

Evaluation of Laurencekirk Rail Station

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1. Background

The town of Laurencekirk in Aberdeenshire lies on the East Coast Mainline between Aberdeen and Dundee and is in very close proximity to the A90 trunk road, which also links the two cities. In terms of distance, the town is situated approximately 30 miles south of Aberdeen and just over 35 miles north-east of Dundee. The town has a resident population of approximately 2,800 (rising to almost 5,000 in the wider Mearns area) and this is projected to increase by 11% by 2030 by the General Register Office for Scotland (GROS). Residents of the town and surrounding area have a high dependence on access to Aberdeen and Dundee for employment and other key facilities such as education, health and leisure.

Laurencekirk station was a calling point on the routes between the Central Belt and Aberdeen until 1967 when it was closed as part of the wide-ranging Beeching reforms.

In 2004 Aberdeenshire Council commissioned work to appraise transport options which could help meet the identified transport problems / constraints and deliver opportunities for the area of Laurencekirk. The work was carried out in line with the Scottish Government / Transport Scotland's Scottish Transport Appraisal Guidance (STAG). The findings of the STAG appraisal pointed towards the re-opening of Laurencekirk Railway Station as a possible option which could deliver a value for money solution in line with the stated transport planning objectives, which were to:

- *Link rural commuters to centres of employment, educational establishments and other facilities;*
- *Encourage greater use of public transport by connecting the township of Laurencekirk and its surrounding area to the rail network;*
- *Encourage modal shift from private car to public transport by constructing a Park and Ride facility serving the new station; and*
- *Improve road safety by encouraging a reduction in trips made by road and through reduced road traffic.*

Following the STAG Part 2 appraisal, a business case for the station was developed and the station was reopened in May 2009.

In line with the recommended appraisal and evaluation cycle of Rationale, Objectives, Appraisal, Monitoring, Evaluation and Feedback (ROAMEF), Transport Scotland commissioned work in 2013 to undertake an evaluation of the re-opening of the station to understand whether the project is meeting its intended objectives. This paper presents the results of the evaluation.



Transport Scotland is currently developing new guidance for carrying out evaluations of rail projects. This study is one of three¹ which have been commissioned by Transport Scotland to inform the development of the new guidance. The findings set out in this report will therefore play an important part in contributing to the guidance.

2. Evaluations

One of the key requirements of STAG is the undertaking of post-implementation evaluation. STAG refers to the term 'evaluation' as a detailed, objective-driven review or audit of a project's performance, which includes:

- **Process evaluation**, which concentrates on the effectiveness of the implementation and delivery aspects of the project;
- **Outcome evaluation**, which assesses whether the outcomes have been achieved and how the project performs against identified targets and objectives, including the stated STAG criteria²; and
- the preparation and completion of an **Evaluation Report**, based on the outputs from the Process Evaluation and Outcome Evaluation undertaken.³

The process and outcome evaluations for the reopening of Laurencekirk station formed the main elements of the evaluation.

3. Additional Analysis

As part of the STAG-based process and evaluations, the Brief for the study identified a number of specific issues to be considered – these included:

- analysis to understand why outturn passenger numbers and ticket revenue had exceeded forecasts;
- an information gathering exercise / survey to obtain a better understanding of users of Laurencekirk station and their travel behaviour prior to the station reopening;
- analysis to determine the impacts of the project against the STAG criteria of economy, environment, accessibility, integration and safety;
- analysis of the outturn costs and benefits to generate a retrospective Benefit Cost Ratio for the project;
- gaining a fuller appreciation of the 'Wider Economic Benefits' (WEBs) of the station and also how it has impacted on the local area; and, finally
- making recommendations on the Draft Guidance on Rail Evaluation being prepared by Transport Scotland.

These wider issues are considered in turn.

4. Process Evaluation Findings

STAG explains that an important aspect of the Evaluation Plan should be a process evaluation. A process evaluation is concerned with how well the project has been implemented and delivered, with a view to identifying what went well and what lessons could be learned for the planning, implementation and delivery of future projects.

¹ The other two evaluations relate to the improvements to the Larkhall – Milngavie route and the reopening of the Airdrie – Bathgate service.

² The five STAG criteria are Economy, Environment, Safety, Accessibility & Social Inclusion and Integration.

³ Scottish Transport Appraisal Guidance (Transport Scotland, 2008), p. 71.

The process evaluation was informed by a series of consultations with the project delivery partners and stakeholders, all of whom were involved in the implementation and delivery stages of the project. This included meetings with:

- Aberdeenshire Council;
- North East Scotland Transport Partnership (NESTRANS);
- Transport Scotland; and
- Network Rail.

The discussion with stakeholders centred on the issues of:

- Timing of Process Evaluation
- The Project Team;
- project scope;
- project management - budget, programme and risk management; and
- stakeholder engagement.

From the evidence gathered as part of the interview and consultation process, it can be concluded that the delivery of Laurencekirk railway station was a success. The project was delivered on time and on budget. Key factors that contributed to the success were:

- Careful consideration being given to who was best placed to manage risks and take overall ownership of delivery;
- A well thought out scope that was clearly understood by all parties;
- Procurement methods specifically tailored to meet the needs of the project; and
- A carefully thought out, well-designed and transparent stakeholder and community engagement process to generate participation and buy in.

However, it is important to note that a process evaluation should be carried out early in the process. This didn't happen in the case of Laurencekirk and it is fortunate that a number of important lessons were not missed due to, for example, the turnover of key and experienced staff involved in the delivery.

As explained in STAG, the process evaluation should be carried out at an early stage of the overall project. The benefit of this is that it will then be possible to amend a project early to make it more efficient and effective in terms of implementation and delivery. If left too late, then it may not be possible to change the delivery process and implement improvements.

Another benefit of conducting the process evaluation early is that the information is clear in the minds of those who have been involved. This is important if lessons learned are to influence future projects. If left too late then key lessons could be forgotten and missed. Perhaps more importantly, if left for a period of time then it is possible that those who were involved in the delivery stage could have moved on. During this process evaluation it was fortunate that those who were involved in the delivery stage were still employed in Government and were able to participate in the interviews and feed in their valuable comments and experience. While some no longer worked in Transport Scotland, they were still employed in the Scottish Government. Under other circumstances they could have left the organisation and it would not have been possible to glean their input. This would have made the process evaluation very much incomplete with important findings missed.

5. Outcome Evaluation Findings

Users Surveys

The majority of the evidence used to develop the analysis supporting the outcome evaluation was gathered from an extensive online passenger survey. In summary, the online survey was designed to gain a better understanding of Laurencekirk rail users' travel patterns, both currently and prior to the opening of the station.

The survey was 'live' over a six-week period. A very good response was generated, with a total of 204 people completing the questionnaire.

Following the survey, the recorded trips made by respondents were scaled up using the frequency of travel information provided to generate an overall figure of 52,745 recorded journeys over the previous 12 months. For context, this compared with the latest figure for the total number of exits and entries at the station in 2012-13 of 92,470 i.e. the number of journeys made by those surveyed accounted for over 55% of the total rail journeys to and from the station, so this can be viewed as a very good sample of station users.

It should be noted at the outset that the transport planning objectives in the original appraisal do not meet all of the SMART (Specific, Measurable, Achievable, Relevant and Time bound) criteria as set out in STAG and the HM Treasury *Green Book – Appraisal and Evaluation in Central Government*. In particular, the objectives were not quantified and time bound, although we would acknowledge that setting fully SMART objectives is not always possible. It was therefore not possible to provide an assessment against whether specific quantified targets had or had not been met. However, the survey results did provide a useful indication of the impact the station had made towards the aims and objectives.

Before moving to the results, to understand the true additional impacts of a scheme it is important to know the counterfactual, i.e. what would have happened to people's travel behaviour and travel decisions if the station had not been reopened. To inform this, the survey included a series of questions about how people would have made their journeys, if at all, had the station not reopened. This covered all journey purposes.

Transport Planning Objectives

The findings of the outcome evaluation show that the re-opening of the station at Laurencekirk has had a positive impact as measured against all the original transport planning objectives.

- *Objective 1 - Link rural commuters to centres of employment, educational establishments and other facilities*

The re-opening has played an important role in linking the local community in the town and surrounding area to centres of employment, educational establishments and other facilities. It has also had a positive impact on those travelling for business purposes. The results of the survey showed that a number of journeys would not have been made if the station had not been reopened. The Accessibility Analysis carried out also demonstrated that facilities have become much more accessible, in terms of journey time, for those without access to a car. This has been particularly so for facilities in Aberdeen where some journey times by public transport have been reduced by up to 50 minutes.

- *Objective 2 - Encourage greater use of public transport by connecting the township of Laurencekirk and its surrounding area to the rail network*

The findings from the survey also showed that the station has encouraged the use of public transport. The results reveal that the station re-opening has not only enabled people to make journeys by public transport that they would not have previously made, but it has also resulted in people making journeys that they would have previously made by car. In addition, 16% of people who travel out of the station reported that they had reduced the number of vehicles they owned as a direct result of the station reopening and less journeys being made by car. Furthermore, of those

using the station, the majority travel to the station on foot suggesting that the station reopening has also contributed to an increase in active forms of travel.

- *Objective 3 - Encourage modal shift from private car to public transport by constructing a Park and Ride facility serving the new station*

The findings of the survey also reveal that the availability of the park & ride facility at the station has encouraged a shift from the private car to public transport. It is clear from respondents that a large share of people using Laurencekirk station also use the park & ride facility and a significant percentage of these people previously made or would have made the journey by driving all the way to their destination. Without the park and ride facility it is likely, from the evidence gathered on the distance between home and station, that a number of people would drive all the way to their destination ie it is too far to walk on a daily basis.

- *Objective 4 - Improve road safety by encouraging a reduction in trips made by road and through reduced road traffic*

The findings show that the station re-opening has resulted in a small reduction in car trips. They also show that a large proportion of these trips would have been made in the peak periods and therefore most congested times. The resulting overall reduction in car kilometres on the network suggests it has had a small but positive impact on road safety, particularly on the A90 into Aberdeen, although this cannot be observed and attributed to Laurencekirk station.

While the evidence suggests that the scheme has made a positive contribution to the objectives, it was not possible to conclude that the scheme has been a success. The objectives developed as part of the appraisal process are not SMART and do not have any quantified targets. It is therefore difficult to determine whether the scheme has resulted in alleviating the transport problems or generating opportunities.

A recommendation to ensure useful and effective evaluations of the outcomes of rail schemes is for the appraisal to develop SMART transport planning objectives so that the performance of a project can be measured and assessed quantitatively. Without such objectives or targets, it is not possible to measure the performance of a scheme against objectives 'to link', 'to improve' or 'to encourage'. Objectives with quantified targets should therefore be developed (reflecting the identified problems that the transport scheme is being designed to tackle) so that the success of the scheme can be quantified.

We have noted though that defining SMART objectives (which are rooted in evidence rather than being arbitrary or aspirational values) can be challenging in the STAG context. Transport Scotland may wish to consider how further Guidance could be provided for Objective setting in STAG. For example, STAG could provide a 'menu' of typical objectives, or recommendations on how objectives can be presented in a SMART format.

Also, to carry out an effective outcome evaluation it is important to know the travel behaviour of users of the station before it was reopened. Without the 'before' information it is not possible to compare the performance of the project against its objectives.

While the online survey was a useful tool to gather this information it does generate inherent risks with the accuracy and reliability of the data due to respondents not having accurate records of their travel behaviour before the station was reopened.

STAG Review

Other important elements of the study were to review the economic elements of the original 2004 STAG appraisal of the project, with a view to understanding:

- why the passenger and revenue figures for Laurencekirk station exceeded those forecast in the STAG appraisal;

- a revised STAG, including Transport Economic Efficiency / Benefit Cost Ratio (BCR) for the scheme using the outcome, as opposed to forecast, figures ; and
- the 'Wider Economic Benefits' (WEBs) of the project.

On the first bullet, there was a lack of clarity within the STAG report on how the revenue forecasts were calculated. On the information that was available there were a number of questions around the methodology, such as:

- are all new rail trips assumed to have transferred from car?;
- are all new rail trips from Laurencekirk new to rail, i.e. no transfer (via park and ride) from existing stations?;
- are any entirely new trips generated?;
- has any change in destination choice occurred?; and
- is there an assumed loss of revenue to other modes (e.g. bus)?

All of these questions are important in understanding how the forecasts were derived and why the forecasts underestimated the outturn passenger numbers.

An important conclusion of this task is therefore that the key underlying cause and effect assumptions and analysis must be recorded and laid out in the STAG report if a latter evaluation process is to understand why outcomes may have diverged from forecast.

On the second element of this task, using the outturn data to recalculate the BCR shows that the Benefit Cost Ratio increases significantly due to the higher than forecast benefits generated by the scheme. It rises from the original estimate of 1.5, to between 2.5 and 4.4 depending on the scenario considered. For example, the 4.4 BCR figure covers the currently used 60-year appraisal period, no timetable disbenefit to those using services which travelled through Laurencekirk station and revised population growth projections.

Wider Economic Benefits

Current transport appraisal guidance includes advice on techniques to capture impacts that have traditionally not been captured in conventional appraisal. This includes Wider Economic Benefits (WEBs). A survey with businesses was undertaken and analysis was carried out to understand the impact of these Wider Economic Benefits from the re-opening of Laurencekirk railway station. The analysis revealed that agglomeration benefits are negligible. It also revealed that while there may have been labour supply impacts, as the new station encouraged people to move to more productive jobs or those not employed to enter the workforce, the impacts will be limited for projects similar to Laurencekirk ie a small station with relatively few users. Nevertheless, there were positive responses to the labour supply questions which could mean greater impacts for larger schemes which may not be being captured in conventional transport appraisal methodologies.

Wider Impacts Analysis

This section looks at the wider impact on the local economy of the station reopening. It considered factors such as population, housing market, commercial development and the labour market to understand whether the station reopening had had any measurable impact in these areas.

In undertaking the analysis it was important to also understand the counterfactual in these circumstances, i.e. what would the economic impact on the local area have been if the station had not been reopened. Identifying and isolating the impacts of a transport scheme is a challenging process as there are likely to be a number of factors acting simultaneously which have contributed to the outcomes. To account for this we defined 'control group' areas where the impacts in these areas can be compared against those in Laurencekirk. The aim of selecting control groups is to help understand whether any impacts that have occurred locally in Laurencekirk have been directly due to the reopening of the new rail station. It does this by comparing impacts against areas that have

faced similar economic experiences, therefore isolating the impact of the station and using it as a differentiating factor.

The control groups adopted for this study were the wider Aberdeenshire area and national averages i.e. Scotland as a whole. The reason for selecting Aberdeenshire is to consider a wider group of similar areas i.e. factors affecting local areas in Aberdeenshire will be common to both groups, with the reopening of the station being the key isolating factor. Similarly, considering Scotland as a whole will, again, mean that both groups are likely to be affected by similar impacts, with the impact of the station being an important differentiating factor.

For each measured output the trend in the Mearns and Laurencekirk area was compared against the Aberdeenshire and Scottish averages over the same period.

The findings show that overall there is no clear evidence from the data examined that the reopening of the station at Laurencekirk had a significant and measurable wider economic and social impact. While there had been some positive impacts across a number of the metrics considered, for example the housing and labour markets, the impacts in Laurencekirk post station reopening do not appear to be significantly different from those witnessed in other areas considered.

It must be noted however that the impacts of the station may not have firmly bedded in and it may take a longer period for these to materialise. In addition, some of the economic and social data is not yet readily available, e.g. census data. It may require some time before the data becomes available for analysis and firm conclusions can be reached. Until then the findings on wider impacts should be seen as preliminary.

6. Recommendations for Rail Evaluation Guidance

A series of recommendations were set out for consideration as part of the development of Transport Scotland's Rail Evaluation Guidance. The recommendations were split into two sections. The first section listed a number of recommendations, many of which are already highlighted in the Draft Guidance. The purpose is to re-emphasise these points and the importance of these factors.

The second section presented potential new recommendations which are not, as yet, covered in the Draft Guidance.

Recommendations Part 1 – factors already covered in Draft Rail Evaluation Guidance

To carry out an effective outcome evaluation it is crucial that relevant data is available relating to the period pre and post project opening. While, in some cases it may be appropriate to use officially published socio-economic time series data, in the case of evaluating the impacts of relatively small and / or rural rail projects these types of data are not necessarily available at that appropriate spatial level, and therefore a bespoke data collection exercise may be required.

At the outset, or as part of the STAG appraisal process, consideration should be given to the information that will be required to effectively measure the performance of a project against its objectives. If the information is not readily available, then measures should be put in place, following the decision to proceed with the project, to ensure it is gathered. This should include details of the method and frequency of the data collection exercise.

An outcome evaluation may not be able to rely on official published sources to inform pre and post project impacts. This is particularly so for projects that are small / or in relatively rural areas as the socio-economic data may not be available at the required spatial level. Careful consideration of data requirements therefore needs to take place early so that if the information is not available then measures can be put in place to gather it.

The data required to undertake the evaluation should be detailed in the Monitoring Plan and these aspects should run right through the logic of the STAG process from the identification of problems to the setting of SMART objectives onwards, ie the SMART objectives should be defined together with a specification of how they will be measured right at the outset.

Fully understanding the behaviour of users before the intervention and the counterfactual are crucial to effective evaluations. The Laurencekirk outcome evaluation largely depended on the memories of users and their answers to the online survey to establish their travel behaviour before the station was reopened, and what they would have done had the station not reopened. Whilst this worked well, there are inherent risks with the accuracy and reliability of the responses. It is important that this baseline information is collected ahead of project implementation, or at the very least as quickly as possible after project opening ie data should ideally be collected in advance of the outcome evaluation and not as part of it.

The **process evaluation** should be undertaken during the implementation and delivery i.e. at the early stage of a project. This will ensure that issues are fresh in the minds of those involved so that lessons can be learned. It will also allow opportunities to improve processes that are not going well during delivery stage. Importantly, if carried out early it also means that the key individuals involved in delivering the project are still accessible to provide inputs to the evaluation.

For the **outcome evaluation**, there needs to be a 'bedding in' period to ensure the impacts expected to be generated by the project have sufficient time to materialise.

To allow a meaningful assessment of the performance of a project against the Transport Planning Objectives, the objectives should be SMART or supported by a number of specific targets or indicators – Transport Scotland should consider if further guidance should be provided to practitioners in the setting of meaningful and consistent SMART objectives which will ultimately feed the evaluation process.

Control groups should be considered and agreed as part of the appraisal stage, i.e. when the monitoring and evaluation framework is being determined, and measures put in place to ensure the relevant data is gathered to allow a comparison with the area directly affected by the project.

Recommendations Part 2 – factors not covered in Draft Rail Evaluation Guidance

Details of the option appraisal should be recorded clearly, particularly the methodology and key forecasting assumptions made, so that the outcomes of the scheme can be evaluated against what was anticipated, and the forecasting process can be more readily revisited when outturn data becomes available.

If the outcome evaluation is considering the impacts on local business performance, e.g. wider impacts analysis or WEBS, then baseline information should be gathered from local companies in advance of the project opening. Similarly to the user survey, this eliminates the risk of relying on the memories of people at a much later stage.

STAG sets out a requirement for a Monitoring Plan and an Evaluation Plan. In practice, these aspects of the process perhaps receive less resource and attention than the main appraisal. These two linked processes should be given a greater prominence as they are key to ensuring lessons are learned and therefore more effective projects in the future.

There were no Monitoring & Evaluation plans detailed in the Laurencekirk STAG but this STAG appraisal may have preceded this requirement. As such this is not a good example in terms of following a Monitoring & Evaluation Plan through from STAG appraisal to implementation to evaluation.

In the case of Laurencekirk there did not appear to be any firm commitment from organisations involved (funders or stakeholders) post STAG appraisal to undertake the necessary data collection outlined in Transport Scotland's guidance to ensure effective evaluation. If evaluation, as required, is to become an integral part of the ROAMEF cycle, it needs to be seen as important, rather than an 'add on' and of secondary importance to the role of project delivery.

There appears to be an increasing public acceptance of Web-based surveys. In some circumstances, particularly rural and / or small projects, if correctly thought through and designed, these surveys can provide a cost effective way of collecting a lot of detailed data as demonstrated with the Laurencekirk survey. This can particularly be the case when there is strong local feeling towards a project.

In the case of small stations, the evidence from the Laurencekirk survey suggests that the Wider Economic Benefits (WEBs) impacts are likely to be minimal. While there was some evidence of the station influencing people's decision to enter the workforce, the numbers were small. It is possible that larger stations may have greater impact. However, in the spirit of the proportionate approach to appraisal highlighted in STAG, it is recommended that WEBs impacts are not required to be captured as part of future appraisals of small station re-openings similar to Laurencekirk.

The approach to, and information required for, evaluating rail projects will differ depending on the nature and size of the project. For example, an evaluation of a small rural station such as Laurencekirk will obviously differ from a new rail service such as the forthcoming re-introduction of rail service between Edinburgh and the Scottish Borders. Important consideration needs to be given to the transport planning objectives when designing the approach to the evaluation. Evaluations can require a significant resource and need to be considered within the principle of proportionality as highlighted in STAG.