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Levenmouth Sustainable Transport Study

Preliminary Options Appraisal, Final Report, May 2019

On behalf of **Transport Scotland**



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1 Introduction

1.1 Purpose of the Report

1.1.1 The purpose of this report is to detail the analysis and findings from the Preliminary Options Appraisal Stage of the Levenmouth Sustainable Transport Study. This is the second and penultimate stage of the Transport Appraisal in line with Scottish Transport Appraisal Guidance (STAG) and is an initial appraisal of the multi-modal transport options brought forward from the Initial Appraisal: Case for Change Stage.

1.2 Other Reports

1.2.1 The Initial Appraisal: Case for Change report was published in November 2018. This report documents the first stage of the study which involved identifying evidenced transport problems and opportunities in the study area and setting Transport Planning Objectives (TPOs) to reflect the changes sought to address these problems and opportunities. A range of potential multi-modal transport options were then generated and sifted so that only options worthy of further consideration were taken forward to the appraisal stage.

1.3 Recommended Multi-Modal Options for Appraisal

1.3.1 Several multi-modal options were considered at the Initial Appraisal: Case for Change Stage and the following options have emerged from this stage for consideration at the Preliminary Options Appraisal Stage.

1.3.2 **It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options listed below – the numbering system is used for presentation and reference purposes only. It should also be noted that options may not be in all cases mutually exclusive and could be packaged together to help meet the TPOs and address the evidenced transport problems. This will be considered further in the next and final stage of the appraisal process.**

Table 1: Recommended Multi-Modal Transport Options for Preliminary Options Appraisal

Option Ref.	Type	Title	Description
1	Accessibility	Enhanced local public transport services	Maintain existing bus services while improving local public transport facilities and information services
2	Accessibility	Improve local bus services	Improve local bus services connecting towns in the Levenmouth area to Leven
3	Accessibility	Improve bus-rail connections	Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes
4	Accessibility	Improve regional bus services	Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow
5	Freight	Freight only rail line	Provision of a freight only rail line to Cameron Bridge and Methil Docks and onwards to the mainline along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks

Option Ref.	Type	Title	Description
6	Public Transport and Freight	Re-open existing rail line to passengers and freight	Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks
7	Public Transport	New passenger only rail line	Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy
8	Public Transport and Freight	New passenger and freight rail line	Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch
9	Public Transport	New passenger BRT route	Provision of a new Bus Rapid Transit alignment from Leven to Markinch
10	Active Travel	Active travel network	Provision of new and / or improved active travel routes linking the towns within Levenmouth, to key services and public transport interchanges, as well as to the East Neuk
11	Public Transport	New hovercraft services	Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks
12	Public Transport	Reduced rail fares	Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity)

1.4 The Structure of the Report

1.4.1 Following this introductory chapter, the remainder of this report is structured as follows:

- Chapter 2: describes the methodology that has been applied in carrying out the Preliminary Options Appraisal.
- Chapter 3: details a summary of the Preliminary Options Appraisal findings, including the performance of the multi-modal options against the Transport Planning Objectives (TPOs); the appraisal of the impacts against five STAG criteria; and the Feasibility, Affordability and Public Acceptability of each option.
- Chapter 4: outlines the recommendations, including the short list of multi-modal transport options recommended to be taken forward to the Detailed Options Appraisal Stage.

2 Methodology

2.1 Scottish Transport Appraisal Guidance (STAG)

- 2.1.1 The **Preliminary Options Appraisal**¹ stage of the Levenmouth Sustainable Transport Study has been undertaken using Scottish Transport Appraisal Guidance (STAG). The STAG process is split into four parts as shown in Figure 1 below.
- 2.1.2 The Preliminary Options Appraisal forms the second part of the overall process: Initial Appraisal: Case for Change; Preliminary Options Appraisal Stage; Detailed Options Appraisal Stage; and Post Appraisal Stage.

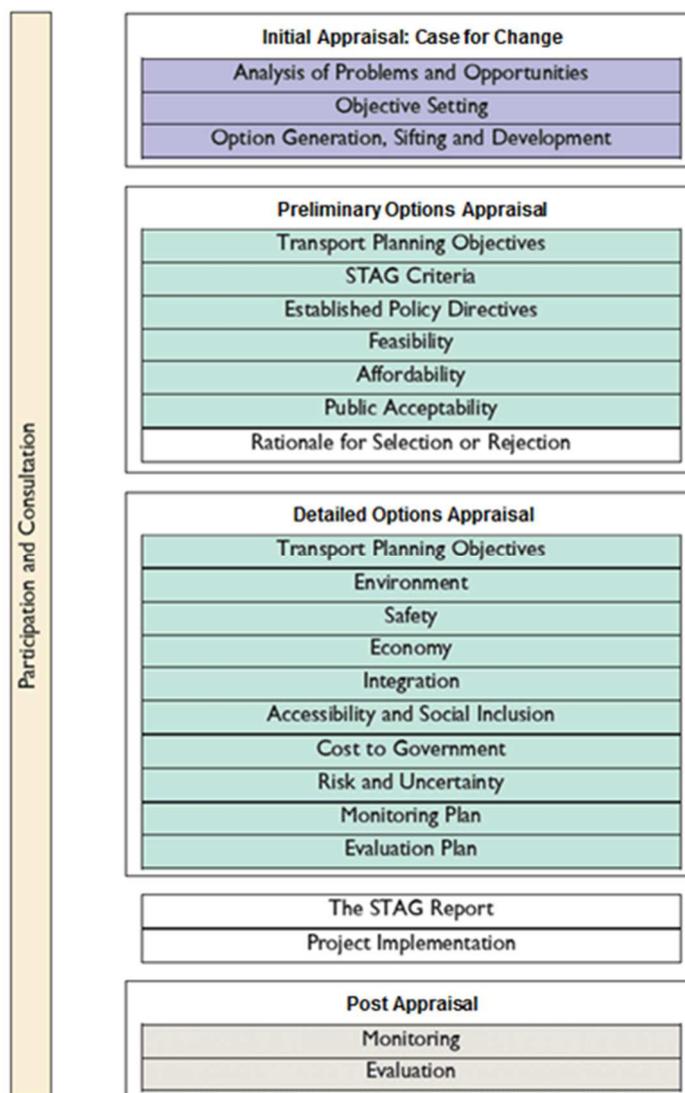


Figure 1: STAG Process

¹ The next stage in the STAG process, [i.e. the Detailed Options Appraisal], will be set out in a subsequent report.

2.2 Approach to Preliminary Options Appraisal

2.2.1 The Preliminary Options Appraisal is a qualitative assessment; however, it draws on quantitative information where available. It has been undertaken using the following approach:

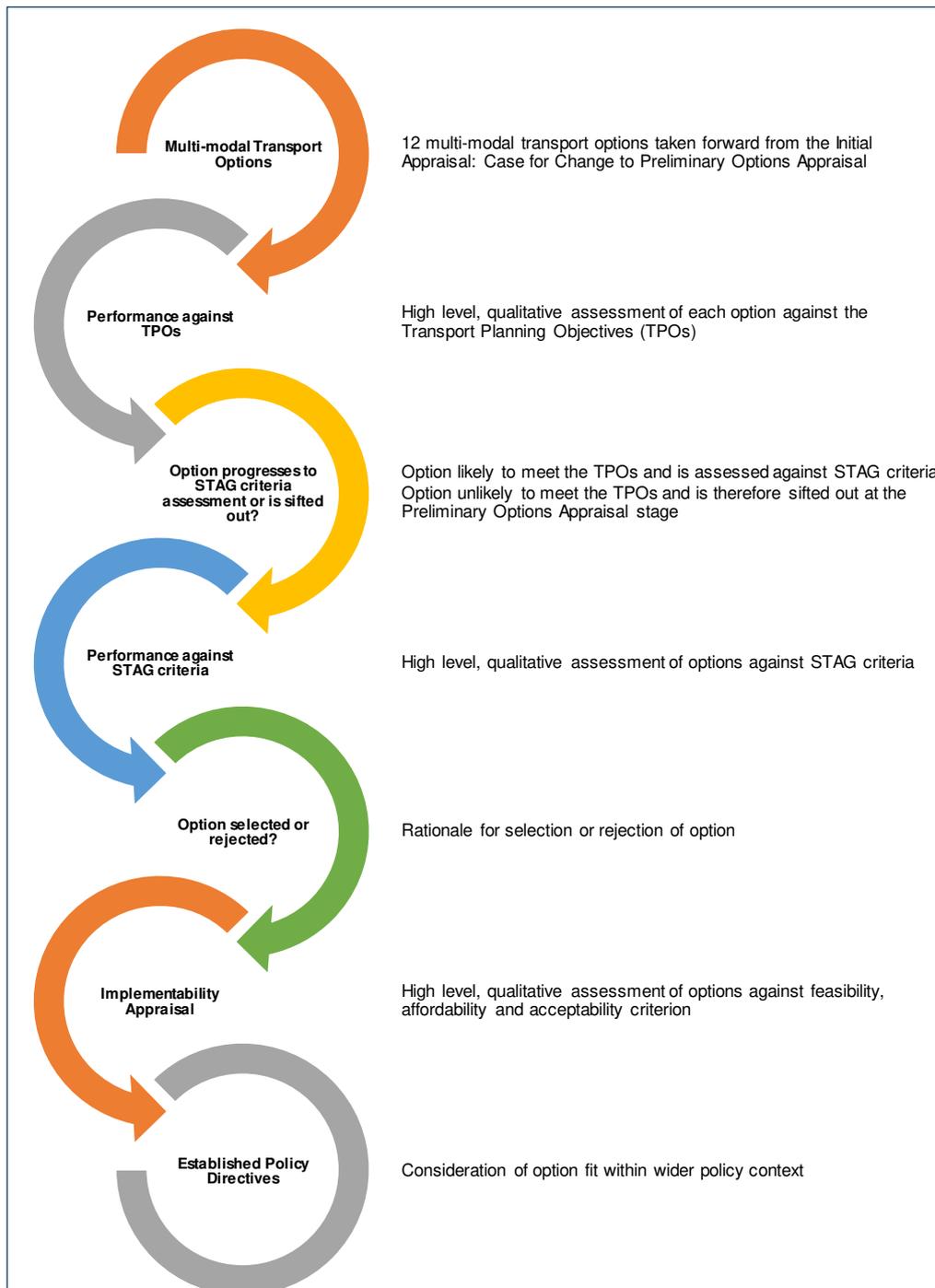


Figure 2: Preliminary Options Appraisal Methodology

2.2.2 The Preliminary Options Appraisal considers the performance of each option against the **TPOs** and five **STAG Criteria**, and an initial assessment against **Feasibility, Affordability and Public Acceptability**. It also considers the fit of each option in light of **relevant established Policy Directives, Plans and Strategies**. Details of the approach are described below.

2.3 Transport Planning Objectives

2.3.1 A set of TPOs were developed during the Initial Appraisal: Case for Change stage of the study to reflect the changes sought in the study area to address the evidenced problems as shown below. **It should be noted that there is no weighting or hierarchy applied to any of the Transport Planning Objectives. The numbering system is used for presentation and reference purposes only.**

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

2.3.2 These TPOs play a pivotal role in the appraisal process by specifying the changes sought to address the evidenced problems and, therefore, provide a means to measure the performance of the options in terms of addressing the problems across the Levenmouth area transport network. The TPOs will be made SMART before commencing the Detailed Options Appraisal Stage.

2.4 STAG Criteria

2.4.1 The appraisal of the impacts of the multi-modal options against the five STAG criteria includes:

■ Environment

- Noise and Vibration
- Global Air Quality (CO₂)
- Local Air Quality particulates (PM₁₀) and nitrogen dioxide (NO₂)
- Water Quality, Drainage and Flood Defence
- Geology
- Biodiversity and Habitats
- Landscape
- Visual Amenity
- Agriculture and Soils
- Cultural Heritage

■ Safety

- Accidents
- Security

■ Economy

- Transport Economic Efficiency
- Wider Economic Impacts

■ Integration

- Transport Integration
- Transport and Land Use Integration
- Policy Integration

■ **Accessibility and Social Inclusion**

- Community Accessibility
- Comparative Accessibility

2.4.2 As set out in STAG guidance, a seven-point scale assessment has been undertaken for each option against the TPOs and STAG criteria. This considers the relative size and scale of the likely impacts, in qualitative terms.

- **Major benefit (+3):** these are benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option's eligibility for funding.
- **Moderate benefit (+2):** the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together do so.
- **Minor benefit (+1):** the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is funded or otherwise.
- **Neutral (0):** the option is anticipated to have no or negligible benefit or negative impact.
- **Small minor cost or negative impact (-1):** the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.
- **Moderate cost or negative impact (-2):** the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.
- **Major cost or negative impact (-3):** these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for funding.

2.5 Feasibility, Affordability and Public Acceptability

2.5.1 An implementability appraisal covering Feasibility, Affordability and Public Acceptability criteria has been undertaken for each option recommended to be taken forward to the detailed appraisal stage. The criteria is described in Table 2 below:

Table 2: Feasibility, Affordability and Acceptability Criteria

Criteria	Description
Feasibility	A preliminary assessment of the feasibility of construction or implementation and operation (if relevant) of an option and the status of its technology [e.g. proven, prototype, in development etc.] as well as any cost, timescale or deliverability risks associated with the construction or operation of the option, including consideration of the need for any departure from design standards that may be required.

Criteria	Description
Affordability	The scale of the financing burden on the promoting authority and other possible funding organisations and the risks associated with these should be considered together with the level of risk associated with an option's ongoing operating or maintenance costs and its likely operating revenues (if applicable).
Public Acceptability	The likely public response at the Preliminary Options Appraisal stage.

2.5.2 Each criteria has been scored against three levels: minor, moderate or major considerations. By 'consideration' it is meant that there could be risks associated with each option taken forward to detailed appraisal that will require a certain level of investigation during this next and final stage of the study.

2.6 Relevant Established Policy Directives

2.6.1 There are many policies and strategies which could have an influence over the future local and strategic development of the Levenmouth area in terms of employment, housing and infrastructure. It is therefore important to consider the fit of each option within the wider relevant policy context. As such, an assessment has been undertaken to establish whether the options may align with and may contribute to the aims of transport and wider (non-transport) government policies and national transport objectives.

2.6.2 For the purpose of this study, several policy and strategy documents have been considered:

National Policy

- National Transport Strategy, 2016
- Scotland's Economic Strategy, 2015
- National Planning Framework 3, 2014
- Strategic Transport Projects Review, 2008

Regional Policy

- Fife Economic Strategy, 2017
- SESplan Proposed Strategic Development Plan, 2016
- SEStran Regional Transport Strategy, Refresh 2015

Local Policy

- FIFEplan Local Development Plan, 2017
- Local Transport Strategy for Fife, 2006

3 Summary of Preliminary Options Appraisal Findings

3.1 Introduction

- 3.1.1 A detailed summary of the Preliminary Options Appraisal findings for each option recommended to be taken forward or rejected, at this stage of the study, is provided below. Indicative layouts are provided where relevant. **These layouts are shown for illustrative purposes only and it should be noted that no decisions on any preferred routes or alignments are considered during the transport appraisal work.**
- 3.1.2 The detailed summary draws on information from the performance of options against the TPOs and the appraisal of the impacts of options against the five STAG criteria, included in Appendix A and Appendix B to this report for the 12 options considered. Given the volume and level of detail contained in these appendices, only a summary is provided in this section. The reader should refer to Appendix A and Appendix B for more detailed information that leads to an option being either selected or rejected at this stage of the study.
- 3.1.3 The appraisal of options at the Preliminary Options Appraisal Stage has resulted in the recommendation of six multi-modal transport options to be taken forward to the Detailed Options Appraisal Stage. These are shown in Table 3 below.
- 3.1.4 **It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options listed below – the numbering system is used for presentation and reference purposes only. It should also be noted that options may not be in all cases mutually exclusive and could be packaged together to help meet the Transport Planning Objectives (TPOs) and address the evidenced transport problems. This will be considered further in the next and final stage of the appraisal process.**

Table 3: Recommended Multi-Modal Transport Options for Detailed Appraisal

Option Ref.	Type	Title	Description
1	Accessibility	Enhanced local public transport services	Maintain existing bus services while improving local public transport facilities and information services
2	Accessibility	Improve local bus services	Improve local bus services connecting towns in the Levenmouth area to Leven
3	Accessibility	Improve bus-rail connections	Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes
4	Accessibility	Improve regional bus services	Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow
6	Public Transport and Freight	Re-open existing rail line to passengers and freight	Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks

Option Ref.	Type	Title	Description
10	Active Travel	Active travel network	Provision of new and / or improved active travel routes linking the towns within Levenmouth, to key services and public transport interchanges, as well as to the East Neuk

3.1.5 Opportunities exist to encourage walking and cycling locally; however, Option 10 (Active travel network) would require the support of the wider public transport network to promote and encourage active travel, and to improve its performance against the Transport Planning Objectives. Therefore, Option 10 has not been appraised as a standalone option, however it could be integral to (packaged with) the other options progressed and this will be considered further in the next and final stage of the appraisal process.

3.1.6 The appraisal of options has resulted in six multi-modal transport options being rejected as shown in Table 4 below. The rationale for rejection is provided in Section 3.4.

Table 4: Rejected Multi-Modal Transport Options at the Preliminary Options Appraisal stage

Option Ref.	Type	Title	Description
5	Freight	Freight only rail line	Provision of a freight only rail line to Cameron Bridge and Methil Docks and onwards to the mainline along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks
7	Public Transport	New passenger only rail line	Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy
8	Public Transport and Freight	New passenger and freight rail line	Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch
9	Public Transport	New passenger BRT route	Provision of a new Bus Rapid Transit alignment from Leven to Markinch
11	Public Transport	New hovercraft services	Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks
12	Public Transport	Reduced rail fares	Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity)

3.2 Recommended Multi-Modal Transport Options for Detailed Appraisal

3.2.1 A summary of the rationale for taking the six recommended options forward to detailed appraisal is provided below. The rationale considers:

- the performance of options against the three TPOs;
- the impact of the options against the five STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion]; and
- an implementability appraisal of options covering feasibility [i.e. technical and deliverability risks], affordability [i.e. financial risks and costs] and public acceptability criteria.

3.2.2 The STAG seven-point scale assessment is shown below and has been undertaken for each option against the TPOs and five STAG criteria. This considers the relative size and scale of the likely impacts (benefits / dis-benefits), in qualitative terms:

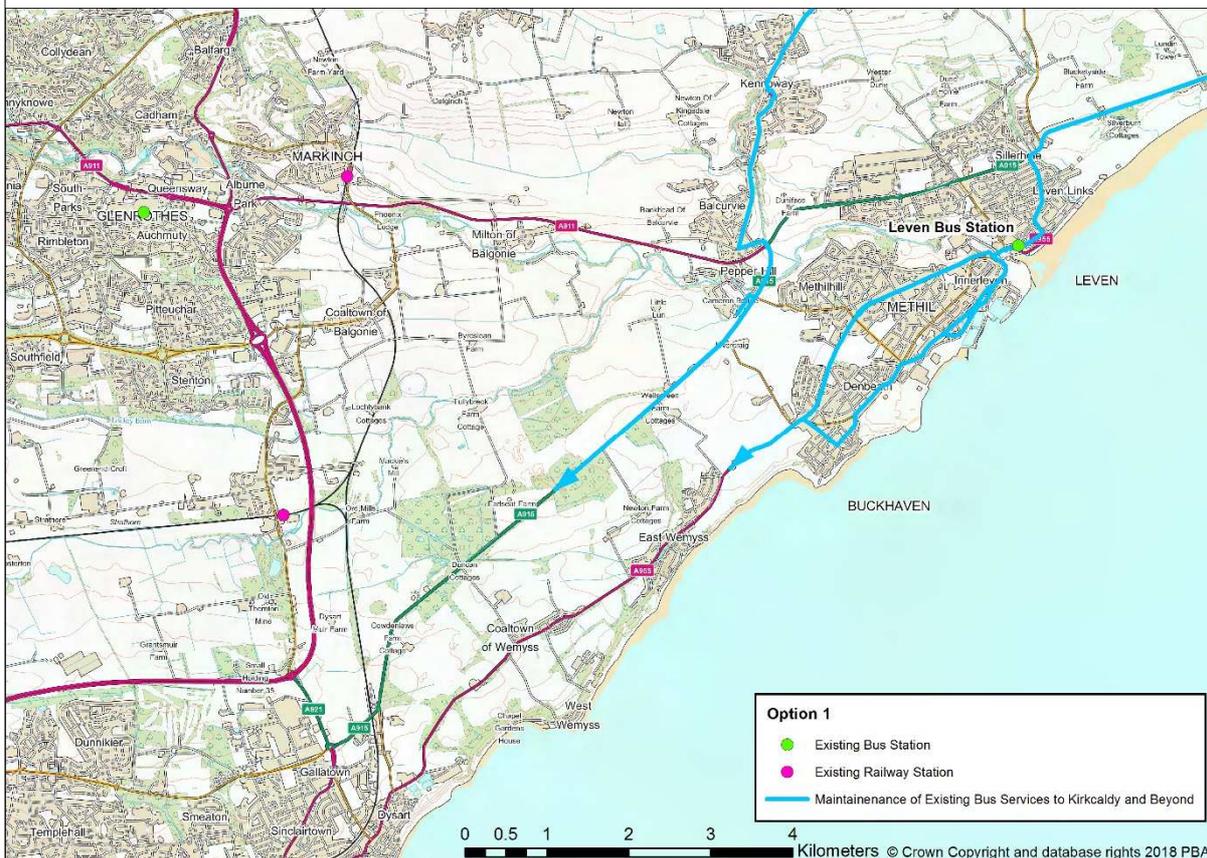
+3	+2	+1	0	-1	-2	-3
Major benefit	Moderate benefit	Minor benefit	Neutral (no benefit or impact)	Small minor cost or negative impact	Moderate cost or negative impact	Major cost or negative impacts

Option 1

Type of Option: Accessibility

Title: Enhanced local public transport services

Description: Maintain existing bus services while improving local public transport facilities and information services



Indicative layout for illustrative purposes only

This option would focus on maintaining the existing level of local bus services connecting Leven to other towns in the Levenmouth area, while improving service information such as real-time information at bus stops. This option would depend on repairs to Bawbee Bridge and Leven Railway Bridge being undertaken.

Performance against Transport Planning Objectives

TPO	Description	Score	Rationale
TPO 1	Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	+1 (minor benefit)	This option would improve access for existing and potentially new users in the Levenmouth area by introducing better service information such as access to digital and real time information at bus stops. This would improve access by public transport to a range of services and locations, including employment and health facilities.
TPO 2	Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.	+1 (minor benefit)	This option would maintain connections to the Levenmouth area. It is expected to have a minor positive impact on residents travelling outside the area who use local buses to connect with regional buses in Leven. It is not expected to have a notable impact on the number of visitors travelling to the Levenmouth area, nor is it expected to have a significant impact on attracting inward investment.

Option 1			
Type of Option: Accessibility			
Title: Enhanced local public transport services			
Description: Maintain existing bus services while improving local public transport facilities and information services			
Performance against Transport Planning Objectives (<i>continued</i>)			
TPO	Description	Score	Rationale
TPO 3	Increase the sustainable mode share for the residents and workforce in the Levenmouth area.	+1 (minor benefit)	This option would likely encourage a shift from private car to public transport as the latter would become more attractive due to improved information on bus services. However, the magnitude of the impact is likely to be limited.
Overall Performance against STAG Criteria			
Criteria	Score	Rationale	
Environment	0 (neutral / no impact)	No material changes in traffic flows or associated emissions on key roads in the Levenmouth area or beyond are expected from this option. Similarly, no significant effects on water quality, drainage and flood defence; geology; biodiversity and habitats; visual amenity; or cultural heritage are expected from this option taking account of assumed design and mitigation.	
Safety	+1 (minor benefit)	This option could generate additional mode shift, but it would be unlikely to be to a scale which would result in a material impact on road accident rates. Improvements to security are likely to be minor, where real or perceived improvements to security would be in relation to improvements to bus facilities such as lighting at stops and increased natural surveillance from increased passenger numbers on-board and at stops. Improved information can also lead to increased perceptions of safety.	
Economy	0 (neutral / no impact)	No material impacts on the economic efficiency of the transport system or the efficiency of economic activities are expected from this option.	
Integration	+1 (minor benefit)	There would be a minor benefit to infrastructure in this option through on-street facility improvements. Information provision would also be improved for users. This option aligns well with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and social inclusion through the availability of alternative modes to car.	
Accessibility & Social Inclusion	+1 (minor benefit)	This option would augment existing services and help to protect public transport connections across the Levenmouth area, including Methil, Buckhaven, East Wemyss and Coaltown of Wemyss. It would also improve public transport facilities and information. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes. This option could help reduce reliance on the car as a mode of transport and help those without access to a car.	

<p>Option 1 Type of Option: Accessibility Title: Enhanced local public transport services Description: Maintain existing bus services while improving local public transport facilities and information services</p>			
<p>Implementability Appraisal * considerations will be explored further during the Detailed Options Appraisal Stage</p>			
Feasibility	Technical Risks	Current weight restrictions on the Bawbee Bridge could limit bus route options south of the River Leven should there be a failure to meet existing express services operated by Stagecoach. A failure in meeting those services could mean that additional interchange, or use of slower services, would be required.	Moderate consideration
	Deliverability Risks	If heavier buses were introduced on express services operated by Stagecoach, then upgrading Bawbee Bridge and Leven Railway Bridge to address the 18t weight restriction would need to be considered, or alternatively services would require re-routing within the Levenmouth area which would impact on settlements to the south of the River Leven, including Buckhaven, Methil and Methilhill.	Moderate consideration
Affordability	Financial Risks	Several commercially operated bus services (Stagecoach Fife) and subsidised bus services (Fife Council) currently serve Leven and the wider Levenmouth area. Ongoing subsidy may be required to maintain existing bus service coverage across the Levenmouth area, serving settlements such as Kennoway, Windygates, Broom, Scoonie and Methilhill.	Major consideration
	Costs	This would be a relatively low-cost option compared with the other options involving upgrades to on street facilities and information. Funding may be required to support Real Time Information at bus stops, including continual revenue funding to cover annual maintenance costs. Maintenance costs for Bawbee Bridge are still a consideration until the outcome of investigation into repair works and whether this is accommodated under existing budgets, or if further work would be required.	Moderate consideration
Public Acceptability	It is expected that this option would have limited public support as it is anticipated that it would not fulfil widespread aspirations around the public transport offering for the area.		Major consideration
<p>Summary of Rationale for Selecting Option 1 for Detailed Appraisal</p> <p>This option contributes to all three Transport Planning Objectives by helping to maintain the existing level of local bus services connecting Leven to other towns and settlements in the Levenmouth area and improving service information such as real time information at bus stops.</p> <p>This option scores slightly positive against the five STAG criteria described above, particularly Integration and Accessibility and Social Inclusion, and contributes to several national, regional and local policy objectives, including sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion through availability of alternative modes to car. Little or no impact is predicted on the environment.</p> <p>The public travel survey highlighted that 25% [no. 60] of respondents who travel regularly by bus noted that lack of information about services and poor-quality bus stops were amongst the main factors that negatively impacts on the ability to travel by bus within the Levenmouth area.</p> <p>There would be public support for this option as it would be seen as an enhancement to the existing public transport offering in the Levenmouth area, particularly around improving access and opportunities for people without access to a car in deprived areas.</p>			

Option 2
Type of Option: Accessibility
Title: Improve local bus services
Description: Improve local bus services connecting towns in the Levenmouth area to Leven



Indicative layout for illustrative purposes only

This option would involve improving local services linking Leven with Methil and Lower Methil, including additional services, increased service frequency and reconfiguration and extending hours of existing timetables.

Performance against Transport Planning Objectives

TPO	Description	Score	Rationale
TPO 1	Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	+3 (major benefit)	This option would reduce journey times by bus, offer a more competitive alternative to the private car and improve connectivity between settlements within the Levenmouth area. Extending the timetable hours would also increase the opportunities, services and locations that could be accessed early in the day or late in the evening.
TPO 2	Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.	+2 (moderate benefit)	This option would provide greater accessibility to Leven, and via connecting services, beyond, by increasing local bus service frequencies at certain times of the day.

Option 2			
Type of Option: Accessibility			
Title: Improve local bus services			
Description: Improve local bus services connecting towns in the Levenmouth area to Leven			
Performance against Transport Planning Objectives (<i>continued</i>)			
TPO	Description	Score	Rationale
TPO 3	Increase the sustainable mode share for the residents and workforce in the Levenmouth area.	+2 (moderate benefit)	This option would encourage a shift from private car to public transport. It would augment existing bus services and increase opportunity to travel by bus.
Overall Performance against STAG Criteria			
Criteria	Score	Rationale	
Environment	+1 (minor benefit)	Minor reductions in traffic flows and associated emissions on key roads within the Levenmouth area are expected from this option. No significant effects on water quality, drainage and flood defence; geology; biodiversity and habitats; visual amenity; or cultural heritage are predicted from this option.	
Safety	+1 (minor benefit)	This option could generate additional mode shift, but it would be unlikely to be to a level which would result in a material impact on road accident rates. Improvements to security are likely to be minor, where real or perceived improvements to security would be in relation to improvements to bus facilities such as lighting at stops and increased natural surveillance from greater passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for services on street and less connections required to make the journey.	
Economy	+1 (minor benefit)	Improved services provision and increased passenger numbers may provide benefits to operator revenues and subsidy revenues, depending on whether additional vehicles would be required. Journey time benefits are expected for travel within the Levenmouth area and, as a result of increased service frequency and timetable improvements, benefits are also expected to and from the Levenmouth area through greater accessibility to Leven and, via connecting services, beyond.	
Integration	+2 (moderate benefit)	There would be a moderate beneficial impact to services and ticketing, provided by a greater geographical network balance of services between Levenmouth and beyond. This would allow for more service integration opportunities. This option aligns well with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and social inclusion through the availability of alternative modes to private car.	

Option 2			
Type of Option: Accessibility			
Title: Improve local bus services			
Description: Improve local bus services connecting towns in the Levenmouth area to Leven			
Overall Performance against STAG Criteria <i>(continued)</i>			
Criteria	Score	Rationale	
Accessibility & Social Inclusion	+2 (moderate benefit)	This option would help to protect and improve public transport connections across the Levenmouth area, particularly Methil, Methilhill and Buckhaven. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes. This option is also expected to improve accessibility for many socially excluded groups by expanding bus service coverage, increasing service frequency and extending hours of existing timetables. It was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of the areas within Levenmouth with the greatest health issues; lowest levels of educational attainment; highest levels of unemployment; and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.	
Implementability Appraisal * considerations will be explored further during the Detailed Options Appraisal Stage			
Feasibility	Technical Risks	No significant technical issues related to the implementation of this option are expected.	Minor consideration
	Deliverability Risks	This option would require reconfiguration of existing bus timetables and potentially additional bus fleets. It would also require effort in terms of negotiation and agreement with bus operators regarding service provision.	Moderate consideration
Affordability	Financial Risks	This would be a low operating revenue option compared with other options that may be dependent on securing public sector revenue funding. The commercial viability of any improved bus service would be dependent on the demand for that service and the enhancements to bus services under this option may not be driven commercially, meaning service improvements may have to be funded by the public purse. This option may increase passenger numbers and operating revenue; however, funding may be required for new 'kick start' services to be commercially viable after four years to ensure no financial burden.	Major consideration
	Costs	There would be relatively low maintenance and operating costs associated with additional bus services and improved service frequency.	Minor consideration
Public Acceptability	It is expected that this option would have an element of public support in terms of it enhancing the current bus network, although it is anticipated that it would not fulfil widespread aspirations around the public transport offering for the area.		Major consideration

Option 2

Type of Option: Accessibility

Title: Improve local bus services

Description: Improve local bus services connecting towns in the Levenmouth area to Leven

Summary of Rationale for Selecting Option 2 for Detailed Appraisal

This option contributes to all three Transport Planning Objectives by improving local bus services connecting towns in the Levenmouth area to Leven, including timetable changes such as extending hours of existing timetables and increased service frequency. This option would offer greater accessibility to Leven and, via connecting services, beyond to employment opportunities.

This option scores positively against the five STAG criteria described above, particularly Integration and Accessibility and Social Inclusion, and contributes to several national, regional and local policy objectives, including sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion through availability of alternative modes to car. This option would have relatively low operating and maintenance costs compared with other options, and a small positive impact is predicted on the environment.

The public travel survey highlighted that 61% [no. 141] of respondents who travel regularly by bus noted that service frequency was the main factor that negatively impacts on the ability to travel by bus within the Levenmouth area. 61% [no. 134] of respondents noted this factor, amongst others, means an early or late journey is required to reach their destination, whilst 57% [no. 125] noted that people face difficulty in accessing key services such as health, education, shopping and leisure.

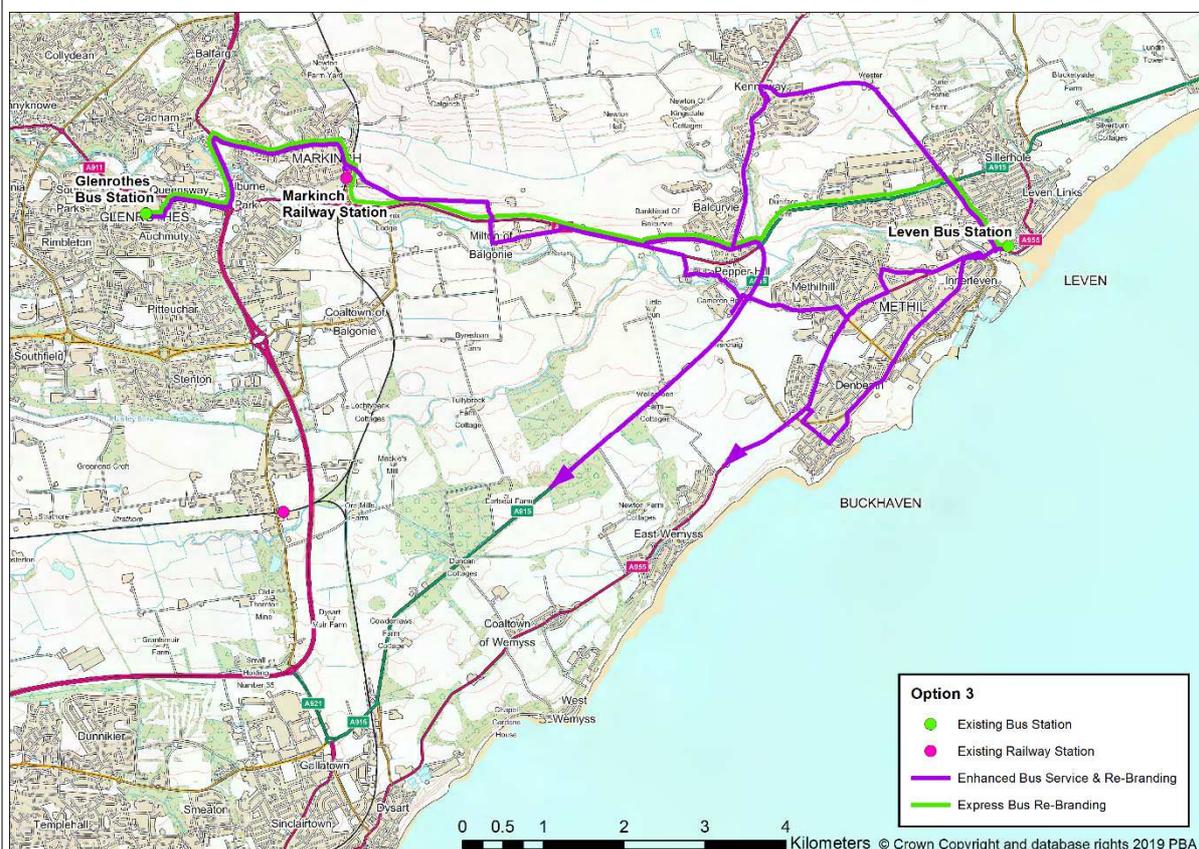
This option would likely receive an element of public support, particularly given the perceived lack of commitment by relevant organisations to improve bus services and the ongoing trend in the reduction of services across the Levenmouth area. Additional funding may be required, however, and careful consideration would have to be given to funding given existing commitments of the council to support current local services.

Option 3

Type of Option: Accessibility

Title: Improve bus-rail connections

Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes



Indicative layout for illustrative purposes only

This option would entail further improved provision of bus services from Methil, Methilhill and Buckhaven to Markinch station through re-branding, increased frequency and timetable adjustments to service 44B to meet rail services at Markinch. The existing X4 service connecting Leven town centre, Markinch station and Glenrothes could also form part of this re-branding exercise.

Performance against Transport Planning Objectives

TPO	Description	Score	Rationale
TPO 1	Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	+1 (minor benefit)	Improved bus services to the rail stations at Markinch, Kirkcaldy and Glenrothes could include additional stops locally. This option would provide journey time benefits for areas currently experiencing relatively poor access to the bus network as well as more public transport travel options for Levenmouth residents, improving access to a range of facilities.
TPO 2	Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.	+2 (moderate benefit)	This option would provide improved access to and from the national rail network via Markinch, Kirkcaldy and Glenrothes, and would provide improved access to jobs and other facilities / services outside the Levenmouth area. It would equally support access to the area.

Option 3			
Type of Option: Accessibility			
Title: Improve bus-rail connections			
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes			
Performance against Transport Planning Objectives (<i>continued</i>)			
TPO	Description	Score	Rationale
TPO 3	Increase the sustainable mode share for the residents and workforce in the Levenmouth area.	+1 (minor benefit)	Improved access to the rail network would promote sustainable transport use. The branding campaign associated with this option would be targeted at modal shift.
Overall Performance against STAG Criteria			
Criteria	Score	Rationale	
Environment	+1 (minor benefit)	Minor reductions in traffic flows and associated emissions on key roads in the study area and beyond are expected from this option. No significant effects on water quality, drainage and flood defence; geology; biodiversity and habitats; visual amenity; or cultural heritage are predicted from this option.	
Safety	+1 (minor benefit)	This option could to produce a minor benefit to road accident rates, resulting from a reduction in the number of motorists on the road network. This reduction would come from people switching from car to the bus and rail link. As well as trips previously undertaken entirely by car, the option could also reduce the number of people driving to both Markinch and Kirkcaldy rail stations to access rail services, with people instead using the branded bus link. Areas of benefit would include Methil and Buckhaven; the A911 between Markinch and Levenmouth, and the A915 / A955 between Kirkcaldy and Levenmouth. Improvements to security associated with this option are likely to be minor. Real and perceived improvements to security would be in relation to improvements to bus facilities such as lighting at stops and increased perceived safety resulting from higher passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for services on street and less connections required to make the journey, particularly in the Methil / Buckhaven area which would see an improved direct link to rail and would therefore be no need for additional interchange at Leven Bus Station.	
Economy	+2 (moderate benefit)	Improved services provision and increased passenger numbers may provide benefit to operator revenues and subsidy revenues. Journey time benefits are expected for public transport trips via the rail network at Markinch. These journey time benefits include improvements to journeys from Methil, Methilhill and Buckhaven in terms of point-to-point travel and reduced interchange / wait time. Quality benefits could be expected from this option if high-quality rail link branded buses are used for links to Markinch, Glenrothes and Kirkcaldy rail stations from Leven, including additional improved direct services to the station from Methil, Methilhill and Buckhaven.	

Option 3			
Type of Option: Accessibility			
Title: Improve bus-rail connections			
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes			
Overall Performance against STAG Criteria (<i>continued</i>)			
Criteria	Score	Rationale	
Integration	+2 (moderate benefit)	There would be a moderate beneficial impact to services and ticketing through better integration of bus and rail services. Timetable matching and information and branding exercises for this option would be particularly effective in these respects. This option aligns well with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and social inclusion through the availability of alternative modes to car use.	
Accessibility & Social Inclusion	+2 (moderate benefit)	This option would help to improve public transport connections across Levenmouth, particularly Leven, Methil, Methilhill and Buckhaven. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes. This option is also expected to improve accessibility for many socially excluded groups – it was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of those within Levenmouth with the greatest health issues; lowest levels of educational attainment; highest levels of unemployment; and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.	
Implementability Appraisal * considerations will be explored further during the Detailed Options Appraisal Stage			
Feasibility	Technical Risks	No significant technical issues related to the implementation of this option are expected.	Minor consideration
	Deliverability Risks	This option would require reconfiguration of existing bus timetables and potentially additional bus fleets. Currently, bus operators within the Levenmouth area are not geared to integrate with rail – in practice, better integration may be achieved through higher bus frequencies. This option would require effort in terms of negotiation and agreement with public transport operators regarding service provision, including potential integration of bus and rail timetables.	Major consideration
Affordability	Financial Risks	This would be a low to moderate operating revenue option compared with other options that may be dependent on securing public sector revenue funding. The commercial viability of any improved bus service would be dependent on the demand for that service and the enhancements to bus services under this option may not be driven commercially, meaning service improvements may have to be funded by the public purse. Like Option 2, this option may increase passenger numbers and operating revenue; however, funding may be required for new 'kick start' services to be commercially viable after four years to ensure no financial burden.	Major consideration

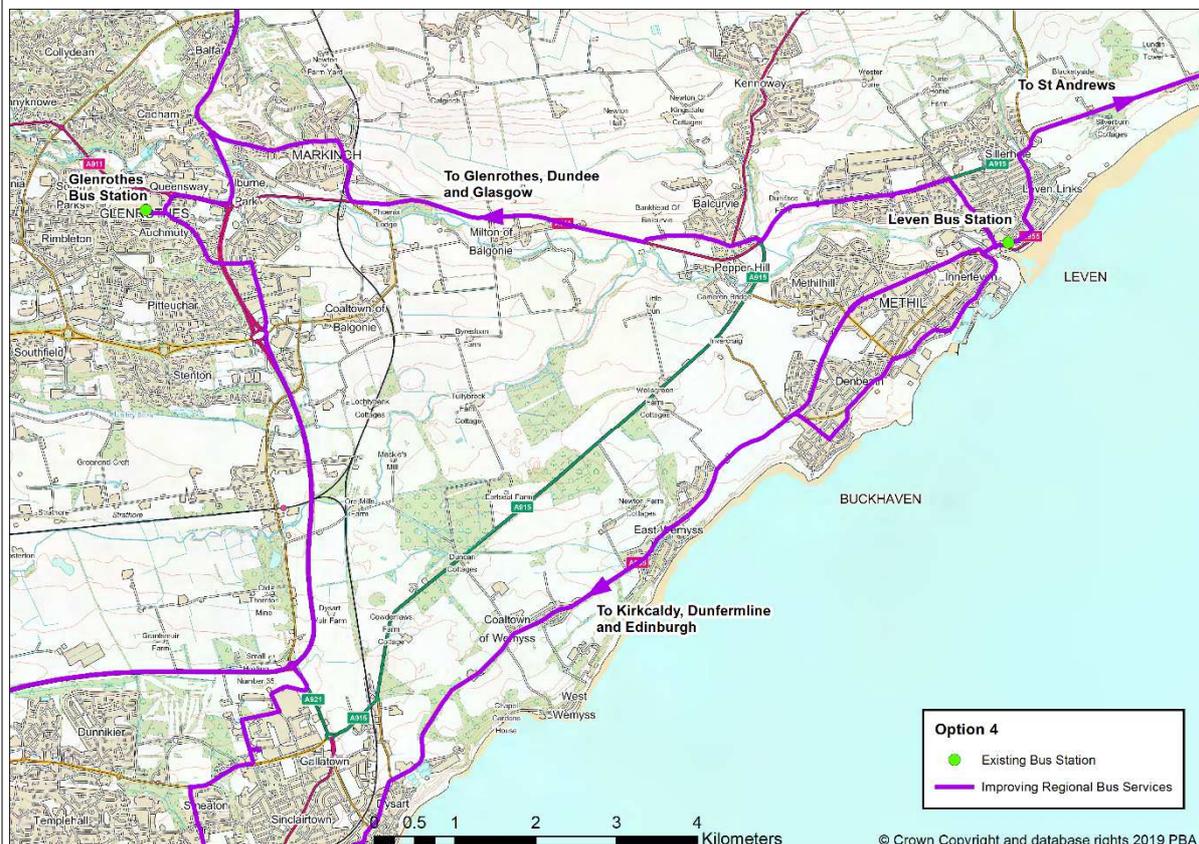
<p>Option 3 Type of Option: Accessibility Title: Improve bus-rail connections Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes</p>			
<p>Implementability Appraisal (continued) * considerations will be explored further during the Detailed Options Appraisal Stage</p>			
Affordability	Costs	There would be relatively low maintenance and operating costs associated with improved service frequency and maintenance of the branding exercise.	Minor consideration
Public Acceptability	It is expected that this option would have an element of public support in terms of it enhancing the current bus network, although it is anticipated that it would not fulfil widespread aspirations around the public transport offering for the area.		Major consideration
<p>Summary of Rationale for Selecting Option 3 for Detailed Appraisal</p> <p>This option contributes to all three Transport Planning Objectives, in particular “improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population” by improving bus services to rail stations at Markinch, Kirkcaldy and Glenrothes.</p> <p>This option would benefit areas south of the River Leven through improved connections to the rail network and Glenrothes, scoring positively against the five STAG criteria described above, including Accessibility and Social Inclusion, Integration and Economy. It also contributes to several national, regional and local policy objectives, including sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion through availability of alternative modes to car.</p> <p>Connections to Leven town centre would also be reinforced through a branding exercise, and benefits would be expected for integration and journey time through improved timetabling. This option would have relatively low operating and maintenance costs compared with other options, and a small positive impact is predicted on the environment.</p> <p>The combination of improvements to services and the branding exercise are likely to make this an attractive public transport option for the residents and workforce of the Levenmouth area. The public travel survey highlighted that 52% [no. 376] of respondents noted that better integration between public transport services [i.e. timetables integrated between modes and services], would benefit travel within and from the Levenmouth area.</p> <p>This option would likely require an element of public support, particularly given the perceived lack of commitment by relevant organisations to improve bus services and the ongoing trend in the reduction of services across the Levenmouth area. Additional funding may be required, however, and careful consideration would have to be given to funding given existing commitments of Fife Council to support current local services.</p>			

Option 4

Type of Option: Accessibility

Title: Improve regional bus services

Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow



Indicative layout for illustrative purposes only

This option would be aimed at improving linkages to areas beyond the Levenmouth area. The frequency of existing bus services would be increased, and more direct services would be run between Leven and Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow.

Performance against Transport Planning Objectives

TPO	Description	Score	Rationale
TPO 1	Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	+1 (minor benefit)	This option would be focussed on improving linkages to areas beyond the Levenmouth area, and particularly to enhance accessibility and connectivity with key employment locations. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.
TPO 2	Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.	+2 (moderate benefit)	This option would reduce journey times by bus, offer a more competitive alternative to the private car and enhance accessibility and connectivity with employment areas in, for example, Dundee, Edinburgh and Glasgow. It would also improve access to important key public services such as health and education.

Option 4
Type of Option: Accessibility
Title: Improve regional bus services
Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow

Performance against Transport Planning Objectives (continued)

TPO	Description	Score	Rationale
TPO 3	Increase the sustainable mode share for the residents and workforce in the Levenmouth area.	+1 (minor benefit)	This option would augment existing bus services and increase opportunity to travel by bus. Therefore, it is expected that it would encourage a shift from private car to public transport.

Overall Performance against STAG Criteria

Criteria	Score	Rationale
Environment	+1 (minor benefit)	Minor reductions in traffic flows and associated emissions on key roads in the study area and beyond are expected from this option. No significant effects on water quality, drainage and flood defence; geology; biodiversity and habitats; visual amenity; or cultural heritage are predicted from this option.
Safety	+1 (minor benefit)	This option could generate additional mode shift and produce a minor benefit to road accident rates. This would come from a reduction in the number of motorists on the road network, from people switching from car to bus. Improvements to security associated with this option are likely to be minor. Real and perceived enhancements to security would be in relation to improvements to bus facilities such as lighting at stops and increased perceived safety resulting from increased passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for services on street and less connections required to make the journey as there would be no need for interchange at Glenrothes, through increased service frequency and more direct services to and from Leven and the destination.
Economy	+2 (moderate benefit)	Improved services provision and increased passenger numbers may provide benefit to operator revenues and potential subsidy levels. Journey time benefits are expected for public transport trips from Leven to the larger towns and cities, including improvements to journeys from Methil, Methilhill and Buckhaven in terms of point-to-point travel and reduced interchange / wait time. Quality benefits would be expected from this option if high-quality buses [i.e. coach standard for the express services, including on-board toilet] are used to serve the Levenmouth area and destination.
Integration	+1 (minor benefit)	There would be a minor beneficial impact to services and ticketing, provided by a greater geographical network balance of services between Levenmouth and beyond. This would allow for more service integration opportunities. This option aligns well with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and social inclusion through the availability of alternative modes to car.

<p>Option 4 Type of Option: Accessibility Title: Improve regional bus services Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow</p>			
<p>Overall Performance against STAG Criteria (continued)</p>			
Criteria	Score	Rationale	
<p>Accessibility & Social Inclusion</p>	<p>+2 (moderate benefit)</p>	<p>This option would improve public transport links from the Levenmouth area, connecting Leven directly with other settlements across Fife and beyond, and would benefit access to key destinations for employment, further education, healthcare and social activities. This option is also expected to improve accessibility for many socially excluded groups – it was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of the areas within Levenmouth with the greatest health issues; lowest levels of educational attainment; highest levels of unemployment; and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport, helping those without access to a car.</p>	
<p>Implementability Appraisal * considerations will be explored further during the Detailed Options Appraisal Stage</p>			
<p>Feasibility</p>	<p>Technical Risks</p>	<p>No significant technical issues related to the implementation of this option are expected.</p>	<p>Minor consideration</p>
	<p>Deliverability Risks</p>	<p>This option would require reconfiguration of existing bus timetables and potentially additional bus fleets. It would also require effort in terms of negotiation and agreement with bus operators regarding service provision.</p>	<p>Major consideration</p>
<p>Affordability</p>	<p>Financial Risks</p>	<p>This would be a low to moderate operating revenue option compared with the other options that may be dependent on securing public sector revenue funding. The commercial viability of any improved bus service would be dependent on the demand for that service and the enhancements to bus services under this option may not be driven commercially, meaning service improvements may have to be funded by the public purse. The recent removal of the express bus service to Glasgow may indicate vulnerability of this option. Like Option 2 and Option 3, this option may increase passenger numbers and operating revenue, therefore potentially minimising funding that may be required for new 'kick start' services to be commercially viable after four years to ensure no financial burden.</p>	<p>Major consideration</p>
	<p>Costs</p>	<p>There would be relatively low to medium maintenance and operating costs associated with improved service frequency and new service routes.</p>	<p>Moderate consideration</p>
<p>Public Acceptability</p>	<p>It is expected that this option would have an element of public support in terms of it enhancing the current bus network, although it is anticipated that it would not fulfil the wider aspirations around the public transport offering for the area.</p>		<p>Major consideration</p>

Option 4

Type of Option: Accessibility

Title: Improve regional bus services

Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow

Summary of Rationale for Selecting Option 4 for Detailed Appraisal

This option contributes to all three Transport Planning Objectives, in particular “improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population” by improving regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow.

Although there are existing direct links to many of the towns, there are, in some cases, many interchanges required for Levenmouth residents to access, for example, Dundee and Edinburgh. These cities can be important for accessing employment opportunities, health services and education facilities. The frequency of existing bus services would be increased, more direct links between Leven and the destination would decrease journey times and changes to existing bus timetables would allow people to arrive in Edinburgh and Glasgow, for example, before office opening hours.

This option scores positively against the five STAG criteria, particularly Economy, Accessibility and Social Inclusion, and contributes to several national, regional and local policy objectives, including sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion through availability of alternative modes to car. A small positive impact is predicted on the environment.

The public travel survey highlighted that 59% [no. 303] of respondents who do not travel regularly by bus from the local Levenmouth area to other areas noted that long journey times as the main contributory factor. 53% [no. 274] of respondents noted “no direct routes to where I need to go” as another contributory factor.

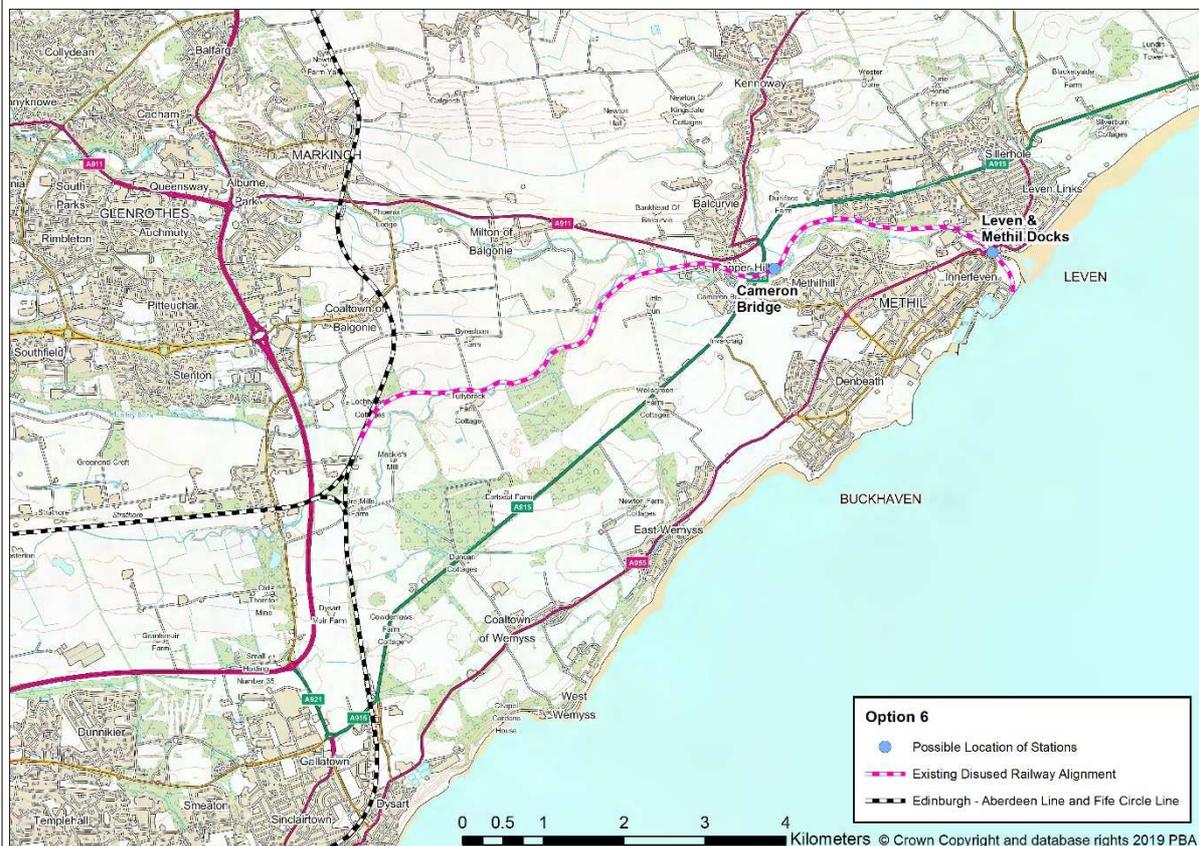
This option would likely receive an element of public support, particularly given the perceived lack of commitment by relevant organisations to improve bus services and the ongoing trend in the reduction of services across the Levenmouth area. Additional funding may be required, however, and careful consideration would have to be given to funding given existing commitments of Fife Council to support current local services.

Option 6

Type of Option: Public Transport and Freight

Title: Re-open existing rail line to passengers and freight

Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks



Indicative layout for illustrative purposes only

This option would involve re-opening the existing, disused, rail line to freight and passenger services between Methil and the existing mainline. Passenger services would be served by a new service or the extension / diversion of existing rail services. Sub-options would include the development of a rail station at Leven and Cameron Bridge and the inclusion of rail freight facilities, summarised as:

- a) Passenger only rail option, with a station provided at Leven only.
- b) Passenger and freight rail option, with stations provided at Leven and Cameron Bridge, and freight facilities provided at Cameron Bridge and Methil Docks.

Performance against Transport Planning Objectives

TPO	Description	Score	Rationale
TPO 1	Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	+1 (minor benefit)	This option would provide journey time benefits for Levenmouth residents, resulting from improved access to settlements via the rail network. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.

Option 6
Type of Option: Public Transport and Freight
Title: Re-open existing rail line to passengers and freight
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks

Performance against Transport Planning Objectives (continued)

TPO	Description	Score	Rationale
TPO 2	Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population.	+3 (major benefit)	This option would improve access to the rail network and enhance business and tourist access to the area, including potential future access to Edinburgh airport. This option would provide the opportunity to serve both sides of the Fife Circle thereby augmenting access opportunities for Levenmouth residents and would also provide additional wider, indirect benefits and travel options for north east Fife communities. This option is also likely to have a major impact on making the Levenmouth area a more attractive location for businesses to locate and for people to visit.
TPO 3	Increase the sustainable mode share for the residents and workforce in the Levenmouth area.	+2 (moderate benefit)	This option would improve public transport mode choice for the residents and workers of Levenmouth and it is expected to be an attractive option for travel outwith and within the area such as improved access to East Neuk, therefore promoting sustainable transport use. There could also be a shift from road to rail for freight.

Overall Performance against STAG Criteria

Criteria	Score	Rationale
Environment	0 (neutral) or -1 (small negative impact)	Given the nature of the project, detailed investigations would be required to understand the full environmental impacts. For example, ground investigation work would be required to confirm the potential for negative effects on water quality, drainage and flood defence, as well as to confirm construction impacts on areas of potentially contaminated land associated with the former industrial areas through which the route passes. Similarly, detailed investigation and assessment at project design stage would be required to confirm the potential impacts on habitat such as indirectly affecting the qualifying interests (wintering and passage bird populations) of the Firth of Forth Special Protection Area and RAMSAR site. However, given the existing rail alignment, it is anticipated that these would be minor and/or could be mitigated. This option may generate significant modal shift and, as a result, moderate positive impacts on local or global air quality are predicted from this option.
Safety	+2 (moderate benefit)	This option would provide a minor or moderate benefit to accident rates, resulting from a reduction in the number of motor vehicles on the road network from drivers switching from car travel to public transport. Provision of new rail station facilities would improve security for public transport users as these would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting. Stations proposed at Leven and Cameron Bridge are likely to include periods of staff presence as well as the provision of formal surveillance (CCTV) and on platform emergency call / information facilities.

Option 6
 Type of Option: Public Transport and Freight
 Title: Re-open existing rail line to passengers and freight
 Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks

Overall Performance against STAG Criteria (continued)

Criteria	Score	Rationale
Economy	+3 (major benefit)	Major journey time benefits are expected for public transport trips via the rail network to and from Leven / Cameron Bridge. It is expected that journey time benefits may also be made for users travelling to and from the vicinity of the rail stations, with major benefits resulting from improved transport network integration. This option would improve reliability for access to destinations on the rail network as rail travel is not directly impacted by road congestion. It is likely that there would be additional revenue gained from increased public transport patronage related to rail transport (rail services and buses serving this); equally there may be revenue lost for bus operators on services which would receive competition from new passenger rail services. Competition from rail could lead to a reduction in bus route viability and potentially a reduction in the number of bus services. There could be opportunities for the rail operator as the branch line to Leven could provide a potential location for a train crew/stabling facility near the main line, reducing empty running back to Edinburgh. A depot in the area could generate local employment opportunities and would provide potential additional timetable-related benefits, both to existing Fife rail services and this option.
Integration	+2 (moderate benefit)	This option would improve the integration of the transport network. Direct access would be provided to the rail network allowing easier access to a range of services options. A new rail station at Leven could be situated within walking distance of the existing Leven Bus Station and so integration of these modes could be improved. New rail infrastructure could be designed to incorporate high quality user information.
Accessibility & Social Inclusion	+3 (major benefit)	This option would improve public transport connections across the Levenmouth area, particularly near the rail station, and would provide major accessibility benefits to key destinations for employment, further education, healthcare and social activities. The provision of an additional mode option for Levenmouth would also help improve the perception of social disconnectedness that was raised during stakeholder engagement. This option would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes. This option is also expected to improve accessibility for many socially excluded groups – it was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of the areas within Levenmouth with the greatest health issues; lowest levels of educational attainment; highest levels of unemployment; and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.

Option 6
Type of Option: Public Transport and Freight
Title: Re-open existing rail line to passengers and freight
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks

Implementability Appraisal * considerations will be explored further during the Detailed Options Appraisal Stage

Feasibility	Technical Risks	There could be technical challenges associated with re-design and refurbishment of the existing, disused, rail line to bring it up to an appropriate standard commensurate with the operation of passenger services. A substantial amount of rail infrastructure is already in place and its condition is to be considered. This option is therefore expected to be technically feasible with a line having operated previously.	Moderate consideration
Feasibility	Deliverability Risks	Engagement with Abellio ScotRail has highlighted capacity issues with regards to existing passenger rail services across the Forth Estuary and that additional rolling stock, servicing and maintenance would be required for any passenger rail service to Leven.	Moderate consideration
Affordability	Financial Risks	Many rail projects have a history of underestimating costs, with the outturn figures being considerably higher than the initial estimates. It will be important to establish cost estimates that are robust as possible at the appraisal stage to avoid this happening in this case, albeit optimism bias will be applied to the costs in the detailed appraisal when calculating value for money of the option.	Major consideration
	Costs	This would be a moderate to high operating revenue option compared with the other options and equally there would be relatively high design, and construction costs associated with bringing the existing, disused, rail line up to an appropriate standard commensurate with the operation of passenger services. This option would have relatively high maintenance and operating costs compared with the other options, which may be offset by the socio-economic benefits that this option may bring.	Major consideration
Public Acceptability	This option has significant public support and has received support from rail campaign groups and businesses via an online survey. The local community would support this option.		Minor consideration

Option 6

Type of Option: Public Transport and Freight

Title: Re-open existing rail line to passengers and freight

Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks

Summary of Rationale for Selecting Option 6 for Detailed Appraisal

This option contributes to all three objectives, in particular “improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population” and “increase the sustainable mode share for the residents and workforce in the Levenmouth area” by providing a rail line along the alignment of the existing, disused, line between Thornton North Junction and Methil Docks.

This option scores positively against the five STAG criteria, particularly Economy, Integration and Accessibility and Social Inclusion, and contributes to several national, regional and local policy objectives, including sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion through availability of alternative modes to car. Particularly, it will have a positive impact on many identified social and economic problems such as providing direct and quicker access to a range of opportunities and services [e.g. educational, cultural, leisure, health and employment] that are currently not available to many residents of Levenmouth.

This option could also generate benefits for the Levenmouth area in relation to the potential for businesses to locate in the area and for them, as well as current businesses, to attract people with the necessary job skills and experience to work in the area.

The public travel survey highlighted that 47% [no. 361] of respondents who do not travel regularly by rail noted that the nearest station is located too far away as the main contributory factor. 35% [no. 126] of respondents noted cost of rail travel as another contributory factor.

The environmental appraisal has highlighted some potential adverse impacts, noting that the scale is to be determined subject to further appraisal and potential mitigation, but equally this option could generate significant modal shift and, as a result, moderate positive impacts on local or global air quality are predicted from this option.

This option has significant public support and has received support from rail campaign groups and businesses via an online survey. The local community would support this option.

3.3 Options contribution to relevant wider policy context

3.3.1 Table 5 below shows how the selected options may align with and may contribute to the aims of transport and wider (non-transport) government policies and national transport objectives. Each option has been scored using the following convention:

✓ = fit O = neutral X = conflict

3.3.2 NB as highlighted in Section 3.1, Option 10 (Active Travel network) has not been appraised as a standalone option. It therefore does not feature in the table below.

3.3.3 Overall, the table shows a reasonable alignment of the options with the relevant wider policy context.

Table 5: Options contribution to wider policies, plans and strategies

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
National						
National Transport Strategy, 2016	<ul style="list-style-type: none"> • Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure to maximise their efficiency 	O	O	✓	✓	✓
	<ul style="list-style-type: none"> • Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network 	✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> • 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 	✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff 	O	O	✓	✓	✓
	<ul style="list-style-type: none"> • Improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport 	✓	✓	✓	✓	✓

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
Scotland's Economic Strategy, 2015	• Investment: investing in our people and our infrastructure in a sustainable way	✓	✓	✓	✓	✓
	• Innovation: fostering a culture of innovation and research and development	○	○	○	○	○
	• Inclusive Growth: promoting inclusive growth and creating opportunity through a fair and inclusive jobs market and regional cohesion	○	○	✓	✓	✓
	• Internationalisation: promoting Scotland on the international stage to boost our trade and investment, influence and networks	○	○	○	○	✓
National Planning Framework 3, 2014	• A Sustainable, Successful Place: Enterprise zones, City Investment Plans, aligning planning and infrastructure investment, support housing developments, investment in coastal and rural areas	○	○	○	○	○
	• A Low Carbon Place: Renewable sources, energy efficiency, community and locally-owned renewable energy	○	○	○	○	○
	• A Natural, Resilient Place: Cycling Action Plan, National Walking Strategy, Scottish Biodiversity Strategy, Tourism Development Framework, Climate Change Adaptation	○	○	○	○	○
	• A Connected Place: Smart Cities, Infrastructure Investment Plan, Next generation Broadband, charging points, Scotland's Scenic Routes	○	○	○	○	○

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
Strategic Transport Projects Review, 2008	<ul style="list-style-type: none"> • Wealthier and Fairer Scotland: improvements in transport provision will generate savings for businesses and individual travellers, leading to improvements in economic welfare 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Smarter Scotland: promoting innovation and encouraging implementation of new transport technologies 	✓	○	○	○	○
	<ul style="list-style-type: none"> • Healthier Scotland: encouraging a shift from car to public transport and to healthier and physically active forms of transport, and by improving transport access to health and community services 	✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Safer and Stronger Scotland: improving the quality, accessibility and affordability of public transport to provide access to essential services and economic opportunities, reduction of accidents through improvement of the condition of roads infrastructure 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Greener Scotland: promoting public transport as well as encouraging the adaptation of new low carbon technologies and promoting cleaner vehicles, provide attractive alternatives to the car 	✓	✓	✓	✓	✓

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
Regional						
Fife Economic Strategy, 2017	<ul style="list-style-type: none"> • Investment: Fife is a well-connected, attractive place to work, live and visit • Innovation: Fife’s residents have more skills and businesses are renowned for their innovation and enterprise • Inclusive Growth: Fife’s economic growth is more equally shared by all • Internationalisation: More Fife businesses are engaged in growing sales outside their local area 	O	✓	✓	✓	✓
		O	O	O	O	✓
		O	✓	✓	✓	✓
		O	O	O	O	✓
SESplan Proposed Strategic Development Plan, 2016	<ul style="list-style-type: none"> • A Place to do Business - Locations for investment, a low carbon economy • A Place for Communities - Increasing housing delivery, thriving town centres, Enhanced Green Networks • A Better Connected Place - Supporting Non-car travel, Regional Walking and Cycling, Strategic Transport Improvements 	O	O	O	O	✓
		O	✓	✓	✓	✓
		✓	✓	✓	✓	✓
SEStran Regional Transport Strategy, Refresh 2015	<ul style="list-style-type: none"> • Economy - to ensure transport facilitates economic growth, regional prosperity and vitality in a sustainable manner • Accessibility - to improve accessibility for those with limited transport choice (including disabled people) or no access to a car, particularly those who live in rural areas • Environment - to ensure that development is achieved in an environmentally sustainable manner • Safety and Health - to promote a healthier and more active SEStran area population 	O	✓	✓	✓	✓
		O	✓	✓	✓	✓
		✓	✓	✓	✓	✓
		O	O	O	O	O

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
Local						
FIFEplan Local Development Plan, 2017	• Increasing opportunity and reducing poverty & inequality	○	✓	✓	✓	✓
	• Improving quality of life in local communities	○	✓	✓	✓	✓
	• Promoting a sustainable society	✓	✓	✓	✓	✓
	• Growing a vibrant economy	○	✓	✓	✓	✓

		Contribution				
Policy	Summary of Objectives / Outcomes	Option 1	Option 2	Option 3	Option 4	Option 6
Local Transport Strategy for Fife, 2006	<ul style="list-style-type: none"> • Access for All: To improve access to all key needs and services for all (including employment, education, health and leisure opportunities) 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Travel Safety: To improve safety for all forms of transport 	○	○	✓	✓	✓
	<ul style="list-style-type: none"> • Changing Travel Habits: To limit the growth in the use of driver only car trips, especially for commuting, by encouraging more use of public transport, and car sharing 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Management and Maintenance of Transport Infrastructure: To manage and maintain road networks in an acceptable, safe and sustainable condition 	○	○	○	○	○
	<ul style="list-style-type: none"> • Transport and Land Use Planning: To encourage more sustainable travel for new and existing developments 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Integrated Transport Networks: To widen travel choice through the provision of integrated transport networks 	○	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Walking and Cycling: To encourage walking and cycling for short trips and as part of an integrated journey to promote a healthier lifestyle. 	○	○	○	○	○
	<ul style="list-style-type: none"> • Passenger Transport: To work with passenger transport operators to develop an integrated public transport system 	✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> • Freight Transport: To promote efficient movement of freight and encourage transfer of goods from road to rail, sea and pipeline. 	○	○	○	○	✓
	<ul style="list-style-type: none"> • Cars, Motorcycles and Parking: To maintain access for essential private vehicle users, whilst restraining the capacity for driver only car commuting in congested locations 	○	○	○	○	○

3.4 Rejected Multi-Modal Transport Options

3.4.1 A summary is provided in this section of the rationale for sifting out Option numbers 5, 7, 8, 9, 11 and 12 at this stage. The reader should refer to Appendix A and Appendix B for more detailed information of the performance of these options against the TPOs and the appraisal of the impacts under the five STAG criteria, including sub-criteria, that leads to these options being rejected at this stage of the study.

Table 6: Rationale for Option Rejection

Option Ref.	Description	Rationale for Option Rejection
5	Provision of a freight only rail line to Cameron Bridge and Methil Docks and onwards to the mainline along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks	Option 5 may help employment in the area by supporting industry, particularly at the Cameron Bridge and Methil Docks sites in the form of Diageo and the Fife Energy Park. This coupled with potential links with the docks may improve inward and external investment levels. This option is also a standalone freight only option which would not alleviate the evidenced problems related to accessibility to destinations and services within the Levenmouth area, particularly for people who rely on public transport [i.e. those who do not own a car or do not have access to a car]. This option is not expected to have an impact on changing travel behaviours, particularly reducing the reliance on the private car for commuter trips and increasing the use of sustainable travel modes such as public transport, walking and cycling. This option would also not help people access services outside the Levenmouth area or allow more people to visit the area. Overall, this option is unlikely to contribute sufficiently [i.e. by considering the relative size and scale of impacts] to meeting the Transport Planning Objectives and addressing the evidenced problems. For these reasons it has been recommended that Option 5 is not taken forward to detailed appraisal.
7	Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy	Option 7 could generate benefits for the Levenmouth area, particularly in relation to improving connectivity and accessibility from the area to key destinations for employment, education, healthcare, and social activities. These benefits could be limited due to the connection point into the existing operating rail line, removing the possibility of provision of passenger services along both sides of the Fife Circle. A potential connection also inhibits the provision of rail freight operations due to the capacity issues on the mainline to and from Kirkcaldy. Additional works and additional costs associated with a new rail alignment alongside the scope of the passenger and freight offering described above, Option 7 does not perform as well as Option 6. Furthermore, a new rail alignment is unlikely to offer any more operational benefits than the existing, disused, alignment. The environmental appraisal has also highlighted some significant potential impacts associated with a new rail alignment such as habitat loss and indirectly affecting the qualifying interests (wintering and passage bird populations) of the Firth of Forth Special Protection Area and RAMSAR site. The local community has highlighted support for rail provision to the Levenmouth area, however it is expected that there would be resistance from some members of the local community to any new alignment proposed under this option. For these reasons it has been recommended that Option 7 is not taken forward to detailed appraisal.

Option Ref.	Description	Rationale for Option Rejection
8	Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch	<p>Option 8 could generate benefits for the Levenmouth area, particularly in relation to attracting investment and improving connectivity and accessibility from the area to key destinations for employment, education, healthcare, and social activities. This option would connect with the existing Fife Circle Line and East Coast Main Line, potentially offering operational flexibility in relation to the provision of passenger services along both sides of the Fife Circle. Additional works and additional costs associated with a new rail alignment coupled with a new rail alignment unlikely to offer any more operational benefits than the existing, disused, alignment, Option 8 does not perform as well as Option 6. The environmental appraisal has also highlighted some significant potential impacts associated with a new rail alignment such as habitat loss and indirectly affecting the qualifying interests (wintering and passage bird populations) of the Firth of Forth Special Protection Area and RAMSAR site. The local community has highlighted support for rail provision to the Levenmouth area, however it is expected that there would be resistance from some members of the local community to any new alignment proposed under this option. For these reasons it has been recommended that Option 8 is not taken forward to detailed appraisal.</p>
9	Provision of a new Bus Rapid Transit alignment from Leven to Markinch	<p>Option 9 could generate benefits for the Levenmouth area, particularly in relation to improving connectivity and accessibility from the area to key destinations for employment, education, healthcare, and social activities. This option would not provide the opportunity for a non-road-based freight alternative to serve the Levenmouth area, which could impact on the potential economic benefits offered by this option in supporting current and future investment. This option also does not perform as well as the rail and other bus options against the Transport Planning Objectives. The local community has highlighted support for improved public transport provision to the Levenmouth area, however it is expected that there would be resistance from some members of the local community to any new alignment proposed under this option. For these reasons it has been recommended that Option 9 is not taken forward to detailed appraisal.</p>
11	Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks	<p>Option 11 could generate benefits for the Levenmouth area, particularly in relation to improving connectivity and accessibility from the area to key destinations for employment, education, healthcare, and social activities. These benefits could be limited due to planning approvals at both Kirkcaldy and Edinburgh whereby landing sites are restricted at these locations. A trial of an Edinburgh to Kirkcaldy service has taken place in recent years and was not taken forward due to poor commercial viability. This option would not provide the opportunity for a non-road-based freight alternative to serve the Levenmouth area, which could impact on the potential economic benefits offered by this option in supporting current and future investment. This option also does not perform as well as the rail and some bus options against the Transport Planning Objectives and there are potential deliverability and affordability risks. For these reasons it has been recommended that Option 11 is not taken forward to detailed appraisal.</p>

Option Ref.	Description	Rationale for Option Rejection
12	Reduction in rail fares from Markinch to Edinburgh (together with an increase in car parking capacity)	<p>The ScotRail franchise is let by the Scottish Ministers and fares are generally set on a commercial basis by the rail franchisee. The current rail fares structure was inherited by rail franchisees at privatisation, in 1993, and there is no standardised [e.g. distance-based] structure to pricing. However, in order to help ensure rail is affordable to passengers, the Scottish Government limits the annual increase on regulated peak fares (Anytime and Season tickets) to the level of inflation, as measured by the Retail Price Index (RPI). Regulated Off-Peak fares are capped at one per cent below RPI. The review of the National Transport Strategy is considering the affordability of transport – for users and providers – and will guide our approach in future. Any change to rail fares can have a significant impact on the wider network (in terms of both affordability and the creation of fares anomalies) and so this option is more appropriate to be considered in the wider approach to fare setting. The Rail Delivery Group has recently consulted with passengers on the approach to fares setting among rail franchisees. Transport Scotland will consider RDG’s recommendations alongside the reviewed NTS to determine the best approach to fare setting in future at a national level, encompassing Fife and the rest of Scotland, rather than changing fares on individual routes in isolation. For this reason, it has been recommended that Option 12 is not taken forward to detailed appraisal.</p>

4 Recommendations and Next Steps

4.1 Introduction

- 4.1.1 This Preliminary Options Appraisal has assessed, in qualitative terms, the multi-modal transport options brought forward from the Initial Appraisal: Case for Change stage of the Levenmouth Sustainable Transport Study.
- 4.1.2 In line with STAG guidance, it has considered the performance of each option against the TPOs and five STAG Criteria, where relevant. It has also considered an initial assessment against Feasibility, Affordability and Public Acceptability, and the fit of each option within relevant established Policy Directives, Plans and Strategies.

4.2 Multi-Modal Transport Options

- 4.2.1 The appraisal of the options has resulted in the recommendation of six multi-modal transport options to be taken forward to the Detailed Options Appraisal Stage. These options are shown in Table 7 below.

- 4.2.2 **It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options listed below – the numbering system is used for presentation and reference purposes only. It should also be noted that options may not be in all cases mutually exclusive and could be packaged together to help meet the Transport Planning Objectives (TPOs) and address the evidenced transport problems. This will be considered further in the next and final stage of the appraisal process.**

Table 7: Recommended Multi-Modal Transport Options for Detailed Appraisal

Option Ref.	Type	Title	Description
1	Accessibility	Enhanced local public transport services	Maintain existing bus services while improving local public transport facilities and information services
2	Accessibility	Improve local bus services	Improve local bus services connecting towns in the Levenmouth area to Leven
3	Accessibility	Improve bus-rail connections	Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes
4	Accessibility	Improve regional bus services	Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow
6	Public Transport and Freight	Re-open existing rail line to passengers and freight	Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks
10	Active Travel	Active travel network	Provision of new and / or improved active travel routes linking the towns within Levenmouth, to key services and public transport interchanges, as well as to the East Neuk

4.3 Detailed Options Appraisal

4.3.1 The purpose of the Detailed Options Appraisal is to undertake a detailed quantitative appraisal of the options taken forward from the Preliminary Options Appraisal. This includes a detailed appraisal of:

- the performance of options against SMART Transport Planning Objectives (TPOs);
- the impact of the options against the five STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion];
- Cost to Government; and
- Risk and Uncertainty.

4.3.2 The potential Feasibility, Affordability and Public Acceptability risks associated with delivery of each multi-modal option will also be investigated during this next and final stage of the study.

Appendix A Options Performance against TPOs

Appendix A provides the options performance against the Transport Planning Objectives (TPOs) for all 12 multi-modal options taken forward from the Initial Appraisal: Case for Change stage, with two exceptions listed below:

- Option 10 (Active Travel network) has not been appraised as a standalone option. Therefore, Option 10 has not been considered in the options performance against the TPOs and so does not feature in the tables below.
- Option 12 (Reduced rail fares) rail fares would be more appropriately considered at a national level, encompassing Fife and the rest of Scotland, at a suitable point in the franchising cycle, which is outside the scope of the Levenmouth Sustainable Transport Study. Therefore, Option 12 has not been considered in the options performance against the TPOs and so does not feature in the tables below.

The STAG seven-point scale assessment has been undertaken for each multi-modal option against the TPOs:

STAG scoring convention

+3	+2	+1	0	-1	-2	-3
Major benefit	Moderate benefit	Minor benefit	Neutral (no benefit or impact)	Small minor cost or negative impact	Moderate cost or negative impact	Major cost or negative impacts

Option 1

Type of Option: Accessibility

Title: Enhanced local public transport services

Description: Maintain existing bus services while improving local public transport facilities and information services

Transport Planning Objectives

Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area.	This option would improve access for existing and potentially new users in the Levenmouth area by introducing better service information such as access to digital and real time information at bus stops. This would improve access by public transport to a range of services and locations, including employment and health facilities.	+1 (minor benefit)

<p>Option 1 Type of Option: Accessibility Title: Enhanced local public transport services Description: Maintain existing bus services while improving local public transport facilities and information services</p>		
<p>TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population</p>	<p>This option would maintain connections to the Levenmouth area. It is expected to have a minor positive impact on residents travelling outside the area who use local buses to connect with regional buses in Leven. It is not expected to have a notable impact on the number of visitors travelling to the Levenmouth area, nor is it expected to have a significant impact on attracting inward investment</p>	<p>+1 (minor benefit)</p>
<p>TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area</p>	<p>This option would likely encourage a shift from private car to public transport as the latter would become more attractive due to improved information on bus services. However, the magnitude of the impact is likely to be limited.</p>	<p>+1 (minor benefit)</p>
<p>OPTION 1 PROGRESSES TO STAG CRITERIA ASSESSMENT</p>		

<p>Option 2 Type of Option: Accessibility Title: Improve local bus services Description: Improve local bus services connecting towns in the Levenmouth area to Leven</p>		
<p>Transport Planning Objectives</p>		
<p>Objective:</p>	<p>Performance against TPO</p>	<p>Score</p>
<p>TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area</p>	<p>This option would reduce journey times by bus, offer a more competitive alternative to the private car and improve connectivity between settlements within the Levenmouth area. Extending the timetable hours would also increase the opportunities, services and locations that could be accessed early in the day or late in the evening.</p>	<p>+3 (major benefit)</p>
<p>TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population</p>	<p>This option would provide greater accessibility to Leven, and via connecting services, beyond, by increasing local bus service frequencies at certain times of the day.</p>	<p>+2 (moderate benefit)</p>
<p>TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area</p>	<p>This option would encourage a shift from private car to public transport. It would augment existing bus services and increase opportunity to travel by bus.</p>	<p>+2 (moderate benefit)</p>
<p>OPTION 2 PROGRESSES TO STAG CRITERIA ASSESSMENT</p>		

Option 3 Type of Option: Accessibility Title: Improve bus-rail connections Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
Transport Planning Objectives		
Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area	Improved bus services to the rail stations at Markinch, Kirkcaldy and Glenrothes could include additional stops locally. This option would provide journey time benefits for areas currently experiencing relatively poor access to the bus network as well as more public transport travel options for Levenmouth residents, improving access to a range of facilities.	+1 (minor benefit)
TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population	This option would provide improved access to and from the national rail network via Markinch, Kirkcaldy and Glenrothes, and would provide improved access to jobs and other facilities / services outside the Levenmouth area. It would equally support access to the area. This option is not expected to have a notable impact on investment opportunities.	+2 (moderate benefit)
TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area	Improved access to the rail network would promote sustainable transport use. The branding campaign associated with this option would be targeted at modal shift.	+1 (minor benefit)
OPTION 3 PROGRESSES TO STAG CRITERIA ASSESSMENT		

Option 4		
Type of Option: Accessibility		
Title: Improve regional bus services		
Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow		
Transport Planning Objectives		
Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area	This option would be focussed on improving linkages to areas beyond the Levenmouth area, and particularly to enhance accessibility and connectivity with key employment locations. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.	+1 (minor benefit)
TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population	This option would reduce journey times by bus, offer a more competitive alternative to the private car and enhance accessibility and connectivity with employment areas in, for example, Dundee, Edinburgh and Glasgow. It would also improve access to important key public services such as health and education.	+2 (moderate benefit)
TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area	This option would augment existing bus services and increase opportunity to travel by bus. Therefore, it is expected that it would encourage a shift from private car to public transport.	+1 (minor benefit)
OPTION 4 PROGRESSES TO STAG CRITERIA ASSESSMENT		

Option 5		
Type of Option: Freight		
Title: Freight only rail line		
Description: Provision of a freight only rail line to Cameron Bridge and Methil Docks and onwards to the mainline along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks		
Transport Planning Objectives		
Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area	This is a standalone freight only option which would not alleviate the problems related to accessibility to destinations and services within the Levenmouth area, particularly for non-car owning or non-car available households who rely on public transport.	0 (neutral / no benefit)

<p>Option 5 Type of Option: Freight Title: Freight only rail line Description: Provision of a freight only rail line to Cameron Bridge and Methil Docks and onwards to the mainline along the alignment of the existing, but currently out of use, line between Thornton North Junction and Methil Docks</p>		
<p>TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population</p>	<p>This option would help employment in the area by supporting industry, in particular at the Cameron Bridge and Methil Docks sites in the form of Diageo and the Fife Energy Park. This coupled with potential links with the docks could potentially improve inward and external investment levels.</p>	<p>+1 (minor benefit)</p>
<p>TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area</p>	<p>This option is not expected to have an impact on changing travel behaviours, in particular reducing reliance on the private car for commuter trips and increasing the use of sustainable travel modes such as public transport, walking and cycling. There could be a shift from road to rail for freight.</p>	<p>0 (neutral / no benefit)</p>
<p>OPTION 5 DOES NOT PROGRESS TO STAG CRITERIA ASSESSMENT</p>		

<p>Option 6 Type of Option: Public Transport and Freight Title: Re-open existing rail line to passengers and freight Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks</p>		
<p>Transport Planning Objectives</p>		
<p>Objective:</p>	<p>Performance against TPO</p>	<p>Score</p>
<p>TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area</p>	<p>This option would provide journey time benefits for Levenmouth residents, resulting from improved access to settlements via the rail network. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.</p>	<p>+1 (minor benefit)</p>

<p>Option 6 Type of Option: Public Transport and Freight Title: Re-open existing rail line to passengers and freight Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks</p>		
<p>TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population</p>	<p>This option would improve access to the rail network and enhance business and tourist access to the area, including potential future access to Edinburgh airport. This option would provide the opportunity to serve both sides of the Fife Circle thereby augmenting access opportunities for Levenmouth residents and would also provide additional wider, indirect benefits and travel options for north east Fife communities. This option is also likely to have a major impact on making the Levenmouth area a more attractive location for businesses to locate and for people to visit.</p>	<p>+3 (major benefit)</p>
<p>TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area</p>	<p>This option would improve public transport mode choice for the residents and workers of Levenmouth and it is expected to be an attractive option for travel outwith and within the area such as improved access to East Neuk, therefore promoting sustainable transport use. There could also be a shift from road to rail for freight.</p>	<p>+2 (moderate benefit)</p>
<p>OPTION 6 PROGRESSES TO STAG CRITERIA ASSESSMENT</p>		

<p>Option 7 Type of Option: Public Transport Title: New passenger only rail line Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy</p>		
<p>Transport Planning Objectives</p>		
<p>Objective:</p>	<p>Performance against TPO</p>	<p>Score</p>
<p>TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area</p>	<p>This option would provide journey time benefits for Levenmouth residents, with access improved to settlements via the rail network. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.</p>	<p>+1 (minor benefit)</p>

Option 7 Type of Option: Public Transport Title: New passenger only rail line Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population	This option would improve access to the rail network and enhance business and tourist access to the area, including potential future access to Edinburgh airport. This option would provide the opportunity to serve both sides of the Fife Circle thereby augmenting access opportunities for Levenmouth residents. It would have the greatest impact on journeys to settlements on the Kirkcaldy side of the Fife circle and beyond.	+3 (major benefit)
TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area	This option would improve public transport mode choice for the residents and workers of Levenmouth and it is expected to be an attractive option for travel outwith and within the area such as improved access to East Neuk, therefore promoting sustainable transport use. The potential new alignment to Kirkcaldy makes journeys north and around the far side of the Fife circle less attractive than those on the Kirkcaldy side and beyond. There could also be a shift from road to rail for freight.	+2 (moderate benefit)
OPTION 7 PROGRESSES TO STAG CRITERIA ASSESSMENT		

Option 8 Type of Option: Public Transport and Freight Title: New passenger and freight rail line Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
Transport Planning Objectives		
Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area	This option would provide journey time benefits for Levenmouth residents, with access improved to settlements via the rail network. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.	+1 (minor benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population	This option would improve access to the rail network and enhance business and tourist access to the area, including potential future access to Edinburgh airport. This option would provide the opportunity to serve both sides of the Fife Circle thereby augmenting access opportunities for Levenmouth residents.	+3 (major benefit)
TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area	This option would improve public transport mode choice for the residents and workers of Levenmouth and it is expected to be an attractive option for travel outwith and within the area such as improved access to East Neuk, therefore promoting sustainable transport use. There could also be a shift from road to rail for freight.	+2 (moderate benefit)
OPTION 8 PROGRESSES TO STAG CRITERIA ASSESSMENT		

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
Transport Planning Objectives		
Objective:	Performance against TPO	Score
TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area	This option would provide journey time benefits for Levenmouth residents, with access improved to settlements via the rail network and BRT link. Other than Leven itself, this option is not expected to have a notable impact on accessibility to destinations and services within the wider Levenmouth area.	+1 (minor benefit)
TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population	This option would improve access to the rail network and could enhance business and tourist access to the area. It would also improve access to services and facilities outside the Levenmouth area. However, this option is not expected to have a notable impact on investment opportunities in the area.	+2 (moderate benefit)
TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area	Improved access to the rail network via a new BRT link would promote sustainable transport use through modal shift from car to public transport.	+1 (minor benefit)

Option 9

Type of Option: Public Transport

Title: New passenger BRT route

Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch

OPTION 9 PROGRESSES TO STAG CRITERIA ASSESSMENT

Option 10 (Active Travel network) has not been appraised as a standalone option. Therefore, Option 10 has not been considered in the option performance against the TPOs.

<p>Option 11 Type of Option: Public Transport Title: New hovercraft services Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks</p>		
<p>Transport Planning Objectives</p>		
<p>Objective:</p>	<p>Performance against TPO</p>	<p>Score</p>
<p>TPO 1: Improve transport access to employment and key services, including education, health and leisure facilities, within the Levenmouth area</p>	<p>This option would provide journey time benefits for Levenmouth residents, with access to services in Kirkcaldy and Edinburgh. Potential journey time benefits may be limited by requirements to connect to the terminal.</p>	<p>+1 (minor benefit)</p>
<p>TPO 2: Improve transport access and connectivity to and from the Levenmouth area for businesses, visitors and the resident population</p>	<p>This option would provide direct links between Edinburgh and the Levenmouth area, which could potentially be used as leisure travel for tourists. Marketing around this option would encourage tourist travel to the Levenmouth area. Several leisure and tourism boat trips operate on the Forth Estuary, and the coastal position of the terminal could link well to the Fife Coastal Path. It would also increase opportunities for many people in Levenmouth to access employment opportunities and services in Edinburgh and Kirkcaldy. This option is not expected to have a notable impact on investment opportunities in the local area.</p>	<p>+2 (moderate benefit)</p>
<p>TPO 3: Increase the sustainable mode share for the residents and workforce in the Levenmouth area</p>	<p>Provision of additional mode choice for travel to Kirkcaldy and Edinburgh would capture some trips currently made by private car.</p>	<p>+1 (minor benefit)</p>
<p>OPTION 11 PROGRESSES TO STAG CRITERIA ASSESSMENT</p>		

Option 12 (Reduced rail fares) rail fares would be more appropriately considered at a national level, encompassing Fife and the rest of Scotland, at a suitable point in the franchising cycle, which is outside the scope of the Levenmouth Sustainable Transport Study. Therefore, Option 12 has not been considered in the option performance against the TPOs.

Appendix B Appraisal of Options against STAG Criteria

Appendix B provides the appraisal of options against STAG Criteria for all multi-modal options brought forward from the Initial Appraisal: Case for Change Stage, with three exceptions listed below:

- Option 5 (Freight only rail line) failed to progress beyond the initial assessment against the Transport Planning Objectives (TPOs). Therefore, Option 5 has not been considered in the appraisal of options against the STAG Criteria and so does not feature in the tables below.
- Option 10 (Active Travel network) has not been appraised as a standalone option. Therefore, Option 10 has not been considered in the appraisal of options against the STAG Criteria and so does not feature in the tables below.
- Option 12 (Reduced rail fares) rail fares would be more appropriately considered at a national level, encompassing Fife and the rest of Scotland, at a suitable point in the franchising cycle, which is outside the scope of the Levenmouth Sustainable Transport Study. Therefore, Option 12 has not been considered in the appraisal of options against the STAG Criteria and so does not feature in the tables below.

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	<p>Potential for short term noise effects during bridge construction works [i.e. Bawbee Bridge] would be temporary and not predicted to be significant.</p> <p>No material changes in traffic flows on key roads in the study area or beyond are expected from this option.</p> <p>No significant effects on transport noise or vibration for receptors adjacent to bus routes or facilities are predicted.</p>	0 (neutral / no impact)

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
Global Air Quality (CO ₂)	No material changes in traffic flows or associated emissions on key roads in the study area or beyond are expected from this option. No significant effects on global (carbon) emissions are predicted.	0 (neutral / no impact)
Local Air Quality (PM ₁₀ and NO ₂)	If the option resulted in changes in routing of buses and layouts of bus terminals in the urban areas of Methil / Leven, there is minor potential for positive or negative effects on air quality in the immediate vicinity of these locations. No significant effects on local air pollutant emissions are predicted.	+1 (minor benefit) or -1 (small negative impact)
Water Quality, Drainage and Flood Defence	Improved facilities and information may encourage increased use of bus services with the potential for small changes in use of other modes [e.g. reduced use of private car] with the potential for very small impacts on run-off quality from roads and urban areas. No significant effects on water quality, drainage and flood defence are predicted from this option taking account of assumed design and mitigation.	+1 (minor benefit) or -1 (small negative impact)
Geology	No significant effects on geology or geological/material resources are predicted for this option.	0 (neutral / no impact)
Biodiversity and Habitats	Improved public transport facilities have potential for minor changes to local habitats from construction and permanent development works which it is assumed would be mitigated during planning and construction phases. No significant effects on biodiversity and habitats are predicted from this option taking account of assumed design and mitigation.	+1 (minor benefit) or -1 (small negative impact)

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
Landscape	<p>Improved public transport facilities have potential for minor changes to landscape and townscape from construction and permanent development works which it is assumed would be of modest scale and designed in a manner appropriate to the townscape character.</p> <p>No significant effects on landscape and townscape are predicted from this option taking account of assumed design and mitigation.</p>	+1 (minor benefit) or -1 (small negative impact)
Visual Amenity	<p>Improved public transport facilities have potential for minor changes to visual receptors and key views during construction and from permanent development works which it is assumed would be of modest scale and designed in a manner appropriate to the townscape character.</p> <p>No significant effects on visual amenity are predicted from this option taking account of assumed design and mitigation.</p>	+1 (minor benefit) or -1 (small negative impact)
Agriculture and Soils	No significant effects on agriculture and soils are predicted for this option.	0 (neutral / no impact)
Cultural Heritage	<p>Improved public transport facilities have potential for minor changes to historic townscapes from construction and permanent development works which it is assumed would be of modest scale and designed in a manner appropriate to the townscape character, particularly if these were within Conservation Areas.</p> <p>No significant effects on cultural heritage are predicted from this option taking account of assumed design and mitigation.</p>	+1 (minor benefit) or -1 (small negative impact)
Safety:		
Accidents	This option supports continued travel by alternatives to the private car, it is unlikely to generate additional mode switch to a level which would result in a material impact on accident rates.	0 (neutral / no benefit)

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
Security	Any improvements to security associated with this option are likely to be minor. Real and perceived improvements to security would be in relation to improvements to bus facilities, such as lighting at stops, and increased natural surveillance from increased passenger numbers on-board and at stops. Improved information can also lead to increased perceptions of safety.	+1 (minor benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Failure to maintain existing express services between the Methil/Buckhaven area, East Wemyss and the Coaltown of Wemyss due to the Bawbee Bridge weight restrictions limiting bus routing options south of the River Leven, would mean that additional interchange, or use of slower services, be required without this option.</p> <p>User charges, including fares, parking charges and tolls: This option is unlikely to impact on this sub-criterion.</p> <p>Vehicle operating cost changes for road vehicles: This option is unlikely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: Quality benefits could be expected from this option if high-quality buses (coach standard for express services, including on-board toilet) are used to service areas south of the River Leven directly, including Methil/Buckhaven area, East Wemyss and the Coaltown of Wemyss.</p> <p>Reliability benefits to transport users: There could be a minor benefit to reliability of services relating to relief of traffic impacts related to development along bus routes.</p>	0 (neutral / no impact)

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
	<p>Investment costs: There may be little impact on private sector operator investment costs as this would merely facilitate planned roll-out of improved bus fleet.</p> <p>Operating and maintenance costs: This option is unlikely to impact on this sub-criterion.</p> <p>Revenues: This option is unlikely to impact on this sub-criterion.</p> <p>Grant and subsidy payments: Funding for this option to be determined during Detailed Option Appraisal stage should this option be taken forward.</p>	
Wider Economic Impacts / Benefits	No wider economic impacts/benefits are expected from this option.	0 (neutral / no impact)
Integration:		
Transport Integration	<p>Services and ticketing: This option is unlikely to impact on this sub-criterion.</p> <p>Infrastructure and information: There would be a minor benefit to infrastructure, through on-street facility improvements. Information provision via this option would also be improved for users.</p>	+1 (minor benefit)
Transport and Land Use Integration	This option utilises existing services but also involves transport mitigations in response to planned development. As well as potential improvements for public transport, any mitigating junction capacity improvements resulting from planned development could improve traffic conditions.	+1 (minor benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use.	+2 (moderate benefit)

Option 1		
Type of Option: Accessibility		
Title: Enhanced local public transport services		
Description: Maintain existing bus services while improving local public transport facilities and information services		
STAG Criteria		
Criterion		
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help to protect public transport connections across the Levenmouth area, including Methil, Buckhaven, East Wemyss and Coaltown of Wemyss, and improve public transport facilities and information. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes.	+1 (minor benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.	+1 (minor benefit)

Option 2		
Type of Option: Accessibility		
Title: Improve local bus services		
Description: Improve local bus services connecting towns in the Levenmouth area to Leven		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	Minor reductions in traffic flows and associated emissions on key roads within the Levenmouth area are expected from this option. No significant effects on transport noise or vibration for receptors adjacent to bus routes or facilities are predicted.	+1 (minor benefit)
Global Air Quality (CO ₂)	Minor reductions in traffic flows and associated emissions on key roads within the Levenmouth area are expected from this option. No significant effects on global (carbon) emissions are predicted.	+1 (minor benefit)
Local Air Quality (PM ₁₀ and NO ₂)	If the option resulted in changes in routing of buses and layouts of bus terminals in the urban areas of Methil / Leven, there is minor potential for positive or negative effects on air quality in the immediate vicinity of these locations. No significant effects on local air pollutant emissions are predicted.	+1 (minor benefit) or -1 (small negative impact)
Water Quality, Drainage and Flood Defence	No significant effects on water quality, drainage and flood defence are predicted from this option taking account of assumed design and mitigation.	0 (neutral / no impact)
Geology	No significant effects on geology or geological/material resources are predicted for this option.	0 (neutral / no impact)
Biodiversity and Habitats	No significant effects on biodiversity and habitats are predicted from this option taking account of assumed design and mitigation.	0 (neutral / no impact)
Landscape	No significant effects on landscape and townscape are predicted from this option taking account of assumed design and mitigation.	0 (neutral / no impact)

Option 2		
Type of Option: Accessibility		
Title: Improve local bus services		
Description: Improve local bus services connecting towns in the Levenmouth area to Leven		
STAG Criteria		
Criterion		
Visual Amenity	No significant effects on visual amenity are predicted from this option taking account of assumed design and mitigation.	0 (neutral / no impact)
Agriculture and Soils	No significant effects on agriculture and soils are predicted for this option.	0 (neutral / no impact)
Cultural Heritage	No significant effects on cultural heritage are predicted from this option taking account of assumed design and mitigation.	0 (neutral / no impact)
Safety:		
Accidents	Whilst this option supports continued travel by alternatives to the private car, it is unlikely to generate additional mode switch to a level which would result in a material impact on accident rates.	0 (neutral / no benefit)
Security	Any improvements to security associated with this option are likely to be minor. Real and perceived improvements to security would be in relation to improvements to bus facilities, such as lighting at stops, and increased natural surveillance from increased passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for services on street and reduced number of connections required to make the journey.	+1 (minor benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	Journey time savings: Journey time benefits are expected for travel within the Levenmouth area and as a result of increased service frequency and timetable improvements, benefits are also expected to and from the Levenmouth area through greater accessibility to Leven and, via connecting services, beyond.	+1 (minor benefit)

Option 2		
Type of Option: Accessibility		
Title: Improve local bus services		
Description: Improve local bus services connecting towns in the Levenmouth area to Leven		
STAG Criteria		
Criterion		
	<p>User charges, including fares, parking charges and tolls: This option is not likely to impact on this sub-criterion.</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: This option is not likely to impact on this sub-criterion.</p> <p>Reliability benefits to transport users: This option is not likely to impact on this sub-criterion.</p> <p>Investment costs: There may be little impact on private sector operator investment costs as this would merely facilitate planned roll-out of improved bus fleet.</p> <p>Operating and maintenance costs: Any requirement for additional bus fleet could have a minor impact on this sub-criterion, including additional service operating and maintenance running costs.</p> <p>Revenues: Improved services provision and increased passenger numbers may provide benefit to revenues.</p> <p>Grant and subsidy payments: Minor increased subsidy revenue from increased patronage. The majority of benefits would be at a local rather than national level for this option.</p>	
Wider Economic Impacts / Benefits	Access to education, healthcare, employment and social opportunities is of importance to the areas that this option would benefit, as these are some of the areas with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. Access to healthcare and social opportunities promotes a	+1 (minor benefit)

Option 2 Type of Option: Accessibility Title: Improve local bus services Description: Improve local bus services connecting towns in the Levenmouth area to Leven		
STAG Criteria		
Criterion		
	physically and mentally healthy workforce, and access to education helps build a skilled and qualified workforce.	
Integration:		
Transport Integration	<p>Services and ticketing: There would be a moderate beneficial impact to this criterion from this option, provided by a greater number of services within the Levenmouth area. This would allow for more service integration opportunities.</p> <p>Infrastructure and information: There would be a minor benefit to infrastructure, through on-street facility improvements. Information provision via this option would also be improved for users.</p>	+2 (moderate benefit)
Transport and Land Use Integration	This option utilises existing services but would also involve transport mitigations in response to planned development.	+1 (minor benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use.	+2 (moderate benefit)
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help to protect and improve public transport connections across the Levenmouth area, including Methil and Buckhaven, and improve public transport facilities and information. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections	+2 (moderate benefit)

Option 2 Type of Option: Accessibility Title: Improve local bus services Description: Improve local bus services connecting towns in the Levenmouth area to Leven		
STAG Criteria		
Criterion		
	but could help facilitate access to services and facilities through active travel modes.	
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the Initial Appraisal: Case for Change report (November 2018) that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.	+2 (moderate benefit)

Option 3		
Type of Option: Accessibility		
Title: Improve bus-rail connections		
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	Potential for short term noise effects during construction of any new hub would be temporary and not predicted to be significant. Minor reductions in traffic flows on key roads in the study area and beyond are expected from this option. No significant effects on transport noise or vibration for receptors adjacent to bus routes are predicted.	+1 (minor benefit)
Global Air Quality (CO ₂)	Minor reductions in traffic flows and associated emissions on key roads in the study area and beyond are expected from this option. No significant effects on global (carbon) emissions are predicted.	+1 (minor benefit)
Local Air Quality (PM ₁₀ and NO ₂)	If the option resulted in changes in routeing of buses in the urban areas of Buckhaven/Methil/Leven and Markinch, Kirkcaldy or Glenrothes, there is minor potential for positive or negative effects on air quality in the immediate vicinity of these locations. No significant effects on local air pollutant emissions are predicted.	+1 (minor benefit) or -1 (small negative impact)
Water Quality, Drainage and Flood Defence	No significant effects on water quality, drainage and flood defence are predicted from this option.	0 (neutral / no impact)
Geology	No significant effects on geology or geological/material resources are predicted for this option.	0 (neutral / no impact)
Biodiversity and Habitats	No significant effects on biodiversity and habitats are predicted from this option, subject to choice of any new hub location/building.	0 (neutral / no impact)

Option 3		
Type of Option: Accessibility		
Title: Improve bus-rail connections		
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
Landscape	No significant effects on landscape and townscape are predicted from this option assuming that design of any new hub integrates well with its surroundings.	0 (neutral / no impact)
Visual Amenity	No significant effects on visual amenity are predicted from this option assuming that design of any new hub integrates well with its surroundings.	0 (neutral / no impact)
Agriculture and Soils	No significant effects on agriculture and soils are predicted for this option.	0 (neutral / no impact)
Cultural Heritage	No significant effects on cultural heritage are predicted from this option assuming that design of any new hub integrates well with the local townscape.	0 (neutral / no impact)
Safety:		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motorists on the road network. This reduction will come from people switching from car to the bus and rail link. As well as trips previously undertaken entirely by car, the option will likely also reduce the number of people driving to both Markinch and Kirkcaldy rail stations to access rail services, with people instead using the branded bus link. Particular areas of benefit could include the Methil/Buckhaven area, the A911 between Markinch and Levenmouth, and the A915/A955 between Kirkcaldy and Levenmouth.	+1 (minor benefit)
Security	Any improvements to security associated with this option are likely to be minor. Real and perceived improvements to security would be in relation to improvements to bus facilities, such as lighting at stops, and increased perceived safety resulting from increased passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for	+1 (minor benefit)

Option 3 Type of Option: Accessibility Title: Improve bus-rail connections Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
	services on street and reduced number of connections required to make the journey, in particular in the Methil/Buckhaven area which would see an improved direct link to rail and therefore negate the need for additional interchange at Leven Bus Station.	
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time benefits are expected for public transport trips via the rail network at Markinch. These journey time benefits include improvements to journeys from Methil, Methilhill, Buckhaven and Fife Energy Park in terms of point to point travel and reduced interchange/wait time.</p> <p>User charges, including fares, parking charges and tolls: This option could include the integration of bus and rail fares from Levenmouth, providing benefit to public transport users.</p> <p>Vehicle operating cost changes for road vehicles: There would be increased vehicle operating costs associated with new bus services.</p> <p>Quality benefits to transport users: Quality benefits could be expected from this option if high-quality rail link branded buses are used for links to Markinch Rail Station from Levenmouth, including additional improved direct services to the station from Methil, Methilhill, Buckhaven and Fife Energy Park.</p> <p>Reliability benefits to transport users: Reliability for access to the rail network would be improved for access to Methil, Methilhill, Buckhaven and Fife Energy Park via the provision of improved direct services.</p> <p>Investment costs: Additional fleet may be required, as would a branding exercise for the new service.</p>	+2 (moderate benefit)

Option 3		
Type of Option: Accessibility		
Title: Improve bus-rail connections		
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
	<p>Operating and maintenance costs: Additional service operating and maintenance running costs.</p> <p>Revenues: Improved services provision and increased passenger numbers may provide benefit to revenues.</p> <p>Grant and subsidy payments: Minor increased subsidy revenue from increased patronage; the majority of benefits for this option would be at a local rather than national level for this option.</p>	
Wider Economic Impacts / Benefits	This option includes improvements of integration of bus and rail from both Leven town centre, with a branded bus services, as well as the areas of Methil, including the Energy Park, Methilhill, Buckhaven and Windygates. This would provide improved access to the national rail network (via Markinch), Glenrothes, and Whitehall Industrial Estate, providing improved access to jobs outwith Levenmouth, and the potential for jobs to be created in the area through investment. In particular, access to the Energy Park and the Cameron Bridge (Distillery and Hospital) employment areas would be improved. There may be some additional benefit to tourism and business from a more clearly branded link from the rail network to Levenmouth.	+2 (moderate benefit)
Integration:		
Transport Integration	This option looks at the integration of bus services with rail options, and so scores well on this criterion in terms of both services and ticketing and infrastructure of information. Timetable matching and information and branding exercises for this option would be particularly effective in these respects.	+2 (moderate benefit)

Option 3		
Type of Option: Accessibility		
Title: Improve bus-rail connections		
Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
Transport and Land Use Integration	This option includes improvements of integration of bus and rail from both Leven town centre, with a branded bus services, as well as the areas of Methil, including the Energy Park, Methilhill, Buckhaven and Windygates. This would provide improved access to the Energy Park and the Cameron Bridge (Distillery and Hospital) employment areas, both of which are identified in the adopted Fife Local Development Plan 2017 (referred to as FifePlan hereinafter) as planned areas of development.	+2 (moderate benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use.	+2 (moderate benefit)
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help to improve public transport connections across Levenmouth, in particular Leven, Methil, Methilhill and Buckhaven. This would optimise access to public transport services on foot and by bicycle across this area. It would not directly improve walking and/or cycling [i.e. active travel] connections but could help facilitate access to services and facilities through active travel modes.	+2 (moderate benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help reduce	+2 (moderate benefit)

Option 3 Type of Option: Accessibility Title: Improve bus-rail connections Description: Improve bus services to rail stations at Markinch, Kirkcaldy and Glenrothes		
STAG Criteria		
Criterion		
	reliance on the car as a mode of transport and help those without access to a car.	

Option 4 Type of Option: Accessibility Title: Improve regional bus services Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	Potential for short term noise effects during construction of any new hubs would be temporary and not predicted to be significant. Minor reductions in traffic flows on key roads in the study area and beyond are expected from this option. No significant effects on transport noise or vibration for receptors adjacent to bus routes are predicted.	+1 (minor benefit)
Global Air Quality (CO ₂)	Minor reductions in traffic flows and associated emissions on key roads in the study area and beyond are expected from this option. No significant effects on global (carbon) emissions are predicted.	+1 (minor benefit)
Local Air Quality (PM ₁₀ and NO ₂)	If the option resulted in changes in routeing of buses in the urban areas of Buckhaven/Methil/Leven and destination, there is minor potential for positive or negative effects on air quality in the immediate vicinity of these locations. No significant effects on local air pollutant emissions are predicted.	+1 (minor benefit) or -1 (small negative impact)
Water Quality, Drainage and Flood Defence	No significant effects on water quality, drainage and flood defence are predicted from this option.	0 (neutral / no impact)
Geology	No significant effects on geology or geological/material resources are predicted for this option.	0 (neutral / no impact)
Biodiversity and Habitats	No significant effects on biodiversity and habitats are predicted from this option, subject to choice of any new hub location/building.	0 (neutral / no impact)

Option 4		
Type of Option: Accessibility		
Title: Improve regional bus services		
Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow		
STAG Criteria		
Criterion		
Landscape	No significant effects on landscape and townscape are predicted from this option assuming that design of any new hub integrate well with its surroundings.	0 (neutral / no impact)
Visual Amenity	No significant effects on visual amenity are predicted from this option assuming that design of any new hub integrate well with its surroundings.	0 (neutral / no impact)
Agriculture and Soils	No significant effects on agriculture and soils are predicted for this option.	0 (neutral / no impact)
Cultural Heritage	No significant effects on cultural heritage are predicted from this option assuming that design of any new hub integrates well with the local townscape.	0 (neutral / no impact)
Safety:		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motorists on the road network. This reduction would come from people switching from car to the bus. As well as trips previously undertaken entirely by car, the option could reduce the number of people driving to destination, with people instead using the more direct services running between Leven and the destination.	0 (neutral / no impact) or +1 (minor benefit)
Security	Any improvements to security associated with this option are likely to be minor. Real and perceived improvements to security would be in relation to improvements to bus facilities, such as lighting at stops, and increased perceived safety resulting from increased passenger numbers on-board and at stops. Passengers would also benefit from reduced wait times for services on street and reduced number of connections required to make the journey, in particular in the Methil/Buckhaven area which would experience improved direct regional bus services to the destination.	+1 (minor benefit)

Option 4		
Type of Option: Accessibility		
Title: Improve regional bus services		
Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow		
STAG Criteria		
Criterion		
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time benefits are expected for public transport trips using direct services to the destination. These journey time benefits include improvements to journeys from Methil, Methilhill and Buckhaven in terms of point-to-point travel and reduced interchange / wait time.</p> <p>User charges, including fares, parking charges and tolls: This option is not likely to impact on this sub-criterion.</p> <p>Vehicle operating cost changes for road vehicles: There would be increased vehicle operating costs associated with new bus services.</p> <p>Quality benefits to transport users: Quality benefits could be expected from this option if high-quality buses [i.e. coach standard] are used to serve the Levenmouth area and destination.</p> <p>Reliability benefits to transport users: Reliability for access to cities, including Glasgow and Dundee, would be improved from Methil, Methilhill and Buckhaven via the provision of improved direct services.</p> <p>Investment costs: Additional fleet may be required, as would a branding exercise for the new service.</p> <p>Operating and maintenance costs: Additional service operating and maintenance running costs.</p> <p>Revenues: Improved services provision and increased passenger numbers may provide benefit to revenues.</p> <p>Grant and subsidy payments: Minor increased subsidy revenue from increased patronage; most benefits for this option would be at a local rather than national level for this option.</p>	+2 (moderate benefit)

Option 4		
Type of Option: Accessibility		
Title: Improve regional bus services		
Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow		
STAG Criteria		
Criterion		
Wider Economic Impacts / Benefits	Access to education, healthcare, employment and social opportunities is of importance to the areas that this option would benefit, as these are some of the areas with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. Access to healthcare and social opportunities promotes a physically and mentally healthy workforce, and access to education helps build a skilled and qualified workforce.	+1 (minor benefit)
Integration:		
Transport Integration	<p>Services and ticketing: There would be a minor positive impact provided by a greater geographical network balance of services between Levenmouth and beyond.</p> <p>Infrastructure and information: This option is not likely to impact on this sub-criterion.</p>	0 (neutral / no impact) or +1 (minor benefit)
Transport and Land Use Integration	This option is not likely to impact on this sub-criterion.	0 (neutral / no impact)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use.	+2 (moderate benefit)
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help to improve public transport connections across Levenmouth, in particular Leven, Methil, Methilhill and Buckhaven. This option could benefit access to key destinations for employment, further education, healthcare and social activities, including Glasgow and Dundee.	+2 (moderate benefit)

<p>Option 4 Type of Option: Accessibility Title: Improve regional bus services Description: Improve regional bus services linking Leven with Kirkcaldy, Glenrothes, Dunfermline, St Andrews, Dundee, Edinburgh and Glasgow</p>		
<p>STAG Criteria</p>		
<p>Criterion</p>		
<p>Comparative Accessibility [i.e. distribution of accessibility impacts]</p>	<p>This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help reduce reliance on the car as a mode of transport and help those without access to a car.</p>	<p>+2 (moderate benefit)</p>

Option 5 (Freight only rail line) failed to progress beyond the initial assessment against the Transport Planning Objectives (TPOs). Therefore, Option 5 has not been considered in the appraisal of options against the STAG Criteria.

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	It is predicted that noise and vibration effects would be experienced during construction which could be significant for short periods of intensive activity [e.g. from station, structures and track construction]. During operation passenger and freight train movements are predicted to result in noise effects for adjacent residential receptors which may be significant dependent on the timetabling and frequency of rail operations. Reductions in HGV and car traffic flows on key roads in the study area and beyond are predicted to have moderate beneficial impacts on communities adjacent to these routes.	+1 (minor benefit) or -1 (minor negative impact)
Global Air Quality (CO ₂)	Reductions in HGV and car traffic flows on key roads in the study area and beyond are predicted to have moderate beneficial impacts on emissions from reduced overall HGV and car vehicle kilometres.	+2 (moderate benefit)
Local Air Quality (PM ₁₀ and NO ₂)	It is predicted that local air quality effects (primarily from dust) would be experienced during construction but these would not be significant. During operation train movements are predicted to result in some emissions of local air pollutants but these are not predicted to significantly affect background concentrations of local air pollutants. Reductions in HGV and car traffic flows on key roads in the study area and beyond are predicted to have moderate beneficial impacts on communities adjacent to key routes used for freight traffic.	+2 (moderate benefit)
Water Quality, Drainage and Flood Defence	It is predicted that with mitigation measures in place the reinstatement of the railway/stations and its operation would not have significant effects on	-1 (small negative impact)

Option 6 Type of Option: Public Transport and Freight Title: Re-open existing rail line to passengers and freight Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
	water quality and drainage taking account of assumed design and mitigation. There is a potential for significant effects on flooding and this would require more detailed assessment at later design stages.	
Geology	It is predicted that with mitigation measures in place the reinstatement of the railway/stations and its operation would not have significant effects on geology. There is a potential for construction to affect areas of potentially contaminated land associated with the former industrial areas through which the route passes, and this would require more detailed investigation, assessment and, if appropriate, remediation at later design stages.	-1 (small negative impact)
Biodiversity and Habitats	It is predicted that the reinstatement of the railway and construction of stations and its operation has the potential for significant effects on biodiversity as a result of habitat loss [e.g. scrub woodland], potential effects on protected species and effects on a local wildlife site. Construction disturbance works close to the coast have the potential to indirectly affect the qualifying interests (wintering and passage bird populations) of the Firth of Forth SPA / Ramsar site and SSSI. This may not be an issue, given the existing alignment, but it will need detailed investigation and potential mitigation measures would need to be employed to ensure that disturbance did not adversely affect the Natura site. The potential for effects would need to be confirmed at later stages based on field surveys of the development area.	-1 (small negative impact)
Landscape	It is predicted that with mitigation measures in place the reinstatement of the railway, construction of stations and train operations would not	-1 (small negative impact)

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
	generally have significant effects on landscape and townscape character of the route.	
Visual Amenity	<p>Significant adverse effects on visual amenity are predicted from the permanent development and operation of this option in some locations where receptors or views are particularly close to the railway route, including areas of housing on the edge of Windygates and Leven.</p> <p>It may be possible to mitigate some of these effects in the longer term through measures such as screen planting. Some minor positive effects are predicted for visual receptors close to roads where HGV and other traffic movements are reduced as a result of the railway's operation.</p>	+1 (minor benefit) or -2 (moderate negative impact)
Agriculture and Soils	<p>It is predicted that with mitigation measures in place the reinstatement of the railway, construction of new stations and railway operations would not have significant effects on agriculture or soils.</p> <p>No new areas of agricultural land are assumed to be required for the option and much of the redevelopment of the line would be on land which has already been developed in the past for original railway construction.</p>	0 (neutral)
Cultural Heritage	<p>No significant effects on cultural heritage are predicted from reinstatement of the railway taking account of assumed design and mitigation.</p> <p>Development of new stations have potential to affect the setting of several listed buildings, depending on the final form and location of the structures and this would require further investigation before construction.</p>	0 (neutral) to -1 (small negative impact)
Safety:		

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction in the number of motor vehicles on the road network from drivers switching from car travel to public transport.	+1 (minor benefit) or +2 (moderate benefit)
Security	Provision of new rail station facilities would improve security for public transport users as these would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting. New stations at Leven and Cameron Bridge are likely to include periods of staff presence as well as the provision of formal surveillance (CCTV) and on platform emergency call/information facilities.	+2 (moderate benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time savings are dependent on the speed achieved along the rail link. It is expected that journey time savings may be made for users travelling to/from the vicinity of the rail station, with savings being made from improved transport network integration.</p> <p>User charges, including fares, parking charges and tolls: A range of fare sensitivity tests would be undertaken to understand impacts on the demand for rail travel and fare benefits [e.g. a sensitivity test considering lower fares than equivalent bus or rail fares from Kirkcaldy and Markinch] should this option be taken forward.</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: Improvements to modal choice from the Levenmouth area, including direct access to the rail network from the</p>	+2 (moderate benefit) or +3 (major benefit)

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
	<p>new station at Leven. However, competition from rail to bus could lead to reduction in bus route viability and therefore the reduction of bus services.</p> <p>Reliability benefits to transport users: Improved reliability for access to the rail network. Reliability could be improved for access to destinations on the rail network as rail travel is not directly impacted by road congestion.</p> <p>Investment costs: Investment costs associated with the reopening of this line include signalling, structure strengthening, line clearance and upgrade.</p> <p>Operating and maintenance costs: Consultation with Abellio ScotRail has noted that existing passenger rail services across the Forth Estuary are at capacity and that additional rolling stock, servicing and maintenance would be required for any passenger rail serving Levenmouth. Operating and maintenance costs would be required for new stations at Leven and Cameron Bridge.</p> <p>Revenues: It is likely that there would be additional revenue gained from increased public transport patronage related to rail transport (rail services and buses serving this), however, there may be revenue lost for bus operators on services which would receive competition new passenger rail services. Overall this option may be of net benefit.</p> <p>Grant and subsidy payments: Expected Scottish Government funding for this option to be determined during Detailed Option Appraisal stage.</p>	
Wider Economic Impacts / Benefits	This option would provide benefits to the Levenmouth area in terms of improving access to education, healthcare, employment and social opportunities, supporting people to live and work in the area. Access to healthcare and social activities promotes a physically and mentally healthy workforce, and access to education helps build a skilled and qualified	+2 (moderate benefit) or +3 (major benefit)

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
	workforce. Together with increased access to jobs, these factors could increase the opportunity for the people of Levenmouth to be economically active, in turn supporting inward and external investment in the area.	
Integration:		
Transport Integration	<p>This option could improve the integration of the transport network.</p> <p>Services and ticketing: direct access would be provided to the rail network allowing easier access to a range of services options. A new rail station at Leven would be situated within walking distance of the existing Leven Bus Station and so integration of these modes would be improved.</p> <p>Infrastructure and information: new rail infrastructure would be provided for this option, this could be designed to incorporate high quality user information.</p>	+2 (moderate benefit)
Transport and Land Use Integration	The reopening of the Leven rail link is identified in FifePlan and land safeguarded for stations with accessibility benefits for planned employment and residential developments in the Leven town centre area, including Riverside Road and Methil Docks.	+2 (moderate benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use. This option also offers the potential for improving tourist access to/from Levenmouth supporting the FifePlan aim to attract tourism to the area.	+2 (moderate benefit)

Option 6		
Type of Option: Public Transport and Freight		
Title: Re-open existing rail line to passengers and freight		
Description: Provision of a passenger only rail line, or a passenger and freight rail line, along the alignment of the existing, disused, rail line between Thornton North Junction and Methil Docks		
STAG Criteria		
Criterion		
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help improve public transport connections across Levenmouth, in particular near the rail station. This option could benefit access to key destinations for employment, further education, healthcare and social activities. The provision of an additional mode option for Levenmouth would also to help improve the perception of disconnectedness that was raised in the analysis of problems and opportunities. Whilst this option would not directly improve walking and/or cycling [i.e. active travel] connections, it could help facilitate access to services and facilities through active travel modes.	+3 (major benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help reduce reliance on the car as a mode of transport and help those without access to a car.	+3 (major benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	<p>It is predicted that noise and vibration effects would be experienced during construction which could be significant for some periods [e.g. from station, structures and track construction].</p> <p>During operation passenger train movements are predicted to result in noise effects for adjacent residential receptors which may be significant dependent on timetabling.</p> <p>A slight reduction in car traffic flows on key roads in the study area or beyond is predicted to have up to minor beneficial effects on communities adjacent to these key routes.</p>	+1 (minor benefit) or -2 (moderate negative impact)
Global Air Quality (CO ₂)	<p>Reductions in car traffic flows on key roads in the study area and beyond is predicted to have moderate beneficial impacts on emissions from reduced vehicle kilometres. No significant effects on global (carbon) emissions are predicted overall.</p>	+2 (moderate benefit)
Local Air Quality (PM ₁₀ and NO ₂)	<p>It is predicted that local air quality effects (primarily from dust) would be experienced during construction but these would not be significant.</p> <p>During operation train movements are predicted to result in some emissions of local air pollutants but these are not predicted to significantly affect background concentrations of local air pollutants.</p> <p>Reductions in car traffic flows on key roads in the study area and beyond is predicted to have moderate beneficial impacts on communities adjacent to key routes used for freight traffic.</p>	+2 (moderate benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
Water Quality, Drainage and Flood Defence	<p>Permanent development of the new rail line between Kirkcaldy and Cameron Bridge has the potential to significantly affect local drainage and water quality through changes in hydrology and watercourse crossings.</p> <p>It is predicted that the reinstatement of the railway section between Windygates and Methil (including stations) would not have significant effects on water quality and drainage taking account of assumed design and mitigation.</p> <p>There is a potential for significant effects on flooding, or as a result of flooding on the railway, between Cameron Bridge and Leven and this would require more detailed assessment at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Geology	<p>It is predicted that with mitigation measures in place the construction and reinstatement of the railway/stations and its operation would not have significant effects on geology.</p> <p>There is a potential for construction to affect areas of potentially contaminated land associated with the former industrial (and mining) areas through which the route passes, and this would require more detailed investigation, assessment and if appropriate remediation at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Biodiversity and Habitats	<p>It is predicted that reinstatement of the former sections of railway (and construction of stations) will result in habitat loss [e.g. scrub woodland], and with potential effects on protected species and effects on a local wildlife site.</p> <p>Construction disturbance works close to the coast have the potential to indirectly affect the qualifying interests (wintering and passage bird populations) of the Firth of Forth SPA / Ramsar site and SSSI and</p>	-1 (small negative impact) or -3 (major negative impacts)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
	mitigation measures would need to be employed to ensure that disturbance did not adversely affect the Natura site. The potential for effects would need to be confirmed at later stages based on field surveys of the development area.	
Landscape	<p>Permanent development of a new rail line between Kirkcaldy and Cameron Bridge would change the character of the Wemyss Special Landscape Area and is predicted to have a significant landscape effect.</p> <p>It is predicted that with mitigation measures in place the reinstatement of the railway (between Cameron Bridge and Leven), construction of stations and train operations would not generally have significant effects on landscape and townscape character of the route.</p> <p>There is potential for significant effects on landscape and townscape dependent on the final form and design of railway and station infrastructure.</p>	-1 (small negative impact) or -3 (major negative impacts)
Visual Amenity	<p>Significant adverse effects on visual amenity are predicted from the permanent development and operation of this option in some locations where receptors or views are particularly close to the railway route, including areas of housing on the edge of Kirkcaldy, Windygates and Leven, and from isolated properties in the coastal area between Kirkcaldy and Cameron Bridge. It may be possible to mitigate some of these effects in the longer term through measures such as screen planting and by careful rail design.</p> <p>Some minor positive effects are predicted for visual receptors close to roads where traffic movements are reduced as a result of the railway's operation.</p>	+1 (minor benefit) or -3 (major negative impacts)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
Agriculture and Soils	Permanent development of a new rail line between Kirkcaldy and Cameron Bridge would result in loss of prime agricultural land and would affect a number of farm units with the potential for significant adverse effects. It is predicted that with mitigation measures in place the reinstatement of the railway between Cameron Bridge and Leven, and construction of new stations would not have significant effects on agriculture or soils since much of the redevelopment of the line would be on land which has already been developed in the past for original railway construction.	-1 (small negative impact) or -2 (moderate negative impact)
Cultural Heritage	<p>Permanent development of a new rail line between Kirkcaldy and Cameron Bridge has the potential to affect as yet unknown archaeology and to affect the setting of the Wemyss Castle Garden and Designed Landscape, a Conservation Area at Coaltown of Wemyss and a number of listed buildings, depending on detailed alignment.</p> <p>No significant effects on cultural heritage are predicted from reinstatement of the railway (between Cameron Bridge and Leven) taking account of assumed design and mitigation.</p> <p>Development of new stations has potential to affect the setting of a number of listed buildings, depending on the final form and location of the structures.</p>	-1 (small negative impact) or -3 (major negative impact)
Safety:		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motor vehicles on the road network from drivers switching from car travel to public transport.	+1 (minor benefit) or +2 (moderate benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
Security	The provision of a new rail line in Option 7 will likely improve security for public transport users through the inclusion of passenger waiting facilities that would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting. A new station at Leven would likely include periods of staff presence as well as the provision of formal surveillance (CCTV) and on-platform emergency call/information facilities.	+1 (minor benefit) or +2 (moderate benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time savings are dependent on the speed achieved along the rail link. It is expected that journey time savings may be made for users travelling to/from the vicinity of the rail station, with savings being made from improved transport network integration.</p> <p>User charges, including fares, parking charges and tolls: A range of fare sensitivity tests would be undertaken to understand impacts on the demand for rail travel and fare benefits [e.g. a sensitivity test considering lower fares than equivalent bus or rail fares from Kirkcaldy and Markinch] should this option be taken forward.</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: Improvements to modal choice from the Levenmouth area, including direct access to the rail network from the new station at Leven. However, competition from rail to bus could lead to reduction in bus route viability and therefore the reduction of bus services.</p>	+2 (moderate benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
	<p>Reliability benefits to transport users: Improved reliability for access to the rail network. Reliability could be improved for access to destinations on the rail network as rail travel is not directly impacted by road congestion.</p> <p>Investment costs: Major investment costs associated with the reopening and construction of this line to Cameron Bridge including, but not limited to, signalling, structure strengthening and line clearance. In addition, there would be major costs associated with full feasibility, land costs, track laying and infrastructure costs for the new rail alignment section.</p> <p>Operating and maintenance costs: Consultation with Abellio ScotRail has noted that existing passenger rail services across the Forth Estuary are at capacity and that additional rolling stock, servicing and maintenance would be required for any passenger rail serving Levenmouth. Operating and maintenance costs would be required for the station.</p> <p>Revenues: It is likely that there would be additional revenue gained from increased public transport patronage related to rail transport (rail services and buses serving this), however, there may be revenue lost for bus operators on services which will receive competition from new passenger rail services. Overall this option may be of net benefit.</p> <p>Grant and subsidy payments: Expected Scottish Government funding for this option to be determined during Detailed Option Appraisal stage should this option be taken forward.</p>	
Wider Economic Impacts / Benefits	This option would provide benefits to the Levenmouth area in terms of facilitating access to education, healthcare, employment and social opportunities, supporting people to live and work in the area. Access to healthcare and social activities promotes a physically and mentally healthy workforce, and access to education helps build a skilled and qualified	+1 (minor benefit) or +2 (moderate benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
	workforce. Together with increased access to jobs, these factors could increase the opportunity for the people of Levenmouth to be economically active, in turn supporting inward and external investment in the area. This option does, however, provide the most benefit to those who can reach Leven town centre easiest. These individuals are more likely to already be benefitting from the transport services in the area, such as bus services on offer at Leven Bus Station.	
Integration:		
Transport Integration	<p>This option could improve the integration of the transport network.</p> <p>Services and ticketing: direct access would be provided to the rail network allowing easier access to a range of service options. A new rail station at Leven would be situated within walking distance of the existing Leven Bus Station and so integration of these modes would be improved.</p> <p>Infrastructure and information: new rail infrastructure would be provided for this option, this should be designed to incorporate high quality user information.</p>	+2 (moderate benefit)
Transport and Land Use Integration	The reopening of the Leven rail link is identified in the FifePlan and land safeguarded for stations. This option has the reopening of the line to Cameron Bridge followed by a realignment to Kirkcaldy. This option offers accessibility benefits for planned employment and residential developments in the Leven town centre area, including Riverside Road and Methil Docks. The route realignment potentially conflicts with a planned development at Coaltown of Wemyss North, and so this will require to be managed, and there are likely to be other conflicts with existing developments and land uses.	0 (neutral / no benefit) or +1 (minor benefit)

Option 7		
Type of Option: Public Transport		
Title: New passenger only rail line		
Description: Provision of a new passenger only rail alignment from Leven and Methil Docks to Kirkcaldy		
STAG Criteria		
Criterion		
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use. This option also offers the potential for improving tourist access to/from Levenmouth supporting the FifePlan aim to attract tourism to the area.	+2 (moderate benefit)
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help improve public transport connections across Levenmouth, in particular near the rail station. This option may benefit access to key destinations for employment, education, healthcare and social activities. The provision of an additional mode option for Levenmouth could also to help improve the perception of disconnectedness that was raised in the analysis of problems and opportunities. Whilst this option would not directly improve walking and/or cycling [i.e. active travel] connections, it could help facilitate access to services and facilities through active travel modes.	+3 (major benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	Option 7 offers a moderate benefit for comparative accessibility. Of the Rail options, those with two stations offer the greatest benefit in terms of potential catchment area.	+2 (moderate benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	<p>It is predicted that noise and vibration effects would be experienced during construction which could be significant for some periods [e.g. from station, structures and track construction].</p> <p>During operation passenger and freight train movements are predicted to result in noise effects for adjacent residential receptors which may be significant dependent on the timetabling of rail operations.</p> <p>Reductions in HGV and car traffic flows on key roads in the study area and beyond is predicted to have moderate beneficial impacts on communities adjacent to these routes.</p>	+1 (minor benefit) or -2 (moderate negative impact)
Global Air Quality (CO ₂)	<p>Reductions in HGV and car traffic flows on key roads in the study area and beyond are predicted to have moderate beneficial impacts on emissions from reduced overall HGV and car vehicle kilometres.</p> <p>No significant effects on global (carbon) emissions are predicted overall.</p>	+2 (moderate benefit)
Local Air Quality (PM ₁₀ and NO ₂)	<p>It is predicted that local air quality effects (primarily from dust) would be experienced during construction but these would not be significant.</p> <p>During operation train movements are predicted to result in some emissions of local air pollutants but these are not predicted to significantly affect background concentrations of local air pollutants.</p> <p>Reductions in HGV and car traffic flows on key roads in the study area and beyond is predicted to have moderate beneficial impacts on communities adjacent to key routes.</p>	+2 (moderate benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
Water Quality, Drainage and Flood Defence	<p>Permanent development of the new rail line between Windygates and Markinch has the potential to significantly affect local drainage and water quality through changes in hydrology and watercourse crossings.</p> <p>It is predicted that the reinstatement of the railway between Windygates and Methil, including stations, would not have significant effects on water quality and drainage taking account of assumed design and mitigation.</p> <p>There is a potential for significant effects on flooding, or as a result of flooding on the railway, between Windygates and Leven and this would require more detailed assessment at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Geology	<p>It is predicted that with mitigation measures in place the construction and reinstatement of the railway/stations and its operation would not have significant effects on geology.</p> <p>There is a potential for construction to affect areas of potentially contaminated land associated with the former industrial (and mining) areas through which the route partly passes, and this would require more detailed investigation, assessment and if appropriate remediation at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Biodiversity and Habitats	<p>Permanent development of a new rail line between Windygates and Markinch would result in loss of habitats including areas of ancient woodland and agricultural land and has the potential to affect a range of species. It would also cross the Kennoway – Windygates Local Wildlife Site. Effects have the potential to be significant.</p> <p>It is predicted that reinstatement of the former sections of railway (and construction of stations) would result in habitat loss [e.g. scrub woodland],</p>	-1 (small negative impact) or -3 (major negative impacts)

Option 8 Type of Option: Public Transport and Freight Title: New passenger and freight rail line Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
	and with potential effects on protected species and effects on the local wildlife site. Construction disturbance works close to the coast have the potential to indirectly affect the qualifying interests (wintering and passage bird populations) of the Firth of Forth SPA / Ramsar site and SSSI and mitigation measures would need to be employed to ensure that disturbance did not adversely affect the Natura site. The potential for effects would need to be confirmed at later stages based on field surveys of the development area.	
Landscape	Permanent development of a new rail line between Windygates and Markinch would change the character of the local landscape which is predominantly low-lying farmland. It is predicted that with mitigation measures in place the reinstatement of the railway (between Windygates and Leven), construction of stations and train operations would not generally have significant effects on landscape and townscape character of the route. There is potential for significant effects on landscape and townscape dependent on the final form and design of railway and station infrastructure and its integration with the local built environment.	-1 (small negative impact) or -3 (major negative impacts)
Visual Amenity	Significant adverse effects on visual amenity are predicted from the permanent development and operation of this option in some locations where receptors or views are particularly close to the railway route, including areas of housing on the edge of Markinch, Windygates and Leven, and from isolated properties in the area between Markinch and Windygates. It may be possible to mitigate some of these effects in the	-1 (small negative impact) or -3 (major negative impacts)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
	<p>longer term through measures such as screen planting and by careful rail design.</p> <p>Some minor positive effects are predicted for visual receptors close to roads where traffic movements are reduced as a result of the railway's operation.</p>	
Agriculture and Soils	<p>Permanent development of a new rail line between Markinch and Windygates would result in loss of agricultural land and would affect a number of farm units with the potential for significant adverse effects. It is predicted that with mitigation measures in place the reinstatement of the railway between Windygates and Leven, and construction of new stations would not have significant effects on agriculture or soils since much of the redevelopment of the line would be on land which has already been developed in the past for original railway construction.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Cultural Heritage	<p>Permanent development of a new rail line between Markinch and Windygates has the potential to affect as yet unknown archaeology and to affect the setting of a number of listed buildings, depending on detailed alignment.</p> <p>No significant effects on cultural heritage are predicted from reinstatement of the railway (between Windygates and Leven) taking account of assumed design and mitigation.</p> <p>Development of new stations has potential to affect the setting of a number of listed buildings, depending on the final form and location of the structures.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Safety:		

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motor vehicles on the road network from drivers switching from car travel to public transport.	+1 (minor benefit) or +2 (moderate benefit)
Security	Provision of new rail station facilities will likely improve security for public transport users as these would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting. A new station at Leven would likely include periods of staff presence as well as the provision of formal surveillance (CCTV) and on-platform emergency call/information facilities.	+1 (minor benefit) or +2 (moderate benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time savings are dependent on the speed achieved along the rail link. It is expected that journey time savings may be made for users travelling to/from the vicinity of the rail station, with savings being made from improved transport network integration.</p> <p>User charges, including fares, parking charges and tolls: A range of fare sensitivity tests would be undertaken to understand impacts on the demand for rail travel and fare benefits [e.g. a sensitivity test considering lower fares than equivalent bus or rail fares from Kirkcaldy and Markinch] should this option be taken forward.</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: Improvements to modal choice from the Levenmouth area, including direct access to the rail network from a new station at Leven. However, competition from rail to bus could lead to reduction in bus route viability and therefore the reduction of bus services.</p>	+2 (moderate benefit) or +3 (major benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
	<p>Reliability benefits to transport users: Improved reliability for access to the rail network. Reliability could be improved for access to destinations on the rail network as rail travel is not directly impacted by road congestion.</p> <p>Investment costs: Major investment costs associated with the reopening and construction of this line to Cameron Bridge including, but not limited to, signalling, structure strengthening and line clearance. In addition, there would be major costs associated with full feasibility, land costs, track laying and infrastructure costs for the new rail alignment section.</p> <p>Operating and maintenance costs: Consultation with Abellio ScotRail has noted that existing passenger rail services across the Forth Estuary are at capacity and that additional rolling stock, servicing and maintenance would be required for any passenger rail serving Levenmouth.</p> <p>Revenues: It is likely that there would be additional revenue gained from increased public transport patronage related to rail transport (rail services and buses serving this), however, there may be revenue lost for bus operators on services which will receive competition new passenger rail services. Overall this option may be of net benefit.</p> <p>Grant and subsidy payments: Expected Scottish Government funding for this option to be determined during Detailed Option Appraisal stage should this option be taken forward.</p>	
Wider Economic Impacts / Benefits	This option would provide benefits to the Levenmouth area in terms of facilitating access to education, healthcare, employment and social opportunities, supporting people to live and work in the area. Access to these healthcare and social activities promotes a physically and mentally healthy workforce, and access to education helps build a skilled and qualified workforce. Together with increased access to jobs, these factors	+2 (moderate benefit) or +3 (major benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
	could increase the opportunity for the people of Levenmouth to be economically active, in turn supporting inward and external investment in the area. This option does, however, provide the most benefit to those who can reach Leven town centre easiest. These individuals are more likely to already be benefitting from the transport services in the area, such as bus services on offer at Leven Bus Station.	
Integration:		
Transport Integration	This option could improve the integration of the transport network. Services and ticketing: direct access would be provided to the rail network allowing easier access to a range of services options. A new rail station at Leven would be situated within walking distance of the existing Leven Bus Station and so integration of these modes would be improved. Infrastructure and information: new rail infrastructure would be provided for this option, this would be designed to incorporate high quality user information, such as Real Time Passenger Information (RTPI).	+2 (moderate benefit)
Transport and Land Use Integration	This option offers accessibility benefits for planned employment and residential developments in the Leven town centre area, including Riverside Road and Methil Docks. Although the route realignment does not appear to conflict with any planned development in the FifePlan, there are likely to be some conflicts with infrastructure and existing land uses.	+1 (minor benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level in terms of sustainable mode use over private motorised vehicles, environmental and health considerations and improving accessibility and inclusion via the availability of alternative modes to car use. This option	+2 (moderate benefit)

Option 8		
Type of Option: Public Transport and Freight		
Title: New passenger and freight rail line		
Description: Provision of a new passenger and freight rail alignment from Leven and Methil Docks to Markinch		
STAG Criteria		
Criterion		
	also offers the potential for improving tourist access to/from Levenmouth supporting the FifePlan aim to attract tourism to the area.	
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help improve public transport connections across Levenmouth, in particular near the rail station. This option may benefit access to key destinations for employment, education, healthcare and social activities. The provision of an additional mode option for Levenmouth could also to help improve the perception of disconnectedness that was raised in the analysis of problems and opportunities. Whilst this option would not directly improve walking and/or cycling [i.e. active travel] connections, it could help facilitate access to services and facilities through active travel modes.	+3 (major benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for a number of socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help reduce reliance on the car as a mode of transport and help those without access to a car.	+3 (major benefit)

Option 9 Type of Option: Public Transport Title: New passenger BRT route Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	It is predicted that noise and vibration effects would be experienced during construction which could be significant for some periods [e.g. from bus station, structures and busway construction]. During operation bus movements are predicted to result in noise effects for adjacent residential receptors which may be significant dependent on the timetabling and frequency of operations. Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on communities adjacent to these routes.	+1 (minor benefit) or -2 (moderate negative impact)
Global Air Quality (CO ₂)	Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on emissions from reduced vehicle kilometres. No significant effects on global (carbon) emissions are predicted overall.	+1 (minor benefit)
Local Air Quality (PM ₁₀ and NO ₂)	It is predicted that local air quality effects (primarily from dust) would be experienced during construction but these would not be significant. During operation bus movements are predicted to result in some emissions of local air pollutants but these are not predicted to significantly affect background concentrations of local air pollutants. Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on communities adjacent to key routes.	+1 (minor benefit) or -1 (small negative impact)

Option 9 Type of Option: Public Transport Title: New passenger BRT route Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
Water Quality, Drainage and Flood Defence	<p>Permanent development of the new bus route between Windygates and Markinch has the potential to significantly affect local drainage and water quality through changes in hydrology and watercourse crossings.</p> <p>It is predicted that the construction of the busway on the former railway line between Windygates and Methil, including stations, would not have significant effects on water quality and drainage taking account of assumed design and mitigation.</p> <p>There is a potential for significant effects on flooding, or as a result of flooding on the busway, between Windygates and Leven and this would require more detailed assessment at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Geology	<p>It is predicted that with mitigation measures in place the construction of the busway/stations and its operation would not have significant effects on geology.</p> <p>There is a potential for construction to affect areas of potentially contaminated land associated with the former industrial (and mining) areas through which the route partly passes, and this would require more detailed investigation, assessment and if appropriate remediation at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Biodiversity and Habitats	<p>Permanent development of a new busway between Windygates and Markinch would result in loss of habitats including areas of ancient woodland and agricultural land and has the potential to affect a range of species. It would also cross the Kennoway – Windygates Local Wildlife Site. Effects have the potential to be significant.</p> <p>It is predicted that construction of the busway on former sections of railway (and construction of bus stations) would result in habitat loss [e.g. scrub</p>	-1 (small negative impact) or -3 (major negative impact)

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
	<p>woodland), and with potential effects on protected species and effects on the local wildlife site].</p> <p>Construction disturbance works close to the coast have the potential to indirectly affect the qualifying interests (wintering and passage bird populations) of the Firth of Forth SPA / Ramsar site and SSSI and mitigation measures would need to be employed to ensure that disturbance did not adversely affect the Natura site.</p> <p>The potential for effects would need to be confirmed at later stages based on field surveys of the development area.</p>	
Landscape	<p>Permanent development of a new busway between Windygates and Markinch would change the character of the local landscape which is predominantly low-lying farmland.</p> <p>It is predicted that with mitigation measures in place the construction and permanent development of the busway on the former railway (between Windygates and Leven) would not generally have significant effects on landscape and townscape character of the route.</p> <p>There is potential for significant effects on landscape and townscape dependent on the final form and design of bus station infrastructure.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Visual Amenity	<p>Significant adverse effects on visual amenity are predicted from the permanent development and operation of this option in some locations where receptors or views are particularly close to the busway route, including areas of housing on the edge of Markinch, Windygates and Leven, and from isolated properties in the area between Markinch and Windygates. It may be possible to mitigate some of these effects in the</p>	+1 (small benefit) or -3 (major negative impact)

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
	<p>longer term through measures such as screen planting and by careful route design.</p> <p>Some minor positive effects are predicted for visual receptors close to roads where traffic movements are reduced as a result of the busway's operation.</p>	
Agriculture and Soils	<p>Permanent development of a new busway between Markinch and Windygates would result in loss of agricultural land and would affect a number of farm units with the potential for significant adverse effects.</p> <p>It is predicted that with mitigation measures in place the permanent development of the busway on the former rail line between Windygates and Leven, and construction of new bus stations, would not have significant effects on agriculture or soils since much of the redevelopment of the route would be on land which has already been developed in the past for railway construction.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Cultural Heritage	<p>Permanent development of a busway between Markinch and Windygates has the potential to affect as yet unknown archaeology and to affect the setting of a number of listed buildings, depending on detailed alignment.</p> <p>No significant effects on cultural heritage are predicted from development of the busway on the former rail line (between Windygates and Leven) taking account of assumed design and mitigation.</p> <p>Development of new bus stations has potential to affect the setting of a number of listed buildings, depending on the final form and location of the structures.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Safety:		

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motor vehicles on the road network from drivers switching from car travel to public transport.	+1 (minor benefit)
Security	BRT would likely improve security for public transport users through the inclusion of passenger waiting facilities that would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting.	+1 (minor benefit)
Economy:		
Economic Efficiency of the Transport System (TEE)	<p>Journey time savings: Journey time savings are dependent on the speed achieved along the BRT link; however, it is expected that journey time savings may be made for users travelling to/from the vicinity of the BRT station, with savings being made from improved transport network integration. BRT can generally achieve higher running speeds than conventional bus.</p> <p>User charges, including fares, parking charges and tolls: It is expected that this service would be provided at a cost to the user which encourages its use as a connector to the rail link at Markinch. An integrated ticketing solution would provide value for money to the user.</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion, assuming delivery of the option without significant reduction in road capacity for route sections along existing road. It should be noted that that the majority of this route would be a new segregated route.</p> <p>Quality benefits to transport users: Improvements to modal choice from the Levenmouth area, including improved access to the rail network from</p>	+1 (minor benefit)

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
	<p>new stations at Leven and Cameron Bridge. BRT can provide much higher quality of service than conventional bus.</p> <p>Reliability benefits to transport users: The segregated running of the BRT system will allow for more reliable connections to the rail network, minimising conflict with other road users along the majority of the route.</p> <p>Investment costs: This option would involve significant investment, requiring full feasibility, design and construction costs of the segregated BRT line. Additional, potentially specialised, BRT vehicles would also be required.</p> <p>Operating and maintenance costs: Operational and maintenance costs would be required in terms of vehicle and route maintenance, and operation of the BRT terminal at Leven.</p> <p>Revenues: It is likely that there would be additional revenue gained from increased public transport patronage related to the BRT - rail transport link, however, there may be revenue lost for bus operators on services which will receive competition from passengers gaining improved access to onward rail services. Overall this option may be of net benefit.</p> <p>Grant and subsidy payments: Expected Scottish Government funding for this option to be determined during Detailed Option Appraisal stage should this option be taken forward.</p>	
Wider Economic Impacts / Benefits	This option would provide benefits to the Levenmouth area in terms of facilitating access to education, healthcare, employment and social opportunities, supporting people to live and work in the area. Access to healthcare and social activities promotes a physically and mentally healthy workforce, and access to education helps build a skilled and qualified workforce. Together with increased access to jobs, these factors could	+1 (minor benefit) or +2 (moderate benefit)

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
	increase the opportunity for the people of Levenmouth to be economically active, in turn supporting inward and external investment in the area. This option does, however, provide the most benefit to those who can reach Leven town centre easiest. These individuals are more likely to already be benefitting from the transport services in the area, such as bus services on offer at Leven Bus Station.	
Integration:		
Transport Integration	<p>This option could improve the integration of the transport network.</p> <p>Services and ticketing: this BRT link would improve access to the rail network. The BRT station at Leven would be situated within walking distance of the existing Leven Bus Station and so integration of these modes would be provided.</p> <p>Infrastructure and information: new BRT terminal infrastructure would be provided for this option, this would be designed to incorporate high quality user information such as RTPI.</p>	+2 (moderate benefit)
Transport and Land Use Integration	This option offers accessibility benefits for planned employment and residential developments in the Leven town centre area, including Riverside Road and Methil Docks. Although the route realignment does not appear to conflict with any planned development in the FifePlan, there are likely to be some conflicts with infrastructure and existing land uses.	+1 (minor benefit)
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use. This option also offers the potential for improving tourist access	+2 (moderate benefit)

Option 9		
Type of Option: Public Transport		
Title: New passenger BRT route		
Description: Provision of a new Bus Rapid Transit alignment from Leven to Markinch		
STAG Criteria		
Criterion		
	to/from Levenmouth supporting the FifePlan aim to attract tourism to the area.	
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This option would help improve public transport connections across Levenmouth, in particular near the BRT terminal. This option could benefit access to key destinations for employment, education, healthcare and social activities. The provision of an additional mode option for Levenmouth could also to help improve the perception of disconnectedness that was raised in the analysis of problems and opportunities. Whilst this option would not directly improve walking and/or cycling [i.e. active travel] connections, it could help facilitate access to services and facilities through active travel modes.	+2 (moderate benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for a number of socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help reduce reliance on the car as a mode of transport and help those without access to a car.	+2 (moderate benefit)

Option 10 (Active Travel network) has not been appraised as a standalone option. Therefore, Option 10 has not been considered in the appraisal of options against the STAG Criteria.

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
Environment:	Performance against STAG Criterion	Score
Noise and Vibration	<p>It is predicted that noise and vibration effects would be experienced during construction of terminal works at Levenmouth which could be significant for some periods.</p> <p>During operation hovercraft movements have some potential for short term significant noise effects for receptors close to the terminals, dependent on the timetabling and frequency of operations.</p> <p>Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on communities adjacent to these routes.</p>	+1 (minor benefit) or -2 (moderate negative impact)
Global Air Quality (CO ₂)	<p>Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on emissions from reduced vehicle kilometres.</p> <p>No significant effects on global (carbon) emissions are predicted overall.</p>	+1 (minor benefit)
Local Air Quality (PM ₁₀ and NO ₂)	<p>It is predicted that local air quality effects (primarily from dust) may be experienced during construction of the terminal but these would not be expected to be significant.</p> <p>During operation hovercraft movements are not predicted to result in significant emissions of local air pollutants.</p> <p>Reductions in traffic flows on key roads in the study area and beyond is predicted to have minor beneficial impacts on communities adjacent to these routes.</p>	+1 (minor benefit) or -1 (small negative impact)

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
Water Quality, Drainage and Flood Defence	<p>Construction of a new hovercraft terminal has potential to result in accidental pollution to the marine environment, however with good construction practices these are not predicted to be significant.</p> <p>Operation of the terminal and hovercraft activity has some potential for discharges to the marine environment, however it is assumed these would be controlled and no significant effects are predicted.</p>	-1 (small negative impact)
Geology	<p>It is predicted that with mitigation measures in place the construction of the terminal and its operation would not have significant effects on geology.</p> <p>There is a potential for construction to affect areas of potentially contaminated land associated with former industrial areas at the port and this would require more detailed investigation, assessment and if appropriate remediation at later design stages.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Biodiversity and Habitats	<p>Construction disturbance works from the terminal development have the potential to indirectly affect the qualifying interests (wintering and passage bird populations) of the Firth of Forth SPA / Ramsar site and SSSI.</p> <p>Mitigation measures would need to be employed to ensure that disturbance did not adversely affect these sites.</p> <p>Hovercraft operations have the potential to disturb birds and their habitats in the Firth of Forth. The potential for effects would need to be confirmed at later stages based on surveys of the development area.</p>	-1 (small negative impact) or -2 (moderate negative impact)
Landscape	<p>There is potential for some change on townscape from development of the terminal dependent on the final form and design of the building although this is not predicted to be significant.</p>	0 (neutral / no impact) or -1 (small negative impact)

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
	Hovercraft operations would not be predicted to change the character of the landscape.	
Visual Amenity	There is potential for some minor visual effects from the new terminal and hovercraft operations which may be perceived as adverse by some receptors. Some minor positive effects are predicted for visual receptors close to roads where traffic movements are reduced as a result of the option.	+1 (minor benefit) or -1 (small negative impact)
Agriculture and Soils	It is predicted that with mitigation measures in place the permanent development of the terminal would not have significant effects on agriculture or soils.	0 (neutral / no impact)
Cultural Heritage	Permanent development of the terminal may slightly change the setting of listed buildings at Methil Docks however these are not predicted to be significant in the context of a commercial harbour.	0 (neutral / no impact) or -1 (small negative impact)
Safety:		
Accidents	This option could produce a minor benefit to accident rates, resulting from the reduction of the number of motor vehicles on the road network from drivers switching from car travel to public transport.	+1 (minor benefit)
Security	Provision of new docking terminal facilities will likely improve security for public transport users as these would be built to at least minimum safety requirements for factors such as site perimeters, entrances and exits, and lighting. The terminal may include periods of staff presence as well as the provision of formal surveillance (CCTV) and emergency call / information facilities.	+1 (minor benefit)

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
Economy:		
<p>Economic Efficiency of the Transport System (TEE)</p>	<p>Journey time savings: Journey time savings are dependent on the speed achieved on the services and timetable. It is expected that journey time savings may be made for users travelling to/from the vicinity of the docking station to Kirkcaldy and Edinburgh; onward travel to Edinburgh city centre would require a further interchange.</p> <p>User charges, including fares, parking charges and tolls: It is unlikely that this option would produce fare benefits [i.e. fares are unlikely to be lower than equivalent bus fares from the Levenmouth area or rail fares between Kirkcaldy and Edinburgh].</p> <p>Vehicle operating cost changes for road vehicles: This option is not likely to impact on this sub-criterion.</p> <p>Quality benefits to transport users: Improvements to modal choice from the Levenmouth area, including direct access to Edinburgh.</p> <p>Reliability benefits to transport users: This option may be subject to reduced reliability due to external factors such as weather conditions.</p> <p>Investment costs: Capital costs required for port and terminal infrastructure.</p> <p>Operating and maintenance costs: This option would generate operating and maintenance costs, including craft depreciation, accruals for interior and engine refits and maintenance.</p> <p>Revenues: As part of the Stagecoach Cross-Forth Passenger Ferry Study the revenue and costs associated with the service were assessed and approximately 2,300 passengers per day would be required to break-even on the service (Kirkcaldy to Seafeld). It is unlikely this service would</p>	<p>-1 (small negative impact)</p>

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
	<p>generate patronage sufficient to meet the equivalent point for a Levenmouth service.</p> <p>Grant and subsidy payments: Expected Scottish Government funding for this option to be determined during Detailed Option Appraisal stage should this option be taken forward.</p>	
Wider Economic Impacts / Benefits	<p>This option would provide better access to Kirkcaldy and Edinburgh, more specifically providing more opportunities for employment in these areas and potentially attracting investment to Levenmouth.</p> <p>This option also offers the potential for improving tourist access to/from Levenmouth and supporting day shopping trips to Kirkcaldy and Edinburgh. Benefits would be weighted towards those with easy access to and from the Terminal.</p>	+1 (minor benefit)
Integration:		
Transport Integration	<p>Services and ticketing: this link would provide an additional mode accessing both Kirkcaldy and Edinburgh, allowing integration with additional services in these settlements.</p> <p>Infrastructure and information: new hovercraft terminal infrastructure would be provided for this option, this would be designed to incorporate high quality user information.</p>	+2 (moderate benefit)
Transport and Land Use Integration	<p>This option involves the development of docking terminal facilities which may conflict with planned developments of Methil port facilities, however, the improved access to the Edinburgh labour market may contribute towards plans to expand employment land in the Energy Park.</p>	+1 (minor benefit)

Option 11		
Type of Option: Public Transport		
Title: New hovercraft services		
Description: Hovercraft triangle between Levenmouth, Kirkcaldy, and Edinburgh, including a hovercraft terminal at Methil Docks		
STAG Criteria		
Criterion		
Policy Integration	This option is fully aligned with transport policy from national to local level, particularly in terms of sustainable mode use over private motorised vehicles, environmental and health considerations, and improving accessibility and inclusion via the availability of alternative modes to car use. This option also offers the potential for improving tourist access to/from Levenmouth supporting the FifePlan aim to attract tourism to the area.	+2 (moderate benefit)
Accessibility & Social Inclusion:		
Community Accessibility [i.e. public transport network coverage and local accessibility]	This link would provide an additional public transport mode accessing both Kirkcaldy and Edinburgh, allowing integration with additional services in these settlements. This could benefit access to key destinations for employment, education, healthcare and social activities. The provision of an additional mode option for Levenmouth could also to help improve the perception of disconnectedness that was raised in the analysis of problems and opportunities. Whilst this option would not directly improve walking and/or cycling [i.e. active travel] connections, it could help facilitate access to services and facilities through active travel modes.	+2 (moderate benefit)
Comparative Accessibility [i.e. distribution of accessibility impacts]	This option is expected to improve accessibility for several socially excluded groups. It was highlighted in the analysis of the problems and opportunities that the areas affected by this option are some of the areas within Levenmouth and, to an extent, Fife with the greatest health issues, lowest levels of educational attainment, highest levels of unemployment, and highest levels of social exclusion. This option could help to reduce reliance on the car as a mode of transport and help those without access to a car.	+2 (moderate benefit)

Option 12 (Reduced rail fares) rail fares would be more appropriately considered at a national level, encompassing Fife and the rest of Scotland, at a suitable point in the franchising cycle, which is outside the scope of the Levenmouth Sustainable Transport Study. Therefore, Option 12 has not been considered in the appraisal of options against the STAG Criteria.