

# **TAY ESTUARY RAIL STUDY**

**Option Appraisal - STAG1**

**Working Paper D**

**10<sup>th</sup> March 2003**

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## 1. INTRODUCTION

### Context

- 1.1 This report provides further details of the Tay Estuary Rail Study (TERS) scheme definition and appraisal process, following on from the *Infrastructure & Operations Review and Option Sifting Working Paper*, dated December 2002. That paper presented the main assumptions and constraints, the initial options under consideration, the first level option sifting and the costing for the improvement of fourteen stations. This Working Paper covers the results of a second level of option sifting and the STAG 1 appraisal of the options remaining at the end of the two sifting levels.

### Objective

- 1.2 The objective of this Working Paper is to set out the appraisal process and criteria in detail and to present the results from its application, leading to the recommendation of a proposed option to be taken forward to a STAG2 appraisal.

### Structure of Working Paper

- 1.3 The next chapter describes the STAG objectives. Chapter Three describes the second level sifting and Chapter Four contains the STAG 1 of the shortlisted options.
- 1.4 Chapter Five sets out our recommendations for the options to take through to the STAG 2 process.
- 1.5 Appendix A provides a detailed assessment of the station improvements and a number of detailed breakdowns of costs.

## 2. STAG OBJECTIVES

2.1 In STAG<sup>1</sup> (Scottish Transport Appraisal Guidance), it is suggested that, when setting objectives in complex situations, there should be layers or levels of objectives, with operational level objectives and possibly intermediate objectives below but linked to the strategic level objectives. While strategic level objectives are concerned with final (policy) outcomes, the lower levels of objectives can relate to outputs from particular strategies and/or to the inputs used.

### Government Objectives

2.2 The Scottish Executive has established five overarching objectives for the development and appraisal of new transport proposals, namely:

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

2.3 The Scottish Government, in its published White Paper entitled *Travel Choices for Scotland*, established the main transport policy objectives as:

- A strong economy;
- A clean environment; and
- An inclusive society.

2.4 The White Paper suggests that the development of a long-term sustainable transport strategy can contribute to achieving these goals.

2.5 National planning guidance is also available to shed light into planning objectives of new proposals. The *National Planning Policy Guidelines N° 17* is of particular relevance, as it considers land use planning an important tool in:

- Reducing the need for travel by relating land use to transport facilities;
- Enabling access to local facilities by walking and cycling;
- Encouraging public transport access to developments; and
- Supporting essential motorised travel but relating overall to sustainable movements.

2.6 The STAG broader objectives are:

- Transport: what are the transport impacts of the proposal?
- Environment: what will be the impacts on the environment?

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<sup>1</sup> Scottish Executive (2001) Scottish Transport Appraisal Guidance, A Draft Consultation Document, Volume 1, July 2001.

- Safety: what will be the effects of the proposal on road and pedestrian safety?
- Economy: what are the impacts in terms of transport economic efficiency?
- Economic activity: what will be the local impacts in terms of employment?
- Accessibility: what will be the impacts on accessibility?
- Transport integration: what will be the impacts in integrating transport modes and services? and
- Policy integration: what will be the impacts of the proposal against wider Government policy?

2.7 STAG prescribes that more detailed appraisal criteria should be led by planning objectives.

### **Planning Objectives**

2.8 In developing planning objectives for this study, the transport vision, objectives and aims set out in the various LTSs were taken into consideration. In addition, they needed to be fully consistent with the STAG guidelines. On this basis, four key planning objectives, as described in the *Planning Objectives and Appraisal Framework* working note, have been defined as:

- Accessibility levels to seven most significant locations;
- Efficiency and effectiveness, in terms of the number of new users in the system;
- Quality of public transport, referring mainly to station improvements; and
- Integration, also with strong reference to station improvements.

2.9 These objectives are believed to reflect local aspirations for planning and transport provision. The following chapter describes the main activities within the appraisal process.

3. APPRAISAL

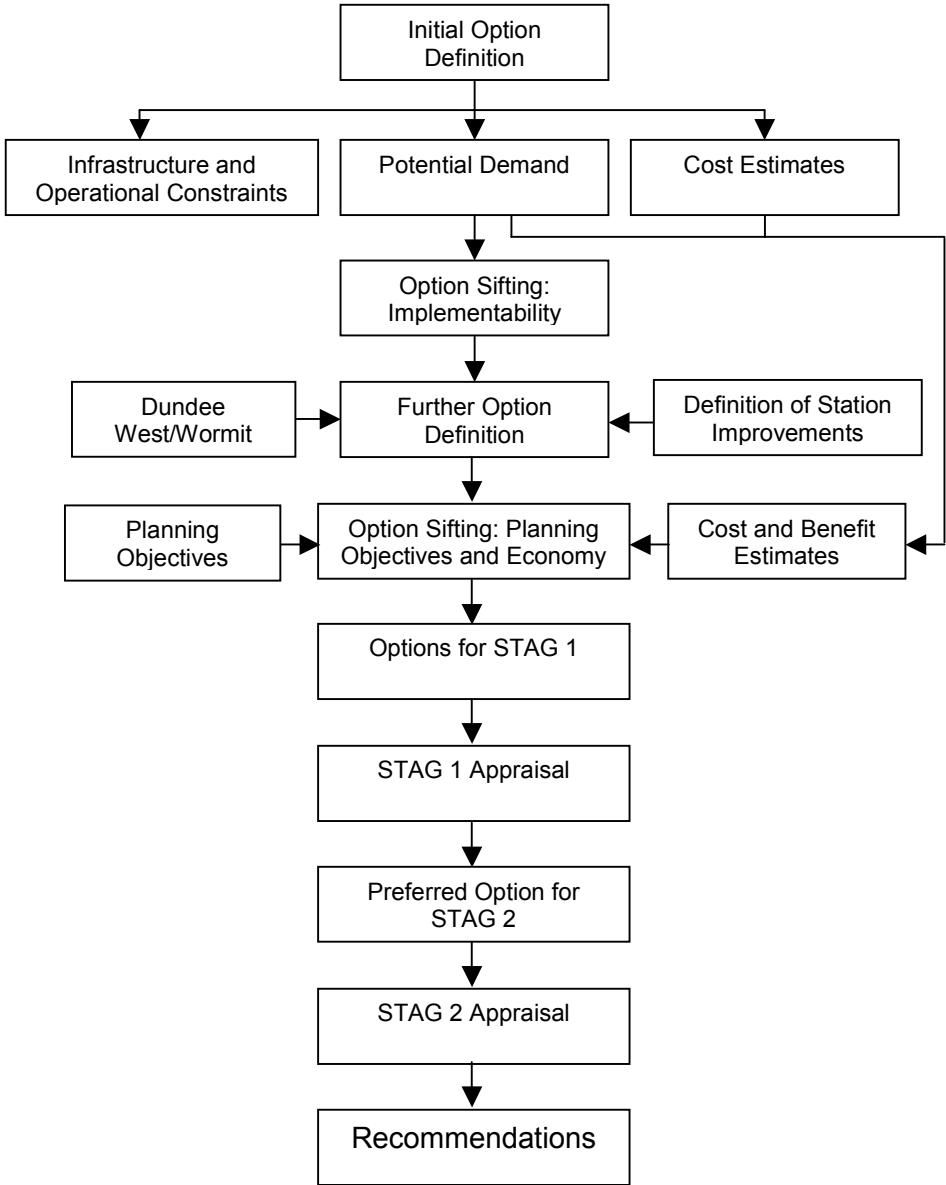
The Appraisal Process

3.1 A clear and transparent process is essential to provide an audit trail. The appraisal process adopted for TERS is shown in Figure 3.1 and consists of:

- Two levels of *option sifting* and
- Two levels of *STAG appraisal*.

3.2 The initial activities, up to and including ‘Option Sifting: Implementability’ have been reported in the previous working paper. This paper covers the tasks through to, and including, the STAG 1 Appraisal.

FIGURE 3.1 APPRAISAL PROCESS



- 3.3 Initially, eight different route/service options were defined (Options A, B, C, D, E, F, G and H – see previous Working Paper for details). For these options, a series of analyses and estimates were carried out:
- Infrastructure and operational constraints;
  - Potential demand; and
  - Preliminary capital cost estimates.
- 3.4 The **first level** of option sifting was carried out on the basis of the level of potential demand, implementability and implementation costs (see *Infrastructure & Operations Review and Option Sifting Working Paper*). Some service/route options were then discarded, and the options that remained were:
- Arbroath – Perth;
  - Arbroath – Ladybank;
  - Arbroath – Dundee; and
  - Ladybank or Leuchars – Perth or Dundee West (via Dundee);
  - Improvements to stations only.
- 3.5 Having established the broad service options at the first level sift a further stage of option definition (within these service options) was carried out for the purposes of establishing the options for the **second level** sifting process. This definition was based on the details of all of the improvements to *existing* stations under consideration and the inclusion or exclusion of the possible *new* stations at Dundee West and Wormit.
- 3.6 The second tier of option sifting is against the planning objectives as well as against economic indicators, including the estimates of costs and benefits for each option.
- 3.7 This process results in the identification of the options to be appraised in STAG 1. The application of STAG 1, in turn, leads to the selection of the preferred option to be appraised in more detail in STAG 2.



### Option Definition for Second Level Sifting

3.8 Table 3.1 shows the options selected for the second level sifting.

**TABLE 3.1 OPTION DEFINITION FOR SECOND LEVEL SIFTING**

Option	No New Stations	New Stations at:	
		Dundee West	Wormit
1.a] Arbroath – Perth	√		
1.b] Arbroath – Perth with Dundee West		√	
2.a] Arbroath – Ladybank	√		
2.b] Arbroath – Ladybank with Wormit			√
3.a] Arbroath – Dundee	√		
3.b] Arbroath – Dundee West		√	
4.a] Ladybank – Perth	√		
4.b] Ladybank – Perth with Dundee W and Wormit		√	√
5] New Stations and Station Improvements Only		√	√
6] Leuchars – Dundee West with Wormit		√	√
7] Leuchars – Perth with Dundee W and Wormit		√	√

3.9 Most options are tested with and without Dundee West or Wormit (note that Option 4.b has been tested with both Dundee West and Wormit). Therefore, a total of 11 options have been defined for the sifting process.

#### **Definition of Station Improvements**

3.10 It is clear that station improvements should be an integral part of the recommended strategy. The improvements for each option depend mostly on the route (for instance, on the route between Arbroath and Perth, no improvements are assumed for Cupar), and on their costs and benefits. A set of station improvements was assumed for each option. The main purpose of this procedure is to reduce the number of options for sifting to a manageable and comprehensible level. Details of costs by type of improvement are set out in Appendix A.

3.11 A comprehensive set of measures assumed for each station has been defined and reported in the *Infrastructure & Operations Review and Option Sifting Working Paper*. Each measure, or element of upgrade/improvement has been costed individually. Table 3.2 shows, for each station, the estimates of:

- Implementation costs;
- The revenue uplift as a result of station improvements; and
- Benefit/cost ratio (discounted benefits over discounted costs over project lifetime).

TABLE 3.2 ECONOMIC INDICATORS FOR NEW STATIONS AND IMPROVEMENTS

Station	Costs (£ m) <sup>1</sup>	% Uplift <sup>2</sup>	Benefit to Cost Ratio (BCR) <sup>3</sup>
<b>Existing Stations</b>			
Arbroath	0.53	3.5%	4.08
Balmossie <sup>4</sup>	2.00	6.8%	<0.1
Barry Links <sup>4</sup>	0.10	<2.0%	<0.1
Broughty Ferry	0.61	6.3%	0.25
Carnoustie	0.22	4.8%	1.52
Cupar	0.96	2.7%	0.71
Dundee	1.63	2.5%	4.46
Golf Street <sup>4</sup>	2.00	4.5%	<0.1
Invergowrie <sup>4</sup>	0.77	6.8%	<0.1
Ladybank	1.21	8.3%	0.41
Leuchars	0.14	0.7%	4.60
Monifieth	0.46	6.7%	0.15
Montrose	0.36	3.5%	7.06
Perth	2.91	8.3%	3.28
Springfield <sup>4</sup>	0.70	7.9%	<0.1
<b>New Stations</b>			
Dundee West <sup>5</sup>	2.00	n/a	1.35
Wormit	2.00	n/a	0.53

## Notes

1. Costs are only those that relate to TERS. Some costs are considered to be retrograde investment which falls under the banner of works that may be within Network Rail's ongoing maintenance obligations. Further costs are already part of PTF bid by Angus and IOS schemes in Fife.
2. The revenue implications of the station improvements have been based on an upgraded level of service, **not** the current level of service
3. BCRs apply to the station upgrades alone.
4. Stations currently served by very few trains and with very low levels of usage. BCRs remain very low even if demand is uplifted after the service improvement;
5. Dundee West cost estimated at £4m if developed as a terminal station for local services. This is the case for Options 3b and 6 only.

- 3.12 The total cost of station improvements (column 1) range from £100,000 (Barry Links) to £2.9 million (Perth). The standard national rail network forecasting guidance, the Passenger Demand Forecasting Handbook (PDFH), suggests a range of up to 10% demand and revenue uplift for a major facelift for a station and the forecasts are within that ceiling (column 2). The BCR estimates (column 3) are considered to be upper end estimates because there exclude operating costs for CCTV or information monitors. Ratios range between virtually zero (Springfield, Invergowrie, Balmossie, Golf Street and Barry Links) to 7:1 (Montrose).
- 3.13 On the basis of the economic performance of station improvements, it is suggested that the very low performance stations (BCR <0.5) may not be worth pursuing further, except where they have the potential to form part of a combined service and station upgrade. The stations for which improvements appear the most marginal are:

- Springfield;
- Invergowrie<sup>2</sup>;
- Balmossie;
- Golf Street; and
- Barry Links.

3.14 Table 3.3 combines the findings of the station sifting to show the aggregate station improvement cost for each of the 11 service/route options following the elimination of the poorer performing improvements.

**TABLE 3.3 COST OF STATION IMPROVEMENTS PER OPTION**

Option	Arbroath	Broughty Ferry	Cupar	Carnoustie	Dundee	Ladybank	Leuchars	Monifieth	Montrose	Perth	Dundee West	Wormit	Total
1.a] Arbroath – Perth	√	√	-	√	√	-	√	-	√	-	-	-	6.36
1.b] Arbroath – Perth with Dundee West	√	√	-	√	√	-	√	-	√	√	-	-	8.36
2.a] Arbroath – Ladybank	√	√	√	√	√	√	√	-	-	-	-	-	5.77
2.b] Arbroath – Ladybank with Wormit	√	√	√	√	√	√	√	-	-	-	-	√	7.77
3.a] Arbroath – Dundee	√	√	-	√	√	-	√	-	-	-	-	-	3.46
3.b] Arbroath – Dundee West	√	√	-	√	√	-	√	-	-	√	-	-	7.46
4.a] Ladybank – Perth	-	-	√	-	√	√	√	-	-	√	-	-	6.85
4.b] Ladybank – Perth with Dundee W/Wormit	-	-	√	-	√	√	√	-	-	√	√	√	10.85
5] New Stations and Station Improvements Only <sup>1</sup>	√	√	√	√	√	√	√	√	√	√	√	√	13.04
6] Leuchars – Dundee West with Wormit	-	-	-	-	√	-	√	-	-	-	√	√	7.77
7] Leuchars – Perth with Dundee W and Wormit	-	-	-	-	√	-	√	-	-	√	√	√	8.70

Notes: 1. This option assumes that all stations are included.

3.15 The total cost for the station improvements under each service option varies between £3.5 million (for Option 3.a) to £13 million.(for Option 5).

### Second Level Sifting of Options Against Planning Objectives

3.16 The second level of option sifting reduces the number of options to a manageable level, for appraisal in STAG 1. The sifting process is largely qualitative supported by a limited number of economic indicators, while STAG 1 introduces further measurable elements. STAG 2 will encompass more quantitative methods for the detailed appraisal.

<sup>2</sup> As a stand-alone scheme upgrading Invergowrie performs less well than a new station at Dundee West. However, if Dundee West subsequently proves to be undeliverable then the case for upgrading Invergowrie as part of an alternative access package to the developments to the west of Dundee can be reconsidered.

**Accessibility (PO1)**

3.17 Accessibility is the most descriptive of the planning objectives and merits special consideration, especially because there are seven locations to which accessibility levels need to be assessed. Table 3.4 is a worksheet summarising the qualitative assessment of the potential impact of each option on accessibility levels to key locations (derivation discussed in *Planning Objectives and Appraisal Framework* note, dated October 2002), as follows:

- Dundee city centre (DCC);
- Dundee University (DU) (west central Dundee);
- Ninewells Hospital/Dundee Technology Park (H/TP) (west Dundee);
- Monifieth (M) (east Dundee);
- Perth city centre (PCC), and beyond this to the Highland Line;
- Cupar town centre (CUP); and
- Angus College (AC) (Arbroath).

**TABLE 3.4 ACCESSIBILITY TO KEY LOCATIONS**

Option	Location							Over-all
	DCC	DU	H/TP	M	PCC	CUP	AC	
1.a] Arbroath – Perth	+++	+	+	++	+++	0	++	++
1.b] Arbroath – Perth with Dundee West	+++	++	++	++	+++	0	++	+++
2.a] Arbroath – Ladybank	+++	+	+	++	0	++	++	++
2.b] Arbroath – Ladybank with Wormit	+++	++	++	++	0	++	++	++
3.a] Arbroath – Dundee	++	0	+	+	0	0	+	+
3.b] Arbroath – Dundee West	++	++	++	+	0	0	+	+
4.a] Ladybank – Perth	+++	+	+	0	+++	++	0	++
4.b] Ladybank – Perth with Dundee W/Wormit	+++	++	++	0	+++	++	0	+++
5] New Stations and Station Improvements only	0	0	+	0	0	0	0	0
6] Leuchars – Dundee West with Wormit	+	+	++	0	+	0	0	+
7] Leuchars – Perth with Dundee W and Wormit	+	+	++	0	++	0	0	+

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ----- (strong negative)

3.18 Some options perform better because they happen to serve more of the selected key locations. The options without the station at Dundee West do not adequately serve the Hospital/Technology Park in that area, although the improved level of service at Invergowrie in Options 1a and 4a means that there is a small improvement in accessibility to that area in the absence of Dundee West.

**Efficiency (PO2)**

3.19 The efficiency objective was defined as primarily intending to provide a measure of the extent to which rail services could provide an alternative to journeys by car if stopping services were more convenient. Beneath these observations lies a general view that there is a need for rail to “fulfil its potential” and that, if it does, several positive social developments will result. The agreed measure is to assess the potential

for each option to increase station-visits. In the table below, indicators regarding the potential contribution of each option to the achievement of this objective are set out.

- 3.20 It should be noted that, for information, the capital, operating cost and revenue effects of Options 6 and 7 are presented both with and without station improvements at Dundee/Dundee West and Perth respectively. The purpose of this is to inform the development of potential packages of service options reported later in this section.

**TABLE 3.5 ESTIMATES OF ADDITIONAL DEMAND LEVELS**

Option	Patronage ('000/year 2000 levels)	New Stations at:		Overall Score
		Dundee West	Wormit	
1.a) Arbroath – Perth	160			++
1.b) Arbroath – Perth with Dundee West	191	√		+++
2.a) Arbroath – Ladybank	141			++
2.b) Arbroath – Ladybank with Wormit	158		√	+++
3.a) Arbroath – Dundee	124			++
3.b) Arbroath – Dundee West	156	√		+++
4.a) Ladybank – Perth	68			+
4.b) Ladybank – Perth with Dundee W/Wormit	117	√	√	++
5] New Stations and Station Improvements only	112	√	√	++
6] Leuchars – Dundee West with Wormit	74	√	√	+
6] Leuchars – Dundee West with Wormit <sup>1</sup>	63	√	√	+
7] Leuchars – Perth with Dundee W/Wormit	108	√	√	++
7] Leuchars – Perth with Dundee W/Wormit <sup>2</sup>	74	√	√	+

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ---- (strong negative)

<sup>1</sup> Without Dundee station upgrade (see §3.20)

<sup>2</sup> Without Dundee and Perth upgrades (see §3.20)

- 3.21 The overall score is based on a combination of the change in ridership forecast to be generated by each option together with the extent to which the service could enable rail services to be provided for currently-untapped local catchments through the provision of the identified potential new stations at Wormit and Dundee West.

#### **Quality of Public Transport Offer (PO3) (Station Improvements)**

- 3.22 An assessment of station improvements has been undertaken for each station, using the following key quality service attributes:

- General appearance;
- Lighting;
- CCTV;
- Information
- Seating;
- Shelter;
- Toilets;
- Accessibility; and
- Staff.

3.23 The assessment used a combination of qualitative and quantitative statements, with points and ratings, to describe the station performance against the attributes given above. For each attribute, an assessment of the following issues has been carried out:

- Feature: Qualitative description of the features of each attribute;
- Base case: Qualitative assessment of the quality of service provision and facilities at stations on the base case, as per the station audit;
- Do-something: Qualitative estimate of the quality of service provision and facilities at stations on the “after” case;
- Base case description: Brief statement of the situation on the base case;
- Base case points rating: Points rating in the base case, based on a reference pointing system;
- Do-something description: Brief statement of the situation on the “after” case;
- Do-something points rating: Points rating in the “after” case, based on a reference pointing system; and
- Points gained: Difference between the points in the base and “after” cases.

3.24 Appendix B shows the detail of this analysis. Table 3.6 summarises the overall station improvement per route option, by providing the total uplift for each option and an assessment score for the comparative performance across different options.

**TABLE 3.6 ASSESSMENT OF STATION IMPROVEMENTS PER ROUTE**

Option	Arbroath	Broughty Ferry	Carnoustie	Cupar	Dundee	Ladybank	Leuchars	Monifieth	Montrose	Perth	Dundee West	Wormit	Average Uplift	Assessment
1.a] Arbroath – Perth	√	-	√	-	√	-	-	-	-	√	-	-	5.3%	++
1.b] Arbroath – Perth with Dundee West	√	-	√	-	√	-	-	-	-	√	√	-	5.3%	+++
2.a] Arbroath – Ladybank	√	-	√	√	√	-	√	-	-	-	-	-	4.4%	++
2.b] Arbroath – Ladybank with Wormit	√	-	√	√	√	-	√	-	-	-	-	√	4.4%	+++
3.a] Arbroath – Dundee	√	-	√	-	√	-	-	-	-	-	-	-	4.8%	+
3.b] Arbroath – Dundee West	√	-	√	-	√	-	-	-	-	-	√	-	4.8%	++
4.a] Ladybank – Perth	-	-	-	√	√	√	√	-	-	√	-	-	4.5%	+
4.b] Ladybank – Perth with Dundee W /Wormit	-	-	-	√	√	√	√	-	-	√	√	√	4.5%	++
5] New Stations and Station Improvements only	√	-	√	√	√	-	√	-	√	√	√	√	4.7%	+++
6] Leuchars – Dundee West with Wormit	-	-	-	-	√	-	√	-	-	-	√	√	1.6%	+
7] Leuchars – Perth with Dundee W and Wormit	-	-	-	-	√	-	√	-	-	√	√	√	3.8%	++

Notes: An assessment of the station improvements has not been produced for Dundee West and Wormit, as these would be new stations. The assessment score for options with a new station (i.e. 1.b, 2.b, 3.b & 4.b) have been assessed as one grade higher than their counterpart option without the station.

#### **Integration (PO4)**

3.25 This fourth planning objective is targeted at the soft side – that of creating the sense that individual public transport services are part of a unified whole. This is clearly difficult to measure, but as most station improvements will introduce an element of integration improvement (e.g. information links to rail and bus systems), and there is a

similar number of stations improved in each option, it is proposed not to make any significant distinction in their assessment, which is considered to be a small positive impact for all options.

### Second Level Sifting Against Economy Objective

3.26 Estimates of the capital and operating costs for the 11 options are summarised in Table 3.7. The estimates bring together the cost estimates for the stations with the service and infrastructure costs outlined in the previous Working Paper to provide a combined option cost estimate. All services have been assessed as hourly services.

**TABLE 3.7 COMBINED OPTION COST ESTIMATES (SERVICE AND STATIONS)**

Option	Capital Costs (£ m)			Operating Costs (£ m/year)
	Stations	Infrastructure for Service Improvements	Total	
1.a] Arbroath – Perth	6.36	0.30	6.66	2.3
1.b] Arbroath – Perth with Dundee West	8.36	0.30	8.66	2.4
2.a] Arbroath – Ladybank	5.77	1.30	7.07	3.1
2.b] Arbroath – Ladybank with Wormit	7.77	1.30	9.07	3.2
3.a] Arbroath – Dundee	3.46	0.30	3.66	1.5
3.b] Arbroath – Dundee West	7.46	0.30	7.66	1.6
4.a] Ladybank – Perth	6.85	1.00	7.85	3.1
4.b] Ladybank – Perth with Dundee W/Wormit	10.85	1.00	11.85	3.2
5] New Stations and Station Improvements only	13.04	0.00	13.04	0.1
6] Leuchars – Dundee West with Wormit	7.77	0.75	8.52	0.9
6] Leuchars – Dundee West with Wormit <sup>1</sup>	6.14	0.75	6.89	0.9
7] Leuchars – Perth with Dundee W and Wormit	8.70	0.75	9.45	1.6
7] Leuchars – Perth with Dundee W and Wormit <sup>2</sup>	4.14	0.75	4.89	1.6

<sup>1</sup>Without Dundee station upgrade (see §3.20).

<sup>2</sup>Without Dundee and Perth upgrades (see §3.20)

3.27 Table 3.8 summarises the forecasts of public transport patronage, revenue, operating ratio (annual revenues divided by annual operating costs) and the benefit/cost ratio for each of the options under consideration.

TABLE 3.8 ESTIMATES OF ADDITIONAL DEMAND AND BCR FOR OPTIONS

Option	Patronage ('000/year 2000 levels)	Revenue (£ 000/ year; 2000 base year)	Operating Ratio	BCR
1.a] Arbroath – Perth	160	591	0.26	0.92
1.b] Arbroath – Perth with Dundee West	191	650	0.27	0.94
2.a] Arbroath – Ladybank	141	447	0.14	0.53
2.b] Arbroath – Ladybank with Wormit	158	470	0.15	0.53
3.a] Arbroath – Dundee	124	390	0.26	0.92
3.b] Arbroath – Dundee West	156	449	0.28	0.90
4.a] Ladybank – Perth	68	559	0.18	0.50
4.b] Ladybank – Perth with Dundee W/Wormit	117	640	0.20	0.54
5] New Stations and Station Improvements only	112	473	4.73	1.99
6] Leuchars – Dundee West with Wormit	74	225	0.25	0.67
6] Leuchars – Dundee West with Wormit <sup>1</sup>	63	108	0.12	0.35
7] Leuchars – Perth with Dundee W/Wormit	108	404	0.25	0.77
7] Leuchars – Perth with Dundee W/Wormit <sup>2</sup>	74	133	0.08	0.30

<sup>1</sup>Without Dundee station upgrade.

<sup>2</sup>Without Dundee and Perth upgrades

- 3.28 The operating ratio measures the potential need for on-going subsidy, that is, when the revenues are lower than the costs for the running of the system. The figures suggest that no service option has an operating ratio above 1.0 (and would therefore generate a revenue surplus over day-to-day operating costs).
- 3.29 In interpreting the Benefit to Cost ratio, however, it should be noted that the Scottish Strategic Rail Study (SSRS) found that in particular the local service options between Arbroath and Dundee/Perth performed best as part of a larger package, including shorter journey times for Express services, facilitated by the introduction of the local stopping service. This is discussed further in section 5 (recommendations).
- 3.30 The results outlined above indicate a better benefit/cost performance than the equivalent local service-only options considered in the SSRS. This is partly driven by the generally positive economic performance of the station enhancements included within the options.
- 3.31 In the final column the BCR conveys a measure of the economic efficiency (incorporating costs and benefits, as given above).



### Summary of Second Level Sift

3.32 Table 3.9 summarises the qualitative assessment of the option performances against the planning objectives. The table summarises the qualitative assessment of the main economic indicators for each option, which is useful for a comparison of their respective merits. The table illustrates the trade-offs between, on one hand, achieving the planning objectives, and on the other hand, being economically robust (discounted benefits above or close to discounted costs, over the project lifetime).

**TABLE 3.9 SIFTING AGAINST PLANNING OBJECTIVES AND ECONOMY SUMMARY TABLE**

Option	Planning Objectives				Economy (BCR)
	PO1 Accessibility	PO2 Efficiency	PO3 PT quality	PO4 Integration	
1.a] Arbroath – Perth	++	++	++	+	++
1.b] Arbroath – Perth with Dundee West	+++	+++	+++	+	++
2.a] Arbroath – Ladybank	++	++	++	+	+
2.b] Arbroath – Ladybank with Wormit	++	+++	+++	+	+
3.a] Arbroath – Dundee	+	++	+	+	++
3.b] Arbroath – Dundee West	+	+++	++	+	++
4.a] Ladybank – Perth	++	+	+	+	+
4.b] Ladybank – Perth with Dundee W/ Wormit	+++	++	++	+	+
5] New Stations and Station Improvements only	0	++	+++	+	+++
6] Leuchars – Dundee West with Wormit	+	+	+	+	+
7] Leuchars – Perth with Dundee W/Wormit	+	+ / ++	++	+	+

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ----- (strong negative)

### Options for STAG 1

3.33 Overall, Options 1 (Perth – Arbroath) and 5 (Station improvements only) appear to best meet the STAG economic criteria. The other options all perform significantly worse in economic terms than these two, whilst none of the options generate a day-to-day surplus of revenues over operating costs (termed the operating surplus). The best-performing options are likely to recoup approximately a quarter of their operating costs through the farebox (fairly typical for this sort of service), but Options 2, 4, 6 and 7 require significantly higher levels of on-going subsidy, as they only cover less than one sixth of the operating costs.

3.34 In terms of achieving planning objectives, of the individual options, service Options 1B, 2B and 4B perform best, with Option 3, 6 and 7 considerably worse than the other options. Option 5 does not contribute at all to achieving the accessibility objective (PO1). In view of this, Option 5 has been dismissed at this stage.

3.35 In line with the STAG appraisal process, and considering the conclusions set out above, the option which is considered to perform best against planning objectives and have the highest chance of obtaining funding (through its relative economic and financial performance in comparison with other options), is Option 1.b, Arbroath – Perth via Dundee West.

- 3.36 It should be noted that this service option would not provide a comprehensive coverage of the study area, and would exclude any improvement in services into Fife in particular. All options thus far have, however, been considered as mutually exclusive, with Option 1B best meeting the appraisal criteria overall. In view of this, a further assessment has been made of an option whereby a package of service improvements is introduced which would provide a better fit with the planning objectives and also have a good economic case.
- 3.37 Potential alternative options have therefore been examined, and a preferred package has been identified as comprising Options 3b and 7 (Arbroath to Dundee West and Leuchars to Perth). This package would provide a half-hourly service between Dundee and Dundee West, and initial operational feasibility examination would suggest that pathing for both of these services together would be possible without significant additional works.
- 3.38 In view of this, a further assessment is presented below illustrating the potential assessment of this package option in comparison to the best performing single option, Option 1B.

### Package Option

#### Costs and Scope of Package Option

- 3.39 In the table below, the costs of station improvements for the single Option 1B is compared to the Package of Options 3b plus 7.

**TABLE 3.10 COST OF STATION IMPROVEMENTS PER OPTION: PACKAGE OPTION**

Option	Arbroath	Broughty Ferry	Cupar	Carnoustie	Dundee	Ladybank	Leuchars	Monifieth	Montrose	Perth	Dundee West	Wormit	Total
1.b] Arbroath – Perth with Dundee West	√	√	-	√	√	-	-	√	-	√	√	-	8.36
Package Option (3b + 7] Leuchars - Perth)	√	√	√	√	√	-	√	√	-	√	√	√	10.50

#### Planning Objective 1 - Accessibility

- 3.40 In the table below, the accessibility impacts of the preferred option in relation to the chosen centre are compared with the Package of Options 3b plus 7.

**TABLE 3.11 ACCESSIBILITY TO KEY LOCATIONS: PACKAGE OPTION**

Option	Location							Over-all
	DCC	DU	H/TP	M	PCC	CUP	AC	
1.b] Arbroath – Perth with Dundee West	+++	++	++	++	+++	0	++	+++
Package Option (3b + 7] Leuchars - Perth)	++++	++	++++	+	++++	0	++	++++

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ---- (strong negative)

**Planning Objective 2 – Efficiency**

3.41 The indicators defined for the Efficiency Objective are set out in the Table below for Option 1B and the Package of Options 3B plus 7.

**TABLE 3.12 ESTIMATES OF ADDITIONAL DEMAND LEVELS: PACKAGE OPTION**

Option	Patronage (‘000/year 2000 levels)	New Stations at:		Overall Score
		Dundee West	Wormit	
1.b] Arbroath – Perth with Dundee West	191	√		+++
Package Option (3b + 7] Leuchars - Perth)	221	√	√	+++

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ----- (strong negative)

**Planning Objective 3 – Quality**

3.42 The table below sets out a comparison of the extent and performance of the station improvements for Option 1B and for the Package of Options 3B plus 7.

**TABLE 3.13 ASSESSMENT OF STATION IMPROVEMENTS PER ROUTE: PACKAGE OPTION**

Option	Arbroath	Broughty Ferry	Carnoustie	Cupar	Dundee	Ladybank	Leuchars	Monifieth	Montrose	Perth	Dundee West	Wormit	Average Uplift	Assessment
1.a] Arbroath – Perth	√	-	√	-	√	-	-	-	-	√	-	-	5.3%	++
Package Option (3b + 7] Leuchars - Perth)	√	-	√	-	√	-	√	-	-	√	√	√	4.9%	++

**Planning Objective 4 – Integration**

3.43 No significant distinction was made between the individual service options in their assessment of integration, with all options providing a small positive impact. The Package of Options 3B plus 7 arguably facilitates an additional market for integration of public transport services: that of providing a link from north Fife to Highland Line services via Perth, and has therefore been scored one point higher.

**Economy Objective**

3.44 Estimates of the costs of service and station improvements for Option 1B and for the Package of Options 3b plus 7 are presented in the following table.

**TABLE 3.14 OPTION COST ESTIMATES: PACKAGE OPTION**

Option	Capital Costs (£ m)			Operating Costs (£ m/year)
	Stations	Infrastructure for Service Improvements	Total	
1.b] Arbroath – Perth with Dundee West	8.36	0.30	8.66	2.4
Package Option (3b + 7] Leuchars – Perth)	10.50	1.05	11.55	3.2

- 3.45 In the table below, the estimates of demand, revenues and benefits for the preferred option are compared to the combination of Option 3b and 7, together with the Benefit to Cost ratio (BCR).

**TABLE 3.15 ESTIMATES OF ADDITIONAL DEMAND AND BCR FOR OPTIONS: PACKAGE OPTION**

Option	Patronage ('000/year 2000 levels)	Revenue (£ 000/ year; 2000 base year)	Operating Ratio	BCR
1.b] Arbroath – Perth with Dundee West	191	650	0.27	0.94
Package Option (3b + 7] Leuchars - Perth)	221	677	0.21	0.77

- 3.46 Overall, the Package option is likely to generate a marginal additional level of patronage and revenue over Option 1B. This is chiefly driven by the fact that the Leuchars – Dundee corridor (included in the Package option) is currently better served by both local and longer-distance services than much of the corridor served by Option 1B east of Dundee towards Arbroath, and therefore the new local service presents a lower relative level of improvement over the current timetable.

#### **Summary of Indicators**

- 3.47 Finally, in the table below, the overall performance of Option 1B and the Package of Options 3b plus 7 are compared including all four planning objectives and a key economic indicator, the benefit to cost ratio.

**TABLE 3.16 SIFTING AGAINST PLANNING OBJECTIVES AND ECONOMY SUMMARY TABLE: PACKAGE OPTION**

Option	Planning Objectives				Economy (BCR)
	PO1 Accessibility	PO2 Efficiency	PO3 PT quality	PO4 Integration	
1.b] Arbroath – Perth with Dundee West	+++	+++	+++	+	++
Package Option (3b + 7] Leuchars - Perth)	++++	+++	++++	++	+

Note: Scale runs from +++++ (Strong positive) to 0 (neutral) to ----- (strong negative)

- 3.48 Overall, the Package of Options 3B plus 7 performs best against the planning objectives, although Option 1B also performs generally well. Option 1B performs better than the Package against the economic indicators, indicating that it is likely to be more implement-able than the Package of options.
- 3.49 To assist with the decision-making, therefore, a STAG1 assessment has been carried out on both of these options, set out in the next section.

#### 4. STAG 1 APPRAISAL TABLES

4.1 The main purpose of applying STAG 1 is to identify the preferred option and any possible variants to be carried forward into STAG 2, where a more detailed appraisal will be produced for the most promising option.

4.2 Tables 4.1 and 4.2 show details of the options under consideration as well as the assessment under STAG 1.

**TABLE 4.1 STAG 1 APPRAISAL FOR OPTION 1.B ARBROATH TO PERTH**

<b>Proposal details</b>			
<i>Name and address of authority promoting the proposal</i>		Dundee City Council	
<i>Proposal name</i>	1.b] Arbroath – Perth	<i>Name of planner</i>	Ian Sheriff (Roads and Transportation Manager)
<i>Proposal description</i>	Rail service improvement on Arbroath – Perth with station improvements at Carnoustie, Arbroath, Monifieth, Broughty Ferry, Perth and Dundee, and a new station at Dundee West.	<i>Costs</i>	<ul style="list-style-type: none"> <li>▪ <i>Capital</i>           £8.7m</li> <li>▪ <i>Annual</i>             £2.4m/year</li> </ul>
<i>Funding sought from</i>	N/A	<i>Amount of application</i>	N/A
<b>Proposal background</b>			
<i>Planning objectives</i>	Accessibility levels to seven most significant locations; Efficiency and effectiveness, in terms of the number of new users in the system; Quality of public transport, referring mainly to station improvements; and Integration, also with strong reference to station improvements.		
<i>Performance against planning objectives</i>	Varying levels of accessibility improvements, depending on location, with overall moderate beneficial impact. Patronage: 191,000 per year: moderate benefits. Quality of public transport: moderate benefits. Integration: slight beneficial.		
<i>Alternatives to proposal considered</i>	Carnoustie – Perth and Montrose – Perth		
<i>Comment on performance of alternatives</i>	Half-hourly service to Carnoustie requires new loop, with potential problems. Does not work as a means of enabling the creation of a two-tier service and makes little sense in its own right as operates over too short distance. Option for reinstate Montrose has prohibitive capital costs and a through service requires doubling of Usan single section.		
<i>Rationale for selection of proposal</i>	The selected option has a stronger economic performance.		
<b>Spatial and social information</b>			
<i>Area context: general</i>	Local rail service between Arbroath – Perth, with connection at Dundee.		
<i>Economic performance</i>	BCR = 0.94:1		
<i>Deprivation/social inclusion</i>	The rail link will enable non-car owners and other socially excluded increased access to the public transport network; hence to job, education, shopping and		

leisure destinations.

*Planning and environment*

*Spatial level of appraisal*

**Implementability appraisal**

<i>Transport land-use integration</i>	To the extent to which the proposal provides changes in modal share, it could contribute to: - sustainable travel (more rail trips and less car trips); and - improving access to local facilities by public transport (and walking). The National Planning Policy Guidelines set out the policies on land use and sustainable transport (see Chapter 2).
<i>Policy integration</i>	The proposal is in line with other local and national planning policies on regeneration and social inclusion.
<i>Distribution impacts</i>	The groups in society most benefited are the potential public transport users living, working, shopping and/or studying along the proposed alignment. Very few would lose with the marginal increase in environmental impacts along the route.
<i>Technical feasibility</i>	Proposal requires additional loops and Intermediate Block Section.
<i>Operational feasibility</i>	Pathing constraints create a 10-minute layover in Arbroath - Dundee direction. Major problems with providing service at peak times.
<i>Technical risks</i>	
<i>Other risks</i>	
<i>Affordability</i>	Not yet at funding stage.
<i>Financial sustainability</i>	Operating ratio = 0.27 Subsidies will be funded by _____
<i>Public acceptability</i>	Improvements in public transport usually have a high degree of public acceptability. Local people may, at some stations, benefit from a reduction in commuter parking on residential streets, thus minimising local objections.

<b>Objective</b>	<b>Assessment summary</b>	<b>Supporting information</b>
<i>Transport</i>	Reduction in car trips and veh-km, with increase in rail trips (and veh-km). Assessment: ++	Small reduction in traffic and congestion with reduction in delays.
<i>Environment</i>	Noise: Marginal increase in rail noise along alignment. Negligible changes in road traffic noise. Air pollution: Reduction in local emissions by cars, but increase in rail diesel engines and rail emissions. Landscape/townscape: improvements at stations may provide better townscape features, but increased service would add to negative visual intrusion. Assessment: 0	Overall, negligible impacts on the environment, as positive impacts outweigh negative ones.
<i>Safety</i>	Marginal reduction in private vehicle safety from reductions in veh-km. Increase in rail traveller safety from	Both users who transfer to rail and non-users who remain on the road network benefit marginally from less accidents. All

<b>Objective</b>	<b>Assessment summary</b>	<b>Supporting information</b>
	station improvements. Assessment: +	rail users benefit in terms of personal security from station improvements.
<i>Economy</i>	BCR = 0.94:1 Assessment: ++	Reduction in travel times and vehicle operating costs for both the users and non-users, with increase in PT revenues. In addition, reduction in journey times for longer distance rail services.
<i>Economic activity</i>	Increased accessibility leading to facilitating connections to jobs and other economic activities (shopping, services, leisure). Assessment: +	Improvements in economic activity and employment reflect in benefits for society as a whole.
<i>Accessibility</i>	Increased public transport accessibility to key destinations. Assessment: +++	Benefits for public transport users, particularly relevant to people who do not own a private car and the socially disadvantaged.
<i>Transport integration</i>	Station improvements with integration benefits. Assessment: +	More efficient local/long distance service provision. Some of the station improvement measures will contribute to make interchanges more efficient and pleasant, both with other rail services and other modes.
<i>Policy integration</i>	Improvements in public transport will support wider Government policy. Assessment: ++	In line with wider national policy on sustainable development.

**TABLE 4.2 STAG 1 APPRAISAL FOR PACKAGE OPTIONS 3.B (ARBROATH TO DUNDEE WEST) AND 7 (LEUCHARS TO PERTH VIA DUNDEE & DUNDEE WEST)**

<b>Proposal details</b>			
<i>Name and address of authority promoting the proposal</i>		As per Option 1.b	
<i>Proposal name</i>	Package option 3.b] Arbroath – Dundee West and 7] Leuchars - Perth	<i>Name of planner</i>	As per Option 1.b
<i>Proposal description</i>	Rail service improvement on Leuchars – Perth and Arbroath to Dundee routes with station improvements at Leuchars, Perth, Dundee, Broughty Ferry, Monifieth, Carnoustie and new stations at Wormit and Dundee West	<i>Costs</i>	<ul style="list-style-type: none"> <li>▪ <i>Capital</i> £11.55m</li> <li>▪ <i>Annual</i> £3.2m/year</li> </ul>
<i>Funding sought from</i>	N/A	<i>Amount of application</i>	N/A
<b>Proposal background</b>			
<i>Planning objectives</i>	As per Option 1.b		
<i>Performance against planning objectives</i>	Varying levels of accessibility improvements, depending on location, with overall large beneficial impact. Patronage: 221,000 per year: large benefits. Quality of public transport: moderate benefits. Integration: slight beneficial.		
<i>Alternatives to proposal considered</i>	Leuchars to Dundee West only (Option 6), and alternatives indicated in Options 1b and 3b		
<i>Comment on performance of alternatives</i>	See options 1b and 3b		
<i>Rationale for selection of proposal</i>	The selected option has a stronger performance in meeting the local planning objectives and services the entire study area. The Leuchars to St Andrews service would provide a connection from North fife to the Highland line at Perth.		
<b>Spatial and social information</b>			
<i>Area context: general</i>	Local rail service between Leuchars – Perth, and between Arbroath and Dundee West via Dundee, providing a combined half hourly service between Dundee and Dundee West.		
<i>Economic performance</i>	BCR = 0.77		
<i>Deprivation/social inclusion</i>	As per Option 1.b		
<i>Planning and environment</i>			
<i>Spatial level of appraisal</i>			



<b>Implementability appraisal</b>		
<i>Transport land-use integration</i>	As per Option 1.b	
<i>Policy integration</i>	As per Option 1.b	
<i>Distribution impacts</i>	As per Option 1.b	
<i>Technical feasibility</i>		
<i>Operational feasibility</i>	May be more vulnerable to capacity constraints than Options 1b and 3b in view of additional paths required at Dundee	
<i>Technical risks</i>		
<i>Other risks</i>		
<i>Affordability</i>	As per Option 1.b	
<i>Financial sustainability</i>	Operating ratio = 0.21 Subsidies will be funded by _____	
<i>Public acceptability</i>	As per Option 1.b	
<b>Objective</b>	<b>Assessment summary</b>	<b>Supporting information</b>
<i>Transport</i>	As per Option 1.b Assessment: ++	As per Option 1.b
<i>Environment</i>	As per Option 1.b Assessment: 0	As per Option 1.b
<i>Safety</i>	As per Option 1.b Assessment: +	As per Option 1.b
<i>Economy</i>	BCR = 0.77 Assessment: +	As per Option 1.b
<i>Economic activity</i>	As per Option 1.b Assessment: +	As per Option 1.b
<i>Accessibility</i>	As per Option 1.b Assessment: +++++	As per Option 1.b
<i>Transport integration</i>	As per Option 1.b Assessment: ++	As per Option 1.b
<i>Policy integration</i>	As per Option 1.b Assessment: ++	As per Option 1.b

## STAG 1 Conclusions

- 4.3 Overall, the combined Package of Options 3B and 7 performs strongly against the planning objectives, particularly with regard to PO1 (accessibility) and PO3 (quality of service). Overall forecast levels of demand for the package option, however, are only around 15% above Option 1B, and the combined option therefore does not show a significant improvement over this option under the PO2 (efficiency). The combined option performs better under PO4 (integration) but this is related primarily to the wider geographical spread of station improvements.
- 4.4 In economic and financial terms, however, the package option performs significantly more weakly than the preferred option, Option 1B. The combined service is estimated to incur an annual operating cost of around £3.2m per year, 21% of which would be covered by the revenue generated, in comparison to £2.4m and 27% respectively for Option 1B. Taking the capital costs into account, the overall benefit to cost ratio for the combined option is lower than Option 1B, at 0.77:1, compared to 0.94:1 for Option 1B.
- 4.5 A comparison of key financial indicators is set out in Table 4.3 below.

**TABLE 4.3 SUMMARY OF FINANCIAL EFFECTS OF STAG1 SERVICE OPTIONS**

	Capital Investment Costs £m			Ongoing Financial Impacts £m	
	Stations	Infrastructure	Total	Operating Costs £m per annum	Revenue £m per annum
Option 1.b] Arbroath – Perth with Dundee West	8.36	0.30	8.66	2.4	0.65
Package Option (Options 3b + 7) Leuchars – Perth	10.50	1.05	11.55	3.2	0.68
Package Option Compared to Option 1b (no.)	+2.14	+0.75	+2.89	+0.8	+0.03
Package Option Compared to Option 1b (%)	+26%	+250%	+33%	+33%	+5%

- 4.6 It is also important to note that the combined package option would cost an additional £800,000 (33%) to operate per annum than Option 1B but is estimated to generate only an additional £30,000 per year (+5%) in revenues over that option.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### Introduction

- 5.1 This note has reported on the different phases of the appraisal process and general outcomes. This process is intended to provide a transparent and impartial audit trail to support the decision to choose a preferred option.
- 5.2 It is, however, worth noting that whilst the STAG1 assessment provides a clear framework for decision-making, there are some external factors which may affect the eventual decision on the appropriate option to take through to the STAG2 assessment. In particular, these include the potential for the strategic services proposed in the Scottish Strategic Rail Study (SSRS) to improve the economic case of the local services under consideration here.

### Synergy with Strategic Fast Services

- 5.3 Any application for funding for a new local service will need to present the costs and benefits of the local service separately from the impacts of any parallel changes to faster or strategic services. That is, although a combined package of speeded-up strategic services and a regular local service may be the optimum combination in terms of meeting economic criteria and achieving the planning objectives (the benefits of TERS would almost certainly be increased if combined with the Inter Regional services), a funding bid for a local service should only include the costs and benefits of this service in the economic assessment.
- 5.4 Our approach to this issue set out here is to examine the number of current local station calls per day that are currently made by semi-fast services which in future could be omitted from Strategic services, replaced by the overlain local services. Omitting these station calls would provide benefits of 1-3 minutes per station to those passengers on fast services (as long as they are not starting or finishing their journey at a deleted stop). This is shown in the Table below. In this analysis it is assumed that Strategic services would continue to serve Montrose, Arbroath, Dundee, Leuchars & Perth.

**TABLE 5.1 LOCAL STATION CALLS PER DAY BY CURRENT SEMI-FAST SERVICES (BOTH DIRECTIONS) WHICH COULD BE OMITTED IF A LOCAL SERVICE WERE ALSO PROVIDED**

Local Service Option	Cupar	Springfield	Carnoustie	Monifieth	Broughty Ferry	Gofl Street	Barry Links	Balmossie	Invergowrie	Total
Option 1A/B (Perth – Arbroath)	-	-	28	3	5	2	2	2	6	48
Package Option (3B and 7 combined)	-	-	28	3	5	2	2	2	6	48

- 5.5 Overall, both Option 1B and the package option would both permit a similar level of strategic service enhancement.

## Conclusions and Recommendations

- 5.6 As reported in the previous sections, the Package of Options 3B and 7 together provide the best fit of all options considered against the Planning Objectives set for the study. However, Option 1B also performs strongly here, and furthermore is likely to prove more likely to be implement-able given its stronger economic performance and significantly lower investment and ongoing revenue support costs (set out in Table 4.3).
- 5.7 Given this position, it is recommended that Option 1B (Perth – Arbroath) should be the preferred option. It has
- the best performance against the planning objectives of the individual service options (albeit not as good as the Package of Options 3b plus 7);
  - a benefit to cost ratio of 0.94:1;
  - potential for excellent synergy with proposals to facilitate speeding up of longer distance rail services; and
  - is likely to be operationally robust and requires minimal levels of track and signalling work.
- 5.8 The recommended local service included in the preferred option will not provide additional or improved services at all stations within the study area, and the station improvements included in the strategy are only those served by the preferred local service option. The station audits undertaken during the study however indicated that there are also some significant areas for improvement at stations beyond those served by the local service, notably at Montrose and stations in Fife.
- 5.9 As supporting elements of the strategy, therefore, comprehensive station improvements are recommended at Montrose, Cupar and Leuchars stations. For the other two stations in Fife within the TERS study area (Ladybank and Springfield), the station audits identified a need for a substantially higher level of investment to address all the areas where the infrastructure is currently below-standard, estimated to cost a total of approximately £1.8m (£1.12m and £0.71m respectively).
- 5.10 An analysis of costs and potential benefits indicates that investment cannot be recommended at Springfield (due to low levels of current and potential future usage). At Ladybank, however, the passenger flow from Ladybank station is largely southwards towards Edinburgh rather than towards Cupar and Dundee (to a ratio of approximately 4.5:1 southbound to northbound), and therefore the potential benefits of any change accrue primarily to travellers outside the scope of this study. However, a limited upgrade proposal has been included in the supporting elements of the strategy that improves the accessibility to persons with mobility impairment, as a major factor in achieving one of the key agreed planning objectives for the study, at a cost of £0.65m.
- 5.11 It is therefore suggested to the client team that this option be carried forward to the STAG 2 appraisal process in the following form:

### Service Improvements

- A new hourly service from Arbroath to Perth calling all stations;
- A comprehensive package of station enhancements at Arbroath, Montrose, Carnoustie, Dundee, Perth on the line of the new service with lesser improvements at Broughty Ferry & Monifieth sufficient to raise quality to a minimum benchmark and brand the service.
- A new station at Dundee West.

### Supporting Elements

- Development of provisions for interchange at Montrose with associated station enhancements. This requires appropriate works at Montrose to create bus layby facilities;
- Improvement of Leuchars stations to enhance its role as a transport interchange hub and building on the quality bus initiative to Dundee;
- Lesser packages of improvement at other Fife stations (Cupar and Ladybank) to bring up to a similar standard as the core Dundee stations.

5.12 It is further proposed that the potential for the Arbroath to Perth service to be extended to Montrose where capacity permits also be included in the STAG2 assessment.

**APPENDIX A**

Breakdown of Station Improvement Costs

	Disabled access	Car park works	Enhanced Lighting	Lifts and crossings	CIS	CCTV	Cycle lockers	Litterbins	Waiting room/Shelters	Seating	Booking hall/entrance upgrade	Toilet upgrade	Full station rebuild	Underpass	General Appearance/ Miscellaneous	TOTAL
Arbroath			0.036	0.050	0.090		0.006	0.008	0.007	0.015	0.100	0.050			0.150	0.51
<i>Balmossie</i>											2.00		2.00			2.00
Broughty Ferry			0.010		0.090	0.120	0.006	0.005	0.250	0.005			0.100		0.025	0.61
Carnoustie			0.030		0.075		0.006	0.005	0.075	0.005					0.024	0.22
Cupar	0.650	0.060	0.050		0.060		0.006	0.005	0.060	0.015		0.020			0.060	0.97
Dundee			0.150			0.153	0.010			0.008		0.100			1.193	1.61
<i>Golf Street</i>													2.00			2.00
Invergowrie	0.250		0.025		0.090	0.120	0.006	0.005	0.250						0.022	0.77
Ladybank	0.650	0.080	0.036			0.115	0.006	0.008	0.118	0.015		0.075			0.020	1.12
Leuchars		0.080	0.045				0.006	0.005		0.005					0.002	0.14
Monifieth		0.080	0.040		0.090	0.110	0.006	0.005	0.110	0.005					0.022	0.47
Montrose			0.033		0.090		0.006	0.005	0.110	0.015		0.050			0.048	0.36
Perth	0.750		0.090	0.600	0.120	0.240	0.006	0.010	0.500	0.025	0.500				0.060	2.90
Springfield	0.090	0.100	0.035		0.090	0.120	0.006	0.005	0.250	0.005					0.002	0.71

**APPENDIX B**

Assessment of Station Improvements



## CUPAR

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Rating (Base Case)	Points Gained
General Appearance	Overall impression of platform environment	Good	Remove station signage at entrance and upgrade main entrance to station including canopy and entrance screens. Full redecoration of station required.	Clean/well-kept	Clean/well-kept	100	100	0
Lighting	Lighting throughout station	Adequate	Enhance lighting to platform, suggested 40-lux minimum. Provide adequate lighting to public car park, footbridge, level crossing area and public roadway at station entrances. Suggested 40-lux minimum, 150 lux to footbridge. Part of Fife IOS scheme and therefore not considered to be a benefit of TERS.	Adequate	Excellent	100	75	25
CCTV	Provision of CCTV	Yes	Provide railway CIS (Customer Information System) to platforms, ticket office and booking hall areas. Provide local bus CIS to bus stance area. Link system with railway CIS.	Yes	Yes	100	100	0
Information	General Provision of Information on Platforms Timetables of all services (static display) CIS Monitors (dynamic display) Platform Information Loudspeaker Platform 1 Seating	Good Yes Yes Yes Yes		Electronic plus tannoy	Electronic plus tannoy	100	100	0
Seating	Platform 2 Seating	2 four-seater wooden benches 2 four-seater wooden benches	Provide additional seating on both platforms.	Some	Plentiful	100	50	50
Shelter	Waiting rooms on Platforms	Yes, on both platforms clean and heated		Complete	Complete	100	100	0
Toilets	Public Toilets	No, but canopies provided on both platforms Yes	NO PROPOSAL	Platform	Platform	100	100	0
Accessibility	Stairs Ramps	Adequate No	Provide disabled toilet facilities within existing buildings on both platforms. Provide disabled access to Platform 1. There is currently no disabled access between platforms. Consideration should be given to provision of lifts and new footbridge. As this is a listed building, careful design considerations must be given to this work.	Stairs Full time manning	Lifts Full time manning	170	100	70
Staff	Lifts Staff on duty	No Yes (Station manned from 06:20 to 20:30)	NO PROPOSAL	0	100	170	100	70

**CARNOUSTIE**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description (Base Case)</b>	<b>Do Something Description</b>	<b>Points Rating (Do-something) Gained</b>
General Appearance	Overall impression of platform environment	Poor	Provide proper soft landscaping to both platforms including trees and shrubs. Full redecoration of station required.	Poor/Shabby 0	Adequate/Rough around edges	50
Lighting	Lighting throughout station	Adequate	Enhance lighting to platform, suggested 40-lux minimum. Provide adequate lighting to public car park, footbridge, level crossing area and public roadway at station entrances. Suggested 40-lux minimum, 150 lux to footbridge.	Poor 25	Adequate	50
CCTV	Provision of CCTV	No	Part of Angus Council PTF bid and therefore not considered as part of TERS.	Yes 100	Yes	0
Information	General Provision of Information at Platforms Timetables of all services (static display) CIS Monitors (dynamic display) Platform Information Loudspeaker Platform 1 Seating Platform 2 Seating	Adequate Yes No Yes	Provide railway CIS (Customer Information System) to platforms and entrances. Provide local bus CIS linked to railway system.			
Seating	Waiting rooms on Platforms Waiting shelters of Platforms Public Toilets	No Three seater wooden bench No	Provide additional seating on both platforms.	Paper plus tannoy None 0	Electronic plus tannoy Some	50 50
Shelter	Public Toilets	Yes	Part of Angus Council PTF bid and therefore not considered as part of TERS. Improve entrance surfacing and remove stairs and replace with DDA compliant ramps.	Foyer 50	Foyer	0
Accessibility	Stairs Ramps Lifts	Adequate Poor No		Ramps 130 No manning 0	Ramps 130 No manning 0	0 0
Staff	Staff on duty	Station unmanned	NO PROPOSAL			

## ARBROATH

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description (Do-something)	Points Rating (Base Case)	Points Rating (Do-something)	Points Gained
General Appearance	Overall impression of platform environment	Adequate	Full decoration of station	Adequate/Rough	Adequate/Rough	50	50	0
Lighting	Lighting throughout station	Adequate	Enhance lighting to platform suggested, 40 lux minimum (period light fittings). Provide adequate lighting to car park, bus stop, taxi stance and road entrance areas, suggested 40-lux minimum (period light fittings). Enhance lighting to footbridge, suggested 100-150 lux minimum (period light fittings).	Adequate	Excellent	75	100	25
CCTV	Provision of CCTV	Yes	Part of Angus Council PTF bid and therefore not considered as part of TERS.	Yes	Yes	100	100	0
Information	General Provision of Information at Central Points	Adequate	Provide railway CIS (Customer Information System) to platforms, ticket office and booking hall areas.					
	Timetables of all services (static display)	Yes	Provide local bus CIS to taxi/bus stop area. Link system with railway CIS.					
	CIS Monitors (dynamic display)	No						
	Platform Information Loudspeaker	Yes						
Seating	Platform 1 Seating	6 four-seater wooden benches, good condition	Provide additional seating on both platforms.	Paper plus tannoy	Electronic plus tannoy	50	100	50
	Platform 2 Seating	4 four-seater wooden benches, good condition		Some	Plentiful	50	100	50
Shelter	Waiting rooms on Platforms	Yes, heated on Platform 1		Limited	Complete	25	100	75
	Waiting shelters of Platforms	No	Upgrade waiting rooms to both platforms. Provide adequate heating.	Platform	Platform	100	100	0
Toilets	Public Toilets	Yes	Upgrade public toilets off booking hall. Replan to enhance security.					
Accessibility	Stairs	Adequate		Lifts	Lifts	170	170	0
	Ramps	Yes	Review current disabled access to Platform 1.					
	Lifts	Yes	Change goods lift to passenger lift.					
Staff	Staff on duty	Yes (Station manned between 06:00 and 23:30)	NO PROPOSAL	Full time manning	Full time manning	100	100	0

**MONTROSE**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description</b>	<b>Points Rating (Base Case)</b>	<b>Do Something Description</b>	<b>Points Rating (Do-something)</b>	<b>Points Gained</b>
General Appearance Lighting	Overall impression of platform environment Lighting throughout station	Adequate	Full decoration of station	Adequate/Rough edges	50	Adequate/Rough edges	50	0
CCTV	Provision of CCTV	Adequate	Enhance lighting to platform, suggested 40-lux minimum.	Adequate	75	Excellent	100	25
Information	Provision of CIS	Yes	Part of Angus Council PTF bid and therefore not considered as part of TERS.	Yes	100	Yes	100	0
	General Provision of Information at Central Points	Adequate	Provide railway CIS (Customer Information System) to platforms, ticket office and booking hall areas.					
	Timetables of all services (static display)	Yes	Provide local bus CIS to bus stance area. Link system with railway CIS.					
	CIS Monitors (dynamic display)	No						
	Platform Information Loudspeaker	Yes		Paper plus tannoy	50	Electronic plus tannoy	100	50
Seating	Platform 1 Seating	6 plastic coated steel benches inside waiting room, 4 three seater benches out on platform	Provide additional seating on both platforms.	Some	50	Plentiful	100	50
	Platform 2 Seating	1 three-seater bench on platform, 1 three-seater wooden bench out on the platform						
Shelter	Waiting rooms on Platforms	Yes, heated on Platform 1		Limited	25	Complete	100	75
	Waiting shelters of Platforms	Yes, unheated on Platform 2	Provide new heated waiting room on Platform 2.	Platform	100	Platform	100	0
Toilets Accessibility	Public Toilets	Yes	NO PROPOSAL					
	Stairs	Good						
	Ramps	Adequate						
	Lifts	Yes	Part of Angus Council PTF bid and therefore not considered as part of TERS.	Lifts	170	Lifts	170	0
Staff	Staff on duty	Yes (Station manned 06:00 - 23:30)	NO PROPOSAL	Full time manning	100	Full time manning	100	0

## LEUCHARS

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Gained
General Appearance Lighting	Overall impression of platform environment	Good	General full redecoration scheme required to station.	Clean/well-kept	Clean/well-kept	100	0
	Lighting throughout station	Good	Enhance lighting to platform, station building and entrance, 40 lux minimum. Enhance lighting to footbridge, 150 lux. Enhance lighting to car park, 40 lux. Part of Fife IOS work and therefore not considered as part of TERS.	Excellent Yes	Excellent Yes	100 100	0 0
CCTV	Provision of CCTV	Yes	Provide CIS to platforms and entrances.	Excellent	Yes	100	0
Information	General Provision of Information on Platforms	Adequate	Provide local bus CIS linked to railway system.	Excellent	Yes	100	0
	Timetables of all services (static display)	Yes		Excellent	Yes	100	0
Seating	CIS Monitors (dynamic display)	No		Excellent	Yes	100	0
	Platform Information Loudspeaker	Yes	Part of Fife IOS work and therefore not considered as part of TERS.	Electronic plus tannoy	Electronic plus tannoy	100	0
Shelter	Platform 1 Seating	4 four-seater benches, good condition	Provide additional seating on both platforms.	Some	Plentiful	100	50
	Platform 2 Seating	3 four-seater benches all in good condition		Some	Plentiful	100	50
Toilets Accessibility	Waiting rooms on Platforms	Yes, one clean and heated		Limited	Limited	25	0
	Waiting shelters of Platforms	No, but canopies provided on both platforms	NO PROPOSAL	Limited	Limited	25	0
Staff	Public Toilets	Yes	NO PROPOSAL	Platform	Platform	100	0
	Stairs	Good	NO PROPOSAL	Platform	Platform	100	0
Staff	Ramps	Good	NO PROPOSAL	Ramps	Ramps	130	0
	Lifts	No	NO PROPOSAL	No manning	No manning	0	0
Staff	Staff on duty	Station unmanned	NO PROPOSAL	No manning	No manning	0	0

## PERTH

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Gained
General Appearance	Overall impression of platform environment	Poor	Refurbish main station entrance, booking hall, ticket office and shop situated between Platforms 2 and 3. Refurbish in period style. Refurbish glazed timber walkway between Platforms 2 and 3.	Poor/Shabby 0	Clean/well-kept	100	100
Lighting	Lighting throughout station	Poor	Upgrade station signage from street accesses through to all areas. Consider foreign language signage.	Poor 25	Excellent	100	75
CCTV	Provision of CCTV	No	Full decoration of station required. Enhance lighting to full station, minimum 40 lux on platforms, 150 lux on stairs, ramps, bridges, etc. Period style lighting to be used.	No	Yes	100	100
Information	General Provision of Information on Platforms	Poor	Provide CCTV coverage to all platforms, footbridges, station buildings, entrances, taxi rank and car park. Provide enhanced CIS (Customer Information System) to cover full station. (Limited installation at present due to size and usage of station)	No	Yes	100	100
	Timetables of all services (static display)	Yes	Provide local bus CIS to bus stance area. Link system with railway CIS.				
	CIS Monitors (dynamic display)	Yes					
	Loudspeaker	Yes, on all platforms					
Seating	Seating	Multiple four-seater wooden benches on platforms 1 - 5	Provide additional seating on both platforms.	Paper plus tannoy Some	Electronic plus tannoy Plentiful	100	50
Shelter	Waiting rooms on Platforms	Yes	Provide new heated waiting rooms and public toilets in a historic building style to Platforms 1, 2, 3 and 4 (consider using existing buildings on Platform 4).	Limited	Complete	100	75
Toilets	Waiting shelters of Platforms Public Toilets	Yes, three shelters of which two are heated No	Provide heated waiting room and disabled toilet on Platform 1.	None	Foyer	50	50
Accessibility	Stairs Ramps Lifts	Adequate - Good Poor - Adequate Yes, but for freight. Very poor condition	Upgrade ramp accesses to Platforms 1, 2, 3 and 4 to be fully DDA compliant.	Ramps	Ramps	130	0
Staff	Staff on duty	Yes (Station manned 05:00 - 01:00, Mon to Sat)	NO PROPOSAL	No manning	No manning	0	0

## SPRINGFIELD

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Gained
General Appearance	Overall impression of platform environment	Poor	General full redecoration scheme required to station.	Poor/Shabby	Adequate/Rough around edges	50	50
Lighting	Lighting throughout station	Poor	Upgrade lighting to platforms and footbridge.				
CCTV	Provision of CCTV	No	Upgrade lighting to entrance areas. Provide CCTV coverage to platforms, footbridge, new car park and entrances. Provide CIS to platforms and entrances.	Poor No	Adequate Yes	75 100	50 100
Information	General Provision of Information on Platforms	Poor	Provide local bus CIS linked to railway system.				
	Timetables of all services (static display)	Yes					
	CIS Monitors (dynamic display)	No					
	Platform Information	No					
	Loudspeaker	No		Paper	Electronic plus tannoy	100	100
Seating	Platform 1 Seating	No	Provide additional seating on both platforms.	None	Some	50	50
	Platform 2 Seating	Three seater wooden bench					
Shelter	Waiting rooms on Platforms	No	Provide new heated waiting room and disabled toilet on north bound platform.				
	Waiting shelters of Platforms	Canopy on platform 1	Provide new waiting shelter on south bound platform.	Limited	Complete	100	75
Toilets	Public Toilets	No	Provide new heated waiting room and disabled toilet on north bound platform. Improve entrance surfacing and remove stairs and replace with DDA compliant ramps.	None	Foyer	50	50
Accessibility	Stairs	Adequate					
	Ramps	Poor		Ramps	Ramps	130	0
	Lifts	No		No manning	No manning	0	0
Staff	Staff on duty	Station unmanned	NO PROPOSAL				

## INVERGOWRIE

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Rating (Do-something) Gained
General Appearance	Overall impression of platform environment	Poor	Upgrade soft landscaping and fencing around station.	Poor/Shabby	Adequate/Rough around edges	50	50
Lighting	Lighting throughout station	Poor	Full redecoration of station required.	Poor	Adequate	75	50
CCTV	Provision of CCTV	No	Provide CCTV coverage to platforms, footbridge and entrances.	No	Yes	100	100
Information	General Provision of Information on Platforms	Poor	Provide railway CIS to platforms and entrances.				
	Timetables of all services (static display)	Only on Platform 2					
	CIS Monitors (dynamic display)	No					
	Platform Information Loudspeaker	No		Paper	Electronic plus tannoy	100	100
Seating	Platform 1 Seating	Two seater wooden bench	Provide additional seating on both platforms.				
	Platform 2 Seating	Two seater wooden bench		Some	Some	50	0
Shelter	Waiting rooms on Platforms	No	Provide new waiting room and disabled toilet to Platform 2 and waiting shelter to Platform 1.	Limited	Complete	100	75
Toilets	Public Toilets	Unheated with uneven floor		None	None	0	0
Accessibility	Stairs	Poor - Adequate	NO PROPOSAL				
	Ramps	Adequate	NO PROPOSAL				
	Lifts	No		Ramps	Ramps	130	0
Staff	Staff on duty	Station unmanned	NO PROPOSAL	No manning	No manning	0	0



**BROUGHTY FERRY**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description (Base Case)</b>	<b>Points Rating (Base Case)</b>	<b>Do Something Description</b>	<b>Points Rating (Do-something)</b>	<b>Points Gained</b>
General Appearance	Overall impression of platform environment	Good	Full redecoration of station required.	Clean/well-kept	100	Clean/well-kept	100	0
Lighting	Lighting throughout station	Good	Upgrading of lighting to access ways and underpass required 100-150 lux.	Excellent	100	Excellent	100	0
CCTV	Provision of CCTV	No	Provide CCTV coverage to platforms, underpass and entrances.	No	0	Yes	100	100
Information	General Provision of Information on Platforms	Adequate	Provide CIS to platforms and entrances.					
	Timetables of all services (static display)	Yes	Provide local bus CIS linked to railway system.					
	CIS Monitors (dynamic display)	No						
	Platform Information Loudspeaker	No		Paper	0	Electronic plus tannoy	100	100
Seating	Platform 1 Seating	No	Provide additional seating on both platforms.	Some	50	Plentiful	100	50
	Platform 2 Seating	Platform 2 only - 7 seats provided against wall under waiting canopy						
Shelter	Waiting rooms on Platforms	No	Provide heated waiting room and disabled toilet on Platform 1.					
	Waiting shelters of Platforms	Waiting canopies provided on both platforms	Provide additional shelter on Platform 2.	Limited	25	Complete	100	75
Toilets	Public Toilets	No	Provide heated waiting room and disabled toilet on Platform 1.	None	0	Foyer	50	50
Accessibility	Stairs	Poor	NO PROPOSAL					
	Ramps	Good						
	Lifts	No		Ramps	130	Ramps	130	0
Staff	Staff on duty	Station unmanned	NO PROPOSAL	No manning	0	No manning	0	0

**BALMOSSIE**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description (Base Case)</b>	<b>Do Something Description</b>	<b>Points Rating (Do-something)</b>	<b>Points Rating (Base Case)</b>	<b>Points Gained</b>
General Appearance	Overall impression of platform environment	Poor	Upgrade soft landscaping and fencing around station. Full redecoration of station required.	Poor/Shabby	Adequate/Rough around edges	50	50	50
Lighting	Lighting throughout station	Poor	Upgrade lighting to both platforms and entrances.	Poor	Adequate	75	25	50
CCTV	Provision of CCTV	No	Provide CCTV coverage to platforms, footbridge and entrances. Provide railway CIS to platforms and entrances.	No	Yes	100	0	100
Information	General Provision of Information on Platforms Timetables of all services (static display) CIS Monitors (dynamic display)	Poor Only on Platform 2 No						
Seating	Platform Information Loudspeaker	No		Paper	Electronic plus tannoy	100	0	100
	Platform 1 Seating Platform 2 Seating	Two seater wooden bench Two seater wooden bench	Provide additional seating on both platforms.	Some	Some	50	50	0
Shelter	Waiting rooms on Platforms	No	Provide new waiting room and disabled toilet to Platform 2 and waiting shelter to Platform 1.	Limited	Complete	100	25	75
	Waiting shelters of Platforms	Unheated with uneven floor						
Toilets Accessibility	Public Toilets	No	NO PROPOSAL	None	None	0	0	0
	Stairs Ramps	Poor - Adequate Adequate	NO PROPOSAL					
Staff	Lifts	No		Ramps No manning	Ramps No manning	130 0	130 0	0 0
	Staff on duty	Station unmanned	NO PROPOSAL					

**MONIFIETH**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description</b>	<b>Points Rating (Base Case)</b>	<b>Do Something Description</b>	<b>Points Rating (Do-something)</b>	<b>Points Gained</b>
General Appearance	Overall impression of platform environment	Adequate	Provide soft landscaping to both platforms including trees and shrubs. General full redecoration scheme required to station.	Adequate/Rough around edges	50	Clean/well-kept	100	50
Lighting	Lighting throughout station	Adequate	Enhance lighting to platform, suggested 40-lux minimum. Provide adequate lighting to car park and station entrances, 40-lux minimum. Provide adequate lighting to car park, bus stop, taxi stance and road entrance areas, suggested 40-lux minimum.		75	Excellent	100	25
CCTV	Provision of CCTV	No	Provide CCTV coverage to platforms, footbridge, car park and roadway entrances. Provide railway CIS to platforms and entrances.	No	0	Yes	100	100
Information	General Provision of Information on Platforms Timetables of all services (static display) CIS Monitors (dynamic display) Platform Information Loudspeaker Platform 1 Seating	Poor Yes, but no info on platform 2 No Yes Two-Seater wooden bench	Provide bus CIS to entrances linked to railway CIS.					
Seating	Platform 2 Seating Waiting rooms on Platforms Waiting shelters of Platforms	No Two, but both unheated and in poor condition	Provide additional seating on both platforms.	Paper plus tannoy Some	50 50	Electronic plus tannoy Plentiful	100 100	50 50
Toilets	Public Toilets	No	Provide new heated waiting room and disabled toilet on Platform 1 (remove existing shelter).	None	0	Foyer	50	50
Accessibility	Stairs Ramps Lifts Staff on duty	Poor Adequate No Station unmanned	NO PROPOSAL	Ramps No manning	130 0	Ramps No manning	130 0	0 0

## LADYBANK

Attributes	Feature	Base Case	Do-Something	Base Case Description (Base Case)	Do Something Description	Points Rating (Do-something)	Points Rating (Base Case)	Points Gained
General Appearance	Overall impression of platform environment	Adequate	General full redecoration scheme required to station.	Adequate/Rough around edges	Clean/well-kept	100	50	50
Lighting	Lighting throughout station	Poor	Enhance lighting to platform, station building and entrance, 40 lux minimum. Enhance lighting to footbridge, 150 lux. Enhance lighting to car park, 40 lux. Provide CCTV coverage to platforms, footbridge, car park and roadway entrances.	Poor	Excellent	100	25	75
CCTV	Provision of CCTV	No		No	Yes	100	0	100
Information	General Provision of Information on Platforms (static display)	Adequate	Provide CIS to platforms and entrances.					
	Timetables of all services	Yes						
	CIS Monitors (dynamic display)	No	Provide local bus CIS linked to railway system.					
Seating	Platform Information Loudspeaker	Yes						
	Platform 1 Seating	2 four-seater wooden benches, good condition	Provide additional seating on both platforms.	Paper plus tannoy	Electronic plus tannoy	100	50	50
Shelter	Platform 2 Seating	1 four-seater benches all in good condition		Some	Plentiful	100	50	50
	Waiting rooms on Platforms	No						
	Waiting shelters of Platforms	No						
Toilets	Public Toilets	No	NO PROPOSAL	None	Limited Platform	25	0	25
Accessibility	Stairs	Poor condition	NO PROPOSAL	None	Platform	100	0	100
	Ramps	No	NO PROPOSAL					
	Lifts	No		Stairs	Lifts	170	0	170
Staff	Staff on duty	Station unmanned	NO PROPOSAL	No manning	No manning	0	0	0

**DUNDEE**

<b>Attributes</b>	<b>Feature</b>	<b>Base Case</b>	<b>Do-Something</b>	<b>Base Case Description (Base Case)</b>	<b>Points Rating Do Something (Do-something) Description</b>	<b>Points Rating (Do-something)</b>	<b>Points Gained</b>
General Appearance	Overall impression of platform environment	Good	Upgrade signage throughout station. Upgrade to DDA standards and provide foreign language sign guides either pictogram or translation. Upgrade cutting stone walls – consider full cleaning, overcladding, murals, lighting. Fully redecorate station incorporating period painting colours and styles. Replace all platform doors and windows to period style elements w/ improved heat retention + U-values. Consider full refurbishment of the building externally with modern style cladding systems to reflect modern, kept forward thinking city. Enhance lighting to platforms, period style. Increase lux level above 100 lux to ensure visibility from waiting areas. Coloured up-lighters to canopy structure. Upgrade lighting to station entrances and car park areas.	Clean/well-kept	100	100	0
Lighting	Lighting throughout station	Good	Enhance lighting to platforms, period style. Increase lux level above 100 lux to ensure visibility from waiting areas. Coloured up-lighters to canopy structure. Upgrade lighting to station entrances and car park areas.	Excellent	100	100	0
CCTV	Provision of CCTV	No	Upgrade lighting levels to walkway bridge to centre of Dundee (eliminate glare). Provide CCTV coverage to all areas including car parks and access areas. Provide CIS link to local bus transportation.	Yes	100	100	100
Information	General provision at central points Timetables of all services (static display) CIS Monitors (dynamic display) Platform Information Loudspeaker Seating	Good Yes Yes Yes					
Seating	Seating	Multiple seating in waiting rooms	Provide additional seating on both platforms.	Electronic plus tannoy Some	100 50	100 100	0 50
Shelter	Waiting rooms on Platforms	2 waiting rooms w/ clean, heated and catering facilities					
	Waiting shelters of Platforms	Canopies along the length of each platform	Full refurbishment and replacement of floors, walls, ceilings, doors, windows, heating, and seating to all waiting rooms. Fully upgrade public toilets and provide proper private baby change areas.	Complete	100	100	0
Toilets	Public Toilets	Yes		Platform	100	100	0
Accessibility	Stairs Ramps Lifts	Adequate No Adequate		Lifts	170	170	0
Staff	Staff on duty	Yes (Station manned from 05:45 to 01:00)	NO PROPOSAL NO PROPOSAL	Full time manning	100	100	0

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**CONTROL SHEET**

Project/Proposal Name: TAY ESTUARY RAIL STUDY  
Document Title: Option Appraisal - STAG1  
Client Contract/Project Number:  
SDG Project/Proposal Number: 204976  
Document Number: See footer

Originator: APB, LMM, SLC

Other Contributors: AZH

Review By: Print: Luke Miller

Sign: \_\_\_\_\_

**ISSUE HISTORY**

Issue No.	Date	Details
1	17/1/2003	First Draft
2	25/2/2003	Second Draft
3	3/3/2003	Third Draft
4	10/3/2003	Final
5	31/7/2003	Revised Final (pgs 11, 17, 23, 25)

**DISTRIBUTION**

Clients: Client team

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