land take (-) Potential impacts relating to permanent land take (-/--) Potential impacts on locally important cultural heritage features during construction and operation (-) Potential impacts statutory cultural heritage features during construction and operation (-)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a good impact. The overall score for this option has been estimated as moderately positive (++)
Economy:	There is estimated to be good impacts regarding accidents, de-congestion, vehicle operating costs while generating moderate benefits for travel times and revenues. Capital and O & M costs are expected to be high producing moderate negative results, but the overall option in terms of value for money is likely to produce minor negative impacts (-)
Integration:	Very positive transport integration can be expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.8 - STAG Part 1 Appraisal Summary Table of Option 3b

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New Rail Alignment to Markinch Station using part of existing railway with stations at Leven & Muiredge Development/Cameron Bridge	Name of Planner:	Scott Wilson
Proposal Description:	New Rail Alignment to Markinch Station using part of existing (de-commissioned) railway with new stations at Leven & Muiredge Development/Cameron Bridge	Estimated Capital Cost:	£26.4 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The rail alignment partly uses the existing rail line at Leven but diverges in the Cameron Bridge area and passes parallel and to the north of the A911, joining the existing Fife circle line north of and close to Markinch station. The new stations will be built in Leven in the Methil docks and Cameron Bridge areas.		
Social Context:	With increased accessibility provided by the new station at Cameron Bridge, this option is likely to be welcomed by the public throughout the Levenmouth area, and owing to the position and nature of the link with the existing line, journeys to and from Leven will not involve any time penalties.		
Economic Context:	Even with re-using part of the existing line and the comparatively short distance of new rail required, the capital costs of the scheme means that it fails to deliver value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is not encouraging the shift of goods, produce and materials from road to rail, but it does promote modal shift for passenger traffic from road to rail, and this should increase the efficiency of freight movements and business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion. This option presents additional accessibility to a larger proportion of the Levenmouth population with a second rail station in the Muiredge Development/Cameron Bridge area.

Implementability Appraisal	
Technical:	This option based on a new rail alignment will require major development that will include the construction of the rail line itself, associated rail infrastructure, two new railway stations and significant structures en-route between Leven and the existing Fife circle line. Owing to the nature of the work required, and potential for land-use conflict, this option may incur large costs and time delays.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	The rail options that require entirely new track alignment are costly, and the potential passenger related benefits alone are unlikely to offset these costs. Therefore the overall scheme is unlikely to present good value for money investment.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (--/-) Potential construction impacts on local air quality (-) Local air quality may improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (O/+) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on bat populations through loss or disturbance of roost sites (buildings/trees) (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on local site of nature conservation importance (-) Potential impact on breeding birds as a result of the removal of trees if required as part of the construction (-) Potential adverse visual impacts on residential receptors (-) Potential landscape impacts in loss of green space (-) Potential environmental improvements (+) Potential impacts associated with temporary land take (-) Potential impacts relating to permanent land take (-/--) Potential impacts on locally important cultural heritage features during construction and operation (-)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be an excellent impact. The overall score for this option has been estimated as moderately positive (++)
Economy:	There is estimated to be good impacts regarding accidents, de-congestion, vehicle operating costs while generating moderate benefits for travel times and revenues. Capital and O & M costs are expected to be high producing major negative results, but the overall option in terms of value for money is likely to produce moderately negative impacts (--)
Integration:	Very positive transport integration can be expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.9 - STAG Part 1 Appraisal Summary Table of Option 3c

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New Rail Alignment to Markinch Station using part of existing railway with station at Leven plus freight facilities	Name of Planner:	Scott Wilson
Proposal Description:	New Rail Alignment to Markinch Station using part of existing (de-commissioned) railway with station at Leven plus freight facilities	Estimated Capital Cost:	£24.5 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The rail alignment partly uses the existing rail line at Leven but diverges in the Cameron Bridge area and passes parallel and to the north of the A911, joining the existing Fife circle line north of and close to Markinch station. A new station will be built in Leven in the Methil docks area, which will also see a refurbishment of freight facilities in this locality.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to all parts of Fife and beyond, and owing to the position and nature of its link with the Fife Circle line, will not involve any time penalties for trips to and from the Levenmouth area.		
Economic Context:	The re-establishment of rail freight facilities and the opportunities this brings to the local business community allows this option to meet the value for money objectives of this scheme.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car and HGV to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially HGV traffic with this option, and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is encouraging the shift of goods, produce and materials from road to rail, and in doing so should reduce the costs of freight deliveries for the type of freight anticipated. It also promotes modal shift for passenger traffic from road to rail, and the combined effect should be the increase in the efficiency of freight movements and business trips by road, with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion, especially that of freight traffic.

Implementability Appraisal	
Technical:	This option in re-commissioning part of the existing railway line reduces the potential for land-use conflict, and this should reduce scale of costs and time delays. The new rail alignment is also comparatively short. Nevertheless re-habilitating the existing rail line and freight yards, re-commissioning the associated rail infrastructure, and the construction of a new railway station, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services and operating the freight facilities should be relatively trouble free.
Financial:	Re-commissioning existing rail infrastructure reduces the costs sufficiently to the point that potential passenger related benefits can marginally offset these. However, the additional benefits of introducing freight mean that the overall scheme performs reasonably well in value for money terms.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (-/--) Potential construction impacts on local air quality (-) Local air quality may improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (O/+) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impacts upon biodiversity features during the construction of new station at Jordanhill West (-) Potential adverse visual impacts on residential receptors (-) Potential impacts associated with temporary land take (-) Potential impacts relating to permanent land take (-/--) Potential impacts on locally important cultural heritage features during construction and operation (-) Potential impacts on statutory cultural heritage features during construction and operation (-)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a good impact. The overall score for this option has been estimated as moderately positive (++)
Economy:	There is estimated to be good impacts regarding accidents, revenues and travel times and it is expected to have no effect regarding improvements in de-congestion o vehicle operating costs. Capital and O & M costs are expected to be high producing moderate negative results, resulting in the overall option in terms of value for money is likely to produce moderately negative impacts (--)
Integration:	Very positive transport integration can be expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.10 - STAG Part 1 Appraisal Summary Table of Option 3d

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New Rail Alignment to Markinch Station using part of existing railway with stations at Leven & Muiredge Development/Cameron Bridge plus freight facilities	Name of Planner:	Scott Wilson
Proposal Description:	New Rail Alignment to Markinch Station using part of existing (de-commissioned) railway with new stations at Leven & Muiredge Development/Cameron Bridge plus freight facilities	Estimated Capital Cost:	£27.9 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The rail alignment partly uses the existing rail line at Leven but diverges in the Cameron Bridge area and passes parallel and to the north of the A911, joining the existing Fife circle line north of and close to Markinch station. The new stations will be built in Leven in the Methil docks and Cameron Bridge areas, and there will be a refurbishment of freight facilities in the Methil Docks area.		
Social Context:	This option is likely to be welcomed by the public for trips commuting, shopping and for other purposes to all parts of Fife and beyond, and owing to the position and nature of its link with the Fife Circle line, will not involve any time penalties for trips to and from the Levenmouth area.		
Economic Context:	The re-establishment of rail freight facilities and the opportunities this brings to the local business community allows this option to meet the value for money objectives of this scheme, in spite of the higher capital costs involved with building a second station.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car and HGV to rail which should assist in reducing local congestion on the A955/A915 and A911 roads and potentially some improvements in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially HGV traffic with this option, and therefore should improve the safety environment for all road users.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option is encouraging the shift of goods, produce and materials from road to rail, and in doing so should reduce the costs of freight deliveries for the type of freight anticipated. It also promotes modal shift for passenger traffic from road to rail, and the combined effect should be the increase in the efficiency of freight movements and business trips by road, with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased accessibility and travel options available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh, and also the ease of travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in congestion, especially that of freight traffic. This option presents additional accessibility to a larger proportion of the Levenmouth population with a second rail station in the Muiredge Development/Cameron Bridge area.

Implementability Appraisal	
Technical:	This option in re-commissioning part of the existing railway line reduces the potential for land-use conflict, and this should reduce scale of costs and time delays. The new rail alignment is also comparatively short. Nevertheless re-habilitating the existing rail line and freight yards, re-commissioning the associated rail infrastructure, and the construction of two new railway stations, which altogether present a sizable cost outlay.
Operational:	Implementing operational issues are likely to be successful, however there maybe difficulties such as linking new sections of the railway to the existing rail network infrastructure. Other operational aspects such as timetabling of new passenger services and operating the freight facilities should be relatively trouble free.
Financial:	Re-commissioning existing rail infrastructure reduces the costs of this option sufficiently to the point that potential passenger related benefits can marginally offset these. However, the additional benefits of introducing freight with this option are largely neutered by the increased costs of an additional station, so that the overall scheme remains marginal in value for money terms.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new rail infrastructure required close to and within Leven itself. There may also be some disruption to services on the Fife Circle line, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (-/--) Potential construction impacts on local air quality (-) Local air quality may improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (++) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on breeding birds as a result of the removal of trees and scrub along the rail corridor (-) Potential impact on bat populations through loss or disturbance of roost sites/foraging areas (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on users of National Cycle Route (---) Potential beneficial visual impacts associated with environmental improvements (+) Potential impacts associated with temporary land take (-) Potential adverse impacts on unscheduled monuments and Listed Buildings (---)
Safety:	For road safety there is estimated to be a positive impact as a result of this option. For personal security there is likely to be a good impact. The overall score for this option has been estimated as moderately positive (++)
Economy:	There is estimated to be minor positive impacts regarding accidents, de-congestion and vehicle operating costs. Good positive impacts are expected for travel times and revenues. Capital and O & M costs are expected to be high producing moderate negative results, resulting in the overall option in terms of value for money is likely to produce moderately negative impacts (--)
Integration:	Very positive transport integration can be expected, together with minor positive results regarding land use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Excellent community & comparative accessibility benefits are expected to generate major positive scores respectively (+++)

Table F.11 - STAG Part 1 Appraisal Summary Table of Option 4a

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New BRT System to Markinch with station at Leven Station	Name of Planner:	Scott Wilson
Proposal Description:	New BRT System to link Markinch rail station with the proposed station at Leven	Estimated Capital Cost:	£11.2 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The BRT alignment passes parallel and to the north of the A911, linking the proposed new BRT interchange at the existing bus station close to Methil Docks with Markinch rail station.		
Social Context:	The BRT bus services are likely to enhance public transport connectivity for the Levenmouth area and permit greater accessibility to both towns nearby the greater Fife area and Edinburgh for a wide variety of purposes.		
Economic Context:	Relatively high passenger revenues and a low capital cost base mean that option is likely to deliver value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to BRT, which should assist in reducing local congestion particularly on the A911, but also to some extent on the A955/A915 roads, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A911, and therefore should improve the safety environment for all road users of the main trunk roads out of Leven.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to BRT, and this should increase the efficiency of business trips by road with journey time savings and vehicle operating cost savings resulting from the anticipated reduction in congestion on the local road network. This option should also secure a wider employment catchment area for local businesses.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region, including Edinburgh. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new segregated busway will require major development that will include the construction of the busway itself, associated infrastructure, an upgraded bus interchange in Leven and some structural work en-route between Leven and Markinch rail station. Owing to the designated route, there is some potential for land-use conflict resulting in increased costs and time delays.
Operational:	Implementing operational issues are likely to be successful, and there are no major problems envisaged in articulating the new segregated busway with the existing road network or bus infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	Compared to the equivalent rail infrastructure, the BRT option is relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieves most of the (passenger only) benefits commonly associated with new rail services. Therefore BRT options usually present good value for money, and this option is no exception.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the BRT and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new bus infrastructure required on the road network close to and within Leven itself, and close to and at Markinch station, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (-/--) Potential construction impacts on local air quality (-) Local air quality may improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (++) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on breeding birds as a result of the removal of trees and scrub along the rail corridor (-) Potential impact on bat populations through loss or disturbance of roost sites/foraging areas (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on users of National Cycle Route (---) Potential beneficial visual impacts associated with environmental improvements (+) Temporary land take associated with construction, including site compounds and haul roads (-) Potential impacts on locally important cultural heritage features during construction and operation (---)
Safety:	In terms of road safety and personal security there is estimated to be a minor positive impacts respectively. The overall score has been estimated as slightly positive (+)
Economy:	There are estimated minor positive results regarding accidents, revenues and travel times. There are likely to be no impacts generated in terms of de-congestion and vehicle operating costs plus minor losses could be generated from capital and O & M costs. This evidently results in an positive overall value for money score of (+)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate slightly positive and neutral scores respectively (+)

Table F.12 - STAG Part 1 Appraisal Summary Table of Option 4b

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New BRT System to Markinch with Station at Leven Station plus a second interchange at Muiredge/Cameron Bridge	Name of Planner:	Scott Wilson
Proposal Description:	New BRT System to Markinch with Station at Leven Station plus a second interchange at Muiredge/Cameron Bridge	Estimated Capital Cost:	£13.2 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The BRT alignment passes parallel and to the north of the A911, linking the proposed new BRT interchanges at the existing bus station close to Methil Docks and at the Muiredge development with Markinch rail station.		
Social Context:	The BRT bus services are likely to enhance public transport integration and connectivity for the Levenmouth area and permit greater accessibility to both towns nearby, the greater Fife area and Edinburgh for a wide variety of purposes.		
Economic Context:	Relatively high passenger revenues and a low capital cost base mean that option is likely to deliver value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to BRT, which should assist in reducing local congestion particularly on the A911, but also to some extent on the A955/A915 roads, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A911, and therefore should improve the safety environment for all road users of the main trunk roads out of Leven.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to bus, and this should increase the efficiency of business trips by road with journey time savings, both for users of the service and for other road users (and for the latter also vehicle operating cost savings), resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new segregated busway will require major development that will include the construction of the busway itself, associated infrastructure, an upgraded bus interchange in Leven and a new interchange close to the Muiredge development/Cameron Bridge area, some structural work en-route between Leven and Markinch rail station. Owing to the designated route, there is some potential for land-use conflict resulting in increased costs and time delays.
Operational:	Implementing operational issues are likely to be successful, and there are no major problems envisaged in articulating the new segregated busway with the existing road network or bus infrastructure. Other operational aspects such as timetabling of new passenger services should be relatively trouble free.
Financial:	Compared to the equivalent rail infrastructure, the BRT option is relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieves most of the (passenger only) benefits commonly associated with new rail services. Therefore BRT options usually present good value for money, and this option is no exception.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the BRT and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region and further afield, boosted by an additional interchange with this option. However, there may be some dissatisfaction by local residents regarding the scale of work undertaken on the parts of the new bus infrastructure required on the road network close to and within Leven itself, and close to and at Markinch station, although this should be for a comparatively short period of time.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (--/-) Local air quality may experience minor adverse effects during the construction phase (-) Local air quality during the operational phase may improve as a result of the modal shift from road to rail, which will result in less pollutants being released into the atmosphere. (++) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential construction impacts on geology and soils (-) Potential impacts upon biodiversity features during the construction phase (-) Potential visual impacts during construction and operation (-) Temporary land take due to construction activity, resulting in temporary severance/traffic diversions during construction (--) Permanent land take associated with the new sections of road (-) Potential impacts on locally important cultural heritage features during construction and operation (O/-)
Safety:	In terms of road safety and personal security there is estimated to be a minor & moderate positive impacts respectively. The overall score has been estimated as moderately positive (++)
Economy:	There are estimated minor positive results regarding accidents, revenues and travel times. There are likely to be no impacts generated in terms of de-congestion and vehicle operating costs plus moderate losses could be generated from capital and O & M costs. This evidently results in an positive overall value for money score of (+)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate slightly positive and neutral scores respectively (+)

Table F.13 - STAG Part 1 Appraisal Summary Table of Option 5a

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Bus priority measures on the A955	Name of Planner:	Scott Wilson
Proposal Description:	Introduction of new bus priority measures on the A955	Estimated Capital Cost:	£3.5 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The bus priority measures follow the alignment of the A955 between the bus station in the centre of Leven and Kirkcaldy bus station.		
Social Context:	Improvements to the bus services are likely to provide significant benefits to the public in terms of accessibility and connectivity for both the Levenmouth area and permit greater accessibility to the adjacent towns in Fife for trips undertaken for a variety of purposes.		
Economic Context:	This option is likely to generate significant benefits for Levenmouth residents, and the low costs of these measures means that it scores well in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to an enhanced bus network, which should assist in reducing local congestion particularly on the A955, but also to some extent on the A911/A915 roads, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A955, and should improve the safety environment for all road users primarily on the A955, and to a lesser extent on the other main trunk roads out of Leven.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to bus, and this should increase the efficiency of business trips by road with journey time savings, both for users of the service and for other road users (and for the latter also vehicle operating cost savings), resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new bus priority measures will requires only minor additional infrastructure on the proposed bus route. There will be no conflicting land-use issues, and little to impede the inauguration of this option that results in increased costs and time delays.
Operational:	Implementing operational issues are very likely to be successful, with no problems envisaged in integrating the improved bus services with the existing road network, existing bus infrastructure or current service provision in terms of timetabling, ticketing and other operational aspects.
Financial:	Compared to the equivalent BRT option, priority bus measures are relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieve most of the (passenger only) benefits commonly associated with a BRT system. Options encompassing bus priority measures therefore usually present very good value for money, and this option with a focus on the A955 is no exception.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the buses operating on the bus priority network and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region. Moreover, the scale of the works required is limited enough and of short enough duration to provoke little in the way of local resident dissatisfaction.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (--) Local air quality may experience minor adverse effects during the construction phase (-) Local air quality may experience minor beneficial impacts resulting from a modal shift from road to rail transport, which may result in less pollutants being released into the atmosphere. (++) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential construction impacts on geology and soils (-) Potential impacts upon biodiversity features during the construction phase of fastlink with interchange facility and park and ride (-) Potential landscape impacts in loss of green space (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation(--) Potential adverse visual impacts on National Cycle Route users (---) Potential beneficial visual impacts associated with environmental improvements (+) Temporary land take due to construction activity, resulting in temporary severance/traffic diversions during construction (--) Permanent land take associated with the new sections of road (-) Potential impacts on locally important cultural heritage features during construction and operation (-)
Safety:	In terms of road safety and personal security there is estimated to be a moderate & major positive impacts respectively. The overall score has been estimated as moderately positive (+++)
Economy:	There are estimated to be moderately positive results regarding accidents, de-congestion and vehicle operating costs. There are likely to be major positive impacts generated in terms of revenues and expected travel times. Major losses are likely to be generated from capital and O & M costs. This evidently results in a major negative overall value for money score of (---)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate moderately positive scores respectively (++)

Table F.14 - STAG Part 1 Appraisal Summary Table of Option 5b

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Bus priority measures on the A915	Name of Planner:	Scott Wilson
Proposal Description:	Introduction of new bus priority measures on the A915	Estimated Capital Cost:	£3.3 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The bus priority measures follow the alignment of the A915 between the bus station in the centre of Leven and Kirkcaldy bus station.		
Social Context:	Improvements to the bus services are likely to provide significant benefits to the public in terms of accessibility and connectivity for both the Levenmouth area and permit greater accessibility to the adjacent towns in Fife for trips undertaken for a variety of purposes.		
Economic Context:	This option is likely to generate significant benefits for Levenmouth residents, and the low costs of these measures means that it scores well in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to an enhanced bus network, which should assist in reducing local congestion particularly on the A915, but also to some extent on the A911/A955 roads, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A915, and should improve the safety environment for all road users primarily on the A915, and to a lesser extent on the other main trunk roads out of Leven.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to bus, and this should increase the efficiency of business trips by road with journey time savings, both for users of the service and for other road users (and for the latter also vehicle operating cost savings), resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new bus priority measures will requires only minor additional infrastructure on the proposed bus route. There will be no conflicting land-use issues, and little to impede the inauguration of this option that results in increased costs and time delays.
Operational:	Implementing operational issues are very likely to be successful, with no problems envisaged in integrating the improved bus services with the existing road network, existing bus infrastructure or current service provision in terms of timetabling, ticketing and other operational aspects.
Financial:	Compared to the equivalent BRT option, priority bus measures are relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieve most of the (passenger only) benefits commonly associated with a BRT system. Options encompassing bus priority measures therefore usually present very good value for money, and this option with a focus on the A915 is no exception.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the buses operating on the bus priority network and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region. Moreover, the scale of the works required is limited enough and of short enough duration to provoke little in the way of local resident dissatisfaction.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (--) Local air quality may experience minor adverse effects during the construction phase (-) Local air quality may experience minor beneficial impacts resulting in a modal shift from road to water transport, although this will depend on the type of power units used on the water craft. (O/+) Potential pollution and disturbance impacts on water resources and associated aquatic species during construction and operation (-) Potential construction impacts on geology and soils (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution during construction and operation (--) Potential impacts on the Fossil Grove SSSI (-) Potential impacts upon biodiversity features during construction of water taxi docking stations on the north and south banks of the River Clyde (-) Potential impact on local site of nature conservation importance (-) Permanent land take impacts (-) Potential impacts on locally important cultural heritage features during construction and operation (-)
Safety:	In terms of road safety there is estimated to be a neutral impact. For personal security benefits there is likely to be large positive impacts. The overall score has been estimated as moderate positive (++)
Economy:	There is estimated to be neutral impacts regarding accidents, de-congestion and vehicle operating costs with minor positive effects for revenues and travel times. However, there is expected to be a moderate negative impact in terms of Capital and O & M costs that could result in the overall value for money of the scheme scoring moderately negative (--)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate moderately positive scores respectively (++)

Table F.15 - STAG Part 1 Appraisal Summary Table of Option 5c

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Circular route on the A915 & A955	Name of Planner:	Scott Wilson
Proposal Description:	Introduction of new bus priority measures on a circular route on both the A915 and A955 between Leven and Kirkcaldy	Estimated Capital Cost:	£5.2 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The bus priority measures follow the alignments of both the A955 and the A915 between the bus station in the centre of Leven and Kirkcaldy bus station.		
Social Context:	Improvements to the bus services are likely to provide significant benefits to the public in terms of accessibility and connectivity for both the Levenmouth area and permit greater accessibility to the adjacent towns in Fife for trips undertaken for a variety of purposes.		
Economic Context:	This option is likely to generate significant benefits for Levenmouth residents, and despite slightly higher costs than associated with the other bus priority options, it scores well in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to an enhanced bus network, which should assist in reducing local congestion particularly on the A955/A915, but also to some extent on the A911 as well, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A915A955 trunk routes, and should improve the safety environment for all road users, primarily on the A955 and A915, but to a lesser extent on the A911.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to bus, and this should increase the efficiency of business trips by road with journey time savings, both for users of the service and for other road users (and for the latter also vehicle operating cost savings), resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new bus priority measures will requires only minor additional infrastructure on the proposed bus routes. There will be no conflicting land-use issues, and little to impede the inauguration of this option that results in increased costs and time delays.
Operational:	Implementing operational issues are very likely to be successful, with no problems envisaged in integrating the improved bus services with the existing road network, existing bus infrastructure or current service provision in terms of timetabling, ticketing and other operational aspects.
Financial:	Compared to the equivalent BRT option, priority bus measures are relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieve most of the (passenger only) benefits commonly associated with a BRT system. Options encompassing bus priority measures therefore usually present good or very good value for money. The additional costs associated with this option, encompassing as it does both the A955 and A915, means that this option does not score quite so highly in value for money terms as the options which focus on one route, but it nevertheless presents good value for money.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the buses operating on the bus priority network and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region. Moreover, the scale of the works required is limited enough and of short enough duration to provoke little in the way of local resident dissatisfaction.

Objective	Supporting Information
Environment:	Potential construction impacts on noise and vibration (--) Local air quality may experience minor adverse effects during the construction phase (-) Local air quality may experience minor beneficial impacts resulting from a modal shift from road to rail transport, which may result in less pollutants being released into the atmosphere. (++) Potential pollution and disturbance impacts on water resources and associated species during construction and operation (-) Potential construction impacts on geology and soils (-) Potential impacts upon biodiversity features during the construction phase of fastlink with interchange facility and park and ride (-) Potential landscape impacts in loss of green space (-) Potential environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation(--) Potential adverse visual impacts on National Cycle Route users (---) Potential beneficial visual impacts associated with environmental improvements (+) Temporary land take due to construction activity, resulting in temporary severance/traffic diversions during construction (--) Permanent land take associated with the new sections of road (-) Potential impacts on locally important cultural heritage features during construction and operation (-)
Safety:	In terms of road safety and personal security there is estimated to be a moderate & major positive impacts respectively. The overall score has been estimated as moderately positive (+++)
Economy:	There are estimated to be moderately positive results regarding accidents, de-congestion and vehicle operating costs. There are likely to be major positive impacts generated in terms of revenues and expected travel times. Major losses are likely to be generated from capital and O & M costs. This evidently results in a major negative overall value for money score of (---)
Integration:	Good positive transport integration is expected, together with minor positive results regarding land-use and policy integration, resulting in an overall moderately positive score (++)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate moderately positive scores respectively (++)

Table F.16 - STAG Part 1 Appraisal Summary Table of Option 5d

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	Bus priority service to Markinch/Glenrothes along the A911	Name of Planner:	Scott Wilson
Proposal Description:	Introduction of bus priority service between Leven and Markinch/Glenrothes along the A911	Estimated Capital Cost:	£2.7 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	The bus priority measures follow the alignment of the A911 between the bus station in the centre of Leven and Kirkcaldy bus station.		
Social Context:	Improvements to the bus services are likely to provide significant benefits to the public in terms of accessibility and connectivity for both the Levenmouth area and permit greater accessibility to the adjacent towns in Fife for trips undertaken for a variety of purposes.		
Economic Context:	This option is likely to generate significant benefits for Levenmouth residents, and the low costs of these measures means that it scores well in terms of value for money.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages modal shift from car to an enhanced bus network, which should assist in reducing local congestion particularly on the A911, but also to some extent on the A915/A955 roads, and so there should be a potential gain in local air quality, particularly at peak times.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, most especially the notorious A911, and should improve the safety environment for all road users primarily on the A911, but also to a lesser extent on the other main trunk roads out of Leven.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	This option promotes modal shift for passenger traffic from road to bus, and this should increase the efficiency of business trips by road with journey time savings, both for users of the service and for other road users (and for the latter also vehicle operating cost savings), resulting from the anticipated reduction in congestion on the local road network.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased regional connectivity and accessibility with increased travel options and quicker PT journey times available to commuters, visitors, students and those visiting leisure facilities in the whole sub-region. This option also eases travel within the local Levenmouth area for those using the roads, including cyclists, motorists and pedestrians with the anticipated reduction in vehicle congestion.

Implementability Appraisal	
Technical:	This option based on a new bus priority measures will requires only minor additional infrastructure on the proposed bus route. There will be no conflicting land-use issues, and little to impede the inauguration of this option that results in increased costs and time delays.
Operational:	Implementing operational issues are very likely to be successful, with no problems envisaged in integrating the improved bus services with the existing road network, existing bus infrastructure or current service provision in terms of timetabling, ticketing and other operational aspects.
Financial:	Compared to the equivalent BRT option, priority bus measures are relatively inexpensive, both in terms of capital and in terms of operating costs, yet achieve most of the (passenger only) benefits commonly associated with a BRT system. Options encompassing bus priority measures therefore usually present very good value for money, and this option with a focus on the A911 is no exception.
Public:	Provision of this option is likely to be welcomed by the public due to the reduction in congestion and associated travel time savings, both for the buses operating on the bus priority network and other road users, and the increased connectivity and accessibility of the Levenmouth area for employment and social purposes to the rest of the immediate region. Moreover, the scale of the works required is limited enough and of short enough duration to provoke little in the way of local resident dissatisfaction.

Objective	Supporting Information
Environment:	Impacts relating to noise and vibration during construction (--) Impacts related to air quality due to construction (--) Impacts on air quality as a result of reducing congestion (O) Potential pollution and disturbance impacts on water resources construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on bat populations through loss or disturbance of roost sites (buildings/trees) (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on breeding birds as a result of the removal of trees if required as part of the construction (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential for environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on National Cycle Route users (---) Potential visual beneficial impacts associated with environmental improvements (+) Potential impacts associated with temporary land take (-) Potential impacts relating to demolition of properties (--/---) Potential Impacts on locally important cultural heritage features (-) Potential Impacts on statutory cultural heritage features (-)
Safety:	In terms of road safety and personal security there is estimated to be a neutral & moderately positive impacts respectively. The overall score has been estimated as slightly positive (+)
Economy:	There are estimated to be no impacts regarding accidents, de-congestion and vehicle operating costs, while revenues and travel times are expected to produce slightly positive results. However, the scheme is likely to incur high Capital and O & M costs. This option is not expected to be value for money, producing an overall score of (--)
Integration:	Positive transport integration is expected, together with minor positive and neutral results regarding land-use and policy integration respectively, resulting in an overall slightly positive score (+)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate slightly positive scores respectively (+)

Table F.17 - STAG Part 1 Appraisal Summary Table of Option 6

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		SEStran First Floor Hopetown Gate 8b McDonald Road Edinburgh EH7 4LZ	
Proposal Name:	New hovercraft/ferry service between Leven and Edinburgh	Name of Planner:	Scott Wilson
Proposal Description:	New hovercraft/ferry service between Methil docks and Edinburgh representing extension of existing hovercraft service from Kirkcaldy to Edinburgh	Estimated Capital Cost:	£10.6 million
Funding Sought From: (if applicable)	Not Applicable	Amount of Application:	Not Applicable
Background Information			
Geographic Context:	A hovercraft/ferry service between the Methil docks and Portobello, representing an extension of the current service between Kirkcaldy and Edinburgh.		
Social Context:	This option is likely to be welcomed by commuters and visitors, including tourists, both to and from Edinburgh, but has limited relevance to travel for Levenmouth residents travelling within the Fife context..		
Economic Context:	This option is unlikely to generate anything like sufficient revenues to compensate for the large capital costs required for port and terminal infrastructure and so does not meet value for money criteria.		

Planning Objectives	
Objective:	Performance against planning objective:
Environment	
To encourage more sustainable travel for new and existing development	This option encourages some modal shift from car and car-rail journeys to Edinburgh in particular, and possibly to some other destinations in the eastern end of the Central Belt, but the volumes of traffic removed are unlikely to be enough to make anything other than a marginal difference to local air quality.
Safety	
By removing traffic from Levenmouth's roads, improving safety for all road users	By encouraging modal shift, this option is removing traffic from Levenmouth's roads, but this is mainly traffic to Edinburgh and the surrounding region, all of it car passenger traffic. Although the level of traffic will be slightly reduced, it is unlikely to be enough to impact on road safety to any significant extent in the Levenmouth area.
Economy	
Promote the efficient movement of freight to and from Levenmouth, and encourage the transfer of movement of goods, produce and materials from road to more sustainable distribution.	Although this option promotes modal shift for passenger traffic from road to hovercraft/ferry, as we have seen, this will be mainly car passenger traffic, which would marginally increase the efficiency of business trips by road in the Levenmouth area. But the volume of car trip savings is unlikely to have anything other than a marginal effect on remaining road-based regional journey time savings and vehicle operating cost savings. The ferry/hovercraft service users themselves will experience the only significant savings. However, there will be some benefits from additional tourism to the Levenmouth area resulting from the new service.
Accessibility & Social Inclusion	
Improve access to key areas and services in terms of employment, education, health, leisure and other transport modes in the local, regional and wider area for all residents in Levenmouth.	This option is likely to be welcomed due to the increased connectivity and accessibility between Levenmouth and Edinburgh, especially for commuters, day-visitors to Edinburgh and tourists. However, the impact on accessibility and social inclusion for local residents wishing to travel between the Levenmouth area and Fife will be minimal.

Implementability Appraisal	
Technical:	This option requires major harbour development including the construction of a new terminal, new parking arrangements and a new park and ride facility. There may also be significant changes required to the local road network to accommodate increased traffic to the locality of the terminal. Owing to the nature and scale of the work required, and the potential for land-use conflict, this option may incur large costs and time delays.
Operational:	Implementing operational issues are likely to be successful. Few difficulties are envisaged with integrating parking arrangements, the new park and ride system and the proposed ferry/hovercraft service. The proposed Levenmouth ferry service will be an extension of the existing Kirkcaldy – Edinburgh service and will involve significant re-timetabling, but these operational aspects should be relatively trouble free.
Financial:	The new terminal and associated road-based infrastructure will be costly, and the passenger related benefits would largely apply only to those using the ferry/hovercraft service rather than the wider travelling population in the area. There may be some local benefit from increasing property prices in the vicinity of the terminal. However the overall numbers of beneficiaries from this option are relatively small, therefore the overall scheme is unlikely to present good value for money investment.
Public:	This option, by improving connectivity and accessibility to Edinburgh is likely to be welcomed by commuters, shoppers, day- visitors and tourists travelling to and from Edinburgh who would expect a reduction in journey time to Edinburgh and beyond. However, for the rest of the local travelling population whose focus is either the Levenmouth area, other Fife towns or, for those making journeys northward, this option presents very little in the way of improving their journey performance or experience.

Objective	Supporting Information
Environment:	Impacts relating to noise and vibration during construction (--) Impacts related to air quality due to construction (--) Impacts on air quality as a result of reducing congestion (O) Potential pollution and disturbance impacts on water resources construction and operation (-) Potential effects on geology and soils as a result of groundbreaking works (-) Potential impact on the Inner Clyde SPA/Ramsar/SSSI qualifying features through disturbance and/or pollution (-) Potential impact on bat populations through loss or disturbance of roost sites (buildings/trees) (-) Potential impact on badger populations through loss/ fragmentation of habitat and disturbance of setts (-) Potential impact on breeding birds as a result of the removal of trees if required as part of the construction (-) Potential impact on local site of nature conservation importance (-) Potential landscape impacts in loss of green space (-) Potential for environmental improvements (+) Potential adverse visual impacts on residential receptors during construction (---) and operation (--) Potential adverse visual impacts on National Cycle Route users (---) Potential visual beneficial impacts associated with environmental improvements (+) Potential impacts associated with temporary land take (-) Potential impacts relating to demolition of properties (--/---) Potential Impacts on locally important cultural heritage features (-) Potential Impacts on statutory cultural heritage features (-)
Safety:	In terms of road safety and personal security there is estimated to be neutral & slightly positive impacts respectively. The overall score has been estimated as moderately positive (+)
Economy:	There are estimated to be no impacts regarding accidents, de-congestion, vehicle operating costs and revenues, while travel times are expected to be slightly positive. However, this option is likely to incur small negative Capital and O & M costs. Overall this option is not expected to be value for money and is likely to score moderately negative (--)
Integration:	Positive transport integration is expected, together with minor positive and neutral results regarding land-use and policy integration respectively, resulting in an overall minor positive score (+)
Accessibility & Social Inclusion:	Community & Comparative accessibility benefits are expected to generate neutral & slightly positive scores respectively (+)

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