

NEWBURGH TRANSPORT APPRAISAL

ADDENDUM NOTE

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1. INTRODUCTION

1.1 Background

1.1.1 SYSTRA Limited (SYSTRA) was commissioned by the South East of Scotland Transport Partnership (SEStran), the Newburgh Train Station Group (NTSG) and Fife Council to undertake a transport appraisal of Newburgh with a particular focus on improving movements to Perth, Edinburgh and Fife by sustainable modes.

1.1.2 To this end, as required by the Local Rail Development Fund (LRDF), the study was undertaken in accordance with the Scottish Transport Appraisal Guidance (STAG). Following the completion of the detailed options appraisal in May 2023, the appraisal report was submitted to Transport Scotland for review.

1.1.3 A discussion on the report was held on 16th January 2024 between representatives from Transport Scotland, Newburgh Train Station Campaign, SEStran, and SYSTRA. Following the meeting, a set of consolidated comments on the report was received from Transport Scotland.

1.1.4 This addendum note provides responses to the comments as well as further clarifications to support the narrative of the report.

2. DEVELOPMENT OF TRANSPORT PLANNING OBJECTIVES (TPOS) UNDER CASE FOR CHANGE

TS comment: Importance of the ‘golden thread’ running through the appraisal to link problems, issues, opportunities, and constraints to TPOs and options.

2.1.1 The Newburgh Transport Appraisal followed a comprehensive approach to establish the ‘golden thread’ between the identified problems, issues, opportunities, and constraints to TPOs and options. A simplified illustration of the process is below:

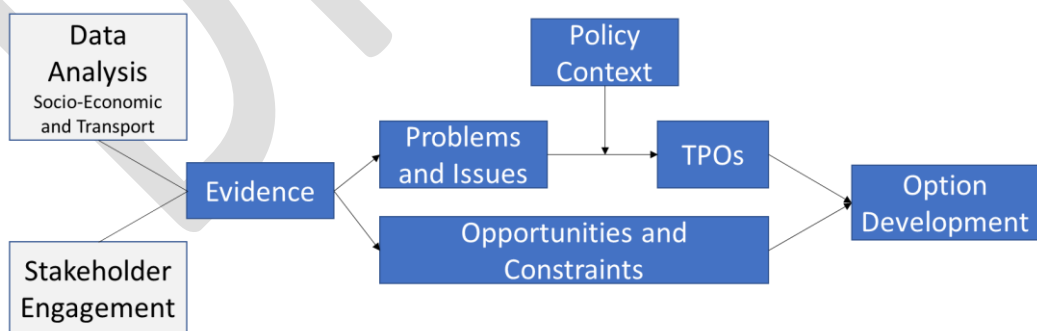


Figure 1. Overall approach for scheme option development

2.1.2 The Detailed Options Appraisal Report (Appendix E) includes a comprehensive review of the policies and strategies. This includes a review of the policy documents that were published following the completion of case for change, such as NTS2, STPR 2, NPF4, and SEStran RTS. In Figure 2 below, we present a simple illustration of how the policy

objectives that have been established to develop TPOs and scheme options align with the latest national and regional strategies.

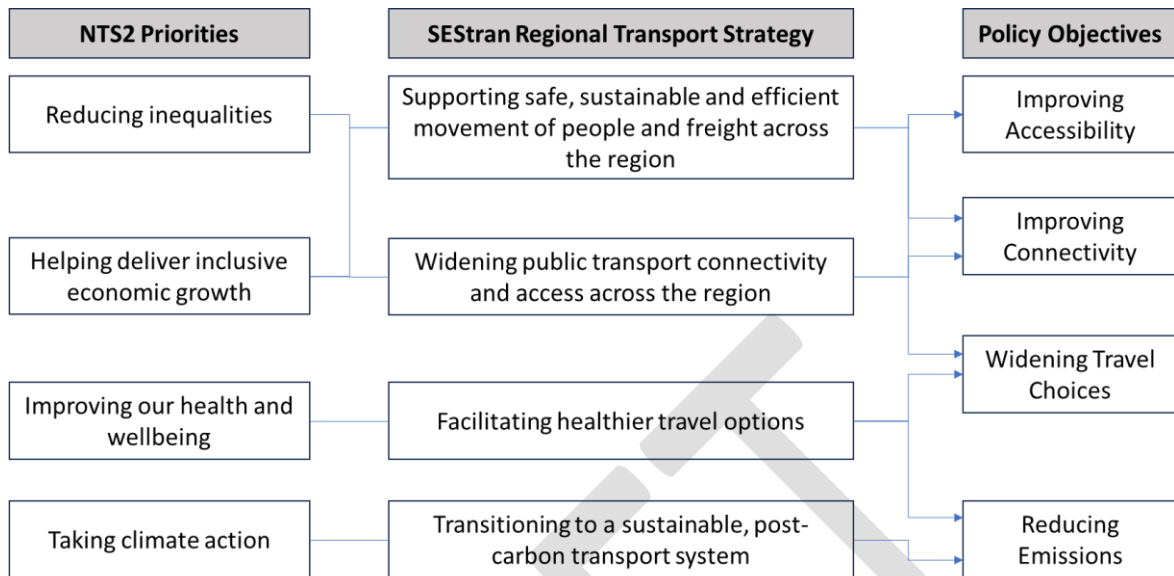


Figure 2. Policy objectives as per national and regional policies and strategies

- 2.1.3 This link between the problems and opportunities with TPOs and options are detailed in **Section 1.4** of the 'Detailed Options Appraisal Report'. Figure 3 below reproduces the summary of key problems, opportunities, issues, constraints, set TPOs and potential transport options.
- 2.1.4 A summary of the links between the problems and opportunities, and the TPOs is presented in Table 1. This is followed by a summary of the links between the TPOs, and the options presented in Table 2. Figure 3 in conjunction with Table 1 and Table 2 establishes the 'golden thread' between problems, opportunities and the subsequent TPOs and Options development.



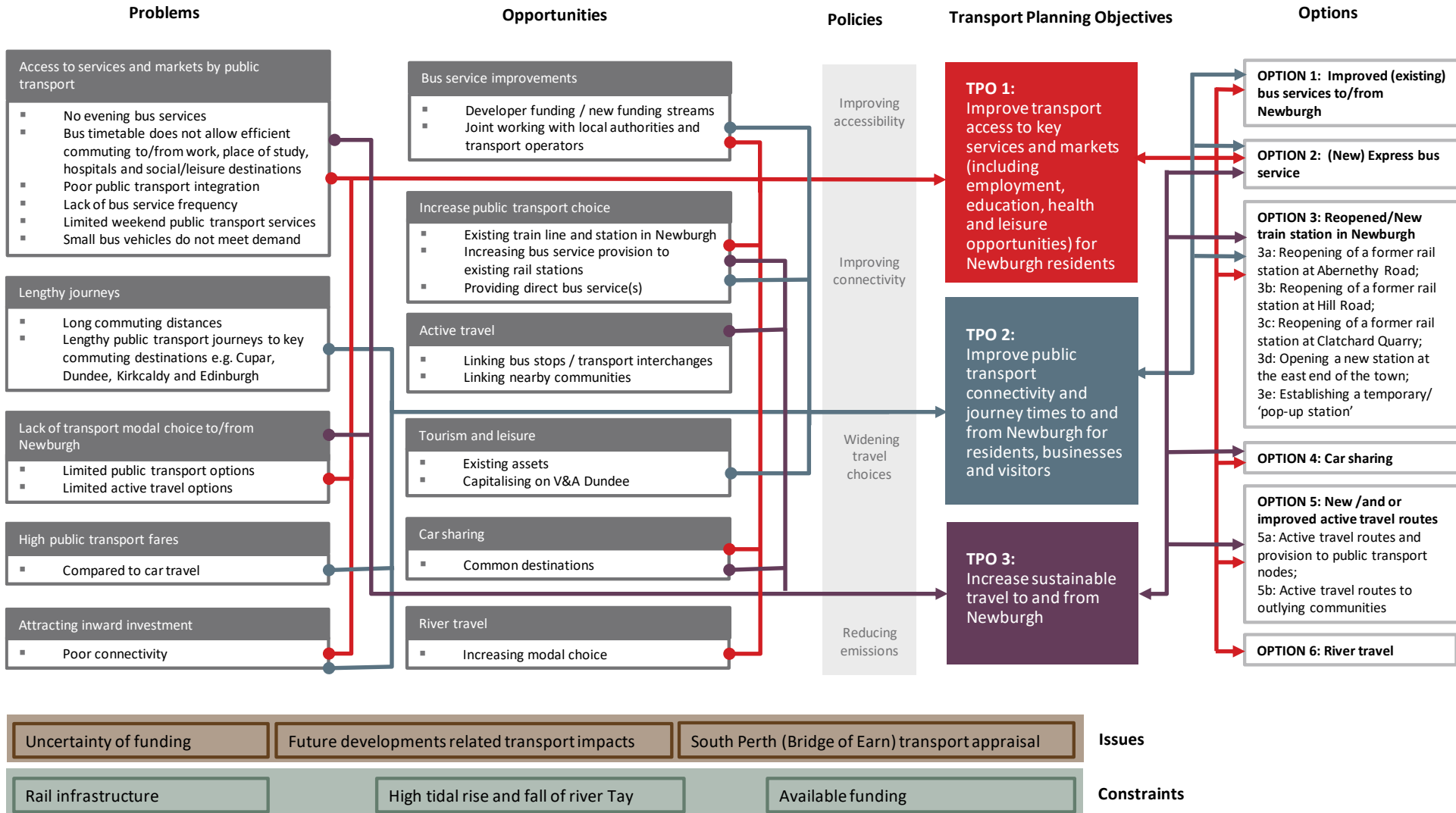


Figure 3. Mapping of Problems, Opportunities, Issues, Constraints, Policies and TPOs

Table 1. Summary of links between the Problem, and Opportunities, and TPOs

TPOS ¹	'GLODEN THREAD' LINKING THE PROBLEMS AND OPPORTUNITIES TO TPOS
<p>TPO 1: Improve accessibility to key services by reducing journey times by 10% and improving accessibility for Newburgh residents using multi-occupancy transport so as to match accessibility from Ladybank.</p>	<p>TPO 1 focuses on addressing transport problems for the residents of Newburgh to be able to access work and study opportunities, as well as destinations for wider health care (i.e. hospitals) and leisure / cultural activities, in particularly for households with no access to a car. This problem was disused under 'Lengthy Journeys', Case for Change Section 7.2. The objective also aims to alleviate problems with the existing public transport access which includes limited public transport options, limited bus service frequency, evening and weekend services, small bus vehicles, bus timetabling and poor transport integration. Additionally, it aims to realise opportunities for widening transport options to Newburgh residents.</p>
<p>TPO 2: Improve accessibility between Newburgh and key regional locations using multi-occupancy transport by reducing journey times by 15% when compared to the existing situation.</p>	<p>TPO 2 aims to improve connectivity to and from Newburgh by public transport and help reduce the lengthy journey times by public transport, especially to key commuting destinations that include Cupar, Dundee, Perth, Kirkcaldy and Edinburgh². This problem was disused under 'Access to Services and Markets', Case for Change Section 7.2. The objective also focusses on realising tourism and leisure opportunities by making use of Newburgh's existing assets (e.g. river Tay waterfront, Ochill hills, Fife Coastal Path, historical sites and Lindores Abbey Distillery and Visitors Centres) as well as providing opportunities for attracting more investment to the area.</p>
<p>TPO 3: Reduce car mode share by 1% and increase PT journeys by 5% for journeys to/from Newburgh.</p>	<p>TPO 3 focuses on changing travel behaviour to encourage more sustainable trips to and from Newburgh, in order to help reduce the number of car trips. Newburgh has above average proportion of households with two and more cars, and this objective aims to help address the balance. The objective also aims to realise opportunities for active travel (in particularly for short trips to link neighbouring communities as well as public transport facilities), and the potential to increase public transport choice.</p>

Table 2. Summary of links between the Options and TPOs

OPTIONS	'GLODEN THREAD' LINKING OPTIONS TO TPOS
<p>Option 1: Improved (existing) Bus Services to/from Newburgh</p>	<p>This option includes the provision of greater frequencies of bus services and hours of operation, as well as improving connectivity with train services to help facilitate onward travel. This option involves enhancing bus service provision to key services and markets i.e. employment, places of study, and wider health care and leisure facilities, and to help increase public transport choice. This option mainly targets TPO 1 and 3 and partly TPO 2 through improved connectivity.</p>

¹ TPOs are updated following TS comments to reflect the scale of change being sought. Discussed in Section 6 of this Addendum Note.

² As per August 2024 timetables, Bus 65 from Newburgh is not coordinated with Edinburgh trains at Cupar, resulting in longer journey times for work and study.

OPTIONS	'GLODEN THREAD' LINKING OPTIONS TO TPOS
Option 2: (New) Express Bus Services	This option includes the potential for more direct service between Newburgh and Cupar, and Newburgh and Ladybank. This will help improve journey times by public transport, help facilitate improved access to key services and markets, improve connectivity and increase public transport choice, thus targets all three TPOs.
Option 3: Reopened/New Train Station in Newburgh	This option includes the reopening of a train station in Newburgh in order to help increase public transport choice for trips to and from Newburgh, increase connectivity, as well as help facilitate access to key services and markets. The option would also allow direct access to the rail network and help reduce public transport journey times to key destinations. The option would also need to include facilities to assist integrated trips accessing the station. This option targets all three TPOs.
Option 4: Car Sharing	This option includes a provision to increase car sharing to and from Newburgh in order to improve access to key services and markets, widen people's travel choices , help reduce lengthy journeys by public transport and help address high public transport fares. This option targets TPO 1.
Option 5: New /and or Improve Active Travel Routes	This option would help to increase access to key services and markets by providing walking and cycling links to/from bus stops and/or public transport interchanges through improvements to walking and cycling routes and/or providing cycle parking provision at bus stops. The option would include improved active travel links to connect outlying settlements and communities. This option targets TPO 1 and 3.
Option 6: River Services	This option includes the provision of passenger service on the Tay Estuary in order to help increase modal choice to and from Newburgh and help increase transport access to Perth and Dundee. This option targets TPO 1.

3. MODELLING APPROACH

Comment: Rationale for using TRACC to undertake TPO appraisal rather than the assignment model (TCRTM).

- 3.1.1 TRACC has been used for Options appraisal in conjunction with the Tay Cities Regional Transport Model (TCRTM). The TCRTM is a strategic multi-modal model which represents the road, bus and rail network of Dundee City, Perth and Kinross, Angus and North Fife. The model outputs were used to undertake to economic, environment and safety appraisals. On the other hand, TRACC has been used for accessibility analysis to inform the appraisal.
- 3.1.2 The TCRTM included 2017 data for public transport provision, therefore the model required to be updated with 2023 data which is an extensive exercise. On the other hand, the latest public transport data could be imported efficiently into TRACC to obtain the modelled results. Hence, TRACC was used to inform TPO 1 and TPO 2.

- 3.1.3 As discussed in Section 4.2 of the Detailed Options Appraisal Report, TRACC is designed to generate travel times using a multitude of public transport and road modes to give accurate journey times from many origins to many destinations in one calculation. The software covers a full range of transport modes such as walking, cycling, driving and public transport, which can be used to ascertain issues within a network, or to assess the effectiveness of a new public transport route. The software allows for timetables to be amended to reflect changes to the network and travel times are calculated between origins and destinations using a number of parameters. Therefore, the use of TRACC to inform the relevant appraisals elements is deemed appropriate.
- 3.1.4 TCRTM helps understand the degree of modal shift that is likely to be generated by the options. It was therefore used to determine the change in mode share to inform performance of the options against TPO 3.

4. IMPACTS ON THE RAIL NETWORK

Comment: Anticipated impacts of introducing a new stopping service at Newburgh, noting the differing time penalty referenced from RailSys analysis and the appraisal assumptions.

- 4.1.1 The RailSys Analysis shows that the journey time penalty because of a new stopping service at Newburgh, including station dwell time, is:

- From Ladybank to Hilton Junction: 2 minutes
- From Hilton Junction to Ladybank: 3 minutes

- 4.1.2 The detailed options appraisal report refers to the penalty **two-to-three minutes journey time** increase to existing services or as an average of the journey time penalties in both directions, i.e., **2 minutes 30 seconds**. This increases journey times for existing rail passengers (by a small amount) and is factored into the overall cost benefit analysis set out in Chapter 6.

Comment: Anticipated impacts to wider network of a stopping service at this location.

- 4.1.3 A sensitivity analysis was planned to be undertaken to take account of the proposed ScotRail's 'Fit for the Future' timetable changes that focus on improved punctuality and reliability of services (Discussed in 7.4.13-7.4.15 of the Detailed Options Appraisal Report). Initially published for public consultation in 2021, the new timetable proposed Edinburgh to Perth services would route via Dunfermline, instead of Kirkcaldy, and the Edinburgh to Inverness service would route via Stirling and therefore be removed from the line through Newburgh. These proposed changes to rail timetables were run in TCRTM and sensitivity testing was planned to be undertaken.
- 4.1.4 However, following public consultation, ScotRail's final proposals are to operate the Perth to Edinburgh service via Kirkcaldy, as a local service, and this is anticipated to reduce the average journey time between Perth, Ladybank, Markinch, and Edinburgh and will also maintain a direct service between Perth and Kirkcaldy. The Edinburgh to Inverness service is still proposed to operate via Stirling³. The removal of the inter-city service (Edinburgh to Inverness) from the line aligns with Scottish Government policy to not increase inter-

³ <https://www.scotrail.co.uk/timetable-routes/intercity>

city journey times as a result of an additional stop⁴. Conflicts on the line from a timetabling perspective may also be reduced given this proposed change. This is a significant, potentially positive, change to this opportunity.

- 4.1.5 Discussions with ScotRail/Abellio would be required to understand the impact of this increase on wider timetabling.

5. FORECAST RAIL DEMAND

Comment: How and from where anticipated rail demand is forecast to come from and proportion made up from abstraction from other rail stations / bus? Further Clarification on what journeys forecasted trips serve, and how the forecast changes compare across options 2 and 3.

- 5.1.1 Section 3.2 of the Detailed Options Appraisal Report discusses the demand forecasting for the options. The demand model forecasts changes to the Road, Public Transport and Active Travel assignment matrices that arise through changes in forecast planning data (i.e. development/population changes) and/or changes in future transport costs (i.e. transport investments, policies and/or congestion). This process also represents changes associated with the price of parking, car park capacity and park and ride site / rail station accessibility.
- 5.1.2 In turn, the Road and PT assignment models inform the demand model of changes in travel costs, which iterates between mode, destination and parking choice responses to generate forecast year outputs.
- 5.1.3 The TELMoS14 economic model provides planning development data (changes in households, population, and jobs) and goods commodity matrices at TCRTM zonal level to inform the base and future year Trip Generation Modelling.
- 5.1.4 The TMfS14 model provides external movements to inform the level and movement of TCRTM long distance trip making, informing the Trip Generation modelling and assignment matrices.

Option 2 Forecast

- 5.1.5 This option introduces a new Express bus service between Newburgh, Cupar, Perth and Broxden Park and Ride. It is a fast and limited stop service; running hourly, to complement the existing services 36 and 94. In TCRTM, a new service was introduced based on the assumed modelled timetables shown in Appendix A within the Detailed Options Appraisal Report.
- 5.1.6 The public transport passenger flow differences in the network are shown in Figure 4 and this highlights the clear increase in public transport use through Newburgh. The passenger demand composes of an increase in bus passengers between Newburgh and Perth, and also a change in destination from Dundee to Perth which results in passengers moving from rail previously Dundee from Cupar, to travelling between Cupar and Perth by bus.

⁴ <https://www.transport.gov.scot/publication/national-transport-strategy-nts2-second-delivery-plan-2022-2023/our-actions-for-2022-2023/>

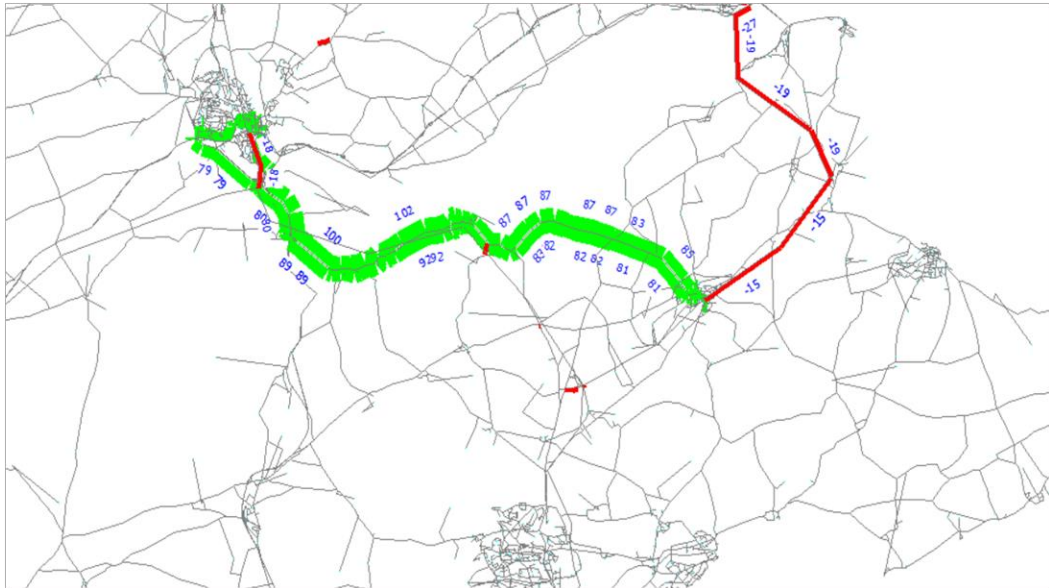


Figure 4. Option 2 – 12hr Public Transport Passenger Flow Differences (2027)

Option 3 Forecast

- 5.1.7 The boarding and alighting associated with the rail station show that a combined 46,733 are expected to use the station in 2027 with boarding and alighting levels anticipated to increase to over 50,000 in 2037.
- 5.1.8 When compared with the Office of Rail and Road (ORR) station entries and exits for 2019-20 (pre-COVID-19 year used as comparison), Option 3 is at a similar level of usage as Wester Hailes, Coatbridge Central, and Kirknewton stations⁵, which are commuter stations outside Glasgow and Edinburgh and in the Fife area. This high-level sense check shows that the proposed patronage for the station is not out-of-step with observed data at locations which serve commuter communities with a similar level of service (1-2 tph). This is detailed in Section 3.2 of the Detailed Options Appraisal Report.
- 5.1.9 The demand associated with the new station is new trips generated by the increased opportunity to travel, mode shift (from road or bus) or abstraction from other stations. The 12-hour boarding and alighting across the TCRTM network in 2027 show that there has been small abstraction from buses travelling between Newburgh and Ladybank, and south of the Forth which is expected due to the location of the proposed new station on the Perth to Edinburgh line.
- 5.1.10 The public transport passenger flow differences in the network are shown in Figure 5 highlighting the increase in rail use through Newburgh. However, there is abstraction from Ladybank and Markinch railway stations to Newburgh.
- 5.1.11 There are also increases in passenger flows between Newburgh and the Glasgow and Edinburgh areas in the central belt and Dundee.

⁵ See Table 3.3 of the Detailed Options Appraisal Report

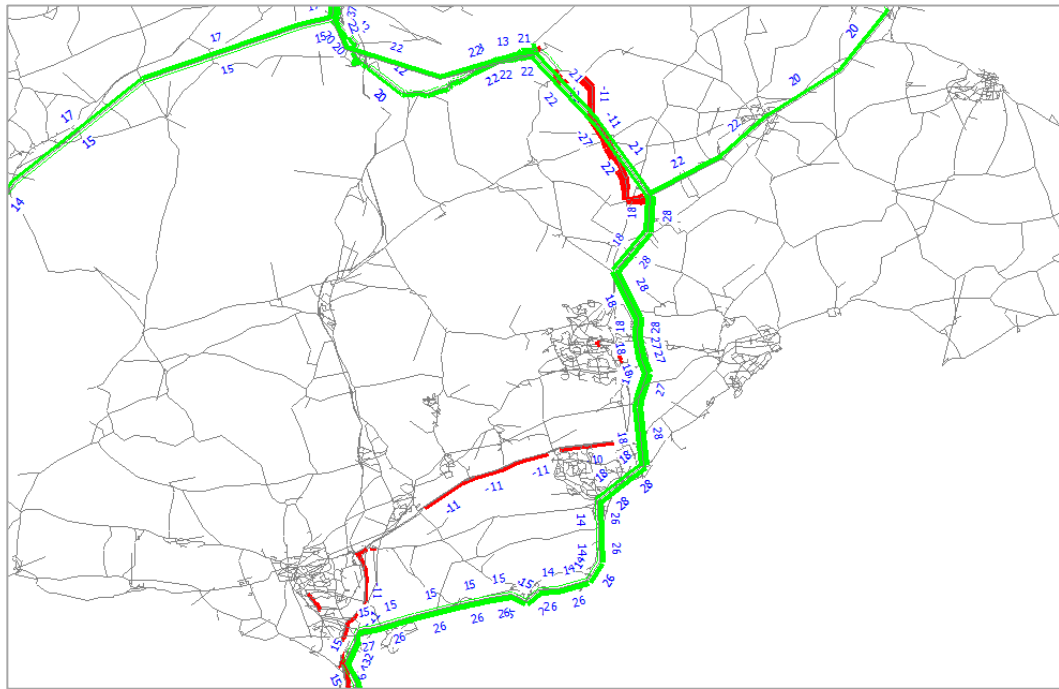


Figure 5. Option 3 – 12hr Public Transport Passenger Flow Differences (2027)

6. TRANSPORT PANNING OBJECTIVES TPOS

Comment: The TPOs could better reflect the change being sought e.g. reducing journey times from xhrs to yhrs. Clarification sought of what specifically is the target of matching accessibility of Ladybank and how would that be defined, measured / monitored & evaluated.

6.1.1 The TPOs have been reviewed and revised below to incorporate the scale changes being anticipated.

- TPO 1: Improve multi-occupancy transport accessibility for Newburgh residents to key services (e.g. health and Education) by reducing public transport journey times **by 10% compared to 2021 Q3 public transport timetable⁶**.
- TPO 2: Improve accessibility between Newburgh and key regional locations using multi-occupancy transport by reducing journey times by **15% compared to the to 2021 Q3 public transport timetable⁶**.
- TPO 3: Reduce car mode share **by 0.5% compared to the 2027 reference case** for journeys to/from Newburgh.

6.1.2 Table 3 presents criteria for assessment of options performance against the TPOs.

⁶ Source: National Public Transport Data Repository (NPTDR) database.

Table 3. Assessment criteria for performance against TPOs

TPOs	Metric	Type	Criteria
TPO1	Journey times savings	Quantitative	Minor benefits: <10% JT Savings Moderate benefits: 10%-30% JT Savings Major Benefits: >30% JT Savings
	Journey times	Quantitative	Are the JTs comparable with JTs from Ladybank?
	Accessibility	Qualitative	Offers access to destinations which is not possible to travel by public transport in the TRACC timeframe- 07:00-09:00 for education and 10:00-12:00 for health centres and retail destinations.
Qualitative		Extended hours of operation	
TPO2	Journey time savings	Quantitative	Minor benefits: <10% JT Savings Moderate benefits: 10%-30% JT Savings Major Benefits: >30% JT Savings
	Accessibility	Qualitative	Extended hours of operation
TPO3	Car mode share change	Quantitative and Qualitative	Minor benefits: <0.4% reduction Moderate benefits: 0.4%-0.7% reduction Major Benefits: >0.7% reduction

6.1.3 The comparison of journey times to key services from Newburgh and Ladybank is based on the proportion of distances to the key services from the respective villages and the proportion of journey times.

Comment: Are we correct in our understanding that none of the options are anticipated to result in a significant impact against the TPOs?

6.1.4 The option appraisal against the TPOs was presented in Section 4.3 of the Detailed Options Appraisal Report. The appraisal includes both quantified and qualitative impacts. The options offer **minor to moderate benefits** when assessed against the TPOs. Option 1 is considered to have minor benefits in terms of all TPOs. Option 2 and Option 3 (a & c) offer moderate benefits against TPO 1 and TPO2. The appraisal results are summarised for each TPO below.

Performance Against TPO1: Improve multi-occupancy transport accessibility for Newburgh residents to key services (e.g. health and Education) by reducing public transport journey times by 10% compared to 2021 Q3 public transport timetable.

6.1.5 The performance of the options against this TPO has been assessed in terms of accessibility and journey time savings. Table 4 presents journey time savings⁷ offered by Options 1, 2 and 3. Option 4 has not been appraised for this TPO. A summary of the option performances is given below.

⁷ Presented in Tables 4.2, 4.4, and 4.8 of the Detailed Options Appraisal report

Option 1

- 6.1.6 The option proposes to extend the service running times of the Stagecoach services 36 and 94. Therefore, Option 1 does not improve journey times. However, it improves accessibility to the locations listed in Table 4 before 09:00am (i.e. before most employment/education starts) and after 19:00pm (when shift work may begin/end). For example, the proposed timetable changes would provide two bus services to St. Andrews that arrive before 09:00am, opening up possible further education opportunities at the University of St. Andrews.
- 6.1.7 Option 1 does not offer journey time improvement from Newburgh to any of the destinations that are comparable to respective trips from Ladybank.

Option 2

- 6.1.8 The option proposes a new express bus service between Cupar and Perth, providing an hourly service in both directions from approximately 06:40am to 23:20pm. TRACC analysis concludes the Option 2 will help reduce journey times to key transport interchanges and services such as regional hospitals and retail centres.
- 6.1.9 Average journey times from the Newburgh area to specific regional health centres were extracted from TRACC (including 800m walk distance) for journeys made by public transport between 10:00am and 12:00 noon (two hours), as shown in Table 4. Journey times improve to all regional centres, in particular to the Adamson Hospital, Cupar and The Royal Infirmary, Perth with journey time savings of approximately 29 minutes and 23 minutes respectively.
- 6.1.10 Note, TRACC shows it is not possible to travel by public transport to hospitals in Dunfermline or Kirkcaldy (including walk time) in the 10:00-12:00 timeframe with existing public transport provision, while this option's proposals make this possible. The proposals in Option 2 therefore are shown not only to improve journey times but also accessibility and transport connectivity to critical health services in the region.
- 6.1.11 The public transport journey times under this option from Newburgh to the hospitals in Cupar, Kirkcaldy and Dunfermline are comparable to those from Ladybank.

Option 3

- 6.1.12 Option 3 proposes a new train station in Newburgh in order to help increase public transport choice for trips to and from Newburgh, increase connectivity, and help facilitate access to key services and markets. The option considers three possible locations as follows:
- 3a: Reopening of a former rail station at Abernethy Road
 - 3c: Opening a new station at the east end of the town
 - 3d: Reopening of a former railway station at Clatchard Quarry
 - 3e: Modular station (at any of the three locations above)⁸
- 6.1.13 Average public transport journey times to education (07:00 – 09:00am), health centres and retail destinations (10:00am – 12:00 noon) show there to be no journey time savings

⁸ These options have not been appraised separately as it is different type of station at the same three locations for Options 3a, 3C and 3d

compared to the existing provision as a result of the introduction of a rail station in Newburgh, with a comparison of journey times shown in Table 4. These minor journey time differences to specific locations are to be expected. For example, there is an existing direct bus service to Perth Royal Infirmary (approximately 40 minutes), whereas by train this would require switching modes (rail to bus) in Perth. Similarly, the existing bus service provides direct access to central Perth retail areas, whereas the train would require some walking in Perth.

- 6.1.14 Note, TRACC shows it is not possible to travel by public transport to St Andrew’s University and hospitals in Dunfermline or Kirkcaldy (including walk time) in the 10:00-12:00 timeframe with existing public transport provision, while this option’s proposals make this possible. The proposals in Option 3 therefore improve accessibility and transport connectivity to critical health services in the region.
- 6.1.15 This option improves accessibility through extended hours of operation (before 09:00 and after 19:00) on weekdays and weekends compared with the existing situation (See Appendix A of the detailed options appraisal report for details). TRACC accessibility analysis show that about half of the Newburgh residents are captured inside 800m of the proposed station locations under Option 3a and 3c, as shown in Table 5.
- 6.1.16 Option 3a and 3c bring public transport journey times from Newburgh to St Andrew’s University and the hospitals in Kirkcaldy and Dunfermline under 2 hours. The public transport journey times under these options from Newburgh to the hospitals in Kirkcaldy and Dunfermline are comparable to those from Ladybank.

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Table 4. Journey times to key services

Destinations From Newburgh		PT Journey time (hh:mm)						
		Base	JTs from Ladybank	Option1	Option 2	Option 3a	Option 3c	Option 3d
St Andrews's University	PT Journey time (hh:mm)	N/A	01:10	01:14	N/A	01:34	01:35	N/A
	Difference from Base	-	-	-	-	-	-	-
Adamson Hospital Cupar	PT Journey time (hh:mm)	01:07	00:33	01:07	00:37	01:07	01:07	01:07
	Difference from Base	-	-	00:00	-00:29	00:00	00:00	00:00
	% Difference from Base			0%	43%	0%	0%	0%
The Royal Infirmary Perth	PT Journey time (hh:mm)	00:51	N/A	00:51	00:27	00:51	00:51	00:51
	Difference from Base	-	-	00:00	-00:23	00:00	00:00	00:00
	% Difference from Base			0%	45%	0%	0%	0%
Victoria Hospital Kirkcaldy	PT Journey time (hh:mm)	N/A	01:14	N/A	01:25	01:07	01:02	N/A
	Difference from Base	-	-	-	-	-	-	-
St Andrews Community Hospital	PT Journey time (hh:mm)	01:31	01:12	01:31	01:16	01:31	01:31	01:31
	Difference from Base	-	-	00:00	-00:14	00:00	00:00	00:00
	% Difference from Base			0%	15%	0%	0%	0%
Ninewells Hospital Dundee	PT Journey time (hh:mm)	01:26	01:48	01:26	01:16	01:26	01:26	01:26
	Difference from Base	-	-	00:00	-00:09	00:00	00:00	00:00
	% Difference from Base			0%	10%	0%	0%	0%
Queen Margaret Dunfermline	PT Journey time (hh:mm)	N/A	01:26	N/A	01:18	01:23	01:24	N/A
	Difference from Base	-	-	-	-	-	-	-
Appraisal Scores	Journey time savings			Neutral	Moderate	Neutral	Neutral	Neutral
	Are the JTs comparable with JTs from Ladybank?			Minor	Major	Moderate	Moderate	Neutral
	Offers access to destinations that are unreachable in the TRACC timeframe			Neutral	Moderate	Major	Major	Neutral

N/A: Journeys not possible in assessed TRACC timeframe under Baseline.

Values in **Green**: Improved access with journey times under 2 hours.

Cells in **Pink** show journey times comparable to those from Ladybank. Based on the proportion of journey distance and journey times to each destination from Newburgh and Ladybank.

Table 5. Population Catchments for proposed station locations

Option	Location	Population Catchments (no. of People)			Appraisal Score
		400m	800m	1500m	
Option 3a	Abernethy Road	518	1292	2262	Moderate
Option 3c	East end of the town	308	1649	2322	Moderate
Option 3d	Clatchard Quarry	97	178	1511	Minor

Appraisal Scores for TPO 1

6.1.17 Based on the individual appraisal scores presented in Table 4 and Table 5, an overall appraisal score have been allocated in Table 6.

Table 6. Appraisal Scores for TPO1

Metrics	Option1	Option 2	Option 3a	Option 3c	Option 3d
Journey time savings	Neutral	Moderate	Neutral	Neutral	Neutral
Do the JTs match with JTs from Ladybank?	Minor	Major	Moderate	Moderate	Neutral
Offers access to destinations that are unreachable in the TRACC timeframe	Neutral	Moderate	Major	Major	Neutral
Extended hours of operation ⁹	Minor	Neutral	Moderate	Moderate	Minor
Overall Score Against TPO1	Minor	Moderate	Moderate	Moderate	Minor

TPO 1 Summary:

Option 1 does not improve journey times to key services but improved access to services with extended hours of operation; hence, **minor benefits**.

Option 2 offers journey time savings to key locations, in particular to the Adamson Hospital, Cupar and The Royal Infirmary, Perth with journey time savings of approximately 29 minutes and 23 minutes respectively. The option also improves access with reduced journey times to Victoria Hospital (85mins) and Queen Margaret Hospital (78mins), compared with the baseline scenario (>2hours). Overall, this option is considered to offer **moderate benefits**.

Option 3 does not improve journey times to key services; however, it (3a & 3c) improves accessibility with majority of the population in Newburgh is captured inside 1500m of the proposed station locations. The option also improves access with reduced journey times to St Andrew’s University (95mins), Victoria Hospital (67mins) and Queen Margaret Hospital (84mins), compared with the baseline scenario (>2hours). Overall, this option is considered to offer **moderate benefits**.

Overall, for TPO1, Option 1 offers **minor benefits**, and Options 2 and Options 3a & 3c) offer **moderate benefits** against TPO1. Option 3d offers **minor benefits**.

⁹ Quantitative assessment for Option 1&2, and quantitative assessment for Option 3.

Performance Against TPO 2: Improve accessibility between Newburgh and key regional locations using multi-occupancy transport by reducing journey times by 15% compared to 2021 Q3 public transport timetable.

6.1.18 Journey times¹⁰ from Newburgh to key locations – Perth, Edinburgh, Cupar and Dundee stations were examined using TRACC are presented in Table 7 below.

Table 7. Journey times to key locations- Perth, Edinburgh, Cupar and Dundee

Options	Journey Times	Perth	Edinburgh	Cupar	Dundee
Base	Journey time (hh:mm)	00:41	02:06	00:46	01:16
Option 1	Journey time (hh:mm)	00:41	02:06	00:46	01:16
	Diff. to Base	00:00	00:00	00:00	00:00
	% Diff. to Base	0%	0%	0%	0%
Option 2	Journey time (hh:mm)	00:22	02:04	00:32	01:06
	Diff. to Base	-00:18	-00:01	-00:14	-00:09
	% Diff. to Base	-44%	-1%	-30%	-12%
Option 3a	Journey time (hh:mm)	00:27	01:25	00:46	01:07
	Diff. to Base	-00:13	-00:41	-00:00	-00:08
	% Diff. to Base	-32%	-33%	0%	-11%
Option 3c	Journey time (hh:mm)	00:27	01:17	00:46	01:08
	Diff. to Base	-00:14	-00:49	00:00	-00:07
	% Diff. to Base	-34%	-39%	0%	-9%
Option 3d	Journey time (hh:mm)	00:26	01:59	00:46	01:16
	Diff. to Base	-00:14	-00:06	00:00	00:00
	% Diff. to Base	-34%	-5%	0%	0%

Option 1

6.1.19 Option 1 does not improve journey times to the key locations. However, it improves accessibility to these locations before 09:00am and after 19:00pm on weekdays and weekends.

Option 2

6.1.20 Option 2 proposals result in journey time savings to key regional train stations, providing improved access to national rail services and in turn opening up further viable opportunities to access employment and leisure by sustainable means. The proposals offer 18 minutes and 14 minutes journey time savings to Perth and Cupar respectively, however do not reduce public transport journey times to Edinburgh.

Option 3

6.1.21 Option 3 provides opportunities to access key regional locations and train stations and the TRACC analysis shows that being able to travel by train from Newburgh brings journey

¹⁰ Presented in Tables 4.3, 4.5, and 4.9 of the Detailed Options Appraisal report

time savings compared to existing public transport provision. Of particular note are the significant journey time savings of between 40 minutes and 50 minutes for public transport journeys to Edinburgh, and subsequently to intermediate stations such as Kirkcaldy, **Inverkeithing and Edinburgh Gateway** (airport and tram) for Option 3a and Option 3c. The journey time savings to key regional train stations provide improved access to national rail and air services and open up further viable opportunities to access employment, retail and leisure by sustainable means. Option 3d (Clatchard Quarry) does not offer significant journey time savings, as it is located more than 1500m from the western extent of the town.

6.1.22 Option 3a/c offer journey time savings to Dundee (around 10%) but not to Cupar. This is because there is a direct bus to Cupar, but the train journey would require changing at Ladybank.

Appraisal Scores for TPO 2

6.1.23 Table 8 shows the appraisal scores for each option against TPO 2 based on the analysis presented in Table 7 and the criteria in Table 3.

Table 8. Appraisal Scores for TPO2

Metrics	Option1	Option 2	Option 3a	Option 3c	Option 3d
Perth	Neutral	Major	Major	Major	Major
Edinburgh	Neutral	Minor	Major	Major	Minor
Cupar	Neutral	Moderate	Neutral	Neutral	Neutral
Dundee	Neutral	Moderate	Moderate	Minor	Neutral
Score against journey time savings	Neutral	Moderate	Moderate	Moderate	Minor
Score against accessibility	Minor	Minor	Minor	Minor	Minor
Overall Score Against TPO2	Minor	Moderate	Moderate	Moderate	Minor

TPO 2 Summary:

Option 1 do not improve journey times to key locations but offers improved access to key locations with extended hours of operation, hence **minor benefits**.

Option 2 offers **moderate benefits** with journey time savings to key locations, in particular to Perth and Cupar stations (approximately 18 minutes and 14 minutes respectively).

Option 3a and 3c offer significant journey times improvements, in particular journey time savings of between 40 minutes and 50 minutes to Edinburgh and subsequently to intermediate stations such as Inverkeithing and Edinburgh Gateway (airport and tram); hence, considered as **moderate benefits**. Option 3d (Clatchard Quarry) does not offer significant journey time savings, as it is located more than 1500m from the western extent of the town.

Overall, for TPO 2, Option 1 offers **minor benefits**. Option 2 and Options 3a & 3c offer **moderate benefits** against TPO1. Option 3d offers **minor benefits**.



Performance Against TPO3: Reduce car mode share by **0.5% compared to the 2027 reference case** for journeys to/from Newburgh.

6.1.24 Table 9 presents mode share¹¹ changes as a result of the proposed options.

Table 9. Mode share changes

Options	Options	Road	PT	Active
Do Min	Number of trips	29,900	1,692	2,781
	Mode share	87.00%	4.92%	8.08%
Option 1	It is not possible to quantify the changes using TCRTM, hence assessed qualitatively.			
Option 2	Number of trips	29,811	1,723	2,856
	Difference	-89	32	75
	Mode share	86.70%	5.00%	8.30%
	% Mode share change	-0.30%	0.08%	0.21%
Option 3a, 3d, 3c	Number of trips	29,828	1,733	2,874
	Difference	-71	42	93
	Mode share	86.62%	5.03%	8.35%
	% Mode share change	-0.38%	0.11%	0.26%
Option 4	Number of trips	28,963	1,690	2,778
	Difference	-937	-1	-3
	Mode share	86.64%	5.05%	8.31%
	% Mode share change	-0.36%	0.13%	0.22%

Option 1

6.1.25 The Tay Cities Regional Transport Model (TCRTM) simulates regional traffic on an average weekday between 07:00am and 19:00pm and therefore it is not possible to quantify the changes in public transport patronage and the effectiveness of the option against TPO3. However, with increased flexibility around travel times, it is reasonable to conclude that the option may positively impact sustainable travel to and from Newburgh and this results in a minor benefit against TPO3.

Option 2

6.1.26 The Tay Cities Regional Transport Model (TCRTM) shows there to be an increase in public transport and active travel usage as a direct result of introducing the proposed bus services changes of Option 2. The resultant 12-hour car mode share reduction is 0.30%.

Option 3

6.1.27 The TCRTM shows there to be an overall increase in public transport and active travel usage as well as a car mode share reduction of 0.38% as a direct result of the Option 3 proposals.

¹¹ Based on Tables 4.6, and 4.10 of the Detailed Options Appraisal report

Option 4

- 6.1.28 Option 4 was modelled in the TCRTM by adjusting current levels of car occupancy. The model outputs showed a decrease in the number of vehicles on the road network as a result of informal car sharing agreements in place. As expected from the option, Table 9 shows there is a significant reduction in number of car trips with no corresponding shift to public transport or active travel. However, the car mode share reduction is still limited under this option as a result of the decrease in total number of trips with no change in public transport or active mode trips.
- 6.1.29 Table 10 shows the appraisal scores for each option against TPO 3 based on the analysis presented in Table 9 and the criteria set out in Table 3.

Table 10. Appraisal Scores for TPO3

Metrics	Option1	Option 2	Option 3a, 3c & 3d	Option 4
Road	Minor	Minor	Minor	Minor
Overall Score Against TPO3	Minor	Minor	Minor	Minor

TPO3 Summary:

Option 1 would offer increased flexibility around travel times; hence expected to deliver **minor benefits**.

Option 2 offered a small increase in travel by sustainable modes and in turn **minor benefits** against TPO3.

Option 3 (all variations) offer a small increase in travel by sustainable modes and in turn **minor benefits** against TPO3.

Option 4, if implemented successfully, would be expected to increase sustainable travel through car sharing rather than increased public transport or active travel use, and will provide **minor benefit** against TPO3.

Overall, all options are expected to offer **minor benefits** for this TPO.

TPO Appraisal Summary

- 6.1.30 TPO Appraisal Summary was presented in Section 4.4 of the Detailed Options Appraisal Report. Table 11 below summarises the level of benefits offered by the options. The appraisal of the options against the TPOs conclude that the new train station options 3a (Abernethy Road), 3c (East end of town) and 3e (at locations a or c) are the best performing options.

Table 11. TPO appraisal summary

Option	Description	TPO 1	TPO 2	TPO 3
1	Improved (Existing) Bus Services	Minor	Minor	Minor
2	(New) Express Bus Service	Moderate	Moderate	Minor
3a & 3e	Train station Abernethy Rd	Moderate	Moderate	Minor
3c & 3e	Train station East of Town	Moderate	Moderate	Minor
3d & 3e	Train station Clatchard Quarry	Minor	Minor	Minor
4	Car Sharing	Neutral	Neutral	Minor

Comment: How has the TRACC analysis informed the appraisal of TPO1 and TPO2?

6.1.31 TRACC analysis informs TPO 1 and TPO 2 by providing journey times for baseline and the options, as presented in Table 4 and Table 7.

- TPO 1 focusses on journeys to **key services**, i.e. selected **health, education and employment** etc. locations.
- TPO 2 focuses on journeys to **key regional centres**, i.e. Perth, Edinburgh, Cupar and Dundee.

6.1.32 Table 12 shows how TRACC analysis informs TPO 1 and TPO 2.

Table 12. TRACC analysis to inform the appraisal process

TPOs	Metric		Based on
TPO1	Journey times	Journey time savings compared with baseline condition.	TRACC analysis
		Journey time comparisons with those from Ladybank.	TRACC analysis
	Accessibility	Access to destinations that are unreachable in the specified timeframe, i.e. 07:00-09:00 for education and 10:00-12:00 for health centres and retail destinations.	TRACC analysis
		Extended hours of operation	Qualitative assessment
TPO2	Journey times	Journey time savings compared with baseline condition	TRACC analysis
	Accessibility	Extended hours of operation	Qualitative assessment

6.1.33 It is correct that the way the information is shown in Detailed Options Appraisal Table 4.8 (replicated in Table 4 above) presents no/negligible journey time savings to key services offered by Option 3. However, as shown in Table 3, TPO1 is formed of other elements. These are discussed below.

6.1.34 TRACC shows that it is not possible to travel by public transport to St Andrew's University and hospitals in Dunfermline or Kirkcaldy (including walk time) in the 10:00-12:00 timeframe with existing public transport provision, i.e. greater than two hours. Hence,

TRACC does not output a journey time to these destinations (shown as 'N/A' in Table 4). This option's proposals make this possible, with a journey time of less than 2 hours noted for each destination, therefore, it can be inferred that Option 3 does give a journey time saving. The proposals in Option 3 therefore improve accessibility and transport connectivity to critical health services in the region.

6.1.35 Option 3 offers journey time improvement from Newburgh to the hospital at Dunfermline that are comparable to respective trips from Ladybank. Individual and overall appraisal scores for TPO 1 are presented in Table 6.

6.1.36 Additionally, it offers improved access to public transport by making public transport available early in the morning and late evenings.

6.1.37 TPO 2 measures journey time savings to regional centres, as presented in Table 4.9 of the Detailed Options Appraisal Report (replicated in Table 7 above). It shows that Option 3 offers significant journey time savings to Perth and Edinburgh and slight journey time savings to Dundee; hence, considered to offer overall '**moderate**' benefits against TPO 2. Individual and overall appraisal scores for TPO 2 are presented in Table 8.

Comment: Further detail which underpins the anticipated mode share change for each of the options.

6.1.38 The impact of the options on mode share has been modelled using the TCRTM, as presented in Sections 6.1.26 to 6.1.28. The TCRTM derives mode shift responses based on travel costs/times between origin and destination geographical areas. The model forecasts generalised travel costs for each transport mode (i.e. representing access/egress time, journey times and monetary costs (such as fares)). Travel costs are calculated for each test scenario and compared against a reference case scenario, with an elasticity of demand mechanism applied to derive modal shift based on travel time/costs changes.

6.1.39 The Tay Cities Regional Transport Model (TCRTM) simulates regional traffic on an average weekday between 07:00am and 19:00pm and therefore it is not possible to quantify the changes in public transport patronage and the effectiveness of Option 1 against TPO3. This option has been appraised qualitatively against TPO3.

6.1.40 Option 2 improves journey times as well as providing additional frequency to existing services. Option 3 will offer access to a new PT mode, with shorter journey times to key locations. These elements have an impact on travel costs/times between origin and destination, instigating modal share change. Detailed appraisal outcomes are set out in Section 4.3 of the Detailed Options Appraisal Report.

7. ECONOMIC APPRAISAL & COST TO GOVERNMENT

Comment: Other than their proximity to commuting destinations and level of service, we're keen to understand in what other ways the benchmarked rail stations are similar to Newburgh? For example, do they have similar demographics, populations or key industries?

A socio-demographic comparison of Newburgh with the benchmarked Royal Burgh of Ladybank is presented in Table 13. The data shows that Newburgh has slightly larger population compared with Ladybank; however, the proportion of male, female and older

adults are comparable. Notably Newburgh has slightly lower percentage of working age people and around 5% more households with no access to cars than those in Ladybank.

Table 13. Socio-demographic comparison of Newburgh and Royal Burgh of Ladybank and District Community

Comparison	Newburgh	Ladybank	Royal Burgh of Ladybank
Population	2188	1213	1543
Male	48.8%	49.5%	49.6%
Female	51.2%	50.5%	50.4%
Working age	58.7%	61.6%	61.2%
Older adults (65+ years)	26.1%	27.0%	26.8%
% No access to a car or van	22.2%	19.2%	17.4%
% of working age employment deprived	8.2%	8.6%	8.0%
% of total population income deprived	10.0%	9.3%	8.8%

7.1.1 Figure 6 shows a comparison of percentage of people travelling to work by mode between Newburgh and Ladybank. The data excludes people who work mainly from home and shows that Newburgh and Ladybank have quite similar mode share for travel to work, however, a greater proportion of people drive a car or van to work from Ladybank compared with Newburgh.

7.1.2 Figure 7 shows that Newburgh residents have to travel longer distances to get to work. Data shows that a total 1206 people travel to work from Newburgh which is about twice the amount from Ladybank (620). A total of 524 (43%) Newburgh resident travel 10-20km, which is significantly greater than that from Ladybank (111 people, 18%). For trips between 5km and 10km, Ladybank has a greater percentage of residents than Newburgh. This may be a result of the key locations that the residents travel from Newburgh and poor accessibility to public transport. Given the number of people travelling to work outside Newburgh, a better public transport provision is warranted.

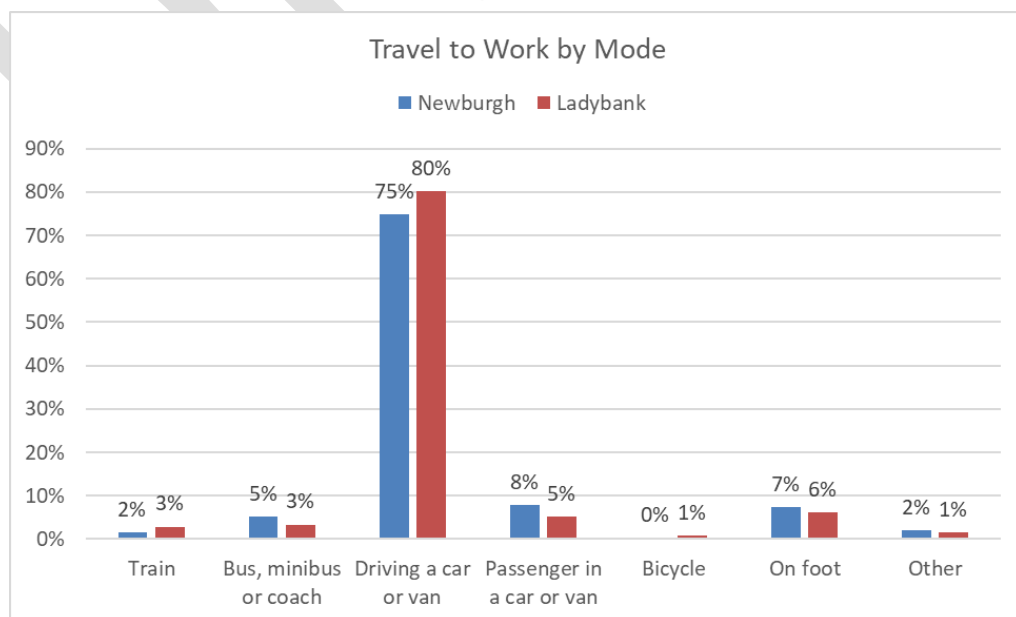


Figure 6. Travel to work¹² comparison by mode share (2011 Census)

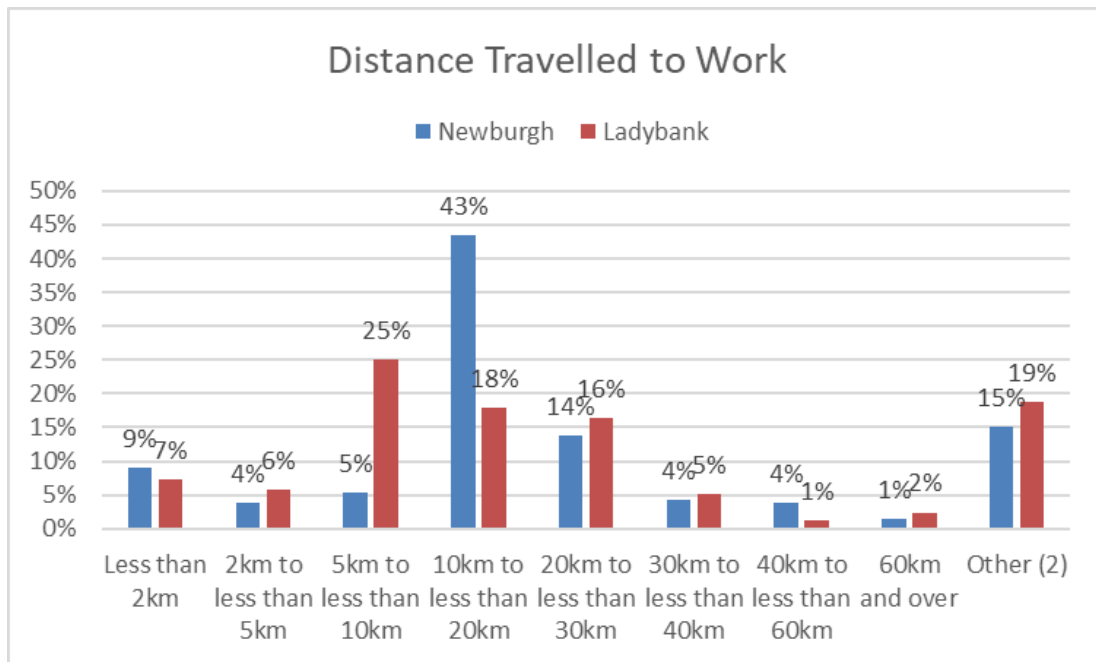


Figure 7. Comparison of distance travelled to work¹³ (2011 Census)

8. OPTION DEVELOPMENT & SIFTING

Comment: What sort of impact to overall levels of accessibility with regards to bus abstraction is anticipated? For example, could this potentially reduce viability of any existing services and potentially see them reduced / withdrawn further?

- 8.1.1 The Detailed Options Appraisal report discusses (in Section 7.3) the impact on the viability of existing bus services resulting from a new station. The introduction of a new rail station or an express bus service sometimes leads to shift from existing bus as well as cars. Reduced demand on local bus services (as witnessed in the Borders following the opening of the Borders Rail line) has the potential to adversely impact on the commercial viability of existing local and regional bus routes / services. Thus, depending on the nature of the impact, there could be greater requirements for increased subsidy in order to keep services in operation.
- 8.1.2 However, it was highlighted that the existing bus fleet in Newburgh serves a different area/purpose than rail will offer and is likely to still be an attractive option for many. If Option 2, the express bus service, is introduced, this service would offer a direct route to Cupar and connecting locations, again different from existing bus and proposed rail provision and it may complement existing services. Additionally, in case of modal shifts from cars, some additional bus trips to access trains at the proposed Newburgh station might be generated.

¹² Source: National Records of Scotland

¹³ Source: National Records of Scotland

Comment: What, if any, track infrastructure changes have been considered as part of the costs for the rail options?

- 8.1.3 The existing rail line is a single track, and the cost estimation assumes no changes to the track changes. This implies a cheaper and simpler station design. However, this station on a single track in conjunction with a station at Bridge of Earn (currently being considered) will lead to further timetabling considerations including conflicts on the single-track line, and increased disbenefits to existing passengers due to longer journey times. Further consultation with the Rail industry will be undertaken at the next stage of scheme development i.e. detailed design, to identify any opportunities associated with the introduction of a new station at Newburgh.

Comment: Have we understood correctly that there are no new costs for option 1?

- 8.1.4 This was discussed in Section 6.2 of the Detailed Options Appraisal Report. Option 1 assumes no requirement for any new buses to be purchased but instead existing provision will be utilised to extend the operating hours of current bus services. However, operation and maintenance costs will be required which include items such as driver costs, fuel, vehicle maintenance, insurance and general maintenance of vehicle fleet. The total operating and maintenance cost (per annum) is estimated to be £0.2m per annum. It is to be noted that any additional costs (i.e. subsidy) that might be required to run the services as a result of potentially low passenger numbers have not been included in the operational costs.

Comment: How robust do you feel cost estimates for option 3 are, having been based on existing stations?

- 8.1.5 The cost estimates for Option 3 were derived from a review of recent and planned station re-openings. Based on this analysis and uncertainty over the final location of the stations (which would impact on access, land acquisition, station car park and signalling costs), indicative costs have been derived for each option variant. As this is a strategic level study and the site-specific elements for new stations are not developed yet, this approach is deemed appropriate and robust.
- 8.1.6 For each option variant, the cost estimate took account of any challenges associated with particular locations. For example, Option 3c (East of town) and Option 3d (Clatchard Quarry) are situated on sloping ground with narrow or restricted access and it is anticipated that construction of a station at these locations would be more challenging and therefore the cost estimates are based on the maximum cost identified in the station cost review.
- 8.1.7 Where appropriate we have also applied case studies, current industry standards and SYSTRA's expertise for cost estimation. For example, the estimated costs for a modular short platform (Option 3e) are based on an example of a 10m station built in Scotland (Conon Bridge) and utilising current industry standards¹⁴ and SYSTRA's inhouse knowledge of modular platform construction.
- 8.1.8 In line with STAG, all investment costs should be adjusted for "Optimism Bias". A 56% uplift applied to the proposed rail station options, in line with the latest WebTAG

¹⁴ <https://www.duracomposites.com/grp-products/rail-station-platforms/>

guidance¹⁵. Detailed assumption of the cost estimation is outlined in Appendix D of the Detailed Options appraisal Report.

- 8.1.9 Following TS's review of the detailed options appraisal, a further review of the Option 3 cost has been undertaken by SYSTRA rail team. The review suggests that the costs for Option 3c/d are in line with a station of this size and quality. Benchmarking exercise (presented in Table 14) against stations which have opened in the previous year identifies that Option 3c/d cost for a single platform (155m) station at a capital cost of £8,000,000 is broadly in line cost per platform for recently opened stations at Portway Park and Ride, Thanet Parkway and East Linton. Cost per platform meter has been used to identify a comparator between the stations due to the differences in cost which would be encountered otherwise. While the Option 3c/d cost per platform meter is marginally higher than those at other stations (East Linton and Portway Park and Ride), this can be explained due to rising inflation, and, especially with East Linton, the economies of scale which were possible during the construction, which cannot be replicated on a single platform station. Costs comparison with benchmarking stations are presented in Table 14.
- 8.1.10 The cost for Option 3e-modular station has been based on case studies. The estimated cost, as set out in the detailed options appraisal report (Section 6.2), is £600,000 for a 10m platform excluding land and before risk. A 10m modular station platform deviates from standard platform design length, however the delivery of Conon Bridge Station (in 2013) with a 15m platform provides evidence that a shorter platform is feasible.
- 8.1.11 The proposed cost for Option 3e has been reviewed by a rail expert at SYSTRA. The estimated cost is deemed reasonable for the proposed site on Abernethy Road given that it is expected to present less challenging construction with some facilities already partly in place (e.g. site access, car parking). To capture any unforeseen site-specific risks, an appropriate optimism bias of 56% has been applied to the cost. The costs will be refined at the detailed design stage. Note that, a modular station, although a low-cost option, involves high deliverability and operational risks as it requires replacement at an interval depending on its lifespan. If a modular option is to progress, further feasibility discussion at the detailed design stage would be required with key stakeholders, including Network Rail.

¹⁵ TAG Unit A1.2 – Scheme Costs. OB applied in line with Stage 1 (Table 7) Road and Rail Project Types (Table 8)

Table 14. Benchmarking costs

Station	Region	Opened	Cost	Cost Source	Platforms	Total Platform Length	Platform 1 Length	Platform 2 Length	Cost per Platform M	Cost per Platform	Notes
Horden	Northeast England	29/06/2020	10,550,000	Network Rail	2	200	100	100	£2,750.00	£5,275,000	A new two platform station with Customer Information Screens (CIS), waiting shelters, CCTV, seating, a footbridge with ramps and stairs, car park with taxi drop-off, bus route and cycle parking. £4.4m from DfT New Stations Fund, built in approx. 6 months
Reston	Southeast Scotland	23/05/2022	20,000,000	Network Rail	2	540	270	270	£37,037.04	£10,000,000	Includes footbridge (lifts)
Reading Green Park	Southwest England	27/05/2023	20,077,000	Network Rail	2	300	150	150	£66,923.33	£10,038,500	A new two platform station with a ticket office/ retail facility, Customer Information Screens (CIS), waiting shelters, CCTV, seating, a footbridge with lifts and stairs, car park with taxi drop-off, bus route and cycle parking. New Stations Fund (£2.3m)
Marsh Barton	Southwest England	04/07/2023	16,000,000	Devon County Council	2	248	124	124	£64,516.13	£8,000,000	Includes footbridge (ramps), no staffing facilities, ticket machine each platform, shelter each platform. Some funding from New Stations Fund
Thanet Parkway	Southeast England	31/07/2023	44,000,000	BBC	2	500	250	250	£88,000.00	£22,000,000	Funded by Councils, New Stations Fund, Getting Building Fund and Local Growth Fund, included signalling and level crossing costs
Portway Park and Ride	Southwest England	01/08/2023	£5,866,000	Bristol Council	1	126	126	-	£46,555.56	£5,866,000	Funded by WECA, New Stations Fund, BCC, NR and GWR
Headbolt Lane	Northwest England	05/10/2023	80,000,000	BBC	3	405	135	135	£197,530.86	£26,666,667	Estimated platform length, staffed station building, shelters, linear layout, ticket machine, park and ride
East Linton	Southeast Scotland	12/12/2023	15,000,000	Transport Scotland	2	316	158	158	£47,468.35	£7,500,000	Footbridge, lifts, stairs, large car park, bus stop, shelters
Newburgh-Option 3c&d	Southeast Scotland	-	£8,000,000	Based on SYSTRA review	1	155	155	-	£51,612.90	£8,000,000	Single permanent platform

Comment: What consideration has been given to an integrated option 3 with appropriate bus and active travel elements?

8.1.12 An integrated Option 3 including bus and active mode options has not been considered. However, active travel can play an important role in improving sustainable access to/from the wider transport network and offering active travel alternatives for short-to-medium distance journeys, and therefore it has been combined with Options 1, 2 and 3 to complement their enhancements to longer-distance travel. High-level assumptions have been assumed at this stage, in line with those developed at Preliminary Appraisal (presented in Appendix A of the Detailed Options Appraisal Report), namely:

- Improved facilities and information at the principal bus stop in Newburgh in terms of improved links to/from the bus stop and the provision of safe and secure cycle parking at the bus stops, to ensure that the experience of using the bus is suitably attractive; and
- Traffic free active travel route between Newburgh and Abernethy; and Newburgh and Lindores (Den, Grange).

Comment: How has the number of rail station car parking spaces been derived? How does this impact on TPO3?

8.1.13 Option 3 provides parking opportunities at the proposed station. The parking zone located within the station is modelled as a Park and Ride site. For modelling, it was assumed that there would not be a parking charge at the site and that the site will have up to a maximum of 37 spaces. The number of car parking spaces was estimated based upon the expected demand from both national model TMfS and the TCRTM model. This is an estimate based upon pre-covid behaviours and is based upon typical weekday demand for parking. The weekend demand for parking should be considered in the detailed design along with the provision of disabled and electric vehicle charging stations. Land availability and on-street parking availability may also feed into the formal parking provision associated with the station.

8.1.14 Table 15¹⁶ below shows that, compared with Option 2, Option 3 offers greater increase in PT and active mode trips, but relatively smaller decrease in number of road trips. This is because the parking spaces at the station are expected to be used by people who will shift from ‘drive only’ to park and ride.

Table 15. Modelled Mode share change for Option 3

	12 Hour Trip Totals (TCRTM)					
	Do Min	Option 1	Option 2	Difference	Option 3	Difference
Road	29,900	N/A ¹⁷	29,811	-89	29,828	-71
PT	1,692		1,723	32	1,733	42
Active	2,781		2,856	75	2,874	93
Total	34,372		34,390	18	34,436	63

¹⁶ Based on Tables 4.6, and 4.10 of the Detailed Options Appraisal report

¹⁷ Not possible to quantify the changes in public transport patronage and the effectiveness of the option against TPO3.

9. OPPORTUNITIES

Comment: Clarification sought on the key distinction between TPO1 and TPO2.

9.1.1 This has been detailed in Section 6 above.

TPO1

9.1.2 Aimed at improving transport access to **key services and markets** (including employment, training, education, health and leisure opportunities) for Newburgh residents.

9.1.3 The performance of the options against this TPO 1 has been assessed for journeys to **key services**, i.e. selected **health, education and employment** etc. locations;

- Journey times- assessed using TRACC analysis.
 - Journey time savings compared with compared to 2021 Q3 public transport timetable.
 - Journey time comparisons with those from Ladybank.
- Accessibility- assessed qualitatively or using TRACC accessibility analysis where appropriate.
 - Access to destinations that are unreachable in the specified TRACC timeframe, i.e. 07:00-09:00 for education and 10:00-12:00 for health centres and retail destinations.
 - Extended hours of operation

TPO2

9.1.4 Aimed at improving public transport connectivity and journey times to key **regional centres** from Newburgh for residents, businesses and visitors.

9.1.5 The performance of the options against this TPO 2 has been assessed for journeys to **four regional centres, i.e..** Perth, Edinburgh, Cupar and Dundee:

- Journey time savings compared to 2021 Q3 public transport timetable - assessed using TRACC analysis.
- Accessibility assessed qualitatively for extended hours of operation.

Comment: Further noted that the scale and nature of change being sought by each TPO should be clearly articulated within the TPO itself.

9.1.6 This has been addressed under Section 6.

Comment: Clarification sought on the rationale for rejection of bus-based options within the recommendations, noting their apparent positive performance across the appraisal.

9.1.7 The appraisal recommendations are based on the performance of the options against TPOs, STAG criteria and Cost to Benefits Analysis. The bus-based options offer minor to moderate benefits against TPOs as discussed in Section 6 above. However, there are issues associated with the feasibility and affordability of the bus-based options that are discussed in Section 8.3 of the Detailed Options Appraisal Report.

- 9.1.8 Option 1 is expected to offer some small positive benefits against the TPOs, STAG criteria and CBA. However, challenges identified through the assessment against risk, uncertainty and funding suggest **Option 1 is unlikely to be deliverable**. Discussions with Fife Council highlighted that there is no additional funding presently available from the Council to subsidise the enhancement of any existing services. While it may be desirable to further consider this option and explore other funding mechanism, the feasibility of realising this option for comparatively lower benefits means it is unlikely to merit further consideration.
- 9.1.9 Option 2 generally preforms well against the TPOs and STAG Criteria. However, issues highlighted the assessment of feasibility and affordability suggest the option would have difficulties in being delivered successfully. Option 2 is the highest cost option, with capital costs anticipated to be significantly higher than the other options under consideration in this appraisal due to the requirement for regular bus fleet renewal. In comparison, Option 3 has high capital costs of station construction but much lower ongoing revenue and maintenance costs due to use of existing rail infrastructure (rail line, train carriages etc.). In order to be successful, Option 2 will require close coordination with bus operators, Fife Council and potentially subsidies to support any services. Fife Council however have advised that any new service competing with existing supported services would be highly likely to mean existing funding resource was directed elsewhere, as the existing gap in service / service provision would no longer exist in Newburgh. There is also the possibility of abstraction from commercial services by the new, supported service. As in Option 1, discussions with Fife Council highlight that there is no additional funding presently available from the Council to subsidise any new service. The option is therefore only likely to be realised if alternative funding sources can be identified (e.g. the operator Stagecoach commercially funds the option). While it may be desirable to further consider this option and explore other funding mechanisms, particularly following high appraisal performance in this report, the **significant cost and associated risk** of the option ultimately **remove this option from further recommendation**.
- Comment: The option to better integrate with existing rail station(s) appears to have been wrapped up in the new bus options (options 1 and 2). Clarification sought on whether an option to better integrate with existing rail stations had been considered as its own option.**
- 9.1.10 Option 2 provides an express service between Cupar (train station), Newburg, Perth (train station) and also Perth P&R, aiming to offers faster journeys and better integration with trains. The option also offers extended hours of operation providing improved accessibility to nearby rail stations. Bus and rail integration could be further enhanced by coordinating timetables.
- 9.1.11 We could probably have considered this option as a separate option; however, we expect that it would score the same as Option 2, therefore a sperate option was not considered.
- 9.1.12 Option 1 can also be considered for integrated timetabling with trains with an extension in operating hours to a service that captures Cupar and Ladybank stations. However, the journey times to these locations are quite lengthy with local buses.

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	FI	Senior Consultant	08/05/2024	
	Checked by	DM	Associate	09/05/2024	
	Approved by	MN	Director	20/05/2024	
2	Author	FI	Senior Consultant	05/06/2024	Following cost review for a 'modular' station
	Checked by	DM	Associate	05/06/2024	
	Approved by	MN	Director	05/06/2024	

